

# *The* ***NORTH CAROLINA REGISTER***

**IN THIS ISSUE . . . . .**

**EXECUTIVE ORDER**

**IN ADDITION**

**Wildlife Resources Commission**

**PROPOSED RULES**

**Economic and Community Development  
Environment, Health, and Natural Resources  
Human Resources  
Insurance  
Medical Examiners  
State Personnel**

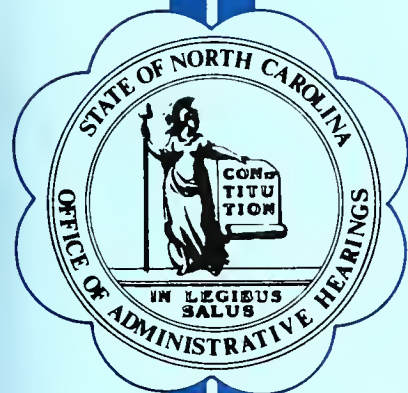
**RRC OBJECTIONS**

**RULES INVALIDATED BY JUDICIAL DECISION**

**CONTESTED CASE DECISIONS**

**ISSUE DATE: December 15, 1992**

**Volume 7 • Issue 18 • Pages 1829 - 2059**



## INFORMATION ABOUT THE NORTH CAROLINA REGISTER AND ADMINISTRATIVE CODE

### NORTH CAROLINA REGISTER

The *North Carolina Register* is published twice a month and contains information relating to agency, executive, legislative and judicial actions required by or affecting Chapter 150B of the General Statutes. All proposed administrative rules and notices of public hearings filed under G.S. 150B-21.2 must be published in the Register. The Register will typically comprise approximately fifty pages per issue of legal text.

State law requires that a copy of each issue be provided free of charge to each county in the state and to various state officials and institutions.

The *North Carolina Register* is available by yearly subscription at a cost of one hundred and five dollars (\$105.00) for 24 issues. Individual issues may be purchased for eight dollars (\$8.00).

Requests for subscription to the North Carolina Register should be directed to the Office of Administrative Hearings, P. O. Drawer 27447, Raleigh, N. C. 27611-7447.

### ADOPTION AMENDMENT, AND REPEAL OF RULES

The following is a generalized statement of the procedures to be followed for an agency to adopt, amend, or repeal a rule. For the specific statutory authority, please consult Article 2A of Chapter 150B of the General Statutes.

Any agency intending to adopt, amend, or repeal a rule must first publish notice of the proposed action in the *North Carolina Register*. The notice must include the time and place of the public hearing (or instructions on how a member of the public may request a hearing); a statement of procedure for public comments; the text of the proposed rule or the statement of subject matter; the reason for the proposed action; a reference to the statutory authority for the action and the proposed effective date.

Unless a specific statute provides otherwise, at least 15 days must elapse following publication of the notice in the *North Carolina Register* before the agency may conduct the public hearing and at least 30 days must elapse before the agency can take action on the proposed rule. An agency may not adopt a rule that differs substantially from the proposed form published as part of the public notice, until the adopted version has been published in the *North Carolina Register* for an additional 30 day comment period.

When final action is taken, the promulgating agency must file the rule with the Rules Review Commission (RRC). After approval by RRC, the adopted rule is filed with the Office of Administrative Hearings (OAH).

A rule or amended rule generally becomes effective 5 business days after the rule is filed with the Office of Administrative Hearings for publication in the North Carolina Administrative Code (NCAC).

Proposed action on rules may be withdrawn by the promulgating agency at any time before final action is taken by the agency or before filing with OAH for publication in the NCAC.

### TEMPORARY RULES

Under certain emergency conditions, agencies may issue temporary rules. Within 24 hours of submission to OAH, the Codifier of Rules must review the agency's written statement of findings of need for the temporary rule pursuant to the provisions in G.S. 150B-21.1. If the Codifier determines that the findings meet the criteria in G.S. 150B-21.1, the rule is entered into the NCAC. If the Codifier determines that the findings do not meet the criteria, the rule is returned to the agency. The agency may supplement its findings and resubmit the temporary rule for an additional review or the agency may respond that it will remain with its initial position. The Codifier, thereafter, will enter the rule into the NCAC. A temporary rule becomes effective either when the Codifier of Rules enters the rule in the Code or on the sixth business day after the agency resubmits the rule without change. The temporary rule is in effect for the period specified in the rule or 180 days, whichever is less. An agency adopting a temporary rule must begin rule-making procedures on the permanent rule at the same time the temporary rule is filed with the Codifier.

### NORTH CAROLINA ADMINISTRATIVE CODE

The North Carolina Administrative Code (NCAC) is a compilation and index of the administrative rules of 25 state agencies and 38 occupational licensing boards. The NCAC comprises approximately 15,000 letter size, single spaced pages of material of which approximately 35% of is changed annually. Compilation and publication of the NCAC is mandated by G.S. 150B-21.18.

The Code is divided into Titles and Chapters. Each state agency is assigned a separate title which is further broken down by chapters. Title 21 is designated for occupational licensing boards.

The NCAC is available in two formats.

- (1) Single pages may be obtained at a minimum cost of two dollars and 50 cents (\$2.50) for 10 pages or less, plus fifteen cents (\$0.15) per each additional page.
- (2) The full publication consists of 53 volumes, totaling in excess of 15,000 pages. It is supplemented monthly with replacement pages. A one year subscription to the full publication including supplements can be purchased for seven hundred and fifty dollars (\$750.00). Individual volumes may also be purchased with supplement service. Renewal subscriptions for supplements to the initial publication are available.

Requests for pages of rules or volumes of the NCAC should be directed to the Office of Administrative Hearings.

### CITATION TO THE NORTH CAROLINA REGISTER

The *North Carolina Register* is cited by volume, issue, page number and date. 1:1 NCR 101-201, April 1, 1986 refers to Volume 1, Issue 1, pages 101 through 201 of the *North Carolina Register* issued on April 1, 1986.

FOR INFORMATION CONTACT: Office of Administrative Hearings, ATTN: Rules Division, P.O. Drawer 27447, Raleigh, North Carolina 27611-7447, (919) 733-2678.

# NORTH CAROLINA REGISTER



*Office of Administrative Hearings  
P. O. Drawer 27447  
Raleigh, North Carolina 27611-7447  
(919) 733-2678*

Julian Mann III,  
*Director*  
James R. Scarcella Sr.,  
*Deputy Director*  
Molly Masich,  
*Director of APA Services*

**Staff:**  
Ruby Creech,  
*Publications Coordinator*  
Teresa Kilpatrick,  
*Editorial Assistant*  
Jean Shirley,  
*Editorial Assistant*

## ISSUE CONTENTS

<b>I. EXECUTIVE ORDER</b>	
Executive Order 182 . . . . .	1829
<b>II. IN ADDITION</b>	
Wildlife Resources Commission . . .	1830
<b>III. PROPOSED RULES</b>	
<b>Economic and Community Development</b>	
Savings Institutions Division . . . .	1833
<b>Environment, Health, and Natural Resources</b>	
Departmental Rules . . . . .	1852
Environmental Management . . . .	1856
Health Services . . . . .	1985
Radiation Protection Commission .	1863
<b>Human Resources</b>	
Medical Assistance . . . . .	1842
<b>Insurance</b>	
Financial Evaluation Division . . .	1849
Market Conduct Division . . . . .	1850
Property and Casualty Division . .	1848
<b>Licensing Board</b>	
Medical Examiners . . . . .	1987
<b>State Personnel</b>	
Office of State Personnel . . . . .	2005
<b>IV. RRC OBJECTIONS</b> . . . . .	2009
<b>V. RULES INVALIDATED BY JUDICIAL DECISION</b> . . . . .	2014
<b>VI. CONTESTED CASE DECISIONS</b>	
Index to ALJ Decisions . . . . .	2015
Text of Selected Decisions	
91 DST 1354 . . . . .	2034
91 OSP 0859 . . . . .	2038
91 EHR 0889 . . . . .	2043
92 OSP 0370 . . . . .	2048
<b>VII. CUMULATIVE INDEX</b> . . . . .	2057

**NORTH CAROLINA REGISTER**  
**Publication Schedule**  
*(August 1992 - December 1993)*

Issue Date	Last Day for Filing	Last Day for Elec- tronic Filing	Earliest Date for Public Hearing	Earliest Date for Adoption by Agency	Last Day to Submit to RRC	*Earliest Effective Date
*****	*****	*****	*****	*****	*****	*****
08/03/92	07/13/92	07/20/92	08/18/92	09/02/92	09/20/92	11/02/92
08/14/92	07/24/92	07/31/92	08/29/92	09/13/92	09/20/92	11/02/92
09/01/92	08/11/92	08/18/92	09/16/92	10/01/92	10/20/92	12/01/92
09/15/92	08/25/92	09/01/92	09/30/92	10/15/92	10/20/92	12/01/92
10/01/92	09/10/92	09/17/92	10/16/92	10/31/92	11/20/92	01/04/93
10/15/92	09/24/92	10/01/92	10/30/92	11/14/92	11/20/92	01/04/93
11/02/92	10/12/92	10/19/92	11/17/92	12/02/92	12/20/92	02/01/93
11/16/92	10/23/92	10/30/92	12/01/92	12/16/92	12/20/92	02/01/93
12/01/92	11/06/92	11/13/92	12/16/92	12/31/92	01/20/93	03/01/93
12/15/92	11/24/92	12/01/92	12/30/92	01/14/93	01/20/93	03/01/93
01/04/93	12/09/92	12/16/92	01/19/93	02/03/93	02/20/93	04/01/93
01/15/93	12/22/92	12/31/92	01/30/93	02/14/93	02/20/93	04/01/93
02/01/93	01/08/93	01/15/93	02/16/93	03/03/93	03/20/93	05/03/93
02/15/93	01/25/93	02/01/93	03/02/93	03/17/93	03/20/93	05/03/93
03/01/93	02/08/93	02/15/93	03/16/93	03/31/93	04/20/93	06/01/93
03/15/93	02/22/93	03/01/93	03/30/93	04/14/93	04/20/93	06/01/93
04/01/93	03/11/93	03/18/93	04/16/93	05/01/93	05/20/93	07/01/93
04/15/93	03/24/93	03/31/93	04/30/93	05/15/93	05/20/93	07/01/93
05/03/93	04/12/93	04/19/93	05/18/93	06/02/93	06/20/93	08/02/93
05/14/93	04/23/93	04/30/93	05/29/93	06/13/93	06/20/93	08/02/93
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06/15/93	05/24/93	06/01/93	06/30/93	07/15/93	07/20/93	09/01/93
07/01/93	06/10/93	06/17/93	07/16/93	07/31/93	08/20/93	10/01/93
07/15/93	06/23/93	06/30/93	07/30/93	08/14/93	08/20/93	10/01/93
08/02/93	07/12/93	07/19/93	08/17/93	09/01/93	09/20/93	11/01/93
08/16/93	07/26/93	08/02/93	08/31/93	09/15/93	09/20/93	11/01/93
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09/15/93	08/24/93	08/31/93	09/30/93	10/15/93	10/20/93	12/01/93
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10/15/93	09/24/93	10/01/93	10/30/93	11/14/93	11/20/93	01/04/94
11/01/93	10/11/93	10/18/93	11/16/93	12/01/93	12/20/93	02/01/94
11/15/93	10/22/93	10/29/93	11/30/93	12/15/93	12/20/93	02/01/94
12/01/93	11/05/93	11/15/93	12/16/93	12/31/93	01/20/94	03/01/94
12/15/93	11/24/93	12/01/93	12/30/93	01/14/94	01/20/94	03/01/94

\* The "Earliest Effective Date" is computed assuming that the agency follows the publication schedule above, that the Rules Review Commission approves the rule at the next calendar month meeting after submission, and that RRC delivers the rule to the Codifier of Rules five (5) business days before the 1st business day of the next calendar month.



**EXECUTIVE ORDER NUMBER 182  
ACCESSIBILITY OF ELECTRONIC EQUIPMENT  
BY PERSONS WITH DISABILITIES**

**WHEREAS**, advances in electronic equipment have greatly expanded the ability to accommodate the functional limitations of users with visual, auditory, and mobility impairments;

**NOW, THEREFORE**, by the authority vested in me as Governor by the Constitution and laws of North Carolina, **IT IS ORDERED**:

**SECTION 1.**

- (a) To implement cost-effective accommodations which ensure that disabled persons have reasonable access to electronic equipment and equivalent access to information technology, every state agency shall follow the Federal Information Resources Management Regulations, published by the General Services Administration in 41 C.F.R. Chapter 201, and in Bulletins C-8 and C-10 (attached).<sup>1</sup>
- (b) The Department of Human Resources, Division of Vocational Rehabilitation Services and the Coordinating Committee on the Americans with Disabilities Act shall assist the agencies in implementing this Order.

**SECTION 2.**

This Order is effective immediately.

Done in Raleigh, North Carolina, this the 19th day of November, 1992.

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<sup>1</sup>Attachment can be viewed or copied from the Office of Administrative Hearings at 424 North Blount Street, P.O. Box 27447, Raleigh, NC 27611-07447, (919) 733-2678.

**Editor's Note:** In the North Carolina Register, Volume 7, Issue 17, on pages 1751 - 1752 and 1771 - 1772, this table was formatted incorrectly due to the conversion of our computer system. The Agency has requested that we reprint the table in its correct format.

# **TITLE 15A - DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES**

## **CHAPTER 10 - WILDLIFE RESOURCES AND WATER SAFETY**

### **SUBCHAPTER 10C - INLAND FISHING REGULATIONS**

#### **SECTION .0300 - GAME FISH**

##### **.0305 OPEN SEASONS: CREEL AND SIZE LIMITS**

(a) Generally. Subject to the exceptions listed in Paragraph (b) of this Rule, the open seasons and creel and size limits are as indicated in the following table:

GAME FISHES	DAILY CREEL LIMITS	MINIMUM SIZE LIMITS	OPEN SEASON
Mountain Trout:			
Wild Trout Waters	4	7 in. (exc. 15)	ALL YEAR (exc. 2)
Hatchery Sup- ported Trout Waters and undesignated waters	7	None	All year, except March 1 to 7:00 a.m. on first Saturday in April (excs. 2 & 3)
Muskellunge and Tiger Musky	2	30 in.	ALL YEAR
Chain Pickerel (Jack)	None	None	ALL YEAR
Walleye	8 (excs. 9 & 10)	None (exc. 9)	ALL YEAR
Sauger	8	15 in.	ALL YEAR
Black Bass:			
Largemouth	5 (exc. 10)	14 in. (excs. 4, 8 & 11)	ALL YEAR (exc. 13)
Smallmouth and Spotted	5 (exc. 10)	12 in. (excs. 4, 8 & 11)	ALL YEAR
White Bass	25	None	ALL YEAR
Sea Trout (Spotted or Speckled)	None	12 in.	ALL YEAR
Flounder	None	13 in.	ALL YEAR

Red drum (channel bass, red fish, puppy drum)	5	18 in.	ALL YEAR
Striped Bass and their hybrids (Morone Hybrids)	8 aggregate (excs. 1 & 6)	16 in. (excs. 1, 6 & 12)	ALL YEAR (excs. 6, 16, & 18)
Kokanee Salmon	7	None	ALL YEAR
Panfishes	None (excs. 5 & 14)	None (exc. 14)	ALL YEAR (exc. 5)
NONGAME FISHES	None (exc. 17)	None (exc. 17)	ALL YEAR (exc. 7)

(b) Exceptions

- (1) In the Dan River upstream from its confluence with Bannister River to the Brantly Steam Plant Dam, and in John H. Kerr, Gaston, and Roanoke Rapids Reservoirs, and Lake Norman, the creel limit on striped bass and Morone hybrids is four in the aggregate and the minimum size limit is 20 inches.
- (2) In designated public mountain trout waters the season for taking all species of fish is the same as the trout fishing season. There is no closed season on taking trout from Nantahala River and all tributaries (excluding impoundments) upstream from Nantahala Lake, and the impounded waters of power reservoirs and municipally-owned water supply reservoirs open to the public for fishing.
- (3) Under an agreement with Tennessee, the minimum size limit on trout in Calderwood Reservoir is seven inches.
- (4) Bass taken from streams designated as public mountain trout waters or from Calderwood Reservoir may be retained without restriction as to size limit.
- (5) On Mattamuskeet Lake, special federal regulations apply.
- (6) In the inland fishing waters of Cape Fear, Neuse, Pungo and Tar-Pamlico Rivers and their tributaries extending upstream to the first impoundment, the daily creel limit for striped bass and their hybrids is one fish and the minimum length limit is 18 inches. In the Roanoke River up to the first impoundment, from July 1 through March 31 and June 1 through June 30 the daily creel limit for striped bass is one fish and the minimum length limit is 18 inches; from April 1 to May 31 the daily creel limit is three fish, no fish between the lengths of 22 inches and 27 inches may be retained, and the minimum length limit is 16 inches, except no fish may be retained in Roanoke River and its tributaries including Cashie, Middle and Eastmost rivers from May 1 to December 31, 1991.
- (7) See 15A NCAC 10C .0407 for open seasons for taking nongame fishes by special devices.
- (8) The maximum combined number of black bass of all species that may be retained per day is five fish, no more than two of which may be smaller than the applicable minimum size limit. The minimum size limit for all species of black bass is 14 inches, with no exception in Lake Luke Marion in Moore County, in Reedy Creek Park lakes in Mecklenburg County, and in Currituck Sound and tributaries north of Wright Memorial Bridge; in North River and tributaries in Currituck and Camden Counties north of a line between Camden Point and the end of SR 1124. In and west of Madison, Buncombe, Henderson and Polk Counties the minimum size limit is 12 inches. In B. Everett Jordan Reservoir a minimum size limit of 16 inches, with no exception, applies to largemouth bass. In Falls of Neuse Reservoir, east of SR 1004, Sutton Lake and Tuckertown Lake no black bass between the lengths of 12 inches and 16 inches may be retained, and the minimum size limit for black bass is 16 inches, except that the daily creel may contain two black bass of less than 12 inches in length. In W. Kerr Scott Reservoir there is no minimum size limit for spotted bass.
- (9) A minimum size limit of 15 inches applies to walleye taken from Lake James and its tributaries, and the daily creel limit for walleye is four fish in Linville River upstream from the NC 126 bridge

above Lake James.

- (10) The creel limit for black bass and walleye taken from Calderwood Reservoir is 10.
- (11) The minimum size limit for all black bass, with no exception, is 18 inches in the following trophy bass lakes:
  - (A) Cane Creek Lake in Union County; and
  - (B) Lake Thom-A-Lex in Davidson County.
- (12) In all impounded inland waters and their tributaries, except those waters described in Exceptions (1), the daily creel limit of striped bass and their hybrids may include not more than two fish of smaller size than the minimum size limit.
- (13) In Cane Creek Reservoir (Orange County) the season for taking largemouth bass is closed.
- (14) In Lake Tillery, Falls Lake, Badin Lake, and Tuckertown Lake a daily creel limit of 20 fish and a minimum size limit of 8 inches apply to crappie.
- (15) In Slick Rock Creek the minimum size is 7 inches for brook trout and 10 inches for brown and rainbow trout.
- (16) In designated inland fishing waters of Roanoke Sound, Croatan Sound, Albemarle Sound, Chowan River, Currituck Sound, Alligator River, Scuppernong River, and their tributaries (excluding the Roanoke River and Cashie River and their tributaries), striped bass fishing season, size limits and creel limits shall be the same as those established by duly adopted rules or proclamations of the Marine Fisheries Commission in adjacent joint or coastal fishing waters.
- (17) The daily creel and length limits for channel, white, and blue catfish in designated urban lakes are provided for in 15A NCAC 10C .0401(d).
- (18) The Executive Director may, by proclamation, suspend or extend the hook-and-line season for striped bass in the inland and joint waters of coastal rivers and their tributaries. It is unlawful to violate the provisions of any proclamation issued under this authority.

*Statutory Authority G.S. 113-134; 113-292; 113-304; 113-305.*



**TITLE 4 - DEPARTMENT OF  
ECONOMIC AND COMMUNITY  
DEVELOPMENT**

*Notice is hereby given in accordance with G.S. 150B-21.2 that the Savings Institutions Division intends to amend rules cited as 4 NCAC 16A .0105; 16D .0101; 16G .0311 - .0312, .0510, .0513, .1203 - .1204; and repeal rules cited as 4 NCAC 16D .0105; 16E .0105; 16G .0721.*

*The proposed effective date of this action is March 15, 1993.*

*The public hearing will be conducted at 10:00 a.m. on January 15, 1993 at the 3rd Floor Hearing Room, 1110 Navaho Drive, Raleigh, NC 27609.*

*Reason for Proposed Action: To remove regulatory impediments to conversions, conversion/mergers, and conversion/acquisitions.*

*Comment Procedures: Anyone may present comments at the hearing. Written comments, or notice of intent to make oral comments, shall be received by the Savings Institutions Division, 1110 Navaho Drive, Suite 301, Raleigh, NC 27609, at least 24 hours prior to the hearing.*

**CHAPTER 16 - SAVINGS INSTITUTIONS  
DIVISION: SAVINGS INSTITUTIONS  
COMMISSION**

**SUBCHAPTER 16A - GENERAL  
PROVISIONS**

**SECTION .0100 - GENERAL**

**.0105 RESTRICTIONS: PAYMENT OF  
DIVIDENDS AND REPURCHASE OF  
STOCK**

(a) A stock savings institution shall not declare or pay a cash dividend on, or repurchase any of, its capital stock if the effect thereof would be to reduce the net worth of the savings institution to an amount which is less than the minimum required by the federal regulatory authority ~~and~~ or for savings banks, an amount less than the minimum required by G.S. 54C-163.

(b) Without the prior written approval of the Administrator, a stock savings institution which

has been in operation or converted from mutual form for less than five years shall not repurchase any of its capital stock. Such approval shall be granted only upon a showing that the proposed repurchase will ~~contribute to~~ not adversely affect the safety and soundness of the savings institution.

(c) A stock savings institution which has been in operation or converted from mutual form for less than five years shall obtain the written approval of the Administrator before declaring or paying a cash dividend on its capital stock in an amount in excess of one-half of the greater of:

- (1) the savings institution's net income for the most recent fiscal year end; or
- (2) the average of the savings institution's net income after dividends for the most recent fiscal year end and not more than two of the immediately preceding fiscal year ends, if applicable.

(d) For a period of three years following the date of completion of a conversion from mutual to stock form, no person shall, directly or indirectly, offer to acquire or acquire the beneficial ownership of more than 10 percent of any class of an equity security of a converted savings institution without the prior written approval of the Administrator. Such approval shall be granted only ~~when necessary to protect the safety and soundness of the institution.~~ as follows:

- (1) During the first year following the date of completion of the conversion to protect the safety and soundness of the institution.
- (2) During the second and third years following the date of completion of the conversion upon a finding by the Administrator that:
  - (A) such acquisition is necessary to protect the safety and soundness of the institution, or
  - (B) the board of directors of the converted savings institution supports the acquisition, and
  - (C) the person acquiring in excess of 10 percent of any class of an equity security of the converted institution is of good character and integrity, possesses satisfactory managerial skills, and after the acquisition such person will be a source of financial strength to the converted savings institution and the interests of the public will not be adversely affected thereby.

(e) Securities beneficially owed in violation of this Paragraph (d) of this Rule in excess of 10

percent of any class of securities shall not be counted as shares entitled to vote and shall not be voted by any person or counted as voting shares in connection with any matters submitted to the stockholders for a vote. ~~Unless made applicable by the Administrator by prior notice in writing, the restriction contained in this Paragraph shall not apply to any offer or announcement of an offer which if consummated would result in the acquisition by a person, together with all other acquisitions by that person of the same class of securities during the preceding 12-month period, of not more than one percent of the class of securities. Nor shall this Paragraph apply to:~~

(f) Paragraphs (d) and (e) shall not apply to:

- (1) any offer with a view toward public resale made exclusively to the savings institution or its underwriters or the selling group acting on its behalf; or
- (2) any offer to acquire or acquisition of beneficial ownership of more than 10 percent of the common stock of a savings institution by a corporation whose ownership is or will be substantially the same as the ownership of the savings institution, provided that the offer or acquisition is made more than one year following the date of completion of the conversion.

Statutory Authority G.S. 54B-43; 54B-55; 54C-44; 54C-53.

## SUBCHAPTER 16D - OPERATION OF SAVINGS ASSOCIATIONS

### SECTION .0100 - DIRECTORS: OFFICERS AND EMPLOYEES

#### .0101 COMPOSITION OF BOARD OF DIRECTORS

(a) ~~The number of directors constituting the initial board of directors shall be not less than seven. Other guidelines Requirements for the composition of a board of directors are as follows:~~

- (1) No Except in the case of a savings institution having 80 percent or more of any class of voting shares owned by a holding company or controlling person, no more than one-third of the Board of Directors shall be salaried officers or employees of the association savings institution, or of any subsidiary or (except in the case of an association having 80 percent or more of any class

~~of voting shares owned by a holding company or controlling person) any holding company or affiliate thereof or any controlling person affiliate thereof.~~

(2) In the case of a savings institution having 80 percent or more of any class of voting shares owned by a holding company or controlling person, no more than 49 percent of the Board of Directors shall be salaried officers or employees of the savings institution, or of any subsidiary or any holding company or affiliate thereof or any controlling person affiliate thereof.

(3) (2) No more than two directors shall be members of the same immediate family.

(4) (3) No two directors who are attorneys may be members of the same law firm.

(5) (4) No more than one-third of the Board of Directors shall be directors, officers or employees of a competing financial institution.

(6) (5) The managing officer of the ~~association~~ savings institution shall be a member of the Board of Directors.

(b) A director shall not vote on any matter in which he has a personal or financial interest.

(c) ~~When an association~~ a savings institution takes action resulting in the establishment of a new chief executive officer or director, the ~~association~~ savings institution shall notify the Administrator in writing in advance of such change, and shall provide the name of the new chief executive officer or director, the effective date of the appointment, and a statement of the person's past and current business and professional affiliations. The name of any departing chief executive officer or director shall also be provided.

Statutory Authority G.S. 54B-55.

#### .0105 AMENDMENT OF CONVERTED ASSOCIATION'S CHARTER

(a) ~~Notwithstanding anything contained in an association's charter or bylaws, an association which has converted from mutual to stock form may amend its charter to provide for the application of any or all of the following provisions, to apply for no more than five years from the date of completion of conversion:~~

- (1) ~~Beneficial Ownership Limitation. No person shall directly or indirectly offer to acquire the beneficial ownership of more than 10 percent of any class of an~~

equity security of the association. This limitation shall not apply to a transaction in which the association forms a holding company without change in the respective beneficial ownership interests of its stockholders other than pursuant to the exercise of any dissenter and appraisal rights or the purchase of shares by underwriters in connection with a public offering.

In the event shares are acquired in violation of this provision, all shares beneficially owned by any person in excess of 10 percent shall be considered "excess shares" and shall not be counted as shares entitled to vote and shall not be voted by any person or counted as voting shares in connection with any matters submitted to the stockholders for a vote.

- (2) Cumulative Voting Limitation. Stockholders shall not be permitted to cumulate their votes for election of directors.
- (3) Call for Special Meetings. Special meetings of stockholders relating to changes in control of the association or amendments to its charter shall be called only upon direction of the Board of Directors.

(b) For purposes of this Section, the following definitions apply:

- (1) The term "person" includes an individual, a group acting in concert, a corporation, a partnership, an association, a joint stock company, a trust, an unincorporated organization or similar company, a syndicate, or any other group formed for the purpose of acquiring, holding or disposing of the equity securities of an association.
- (2) The term "offer" includes every offer to buy or otherwise acquire, solicitation of an offer to sell, tender offer for, or request or invitation for tenders of, a security or interest in a security for value.
- (3) The term "acquire" includes every type of acquisition whether effected by purchase, exchange, operation of law or otherwise.
- (4) The term "acting in concert" means the knowing participation in a joint activity or conscious parallel action towards a common goal whether or not pursuant to an express agreement, or a combina-

tion or pooling of voting or other interests in the securities of an issuer for a common purpose pursuant to any contract, understanding, relationship, agreement or other arrangements, whether written or otherwise.

Statutory Authority G.S. 54B-33.

## SUBCHAPTER 16E - OPERATION OF SAVINGS BANKS

### SECTION .0100 - DIRECTORS, BYLAWS AND CHARTER

#### .0105 AMENDMENT OF CONVERTED SAVINGS BANK'S CHARTER

(a) Notwithstanding anything contained in a savings bank's charter or bylaws, a savings bank which has converted from mutual to stock form may amend its charter to provide for the application of any or all of the following provisions, to apply for no more than five years from the date of completion of conversion:

- (1) Beneficial Ownership Limitation. No person shall directly or indirectly offer to acquire the beneficial ownership of more than ten percent of any class of an equity security of the savings bank. This limitation shall not apply to a transaction in which the savings bank forms a holding company without change in the respective beneficial ownership interests of its stockholders other than pursuant to the exercise of any dissenter and appraisal rights or the purchase of shares by underwriters in connection with a public offering. In the event shares are acquired in violation of this provision, all shares beneficially owned by any person in excess of ten percent shall be considered "excess shares" and shall not be counted as shares entitled to vote and shall not be voted by any person or counted as voting shares in connection with any matters submitted to the stockholders for a vote.
- (2) Cumulative Voting Limitation. Stockholders shall not be permitted to cumulate their votes for election of directors.
- (3) Call for Special Meetings. Special meetings of stockholders relating to changes in control of the savings bank or amendments to its charter shall be



called only upon direction of the Board of Directors.

(b) For purposes of this Section, the following definitions apply:

- (1) ~~The term "person" includes an individual, a group acting in concert, a corporation, a partnership, an association, a joint stock company, a trust, an unincorporated organization or similar company, or a syndicate.~~
- (2) ~~The term "offer" includes every offer to buy or otherwise acquire, solicitation of an offer to sell, tender offer for, or request or invitation for tenders of, a security or interest in a security for value.~~
- (3) ~~The term "acquire" includes every type of acquisition whether effected by purchase, exchange, operation of law or otherwise.~~
- (4) ~~The term "acting in concert" means the knowing participation in a joint activity or conscious parallel action towards a common goal whether or not pursuant to an express agreement.~~

Statutory Authority G.S. 54C-33; 54C-53.

## SUBCHAPTER 16G - MUTUAL TO STOCK CONVERSIONS

### SECTION .0300 - GENERAL PRINCIPLES FOR CONVERSIONS

#### .0311 REQUIRED PROVISIONS IN PLAN OF CONVERSION

The plan of conversion shall:

- (1) Provide that the converting savings bank shall issue and sell its capital stock at a total price equal to the estimated pro forma market value of such stock in the converted savings bank, based on an independent valuation, as provided in Rule .0717 of this Subchapter.
- (2) Provide that each eligible account holder shall receive without payment, nontransferable subscription rights to purchase capital stock. Subscription rights shall be allocated among the eligible account holders on an equitable basis in an amount not greater than the maximum purchase limitation established for the public offering or the direct community offering. The plan of conversion shall provide a comprehensive description of

this allocation including a detailed description of the allocation in the event of an oversubscription of the capital stock. In the event of an oversubscription, shares shall be allocated on an equitable basis that is related to the amount of the subscriber's qualifying deposits.

- (3) Provide that nontransferable subscription rights to purchase capital stock received by executive officers and directors of the applicant and their associates based on their increased deposits in the applicant savings bank in the one-year period preceding the eligibility record date shall be subordinated to all other subscriptions involving the exercise of nontransferable subscription rights to purchase shares pursuant to Paragraph (2) of this Rule.
- (4) Provide that, in plans involving an eligibility record date that is more than 15 months prior to the date of the latest amendment to the application for conversion filed prior to the administrator's approval, a supplemental eligibility record date shall be determined whereby each supplemental eligible account holder of the applicant shall receive without payment, nontransferable subscription rights to purchase capital stock in an amount related to ~~their~~ his/her respective qualifying deposits.
  - (a) Subscription rights received pursuant to Paragraph (4) of this Rule shall be subordinated to all rights received by eligible account holders to purchase shares pursuant to Paragraphs (2) and (3) of this Rule.
  - (b) Any nontransferable subscription rights to purchase shares received by an eligible account holder in accordance with Paragraph (2) of this Rule shall be applied in partial satisfaction of the subscription rights to be distributed pursuant to this Paragraph.
  - (c) In the event of an oversubscription for supplemental shares pursuant to this Paragraph, shares shall be allocated among the subscribing supplemental eligible account holders on such equitable basis, related to the amounts of their respective qualifying deposits, as may be provided in the plan of conversion.
- (5) Provide that voting members who are not either eligible account holders or supple-



mental eligible account holders shall receive, without payment, nontransferable subscription rights to purchase capital stock on an equitable basis defined in the plan of conversion. Subscription rights received pursuant to this Paragraph shall be subordinated to all rights received by eligible account holders and supplemental eligible account holders to purchase shares pursuant to Paragraphs (2), (3), and (4) of this Rule. In the event of an oversubscription of capital stock pursuant to this Paragraph, shares shall be allocated among the subscribing voting members on such equitable basis as may be provided in detail in the plan of conversion.

(6) Provide that any shares of the applicant not sold to persons with subscription rights shall either be sold in a public offering through an underwriter or directly by the applicant in a direct community offering, subject to the applicant demonstrating to the administrator the feasibility of the method of sale and to such conditions as may be provided in the plan of conversion. Such conditions shall include, but not be limited to:

(a) A condition limiting purchases in the public offering or the direct community offering by any person together with any associate or group of persons acting in concert to a percentage of the total offering of shares not exceeding five percent; except that any one or more tax-qualified employee stock benefit plans of the applicant may purchase in the aggregate not more than ten percent of the total offering of shares and shall be entitled to purchase such amount regardless of the number of shares to be purchased by other parties, and that shares held by one or more tax-qualified employee stock benefit plans and attributed to a person shall not be aggregated with other shares purchased directly by or otherwise attributable to that person.

(b) A condition requiring that orders for stock in any public offering or direct community offering shall first be filled up to a maximum of two percent of the conversion stock per order and thereafter remaining shares shall be allocated on an equal number of shares basis per

order until all orders have been filled.

(c) A condition requiring the stock to be offered and sold in the public offering or the direct community offering to be offered and sold in a manner that will achieve the widest distribution of the stock.

(d) A condition that any direct community offering by the applicant shall give a preference to natural persons residing in the counties in which the applicant has an office.

(7) Provide that the number of shares which any person together with any associate or group of persons acting in concert may subscribe or purchase in the conversion shall not exceed five percent of the total offering of shares; except that any one or more tax-qualified employee stock benefit plans of the applicant may purchase in the aggregate not more than 10 percent of the total offering of shares. Shares held by one or more tax-qualified or non-tax-qualified employee stock benefit plans and attributed to a person shall not be aggregated with shares purchased directly by or otherwise attributable to that person. For purpose of this Paragraph, the members of the converting savings bank's board of directors shall not be deemed to be associates or a group of persons acting in concert solely as a result of their board membership.

(8) Provide that for a period of three years following the conversion no executive officer or director or any associate of an executive officer or director shall purchase without the prior written approval of the administrator the capital stock of the converted savings bank except from a broker or dealer registered with the Secretary of State of North Carolina and/or the Securities and Exchange Commission. This provision shall not apply to negotiated transactions involving more than one percent of the outstanding capital stock of the converted savings bank or to purchases of stock made by and held by any one or more tax qualified or non-tax-qualified employee stock benefit plans of the applicant which may be attributable to executive officers or directors.

(9) Provide that the sales price of the shares of capital stock to be sold in the conver-

- sion shall be a uniform price determined in accordance with Rule .0714 of this Subchapter and specify the underwriting and other marketing arrangements to be made to assure the sale of ~~all~~ any shares not sold in the subscription offering.
- (10) Provide that each deposit account holder of the converting savings bank shall receive, without payment, a deposit account or accounts in the converted savings bank equal in amount to the value of such account holder's deposit account or accounts in the converting savings bank.
  - (11) Provide for the establishment and maintenance of a liquidation account for the benefit of eligible account holders and supplemental eligible account holders in the event of a subsequent complete liquidation of the converted savings bank, in accordance with the provisions of Rule .0314 of this Section.
  - (12) Provide for an eligibility record date which shall be not less than 90 days prior to the date of adoption of the plan by the converting savings bank's board of directors.
  - (13) Provide that the holders of the capital stock of the converted savings bank shall have exclusive voting rights.
  - (14) Provide that the plan of conversion adopted by the applicant's board of directors may be substantively amended by such board of directors prior to the solicitation of proxies from members to vote on the plan and at any time thereafter with the concurrence of the administrator; and that the conversion may be terminated by the board of directors at any time prior to the meeting of members called to consider the plan of conversion and at any time thereafter with the concurrence of the administrator.
  - (15) Establish a time period within which the conversion must be completed prior to termination. This time period shall be not more than 12 months from the date the members approve the plan of conversion. This time period may be extended an additional 12 months with the written permission of the administrator.
  - (16) Provide that all shares of capital stock purchased by directors and executive officers on original issue in the conversion either directly from the applicant (by subscription or otherwise) or from an underwriter of such shares, shall be subject to the restriction that such shares shall not be sold, without written permission of the administrator, for a period of not less than one year following the date of purchase, except in the event of death of the director or executive officer.
  - (17) Provide that, in connection with shares of capital stock subject to restriction on sale under Paragraph (16) of this Rule:
    - (a) Each certificate for such stock shall bear a legend giving appropriate notice of the applicable restrictions;
    - (b) Appropriate instructions shall be issued to the transfer agent for the converted savings bank's capital stock with respect to applicable restrictions on transfer of any restricted stock; and
    - (c) Any shares issued as a stock dividend, stock split or otherwise with respect to any restricted stock shall be subject to the same restrictions as may apply to the restricted stock.
  - (18) Provide that the converting savings bank shall:
    - (a) use its best efforts to encourage and assist a market maker to establish and maintain a market for the securities issued in connection with the conversion; and
    - (b) use its best efforts to list those shares issued in connection with the conversion on a national or regional securities exchange or on the NASDAQ system.
  - (19) Provide that the expenses incurred in the conversion shall be reasonable.
  - (20) Contain no provision which the administrator may determine to be inequitable or detrimental to the applicant, its account holders or other savings banks or to be contrary to the public interest.
  - (21) Contain no provision which the administrator finds will harm the community and public served by the savings bank.
  - (22) Provide that the converting savings bank shall not loan funds or otherwise extend credit on an unsecured basis or upon the security of the savings bank's capital stock to any person to purchase the capital stock of the converting savings bank.
  - (23) Provide that the savings bank may make scheduled discretionary contributions to a tax-qualified employee stock benefit plan provided such contributions do not cause

the savings bank to fail to meet its net worth requirements.

*Statutory Authority G.S. 54C-33; 54C-53.*

### **.0312 OPTIONAL PROVISIONS IN PLAN OF CONVERSION**

The plan of conversion may provide any or all of the following:

- (1) That the applicant may commence the direct community offering or the public offering, or both, concurrently with or at any time during the subscription offering. The subscription offering may be commenced concurrently with or at any time after the mailing to members pursuant to Rule .0607 of this Subchapter of the proxy statement authorized for use by the administrator. The subscription offering may be closed before the meeting of the members held to vote on the plan of conversion, provided that the offer and sale of capital stock shall be conditioned upon the approval of the plan of conversion by the members as provided in Section .0600 of this Subchapter.
- (2) That directors, executive officers, and employees of the converting ~~association~~ savings bank shall receive, without payment, nontransferable subscription rights to purchase shares of capital stock, to the extent that shares are available after satisfying the subscriptions of eligible account holders, supplemental eligible account holders, and voting members provided for under Paragraphs (2), (4) and (5) of Rule .0311 of this Section. The shares shall be allocated among directors, officers, and employees on an equitable basis such as by giving weight to period length of service, compensation, and position, subject to the limitation in Paragraph (7) of Rule .0311 of this Section on the amount of shares which may be purchased by any person, associate thereof, or group of affiliated persons or group of persons otherwise acting in concert.
- (3) That any account holder receiving rights to purchase stock in the subscription offering shall also receive, without payment, nontransferable subscription rights to purchase up to one percent of the total offering of shares of capital stock, to the extent that such shares are available after

satisfying the subscriptions provided for under Paragraphs (2), (4), and (5) of Rule .0311 of this Section, subject to such conditions as may be provided in the plan of conversion. In the event of an oversubscription for such additional shares, the shares available shall be allocated among the subscribing eligible account holders, supplemental eligible account holders, and voting members on such equitable basis, related to the amounts of their respective subscriptions, as may be provided in the plan of conversion.

- (4) That the applicant may require members to return by a reasonable date certain a postage-paid written communication provided by the applicant requesting receipt of a subscription offering circular, or a preliminary or final offering circular in an offering pursuant to Paragraph (10) of this Rule, in order to be entitled to receive an offering circular from the applicant; provided, that the subscription offering or the offering pursuant to Paragraph (10) of this Rule shall not be closed until 30 days after the mailing by the applicant to members of the postage-paid written communication. If the subscription offering or the offering pursuant to Paragraph (10) of this Rule is not commenced within 45 days after the meeting of members, any converting savings bank adopting this optional provision shall transmit not more than 30 days prior to the commencement of the subscription offering or the offering pursuant to Paragraph (10) of this Rule to each member who had been furnished with proxy solicitation materials, written notice of the commencement of the offering which notice shall state that the converting savings bank is not required to furnish an offering circular to a member unless the member returns by a reasonable date certain the postage-paid written communication provided by the converting savings bank requesting receipt of an offering circular.
- (5) That the applicant may require eligible account holders and supplemental eligible account holders who are not voting members pursuant to Rule .0608 of this Subchapter to return by a reasonable date certain a postage-paid written communi-



- cation in accordance with the procedure established in Paragraph (4) of this Rule.
- (6) ~~Then~~ That any insignificant residue of shares of the converting savings bank not sold in the subscription offering or in a public offering or direct community offering may be sold in such other manner as provided in the plan of conversion with the written consent of the administrator.
  - (7) That the number of shares which any person or group of persons affiliated with each other or otherwise acting in concert may subscribe for in the subscription offering may be made subject to a limit of not less than one percent of the total offering of the shares.
  - (8) That any person exercising subscription rights to purchase capital stock shall be required to purchase a minimum number of shares but the aggregate price for any minimum share purchase shall not exceed five hundred dollars (\$500.00).
  - (9) That the converted savings bank shall issue and sell, in lieu of shares of its capital stock, units of securities consisting of capital stock and long-term warrants or other equity securities, in which event any reference in the provisions of this Subchapter to capital stock shall apply to such units of equity securities unless the context otherwise requires.
  - (10) That, instead of a separate subscription offering, all subscription rights issued in connection with the conversion shall be exercisable by delivery of properly completed and executed order forms to the underwriters or selling group for the public offering or pursuant to any other procedure, subject to the applicant demonstrating to the administrator the feasibility of the method of exercising such right and to such conditions as shall be provided in the plan of conversion.
  - (11) That the administrator may approve such other equitable provisions as necessary to avert imminent injury to the converting savings bank.
  - (12) That the proxy statement required by Rule .0607 of this Subchapter may be in summary form, provided:
    - (a) A statement is made in bold-faced type on the summary proxy statement that a more detailed description of the proposed transaction may be obtained by

returning an attached postage-paid postcard or other written communication requesting a supplemental information statement which, together with the summary proxy statement, complies with the requirements of Form PS contained in the Application for Conversion (~~Form AC~~).

- (b) The date on which the summary proxy statement is mailed to members will be deemed the date on which notice is given for purposes of Rule .0607 of this Subchapter. Without the prior written consent of the administrator, the meeting of members shall not be held less than 20 days after the date on which the supplemental information statement is mailed to requesting members.
  - (c) The supplemental information statement required to be furnished to members pursuant to Subparagraph (a) of this Paragraph may be combined with Form OC, if the subscription offering is commenced concurrently with or during the proxy solicitation period pursuant to Paragraph (1) of this Rule.
  - (d) The form of the summary proxy statement has been approved by the administrator.
- (13) That, in the event that the converting institution is establishing a tax-qualified employee stock ownership plan (ESOP) for the benefit of its employees, then notwithstanding the priorities established under Subparagraphs (2), (4), and (5) of Rule .0311 of this Section, the plan of conversion may provide that such ESOP may purchase up to 10 percent of the aggregate shares offered in the conversion prior to offering any shares to eligible account holders, supplemental eligible account holders or other voting members.

*Statutory Authority G.S. 54C-33; 54C-53.*

## SECTION .0500 - SOLICITATION OF PROXIES: PROXY STATEMENT

### .0510 USE OF PROXY SOLICITING MATERIAL TO BE AUTHORIZED

No proxy solicitation material required to be filed with the administrator prior to use shall be furnished to members or otherwise released for distribution until the use of such material has been authorized in writing by the administrator. Proxy



material authorized for use by the administrator shall be mailed to the members within 10 days of such authorization ~~unless extended by the or within 10 days of the date such material is declared effective by the Securities and Exchange Commission, if applicable, whichever is later.~~ The administrator ~~in writing may extend such date~~ upon a showing that adherence to the 10 day rule would work a hardship upon the savings institution and that the delay, if approved ~~in writing~~, would not be disadvantageous to any interested party.

*Statutory Authority G.S. 54C-33; 54C-53.*

#### **.0513 MATERIAL REQUIRED TO BE FILED**

(a) ~~Applicants~~ An applicant shall file a preliminary copy of the proxy materials ~~required by Form AC-7 to be used by such applicant as a part of the application for conversion filed with the administrator.~~

(b) A preliminary copy of any additional solicitation material, including press releases and radio or television scripts, to be used or furnished to members subsequent to furnishing the proxy statement, shall be filed with the administrator at least five business days prior to the date on which the administrator is requested to authorize the use of such material. Speeches may, but need not, be filed with the administrator prior to use.

(c) A copy of the proxy statement and a copy of the form of proxy and all other solicitation material, in the form in which such material is furnished to members, shall be filed with or mailed for filing to the administrator not later than the date such material is first sent or given to members. All materials filed pursuant to this Paragraph shall be accompanied by a statement of the date on which copies of such materials are to be released to members.

(d) If the solicitation is to be made in whole or in part by personal solicitation, a preliminary copy of all written instructions or other material which discusses, ~~or~~ reviews, or comments upon the merits of, any matter to be acted upon and which is to be furnished to the individuals making the actual solicitation for their use directly or indirectly in connection with the solicitation shall be filed with the administrator at least five business days prior to the date on which the administrator is requested to authorize the use of such material.

(e) All preliminary copies of material filed pursuant to Paragraphs (a), (b), and (d) of this Rule shall be clearly marked on the cover page "Preliminary Copy." Such preliminary copies

shall be for the information of the administrator only and shall not be deemed available for public inspection except that such material may be disclosed to any department or agency of the United States, this State, or any other state, that has concurrent jurisdiction over the applicant. The administrator may make such inquiries or investigation in regard to the material as may be necessary for an adequate review.

(f) Unless requested by the administrator, copies of replies to inquiries from members and copies of communications which do no more than request that forms of proxy theretofore solicited be signed and returned need not be filed pursuant to this Rule.

(g) Where any proxy statement, form of proxy or other material filed pursuant to this Rule is amended or revised, a copy of such amended or revised material filed with the administrator shall be marked to indicate clearly and precisely the changes effected subsequent to the previous filing.

*Statutory Authority G.S. 54C-33; 54C-53.*

### **SECTION .0700 - PRICING AND SALE OF SECURITIES**

#### **.0721 INTEREST: SUBSCRIPTION/ COMMUNITY PURCHASE ORDERS**

~~The applicant shall pay interest at not less than the passbook rate on all amounts paid in cash or by check or money order to the savings bank to purchase shares of capital stock in the subscription offering or direct community offering from the date payment is received by the applicant until the conversion is completed or terminated.~~

*Statutory Authority G.S. 54C-33; 54C-53.*

### **SECTION .1200 - CONVERSION: MERGERS: ACQUISITIONS**

#### **.1203 CONVERSION IN CONNECTION WITH ACQUISITION**

(a) A mutual savings bank may convert to the stock form as part of a transaction whereby an existing holding company acquires all its conversion stock; ~~The provided that the~~ eligible account holders, supplemental eligible account holders, and voting members of the converting savings bank shall receive, without payment, ~~the same~~ nontransferable rights to purchase the capital stock of the existing holding company; ~~the same~~ as they would have to purchase capital stock of the converting savings bank in a standard conversion under the

provisions of this Subchapter.

(b) If the existing holding company acquiring the converting savings bank has consolidated total assets which are 10 times greater than the total assets of the converting savings bank which it is acquiring and the capital stock of such holding company is listed on a national or regional stock exchange or is quoted on the National Association of Securities Dealers Quotation (NASDAQ) System, then the plan of conversion shall not be required to contain provisions of Subparagraphs (6), (7), (8), (16), (17) and (18) of Rule .0311 of this Subchapter.

Statutory Authority G.S. 54C-33; 54C-53; 54C-195.

#### **.1204 CONVERSION IN CONNECTION WITH MERGER**

(a) A mutual savings bank may convert to the stock form by merging with an existing stock depository institution as part of a transaction in which the equity securities of the existing stock depository institution or its holding company acquiring all of the conversion stock are issued; and ~~The provided that the~~ eligible account holders, supplemental eligible account holders, and voting members of the converting savings bank shall receive, without payment, the same nontransferable rights to purchase the capital stock of the existing stock depository institution, or its holding company; the same as they would have to purchase capital stock of the converting savings bank in a standard conversion under the provisions of this Subchapter.

(b) If the existing depository institution, or its holding company, whose equity securities will be issued in connection with the merger of the converting savings bank has consolidated total assets which are 10 times greater than the total assets of the converting savings bank which it is acquiring and the capital stock of such existing depository institution, or its holding company, is listed on a national or regional stock exchange or is quoted on the National Association of Securities Dealers Quotation (NASDAQ) System, then the plan of conversion shall not be required to contain provisions of Subparagraphs (6), (7), (8), (16), (17) and (18) of Rule .0311 of this Subchapter.

Statutory Authority G.S. 54C-33; 54C-53; 54C-195.

#### **TITLE 10 - DEPARTMENT OF HUMAN RESOURCES**

*Notice is hereby given in accordance with G.S. 150B-21.2 that the DHR/Division of Medical Assistance intends to amend rule(s) cited as 10 NCAC 26B .0104, .0120; 10 NCAC 50B .0101, .0403 and .0405.*

*The proposed effective date of this action is March 1, 1993.*

*The public hearing will be conducted at 1:30 p.m. on January 15, 1993 at the North Carolina Division of Medical Assistance, 1985 Umstead Drive, Room 132, Raleigh, NC 27603.*

#### **Reason for Proposed Action:**

**10 NCAC 26B .0104** - Amendment updates qualifications of labs and adds provision for coverage of portable ultrasound services.

**10 NCAC 26B .0120** - This amendment clarifies rules to prevent conflicts of interest and to offer alternative proof of a business establishment.

**10 NCAC 50B .0101** - Amendment brings rule into compliance with Federal law and adds coverage for individuals eligible for Part B Medicare premiums.

**10 NCAC 50B .0403** - Amendment clarifies that Federal Law regarding spousal financial responsibility takes precedence when determining countable resources for Medicaid eligibility.

**10 NCAC 50B .0405** - Amendment changes the certification periods for certain groups from six months to twelve months.

**Comment Procedures:** Written comments concerning this amendment must be submitted by January 15, 1993, to: Division of Medical Assistance, 1985 Umstead Drive, Raleigh, NC 27603 ATTN: Clarence Ervin, APA Coordinator. Oral comments may be presented at the hearing. In addition, a fiscal impact statement is available upon written request from the same address.

#### **CHAPTER 26 - MEDICAL ASSISTANCE**

##### **SUBCHAPTER 26B - MEDICAL ASSISTANCE PROVIDED**

##### **SECTION .0100 - GENERAL**

##### **.0104 LABORATORY AND X-RAY SERVICES**



Laboratory and x-ray services shall be covered to the extent permitted in federal Medicaid regulations and subject to the following conditions:

- (1) The service is not performed in connection with a routine physical examination.
- (2) ~~Laboratory services are rendered by laboratories that:~~
  - ~~(a) Are Medicare certified laboratory providers, and~~
  - ~~(b) Are inspected by the N.C. Division of Facility Services or are licensed or approved as meeting standards for licensure in the state where located, and~~
  - ~~(c) Participate in an approved laboratory proficiency testing program for each specialty and sub-specialty of service provided to Medicaid eligible clients which is approved by the U.S. Department of Health and Human Services, and~~
  - ~~(d) Are approved or licensed under the Clinical Laboratories Improvement Act for interstate commerce or hold an unrevoked and unsuspended letter of exemption from DHHS based on accreditation or licensure by an approved organization or state licensure program if located out of state and are engaged in examination of human specimens.~~
- (2) It is provided in an office or similar facility other than a hospital outpatient department or a clinic.
- (3) Clinical laboratory services are rendered by medical care entities who are issued a certificate of waiver, registration certificate, or certificate of accreditation under the Clinical Laboratories Improvement Amendments of 1988.
- (3) (4) Portable x-ray services are medically necessary and ordered in writing by the attending physician. Services may be provided only by providers who are Medicare certified and inspected by the N.C. Division of Facility Services and are limited to provision in the patient's home or a nursing facility place of residence. The ordering physician must:
  - (a) State the patient's diagnosis, and
  - (b) Indicate the condition suspected, and
  - (c) Reason why "portable" service is needed.
- (5) Portable ultrasound services are medically necessary and ordered in writing by the attending physician. Providers must be Medicare certified as physiological

labs, assure its personnel are licensed or registered in accordance with applicable State laws, and comply with manufacturer's guidelines for use of and routine inspection of equipment. The ordering physician must:

- (a) State the patient's diagnosis, and
- (b) Indicate the condition suspected, and
- (c) Reason why "portable" service is needed.

Authority G.S. 108A-25(b); 108A-54; 42 C.F.R. 440.30; 40 C.F.R. 441.16; 42 C.F.R. Part 493.

## .0120 DURABLE MEDICAL EQUIPMENT

(a) Medically necessary durable medical equipment (DME) is covered by the Medicaid program when it is prescribed by a physician. Prior approval must be obtained from the Division of Medical Assistance, or its designated agent.

(b) Payment for durable medical equipment is limited to the official, approved DME list established by the Division of Medical Assistance. Additions, deletions or revisions to the DME list are approved by the Director of the Division of Medical Assistance upon recommendation of DMA staff and/or consultants. Only items determined to be medically necessary, effective and efficient may be included.

(c) Providers must ~~possess a state business license and be certified to participate in Medicare as a DME supplier, or be meet the following conditions to qualify for participation in the Medicaid Program:~~

- (1) Not accept prescriptions for Medicaid covered equipment from any physician or practitioner who has an ownership interest in the provider's DME business, and
- (2) Be enrolled and participate in Medicare as a DME supplier, and
- (3) Provide services on an emergency basis 24 hours per day, seven days per week for life sustaining equipment, and
- (4) Be located within the boundaries of NC or in an adjoining state from whom NC recipients living on the border use the provider as a general practice, and
- (5) Be either:
  - (A) A business entity authorized to conduct business in the state or in the locality where the business site is located. Proof of authorization shall include a certificate of assumed name,

certificate of authority, certificate of good standing, license, permit, or privilege license, or

- (B) A Medicaid enrolled home health agency, a state agency, a local health department, a local lead agency for the Community Alternatives Program for Disabled Adults, or ~~for the~~ mentally retarded or developmentally disabled, or ~~a local lead an~~ agency that provides case management for the Community Alternative Program for children.

Authority G.S. 108A-25(b); 42 C.F.R. 440.70(b)(3).

## CHAPTER 50 - MEDICAL ASSISTANCE

### SUBCHAPTER 50B - ELIGIBILITY DETERMINATION

#### SECTION .0100 - COVERAGE GROUPS

##### .0101 MANDATORY

The following groups required by 42 U.S.C. 1396a (a)(10) (A) (i) shall be eligible for Medicaid:

- (1) Recipients receiving AFDC.
- (2) Deemed recipients of AFDC including:
  - (a) Individuals denied AFDC solely because the payment amount would be less than ten dollars (\$10.00),
  - (b) Participants in AFDC work supplementation programs approved in the AFDC State Plan,
  - (c) Individuals deemed to be AFDC recipients for four months following termination of AFDC due to collection or increased collection of child support,
  - (d) Individuals receiving transitional Medicaid as described in 42 U.S.C. 1396s when AFDC eligibility is lost due to increased earnings,
  - (e) Individuals for whom an adoption assistance agreement is in effect or foster care maintenance payments are being made under Title IV E of the Social Security Act as described at 42 U.S.C. 673 (b).
- (3) Qualified pregnant women as defined at 42 U.S.C. 1396d(n)(1).
- (4) Qualified children as defined at 42 U.S.C. 1396d(n)(2).
- (5) Pregnant women, during a 60 day period

following termination of the pregnancy, for pregnancy related and post partum services if they applied for Medicaid prior to termination of the pregnancy and were eligible on the date pregnancy is terminated.

- (6) ~~Infants~~ Children, born to a woman who was eligible for and receiving Medicaid on the date of the child's birth, for up to one year from the date of birth; ~~as long as the mother remains eligible for Medicaid as described at 42 U.S.C. 1396a(e)~~ (4).
- (7) Aged, blind or disabled individuals who meet financial eligibility criteria more restrictive than those of the SSI program.
- (8) Individuals who meet the requirements under 42 U.S.C. 1382h(a) or (b)(1).
- (9) Blind or disabled individuals who were eligible in December 1973 as blind or disabled and who for each consecutive month since December 1973 continue to meet December 1973 eligibility criteria.
- (10) Individuals who were eligible in December 1973 as aged, or blind, or disabled with an essential spouse and who, for each consecutive month since December 1973, continue to live with the essential spouse and meet December 1973 eligibility criteria.
- (11) Individuals who in December 1973 were eligible as the essential spouse of an aged, or blind, or disabled individual and who for each consecutive month since December 1973, have continued to live with that individual who has met December 1973 eligibility criteria.
- (12) Qualified Medicare Beneficiaries described at 42 U.S.C. 1396d(p).
- (13) Pregnant women whose countable income does not exceed the percent of the income official poverty line, established at 42 U.S.C. 1396a(1)(2), for pregnancy related services including labor and delivery.
- (14) Children born after September 30, 1983 and who are under age 19 who are described at 42 U.S.C. 1396a(1).
- (15) Qualified Disabled and Working Individuals described at 42 U.S.C. 1396d(s).
- (16) Individuals as described at 42 U.S.C. 1396a(a)(10)(E)(iii).

Authority G.S. 108A-54; 42 U.S.C. 1396a(e)(4); 42 U.S.C. 1396a (a)(10)(A)(i); 42 U.S.C.



1396a(f); 42 C.F.R. 435.110; 42 C.F.R. 435.112;  
42 C.F.R. 435.113; 42 C.F.R. 435.114; 42 C.F.R.  
435.115; 42 C.F.R. 435.116; 42 C.F.R. 435.117;  
42 C.F.R. 435.118; 42 C.F.R. 435.121; 42 C.F.R.  
435.131; 42 C.F.R. 435.132;  
42 C.F.R. 435.133.

## SECTION .0400 - BUDGETING PRINCIPALS

### .0403 RESERVE

(a) The value of resources held by the client or by a financially responsible person shall be considered available to the client in determining countable reserve for the budget unit.

(b) Jointly owned resources shall be counted as follows:

- (1) The value of resources owned jointly with a non-financially responsible person who is a recipient of another public assistance budget unit shall be divided equally between the budget units;
- (2) The value of liquid assets and personal property owned jointly with a non-financially responsible person who is not a client of another public assistance budget unit shall be available to the budget unit member if he can dispose of the resource without the consent and participation of the other owner or the other owner consents to and, if necessary, participates in the disposal of the resource;
- (3) The client's share of the value of real property owned jointly with a non-financially responsible person who is not a member of another public assistance budget unit shall be available to the budget unit member if he can dispose of his share of the resource without the consent and participation of the other owner or the other owner consents to and, if necessary, participates in the disposal of the resource.

(c) Terms of a separation agreement, divorce decree, will, deed or other legally binding agreement or legally binding order shall take precedence over ownership of resources as stated in (a) and (b) of this Rule, except as provided in Paragraph (o) of this Rule.

(d) The reserve limit for the budget unit for aged, blind or disabled cases shall be determined as follows:

- (1) The reserve limit for two persons shall be allowed when spouses live together

in a private living situation or when the couple share the same room in long term care;

- (2) Allow the reserve limit for one person for the Community Alternative Program (CAP) client with a spouse at home and only count the resources that are available to the CAP client in determining his countable reserve;
- (3) The reserve limit for one person is allowed for the client who is in long term care and the spouse remains in the home;
- (4) The reserve allowance for one person is allowed for the client who is in long term care and the spouse is in domiciliary care;
- (5) The reserve limit allowed for a blind or disabled minor child who lives with his parent or parents or is temporarily absent includes the child and the parent or parents with whom the child lives;
- (6) The reserve limit allowed for a blind or disabled dependent child under age 19 who is in long term care shall include only the child if his care and treatment are expected to exceed 12 months, as certified by the child's physician.

(e) Countable resources for Family and Children's related cases will be determined as follows:

- (1) The resources of a spouse, who is not a stepparent, shall be counted in the budget unit's reserve allowance if the spouses live together or one spouse is temporarily absent in long term care and the spouse is not a member of another public assistance budget unit;
- (2) The resources of a client and a financially responsible parent or parents shall be counted in the budget unit's reserve limit if the parents live together or one parent is temporarily absent in long term care and the parent is not a member of another public assistance budget unit;
- (3) The resources of the parent or parents shall not be considered if a child under age 21 requires care and treatment in a medical institution and his physician certifies that the care and treatment are expected to exceed 12 months.

(f) The homesite shall be excluded from countable resources when it is the principal place of residence for the client. The homesite is defined

as the house and lot, plus all buildings on the lot, in the city or the house and the land the house is on, to a maximum of one acre, plus all buildings on the acre, in a rural area.

- (1) For all aged, blind or disabled cases and medically needy families and children related cases, in addition to the principal place of residence, the homesite shall include real property contiguous to the home with a tax value of less than twelve thousand dollars (\$12,000).
- (2) For all aged, blind or disabled cases the equity in the homesite shall be excluded when the client is in long term care and his spouse, minor children or adult disabled children remain in the home or a physician has certified in writing that the client will return home within six months from the date of entry into the hospital or long term care facility.

(g) For categorically needy aged, blind or disabled cases without grandfathered protection, nonhome property and personal property that is income producing shall be excluded from resources when the budget unit's equity in the property does not exceed six thousand dollars (\$6,000) and the property produces a net annual return of at least six percent of the excludable equity value for each income producing activity.

(h) For medically needy Families and Children cases and medically needy aged, blind or disabled cases without grandfathered protection, if the client or any member of the budget unit has ownership in a probated estate, the value of the individual's proportionate share of the countable property shall be a countable resource unless the property can be excluded as the homesite or as income producing property, as stated in (e) and (f) of this Rule.

(i) The equity in non-excluded real property shall be counted toward the reserve level of the budget unit.

(j) A motor vehicle shall be determined an essential vehicle as follows:

- (1) For aged, blind or disabled individuals with grandfathered protection, if public transportation cannot be used because it is not available or because of his physical or mental condition and the vehicle is needed to:
  - (A) Obtain regular medical treatment, or
  - (B) Retain employment, or
  - (C) Go shopping if the shopping area is more than one-half mile from the client's home, or
  - (D) Go shopping if the client is responsi-

ble for shopping and is physically limited from walking one-half mile, or

- (E) Transport children to and from school and the school is not within reasonable walking distance;

- (2) For aged, blind or disabled cases without grandfathered protection and medically needy Family and Children's related cases, a vehicle must be specially equipped for use by a handicapped individual, used to obtain regular medical treatment, or used to retain employment.

(k) The value of non-excluded motor vehicles will be determined by the average wholesale value listed in the Red Book. If the vehicle is not listed in the Red Book, the value will be determined by knowledgeable sources. If the client disagrees with the Red Book value he may obtain an appraisal at his own expense based on Part 5 - Supplemental Security Income Manual.

(l) The current market value of a remainder interest in life estate shall be determined by applying the remainder interest percentage from the chart in the Medicaid Eligibility Manual to the tax value of the property. A lower current market value for remainder interest may be established by offering the interest for sale and the highest offer received, if any, is less than the value determined by application of the values chart to the tax value.

(m) For all aged, blind or disabled cases, up to one thousand five hundred dollars (\$1,500) may be excluded from countable resources for the client and his spouse under the burial exclusion. Apply the one thousand five hundred dollar (\$1,500) burial exclusion for each individual separately. Only the following resources may be excluded and they must be excluded in the following order:

- (1) Irrevocable pre-need burial contracts, burial trusts, or other irrevocable arrangements established for burial expenses;
- (2) Face value of life insurance policies that accrue cash value when the total face value of all policies for the budget unit is one thousand five hundred dollars (\$1,500) or less and the cash value was not counted in reserve;
- (3) Revocable burial contracts or trusts established for burial expenses. Any excess remains a countable resource;
- (4) Cash value of life insurance that has been designated for burial expenses if the cash value was considered in deter-

mining countable reserve. Any cash value in excess of one thousand five hundred dollars (\$1,500) remains a countable resource.

(n) For all aged, blind or disabled cases and medically needy Family and Children's related cases, the value of trust funds established for the client or for any member of the budget unit is a countable resource unless it is determined by the courts that the funds are not available for the beneficiary of the trust.

(o) For a married individual:

(1) resources available to the individual are available to his or her spouse who is a noninstitutionalized applicant or recipient and who is either living with the individual or temporarily absent from the home, irrespective of the terms of any will, deed, contract, antenuptial agreement, or other agreement, and irrespective of whether or not the individual actually contributed the resources to the applicant or recipient. All resources available to an applicant or recipient under these rules must be considered when determining his or her countable reserve.

(2) For an institutionalized spouse as defined in 42 U.S.C. 1396r-5(h), available resources shall be determined in accordance with 42 U.S.C. 1396r-5(c), except as specified in Paragraph (p) of this Rule.

(p) For an institutionalized individual, the availability of resources are determined in accordance with 42 U.S.C. 1396r-5. Resources of the community spouse are not counted for the institutionalized spouse when:

- (1) Resources of the community spouse cannot be determined or cannot be made available to the institutionalized spouse because the community spouse cannot be located; or
- (2) The couple has been continuously separated for 12 months at the time the institutionalized spouse enters the institution.

Authority G.S. 108A-54; 108A-55; 143-127.1(d); S.L. 1983, c. 1116; 42 U.S.C. 1396r-5; 42 U.S.C. 1396a(a)(17); 42 U.S.C. 1396a(a)(51); 42 C.F.R. 435.602; 42 C.F.R. 435.711; 42 C.F.R. 435.712; 42 C.F.R. 435.723; 42 C.F.R. 435.734; 42 C.F.R. 435.821; 42 C.F.R. 435.822; 42 C.F.R. 435.823; 42 C.F.R. 435.845; 45 C.F.R. 233.20; 45 C.F.R.

233.51; Deficit Reduction Act of 1984 (P.L. 98-369), Section 2373; Schweiker v. Gray Panthers, 453 U.S. 34, 101 S. ct. 2633, 69 L. Ed.2d 460 (1981).

#### .0405 CERTIFICATION AND AUTHORIZATION

(a) Certification.

(1) Certification periods shall be for:

- (A) One, two or three months if a medical service covered by the state's program was received in the three months prior to the month of application and the client would have been eligible had he applied; or
- (B) Not more than four months for AFDC cases terminated due to child care; or
- (C) Six months for medically needy clients, clients in long term care, with income other than or in addition to SSI, Family and Children's related cases and children in county custody or for whom the county has placement responsibility, and categorically needy aged, blind or disabled clients who have deductibles or unstable incomes; or
- (D) Twelve months for categorically needy aged, blind or disabled clients who are in a private living arrangement and have no deductible and their whose incomes are stable, clients who are in long term care and have no income other than SSI and children in county custody or for whom the county has placement responsibility who have no deductible and who have stable income; or
- (E) Not more than six months for AFDC cases terminated for the increased earnings or hours of employment; or
- (F) Twelve months for categorically needy clients receiving Special Assistance for the Blind; or
- (G) Twelve months for M-IC cases and children who are born to Medicaid eligible women as described in Paragraph (6) of Rule .0101 of this Subchapter or through month of next birthday, whichever is earlier; or
- (H) ~~(F)~~ A lesser number of months if the client dies before the application is completed or if the client is a budget unit member of another case and the months remaining in the certification



period for that case are less than six or twelve months as stated in (a) (1) (C) or (D) of this Rule.

- (I) Begin M-PW certification with first month of M-PW coverage and end on the last day of month in which falls the 60th day after the termination of pregnancy.
- (2) Certification periods shall begin:
  - (A) With the first month of retroactive medical need except that if the months are not consecutive, each month is a separate certification period; or
  - (B) With the month of application except that if application is made in anticipation of a future medical need within the application processing period, the certification begins with the month of medical need; and
  - (C) On the first day of the month of certification as stated in (a) (2) (A) and (B) of this Rule.
- (3) Certification is established when a client meets all conditions of eligibility for the program except that he must incur medical expenses equal to the amount by which his income exceeds the income levels.
- (4) Certification shall be terminated when the client's predicted medical expenses not subject to payment by a third party indicate that he cannot meet the amount of his deductible.
- (5) A twelve month certification period shall be adjusted to two six month periods when a change in the client's situation results in his having a deductible or his income becomes unstable.
- (6) Certification periods shall run consecutively unless the client's case is terminated and he reapplies at a later date. Certification periods shall not overlap except that months included in a previous application which was denied, may be included as retroactive months in a new application.
- (b) Authorization.
  - (1) Eligibility shall be authorized when a client meets all conditions of eligibility, including meeting a deductible if one is required.
  - (2) The period authorized shall be the portion of the certification period for which all conditions of eligibility are met.

- (3) The beginning and ending dates of the authorization period are stated in Rule .0204 of this Subchapter.

Authority G.S. 108A-54; 42 C.F.R. 435.112; 42 C.F.R. 435.914.

## TITLE 11 - DEPARTMENT OF INSURANCE

*Notice is hereby given in accordance with G.S. 150B-21.2 that the Department of Insurance intends to repeal rules cited as 11 NCAC 10 .1506 - .1508 and 11 NCAC 11E .0106.*

*The proposed effective date of this action is March 1, 1993.*

*The public hearing will be conducted at 10:00 a.m. on January 6, 1993 at the Dobbs Building, 3rd Floor Hearing Room, 430 N. Salisbury Street, Raleigh, NC 27611.*

*Reason for Proposed Action: To modernize and improve the rules governing market conduct examinations of insurance companies and retention of records by domestic insurance companies.*

*Comment Procedures: Written comments may be sent to Ellen Sprenkel, 430 N. Salisbury Street, Raleigh, NC 27611. Oral presentations may be made at the public hearing.*

## CHAPTER 10 - PROPERTY AND CASUALTY DIVISION

### SECTION .1500 - MARKET CONDUCT EXAMINATION SECTION

#### .1506 REPORT AND COLLECTION PROCEDURES

~~(a) The form of the market conduct report shall be as stated in 11 NCAC 11C .0102.~~

~~(b) The reproduction of the report shall be as stated in 11 NCAC 11C .0103.~~

~~(c) Collection procedures for examination expenses and "days worked" charges shall be as stated in 11 NCAC 11C .0118, provided, that if department personnel whose usual duties include market conduct examinations are assigned to investigate an alleged violation of a specific insurance statute or statutes, "days worked" charges and~~



expenses resulting from such investigation shall be billed in a manner consistent with G.S. 58-18.

Statutory Authority G.S. 57-10; 58-16; 58-16.2; 58-18; 58-63.

#### .1507 MAINTENANCE OF RECORDS

(a) ~~Each insurer shall maintain for at least three years all records which are required by Chapters 57 and 58 of the North Carolina General Statutes.~~

(b) ~~Every agency, agent, broker or producer of record shall maintain a file for each policy sold, and said file shall contain all work papers and written communications in his possession pertaining to the policy documented therein. This Section shall not apply to insurers.~~

(c) ~~Nothing in this Rule shall be construed to prohibit an insurer, agency, agent, broker or producer of record from using electronic or photographic processes to store such records.~~

Statutory Authority G.S. 57-10; 58-9; 58-9.2; 58-15; 58-25; 58-25.1; 58-26; 58-27.

#### .1508 COMPLAINT RECORDS

~~Each insurer shall maintain or cause to be maintained a record of all written complaints listing the name of the insured, the nature of the complaint, the department subject to the complaint, the policy or claim number of the insured, and the disposition of the complaint. This record shall be retained for at least three years.~~

Statutory Authority G.S. 57-10; 58-9; 58-16; 58-25.1; 58-26; 58-27; 58-54.5; 58-54.6.

### CHAPTER 11 - FINANCIAL EVALUATION DIVISION

#### SUBCHAPTER 11E - TAX AND STATISTICAL

#### SECTION .0100 - GENERAL PROVISIONS

#### .0106 MICROFILMING OF COMPANY RECORDS

~~Every domestic insurer must maintain all records in original form for the years for which no statutory examination has yet been made, regardless of when such original records are microfilmed. The microfilming of original records should in no way alter the company's basic record retention schedule. Every foreign insurer licensed in North Carolina shall be in substantial compliance herewith.~~

Statutory Authority G.S. 58-9.1.

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*Notice is hereby given in accordance with G.S. 150B-21.2 that the Department of Insurance intends to amend rule cited as 11 NCAC 11C .0105.*

*The proposed effective date of this action is March 1, 1993.*

*The public hearing will be conducted at 10:00 a.m. on January 6, 1993 at the Dobbs Building, 3rd Floor Hearing Room, 430 N. Salisbury Street, Raleigh, NC 27611.*

*Reason for Proposed Action: To modernize and improve the rules governing retention of records by domestic insurance companies.*

*Comment Procedures: Written comments may be sent to Ray Martinez, P.O. Box 26387, Raleigh, NC 27611. Oral presentations may be made at the public hearing. Anyone having questions should call Ray Martinez at 733-5633, or Ellen Sprenkel at 733-4529.*

### CHAPTER 11 - FINANCIAL EVALUATION DIVISION

#### SUBCHAPTER 11C - ANALYSIS AND EXAMINATIONS

#### SECTION .0100 - GENERAL PROVISIONS

#### .0105 RETENTION OF RECORDS OF DOMESTIC INSURANCE COMPANIES

(a) All records of domestic insurance companies ~~must~~ shall be maintained by the company for the years for which a statutory examination has not yet been ~~completed and all completed.~~ completed. All books of original entry, corporate records and premium payment records ~~should~~ shall be retained indefinitely.

(b) Any claim file wherein a minor is involved ~~should~~ shall be maintained until that minor has ~~reached majority.~~ attained the age of majority. ~~Any and all~~ All tax and tax related questions or litigation ~~should have been resolved prior to the disposition of any pertinent records having a~~

bearing thereon, shall be resolved or finally adjudicated before the destruction of any records related thereto.

(c) All records that are required to be maintained by this Rule shall be either original or duplicate records, as defined in this Rule.

(d) For the purpose of this Rule, an "original record" is the writing or recording itself or any counterpart intended to have the same effect by a person executing or issuing it. An "original" of a photograph includes the negative or any print therefrom. If data are, in the normal and ordinary course of business, stored in a computer or similar device, any printout or other output readable by sight, shown to reflect the data accurately, is an "original record".

(e) For the purpose of this Rule, a "duplicate record" is a counterpart produced by the same impression as the original record, or from the same matrix, or by mechanical or electronic re-recording or by chemical reproduction, or by equivalent techniques, such as imaging or image processing, that accurately reproduce the original record.

(f) If only duplicate records are maintained, the following requirements must be met:

(1) The data must be easily accessible to the Department in readable form; and readable, reproduced copies must be obtainable;

(2) Before the destruction of any original records, the company in possession of the original records shall:

(A) Verify that the records stored consist of all information contained in the original records and that the original records can be reconstructed therefrom in a form acceptable to the Department; and

(B) Implement disaster preparedness or disaster recovery procedures that include provisions for the maintenance of duplicate records at another location; and

(3) Adequate controls must be established with respect to the transfer and maintenance of data.

(g) Every foreign insurer licensed in North Carolina shall be in substantial compliance with this Rule.

Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-155; 58-19-35; 58-20-30; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-

62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.

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*Notice* is hereby given in accordance with G.S. 150B-21.2 that the N. C. Department of Insurance intends to adopt rules cited as 11 NCAC 19 .0001 - .0007.

*The proposed effective date of this action is March 1, 1993.*

*The public hearing will be conducted at 10:00 a.m. on January 6, 1993 at the 3rd Floor Hearing Room, Dobbs Building, 430 N. Salisbury Street, Raleigh, N.C. 27611.*

*Reason for Proposed Actions: To modernize and improve the rules governing market conduct examinations of insurance companies.*

*Comment Procedures: Written comments may be sent to Jerry Polenz, Market Conduct Division, N.C. Dept. of Insurance, 112 Cox Avenue, Raleigh, N.C. 27605. Oral presentations may be made at the public hearing. Anyone having questions should call Jerry Polenz at 733-0055 or Ellen Sprenkel at 733-4529.*

## CHAPTER 19 - MARKET CONDUCT DIVISION

### .0001 REPORT AND COLLECTION PROCEDURES

(a) The form of the market conduct report shall be as stated in 11 NCAC 11C.0102.

(b) The reproduction of the report shall be as stated in 11 NCAC 11C.0103.

(c) Collection procedures for examination expenses and "days worked" charges shall be as stated in 11 NCAC 11C.0118, provided, however, that if department personnel whose usual duties include market conduct examinations are assigned to investigate an alleged violation of a specific insurance statute or statutes, then "days worked" charges and expenses resulting from such investigation shall be billed in a manner consistent with G.S. 58-2-155.

Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-155; 58-6-5; 58-20-30; 58-21-40; 58-21-75; 58-22-

20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.

#### .0002 MAINTENANCE OF RECORDS

(a) Every insurer licensed to do business in this State shall maintain for not less than three years all records, books, documents, and other business records that are required by Chapter 58 of the General Statutes. This data shall be maintained in such an order that information can be readily ascertained by the department upon a market conduct examination.

(b) Every agency, agent, broker, or producer of record shall maintain a file for each policy sold, and said file shall contain all work papers and written communications in his possession pertaining to the policy documented therein. These records shall be retained for not less than three years.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-185; 58-2-190; 58-2-195; 58-2-200; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### .0003 COMPLAINT RECORDS

Each insurer and its agents shall maintain or cause to be maintained a record of all written complaints listing the name of the insured, the nature of the complaint, the department subject to the complaint, the policy or claim number of the insured, and the disposition of the complaint. This record shall be retained for at least three years.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### .0004 POLICY RECORDS

Each insurer and its agents shall maintain or cause to be maintained a record of all policies so as to show clearly the policy period, basis for rating, and if terminated, return premium amounts, if applicable. These records shall be retained for at least three years.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-190;*

*58-2-195; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### .0005 CLAIM RECORDS

Each insurer and its agents shall maintain or cause to be maintained a record of all claim reports so as to show clearly the inception, handling, and disposition of each claim.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-190; 58-2-195; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### .0006 RECORDS REQUIRED FOR EXAMINATION

(a) Market conduct examinations of property and casualty insurers generally include review of the following areas of operation:

- (1) Company overview: history and profile, company operations and management, and certificates of authority;
- (2) Policyholder treatment: consumer complaints;
- (3) Marketing: policy forms and filings, sales and advertising, agency management;
- (4) Underwriting and rating practices: private passenger automobile, homeowners, and commercial lines (multi-peril, automobile, workers, compensation), adverse underwriting decisions (cancellations, nonrenewals, and declinations);
- (5) Claims practices: organization and procedures, closed with payment, closed without payment, total loss settlements (salvage), and subrogation litigation.

(b) Market conduct examinations of life and health insurers generally include review of the following areas of operation:

- (1) Company overview: history and profile, company operations and management, and certificates of authority;
- (2) Policyholder treatment: consumer complaints, nonforfeiture benefits (policy loans, cash surrenders, extended term and reduced paid-up);
- (3) Marketing: policy forms and filings, sales and advertising, and agency man-



agement;

- (4) Underwriting and rating practices: life (individual and group), health (individual and group), annuities (individual and group);
- (5) Claims practices: life (individual and group), health (individual and group) annuities (individual and group).

(c) Specific records relative to these areas of operations will usually be requested by prior written notification or pre-examination conference. These records shall be made available to the Market Conduct Division staff upon arrival.

(d) Additional records shall be made available on the date of arrival if the department has requested that such records be made available for the examination. Additional records, not previously requested, may be required during and after an examination. Appropriate work space and equipment shall be provided to the examiners to expedite the examiners' review of the records.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-190; 58-2-195; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### .0007 ORIGINAL AND DUPLICATE RECORDS

(a) All records that are required to be maintained by this Chapter shall be either original or duplicate records, as defined in this Rule.

(b) For the purpose of this Chapter, an "original record" is the writing or recording itself or any counterpart intended to have the same effect by a person executing or issuing it. An "original" of a photograph includes the negative or any print therefrom. If data are, in the normal and ordinary course of business, stored in a computer or similar device, any printout or other output readable by sight, shown to reflect the data accurately, is an "original record".

(c) For the purpose of this Chapter, a "duplicate record" is a counterpart produced by the same impression as the original record, or from the same matrix, or by mechanical or electronic re-recording or by chemical reproduction, or by equivalent techniques, such as imaging or image processing, that accurately reproduce the original record.

(d) If only duplicate records are maintained, the following requirements must be met:

- (1) The data must be easily accessible to

the Department in readable form; and readable, reproduced copies must be obtainable;

- (2) Before the destruction of any original records, the person in possession of the original records shall:

(A) Verify that the records stored consist of all information contained in the original records and that the original records can be reconstructed therefrom in a form acceptable to the Department; and

(B) Implement disaster preparedness or disaster recovery procedures that include provisions for the maintenance of duplicate records at another location; and

- (3) Adequate controls must be established with respect to the transfer and maintenance of data.

(e) Every foreign insurer licensed in North Carolina shall be in substantial compliance with this Rule.

*Statutory Authority G.S. 58-2-40(1); 58-2-50; 58-2-131; 58-2-132; 58-2-133; 58-2-145; 58-2-185; 58-2-190; 58-2-195; 58-20-30; 58-21-40; 58-21-75; 58-22-20(6); 58-23-25; 58-24-135; 58-27-10; 58-39-70; 58-48-65; 58-49-55; 58-56-16; 58-62-66; 58-63-20; 58-64-55; 58-65-105; 58-67-100.*

#### TITLE 15A - DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES

*Notice is hereby given in accordance with G.S. 150B-21.2 that the Department of Environment, Health, and Natural Resources intends to amend rule cited as 15A NCAC 1C .0504.*

*The proposed effective date of this action is March 1, 1993.*

*Instructions on How to Demand a Public Hearing (must be requested in writing within 15 days of notice): Any person requesting that the Department hold a public hearing on this proposed amendment must submit a written request by December 30, 1992. Written requests must be submitted to: Bill Flournoy, Chief, Environmental Assessment Section, Division of Planning and Assessment, P.O. Box 27687, Raleigh, North Carolina 27611.*

**Reason for Proposed Action:** *The 1992 session of the General Assembly, through House Bill 1596, amended G.S. 113A-4(2) to include the "use of public land" as an activity requiring environmental documentation under the N.C. Environmental Policy Act. Further, G.S. 113A-9(11)(a) defined the use of public land to explicitly include the "grant of a lease, easement, or permit authorizing private use of public land". These changes became effective October 1, 1992. The proposed rule will establish those activities which are presumed to leave minor impacts and therefore not require environmental documentation.*

**Comment Procedures:** *Interested persons may contact Mr. Bill Flournoy at (919) 733-6376 for more information regarding this Rule. Written comments must be received no later than 5:00 p.m. on January 14, 1993. Submit all comments to Mr. Bill Flournoy, Chief, Environmental Assessment Section, Division of Planning and Assessment, P.O. Box 27687, Raleigh, North Carolina 27611.*

**Editor's Note:** *This Rule was filed as a temporary amendment effective December 7, 1992 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner.*

## CHAPTER 1 - DEPARTMENTAL RULES

### SUBCHAPTER 1C - CONFORMITY WITH NORTH CAROLINA ENVIRONMENTAL POLICY ACT

#### SECTION .0500 - MINIMUM CRITERIA

##### .0504 NON-MAJOR ACTIVITY

The following minimum criteria are established as an indicator of the types and classes of thresholds of activity at and below which environmental documentation under the NCEPA is not required. As set out in Rule .0503 of this Section, the Secretary may require environmental documentation for activities that would otherwise qualify under these minimum criteria thresholds.

- (1) Sampling, survey, monitoring and related research activities including but not limited to the following:
  - (a) Aerial photography projects involving the photographing or mapping of the lands of the state.
  - (b) Biological sampling and monitoring of fisheries resources through the use of

- traditional commercial fishing gear, electricity, and rotenone.
  - (c) Soil survey projects involving the sampling or mapping of the soils of the state.
  - (d) Establishing stream gaging stations for the purpose of measuring water flow at a particular site.
  - (e) Placement of monitoring wells for the purpose of measuring groundwater levels, quantity, or quality.
  - (f) Gathering surface or subsurface information on the geology, minerals, or energy resources, of the state.
  - (g) Placement and use of geodetic survey control points.
  - (h) Other routine survey and resource monitoring activities, or other temporary activities required for research into the environment which have minimum long-term effects.
  - (i) Activities that are proposed for funding under the North Carolina Community Development Block Grant Program that are exempt or categorically excluded from NEPA under the provisions of the Environmental Review Procedures at 24 CFR Part 58.
- (2) Standard maintenance or repair activities as needed to maintain the originally defined function of a project or facility (but without expansion, increase in quantity, or decrease in quality) including but not limited to the following:
    - (a) Routine repairs and housekeeping projects which maintain a facility's original condition and physical features, including re-roofing and minor alterations where in-kind materials and techniques are used. This also encompasses structures 50 years of age and older and for which no separate law, rule, or regulation dictates a formal review and approval process.
    - (b) Roads, bridges, parking lots, and their related facilities.
    - (c) Utilities (water, sewer, and electricity) on their existing rights-of-way.
    - (d) Storm sewer and surface drainage systems.
    - (e) Boat ramps, docks, piers, bulkheads, and associated facilities at water-based recreation sites.
    - (f) Diked, highground dredge-material disposal areas.

- (g) Activities necessary to fulfill the existing requirements of in-effect permits for the protection of the environment and human health.
  - (h) Other maintenance and repair activities on previously approved projects, consistent with existing environmental documents.
  - (i) Activities that are proposed for funding under the North Carolina Community Development Block Grant Program that are exempt or categorically excluded from NEPA review under the provisions of the Environmental Review Procedures at 24 CFR Part 58.
  - (j) Activities that are proposed for funding under the North Carolina Emergency Shelter Grants Program that are exempt or categorically excluded from NEPA review under provisions of the Environmental Review Procedures at 24 CFR Part 50.
- (3) Minor construction activities including but not limited to the following:
- (a) New surface discharge facilities of less than 500,000 gallons per day or expansions of existing facilities with less than 500,000 gallons per day additional flow and where design flows are less than one-third of the 7Q10 flow of the stream and do not result in a loss of any existing use.
  - (b) Waste water spray irrigation and rotary distributor systems not greater than 100,000 gallons per day.
  - (c) New land application sites for sludge disposal with less than 200 total acres or expansions of existing permits of less than 200 additional acres and for which the sludge has been determined to be not a hazardous waste.
  - (d) Sewer extensions with less than three miles of new lines and a design volume not exceeding 1,000,000 gallons per day, or individual pump stations not exceeding 1,000,000 gallons per day.
  - (e) New and expanded subsurface waste water systems with a final design capacity not exceeding 100,000 gallons per day.
  - (f) Groundwater withdrawals of less than 1,000,000 gallons per day where such withdrawals are not expected to cause a significant alteration in established land use patterns, or degradation of groundwater or surface water quality.
- (g) Air emissions of pollutants from a minor source or modification as defined in 15A NCAC 2D .0530, that are less than 100 tons per year or 250 tons per year as defined therein.
  - (h) Dams less than 25 feet in height and having less than 50 acre feet of storage capacity.
  - (i) Routine grounds maintenance and landscaping, such as sidewalks, trails, walls, gates, and related facilities, including outdoor exhibits. (j) Any new building construction involving all of the following:
    - (i) less than 10,000 square feet;
    - (ii) less than two hundred thousand dollars (\$200,000) cost;
    - (iii) less than one acre of previously undisturbed ground, unless the site is a National Register archaeological site; or
    - (iv) no handling or storage of hazardous materials in the completed facility.
  - (k) Demolition of or additions, rehabilitation and/or renovations to a structure not listed in the National Register of Historic Places or less than 50 years of age.
  - (l) Reclamation of underground storage tanks and restoration of groundwater quality.
  - (m) Systems that discharge swimming pool filter backwash.
  - (n) Installation of on-farm Best Management Practices for the N.C. Cost Share Program For Nonpoint Source Pollution Control codified as 15A NCAC 6E.
  - (o) Activities that are proposed for funding under the North Carolina Community Development Block Grant Program that are exempt or categorically excluded from NEPA review under the provisions of the Environmental Review Procedures at 24 CFR Part 58.
  - (p) Activities that are proposed for funding under the North Carolina Emergency Shelter Grants Program that are exempt or categorically excluded from NEPA review under provisions of the Environmental Review Procedures at 24 CFR Part 50.
- (4) Management activities including but not limited to the following:
- (a) Replenishment of shellfish beds through



- the placement of shell or seed oysters on depleted and/or suitable marine habitat.
- (b) Creation and enhancement of marine fisheries habitat through the establishment of artificial reefs on Environmental Protection Agency, U.S. Army Corps of Engineers, National Marine Fisheries Service, and U.S. Fish and Wildlife Service approved sites, including the use of artificial reef construction material requiring an EPA certificate of cleanliness from petroleum based products and other pollutants.
  - (c) Placement of fish attractors and shelter in public waters.
  - (d) Translocation and stocking of native fish and wildlife in accordance with wildlife management plans.
  - (e) Reintroduction of native endangered or threatened species in accordance with Federal guidelines or recovery plans.
  - (f) Production of native and agricultural plant species to create or enhance fish or wildlife habitat and forest resources, including fertilization, planting, mowing, and burning in accordance with management plans.
  - (g) Timber harvest in accordance with the National Forest Service or the N.C. Division of Forest Resources timber management plans.
  - (h) Reforestation of timberlands in accordance with the National Forest Service or the N.C. Division of Forest Resources timber management plans.
  - (i) Control of forest or agricultural insects and disease outbreaks, by the lawful application of labeled pesticides and herbicides by licensed applicators, on areas of no more than 100 acres.
  - (j) Control of aquatic weeds in stream channels, canals, and other water bodies, by the lawful application of labeled herbicides by licensed applicators, on areas of no more than two acres or 25 percent of the surface area, whichever is less.
  - (k) Removal of logs, stumps, trees, and other debris from stream channels where there is no channel excavation, and activities are carried out in accordance with Stream Obstruction Removal Guidelines prepared by the Stream Renovation Guidelines Committee of the Wildlife Society and the American Fisheries Society.
  - (l) Dredging of existing navigation channels and basins, provided that the spoil is placed in existing and approved high ground disposal areas.
  - (m) Controlled or prescribed burning for wildlife and timber enhancement in accordance with applicable management plans.
  - (n) Drainage projects where the mean seasonal water table elevation will be lowered less than one foot over an area of one square mile or less.
  - (o) Manipulation of water levels in reservoirs or impoundments in accordance with approved management plans, for the purpose of providing for water supply storage, flood control, recreation, hydroelectric power, and fish and wildlife.
  - (p) Specific modifications in previously permitted discharges resulting in an increased flow of less than 500,000 gallons per day.
  - (q) Installation of on-farm Best Management Practices for the N.C. Cost Share Program For Nonpoint Source Pollution Control codified as 15A NCAC 6E.
  - (r) Continuation of previously permitted activities where no increase in quantity or decrease in quality are proposed.
  - (s) Acquisition or acceptance of real property to be retained in a totally natural condition for its environmental benefits, or to be managed in accordance with plans for which environmental documents have been approved.
  - (t) Care of all trees, plants, and groundcovers on public lands.
  - (u) Care, including medical treatment, of all animals maintained for public display.
  - (v) Activities that are proposed for funding under the North Carolina Community Development Block Grant Program that are exempt or categorically excluded from NEPA review under the provisions of the Environmental Review Procedures at 24 CFR Part 58.
  - (w) Activities that are proposed for funding under the North Carolina Emergency Shelter Grants Program that are exempt or categorically excluded from NEPA review under provisions of the Environ-

mental Review Procedures at 24 CFR Part 50.

(5) Private use of public lands including but not limited to the following:

- (a) Use of pound nets.
- (b) Mechanical shellfish harvesting.
- (c) Shellfish relaying and transplanting.
- (d) Harvest of shellfish during closed seasons.
- (e) Special fisheries management activities under 15A NCAC 3I .0012.
- (f) Scientific collecting within coastal waters.
- (g) Aquaculture operations within estuarine waters.
- (h) Introduction and transfer of marine and estuarine organisms.

Statutory Authority G.S. 113A-4; 113A-6; 113A-9; 113A-10; 143B-10.

\* \* \* \* \*

**N**otice is hereby given in accordance with G.S. 150B-21.2 that the EHNR-Environmental Management Commission intends to amend rules cited as 15A NCAC 2H .1001 - .1003.

**T**he proposed effective date of this action is July 1, 1993.

**T**he public hearings will be conducted on the following dates, times and locations:

January 26, 1993

2:00 p.m.

Groundfloor Hearing Room  
512 N. Salisbury Street  
Raleigh, NC

January 28, 1993

7:00 p.m.

Joslyn Hall  
Carteret Community College  
3505 Arendell Street  
Morehead City, NC

**R**eason for Proposed Actions: To gather public comment on proposals to modify existing stormwater management rules (Title 15A NCAC 2H .1000).

EXPLANATION OF PROPOSED RULE AMEND-

**MENTS:** The modifications proposed reflect changes to the existing rules in a few basic areas.

(1) The proposed rules consolidate a number of existing stormwater management requirements currently administered by the Environmental Management Commission (EMC) and the Division of Environmental Management (DEM) into one Section of the Rules. The proposed amendments consolidate existing stormwater requirements for the twenty coastal counties, areas draining to High Quality Waters and areas draining to Outstanding Resource Waters. This will provide for consistent representation of the requirements and make it easier for those potentially subject to the rules to identify their specific requirements. (2) The proposed rules offer amendments to requirements for issuance of certificates of stormwater compliance. These amendments are consistent with existing practices and provide more clearly defined certification requirements that will assure continued compliance with issued certifications. (3) Proposed amendments to definitions, wording and organization of the rules is included for clarification of requirements and to add flexibility. As an example, the definition of redevelopment is proposed to allow for any rebuilding activity that provides equal or greater stormwater control than the original development. Amendments are also proposed to provide clarification and flexibility in addressing stormwater impacts and alternatives for stormwater management. The amendments include removal of a previous exemption for projects that resulted in less than one acre of actual built-upon area. This change will allow for consistency among stormwater requirements and also allow the opportunity for further review of projects that may impact water quality. The proposed amendments also include specific allowance for proven engineering design alternatives. This flexibility will allow for a wider range of proven stormwater management alternatives in compliance with the Rules. Other modifications are proposed to clarify procedural issues and incorporate policy directives developed during past implementation of the Rules.

The EMC will utilize the information gathered during the hearing process to adopt final Stormwater Management Rules. It is very important that all interested and potentially affected persons or parties make their views known (including the perceived economic and social costs/benefits) to the EMC whether in favor of or opposed to any and all provisions of the proposed Stormwater Management Rules revisions being noticed herein. THE EMC MAY, IN ACCOR-

DANCE WITH N.C.G.S. 150B-21.2 MAKE CHANGES IN FINAL RULES WITHOUT RENOTICE AND REHEARING AS LONG AS THE FINAL RULES ARE A LOGICAL OUTGROWTH OF THE PUBLIC HEARING AND PUBLIC COMMENT PROCEEDINGS AND AS LONG AS THE ADOPTED RULES DO NOT DIFFER SUBSTANTIALLY FROM THE PROPOSED RULES. IN ACCORDANCE WITH THIS AUTHORITY, THE EMC MAY ADOPT FINAL STORMWATER MANAGEMENT REQUIREMENTS THAT ARE MORE OR LESS STRINGENT THAN THOSE BEING NOTICED IF THE EMC DETERMINES THAT THE FINAL ADOPTED RULES ARE A LOGICAL OUTGROWTH OF THE NOTICE, PUBLIC HEARING AND PUBLIC COMMENTS RECEIVED.

**Comment Procedures:** All persons interested in this matter are invited to attend. Comments, data, statements and other information may be submitted prior to, during or within 30 days after the last public hearing or may be presented verbally at the hearings. Verbal statements may be limited at the discretion of the hearing officer. Submittal of written copies of verbal statements is encouraged. The proposed effective date for final Stormwater Management Rules pursuant to this hearing process is July 1, 1993. ALL INTERESTED AND POTENTIALLY AFFECTED PERSONS ARE STRONGLY ENCOURAGED TO READ THIS ENTIRE NOTICE INCLUDING THE PROPOSED RULES AND MAKE THEIR VIEWS KNOWN TO THE EMC. Written comments or requests for additional information should be submitted to: Bradley Bennett, Stormwater Group, Division of Environmental Management, P.O. Box 29535, Raleigh NC 27626-0535, (919) 733-5083.

## CHAPTER 2 - ENVIRONMENTAL MANAGEMENT

### SUBCHAPTER 2H - PROCEDURES FOR PERMITS:APPROVALS

#### SECTION .1000 - STORMWATER MANAGEMENT

##### .1001 STORMWATER MANAGEMENT POLICY

(a) The increase in stormwater runoff associated with land development activities can substantially increase inputs of waste constituents present in stormwater to waters of the state over that which occurs in natural, undeveloped watersheds. The

increased pollutant loading from stormwater runoff may degrade ambient water quality, adversely impact best usage or otherwise violate water quality standards. For these reasons, it is the goal of the Commission to minimize any water quality impacts of development activities to ensure that existing and designated uses are maintained and protected in accordance with the provisions of this Section. In establishing this goal, the Commission recognizes that the U.S. Environmental Protection Agency ~~will be establishing~~ established permit requirements and best management practices for stormwater point sources pursuant to the Federal Water Pollution Control Act as amended.

(b) The rules in this Section to control pollutants associated with stormwater runoff apply to development of land for residential, commercial, industrial, transportation, or institutional use but do not apply to land management activities associated with agriculture or silviculture.

Statutory Authority G.S. 143-214.1; 143-214.7; 143-215.3(a)(1).

##### .1002 DEFINITIONS

The definition of any word or phrase in this Section shall be the same as given in Article 21, Chapter 143 of the General Statutes of North Carolina, as amended. Other words and phrases used in this Section are defined as follows:

- (1) "Development" means any land disturbing activity which ~~adds to or changes~~ increases the amount of ~~impervious or partially impervious cover on a land~~ built-upon area or which otherwise decreases the infiltration of precipitation into the soil ~~thus altering the hydrological characteristics of the area~~.
- (2) "Drainage ~~area~~ Area or watershed Water-shed" means that area contributing runoff to a single point measured in a horizontal plane which is enclosed by a ridge line.
- (3) "Infiltration ~~systems~~ Systems" mean stormwater treatment systems designed to allow runoff to pass or move (infiltrate/exfiltrate) into the soil ~~surface~~.
- (4) "On-site ~~stormwater~~ Stormwater systems Systems" mean the systems necessary to control stormwater within an individual development project.
- (5) "Off-site ~~stormwater~~ Stormwater systems Systems" mean the systems necessary to control stormwater from more than one development, ~~which is~~ These systems are owned and operated as a duly licensed



- utility or by a local government.
- (6) "Built-upon ~~area~~ Area" means that portion of an individual development project that is covered by impervious or partially impervious cover including buildings, pavement, gravel roads, recreation facilities (e.g., tennis courts), etc. ~~but not including decking~~ (Note: Wooden slatted decks and the water areas of a swimming pool are considered pervious).
- (7) "Redevelopment" means any rebuilding activity ~~following fires, hurricanes or other natural disaster or other public restoration projects designated by the Commission which has no net increase in built-upon area or which provides equal or greater stormwater control than the previous development (stormwater controls shall not be allowed where otherwise prohibited).~~
- (8) "Wet ~~detention~~ Detention pond Pond" means a structure that provides for the storage and treatment of runoff and includes a designed and maintained permanent pool of water volume.
- (9) "Coastal Counties" include Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.
- (10) "Sedimentation/~~erosion~~ Erosion ~~control~~ Control ~~plan~~ Plan" means any plan, amended plan or revision to an approved plan submitted to the Division of Land Resources or delegated authority in accordance with G. S. 113A-57 ~~45A NCAC 4B .0005~~.
- (11) "CAMA ~~major~~ Major development Development ~~permits~~ Permits" mean those permits required by the Coastal Resources Commission according to 15A NCAC 7J Sections .0100 and .0200.
- (12) "Vegetative ~~filter~~ Filter" means an area of natural or planted vegetation through which stormwater runoff flows in a diffuse manner so that runoff does not become channelized and which provides for treatment of stormwater runoff through infiltration of runoff and filtering of pollutants. The defined length of the filter shall be provided for in the direction of stormwater flow ~~defines the width of the filter.~~
- (13) "Stormwater ~~collection~~ Collection system

System" means any conduit, pipe, channel, curb or gutter for the primary purpose of transporting (not treating) runoff, ~~but~~ A stormwater collection system does not include grassed swales, swales stabilized with armoring or alternative methods where natural topography prevents the use of grassed swales (subject to case-by-case review), curb break systems, or pipes used to carry drainage underneath built-upon surfaces that are associated with development controlled by the provisions of Rule .1003(a)(2)(1) and through (a)(3)(5) in this Section.

- (14) "Curb Break System" means curb and gutter installed in a development which meets low density criteria [15A NCAC 2H .1003(a)(1) through (a)(5)] with breaks in the curb used to convey stormwater runoff to grassed swales and designed in accordance with Rule .1003(k) of this Section.
- (15) "Vegetative Buffer" means an area of natural or established vegetation directly adjacent to surface waters through which stormwater runoff flows in a diffuse manner to protect surface waters from degradation due to land disturbing activities. The width of the buffer is measured horizontally from the normal pool elevation of impounded structures, from the bank of each side of streams or rivers, and from the mean high water line of tidal waters, perpendicular to the shoreline.
- (16) "Forebay" means a device located at the head of a wet detention pond to serve as a depository for a large portion of sediment. The forebay is typically an excavated settling basin or a section separated by a low weir.
- (17) "Water Dependent Structures" means a structure for which the use requires access or proximity to or siting within surface waters to fulfill its basic purpose, such as boat ramps, docks, and bulkheads. Ancillary facilities such as restaurants, outlets for boat supplies, parking lots and boat storage areas are not water dependent uses.
- (18) "Ten Year Storm" means the surface runoff resulting from a rainfall of an intensity expected to be equalled or exceeded, on the average, once in 10 years, and of a duration which will produce the

maximum peak rate of runoff, for the watershed of interest under average antecedent wetness conditions.

(19) "Certificate of Stormwater Compliance" means a permit issued pursuant to G.S.143-215.1 (a)(11) for all land disturbing activities which are regulated by this Rule.

(20) "Seasonal High Water Table" means the highest level that groundwater, at atmospheric pressure, reaches in the soil in most years. The seasonal high water table is usually detected by the mottling of the soil that results from mineral leaching.

Statutory Authority G.S. 143-214.1; 143-214.7; 143-215.3(a)(1).

### .1003 STORMWATER MANAGEMENT

(a) Applicability. The intent of the Commission is to achieve the water quality protection which low density development near productive coastal waters, waters classified as Outstanding Resource Waters (ORW), and waters classified as High Quality Waters (HQW) would provide. To that end, the ~~director~~ Director, by applying the standards in this Rule will cause development to comply with the antidegradation requirements specified in 15A NCAC 2B .0201 by protecting high quality waters and highly productive aquatic resources from the adverse impacts of uncontrolled high density development or the potential failure of stormwater control measures. Structural Stormwater stormwater control measures as described in Paragraphs (c) through (f) (o) of this Rule are required for any development activities in the coastal counties, any development activities that drain to Outstanding Resource Waters (ORW), or any development activities that are within one mile and drain to High Quality Waters (HQW), and which require a CAMA major development permit or a sedimentation/erosion control plan after January 1, 1988 unless the development meets the following low density criteria:

(1) ~~is one acre or less;~~

(2)(1) drains to and is located within one-half mile of SA waters or unnamed tributaries to SA waters; has a built-upon area of 25 percent or less, or proposes development of single-family residences on lots with one-third of an acre or greater with a built-upon area of 25 percent or less; has no stormwater collection system; and built-upon area

is at least 30 feet from surface waters has a 30 foot wide vegetative buffer;

(3)(2) is located in the Coastal Counties except waters as defined in Subparagraph (a)(1) drains to waters other than SA; has a built-upon area of 30 percent or less, or proposes development of single-family residences on lots with one-third of an acre or greater with a built-upon area of 30 percent or less; has no stormwater collection system; and built-upon area is at least 30 feet from surface waters has a 30 foot wide vegetative buffer;

(3) drains to and is within one mile of High Quality Waters (HQW); has a built-upon area of 12 percent or less, or proposes development of single family residences on lots with one acre or greater; has no stormwater collection system; and has a 30 foot wide vegetative buffer; more stringent stormwater runoff control measures may be required on a case-by-case basis where it is determined that additional runoff control measures are required to protect water quality and maintain existing and anticipated uses of these waters;

(4) drains to freshwater Outstanding Resource Waters (ORW); has a built-upon area of 12 percent or less, or proposes development of single family residences on lots with one acre or greater; has no stormwater collection system; and has a 30 foot wide vegetative buffer; more stringent stormwater runoff control measures may be required on a case-by-case basis where it is determined that additional runoff control measures are required to protect water quality and maintain existing and anticipated uses of these waters;

(4)(5) controls runoff through an off-site stormwater system meeting provisions of this Rule and permitted in accordance with G.S. 143-215.1(d) is issued a certificate of stormwater compliance;

(5)(6) is redevelopment which meets the requirements of this Rule to the maximum extent practicable;

(6)(7) otherwise meets the provisions of this Rule and has boat-ramps water dependent structures, public roads and public bridges which minimize impervious built-upon surfaces, divert stormwater



away from surface waters as much as possible and employ other best management practices to minimize water quality impacts; or

~~(7)(8)~~ is certified by the Director that the site is situated such that water quality standards and uses are not threatened and the developer demonstrates that the development ~~meets the following criteria:~~

~~(A) the plans and specifications indicate stormwater control measures which will be installed in lieu of the requirements of this Rule; or~~

~~(B) the development is located such a distance from surface waters that the Director determines that impacts from pollutants present in stormwater from the site will be effectively mitigated. Where stormwater controls are required to mitigate the impact, the controls will be designed in accordance with Paragraphs (c) through (o) of this Rule and will be issued a certificate of stormwater compliance.~~

Development designed to meet the low density requirements in Subparagraphs (a)~~(2)(1)~~ and through (a)~~(3)(8)~~ of this Paragraph must demonstrate that no areas within the project site are of such high density that stormwater threatens water quality.

(b) Certification. To ensure the protection of surface waters of the State in accordance with G.S. 143-214.7, low density and high density developments shall be certified as follows:

(1) Low Density: Development designed to meet the low density requirements in Subparagraphs (a)(1) through (a)(8) of this Paragraph shall be issued a certificate of stormwater compliance. The certificate of stormwater compliance shall be issued for such development upon approval of low density designation and receipt of recorded deed restrictions and protective covenants used to ensure that subdivisions the development activities maintain the development consistent with the plans and specifications approved by the Division. The deed restrictions and protective covenants will include the state as a beneficiary of the restrictions.

~~(2)(b)~~ High Density: Projects located in the Coastal Counties and projects that drain to and are within one mile of High

Quality Waters (HQW) and projects that drain to Outstanding Resource Waters(ORW) with stormwater control measures designed, operated and maintained in accordance with the provisions of this Rule shall be ~~deemed permitted~~ issued a certificate of stormwater compliance pursuant to G.S. 143-215.1(d) upon receipt of a permit from the Division of Coastal Management or plan approval from the Division of Land Resources (or delegated authority). The certificate of stormwater compliance shall be issued after deed restrictions and protective covenants, including the state as a beneficiary of the restrictions, have been recorded and stormwater control measures and operation and maintenance plans developed in accordance with Paragraphs (c) through (o) of this Rule have been approved by the Division.

In addition, NPDES permits for stormwater point sources may be required according to the provisions of 15A NCAC 2H .0126.

(c) Structural Stormwater Control Options. Stormwater control measures which can be approved pursuant to this Rule and which will not be considered innovative include:

- (1) Stormwater infiltration systems including infiltration basins/ponds, swales, and vegetative filters; and
- (2) Wet detention ponds; and
- (3) Devices approved in accordance with Paragraph (o) of this Rule.

(d) Innovative Systems. Innovative measure measures for controlling stormwater which are not well established through actual experience may be approved on a demonstration basis under the following conditions:

- (1) There is a reasonable expectation that the control measures will be successful;
- (2) The projects are not located near high High quality Quality waters Waters (HQW);
- (3) Monitoring requirements are included to verify the performance of the control measures; and
- (4) Alternatives are available if the control measures fail and will be required when the Director determines that the system has failed.

No more than five projects utilizing the same innovative control measure will be approved until



the technology is proven over a time frame to be determined on a case-by-case basis. These five projects will include projects approved since November 1, 1986 according to the provisions of 15A NCAC 2H .0408.

(e) Design Criteria for Development Draining to Coastal Outstanding Resource Waters. Stormwater control requirements to protect coastal waters classified as Outstanding Resource Waters (ORW) pursuant to 15A NCAC 2B .0216 shall be determined in the process to reclassify the waters as ORW. After the Commission has received a request to classify Class SA waters as ORW and given permission to the Director to schedule a public hearing to consider reclassification and until such time as specific stormwater design criteria become effective, only development which meets the requirements of Paragraph (a)(2)(1), (5)(6) or (6)(7) will be approved within 575 feet of mean high water of these waters. Projects draining to saltwaters classified as ORW that impact the Areas of Environmental Concern (AEC), determined pursuant to G.S. 113A-113, shall delineate the ORW AEC on the project plans and conform to low density requirements as specified in Paragraph (a)(1) of this Rule within the ORW AEC.

(f) Design Criteria for ~~Development~~ High Density Projects Draining Directly to and Located Within One-half Mile of Class SA waters.

- (1) Direct outlet channels or pipes to SA waters are prohibited unless permitted in accordance with 15A NCAC 2H .0126.
- (2) Infiltration control systems must be designed in accordance with Paragraph (i) of this Rule to control the runoff from all ~~impervious~~ surfaces generated by one and one-half inches of rainfall. ~~The size of the system must take into account the runoff from any pervious surfaces draining to the system.~~
- (3) Runoff in excess of the design volume must flow overland through a vegetative filter designed in accordance with Subparagraph (k)(2) of this Rule with a minimum ~~width~~ length of 50 feet measured from mean high water of SA waters.

(g) Design Criteria For ~~Development Not Draining to SA Waters~~ High Density Projects, except as defined in Paragraphs (e) and (f) of this Rule.

- (1) Infiltration Projects located in the Coastal Counties shall have structural stormwater control systems must be

designed to control the runoff from all ~~impervious~~ surfaces generated by one inch of rainfall in accordance with Paragraphs (i) through (o) of this Rule. ~~The size of the system must take into account the runoff from any pervious surfaces draining to the system;~~

- ~~(2) Wet detention ponds must be designed according to methods approved by the Director for 85 percent removal of total suspended solids in the permanent pool and storage of runoff from a one inch rainfall from the site above the permanent pool;~~
- ~~(3) Vegetative filters are required for the overflow and discharge of all stormwater wet detention ponds. These filters shall be at least 30 feet in length;~~
- ~~(4) Additional control measures may be required on a case-by-case basis to protect high quality waters or specific water uses.~~
- (2) Projects outside the Coastal Counties that drain to Outstanding Resource Waters (ORW) or that drain to and are within one mile of High Quality Waters (HQW) shall have wet detention ponds designed in accordance with Paragraph (i) of this Rule to control the runoff from all surfaces generated by one inch of rainfall.

(h) General Engineering Design Criteria For All Projects.

- (1) The size of the system must take into account the runoff at the ultimate built-out potential from all surfaces draining to the system, including any off-site drainage. The storage volume of the system shall be calculated to provide for the most conservative protection using the Rational Method or other approved engineering methods;
- (2) All side slopes being stabilized with vegetative cover shall be no steeper than 3:1 (horizontal to vertical);
- (3) All stormwater management structures shall be located in recorded drainage easements for the purposes of operation and maintenance and shall have recorded access easements to the nearest public right-of-way;
- (4) In accordance with the Antidegradation Policy as defined in 15A NCAC 2B .0201, additional control measures may be required on a case-by-case basis to

maintain and protect, for existing and anticipated uses, waters with quality higher than the standards;

- (5) Vegetative filters designed in accordance with Paragraph (k) of this Rule are required from the overflow of all infiltration systems and discharge of all stormwater wet detention ponds. These filters shall be at least 30 feet in length, except where a minimum length of 50 feet is required in accordance with Subparagraph (f)(3) of this Rule;

- (6) Stormwater controls should be designed in accordance with the Technical Guidance Document developed pursuant to Section .1004 of this Rule.

(h)(i) Infiltration System Requirements. Infiltration systems may be designed to provide infiltration of the entire design rainfall volume required for a site or a series of successive systems may be utilized. Infiltration may also be used to pretreat runoff prior to disposal in a wet detention ponds. The following are general requirements:

- (1) Infiltration systems shall be a minimum of 30 feet from surface waters and 50 feet from Class SA waters;
- (2) Infiltration systems shall be a minimum distance of 100 feet from water supply wells;
- (3) The bottom of infiltration systems shall be a minimum of 2 feet above the seasonal high water table;
- (4) Infiltration systems must be designed such that runoff in excess of the design volume by-passes the system and does not flush pollutants through the system;
- (5) Infiltration systems must be designed to completely draw down the design storage volume to pre-storm levels the seasonal high water table under seasonal high water conditions within five days and a hydrogeologic evaluation may be required to determine whether the system can draw down in five days;
- (6) Soils must have a minimum hydraulic conductivity of 0.52 inches per hour to be suitable for infiltration;
- (7) Infiltration systems must not be sited on or in fill material, unless approved on a case-by-case basis under Paragraph (o) of this Rule;
- (8) Infiltration systems ~~must~~ may be required on a case-by-case basis to have an observation well to provide ready inspection of the system;

- (9) If runoff is directed to infiltration systems during construction of the project, the system must be restored to design specifications after the project is complete and the entire drainage area is stabilized.

(h)(j) Wet Detention Pond Requirements. These practices can be used as a primary treatment device or as a secondary device following an infiltration system. Wet detention ponds shall be designed for a specific pollutant removal according to modeling techniques approved by the Director. Specific requirements for these systems are as follows:

- (1) ~~the~~ The design storage volume shall be above the permanent pool;
- (2) The discharge rate from these systems following ~~the~~ one inch of rainfall ~~design storm~~ shall be such that the runoff ~~does not~~ draw down to the permanent pool level occurs within five days, but not in less than two days and that the pond is drawn down to the permanent pool level within at least five days;
- (3) The design permanent pool level mean depth shall be a minimum of three feet and shall be designed with a surface area sufficient to remove 85 percent of total suspended solids in accordance with methods approved by the Director;
- (4) The inlet structure must be designed to minimize turbulence using baffles or other appropriate design features and shall be located to avoid short circuiting in the pond;
- (5) Pretreatment of the runoff by the use of ~~infiltration swales~~ vegetative filters is encouraged to minimize sedimentation and eutrophication of the detention pond;
- (6) Wet detention ponds will be designed with a forebay to enhance sedimentation at the inlet to the pond;
- (7) The basin side slopes for the storage volume above the permanent pool shall be stabilized with vegetation down to the permanent pool level and shall be designed in accordance with Subparagraph (h)(2).

(h)(k) Vegetative Filter Requirements. Vegetative filters shall be used as a non-structural method for providing additional infiltration, filtering of pollutants and minimizing stormwater impacts. Requirements for these filters are as follows:

- (1) A distribution device such as a swale



shall be used to provide even distribution of runoff ~~over the length across the width~~ of the vegetative filter;

- (2) The slope and ~~width~~ length of the vegetative filter shall be ~~determined designed, constructed and maintained~~ so as to provide a non-erosive velocity of flow-through the filter for ~~a 10-year, 24-hour storm with a 10-year, 1-hour intensity the ten year storm and the portion of the filter representing the minimum filter width specified in Paragraphs (f) and (g) of this Rule~~ shall have a slope of five percent or less, where practicable;
- (3) Vegetation in the filter may be natural vegetation, grasses or artificially planted wetland vegetation appropriate for the site characteristics.

(l) Curb Break Systems. Projects that meet the low density provisions of Paragraph (a)(1) through (4) of this Rule may use curb and gutter with breaks in the curb to convey the stormwater to grassed swales prior to the runoff discharging to vegetative filters or wetlands. Requirements for these curb break systems are as follows:

- (1) The curb breaks shall be located such that the swale can carry the peak flow from the ten year storm and the velocity of the flow shall be non-erosive;
- (2) The longitudinal slope of the swale shall not exceed five percent, where practicable;
- (3) The side slopes of the swale shall be no steeper than 5:1 (horizontal to vertical);
- (4) The minimum length of the swale shall be 100 feet;
- (5) In sensitive areas, check dams, rock or wooden, may be required to increase detention time within the swale.

(~~k~~)(m) Operation and maintenance plans. An operation and maintenance plan or manual shall be provided by the developer for stormwater systems, indicating what operation and maintenance actions are needed, what specific quantitative criteria will be used for determining when those actions are to be taken, and who is responsible for those actions prior to approval of the development by the Division. The plan must clearly indicate the steps that will be taken and who will be responsible for restoring a stormwater system to design specifications if a failure occurs and will include an acknowledgement by the responsible party. Development must be maintained consistent with the requirements in these plans and modifications to

these plans must be approved by the Division.

(~~h~~)(n) System Design. Stormwater systems must be designed by a North Carolina registered professional with qualifications appropriate for the type of system required; to design stormwater management systems; these registered professionals are defined as:

- (1) professional engineers;
- (2) landscape architects, to the extent that the General Statutes, Chapter 89A, allow; and
- (3) registered land surveyors, to the extent that the design represents incidental drainage within a subdivision, as provided in General Statute 89(C)-3(7).

Upon completion of construction, the registered professional appropriate for the type of stormwater system designed must certify that the system was inspected during construction and was constructed in substantial conformity with plans and specifications reviewed by the Division and complies with the requirements of this Rule prior to issuance of the certificate of occupancy.

(o) Alternative Design Criteria. The Director may approve alternative design criteria for stormwater systems. Alternative designs shall be proven engineering technologies in the treatment of stormwater or wastewater. This approval will only be given in cases where the applicant can demonstrate that the Alternative Design Criteria will provide the following:

- (1) Equal or better treatment of the stormwater;
- (2) Equal or better protection of the waters of the state; and
- (3) No increased potential for nuisance conditions.

Statutory Authority G.S. 143-214.1; 143-214.7; 143-215.1(d); 143-215.3(a)(1).

\* \* \* \* \*

*Notice is hereby given in accordance with G.S. 150B-21.2 that the EHNH - Radiation Protection Commission intends to adopt rule cited as 15A NCAC 11 .0118.*

*The proposed effective date of this action is May 3, 1993.*

*The public hearing will be conducted at 1:00 p.m. on January 14, 1993 at the Division of*



Radiation Protection, 3825 Barrett Drive, Room 101, Raleigh, NC 27609.

**Reason for Proposed Action:** Proposed regulations, Section .1600 "Standards for Protection Against Radiation" will not become effective until January 1, 1994. This proposed rule provides for early compliance of Section .1600 by the agency's registrants and licensees.

**Comment Procedures:** Written comments should be submitted to the Division of Radiation Protection, PO Box 27687, Raleigh, NC 27611-7687. Written comments will be accepted until January 31, 1993. Any person requiring information concerning the proposed rule should contact Richard M. Fry, Deputy Director, at 919/571-4141.

## CHAPTER 11 - RADIATION PROTECTION

### SECTION .0100 - GENERAL PROVISIONS

#### .0118 OPTIONAL EARLY COMPLIANCE WITH SECTION .1600

Any licensee or registrant may choose to implement the rules in Section .1600 of this Chapter prior to the January 1, 1994 effective date of that Section, in lieu of the rules in Section .0400 of this Chapter, provided such licensee or registrant shall:

- (1) implement all rules in Section .1600 of this Chapter, except as exempted by the provisions of Rule .1602(c) of this Chapter;
- (2) comply with the rules in Section .1600 of this Chapter in lieu of any rule in Section .0400 of this Chapter that is cited in license or registration conditions, except as otherwise provided in Rule .1602 of this Chapter; and
- (3) provide written notification of implementation to the agency at the address in Rule .0111 of this Section.

Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).

\* \* \* \* \*

**Notice** is hereby given in accordance with G.S. 150B-21.2 that the EHNH - Radiation Protection Commission intends to amend rules cited as 15A NCAC 11 .1403, .1405, .1412, .1414, .1415,

.1418 and adopt rules cited as 15A NCAC 11 .1420 - .1422.

**The proposed effective date of this action is May 3, 1993.**

**The public hearing will be conducted at 1:00 p.m. on January 12, 1993 at the Division of Radiation Protection, 3825 Barrett Drive, Room 101, Raleigh, NC 27609.**

**Reason for Proposed Action:** Clarify definitions, correct typographical errors; adopt rules covering service personnel who offer tanning equipment services; limit age of operators to 18 years old or older with demonstrated literacy skills; and require reports of installation.

**Comment Procedures:** Written comments should be submitted to the Division of Radiation Protection, P.O. Box 27687, Raleigh, NC 27611-7687. Written comments will be accepted until January 31, 1993. Any person requiring information concerning the proposed rules should contact Richard M. Fry, Deputy Director, at (919) 571-4141.

## CHAPTER 11 - RADIATION PROTECTION

### SECTION .1400 - TANNING FACILITIES

#### .1403 DEFINITIONS

As used in this Section, the following definitions shall apply:

- (1) "Agency" means the North Carolina Department of Environment, Health, and Natural Resources.
- (2) "Consumer" means any individual who is provided access to a tanning facility which is required to be registered pursuant to provisions of this Section.
- (3) "Individual" means any human being.
- (4) "Operator" means any individual designated by the registrant to operate or to assist and instruct the consumer in the operation and use of the tanning facility or tanning equipment.
- (5) "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this state, any other state or political

subdivision or agency thereof, and any legal successor, representative, agent or agency of these entities.

- (6) "Registrant" means any person who is registered with the agency as required by provisions of this Section.
- (7) "Registration" means registration with the agency in accordance with provisions of this Section.
- (8) "Tanning components" means any constituent tanning equipment part, to include ballasts, starters, lamps, reflectors, acrylic shields, timers, and airflow cooling systems.
- (9) ~~(8)~~ "Tanning equipment" means ultraviolet or other lamps and equipment containing such lamps intended to induce skin tanning through the irradiation of any part of the living human body with ultraviolet radiation, e.g., beds, booths, facials and wands.
- (10) "Tanning equipment services" means the installation, sales and servicing of tanning equipment and associated tanning components; calibration of equipment used in surveys to measure radiation and timer accuracy; tanning health physics consulting, e.g. radiation output measurements, design of safety programs, training seminars for tanning operators and service personnel.
- (11) ~~(9)~~ "Tanning facility" means any location, place, area, structure or business which provides consumers access to tanning equipment. For the purpose of this definition tanning equipment registered to different persons at the same location and tanning equipment registered to the same person, but at separate locations, shall constitute separate tanning facilities.
- (12) ~~(10)~~ "Ultraviolet radiation" means electromagnetic radiation with wavelengths in air between 200 nanometers and 400 nanometers.

Statutory Authority G.S. 104E-7(a)(7).

#### 1405 APPLICATION FOR REGISTRATION OF TANNING FACILITIES

(a) Each person having a tanning facility on the effective date of this Rule shall apply for registration of such facility no later than 60 days following the effective date of this Rule.

(b) Each person acquiring or establishing a

tanning facility after the effective date of this Rule shall apply to the agency for registration of such facility prior to beginning operation.

(c) The application required in Paragraphs (a) and (b) of this Rule shall be completed on forms provided by the agency and shall contain all the information required by such forms and any accompanying instructions.

(d) The agency shall require at least the following information on the forms provided for applying for registration of tanning facilities:

- (1) name, physical address, mail address and telephone number of the tanning facility;
- (2) name(s), mail address(es) and telephone number(s) of the owner(s) of the tanning facility;
- (3) name(s) of the tanning facility operator(s) with a certification of each operator's training as provided in Rules .1418(g) and (h) of this Section;
- (4) the manufacturer(s), model number(s) and type(s) of ultraviolet lamp(s) or tanning equipment located at the tanning facility;
- (5) name(s) of the tanning equipment supplier(s), installer(s) and service agent(s);
- (6) the geographic areas of the state to be covered, if the application is for a mobile tanning facility;
- (7) copies of any posted warnings or notices which are not required by this Section and which address the safety and proper use of tanning equipment and protective devices;
- (8) copies of the consent forms and statements which the consumer, parent or guardian will be required to sign pursuant to Paragraphs ~~Rules .1418~~ (a) and (d) of Rule .1418 of this Section;
- (9) procedures which the operator(s) will be required to follow for the correct use of tanning equipment to include: instructions to the consumer, use of protective ~~eyeware~~ eyewear, suitability of prospective consumers for tanning equipment use, determination of duration of tanning exposures, periodic testing of tanning equipment and timers, handling of complaints of injury from consumers, and records to be maintained on each consumer; ~~and~~
- (10) certification that the applicant has read and understands the requirements of the

rules in this Section, such certification to be signed and dated by the manager and the owner of the tanning facility;

- (11) each person operating a tanning facility shall not allow any individual under 18 years of age to be the operator of tanning equipment; and
- (12) each person operating a tanning facility or tanning equipment shall meet one of the following educational requirements:
  - (A) high school diploma;
  - (B) high school equivalency; or
  - (C) demonstrate basic literacy skills.

*Statutory Authority G.S. 104E-7(a)(7).*

#### **.1412 DENIAL: REVOCATION: TERMINATION OF REGISTRATION**

(a) The agency may deny, suspend or revoke a certificate of registration applied for or issued pursuant to this Section:

- (1) for any material false statement in the application for registration or in any statement of fact required by provisions of this Section;
- (2) because of conditions revealed by the application or any report, record, inspection or other means which would warrant the agency to refuse to grant a certificate of registration on an original application;
- (3) for operation of the tanning facility in a manner that causes or threatens to cause hazard to the public health or safety;
- (4) for failure to allow authorized representatives of the agency to enter the tanning facility at reasonable times for the purpose of determining compliance with the provisions of this Section, conditions of the certificate of registration or an order of the agency; or
- (5) for violation of or failure to observe any of the terms and conditions of the certificate of registration, the rules in this Section, or an order of the agency.

(b) Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, prior to the institution of proceedings for suspension or revocation of a certificate of registration, the agency shall:

- (1) call to the attention of the registrant, in writing, the facts or conduct which may warrant such actions, and
- (2) provide reasonable opportunity opportunity opportunity for the registrant to demonstrate

or achieve compliance with all lawful requirements.

(c) Any person aggrieved by a decision by the agency to deny a certificate of registration or to suspend or revoke a certificate of registration after issuance may request a hearing under provisions of ~~Chapter~~ G.S. 150B of the North Carolina General Statutes, Article 3.

(d) The agency may terminate a certificate of registration upon receipt of a written request for termination from the registrant.

*Statutory Authority G.S. 104E-7(a)(7).*

#### **.1414 WARNING SIGNS REQUIRED**

(a) The registrant shall conspicuously post the warning sign described in Paragraph (b) of this Rule within one meter of each tanning station and in such a manner that the sign is clearly visible, not obstructed by any barrier, equipment or other object, and can be easily viewed by the consumer before ~~energizing~~ the tanning equipment is energized.

(b) The warning sign in Paragraph (a) of this Rule shall use upper and lower case letters which are at least ten millimeters and five millimeters in height, respectively, and shall have the following wording:

##### **DANGER - ULTRAVIOLET RADIATION**

-Follow instruction.

-Avoid overexposure. As with natural sunlight, overexposure can cause eye and skin injury and allergic reactions. Repeated exposure may cause premature aging of the skin and skin cancer.

-Wear protective eyewear.

##### **FAILURE TO USE PROTECTIVE EYEWEAR MAY RESULT IN SEVERE BURNS OR LONG-TERM INJURY TO THE EYES.**

-Medications or cosmetics may increase your sensitivity to the ultraviolet radiation. Consult a ~~physican~~ physician before using sunlamp or tanning equipment if you are using medication or have a history of skin problems or believe yourself to be especially sensitive to sunlight.

-If you do not tan in the sun, you are unlikely to tan from the use of this product.

*Statutory Authority G.S. 104E-7(a)(7).*

#### **.1415 EQUIPMENT AND CONSTRUCTION**



## REQUIREMENTS

(a) The registrant shall use only tanning equipment manufactured in accordance with the specifications set forth in 21 Code of Federal Regulations (CFR) Part 1040, Section 1040.20, "Sunlamp products and ultraviolet lamps intended for use in sunlamp products." The exact nature of compliance shall be based on the standards in effect at the time of manufacture as shown on the ~~device~~ equipment identification label required by 21 CFR Part 1010, Section 1010.3.

(b) Each assembly of tanning equipment shall be designed for use by only one consumer at a time.

(c) Each assembly of tanning equipment shall be equipped with a timer which complies with the requirements of 21 CFR Part 1040, Section 1040.20(c)(2). The maximum timer interval shall not exceed the manufacturer's maximum recommended exposure time. No timer interval shall have an error exceeding plus or minus ten percent of the maximum timer interval for the product.

~~(d) Tanning equipment electrical circuit shall be approved by the Underwriter Laboratories (UL) or Electrical Testing Laboratories (ETL).~~

~~(d)(e)~~ Tanning equipment shall include physical barriers to protect consumers from injury induced by touching or breaking the lamps.

(e) All tanning equipment labeling required in Paragraph (a) of this Rule shall be legible and accessible to view.

*Statutory Authority G.S. 104E-7(a)(7).*

## .1418 RECORDS: REPORTS AND OPERATING REQUIREMENTS

(a) Prior to initial exposure, the tanning facility operator shall provide each consumer the ~~opportunity~~ opportunity to read a copy of the warning specified in Rule .1414(b) of this Section and request that the consumer sign a statement that the information has been read and understood. For illiterate or visually impaired persons unable to sign their name, the warning statement shall be read by the operator, in the presence of a witness, and the witness and the operator shall sign the statement.

(b) The registrant shall maintain a record of each consumer's total number of tanning visits ~~and~~ including dates and durations of tanning exposures.

(c) The registrant shall submit to the agency a written report of injury for which medical attention was sought or obtained from the use of registered tanning equipment within five working days after occurrence. The report shall include:

(1) the name of the affected individual,

- (2) the name and location of the tanning facility involved,
- (3) the nature of the actual or alleged injury, and
- (4) any other information relevant to the actual or alleged injury, to include the date and duration of exposure and any documentation of medical attention sought or obtained.

(d) The registrant shall not allow individuals under the age of 18 to use tanning equipment unless the individual provides a consent form and a statement, described in Paragraph (a) of this Rule, signed by that individual's parent or legal guardian.

(e) The registrant shall replace defective or burned out lamps, bulbs or filters with a type intended for use in the affected tanning equipment as specified by the manufacturer's product label and having the same spectral distribution (certified equivalent lamp).

(f) The registrant shall replace ultraviolet lamps and bulbs, which are not otherwise defective or damaged, at such frequency or after such duration of use as may be recommended by the manufacturer of such lamps and bulbs.

(g) The registrant shall certify that all tanning equipment operators are adequately trained in at least the following:

- (1) the requirements of this Section,
- (2) procedures for correct operation of the tanning facility and tanning equipment,
- (3) recognition of injury or overexposure to ultraviolet radiation,
- (4) the tanning equipment manufacturer's procedures for operation and maintenance of the tanning equipment,
- (5) the determination of skin type of customers and appropriate determination of duration of exposure to registered tanning equipment, and
- (6) emergency procedures to be followed in case of injury.

(h) Effective January 1, 1993 the registrant shall allow operation of tanning equipment only by persons who have successfully completed formal training courses which cover the topics in Subparagraphs (g)(1) to (6) of this Rule and have been approved by the agency.

(i) The registrant shall maintain a record of operator training required in Paragraphs (g) and (h) of this Rule for inspection by authorized representatives of the agency.

(j) No registrant shall possess, use, operate or transfer tanning equipment or their ultraviolet

radiation sources in such a manner as to cause any individual under 18 years of age to be exposed to radiation emissions from such equipment except in accordance with Paragraph (d) of this Rule.

*Statutory Authority G.S. 104E-7(a)(7).*

#### **.1420 PROPOSED SERVICING**

Each person registered pursuant to Rule .1405 of this Section shall prohibit any person from furnishing tanning equipment services to their tanning equipment or facility until such person provides evidence that they are registered with the agency as a provider of services in accordance with the provisions of Rule .1421 of this Section.

*Statutory Authority G.S. 104-7(a)(7).*

#### **.1421 APPLICATION FOR REGISTRATION OF SERVICING OR SERVICES**

(a) Each person who offers tanning equipment services to any agency registrant, shall apply for registration of such services with the agency within 30 days following the effective date of this Rule or, thereafter, prior to furnishing or offering to furnish any of these services.

(b) The application for registration required in Paragraph (a) of this Rule shall be completed on an approved agency form and shall contain all information required by the agency form and accompanying instructions. This information shall include, but is not limited to:

- (1) the name, address and telephone number of:
  - (A) the individual or company to be registered;
  - (B) the owner(s) of the company;
- (2) description of the services provided;
- (3) the name, training and experience of each person who provides services;
- (4) the date of the application and signature of the individual to be registered or any individual authorized to sign on behalf of the company to be registered; and
- (5) any additional information the agency determines to be necessary for evaluation of the application for registration.

(c) Persons applying for registration under Paragraph (a) of this Rule shall certify that they have read and understand the requirements of the rules in this Section.

*Statutory Authority G.S. 104E-7(a)(7).*

#### **.1422 REPORTS AND INSTALLATION**

Persons registered pursuant to Rule .1421 of this Section, who sell, lease, transfer, lend, dispose of, assemble or install tanning equipment in this state shall, within 30 days after each calendar quarter, notify the agency at the address in Rule .1419 of this Section, of:

- (1) whether any tanning equipment was installed, transferred, or disposed of during the calendar quarter;
- (2) the name and address of persons who receive tanning equipment during the calendar quarter;
- (3) the manufacturer, model and serial number of tanning equipment transferred or otherwise disposed of; and
- (4) the date of transfer of any tanning equipment.

*Statutory Authority G.S. 104E-7(a)(7).*

\*\*\*\*\*

*Notice is hereby given in accordance with G.S. 150B-21.2 that the EHNR - Radiation Protection Commission intends to amend rules cited as 15A NCAC 11 .0104, .0301, .0307 - .0309, .0311 - .0312, .0314 - .0316, .0328, .0331, .0335, .0348 - .0349, .0353, .0502, .0506, .0513 - .0514, .0516, .0520, .0601, .0603 - .0604, .0607 - .0610, .0702, .0804, .0901, .0905 - .0907, .0910, .1002, .1004, .1201, .1206, .1214, .1225, .1230, .1233, .1238, .1241 - .1242, .1301, .1304, .1307, .1314 - .1315, .1320, .1324; repeal rules cited as 15A NCAC 11 .0401 - .0428 and adopt rules cited as 15A NCAC 11 .1601 - .1652.*

*The proposed effective date of this action is January 1, 1994.*

*The public hearings will be conducted at 1:00 p.m. and 7:00 p.m. on January 14, 1993 at the Division of Radiation Protection, 3825 Barrett Drive, Room 101, Raleigh, NC 27609.*

*Reason for Proposed Actions: The current "Standards for Protection Against Radiation" in 15A NCAC 11 .0400 have been in effect and relatively unchanged since their original adoption in 1964. The adoption of Section .1600 is needed to make our regulations compatible to the U.S. Nuclear Regulatory Commission in accordance with our regulatory agreement with that agency.*

*Comment Procedures: Written comments should be submitted to the Division of Radiation Protection, P.O. Box 27687, Raleigh, NC 27611-7687. Written comments will be accepted until January 31, 1993. Any person requiring information concerning the proposed rules should contact Richard M. Fry, Deputy Director, at 919-571-4141.*

## CHAPTER 11 - RADIATION PROTECTION

### SECTION .0100 - GENERAL PROVISIONS

#### **.0104 DEFINITIONS**

As used in these Rules, the following definitions shall apply.

(1) "Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the rad and the gray (Gy).

(2) ~~(1)~~ "Accelerator produced material" means any material made radioactive by use of a particle accelerator.

(3) ~~(2)~~ "Act" means North Carolina Radiation Protection Act as defined in G.S. 104E-1.

(3) ~~"Activity" of a quantity of a radioactive material means the quotient of dN by dt, where dN is the number of spontaneous nuclear transformations which occur in this quantity in the time interval dt.~~

Note: ~~The term nuclear transformation is meant to designate a change of nuclide or an isomeric transition. A special unit of activity is the curie (Ci).~~

(4) Activity is the rate of disintegration (transformation) or decay of radioactive material. The units of activity are the curie (Ci) and the becquerel (Bq).

(5) "Adult" means an individual 18 or more years of age.

(6) ~~(4)~~ "Agency" means the North Carolina Department of Environment, Health, and Natural Resources.

(7) ~~(5)~~ "Agreement state" means any state with which the United States Nuclear Regulatory Commission has entered into an effective agreement under Subsection 274b. of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

(8) ~~(6)~~ "Airborne radioactive material" means any radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

(7) ~~"Airborne radioactivity area" means any room, enclosure, or operating area in which airborne radioactive material exists in concentrations in excess of the amounts specified in Table 1, Column 1 of Rule .0423(a)(1) of this Chapter; or any room, enclosure, or operating area in which airborne~~



radioactive material exists in concentrations which, averaged over the number of hours in any week during which individuals are in the area, exceed 25 percent of the amounts specified in Table 1, Column 1 of Rule .0423(a)(1) of this Chapter.

- (9) "Airborne radioactivity area" means a room, enclosure, or area in which airborne radioactive materials, composed wholly or partly of licensed radioactive material, exist in concentrations:
  - (a) in excess of the derived air concentrations (DACs) specified in Appendix B to 10 CFR §§ 20.1001 - 20.2401, or
  - (b) to such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI) or 12 DAC-hours.
- (10) "ALARA" (acronym for "as low as is reasonably achievable") means making every reasonable effort to maintain exposures to radiation as far below the dose limits in the rules of this Chapter as is practical consistent with the purpose for which the licensed or registered activity is undertaken, taking into account the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of sources of radiation in the public interest.
- (11) "Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of five rems (0.05 Sv) or a committed dose equivalent of 50 rems (0.5 Sv) to any individual organ or tissue. (ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table 1, Columns 1 and 2, of Appendix B to 10 CFR §§ 20.1001 - 20.2401).
- (12) "Annually" means at intervals not to exceed 12 consecutive months.
- (13) (8) "Authorized representative" means an employee of the agency, or an individual outside the agency when the individual is specifically so designated by the agency under Rule .0112 of this Section.
- (14) "Background radiation" means radiation from cosmic sources, naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material) and global fallout as it exists in the environment from the testing of nuclear explosive devices. "Background radiation" does not include sources of radiation regulated by the agency.
- (15) "Becquerel" is the SI unit of radioactivity. One becquerel is equal to one disintegration per second (s<sup>-1</sup>).
- (16) "Bioassay" or "radiobioassay" means the determination of kinds, quantities or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement (in vivo counting) or by analysis and evaluation of materials excreted or removed from the human body.
- (17) (9) "Byproduct material" means any radioactive material, except special nuclear material, yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material.
- (18) (10) "Calendar quarter" means not less than 12 consecutive weeks nor more than 14 consecutive weeks. The first calendar quarter of each year shall begin in January and subsequent calendar quarters shall be so arranged that no day is included in more than one calendar quarter and no day in any one year is omitted from inclusion within a calendar quarter. No licensee or registrant shall change the method observed by him of determining calendar quarters for purposes of these Rules except at the beginning of a calendar year.
- (18) "Class", "lung class" or inhalation class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times as follows:

#### CLASSIFICATION OF INHALED MATERIAL

<u>Class</u>	<u>Clearance half-time</u>
<u>Class D (Day)</u>	<u>less than 10 days</u>
<u>Class W (Weeks)</u>	<u>10 days to 100 days</u>

Class Y (Years)

greater than 100 days

- (19) "Collective dose" is the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.
- (20) ~~(14)~~ "Commission" means the North Carolina Radiation Protection Commission.
- (21) "Committed dose equivalent" ( $H_{T,50}$ ) means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.
- (22) "Committed effective dose equivalent" ( $H_{E,50}$ ) is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues ( $H_{E,50} = \sum w_T H_{T,50}$ ).
- (23) "Controlled area" means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee or registrant for any reason.
- ~~(12)~~ "Curie" means an activity of  $3.7 \times 10^{10}$  disintegrations per second (dps) or  $2.2 \times 10^2$  disintegrations per minute (dpm), except as provided in Rules .0423 and .0424 of this Chapter. Commonly used multiples and sub-multiples of the curie(Ci) are kilocurie (1kCi=1000 Ci), millicurie (1mCi=0.001 Ci= $3.7 \times 10^7$  dps or  $2.22 \times 10^9$  dpm) and microcurie (1 microcurie = 0.000001 Ci =  $3.7 \times 10^4$  dps or  $2.22 \times 10^6$  dpm).
- (24) "Curie" is the special unit of radioactivity. One curie is equal to  $3.7 \times 10^{10}$  disintegrations per second =  $3.7 \times 10^{10}$  becquerels =  $2.22 \times 10^{12}$  disintegrations per minute.
- (25) "Declared pregnant woman" means a woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of conception.
- (26) ~~(13)~~ "Decommission" means to remove (as a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license.
- (27) "Deep-dose equivalent" ( $H_d$ ), which applies to external whole-body exposure, is the dose equivalent at a tissue depth of one cm ( $1000 \text{ mg/cm}^2$ ).
- (28) ~~(14)~~ "Department" means the North Carolina Department of Environment, Health, and Natural Resources.
- (29) ~~(15)~~ "Depleted uranium" means the source material uranium in which the isotope uranium-235 is less than 0.711 weight percent of the total uranium present. Depleted uranium does not include special nuclear material.
- (30) "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate 1.2 cubic meters of air per hour), results in an intake of ALI. DAC values are given in Table 1, Column 3, of Appendix B to 10 CFR §§ 20.1001 - 20.2041).
- (31) "Derived air concentration-hour" (DAC-hour) is the product of the concentration of radioactive material in air (expressed as a fraction or multiple of the derived air concentration for each radionuclide) and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of five rems (0.05 Sv).
- ~~(16)~~ "Dose" means, for the purposes of these Rules, absorbed dose or dose equivalent as appropriate.
- (32) "Dose" (or radiation dose) is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, effective dose equivalent, or total effective dose equivalent, as defined in other items of this Rule.
- ~~(17)~~ "Dose, absorbed" is the energy imparted to matter by ionizing radiation per unit mass of irradiated material at the place of interest. The special unit of absorbed dose is the rad.
- ~~(18)~~ "Dose commitment" means the total radiation dose to a part of the body that will result from retention in the body of radioactive material. For purposes of estimating the dose commitment, it is assumed that from the time of intake the period of exposure to retained material will not exceed 50 years.
- ~~(19)~~ "Dose equivalent" means a quantity that expresses on a common scale for all radiations, a measure of the biological effect on a given organ or organism. It is defined as the absorbed dose multiplied by certain modifying factors. The unit of dose equivalent is the rem.
- (33) "Dose equivalent" ( $H_T$ ) means the product of the absorbed dose in tissue, quality factor, and all other



- necessary modifying factors at the location of interest. The units of dose equivalent are the rem and sievert (Sv).
- (34) "Dose limits" (see "Limits" defined in this Rule).
- (35) "Dosimetry processor" means an individual or an organization that processes and evaluates individual monitoring equipment in order to determine the radiation dose delivered to the equipment.
- (36) "Effective dose equivalent" ( $H_E$ ) is the sum of the products of the dose equivalent to the organ or tissue ( $H_T$ ) and the weighting factors ( $w_T$ ) applicable to each of the body organs or tissues that are irradiated ( $H_E = \sum w_T H_T$ ).
- (37) "Embryo/fetus" means the developing human organism from conception until the time of birth.
- (38) "Entrance or access point" means any location through which an individual could gain access to radiation areas or to a source of radiation. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.
- (39) ~~(20)~~ "Equipment services" means the selling, installation, rebuilding, conversion, repair, inspection, testing, survey or calibration of equipment which can affect compliance with these Rules by a licensee or registrant.
- ~~(21) "Exposure" means the quotient of dQ by dm where dQ is the absolute value of the total charge of the ions of one sign produced in air when all the electrons (both positive and negative) liberated by photons in a volume element of air having mass dm are completely stopped in air. A special unit of exposure is the roentgen (R).~~
- (40) "Exposure" means being exposed to ionizing radiation or to radioactive material.
- (41) ~~(22)~~ "Exposure rate" means the exposure per unit of time, such as R/min and mR/h.
- (42) "External dose" means that portion of the dose equivalent received from radiation sources outside the body.
- (43) "Extremities" means that portion of the dose equivalent received from radiation sources outside the body.
- (44) "Eye dose equivalent" applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm<sup>2</sup>).
- (45) "Generally applicable environmental radiation standards" means standards issued by the U.S. Environmental Protection Agency (EPA) under the authority of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using sources of radiation.
- ~~(23) "Gray", symbolized Gy, means an alternative special unit of dose, such that the energy deposition is 1 joule (J) per kilogram (kg) of irradiated material. Multiples and sub-multiples such as kilogray (kGy) = 1000 Gy, or eGy = 0.01 Gy, etc., may be used. Note that 1 eGy = 1 rad.~~
- (46) "Gray" (Gy) is the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule/kilogram (100 rads).
- ~~(24) "High radiation area" means any area, accessible to individuals, in which there exists radiation(s) at such levels that a major portion of an individual's body could receive in any one hour a dose equivalent in excess of 100 millirems.~~
- (47) "High radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 mSv) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.
- (48) ~~(25)~~ "Hospital" means a facility that provides as its primary functions diagnostic services and intensive medical and nursing care in the treatment of acute stages of illness.
- (49) ~~(26)~~ "Human use" means the internal or external administration of radiation or radioactive materials to human beings.
- (50) ~~(27)~~ "Individual" means any human being.
- (51) "Individual monitoring" means:
- (a) the assessment of dose equivalent by the use of devices designed to be worn by an individual;
  - (b) the assessment of committed effective dose equivalent by bioassay (see Bioassay) or by determination of the time-weighted air concentrations to which an individual has been exposed, i.e., DAC-hours; or
  - (c) the assessment of dose equivalent by the use of survey data.
- (52) "Individual monitoring devices" or "individual monitoring equipment" means devices designed to be



worn by a single individual for the assessment of dose equivalent such as film badges, thermoluminescent dosimeters (TLDs), pocket ionization chambers, and personal ("lapel") air sampling devices.

- (53) "Inhalation class" (see "Class" defined in this Rule).
- (54) ~~(28)~~ "Inspection" means an official examination or observation to determine compliance with rules, regulations, orders, requirements and conditions of the agency or the Commission.
- (55) "Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.
- (56) ~~(29)~~ "License", except where otherwise specified, means a license issued pursuant to Section .0300 of this Chapter.
- (57) ~~(30)~~ "Licensee" means any person who is licensed by the agency pursuant to Section .0300 of this Chapter.
- (58) ~~(31)~~ "Licensing state" means any state with regulations equivalent to the Conference of Radiation Control Program Directors, Inc. Suggested State Regulations for Control of Radiation relating to, and an effective program for, the regulatory control of naturally occurring and accelerator produced radioactive material (NARM) and so designated as such by the Conference of Radiation Control Program Directors, Inc. Unless the context clearly indicates otherwise, use of the term Agreement State in this Chapter shall be deemed to include licensing state with respect to NARM.
- (59) "Limits" or "dose limits" means the permissible upper bounds of radiation doses.
- (60) "Lost or missing licensed radioactive material" means licensed radioactive material whose location is unknown. It includes material that has been shipped but has not reached its destination and whose location cannot be readily traced in the transportation system.
- (61) "Lung class" (see "Class" as defined in this Rule).
- (62) "Member of the public" means an individual in a controlled or unrestricted area; however, an individual is not a member of the public during any period in which the individual receives an occupational dose.
- (63) "Minor" means an individual less than 18 years of age.
- (64) ~~(32)~~ "Misadministration" means the administration of:
  - (a) a radiopharmaceutical or source of radiation other than the one intended;
  - (b) a ~~radiopharmaceutical~~ radiopharmaceutical or radiation to the wrong patient;
  - (c) a radiopharmaceutical or radiation by a route of administration other than that intended by the prescribing physician;
  - (d) a diagnostic dosage of a radiopharmaceutical or source of radiation differing from the prescribed dosage by more than 50 percent;
  - (e) a therapy dosage of a radiopharmaceutical differing from the prescribed dosage by more than ten percent; or
  - (f) a therapy radiation dose from a source of radiation such that errors in the source calibration, time of exposure, or treatment geometry result in a calculated total treatment dose differing from the final prescribed total treatment dose by more than ten percent.
- (65) ~~(33)~~ "Mobile nuclear medicine service" means the transportation and medical use of radioactive material.
- (66) "Monitoring", "radiation monitoring" or "radiation protection monitoring" means the measurement of radiation levels, concentrations, surface area concentrations or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses.
- (67) ~~(34)~~ "Natural radioactivity" means radioactivity of naturally occurring nuclides.
- (68) "Nonstochastic effect" means health effects, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect (also called a deterministic effect).
- (69) "NRC" means the United States Nuclear Regulatory Commission or its duly authorized representatives.
- ~~(35) "Occupational dose" means the dose received in a restricted area or in the course of employment in which an individual's duties involve exposure to radiation; provided that occupational dose shall not be deemed to include any dose received by the individual when undergoing medical diagnosis or medical therapy.~~
- (70) "Occupational dose" means the dose received by an individual in a restricted area or in the course

- of employment in which the individual's assigned duties involve exposure to radiation or licensed radioactive material, whether in the possession of the licensee or registrant or other person. Occupational dose does not include dose received from background radiation, as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the general public.
- (71) ~~(36)~~ "Particle accelerator" means any machine capable of accelerating electrons, protons, deuterons, or other charged particles.
- (72) ~~(37)~~ "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this state, any other state or political subdivision or agency thereof, and any legal successor, representative, agent or agency of these entities.
- (73) ~~(38)~~ "Personnel monitoring equipment" means devices, such as film badges, pocket dosimeters, and thermoluminescent dosimeters, designed to be worn or carried by an individual for the purpose of estimating the dose received by the individual.
- (74) ~~(39)~~ "Pharmacist" means an individual licensed by this state to compound and dispense drugs, prescriptions and poisons.
- (75) ~~(40)~~ "Physician" means an individual currently licensed to practice medicine in this state.
- (76) "Planned special exposure" means an infrequent exposure to radiation, separate from and in addition to the annual dose limits.
- (77) "Public dose" means the dose received by a member of the public from exposure to radiation and to radioactive material released by a licensee or registrant, or to another source of radiation either within a licensee's or registrant's controlled area or in unrestricted areas. It does not include occupational dose or doses received from background radiation, as a patient from medical practices, or from voluntary participation in medical research programs.
- (78) "Quality factor" (Q) means the modifying factor that is used to derive dose equivalent from absorbed dose. Quality factors are provided in the definition of rem in this Rule.
- (79) "Quarter" means a period of time equal to one-fourth of the year observed by the licensee or registrant (approximately 13 consecutive weeks), providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.
- ~~(41) "Rad" means a special unit of measure for absorbed dose. One rad corresponds with the absorption of 100 ergs of energy per gram of irradiated material at the point of interest. See also "Gray" as defined in this Rule.~~
- (80) "Rad" is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/gram or 0.01 joule/kilogram (0.01 gray).
- ~~(42) "Radiation" means ionizing radiation and includes: gamma rays, x-rays, alpha and beta particles, high-speed electrons, neutrons, high-speed protons and other nuclear particles.~~
- (81) "Radiation" (ionizing radiation), except as otherwise defined in Section .1400 of this Chapter, means alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions.
- ~~(43) "Radiation area" means any area, accessible to individuals, in which there exists radiation at such levels that, a major portion of the body could receive in any one hour a dose in excess of five millirems, or in any five consecutive days a dose in excess of 100 millirems.~~
- (82) "Radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem (0.05 mSv) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.
- (83) "Radiation dose" means dose.
- (84) ~~(44)~~ "Radiation machine" means any device capable of producing radiation except devices which produce radiation only from radioactive material.
- (85) ~~(45)~~ "Radiation safety officer" means one who has the knowledge and responsibility to apply appropriate radiation protection regulations.
- (86) ~~(46)~~ "Radioactive material" means any material, solid, liquid, or gas, which emits radiation spontaneously.
- (87) ~~(47)~~ "Radioactive waste disposal facility" means any low-level radioactive waste disposal facility, as defined in G.S. 104E-5(9c), established for the purpose of receiving low-level radioactive waste,

- as defined in Rule .1202 of this Chapter, generated by another licensee for the purpose of disposal.
- (88) ~~(48)~~ "Radioactive waste processing facility" means any low-level radioactive waste facility, as defined in G.S. 104E-5(9b), established for the purpose of receiving waste, as defined in Subparagraph (73) of this Rule, generated by another licensee to be stored, compacted, incinerated or treated.
- (89) ~~(49)~~ "Radioactivity" means the disintegration of unstable atomic nuclei by emission of radiation.
- (90) "Radiobioassay" means bioassay.
- (91) "Reference man" means a hypothetical aggregation of human physical and physiological characteristics arrived at by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base.
- (92) ~~(50)~~ "Registrant" means any person who is registered with the agency as required by provisions of these Rules or the Act.
- (93) ~~(51)~~ "Registration" means registration with the agency in accordance with these Rules.
- (94) ~~(52)~~ "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189.
- (53) ~~"Rem" means a measure of the dose equivalent delivered by any radiation to body tissue, expressed in terms of its estimated biological effect relative to the effect of the dose resulting from irradiation of the tissue by one roentgen (1R) of x rays. One millirem (mrem) equals 0.001 rem. For the purpose of these Rules any of the following is considered to be equivalent to one rem:~~
- ~~(a) The dose received when the exposure is one roentgen (1R) of x- or gamma radiation;~~
  - ~~(b) An absorbed dose of one rad due to x-, gamma-, or beta radiation;~~
  - ~~(c) A dose of 0.1 rad due to neutrons or high energy protons;~~
  - ~~(d) A dose of 0.05 rad due to particles heavier than protons and with sufficient energy to reach the lens of the eye;~~
  - ~~(e) If it is more convenient to measure the neutron flux, or equivalent, than to determine the neutron dose in rads, as provided in Subparagraph (53)(c) of this Rule, one rem of neutron radiation may, for purposes of these Rules, be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body; or, if there exists sufficient information to estimate with reasonable accuracy the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to one rem may be estimated from the following table:~~



**Neutron Flux-Dose Equivalents**

neutron energy (MeV)	number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm <sup>2</sup> )	average flux to deliver deliver 100 millirem in 40 hrs. (neutrons/cm <sup>2</sup> -per sec.)
Thermal	970 x 10 <sup>6</sup>	670
0.0001	720 x 10 <sup>6</sup>	500
0.005	820 x 10 <sup>6</sup>	570
0.02	400 x 10 <sup>6</sup>	280
0.1	120 x 10 <sup>6</sup>	80
0.5	43 x 10 <sup>6</sup>	30
1.0	26 x 10 <sup>6</sup>	18
2.5	29 x 10 <sup>6</sup>	20
5.0	26 x 10 <sup>6</sup>	18
7.5	24 x 10 <sup>6</sup>	17
10.0	24 x 10 <sup>6</sup>	17
10 to 30	14 x 10 <sup>6</sup>	10

- (95) "Rem" is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rems is equal to the absorbed dose in rads multiplied by the quality factor (1 rem = 0.01 sievert). As used in this Chapter, the quality factors for converting absorbed dose to dose equivalent are as follows:

**QUALITY FACTORS AND ABSORBED DOSE EQUIVALENCIES**

<u>TYPE OF RADIATION</u>	<u>Quality Factor</u>	<u>Absorbed Dose Equal to a Unit Dose Equivalent<sup>a</sup></u>
	<u>Q</u>	
<u>X-, gamma, or beta radiation</u>	<u>1</u>	<u>1</u>
<u>Alpha particles, multiple-charged particles, fission fragments and heavy particles of unknown charge</u>	<u>20</u>	<u>0.05</u>
<u>Neutrons of unknown energy</u>	<u>10</u>	<u>0.1</u>
<u>High-energy protons</u>	<u>10</u>	<u>0.1</u>

<sup>a</sup>Absorbed dose in rad equal to one rem or the absorbed dose in gray equal to one sievert.

If it is more convenient to measure the neutron fluence rate than to determine the neutron dose equivalent rate in rems per hour or sieverts per hour, one rem (0.01 Sv) of neutron radiation of unknown energies may, for purposes of the rules of this Chapter, be assumed to result from a total fluence of 25 million neutrons per square centimeter incident upon the body. If sufficient information exists to estimate the approximate energy distribution of the neutrons, the licensee or registrant may use the fluence rate per unit dose equivalent or the appropriate Q value from the following table to convert a measured tissue dose in rads to dose equivalent in rems:

**MEAN QUALITY FACTORS, Q, AND FLUENCE PER UNIT DOSE  
EQUIVALENT FOR MONOENERGETIC NEUTRONS**

**PROPOSED RULES**

	<u>Neutron Energy (MeV)</u>	<u>Quality Factor<sup>a</sup> (Q)</u>	<u>Fluence per Unit Dose Equivalent<sup>b</sup> (neutrons cm<sup>-2</sup> rem<sup>-1</sup>)</u>
(thermal)	$2.5 \times 10^{-8}$	<u>2</u>	$980 \times 10^6$
	$1 \times 10^{-7}$	<u>2</u>	$980 \times 10^6$
	$1 \times 10^{-6}$	<u>2</u>	$810 \times 10^6$
	$1 \times 10^{-5}$	<u>2</u>	$810 \times 10^6$
	$1 \times 10^{-4}$	<u>2</u>	$840 \times 10^6$
	$1 \times 10^{-3}$	<u>2</u>	$980 \times 10^6$
	$1 \times 10^{-2}$	<u>2.5</u>	$1010 \times 10^6$
	$1 \times 10^{-1}$	<u>7.5</u>	$170 \times 10^6$
	$5 \times 10^{-1}$	<u>11</u>	$39 \times 10^6$
	<u>1</u>	<u>11</u>	$27 \times 10^6$
	<u>2.5</u>	<u>9</u>	$29 \times 10^6$
	<u>5</u>	<u>8</u>	$23 \times 10^6$
	<u>7</u>	<u>7</u>	$24 \times 10^6$
	<u>10</u>	<u>6.5</u>	$24 \times 10^6$
	<u>14</u>	<u>7.5</u>	$17 \times 10^6$
	<u>20</u>	<u>8</u>	$16 \times 10^6$
	<u>40</u>	<u>7</u>	$14 \times 10^6$
	<u>60</u>	<u>5.5</u>	$16 \times 10^6$
	$1 \times 10^2$	<u>4</u>	$20 \times 10^6$
	$2 \times 10^2$	<u>3.5</u>	$19 \times 10^6$
	$3 \times 10^2$	<u>3.5</u>	$16 \times 10^6$
	$4 \times 10^2$	<u>3.5</u>	$14 \times 10^6$

<sup>a</sup> Value of quality factor (Q) at the point where the dose equivalent is maximum in a 30-cm diameter cylinder tissue-equivalent phantom.

<sup>b</sup> Monoenergetic neutrons incident normally on a 30-cm diameter cylinder tissue-equivalent phantom.

(96) ~~(54)~~ "Research and development" means:

- (a) theoretical analysis, exploration, or experimentation; or
- (b) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

Research and development does not include the internal or external administration of radiation or radioactive material to human beings.

(97) "Respiratory protective device" means an apparatus, such as a respirator, used to reduce the individual's intake of airborne radioactive materials.

(98) ~~(55)~~ "Restricted area" means an area, access to which is controlled by the licensee or registrant for purposes of ~~protection of~~ protecting individuals against undue risks from exposure to radiation and radioactive materials. Restricted area does ~~shall~~ not include ~~any~~ areas used for as residential quarters, ~~although a but~~ separate room or rooms in a residential building may be set apart as a restricted area.

(99) ~~(56)~~ "Roentgen" (R) means the special unit of exposure. One roentgen equals  $2.58 \times 10^{-4}$  coulombs/kilogram of air.

(100) "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee.

(101) ~~(57)~~ "Sealed ~~Source~~ source" means radioactive material that is permanently bonded, fixed or encapsulated so as to prevent release and dispersal of the radioactive material under the most severe conditions which are likely to be encountered in normal use and handling.

(102) "Shallow-dose equivalent" (H<sub>s</sub>), which applies to the external exposure of the skin or an extremity, is taken as the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm<sup>2</sup>) averaged over an

- area of one square centimeter.
- (103) "SI unit" means a unit of measure from the International System of Units as established by the General Conference of Weights and Measures.
- (104) "Sievert" is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sieverts is equal to the absorbed dose in grays multiplied by the quality factor (1 Sv = 100 rems).
- (105) "Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee or registrant.
- (106) ~~(58)~~ "Source material" means:
- (a) uranium or thorium or any combination of uranium and thorium in any physical or chemical form; or
  - (b) ores which contain, by weight, 0.05 percent or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.
- (107) ~~(59)~~ "Source of radiation" means any radioactive material, or any device or equipment emitting or capable of producing radiation.
- (108) ~~(60)~~ "Special form radioactive material" means radioactive material which satisfies the following conditions:
- (a) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;
  - (b) The piece or capsule has at least one dimension not less than five millimeters (0.197 inch); and
  - (c) It satisfies the test requirements specified by the U.S. Nuclear Regulatory Commission and the tests prescribed in Rule .0114 of this Section. A special form encapsulation designed in accordance with the U.S. Nuclear Regulatory Commission requirements in effect on June 30, 1984, and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation either designed or constructed after June 30, 1985, must meet requirements of this definition applicable at the time of its design or construction.
- (109) "Special nuclear material" means:
- (a) plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the United States Nuclear Regulatory Commission, pursuant to the provisions of Section 51 of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), determines to be special nuclear material, but does not include source material; or
  - (b) any material artificially enriched by any of the foregoing but does not include source material.
- (110) ~~(61)~~ "Special nuclear material in quantities not sufficient to form a critical mass" means uranium enriched in the isotope uranium-235 in quantities not exceeding 350 grams of contained uranium-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of uranium-235, uranium enriched in uranium-235 and plutonium in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified in this Rule for the same kind of special nuclear material. The sum of these ratios for all the kinds of special nuclear material in combination shall not exceed unity. For example, the following quantities in combination would not exceed the limitations and are within the formula, as follows:
- $$\frac{175 \text{ (gram contained U-235)}}{350} + \frac{50 \text{ (grams U-233)}}{200} + \frac{50 \text{ (grams Pu)}}{200} \text{ is } < \text{ or } = 1$$
- (111) ~~(62)~~ "State" means the State of North Carolina.
- (112) "Stochastic effects" means health effects that occur randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects.
- ~~(63)~~ "Survey" means an evaluation of the production, use, release, disposal, or presence of sources of radiation under a specific set of conditions to determine actual or potential radiation hazards.
- (113) "Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of sources of radiation. When appropriate, such an evaluation includes a physical survey of the location of sources of radiation and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present.



- (114) ~~(64) "These Regulations" and "these These Rules" means Chapter 11 of this Title.~~
- (115) "Total effective dose equivalent" (TEDE) means the sum of the deep-dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).
- (116) ~~(74) "Toxic or Hazardous hazardous Constituent constituent of the Waste waste" means the nonradioactive content of waste which, notwithstanding the radioactive content, would be classified as "hazardous waste" as defined in 15A NCAC 13A .0002(a).~~
- (117) ~~(65) "Type A quantity" means a quantity of radioactive material, the aggregate radioactivity of which does not exceed A<sub>1</sub> for special form radioactive material or A<sub>2</sub> for normal form radioactive material, where A<sub>1</sub> and A<sub>2</sub> are given in Rule .0113 of this Section or may be determined by procedures described in Rule .0113 of this Section. All quantities of radioactive material greater than a Type A quantity are Type B.~~
- ~~(66) "U.S. Department of Energy" means the Department of Energy established by Public Law 95-91, August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101 et seq., to the extent that the department exercises functions formerly vested in the U.S. Atomic Energy Commission, its chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the administrator thereof pursuant to sections 104(b), (c) and (d) of the Energy Reorganization Act of 1974 (Public Law 93-438, October 11, 1974, 88 Stat. 1233 at 1237, effective January 19, 1975) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Public Law 95-91, August 4, 1977, 91 Stat. 565 at 577-578, 42 U.S.C. 7151, effective October 1, 1977.)~~
- (118) ~~(67) "Unrefined and unprocessed ore" means ore in its natural form prior to any processing, such as grinding, roasting, beneficiating, or refining.~~
- (119) ~~(68) "Unrestricted area" means any area access to which is not controlled by an area, access to which is neither limited nor controlled by the a licensee or registrant for purposes of protection of individuals from exposure to radiation and radioactive materials, and any area used for residential quarters.~~
- (120) "Very high radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in one hour at one meter from a radiation source or from any surface that the radiation penetrates. At very high doses received at high dose rates, units of absorbed dose (e.g., rads and grays) are appropriate, rather than units of dose equivalent (e.g., rems and sieverts).
- (121) ~~(73) "Waste" means low-level radioactive waste as defined in G.S. 104E-5(9a) and includes licensed naturally occurring and accelerator produced radioactive material which is not subject to regulation by the U.S. Nuclear Regulatory Commission under the Atomic Energy Act of 1954, as amended, except as defined differently in Rule .1202 of this Chapter.~~
- (122) ~~(70) "Waste, Class A Waste" is defined in Rule .0425(a)(1) .1650 of this Chapter.~~
- (123) ~~(71) "Waste, Class B Waste" is defined in Rule .0425(a)(2) .1650 of this Chapter.~~
- (124) ~~(72) "Waste, Class C Waste" is defined in Rule .0425(a)(3) .1650 of this Chapter.~~
- (125) "Week" means seven consecutive days starting on Sunday.
- (126) "Weighting factor", w<sub>T</sub>, for an organ or tissue (T) is the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w<sub>T</sub> are:

ORGAN DOSE WEIGHTING FACTORS

<u>Organ or Tissue</u>	<u>w<sub>T</sub></u>
<u>Gonads</u>	<u>0.25</u>
<u>Breast</u>	<u>0.15</u>
<u>Red bone marrow</u>	<u>0.12</u>
<u>Lung</u>	<u>0.12</u>
<u>Thyroid</u>	<u>0.03</u>
<u>Bone surfaces</u>	<u>0.03</u>
<u>Remainder</u>	<u>0.30<sup>a</sup></u>

Whole body

1.00<sup>b</sup>

<sup>a</sup> 0.30 results from 0.06 for each of 5 "remainder" organs (excluding the skin and the lens of the eye) that receive the highest doses.

<sup>b</sup> For the purpose of weighting the external whole body dose (for adding it to the internal dose), a single weighting factor,  $w_T = 1.0$ , has been specified. The use of other weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

- (127) "Whole body" means, for purposes of external exposure, head, trunk (including male gonads), arms above the elbow, or legs above the knee.
- (128) ~~(69)~~ "Worker" means an individual engaged in work under a license or registration issued by the agency and controlled by a licensee or registrant, but does not include the licensee or registrant.
- (129) "Working level" (WL) is any combination of short-lived radon daughters (for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon-220: polonium-216, lead-212, bismuth-212, and polonium-212) in one liter of air that will result in the ultimate emission of  $1.3 \times 10^5$  MeV of potential alpha particle energy.
- (130) "Working level month" (WLM) means an exposure to one working level for 170 hours (2,000 working hours per year/12 months per year = approximately 170 hours per month).
- (131) "Year" means the period of time beginning in January used to determine compliance with the provisions of Section .1600 of this Chapter. The licensee or registrant may change the starting date of the year used to determine compliance by the licensee or registrant provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

Statutory Authority G.S. 104E-7(a)(2).

## SECTION .0300 - LICENSING OF RADIOACTIVE MATERIAL

### .0301 PURPOSE AND SCOPE

(a) This Section provides for the licensing of radioactive material. No person shall receive, possess, use, transfer, own or acquire radioactive material except as authorized in a specific or general license issued pursuant to, or as otherwise provided in, this Section.

(b) In addition to the requirements of this Section,

- (1) All licensees are subject to the requirements of Sections ~~.0400 and~~ .1000 and .1600 of this Chapter, except as otherwise provided in the ~~Rules~~ rules of this Section;
- (2) Licensees engaged in industrial radiographic operations are subject to the requirements of Section .0500 of this Chapter;
- (3) Licensees using sealed sources in the healing arts are subject to the requirements of Section .0700 of this Chapter;
- (4) Licensees engaged in the operation of radioactive waste disposal facilities are subject to the requirements of Section .1200 of this Chapter; and

(5) Licensees engaged in well-logging operations are subject to the requirements of Section .1300 of this Chapter.

(c) In addition to the requirements of this Section, all licensees are subject to the annual fee provisions contained in Section .1100 of this Chapter.

(d) The rules in this Section do not apply to persons licensed pursuant to the rules in Section .1200 of this Chapter except as specifically provided otherwise in Section .1200.

Statutory Authority G.S. 104-7; 104E-9(8); 104E-10(b); 104E-19.

### .0307 GENERAL LICENSES: SOURCE MATERIAL

(a) A general license shall be issued authorizing use and transfer of not more than ~~fifteen (15)~~ 15 pounds of source material at any one time by persons in the following categories:

- (1) pharmacists using the source material solely for the compounding of medicinals;
- (2) physicians using the source material for medicinal purposes;
- (3) persons receiving possession of source material from pharmacists and physicians in the form of medicinals or

drugs;

- (4) commercial and industrial firms, and research, educational, and medical institutions, and state and local governmental agencies for research, development, educational, commercial or operational purposes.

(b) Pursuant to this general license no person shall receive more than a total of 150 pounds of source material in any one calendar year.

(c) Persons who receive, possess, use, or transfer source material pursuant to the general license issued in Paragraph (a) of this Rule are exempt from the provisions of Sections ~~.0400 and .1000~~ and .1600 of this Chapter to the extent that the receipt, possession, use, or transfer is within the terms of the general license, provided that this exemption shall not be deemed to apply to any person who is also in possession of source material under a specific license issued pursuant to the rules in this Section.

(d) A general license shall be issued authorizing the receipt of title to source material without regard to quantity. This general license does not authorize any person to receive, possess, use, or transfer source material.

(e) A general license shall be issued to receive, acquire, possess, use, or transfer in accordance with the provisions of Subparagraphs (e)(2), (3), (4) and (5) of this Rule, depleted uranium contained in industrial products or devices for the purpose of providing a concentrated mass in a small volume of the product or device.

- (1) The general license in Paragraph (e) of this Rule applies only to industrial products or devices which have been manufactured either in accordance with a specific license issued to the manufacturer of the products or devices pursuant to Rule .0336 of this Section or in accordance with a specific license issued to the manufacturer by the U.S. Nuclear Regulatory Commission or an agreement state which authorizes manufacture of the products or devices for distribution to persons generally licensed by the U.S. Nuclear Regulatory Commission or an agreement state.

- (2) Persons who receive, acquire, possess, or use depleted uranium pursuant to the general license established by Paragraph (e) of this Rule shall file with the agency appropriate form(s) provided by the agency. The form shall be submitted within 30 days after the first receipt or

acquisition of such depleted uranium. The registrant shall furnish on appropriate form(s) provided by the agency the following information and such other information as may be required by that form:

- (A) name and address of the registrant;
  - (B) a statement that the registrant has developed and will maintain procedures designed to establish physical control over the depleted uranium described in Paragraph (e) of this Rule and designed to prevent transfer of such depleted uranium in any form, including metal scrap, to persons not authorized to receive the depleted uranium; and
  - (C) name, title, address, and telephone number of the individual duly authorized to act for and on behalf of the registrant in supervising the procedures identified in Subparagraph Part (e)(2)(B) of this Rule.
- (3) The registrant possessing or using depleted uranium under the general license established by Paragraph (e) of this Rule shall report in writing to the agency any changes in information furnished by him on the appropriate form(s) provided by the agency. The report shall be submitted within 30 days after the effective date of such change.
- (4) A person who receives, acquires, possesses, or uses depleted uranium pursuant to the general license established by Paragraph (e) of this Rule shall:
- (A) not introduce such depleted uranium, in any form, into a chemical, physical or metallurgical treatment or process, except a treatment or process for repair or restoration of any plating or other covering of the depleted uranium;
  - (B) not abandon such depleted uranium;
  - (C) transfer or dispose of such depleted uranium only by transfer in accordance with the provisions of Rule .0343 of this Section;
- (i) In the case where the transferee receives the depleted uranium pursuant to the general license established by Paragraph (e) of this Rule, the transferor shall furnish the transferee a copy of this Rule and a copy of the appro-



- appropriate agency form described in Subparagraph (e)(2) of this Rule;
- (ii) In the case where the transferee receives the depleted uranium pursuant to a general license contained in the U.S. Nuclear Regulatory Commission or agreement state regulations equivalent to Paragraph (e) of this Rule, the transferor shall furnish the transferee a copy of this Rule and a copy of the appropriate agency form accompanied by a note explaining that use of the product or device is regulated by the U.S. Nuclear Regulatory Commission or agreement state under requirements substantially the same as those in this Rule;
- (D) within 30 days of any transfer, report in writing to the agency the name and address of the person receiving the depleted uranium pursuant to such transfer;
- (E) not export such depleted uranium except in accordance with a license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR Part 110.
- (5) Any person receiving, acquiring, possessing, using, or transferring depleted uranium pursuant to the general license established by Paragraph (e) of this Rule is exempt from the requirements of Sections ~~.0400~~ and ~~.1000~~ and ~~.1600~~ of this Chapter with respect to the depleted uranium covered by that general license.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

#### **.0308 GENERAL LICENSES: OTHER THAN SOURCE MATERIAL**

(a) A general license shall be issued to transfer, receive, acquire, own, possess, and use radioactive material incorporated in the following devices or equipment which have been manufactured, tested and labeled by the manufacturer in accordance with a specific license issued to the manufacturer by the U.S. Nuclear Regulatory Commission for use pursuant to Section 31.3 of 10 CFR Part 31:

- (1) static elimination devices designed for use as static eliminators which contain as a sealed source or sources, radioactive material consisting of a total of not

more than 500 microcuries of polonium-210 per device;

- (2) ion generating tube designed for ionization of air and containing, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of polonium-210 per device or a total of not more than 50 millicuries of hydrogen-3 (tritium) per device.

(b) The general license in Paragraph (a) of this Rule is subject to the provisions of Rules .0107 to .0111, .0303(a), .0337, .0342, .0343 and .0345 of this Chapter and to labeling requirements in Section ~~.0400~~ .1600 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

#### **.0309 GENERAL LICENSES: MEASURING GAUGING: CONTROLLING DEVICES**

(a) A general license shall be issued to commercial and industrial firms and research, educational and medical institutions, individuals in the conduct of their business, and federal, state, or local government agencies to acquire, receive, possess, use, or transfer in accordance with Paragraphs (b), (c), and (d) of this Rule, radioactive material contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.

(b) The general license in Paragraph (a) of this Rule applies only to radioactive material contained in devices which have been manufactured and labeled in accordance with the specifications contained in a specific license issued pursuant to Rule .0328 of this Section or in accordance with the specifications contained in a specific license issued by the U.S. Nuclear Regulatory Commission or an agreement state which authorizes distribution of the devices to persons generally licensed pursuant to equivalent regulations.

(c) Any person who acquires, receives, possesses, uses or transfers radioactive material in a device pursuant to the general license issued under Paragraph (a) of this Rule:

- (1) shall assure that all labels, affixed to the device at the time of receipt and bearing a statement that removal of the label is prohibited, are maintained thereon and shall comply with all instructions and precautions provided by the labels:

- (2) shall assure that the device is tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at such other intervals as are specified in the label, except as follows:
  - (A) Devices containing only krypton need not be tested for leakage of radioactive material;
  - (B) Devices containing only tritium or not more than 100 microcuries of other beta, gamma, or beta and gamma emitting material or ten microcuries of alpha emitting material and devices held in storage in the original shipping container prior to initial installation need not be tested for any purpose;
- (3) shall assure that the tests required by Subparagraph (c)(2) of this Rule and other testing, installation, servicing and removal from installation involving the radioactive materials, its shielding or containment are performed:
  - (A) in accordance with the instructions provided on labels affixed to the device, except that tests for leakage or contamination may be performed by the general licensee using leak test kits provided and analyzed by a specific licensee who is authorized to provide leak test kit services; or
  - (B) by a person holding a specific license or registration which authorizes the providing of services required by this Rule and which is issued pursuant to Rules .0205 and .0306 of this Chapter or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state.
- (4) shall maintain records, showing compliance with the requirements in Subparagraphs (c)(2) and (3) of this Rule, to include:
  - (A) the name of the person(s) performing the test(s) and the date(s) of the test(s);
  - (B) the name of the person(s) performing installation, servicing and removal of any radioactive material, shielding or containment;
  - (C) retention of leakage or contamination, on-off mechanism and on-off indicator test records for one year after the next required test is performed or until the sealed source is disposed of or transferred, whichever is shorter;
- (D) retention of other records of tests required in Subparagraph (c)(3) of this Rule for two years from the date of the recorded test or until the device is disposed of or transferred.
- (5) upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on-off mechanism or indicator, or upon the detection of 0.005 microcurie or more removable radioactive material, shall immediately suspend operation of the device until it has been:
  - (A) repaired by the manufacturer or other person authorized to repair the device(s) by a specific license issued by the agency, the U.S. Nuclear Regulatory Commission, or an agreement state; or
  - (B) disposed of by transfer to a person authorized by a specific license to receive the radioactive material contained in the device; and within 30 days, furnish to the agency at the address in Rule .0111 of this Chapter a report containing a brief description of the event and the remedial action taken;
- (6) shall not abandon the device containing radioactive material;
- (7) except as provided in Subparagraph (c)(8) of this Rule, shall transfer or dispose of the device containing radioactive material only by transfer to a person holding a specific license authorizing receipt of the device; and, within 30 days after transfer of a device to a specific licensee, shall furnish to the agency at the address in Rule .0111 of this Chapter, identification of the device by manufacturer's name and model number and the name and address of the person receiving the device, except no report is required if the device is transferred to the specifically licensed manufacturer or distributor in order to obtain a replacement device;
- (8) shall transfer the device to another general licensee only where the device:
  - (A) remains in use at a particular location.
    - (i) In this case the transferor shall

give the transferee a copy of this Section and any safety documents identified in the label of the device;

- (ii) The transferor shall, within 30 days of the transfer, report to the agency at the address in Rule .0111 of this Chapter, the manufacturer's name and model number of device transferred, the name and address of the transferee, and the name and position of an individual who may constitute a point of contact between the Commission and the transferee.

(B) is held in storage in the original shipping container at its intended location of use prior to initial use by a general licensee.

- (9) shall comply with the provisions of Sections .0100 and ~~.0400~~ .1600 of this Chapter for reporting radiation incidents, theft or loss of licensed material, but shall be exempt from the other requirements of Section ~~.0400~~ .1600 of this Chapter.

(d) The general license in Paragraph (a) of this Rule does not authorize the manufacture or distribution of devices containing radioactive material.

(e) The general license in Paragraph (a) of this Rule is subject to the provisions of Rules .0107 to .0111, .0303(a), .0337, .0342, .0343 and .0345 of this Chapter and to labeling requirements in Section ~~.0400~~ .1600 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

#### **.0311 GENERAL LICENSES: LUMINOUS SAFETY DEVICES**

(a) A general license shall be issued to own, receive, acquire, possess, and use tritium or promethium-147 contained in luminous safety devices for use in aircraft, provided:

- (1) each device contains not more than ten curies of tritium or 300 millicuries of promethium-147; and
- (2) each device has been manufactured, assembled or imported in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, or each device has been manufactured or assembled in accordance with the specifications contained in a specific license issued by the agency or an agreement state to the manufacturer or

assembler of the device pursuant to licensing requirements equivalent to those in Section 32.53 of 10 CFR Part 32 of the regulations of the U.S. Nuclear Regulatory Commission.

(b) Persons who own, receive, acquire, possess, or use luminous safety devices pursuant to the general license in Paragraph (a) of this Rule are exempt from the requirements of Sections ~~.0400~~ and .1000 and .1600 of this Chapter except for Rules ~~.0418~~ .1645 and ~~.0419~~ .1646 of this Chapter.

(c) This general license does not authorize the manufacture, assembly, or repair of luminous safety devices containing tritium or promethium-147.

(d) This general license does not authorize the ownership, receipt, acquisition, possession or use of promethium-147 contained in instrument dials.

(e) The general license provided in Paragraphs (a) and (b) of this Rule are subject to the provisions of Rules .0107 to .0111, .0303(a), .0338, .0343, .0344 and .0346 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10(b).*



**.0312 GENERAL LICENSES: CALIBRATION AND REFERENCE**

(a) A general license shall be issued to those persons listed below to own, receive, acquire, possess, use and transfer, in accordance with the provisions in Paragraphs (c) and (d) of this Rule, americium-241 in the form of calibration or reference sources:

- (1) any person who holds a specific license issued by the agency which authorizes receipt, possession, use, and transfer of radioactive material; and
- (2) any person who holds a specific license issued by the U.S. Nuclear Regulatory Commission which authorizes receipt, possession, use, and transfer of special nuclear material.

(b) A general license to own, receive, possess, use, and transfer plutonium in the form of calibration or reference sources in accordance with the provisions in Paragraphs (c) and (d) of this Rule is hereby issued to any person who holds a specific license which is issued by the agency and which authorizes receipt, possession, use, and transfer of radioactive material.

(c) The general licenses in Paragraphs (a) and (b) of this Rule apply only to calibration or reference sources which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer or importer of the sources by the U.S. Nuclear Regulatory Commission pursuant to Section 32.57 of 10 CFR Part 32 or Section 70.39 of 10 CFR Part 70 or which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer by the agency or an agreement state pursuant to licensing requirements equivalent to those contained in Section 32.57 of 10 CFR Part 32 or Section 70.39 of 10 CFR Part 70 of the regulations of the U.S. Nuclear Regulatory Commission.

(d) The general license provided in Paragraphs (a) and (b) of this Rule are subject to the provisions of Rules .0107 to .0111, .0303(a), .0337, .0342, .0343 and .0345 of this Chapter and Sections ~~.0400~~ and .1000 and .1600 of this Chapter. In addition, persons who own, receive, acquire, possess, use, or transfer one or more calibration or reference sources pursuant to this Rule:

- (1) shall not possess at any one time, at any one location of storage or use, more than five microcuries of americium-241 and five microcuries of plutonium in the calibration and reference sources;
- (2) shall not receive, possess, use, or transfer a calibration or reference source unless the source, or the storage container, bears a label which includes the following statement or a substantially similar statement which contains the information called for in the following statement:  
The receipt, possession, use and transfer of this source, Model \_\_\_\_\_, Serial No. \_\_\_\_\_, are subject to a general license and the regulations of the U.S. Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION - RADIOACTIVE MATERIAL - THIS SOURCE CONTAINS

(name of appropriate radioisotope)

DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

\_\_\_\_\_  
(Name of manufacturer or importer)

- (3) shall not transfer, abandon, or dispose of a calibration or reference source except by transfer to a person authorized by a license issued by the agency, the U.S. Nuclear Regulatory Commission, or an agreement state and authorizing receipt of the source;
- (4) shall store each source, except when being used, in a closed container adequately designed and constructed to contain americium-241 or plutonium which might otherwise escape during storage; and
- (5) shall not use a calibration or reference source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

(e) The general licenses in Paragraphs (a) and (b) of this Rule do not authorize the manufacture or calibration of reference sources containing americium-241 or plutonium.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

**.0314 GENERAL LICENSES: IN VITRO  
CLINICAL OR LABORATORY  
TESTING**

(a) A general license shall be issued to any physician, veterinarian in the practice of veterinary medicine, clinical laboratory or hospital to receive, acquire, possess, transfer or use the following

radioactive materials for IN VITRO clinical or laboratory tests not involving internal or external administration of radioactive material, or radiation therefrom, to human beings or animals:

- (1) iodine-125 in units not exceeding ten microcuries each;
  - (2) iodine-131 in units not exceeding ten microcuries each;
  - (3) carbon-14 in units not exceeding ten microcuries each;
  - (4) hydrogen-3 (tritium) in units not exceeding 50 microcuries each;
  - (5) iron-59 in units not exceeding 20 microcuries each;
  - (6) cobalt-57 in units not exceeding ten microcuries each;
  - (7) selenium-75 in units not exceeding ten microcuries each;
  - (8) mock iodine-125 reference or calibration sources in units not exceeding 0.05 microcuries of iodine-129 and 0.005 microcurie of americium-241 each.
- This general license is subject to the provisions of Paragraphs (b) to (f) of this Rule.

(b) No person shall receive, acquire, possess, use or transfer radioactive material pursuant to the general license established in Paragraph (a) of this Rule until he has filed agency form "Certificate IN VITRO Testing with Radioactive Material Under General License", with the agency and received from the agency a validated copy of the agency form with certification number assigned. The physician, clinical laboratory or hospital shall furnish on the agency form the following information and such other information as may be required by the form:

- (1) name and address of the physician, clinical laboratory or hospital;
- (2) the location of use;
- (3) a statement that the physician, clinical laboratory or hospital has appropriate radiation measuring instruments to carry out IN VITRO clinical or laboratory tests with radioactive material as authorized under the general license in Paragraph (a) of this Rule and that these tests will be performed only by personnel competent in the use of the instruments and in the handling of the radioactive material.

(c) A person who receives, acquires, possesses or uses radioactive material pursuant to the general license established in Paragraph (a) of this Rule:

- (1) shall not possess at any one time, pur-

suant to the general license in Paragraph (a) of this Rule at any one location of storage or use a total amount of iodine-125, iodine-131, and iron-59 in excess of 200 microcuries;

- (2) shall store the radioactive material, until used, in the original shipping container or in a container providing equivalent radiation protection;
- (3) shall use the radioactive material only for the uses authorized in Paragraph (a) of this Rule;
- (4) shall not transfer the radioactive material to a person who is not authorized to receive it pursuant to a license issued by the agency, the U.S. Nuclear Regulatory Commission, or an agreement state, nor transfer the radioactive material in any manner other than in the unopened, labeled shipping container as received from the supplier; and
- (5) shall dispose of the mock iodine-125 reference or calibration sources described in Subparagraph (a)(8) of this Rule as required by Rule ~~4416~~ .1628 of this Chapter.

(d) The general licensee shall not receive, acquire, possess, or use radioactive material pursuant to Paragraph (a) of this Rule:

- (1) except as prepackaged units which are labeled in accordance with the provisions of a specific license issued by the U.S. Nuclear Regulatory Commission, or an agreement state which authorizes the manufacture and distribution of iodine-125, iodine-131, carbon-14, hydrogen-3 (tritium), selenium-75, mock iodine-125 (of iodine-129 and americium-241), or iron-59 for distribution to persons generally licensed under Paragraph (a) of this Rule or its equivalent; and
- (2) unless the following statement, or a substantially similar statement which contains the information called for in the following statement, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:
  - (A) This radioactive material may be received, acquired, possessed, and used only by physicians, clinical laboratories, or hospitals and only for IN VITRO clinical or laboratory tests not involving internal or external

administration of the material, or the radiation therefrom, to human beings or animals.

- (B) Its receipt, acquisition, possession, use, and transfer are subject to the regulations and a general license of the United States Nuclear Regulatory Commission, or, of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. (Name of Manufacturer).

(e) The physician, clinical laboratory or hospital possessing or using radioactive material under the general license in Paragraph (a) of this Rule shall report in writing to the agency, any changes in the information furnished in the "Certificate IN VI-TRO Testing with Radioactive Material Under General License" agency form within 30 days after the effective date of the changes.

(f) Any person using radioactive material pursuant to the general license in Paragraph (a) of this Rule is exempt from the requirements of Sections ~~.0400 and .1000 and .1600~~ of these ~~Regulations~~ Rules with respect to radioactive material covered by the general license. The new drug provisions of the Federal Food, Drug, and Cosmetic Act also govern the availability and use of any specific diagnostic drugs in interstate commerce.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

### **.0315 GENERAL LICENSES: ICE DETECTION DEVICES**

(a) A general license shall be issued to own, receive, acquire, possess, use, and transfer strontium-90 contained in ice detection devices, provided each device contains not more than 50 microcuries of strontium-90 and each device has been manufactured in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission or in accordance with the specifications contained in a specific license issued by the agency or an agreement state to the manufacturer of the device pursuant to licensing requirements equivalent to those in Section 32.61 of 10 CFR Part 32 of the regulations of the U.S. Nuclear Regulatory Commission.

(b) Persons who own, receive, acquire, possess, use, or transfer strontium-90 contained in ice detection devices pursuant to the general license in Paragraph (a) of this Rule:

- (1) shall, upon occurrence of visually observable damage, such as a bend or crack or discoloration from overheating

to the device, discontinue use of the device until it has been inspected, tested for leakage and repaired by a person holding a specific license from the U.S. Nuclear Regulatory Commission or an agreement state authorizing manufacture or servicing of the devices; or shall dispose of the device pursuant to the provisions of Rule ~~.0416~~ .1628 of this Chapter;

- (2) shall assure that all labels affixed to the device at the time of receipt, and bearing a statement which prohibits removal of the labels, are maintained thereon; and
- (3) are exempt from the requirements of Sections ~~.0400 and .1000 and .1600~~ of this Chapter except that such persons shall comply with the provisions of Rules ~~.0416~~ .1628, ~~.0418~~ .1645 and ~~.0419~~ .1646 of this Chapter.

(c) This general license does not authorize the manufacture, assembly, disassembly or repair of ice detection devices containing strontium-90.

(d) This general license is subject to the provisions of Rules .0107 to .0111 of this Chapter and Rules .0303(a), .0337, .0342, .0343, and .0345 of this Section.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

### **.0316 GENERAL LICENSES: TRANSPORTATION**

(a) Except for persons exempt from these Rules pursuant to Rule .0106(b) and (c) of this Chapter, a general license is hereby issued to any common, contract or other carrier to transport and store radioactive material in the regular course of their carriage for another or storage incident thereto; provided the transportation and storage is in accordance with the applicable requirements of the regulations appropriate to the mode of transport of the U.S. Department of Transportation in 49 CFR Part 170-189 and the U.S. Postal Service in the Postal Service Manual, (Domestic Mail Manual), Section 124.3; insofar as, such regulations relate to the packaging of radioactive material, marking and labeling of the package, loading and storage of packages, placarding of the transportation vehicle, monitoring requirements and accident reporting. Any common, contract or other carrier transporting nuclear waste or spent nuclear fuel under this general license shall comply with the provisions in Paragraph (c) of this Rule. Persons who transport and store radioactive material pursuant to the



general license in this Paragraph are exempt from the requirements of Sections ~~.0400 and .1000 and .1600~~ of this Chapter.

(b) Except for persons exempt from these Rules pursuant to Rule .0106(b) and (c) of this Chapter, a general license is hereby issued to any private carrier to transport radioactive material; provided, the transportation is in accordance with the applicable requirements of the regulations, appropriate to the mode of transport of the U.S. Department of Transportation in 49 CFR Part 170-189 and the U.S. Postal Service in the Postal Service Manual, (Domestic Mail Manual), Section 124.3; insofar as, such regulations relate to the packaging, loading and storage of packages, placarding of the transportation vehicle, monitoring requirements and accident reporting. The following exemptions and requirements shall apply to transportation of radioactive material under this general license:

- (1) Persons who transport radioactive material pursuant to the license in Paragraph (b) of this Rule are exempt from the requirements in Sections ~~.0400 and .1000 and .1600~~ of this Chapter to the extent that they transport radioactive material. Any notification of incidents referred to in those requirements shall be filed with, or made to, the agency.
- (2) Physicians, as defined in Rule .0104 of this Chapter, are exempt from the requirements in Paragraph (b) of this Rule to the extent that they transport in their private vehicle radioactive material for use in the practice of medicine.
- (3) Any person who transports nuclear waste within or through this state under this general license shall comply with the provisions in Paragraph (c) of this Rule.

(c) No carrier shall transport within or through this state any nuclear waste or spent nuclear fuel unless the shipper has notified the "governor's designee" in accordance with the requirements of 10 CFR Part 71.97 for nuclear waste and 10 CFR 73.37(f) for spent nuclear fuel. The governor's designee and contact information is as follows:

- (1) designee: N.C. Highway Patrol Headquarters, Operations Officer;
- (2) mailing address: P.O. Box 27687, Raleigh, North Carolina 27611-7687;
- (3) telephone 919/733-4030 from 8 a.m. to 5 p.m. workdays and 919/733-3861 all other times.

(d) As used in Paragraphs (a) through (d) of this Rule:

- (1) "Shipment" means any single vehicle carrying one or more containers of nuclear waste.
- (2) "Nuclear Waste" means:
  - (A) any large quantity of radioactive material required by 10 CFR Part 71 to be in Type B packaging while transported within or through this state to a disposal site, or to a collection point for transport to a disposal site; or
  - (B) any large quantity of irradiated fuel required by 10 CFR Part 71 to be in Type B packaging while transported within or through this state irrespective of destination if the quantity of irradiated fuel is less than that subject to advance notification requirements of 10 CFR Part 73.
- (3) "Spent Nuclear Fuel" means a quantity of irradiated reactor fuel in excess of 100 grams in net weight of irradiated fuel exclusive of cladding or other structural or packaging material which has a total external radiation dose rate in excess of 100 rems per hour at a distance of three feet from any accessible surface without intervening shielding.

~~(e) For the purpose of this Rule, 10 CFR Part 71, 10 CFR Part 73, 49 CFR Part 170-189, and the Postal Service Manual (Domestic Mail Manual) Section 124.3 [incorporated by reference in 39 CFR 111.11 (1974)] are hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Radiation Protection at the address listed in Rule .0111 of this Chapter. Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 at a cost as follows:~~

- ~~(1) Seventeen dollars (\$17.00) for 10 CFR Parts 71 and 73 (in volume containing 10 CFR Part 51-199);~~
- ~~(2) Twenty seven dollars (\$27.00) for 49 CFR Part 170-177 (in volume containing 49 CFR Part 100-177);~~
- ~~(3) Seventeen dollars (\$17.00) for 49 CFR Part 178-189 (in volume containing 49 CFR 178-199); and~~
- ~~(4) Thirty six dollars (\$36.00) for the Postal Service Manual (Domestic Mail Manual) Section 124.3 [incorporated by~~

reference in 39 CFR 111.11 (1974)).

Statutory Authority G.S. 20-167.1; 104E-7; 104E-10(b); 104E-15(a); 150B-21.6.

**.0328 SPECIFIC LICENSES:  
MANUFACTURE DEVICES TO  
PERSONS LICENSED**

(a) An application for a specific license to manufacture or distribute devices containing radioactive material, excluding special nuclear material, to persons generally licensed under Rule .0309 of this Section or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state will be approved if:

- (1) the applicant satisfies the general requirements of Rule .0317 of this Section;
- (2) the applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control, labels, proposed uses, installation, servicing, leak testing, operating and safety instructions, and potential hazards of the device to provide reasonable assurance that:
  - (A) the device can be safely operated by persons not having training in radiological protection;
  - (B) under ordinary conditions of handling, storage, and use of the device, the radioactive material contained in the device will not be released or inadvertently removed from the device, and it is unlikely that any person will receive in any period of one calendar quarter a dose in excess of ten percent of the limits specified in the table of Rule ~~.0402~~ .1604 of this Chapter;
  - (C) under accident conditions (such as fire and explosion) associated with handling, storage, and use of the device, it is unlikely that any person would receive an external radiation dose or dose commitment in excess of the following organ doses:
    - (i) whole body, head and trunk, active blood-forming organs, gonads, or lens of eye: 15 rems;
    - (ii) hands and forearms, feet and ankles, localized areas of skin averaged over areas no larger than one square centimeter: 200 rems;
    - (iii) other organs: 50 rems.

- (3) each device bears a durable, legible, clearly visible label or labels approved by the agency, which contain in a clearly identified and separate statement:
  - (A) instructions and precautions necessary to assure safe installation, operation, and servicing of the device (documents such as operating and service manuals may be identified in the label and used to provide this information);
  - (B) the requirement, or lack of requirement, for leak testing, or for testing any on-off mechanism and indicator, including the maximum time interval for such testing, and the identification of radioactive material by isotope, quantity of radioactivity, and date of determination of the quantity; and
  - (C) the information called for in the following statement in the same or substantially similar form: "The receipt, possession, use, and transfer of this device Model \_\_\_\_\_, Serial No. \_\_\_\_\_, are subject to a general license or the equivalent and the regulations of the U.S. Nuclear Regulatory Commission or an agreement state. This label shall be maintained on the device in a legible condition. Removal of this label is prohibited."

**CAUTION - RADIOACTIVE MATERIAL**

(name of manufacturer or distributor)

- (4) the model, serial number, and name of manufacturer or distributor may be omitted from this label provided they are elsewhere specified in labeling affixed to the device.
- (b) In the event the applicant desires that the device be required to be tested at intervals longer than six months, either for proper operation of the on-off mechanism and indicator, if any, or for leakage of radioactive material or for both, he shall include in his application sufficient information to demonstrate that such longer interval is justified by performance characteristics of the device or similar devices and by design features which have a significant bearing on the probability or consequences of leakage of radioactive material from the device or failure of the on-off mechanism and indicator. In determining the acceptable interval for the test for leakage of radioactive material, the agency will consider information which includes, but is not limited to:

- (1) primary containment (source capsule);
- (2) protection of primary containment;
- (3) method of sealing containment;
- (4) containment construction materials;
- (5) form of contained radioactive material;
- (6) maximum temperature withstood during prototype test;
- (7) maximum pressure withstood during prototype tests;
- (8) maximum quantity of contained radioactive material;
- (9) radiotoxicity of contained radioactive material; and
- (10) operating experience with identical devices or similarly designed and constructed devices.

(c) In the event the applicant desires that the general licensee under Rule .0309 of this Section, or under equivalent regulations of the U.S. Nuclear Regulatory Commission, or an agreement state, be authorized to install the device, collect the sample to be analyzed by a specific licensee for leakage of radioactive material, service the device, test the on-off mechanism and indicator, or remove the device from installation, he shall include in his application:

- (1) Written instructions to be followed by the general licensee;
- (2) Estimated calendar quarter doses associated with such activity or activities by an individual untrained in radiological protection, in addition to other handling, storage and use of devices under the general license; and
- (3) information to demonstrate that performance of such activity(ies) is unlikely to cause that individual to receive a calendar quarter dose in excess of ten percent of the limits specified in Rule ~~.0402(a)~~ .1604 of this Chapter.

(d) Each person licensed under this Rule to distribute devices shall furnish a copy of the general license contained in Section 31.5 of 10 CFR Part 31 to each person to whom he directly or through an intermediate person transfers radioactive material in a device for use pursuant to the general license contained in Rule .0309 of this Section, or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state. The copy of Section 31.5 of 10 CFR Part 31 shall be accompanied by a note explaining that the use of the device is regulated by agreement states under requirements substantially the same as those in Section 31.5 of 10 CFR Part 31. Alternatively, when transferring the devices to persons in

a specific agreement state, a copy of that agreement state's equivalent regulations shall be furnished.

(e) Each person, licensed under this Rule to distribute devices, shall report to the agencies specified in Subparagraphs (e)(1), (2) and (3) of this Rule all transfers of the devices to persons generally licensed under the regulations of those agencies. Such reports shall identify each general licensee by name and address, an individual by name or position who may constitute a contact with the general licensee, the type and model number of the device transferred, and the quantity and type of radioactive material contained in the device. If one or more intermediate persons will temporarily possess the device at the intended place of use prior to its possession by the user, the reports shall include identification of each intermediate person by name, address, contact and relationship to the intended user. If no transfers have been made to generally licensed persons during the reporting period, the reports shall so indicate. The reports shall cover each calendar quarter and shall be filed within 30 days thereafter. The reports shall be submitted to:

- (1) the agency for devices transferred to persons generally licensed under Rule .0309 of this Section;
- (2) each agreement state for devices transferred to persons generally licensed under regulations equivalent to Rule .0309 of this Section; and
- (3) the U.S. Nuclear Regulatory Commission for devices transferred to persons generally licensed under Section 31.5 of 10 CFR Part 31.

(f) Each person, licensed under this Rule to distribute devices, shall maintain for agency inspection either copies of all reports required in Paragraph (e) of this Rule or a record containing substantially the same information. Such copies or records of transfer shall be maintained for at least five years after the date of each transfer of a device to a generally licensed person.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

#### **.0331 SPECIFIC LICENSES- MANUFACTURE OF IN VITRO TEST KITS**

An application for a specific license to manufacture or distribute radioactive material for use under the general license in Rule .0314 of this Section will be approved if the following requirements are satisfied:



- (1) The applicant satisfies the general requirements specified in Rule .0317 of this Section.
- (2) The radioactive material is to be prepared for distribution in prepackaged units of:
  - (a) iodine-125 in units not exceeding ten microcuries each;
  - (b) iodine-131 in units not exceeding ten microcuries each;
  - (c) carbon-14 in units not exceeding ten microcuries each;
  - (d) hydrogen-3 (tritium) in units not exceeding 50 microcuries each;
  - (e) iron-59 in units not to exceed 20 microcuries each;
  - (f) cobalt-57 in units not to exceed ten microcuries each;
  - (g) selenium-75 in units not exceeding 0.05 microcurie of iodine-129 and 0.005 microcurie of americium-241 each.
- (3) Each prepackaged unit bears a durable, clearly visible label:
  - (a) identifying the radioactive contents as to chemical form and radionuclide, and indicating that the amount of radioactivity does not exceed the appropriate limit in Item (2) of this Rule, and
  - (b) displaying the radiation caution symbol described in Rule ~~.0411(a)(1)~~ .1623 of this Chapter and the words, "CAUTION, RADIOACTIVE MATERIAL", and "NOT FOR INTERNAL OR EXTERNAL USE IN HUMANS OR ANIMALS".
- (4) The following statement, or a substantially similar statement which contains the information called for in the following statement, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

This radioactive material may be received, acquired, possessed, and used only by physicians, clinical laboratories or hospitals and only for IN VITRO clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use, and transfer are

subject to the regulations and a general license of the U.S. Nuclear Regulatory Commission or a state with which the Commission has entered into an agreement for the exercise of regulatory authority. (Name of Manufacturer)

- (5) The label affixed to the unit, or the leaflet or brochure which accompanies the package, contains adequate information as to the precautions to be observed in handling and storing such radioactive material. In the case of the mock iodine-125 reference or calibration source, the information accompanying the source must also contain directions to the licensee regarding the waste disposal requirements set out in Rule ~~.0416~~ .1628 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10(b).*

#### **.0335 SPECIFIC LICENSES: PRODUCTS CONTAINING DEPLETED URANIUM**

(a) An application for a specific license to manufacture industrial products and devices containing depleted uranium for use pursuant to Rule .0307(e) of this Section or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state will be approved if:

- (1) the applicant satisfies the general requirements specified in Rule .0317 of this Section;
- (2) the applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, proposed uses, and potential hazards of the industrial product or device to provide reasonable assurance that possession, use, or transfer of the depleted uranium in the product or device is not likely to cause any individual to receive in any period of one calendar quarter a radiation dose in excess of ten percent of the limits specified in Rule ~~.0402~~ .1604 of this Chapter; and
- (3) the applicant submits sufficient information regarding the industrial product or device and the presence of depleted uranium for a mass-volume application in the product or device to provide reasonable assurance that unique benefits will accrue to the public because of the usefulness of the product or device.

(b) In the case of an industrial product or device whose unique benefits are questionable, the agency will approve an application for a specific license under this Rule only if the product or device is found to combine a high degree of utility and low probability of uncontrolled disposal and dispersal of significant quantities of depleted uranium into the environment.

(c) The agency may deny any application for a specific license under this Rule if the end use(s) of the industrial product or device cannot be reasonably foreseen.

(d) Each person licensed pursuant to Paragraph (a) of this Rule shall:

- (1) maintain the level of quality control required by the license in the manufacture of the industrial product or device, and in the installation of the depleted uranium into the product or device;
- (2) label or mark each unit to:
  - (A) identify the manufacturer of the product or device and the number of the license under which the product or device was manufactured, the fact that the product or device contains depleted uranium, and the quantity of depleted uranium in each product or device; and
  - (B) state that the receipt, possession, use, and transfer of the product or device are subject to a general license or the equivalent and the regulations of the U.S. Nuclear Regulatory Commission or of an agreement state.
- (3) assure that the depleted uranium before being installed in each product or device has been impressed with the following legend clearly legible through any plating or other covering: "Depleted Uranium":

(e) Each person, licensed under this Rule to distribute devices, shall furnish a copy of the general license contained in Section 40.25 of 10 CFR Part 40 to each person to whom he directly or through an intermediate person transfers radioactive material in a device for use pursuant to the general license contained in Rule .0307(e) of this Section, or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state. The copy of Section 40.25 of 10 CFR Part 40 shall be accompanied by a note explaining that the use of the device is regulated by agreement states under requirements substantially the same as those in Section 40.25 of 10 CFR Part 40. Alternatively, when transferring the devices to persons

in a specific agreement state, a copy of that agreement state equivalent regulations shall be furnished.

(f) Each person, licensed under this Rule to distribute devices, shall report to the agencies specified in Subparagraphs (f)(1), (2) and (3) of this Rule all transfers of the devices to persons generally licensed under the ~~regulations~~ rules of those agencies. Such reports shall identify each general licensee by name and address, an individual by name or position who may constitute a contact with the general licensee, the type and model number of the device transferred, and the quantity and type of radioactive material contained in the device. If one or more intermediate persons will temporarily possess the device at the intended place of use prior to its possession by the user, the reports shall include identification of each intermediate person by name, address, contact and relationship to the intended user. If no transfers have been made to generally licensed persons during the reporting period, the reports shall so indicate. The reports shall cover each calendar quarter and shall be filed within 30 days thereafter. The reports shall be submitted to:

- (1) the agency for devices transferred to persons generally licensed under Rule .0307(e) of this Section;
- (2) each agreement state for devices transferred to persons generally licensed under ~~regulations~~ rules equivalent to Rule .0307(e) of this Section; and
- (3) the U.S. Nuclear Regulatory Commission for devices transferred to persons generally licensed under Section 40.25 of 10 CFR Part 40.

(g) Each person, licensed under this Rule to distribute devices, shall maintain for agency inspection either copies of all reports required in Paragraph (f) of this Rule or a record containing substantially the same information. Such copies or records of transfer shall be maintained for at least five years after the date of each transfer of a device to a generally licensed person.

*Statutory Authority: G.S. 104E-7; 104E-10(b).*

#### **.0348 SPECIFIC LICENSES: CERTAIN INCINERATOR FACILITIES**

(a) In addition to the requirements set forth in Rule .0317 of this Section, an application for a license authorizing construction and operation of an incinerator as part of a radioactive waste processing facility as defined in Rule .0104(44) of this Chapter shall include an environmental assessment

that addresses the following topics:

- (1) description of the applicant:
  - (A) the company or corporate structure with the names, addresses and titles of officers;
  - (B) present products and activities;
  - (C) prior experience in the use, processing and disposal of radioactive material;
  - (D) financial and technical ability to construct, operate and decommission the proposed radioactive waste processing facility;
- (2) description of the site:
  - (A) physical location and general description to include nearest buildings, residences, schools, hospitals, etc.;
  - (B) populations and land use in the general area to include nearest buildings, residences, schools, hospitals, etc.;
  - (C) geological and hydrological characterization of the site to include soil type, topography, past and projected seismic activity, ~~ground-water~~ groundwater, aquifers and surface waters;
  - (D) meteorology to include climate, distribution of wind speed and direction, atmospheric stability and dispersion characteristics, and data on precipitation, floods, hurricanes and tornados;
  - (E) background radiation and radioactivity;
  - (F) transportation routes;
- (3) incinerator design:
  - (A) general description;
  - (B) manufacturer, basis for selecting the proposed incinerator design and identification of operating incinerators of the same or similar design;
  - (C) maximum capacity, minimum chamber temperatures, minimum chamber residence times, residual ash collection and effluent controls (e.g., scrubber filters and stack);
  - (D) decontamination, maintenance and anticipated operating life;
  - (E) waste handling, storage and injection systems;
  - (F) instrumentation and controls;
  - (G) minimum performance specifications for the incinerator and effluent control systems, and preoperational testing/certification program;
- (4) facility design:
  - (A) compartmentalization/zoning, waste storage and handling areas, waste flow, ventilation and contamination control/containment;
  - (B) sanitary sewer, drains, holdup systems, showers and other liquid handling systems;
- (5) management and staffing:
  - (A) structure of facility organization showing line configuration of the radiation safety officer;
  - (B) qualifications of management, supervisory and safety personnel;
  - (C) staff training program;
- (6) description of waste:
  - (A) general chemical, physical and radiological properties;
  - (B) maximum quantity of each radionuclide to be incinerated per year;
  - (C) maximum quantity of each radionuclide to be stored on-site at any one time;
  - (D) maximum quantity of each toxic or hazardous constituent of the waste to be incinerated per year;
  - (E) maximum quantity of each toxic or hazardous constituent of the waste to be stored on-site at any one time;
  - (F) acceptance and rejection criteria for waste to be received for incineration;
- (7) treatment of waste to be shipped off-site:
  - (A) classification;
  - (B) immobilization;
  - (C) packaging;
  - (D) storage;
  - (E) shipment;
  - (F) disposal;
  - (G) processing and disposal of ash;
- (8) precicensing and operational public information program:
  - (A) state and local government;
  - (B) media and public;
- (9) plan for maintaining radiation exposures and releases of radioactivity as low as reasonably achievable (ALARA):
  - (A) procedures, systems and criteria to maintain whole body, thyroid, and other organ radiation doses of the off-site public as low as reasonably achievable below the limits stated in Section ~~0400~~ 1600 of this Chapter;
  - (B) procedures, systems and criteria to maintain whole body, thyroid, and other organ radiation doses of on-site



- personnel as low as reasonably achievable below the limits established in Section ~~.0400~~ .1600 of this Chapter;
- (10) off-site impact assessment for routine operation:
- (A) maximum quantity and concentration of each radionuclide and toxic or hazardous constituent of the waste released annually to the air, to the water and to the soil;
  - (B) maximum radiation doses to off-site populations to include dose to the nearest resident, a description of computational models, sample computations and a summary of any previous experience;
  - (C) maximum off-site radionuclide concentrations in air, soil, water and food;
- (11) monitoring programs and systems:
- (A) analytical and portable monitoring equipment for radiological and chemical measurements;
  - (B) inspection, monitoring and analysis of waste containers and waste prior to incineration;
  - (C) alarms, area monitors, stack/effluent monitors and facility shutdown mechanisms to include action levels, reset and restart procedures and criteria;
  - (D) personnel monitoring and bioassay;
  - (E) preoperational environmental monitoring;
  - (F) operational environmental monitoring, to include, if available, a copy of the last environmental monitoring report filed with the U.S. Nuclear Regulatory Commission or agreement state program;
- (12) other regulations, standards and permits:
- (A) federal, state and local regulations and standards which will apply to the proposed facility or would apply to the facility in the absence of the radioactive content of the waste;
  - (B) other permits which are required to include the current status of applications for and issuance of such permits;
- (13) accident analysis:
- (A) identification of accident modes;
  - (B) major credible accidents and projected potential off-site impacts;

- (C) mitigation of accidents and protection of the public;
- (14) emergency response plan:
- (A) on-site response;
  - (B) local and county;
  - (C) state and regional;
  - (D) training and public information;
  - (E) if available, copies of most current emergency response plans submitted to the U.S. Nuclear Regulatory Commission or an agreement state;
- (15) decontamination and decommissioning:
- (A) schedule;
  - (B) procedure;
  - (C) radioactive waste disposal plan.
- (b) The applicant shall submit to the agency ten copies of the license application, environmental assessment, and other information required in Paragraph (a) of this Rule and Rule .0317 of this Section.

*Statutory Authority G.S. 104E-7(2),(8); 104E-10(b).*

#### **.0349 EXEMPTIONS: WASTE MANAGEMENT BY GENERATORS**

(a) Subject to the limitations in Paragraphs (b) and (c) of this Rule, any licensee is exempt from the provisions of G.S. 104E-6.1 and G.S. 104E-10.1 with respect to the following waste management practices:

- (1) storage of waste incidental to transfer to a licensed low-level radioactive waste facility authorized to receive such waste;
  - (2) storage of waste to allow for total decay of contained radioactive material prior to disposal as nonradioactive waste;
  - (3) storage of waste to allow for partial decay of contained radioactive material prior to disposal, incineration or other treatment; or
  - (4) compaction, incineration, treatment, packaging or disposal of waste as provided in the Rules rules in Section ~~.0400~~ .1600 of this Chapter.
- (b) Except as provided in Paragraph (c) of this Rule, the exemptions in Paragraph (a) of this Rule shall apply only to a licensee:
- (1) who possesses and uses radioactive material pursuant to specific licenses issued by the agency and only to management by the licensee of waste generated incidental to such possession and use;

- (2) who is determined by the agency to be using sound waste management practices;
- (3) who is determined by the agency to be managing such low volumes or activity of waste that such exemptions will not endanger the public health or safety or the environment; and
- (4) whose combined waste management activities do not cause a radiation dose to the off-site public in excess of the limits stated in Rule .1223 of this Chapter.

(c) The exemptions in Paragraph (a) of this Rule shall also apply to on-site disposal of waste by persons who generate waste pursuant to a license issued by the U.S. Nuclear Regulatory Commission, provided that:

- (1) the U.S. Nuclear Regulatory Commission determines that such on-site disposal is subject to regulation by the agency;
- (2) such persons satisfy the requirements in Subparagraphs (b)(2) and (b)(3) of this Rule;
- (3) such persons do not receive waste, generated by others or generated at other sites for the purpose of disposal;
- (4) such persons shall limit off-site dose to the public, resulting from all activities authorized by the agency and the U.S. Nuclear Regulatory Commission, to the limits stated in Rule .1223 of this Chapter or as prescribed by the U.S. Nuclear Regulatory Commission for U.S. Nuclear Regulatory Commission regulated activities, whichever is more restrictive; and
- (5) such persons apply for and receive a specific radioactive material license, issued by the agency pursuant to the Rules rules in this Section, which authorizes such disposal pursuant to Rule ~~.0416~~ .1628 of this Chapter.

Statutory Authority G.S. 104E-7(a)(10).

### **.0353 FINANCIAL ASSURANCE AND RECORD-KEEPING FOR DECOMMISSIONING**

(a) Each applicant for a specific license authorizing the possession and use of unsealed radioactive material of half-life greater than 120 days and in quantities such that  $R$  divided by  $10^5$  is greater than one (unity rule), where  $R$  is defined here as

the sum of the ratios of the quantity of each isotope to the applicable value in the table in Rule ~~.0424~~ Appendix C to 10 CFR §§ 20.1001 - 20.2401 shall submit a decommissioning funding plan as described in Paragraph (g) of this Rule.

(b) Each holder of a specific license issued before the effective date of this Rule, and of a type described in Paragraph (a) of this Rule shall submit, no later than 60 days after the effective date of this Rule, a decommissioning funding plan or a certification of financial assurance for decommissioning in an amount of at least seven hundred and fifty thousand dollars (\$750,000) in accordance with the criteria set forth in this Rule. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan at this time, the licensee shall include a decommissioning funding plan in any application for license renewal.

(c) Each applicant for a specific license authorizing possession and use of radioactive material of half-life greater than 120 days and in quantities specified in Paragraph (f) of this Rule shall either:

- (1) submit a decommissioning funding plan as described in Paragraph (g) of this Rule; or
- (2) submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by Paragraph (f) of this Rule using one of the methods described in Rule .0354 of this Section. For an applicant, this certification may state that the appropriate assurance will be obtained after the application has been approved and the license issued but prior to the receipt of licensed material. As part of the certification, the applicant shall submit to this agency, a copy of the financial instrument obtained to satisfy the requirements of Paragraph (g) of this Rule.

(d) Each holder of a specific license issued before the effective date of this Rule, and of a type described in Paragraph (c) of this Rule shall submit, no later than 60 days after the effective date of this Rule, a certification of financial assurance for decommissioning or a decommissioning funding plan in accordance with the criteria set forth in this Rule.

(e) Each holder of a specific license issued on or after the effective date of this Rule, which is of a type described in Paragraph (a) or (c) of this Rule, shall provide financial assurance for decommissioning in accordance with the criteria set forth in

this Rule.

(f) Required amounts of financial assurance for decommissioning by quantity of radioactive material where R is defined as the sum of the ratios of the quantity of each isotope to the applicable value in Rule .0424 Appendix C to 10 CFR §§ 20.1001 - 20.2401 are as follows:

- (1) for unsealed form, if R divided by  $10^5$  is greater than one, then the minimum financial assurance amount is seven hundred and fifty thousand dollars (\$750,000) and shall be as stated in an approved decommissioning funding plan as described in Paragraph (g) of this Rule;
- (2) for unsealed form, if R divided by  $10^4$  is greater than one but R divided by  $10^5$  is less than or equal to one, then the financial assurance amount is seven hundred and fifty thousand dollars (\$750,000);
- (3) for unsealed form, if R divided by  $10^3$  is greater than one but R divided by  $10^4$  is less than or equal to one, then the financial assurance amount is one hundred and fifty thousand dollars (\$150,000);
- (4) for sealed sources or plated foils, if R, divided by  $10^{10}$  is greater than one, then the financial assurance amount is seventy five thousand dollars (\$75,000).

(g) Each decommissioning funding plan shall contain a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning as referenced in Rule .0354 of this Section, including means of adjusting cost estimates and associated funding levels periodically over the life of the facility.

(h) Each person licensed under this Section of this Chapter shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the license is terminated by the agency. If records of relevant information are kept for other purposes, reference to these records and their locations may be used. Information the agency considers important to decommissioning includes, but is not limited to:

- (1) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site.
- (A) These records may be limited to instances when contamination remains after any cleanup procedures or when

there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete.

- (B) These records shall include any known information on identification of involved nuclides, quantities, forms, and concentrations.
- (2) As-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are being used or stored, and of locations of possible inaccessible contamination such as buried pipes which may be subject to contamination.
- (A) If required drawings are referenced, each relevant document need not be indexed individually.
- (B) If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.
- (3) Records of the cost estimate performed for the decommissioning funding plan or of the amount certified for decommissioning, and records of the funding method used for assuring funds if either a funding plan or certification is used.

*Statutory Authority G.S. 104E-7; 104E-18.*

## SECTION .0400 - STANDARDS FOR PROTECTION AGAINST RADIATION

### .0401 PURPOSE AND SCOPE

~~(a) This Section establishes standards for protection against ionizing radiation hazards. Except as otherwise specifically provided, this Section applies to all licensees or registrants. Nothing in this Section shall be interpreted as limiting the intentional exposure of patients to radiation for the purpose of medical diagnosis or therapy.~~

~~(b) In addition to complying with the requirements set forth in this Section, every reasonable effort shall be made to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as far below the limits specified in this Section as practicable. The term "as far below the limits specified in this Section as practicable" means as low as reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety and in relation to the utilization of ionizing radiation in~~



the public interest.

(e) ~~Nothing in this Section shall relieve a licensee engaged in operation of a radioactive waste disposal facility, as defined in Rule .0104 of this Chapter, from responsibility for complying with the requirements in Section .1200 of this Chapter.~~

*Statutory Authority G.S. 104E-7.*

#### **.0402 RADIATION DOSE TO INDIVIDUALS IN RESTRICTED AREAS**

(a) ~~Except as provided in (c) of this Rule, no licensee or registrant shall possess, use, receive, or transfer sources of radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from all sources of radiation in the licensee's or registrant's possession a dose in excess of the limits specified in the following table:~~

	Rems/Calendar Quarter
Whole body; head and trunk;	1.25
Active blood forming organs;	
Lens of eyes; or Gonads	
Hands and forearms;	18.75
Feet and ankles	
Skin of whole body	7.50

(b) ~~For determining the doses specified in this Rule, a dose from x or gamma rays up to 10 MeV may be assumed to be equivalent to the exposure measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of the highest dose rate.~~

(c) ~~A licensee or registrant may permit an individual in a restricted area to receive a dose to the whole body greater than that permitted under (a) of this Rule provided that:~~

- (1) ~~During any calendar quarter the dose to the whole body from sources of radiation in the licensee's or registrant's possession shall not exceed three rems;~~
- (2) ~~The dose to the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed 5(N-18) rems where "N" equals the individual's age in years at his last birthday; and~~
- (3) ~~The licensee or registrant has determined the individual's accumulated occupational dose to the whole body on appropriate form(s) provided by the agency or on a clear and legible record containing all the information required in that form and has otherwise complied with the requirements of Rule .0403 of this Section. As used in this Rule "dose to the whole body" shall be deemed to include any dose to the whole body, gonads, active blood forming organs, head and trunk, or lens of eyes.~~

*Statutory Authority G.S. 104E-7.*

#### **.0403 DETERMINATION OF PRIOR DOSE**

(a) ~~Each licensee or registrant shall require any individual, prior to first entry of the individual into the licensee's or registrant's restricted area during each employment or work assignment under such circumstances that the individual will receive or is likely to receive in any period of one calendar quarter an occupational dose in excess of 25 percent of the applicable standards specified in Rules .0402(a) and .0405(a) of this Section, to disclose in a written, signed statement, either:~~

- (1) ~~that the individual has no prior occupational dose during the current calendar quarter, or~~
- (2) ~~the nature and amount of any occupational dose which the individual may have received during that specifically identified current calendar quarter from sources of radiation possessed or controlled by other persons.~~

~~Each licensee or registrant shall maintain records of such statements until the agency authorizes their disposition.~~

(b) ~~Before permitting any individual in a restricted area to be exposed to radiation in excess of the limits~~

specified in Rule .0402(a) of this Section, each licensee or registrant shall:

- (1) obtain a certificate on appropriate form(s) provided by the agency or on a clear and legible record containing all the information required in that form, signed by the individual, showing each period of time after the individual attained the age of 18 in which the individual received an occupational dose of radiation; and
- (2) calculate on the agency form, in accordance with the instructions appearing therein, or on a clear and legible record containing all information required in that form, the previously accumulated occupational dose received by the individual and the additional dose allowed for that individual under Rule .0402(e) of this Section.

(e) In the preparation of the appropriate agency form(s) or a clear and legible record containing all the information required in that form, the licensee or registrant shall make a reasonable effort to obtain reports of the individual's previously accumulated occupational dose. For each period for which the licensee or registrant obtains these reports, he shall use the dose shown in the report in preparing the form. In any case where a licensee or registrant is unable to obtain reports of the individual's occupational dose for a previous complete calendar quarter, it shall be assumed that the individual has received the occupational dose specified in whichever of the following columns apply:

	Column 1	Column 2
	Assumed Dose in Rems for Calendar Quarters Prior to January 1, 1961	Assumed Dose in Rems for Calendar Quarters Beginning on or after January 1, 1961
Part of Body	3.75	1.25
Whole body		
Gonads		
Active blood- forming organs		
Head and trunk		
Lens of eyes		

(d) The licensee or registrant shall retain and preserve records used in preparing the appropriate agency form(s). If calculation of the individual's accumulated occupational dose for all periods prior to January 1, 1961 yields a result higher than the applicable accumulated dose value for the individual as of that date as specified in Rule .0402(e) of this Section, the excess may be disregarded.

Statutory Authority: G.S. 104E-7; 104E-12(a)(2).

#### .0404 CONCENTRATIONS IN A RESTRICTED AREA

(a) No licensee shall possess, use or transfer radioactive material in such a manner as to permit any individual in a restricted area to inhale a quantity of radioactive material, in any period of one calendar quarter greater than the quantity which would result from inhalation for 40 hours per week for 13 weeks at uniform concentrations of radioactive material in air specified in Table I, Column 1 of Rule .0423(a) of this Section.

(b) To determine compliance with (a) of this Rule:

- (1) The concentration for soluble hydrogen 3 in Table I, Column 1 of Rule .0423(a) of this Section may be multiplied by 2;

(2) For radon 222, the limiting quantity is that inhaled in a period of one calendar year;

(3) For radioactive material designated "Sub" in the "Isotope" column of Table I in Rule .0423(a) of this Section the specified concentrations are based upon exposure to the radioactive material as an external source; hence, individual exposures to these radioactive materials may be accounted for as part of the limitation on individual dose in Rule .0402 of this Section;

(4) It shall be assumed that a person working 40 hours per week inhales  $6.3 \times 10^3$  ml of air during 13 such weeks and  $2.5 \times 10^5$  ml of air during one year.

(c) Notwithstanding (a) of this Rule, if radione-



tive material is of such form that intake by absorption through the skin is likely, individual exposures to radioactive material shall be controlled so that the uptake of radioactive material by any organ from either inhalation or absorption or both routes of intake in any calendar quarter does not exceed that which would result from inhaling such radioactive material for 40 hours per week for 13 weeks at uniform concentrations specified in Table I, Column 1 in Rule .0423(a) of this Section.

(d) Notwithstanding (a) to (c) of this Rule, no licensee shall possess, use or transfer mixtures of U-234, U-235, and U-238 in soluble form in such a manner as to permit any individual in a restricted area to inhale a quantity of such material in any calendar week greater than the quantity which would result from inhalation for 40 hours at a uniform concentration of such material in air specified in Table I, Column 1 of Rule .0423(a) of this Section. If such soluble uranium is of a form such that absorption through the skin is likely, individual exposures to such material shall be controlled so that the uptake of such material by an organ from either inhalation or absorption or both routes of intake, during any calendar week, does not exceed the quantity which would result from inhalation for 40 hours at a uniform concentration of such material in the air as specified in Table I, Column 1 of Rule .0423(a) of this Section.

(e) Exposures due to accident, inadvertence, poor procedure, or similar conditions shall be evaluated and accounted for by appropriate techniques and procedures. Such exposures shall be included in determining compliance with (a), (c) and (d) of this Rule.

(f) For the purpose of determining compliance with the requirements of this Rule, the licensee shall use suitable measurements of concentrations of radioactive materials in air for detecting and evaluating airborne radioactivity in restricted areas and in addition, as appropriate, shall use measurements of radioactivity in the body, excreted from the body, or any combination of such measurements as may be necessary for timely detection and assessment of individual intakes of radioactivity by exposed individuals. It shall be assumed that an individual inhales radioactive material at the airborne concentration in which the individual is present, unless respiratory protective equipment is used pursuant to (h) of this Rule. When assessment of an individual's intake of radioactive material is necessary, intakes less than those which would result from inhalation for two hours in any one day or for ten hours in any one week at uniform concentrations specified in Table I, Col-

umn 1 of Rule .0423(a) of this Section need not be included in such assessment, provided that for any assessment in excess of these amounts the entire amount is included.

(g) The licensee shall, as a precautionary procedure, use process or other engineering controls to limit concentrations of radioactive materials in air to levels below those defined in Rule .0104(7) of this Chapter. When it is impracticable, by such means, to limit such airborne concentrations below the levels defined in Rule .0104(7) of this Chapter, other precautionary procedures, such as increased surveillance, limiting worktimes or provision of respiratory protective equipment, shall be used to maintain intake of radioactive materials by any individual within any period of seven consecutive days as far as reasonably achievable below that intake of radioactive material which would result from inhalation of such material for 40 hours at the uniform concentrations specified in Table I, Column 1, of Rule .0423(a) of this Section. Whenever the intake of radioactive material by any individual exceeds this 40 hour control measure, the licensee shall make such evaluations and take such actions as are necessary to assure against recurrence. The licensee shall maintain records of such occurrences, evaluations, and actions in a clear and readily identifiable form suitable for summary review and evaluation.

(h) When respiratory protective equipment is used to limit the inhalation of airborne radioactive materials pursuant to (g) of this Rule, the licensee may make allowance for such use in estimating exposures of individuals to such radioactive materials provided that such equipment is used as stipulated in Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection", of the U.S. Nuclear Regulatory Commission.

(i) The licensee shall notify the agency in writing at least 30 days before the date that respiratory protective equipment is first used under the provisions of (g) of this Rule.

(j) Notwithstanding the provisions of (g) and (h) of this Rule, the agency may impose further restrictions:

- (1) — on the extent to which a licensee may make allowance for use of respirators in lieu of provision of process, and the engineering controls, if application of such controls is found to be practicable; and
- (2) — as may be necessary to assure that the respiratory protective program of the licensee is adequate in limiting exposures of personnel to airborne radioac-



tive materials.

*Statutory Authority G.S. 104E-7.*

#### **.0405 EXPOSURE OF MINORS**

(a) ~~No licensee or registrant shall possess, use, or transfer sources of radiation in such a manner as to cause any individual within a restricted area, who is under 18 years of age to receive in any period of one calendar quarter from all sources of radiation in such licensee's or registrant's possession a dose in excess of ten percent of the limits specified in the table in Rule .0402(a) of this Section.~~

(b) ~~No licensee shall possess, use, or transfer radioactive material in such a manner as to cause any individual within a restricted area, who is under 18 years of age, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table II in Rule .0423(a) of this Section. For purposes of this Rule, concentrations may be averaged over periods not greater than one week.~~

(c) ~~The provisions of Rule .0404(a) to (d) of this Section shall apply to exposures subject to (b) of this Rule.~~

*Statutory Authority G.S. 104E-7.*

#### **.0406 PERMISSIBLE LEVELS IN UNRESTRICTED AREAS**

(a) ~~Except as authorized by the agency pursuant to (b) of this Rule, no licensee or registrant shall possess, use, or transfer sources of radiation in such a manner as to create in any unrestricted area from such sources of radiation in his possession:~~

- (1) ~~radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of two millirems in any one hour; or~~
- (2) ~~radiation levels which, if an individual were continuously present in the area could result in his receiving a dose in excess of 100 millirems in any seven consecutive days.~~

(b) ~~Any person may apply to the agency for proposed limits upon levels of radiation in unrestricted areas in excess of those specified in (a) of this Rule resulting from the applicant's possession or use of sources of radiation. The application shall include information as to anticipated average radiation levels and anticipated occupancy time for each unrestricted area involved. The agency will approve the proposed limits if the applicant demonstrates to the satisfaction of the agency that the~~

~~proposed limits are not likely to cause any individual to receive a dose to the whole body in any period of one calendar year in excess of 0.5 rem.~~

(c) ~~It is the intent of this Rule to limit radiation levels so that it is unlikely that individuals in unrestricted areas would receive a dose to the whole body in excess of 0.5 rem in any one year. If in specific instances it is determined by the agency that this intent is not met, the agency may impose such additional requirements on the licensee or registrant as may be necessary to meet this intent.~~

*Statutory Authority G.S. 104E-7.*

#### **.0407 CONCENTRATION IN EFFLUENTS TO UNRESTRICTED AREAS**

(a) ~~No licensee shall possess, use, or transfer licensed radioactive material so as to release to an unrestricted area radioactive material in concentrations which exceed the limits specified in Table II in Rule .0423(a) of this Section, except as authorized pursuant to Rule .0416 of this Section and (b) of this Rule. For purposes of this Rule, concentrations may be averaged over a period not greater than one year.~~

(b) ~~An application for a license or amendment may include proposed limits higher than those specified in (a) of this Rule. The agency will approve the proposed limits if the applicant demonstrates:~~

- (1) ~~that the applicant has made a reasonable effort to minimize the radioactivity contained in effluents to unrestricted areas, and~~
- (2) ~~that it is not likely that radioactive material discharged in the effluent would result in the exposure of an individual to concentrations of a radioactive material in air or water exceeding the limits specified in Table II in Rule .0423(a) of this Section.~~

(c) ~~An application for higher limits pursuant to (b) of this Rule shall include information demonstrating that the applicant has made a reasonable effort to minimize the radioactivity discharged in effluents to unrestricted areas, and shall include, as pertinent:~~

- (1) ~~information as to flow rates, total volume of effluent, peak concentration of each radionuclide in the effluent, and concentration of each radionuclide in the effluent averaged over a period of one year at the point where the effluent leaves a stack, tube, pipe, or similar~~

- conduit;
- (2) ~~a description of the properties of the effluents, including:~~
    - (A) ~~chemical composition;~~
    - (B) ~~physical characteristics, including suspended solids content in liquid effluents, and nature of gas or aerosol for air effluents;~~
    - (C) ~~the hydrogen ion concentrations (pH) of liquid effluents; and~~
    - (D) ~~the size range of particulates in effluents released into air;~~
  - (3) ~~a description of the anticipated human occupancy in the unrestricted area where the highest concentration of radioactive material from the effluent is expected and, in the case of a river or stream, a description of water uses downstream from the point of release of the effluent;~~
  - (4) ~~information as to the highest concentration of each radionuclide in an unrestricted area including anticipated concentrations averaged over a period of one year:~~
    - (A) ~~in air at any point of human occupancy, or~~
    - (B) ~~in water at points of use downstream from the point of release of the effluent;~~
  - (5) ~~the background concentration of radionuclides in the receiving river or stream prior to the release of liquid effluent;~~
  - (6) ~~a description of the environmental monitoring equipment including sensitivity of the system and procedures and calculations to determine concentrations of radionuclides in the unrestricted area and possible reconcentrations of radionuclides; and~~
  - (7) ~~a description of the waste treatment facilities and procedures used to reduce the concentration of radionuclides in effluents prior to their release.~~
- (d) ~~For the purposes of this Rule, the concentration limits in Table II in Rule .0423(a) of this Section shall apply at the boundary of the restricted area. The concentration of radioactive material discharged through a stack, pipe or similar conduit may be determined with respect to the point where the material leaves the conduit. If the conduit discharges within the restricted area, the concentration at the boundary may be determined by applying appropriate factors for dilution, disper-~~

sion, or decay between the point of discharge and the boundary.

(e) ~~In addition to limiting concentrations in effluent streams, the agency may limit quantities of radioactive material released in air or water during a specified period of time if it appears that the daily intake of radioactive material from air, water, or food by a suitable sample of an exposed population group, averaged over a period not exceeding one year, would otherwise exceed the daily intake resulting from continuous exposure to air or water containing one third the concentration of radioactive material specified in Table II in Rule .0423(a) of this Section.~~

(f) ~~The provisions of this Section do not apply to disposal of radioactive material into sanitary sewerage systems, which is governed by Rule .0416(d) of this Section.~~

*Statutory Authority G.S. 104E-7.*

#### **.0408 BIOASSAY SERVICES**

~~Where necessary or desirable in order to aid in determining the extent of an individual's exposure to concentrations of radioactive material, the agency may incorporate license provisions or issue an order requiring a licensee or registrant to make available to the individual appropriate bioassay services and to furnish a copy of the reports of such services to the agency.~~

*Statutory Authority G.S. 104E-7; 104E-12(a)(2).*

#### **.0409 SURVEYS**

~~Each licensee or registrant shall make or cause to be made such surveys as may be necessary for him to establish compliance with these Regulations.~~

*Statutory Authority G.S. 104E-7.*

#### **.0410 PERSONNEL MONITORING**

(a) ~~Each licensee or registrant shall supply appropriate personnel monitoring equipment to, and shall require the use of such equipment by:~~

- (1) ~~each individual who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 25 percent of the applicable value specified in Rule .0402 of this Section;~~
- (2) ~~each individual under 18 years of age who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of five percent of the~~



applicable value specified in Rule .0402 of this Section; and

(3) ~~each individual who enters a high radiation area.~~

(b) ~~Exposure of a personnel monitoring device to deceptively indicate a dose delivered to an individual is prohibited.~~

(c) ~~With the exception of direct and indirect reading pocket ionization chambers and dosimeters used to measure the doses to the hands, forearms, feet and ankles, all personnel dosimeters which are used to comply with Rules .0402 or .0405 of this Section or with conditions in a license or registration and which require processing to determine the radiation doses shall be provided and evaluated by a dosimetry processor who is:~~

(1) ~~registered to provide such services pursuant to Rule .0205 of this Chapter; and~~

(2) ~~accredited by the National Voluntary Laboratory Accreditation Programs (NVLAP) of the National Bureau of Standards for the type of radiation or radiations included in the NVLAP programs that most closely approximate the type of radiation or radiations for which the individual wearing the dosimeter is monitored.~~

Statutory Authority: G.S. 104E-7;

#### **.0411 CAUTION SIGNS: LABELS: AND SIGNALS**

(a) General requirements are as follows:

(1) ~~Except as otherwise authorized by the agency, symbols prescribed by this Section shall use the conventional radiation caution colors, magenta or purple on yellow background. The symbol prescribed by this Section is the conventional three-bladed design, radiation symbol.~~

Radiation Symbol

(A) ~~Crosshatched area is to be magenta or purple.~~

(B) ~~Background is to be yellow.~~

(2) ~~In addition to the contents of signs and labels prescribed in this Section, a licensee or registrant may provide on or near these signs and labels any additional information which may be appropriate in aiding individuals to minimize exposure to radiation.~~

(3) ~~The word "danger" may be substituted for the word "caution" in the signs~~

~~described in this Rule.~~

(b) ~~Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:~~

#### **CAUTION RADIATION AREA**

(c) ~~High radiation areas shall be posted and protected as follows:~~

(1) ~~Each high radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:~~

#### **CAUTION HIGH RADIATION AREA**

(2) ~~Each entrance or access point to a high radiation area shall be posted with the sign described in Subparagraph (c)(1) of this Rule and shall be:~~

(A) ~~equipped with a control device which shall cause the level of radiation to be reduced below that at which an individual might receive a dose of 100 millirems in one hour upon entry into the area; or~~

(B) ~~equipped with a control device which shall energize a conspicuous visible or audible alarm signal in such a manner that the individual entering the high radiation area and the licensee, registrant, or a supervisor of the activity are made aware of the entry; or~~

(C) ~~maintained locked except during periods when access to the area is required, with positive control over each individual entry.~~

(3) ~~The controls required by Subparagraph (c)(2) of this Rule shall be established in such a way that no individual will be prevented from leaving a high radiation area.~~

(4) ~~In the case of a high radiation area established for a period of 30 days or less, direct surveillance to prevent unauthorized entry may be substituted for the controls required by Subparagraph (c)(2) of this Rule.~~

(5) ~~Any licensee, registrant or applicant for a license or registration may apply to the agency for approval of methods not included in Subparagraphs (c)(2) and (4) of this Rule for controlling access to~~



high radiation areas. The agency will approve the proposed alternatives if the licensee, registrant or applicant demonstrates that the alternative methods of control will prevent unauthorized entry into a high radiation area, and that the requirements of Subparagraph (c)(2) of this Rule are met.

- (6) Each area in which there may exist radiation levels in excess of 500 rems in one hour at one meter from a sealed radioactive source that is used to irradiate materials shall meet the requirements which follow:

(A) Each entrance or access point shall:

- (i) be equipped with entry control devices which shall function automatically to prevent any individual from inadvertently entering the area when these radiation levels exist;
- (ii) permit deliberate entry into the area only after actuation of a control device which shall cause the radiation level within the area, from the sealed source, to be reduced below that at which it would be possible for an individual to receive a dose in excess of 100 mrem in one hour; and
- (iii) prevent operation of the source if the source would produce radiation levels in the area that could result in a dose to an individual in excess of 100 mrem in one hour.

(B) Each area shall be equipped with additional control devices such that upon failure of the entry control devices to function as required by Subparagraph (c)(6)(A) of this Rule, the radiation level within the area, from the sealed source, shall be reduced below that at which it would be possible for an individual to receive a dose in excess of 100 mrem in one hour. Visible and audible alarm signals shall be generated to make:

- (i) an individual attempting to enter the area aware of the hazard; and
- (ii) the licensee, or at least one other individual who is familiar with the activity and prepared to render or summon assistance, aware of the failure of the entry control devices.

(C) Each area shall be equipped with control devices, such that:

- (i) upon failure or removal of physical radiation barriers, other than the source's shielded storage container, the radiation level from the source shall be reduced below that at which it would be possible for an individual to receive a dose in excess of 100 mrem in one hour;
- (ii) visible and audible alarm signals shall be generated to make:
  - (I) potentially affected individuals aware of the hazard, and
  - (II) the licensee, or at least one other individual who is familiar with the activity and prepared to render or summon assistance, aware of the failure or removal of the physical barrier.

When the shield for the stored source is a liquid, means shall be provided to monitor the integrity of the shield and to signal, automatically, loss of adequate shielding. Physical radiation barriers that comprise permanent structural components, such as walls that have no credible probability of failure or removal in ordinary circumstances, need not meet the requirements of this Subparagraph.

(D) Each area shall be equipped with devices that will automatically generate visible and audible alarm signals to alert personnel in the area before the source can be put into operation and in sufficient time for any individual in the area to operate a clearly identified control device which shall be installed in the area and which can prevent the source from being put into operation.

(E) Each area shall be controlled by use of such administrative procedures and such devices as are necessary to assure that the area is cleared of personnel prior to each use of the source preceding which use it might have been possible for an individual to have entered the area.

(F) Each area shall be checked by a physical radiation measurement to assure that prior to the first individual's entry into the area after any use of the source, the radiation level from the source in the area is below that at

- which it would be possible for an individual to receive a dose in excess of 100 mrem in one hour.
- (G) ~~The licensee shall test the entry control devices required in Subparagraph (e)(6)(A) of this Rule for proper functioning prior to initial operation with the source of radiation on any day that operations are not uninterruptedly continued from the previous day or before resuming operations after any unintended interruption.~~
- (i) ~~The licensee shall maintain records of the dates, times and results of such tests of function. No such operations other than those necessary to place the source in safe condition or to effect repairs on controls shall be conducted with the source unless control devices are functioning properly.~~
- (ii) ~~The licensee shall submit an acceptable schedule for more complete periodic tests of the entry control and warning systems to be established and adhered to as a condition of the license.~~
- (H) ~~The licensee shall have those entry and exit portals that are used in transporting materials to and from the irradiation area and, that are not intended for use by individuals, controlled by such devices and administrative procedures as are necessary to physically protect and warn against inadvertent entry by any individual through these portals. Exit portals for processed materials shall be equipped to detect and signal the presence of loose radiation sources that are carried toward such an exit and to automatically prevent the loose sources from being carried out of the area.~~
- (7) ~~Licensees with, or applicants for, licenses for radiation sources that:~~
- (A) ~~are within the purview of Subparagraph (e)(6) of this Rule;~~
- (B) ~~must be used in a variety of positions or in peculiar locations, such as open fields or forests; and~~
- (C) ~~make it impracticable to comply with certain requirements of Subparagraph (e)(6) of this Rule, such as those for the automatic control of radiation~~
- levels;
- may apply to the agency for approval prior to use of safety measures that are alternative to those specified in Subparagraph (e)(6) of this Rule, and that will provide at least an equivalent degree of personnel protection in the use of these sources.
- (8) ~~At least one of the alternative measures pursuant to Subparagraph (e)(7) of this Rule must include an entry preventing interlock control based on a physical measurement of radiation that assures the absence of high radiation levels before an individual can gain access to an area where the sources are used.~~
- (9) ~~Subparagraph (e)(6) of this Rule does not apply to radioactive sources that are used in:~~
- (A) ~~teletherapy;~~
- (B) ~~radiography; or~~
- (C) ~~completely shielded irradiators within which the source:~~
- (i) ~~is both stored and operated within:~~
- (I) ~~the same shielded radiation barrier, and~~
- (II) ~~the designed configuration of the irradiator;~~
- (ii) ~~is always inaccessible to any individual; and~~
- (iii) ~~cannot create high levels of radiation in an area that is accessible to any individual.~~
- (d) ~~Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:~~
- CAUTION  
AIRBORNE RADIOACTIVITY AREA**
- (e) ~~Additional Requirements~~
- (1) ~~Each area or room in which any radioactive material, other than natural uranium or thorium, is used or stored in an amount exceeding ten times the quantity of radioactive material specified in Rule .0424(a) of this Section shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:~~
- CAUTION  
RADIOACTIVE MATERIAL**
- (2) ~~Each area or room in which natural uranium or thorium is used or stored in~~

an amount exceeding 100 times the quantity specified in Rule .0424(a) of this Section shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

CAUTION  
RADIOACTIVE MATERIAL

(f) Containers

- (1) Except as provided in Subparagraph (f)(3) of this Rule each container of radioactive material shall bear a durable, clearly visible label identifying the radioactive contents.
- (2) A label required pursuant to Subparagraph (f)(1) of this Rule shall bear the radioactive caution symbol and the words:

CAUTION  
RADIOACTIVE MATERIAL

It shall also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity thereof, to take precautions to avoid or minimize exposures. The information shall include radiation levels, kinds of material, estimate of activity and date for which activity is estimated as appropriate.

- (3) Notwithstanding the provisions of Subparagraph (f)(1) of this Rule, labeling is not required for containers which:
  - (A) do not contain radioactive material in quantities greater than the applicable quantities listed in Rule .0424(a) of this Section;
  - (B) contain only natural uranium or thorium in quantities no greater than ten times the applicable quantities listed in Rule .0424(a) of this Section;
  - (C) do not contain radioactive material in concentrations greater than the applicable concentrations listed in Column 2, Table 1 in Rule .0423(a) of this Section;
  - (D) are attended by an individual who takes the precautions necessary to prevent the exposure of any individual to radiation or radioactive material in excess of the limits established by the rules in this Section;
  - (E) are in transport and are packaged and labeled in accordance with regulations published by the Department of

Transportation;

- (F) accessible only to individuals authorized to handle or use them or to work in the vicinity thereof, provided that the contents are identified to such individuals by a readily available written record, for example, containers in locations such as water-filled canals, storage vaults, or hot cells; and
  - (G) are manufacturing and processing equipment such as piping and tanks.
- (4) Each licensee shall, prior to disposal of an empty uncontaminated container to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.
- (g) All radiation machines shall be labeled in a manner which cautions individuals that radiation is produced when the machine is being operated.

Statutory Authority G.S. 104E-7; 104E-12(a)(1).

**.0412 EXCEPTIONS FROM POSTING AND LABELING**

Notwithstanding the provisions of Rule .0411 of this Section:

- (1) A room or area is not required to be posted with a caution sign because of the presence of a sealed source, provided the radiation level 12 inches from the surface of the source container or housing does not exceed five millirems per hour.
- (2) Rooms or other areas in hospitals are not required to be posted with caution signs and control of entrance or access thereto, pursuant to Rule .0411(e) of this Section, because of the presence of patients containing radioactive material provided that there are personnel in attendance who will take the precautions necessary to prevent the exposure of any individual to radiation or radioactive material in excess of the limits established in the Rules of this Section.
- (3) Caution signs are not required to be posted in areas or rooms containing radioactive material for periods of less than eight hours provided that:
  - (a) The material is constantly attended during such periods by an individual who shall take the precautions necessary to prevent the exposure of an individual to radiation or radioactive



material in excess of the limits established in this Section; and

- (b) ~~the area or room is subject to the licensee's or registrant's control.~~
- (4) ~~A room or other area is not required to be posted with a caution sign, and control is not required for each entrance or access point to a room or other area which is a high radiation area solely because of the presence of radioactive material prepared for transport and packaged and labeled in accordance with regulations of the Department of Transportation.~~

*Statutory Authority G.S. 104E-7.*

### **.0413 INSTRUCTION OF PERSONNEL**

Instructions required for individuals working in or frequenting any portion of a restricted area are specified in Rule .1003 of this Chapter.

*Statutory Authority G.S. 104E-7.*

### **.0414 STORAGE OF SOURCES OF RADIATION**

(a) ~~Sources of radiation shall be secured against unauthorized removal from the place of storage.~~

(b) ~~Sources of radiation in an unrestricted area and not in storage shall be tended under the constant surveillance and immediate control of the licensee or registrant.~~

*Statutory Authority G.S. 104E-7.*

### **.0415 PICKING UP; RECEIVING; AND OPENING PACKAGES**

(a) ~~Each licensee or registrant who expects to receive a package containing quantities of radioactive material in excess of the Type A quantities specified in Rule .0113 of this Chapter shall:~~

- (1) ~~If the package is to be delivered to the licensee's or registrant's facility by the carrier, make arrangements to receive the package when it is offered for delivery by the carrier; or~~
- (2) ~~If the package is to be picked up by the licensee or registrant at the carrier's terminal, make arrangements to receive notification from the carrier of the arrival of the package, at the time of arrival.~~

(b) ~~Each licensee or registrant who picks up a package of radioactive material from a carrier's terminal shall pick up the package expeditiously upon receipt of notification from the carrier of its~~

~~arrival.~~

(c) ~~Each licensee or registrant, upon receipt of a package of radioactive material, shall monitor the external surfaces of the package for radioactive contamination caused by leakage of the radioactive contents, except that the following are not required to be monitored:~~

- (1) ~~packages containing less than one millicurie of beta or gamma emitting radioactive material or ten microcuries of alpha emitting radioactive material;~~
- (2) ~~packages containing no more than ten millicuries of radioactive material consisting solely of tritium, carbon 14, sulfur 35, or iodine 125;~~
- (3) ~~packages containing only radioactive material as gases or in special form;~~
- (4) ~~packages containing only radioactive material in other than liquid form including Mo 99/Tc 99m generators, and not exceeding the Type A quantity limit specified in Rule .0113 of this Chapter; and~~
- (5) ~~packages containing only radionuclides with half lives of less than 30 days and a total quantity of no more than 100 millicuries.~~

~~The monitoring shall be performed as soon as practicable after receipt, but no later than three hours after the package is received at the licensee's facility if received during the licensee's normal working hours, or within 18 hours after receipt if received after normal working hours.~~

(d) ~~If removable radioactive contamination in excess of 0.01 microcurie or 22,200 disintegrations per minute per 100 square centimeters of package surface, is found on the external surfaces of the package, the licensee shall immediately notify the final delivering carrier and, by telephone and by telegraph, mailgram or facsimile, the agency.~~

(e) ~~Each licensee or registrant, upon receipt of a package containing quantities of radioactive material in excess of the Type A quantities specified in Rule .0113 of this Chapter, other than those transported by exclusive use vehicle, shall monitor the radiation levels external to the package. The package shall be monitored as soon as practicable after receipt, but no later than three hours after the package is received at the licensee's facility if received during the licensee's normal working hours, or within 18 hours after receipt if received after normal working hours.~~

(f) ~~If radiation levels are found on the external surface of the package in excess of 200 millirem~~

per hour, or at three feet from the external surface of the package in excess of ten millirem per hour; the licensee or registrant shall immediately notify, by telephone and by telegraph, mailgram or facsimile, the final delivering carrier and the agency.

(g) Each licensee or registrant shall establish and maintain procedures for safely opening packages in which radioactive material is received, and shall assure that these procedures are followed and that due consideration is given to special instructions for the type of package being opened.

Statutory Authority G.S. 104E-7.

#### .0416 WASTE DISPOSAL

(a) No licensee shall dispose of any radioactive material except:

- (1) by transfer to an authorized recipient as provided in Section .0300 of this Chapter, or
- (2) as authorized pursuant to the provisions of this Rule or Rule .0407 of this Section.

(b) Any person may apply to the agency for approval of proposed procedures to dispose of radioactive material in a manner not otherwise authorized in this Section. Each applicant shall include:

- (1) a description of the radioactive material, including the quantities and kinds of radioactive material and levels of radioactivity involved, and the proposed manner and conditions of disposal;
- (2) where appropriate, an analysis and evaluation of pertinent information as to:
  - (A) the nature of the environment, including topographical, geological, meteorological, and hydrological characteristics;
  - (B) usage of ground and surface waters in the general area;
  - (C) the nature and location of other potentially affected facilities; and
  - (D) procedures to be observed to minimize the risk of unexpected or hazardous exposures.

(c) The agency will not approve any application for a license to receive radioactive material from other persons for disposal on land not owned by the state or the federal government.

(d) No licensee shall discharge radioactive material into a sanitary sewerage system unless:

- (1) It is readily soluble or dispersible in water;

(2) The quantity of any radioactive material released into the system by the licensee in any one day does not exceed the larger of Subparagraphs (d)(2)(A) and (B) of this Rule:

- (A) the quantity which, if diluted by the average daily quantity of sewage released into the sewer by the licensee, will result in an average concentration not greater than the limits specified in Table I, Column 2 of Rule .0423(a) of this Section; or
- (B) ten times the quantity of the radioactive material specified in the table in Rule .0424(a) of this Section.

(3) The quantity of any radioactive material released in any one month, if diluted by the average monthly quantity of water released by the licensee, will not result in an average concentration exceeding the limits specified in Table I, Column 2 of Rule .0423(a) of this Section.

(4) The gross quantity of licensed and other radioactive material, excluding hydrogen-3 and carbon-14, released into the sanitary sewerage system by the licensee does not exceed one curie per year. The quantities of hydrogen-3 and carbon-14 released to the sanitary sewerage system may not exceed five curies per year for hydrogen-3 and one curie per year for carbon-14.

(5) Excreta from individuals undergoing medical diagnosis or therapy with radioactive materials are exempt from any limitations contained in this Rule.

(e) No licensee shall dispose of radioactive material by burial in soil except as specifically approved by the agency pursuant to (b) of this Rule.

(f) No licensee shall incinerate radioactive material for the purpose of disposal or preparation for disposal except as specifically approved by the agency pursuant to (b) of this Rule and Rule .0407 of this Section. Rule .0348 of this Chapter imposes additional requirements for radioactive waste processing facilities which include incineration.

(g) The Commission or its designee shall conduct a public hearing in any county in which a person proposes to operate a radioactive waste processing facility or a radioactive waste disposal facility, as defined in Rule .0104 of this Chapter, or to enlarge an existing facility for such processing or disposal. Rules governing this hearing shall be those found in 15A NCAC 1B .0200.



(h) ~~Any licensee may dispose of the following licensed material without regard to its radioactivity:~~

- ~~(1) 0.05 microcurie or less of hydrogen-3, carbon-14 and iodine-125 per gram of medium, used for liquid scintillation counting; and~~
- ~~(2) 0.05 microcurie or less of hydrogen-3, carbon-14 or iodine-125 per gram of animal tissue averaged over the weight of the entire animal; provided however, such tissue may not be disposed of in a manner that would permit its use either as food for humans or as animal feed.~~

~~(i) Nothing in (h) of this Rule relieves the licensee of responsibility for:~~

- ~~(1) maintaining records showing the receipt, transfer and disposal of radioactive material as required in Rule .0417 of this Section; and~~
- ~~(2) complying with other applicable federal, state and local regulations governing any other toxic or hazardous property of the materials specified in (h) of this Rule.~~

*Statutory Authority G.S. 104E-7(2), (5).*

#### **.0417 RECORDS**

~~(a) Each licensee or registrant shall maintain records showing the radiation exposures of all individuals for whom personnel monitoring is required under Rule .0410 of this Section. Such records shall be kept on appropriate form(s) provided by the agency in accordance with the instructions contained in that form, or on clear and legible records containing all the information required by the agency form. The doses entered on the forms or records shall be for periods of time not exceeding one calendar quarter.~~

~~(b) Each licensee or registrant shall maintain records in the same units used in this Section, showing the results of surveys required by Rule .0409 of this Section, monitoring required by Rules .0415(c) and (e) of this Section, and disposal made pursuant to the provisions of Rule .0416(b) and (d) of this Section.~~

~~(c) Records of individual exposure to radiation and to radioactive material which must be maintained pursuant to the provisions of (a) of this Rule and records of bioassays, including results of whole body counting examinations, made pursuant to Rule .0408 of this Section shall be preserved until the agency authorizes disposition.~~

~~(d) Records of the results of surveys and moni-~~

~~toring which must be maintained pursuant to (b) of this Rule shall be preserved for two years after completion of the survey except that the following records shall be maintained until the agency authorizes their disposition:~~

- ~~(1) records of the results of surveys to determine compliance with Rule .0404(a) of this Section;~~
- ~~(2) in the absence of personnel monitoring data, records of the results of surveys to determine external radiation dose;~~
- ~~(3) records of the results of surveys used to evaluate the release of radioactive effluents to the environment;~~
- ~~(4) records of licensed radioactive material which is disposed of pursuant to provisions of Rule .0416(b) and (c) of this Section shall be maintained until the agency authorizes their disposition.~~

~~(e) Records of disposal of radioactive material made pursuant to Rule .0416 of this Section shall be maintained until the agency authorizes their disposition.~~

~~(f) Records which must be maintained pursuant to this Section may be the original or a reproduced copy or microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by agency rules.~~

~~(g) If there is a conflict between the agency rules in this Section, license condition, or other written agency approval or authorization pertaining to the retention period for the same type of record, the retention period specified in the rules in this Section for such records shall apply unless the agency, pursuant to Rule .0106 of this Chapter, has granted a specific exemption from the record retention requirements specified in the rules in this Section.~~

~~(h) The discontinuance of or curtailment of activities, does not relieve the licensee or registrant of responsibility for retaining all records required by this Rule. A licensee or registrant may, however, request the agency to accept such records. The acceptance of the records by the agency relieves the licensee or registrant of subsequent responsibility only in respect to their preservation as required by this Rule.~~

*Statutory Authority G.S. 104E-7(2); 104E-12(a).*

#### **.0418 REPORTS OF THEFT OR LOSS**

~~Each licensee or registrant shall report by telephone and telegraph to the agency the theft or loss~~



of any source of radiation immediately after the occurrence becomes known to the licensee or registrant.

*Statutory Authority G.S. 104E-7.*

#### **.0419 NOTIFICATION OF INCIDENTS**

(a) Each licensee or registrant shall immediately notify the agency by telephone and telegraph of any incident involving any source of radiation possessed by him and which may have caused or threatens to cause:

- (1) a dose to the whole body of any individual of 25 rems or more; a dose to the skin of the whole body of any individual of 150 rems or more; or a dose to the feet, ankles, hands, or forearms of any individual of 375 rems or more;
- (2) the release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 5,000 times the limits specified for such materials in Table II in Rule .0423(a) of this Section;
- (3) a loss of one working week or more of the operation of any facilities affected; or
- (4) damage to property in excess of \$200,000.

(b) Each licensee or registrant shall within 24 hours notify the agency by telephone and telegraph of any incident involving any source of radiation possessed by him and which may have caused or threatens to cause:

- (1) a dose to the whole body of an individual of five rems or more; a dose to the skin of the whole body of any individual of 30 rems or more; or a dose to the feet, ankles, hands, or forearms of 75 rems or more;
- (2) the release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 500 times the limits specified for such materials in Table II in Rule .0423(a) of this Section;
- (3) a loss of one day or more of the operation of any facilities affected; or
- (4) damage to property in excess of \$2000.

(c) Any report filed with the agency pursuant to this Rule shall be prepared in such a manner that names of individuals who have received excessive doses will be stated in a separate part of the report.

*Statutory Authority G.S. 104E-7.*

#### **.0420 OVEREXPOSURES AND EXCESSIVE LEVELS AND CONCENTRATIONS**

(a) In addition to any notification required by Rule .0419 of this Section, each licensee or registrant shall make a report in writing within 30 days to the agency of:

- (1) each exposure of an individual to radiation or concentrations of radioactive material in excess of any applicable limit as set forth in this Section or as otherwise approved by the agency;
- (2) any incident for which notification is required by Rule .0419 of this Section;
- (3) levels of radiation or concentrations of radioactive material in an unrestricted area in excess of ten times any applicable limit as set forth in this Section or as otherwise approved by the agency, but not involving excessive exposure of any individual.

(b) Each report required under this Rule shall describe the extent of exposure of individuals to radiation or to radioactive material, including estimates of each individual's dose as required by Subparagraph (a)(1) of this Rule; levels of radiation and concentrations of radioactive material involved; the cause of exposure, levels of concentrations, and corrective steps taken or planned to assure against a recurrence.

(c) Any report filed with the agency pursuant to this Rule shall include, for each individual exposed, the name, social security number, and date of birth; and an estimate of the individual's dose. The report shall be prepared so that this information is stated in a separate part of the report.

*Statutory Authority G.S. 104E-7.*

#### **.0421 VACATING PREMISES**

No less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material as a result of his activities, each specific licensee shall notify the agency in writing of intent to vacate. When deemed necessary by the agency, the licensee shall decontaminate the premises in such a manner as the agency may specify.

*Statutory Authority G.S. 104E-7.*

#### **.0422 NOTIFICATION AND REPORTS TO INDIVIDUALS**

(a) Requirements for notification and reports to

individuals of exposure to radiation or radioactive material are specified in Rule .1004 of this Chapter.

(b) When a licensee or registrant is required pursuant to Rule .0420 of this Section to report to the agency any exposure of an individual to radiation or radioactive material, the licensee or registrant shall also notify the individual. Such notice shall be transmitted at a time not later than the transmittal to the agency, and shall comply with the provisions of Rule .1004(a) of this Chapter.

Statutory Authority G.S. 104E-7; 104E-12(b).

### .0423 REFERENCE CONCENTRATIONS IN AIR AND WATER

(a) The following table consists of reference concentrations of radioactive material above natural background in air and water for use in conjunction with the Rules of this Chapter.

#### (1) CONCENTRATIONS IN AIR AND WATER ABOVE NATURAL BACKGROUND

			Table I		Table II	
Element			Column 1	Column 2	Column 1	Column 2
(atomic number)	Isotope		Air (uCi/ml)	Water (uCi/ml)	Air (uCi/ml)	Water (uCi/ml)
Actinium (89)	Ac 227	S	$2 \times 10^{-12}$	$6 \times 10^{-5}$	$8 \times 10^{-14}$	$2 \times 10^{-6}$
		I	$3 \times 10^{-11}$	$9 \times 10^{-3}$	$9 \times 10^{-13}$	$3 \times 10^{-4}$
	Ac 228	S	$8 \times 10^{-8}$	$3 \times 10^{-3}$	$3 \times 10^{-9}$	$9 \times 10^{-5}$
		I	$2 \times 10^{-8}$	$3 \times 10^{-3}$	$6 \times 10^{-10}$	$9 \times 10^{-5}$
Americium (95)	Am 241	S	$6 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$2 \times 10^{-5}$
	Am 242m	S	$6 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$
		I	$3 \times 10^{-10}$	$3 \times 10^{-3}$	$9 \times 10^{-12}$	$9 \times 10^{-5}$
	Am 242	S	$4 \times 10^{-8}$	$4 \times 10^{-3}$	$1 \times 10^{-9}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-8}$	$4 \times 10^{-3}$	$2 \times 10^{-9}$	$1 \times 10^{-4}$
	Am 243	S	$6 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	Am 244	S	$4 \times 10^{-6}$	$1 \times 10^{-1}$	$1 \times 10^{-7}$	$5 \times 10^{-3}$
		I	$2 \times 10^{-5}$	$1 \times 10^{-1}$	$4 \times 10^{-7}$	$5 \times 10^{-3}$
Antimony (51)	Sb 122	S	$2 \times 10^{-7}$	$8 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$8 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
	Sb 124	S	$2 \times 10^{-7}$	$7 \times 10^{-4}$	$5 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$2 \times 10^{-8}$	$7 \times 10^{-4}$	$7 \times 10^{-10}$	$2 \times 10^{-5}$
	Sb 125	S	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$3 \times 10^{-8}$	$3 \times 10^{-3}$	$9 \times 10^{-10}$	$1 \times 10^{-4}$
Argon (18)	Ar 37	Sub	$6 \times 10^{-3}$	—	$1 \times 10^{-4}$	—
	Ar 41	Sub	$2 \times 10^{-6}$	—	$4 \times 10^{-8}$	—
Arsenic (33)	As 73	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$7 \times 10^{-8}$	$5 \times 10^{-4}$
		I	$4 \times 10^{-7}$	$1 \times 10^{-2}$	$1 \times 10^{-8}$	$5 \times 10^{-4}$
	As 74	S	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$5 \times 10^{-5}$

**PROPOSED RULES**

		I	$1 \times 10^{-7}$	$2 \times 10^{-3}$	$4 \times 10^{-9}$	$5 \times 10^{-5}$
	As 76	S	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
	As 77	S	$5 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$8 \times 10^{-5}$
		I	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$8 \times 10^{-5}$
Astatine (85)	At 211	S	$7 \times 10^{-9}$	$5 \times 10^{-5}$	$2 \times 10^{-10}$	$2 \times 10^{-6}$
		I	$3 \times 10^{-8}$	$2 \times 10^{-3}$	$1 \times 10^{-9}$	$7 \times 10^{-5}$
Barium (56)	Ba 131	S	$1 \times 10^{-6}$	$5 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$4 \times 10^{-7}$	$5 \times 10^{-3}$	$1 \times 10^{-8}$	$2 \times 10^{-4}$
	Ba 140	S	$1 \times 10^{-7}$	$8 \times 10^{-4}$	$4 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$4 \times 10^{-8}$	$7 \times 10^{-4}$	$1 \times 10^{-9}$	$2 \times 10^{-5}$
Berkelium (97)	Bk 249	S	$9 \times 10^{-10}$	$2 \times 10^{-2}$	$3 \times 10^{-11}$	$6 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$2 \times 10^{-2}$	$4 \times 10^{-9}$	$6 \times 10^{-4}$
	Bk 250	S	$1 \times 10^{-7}$	$6 \times 10^{-3}$	$5 \times 10^{-9}$	$2 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$6 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
Beryllium (4)	Be 7	S	$6 \times 10^{-6}$	$5 \times 10^{-2}$	$2 \times 10^{-7}$	$2 \times 10^{-3}$
		I	$1 \times 10^{-6}$	$5 \times 10^{-2}$	$4 \times 10^{-8}$	$2 \times 10^{-3}$
Bismuth (83)	Bi 206	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$1 \times 10^{-3}$	$5 \times 10^{-9}$	$4 \times 10^{-5}$
	Bi 207	S	$2 \times 10^{-7}$	$2 \times 10^{-3}$	$6 \times 10^{-9}$	$6 \times 10^{-5}$
		I	$1 \times 10^{-8}$	$2 \times 10^{-3}$	$5 \times 10^{-10}$	$6 \times 10^{-5}$
	Bi 210	S	$6 \times 10^{-9}$	$1 \times 10^{-3}$	$2 \times 10^{-10}$	$4 \times 10^{-5}$
		I	$6 \times 10^{-9}$	$1 \times 10^{-3}$	$2 \times 10^{-10}$	$4 \times 10^{-5}$
	Bi 212	S	$1 \times 10^{-7}$	$1 \times 10^{-2}$	$3 \times 10^{-9}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-2}$	$7 \times 10^{-9}$	$4 \times 10^{-4}$
Bromine (35)	Br 82	S	$1 \times 10^{-6}$	$8 \times 10^{-3}$	$4 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
Cadmium (48)	Cd 109	S	$5 \times 10^{-8}$	$5 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
		I	$7 \times 10^{-8}$	$5 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$
	Cd 115m	S	$4 \times 10^{-8}$	$7 \times 10^{-4}$	$1 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$4 \times 10^{-8}$	$7 \times 10^{-4}$	$1 \times 10^{-9}$	$3 \times 10^{-5}$
	Cd 115	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
Calcium (20)	Ca 45	S	$3 \times 10^{-8}$	$3 \times 10^{-4}$	$1 \times 10^{-9}$	$9 \times 10^{-6}$
		I	$1 \times 10^{-7}$	$5 \times 10^{-3}$	$4 \times 10^{-9}$	$2 \times 10^{-4}$
	Ca 47	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$5 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
Californium (98)	Cf 249	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$5 \times 10^{-14}$	$4 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$7 \times 10^{-4}$	$3 \times 10^{-12}$	$2 \times 10^{-5}$
	Cf 250	S	$5 \times 10^{-12}$	$4 \times 10^{-4}$	$2 \times 10^{-13}$	$1 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$7 \times 10^{-4}$	$3 \times 10^{-12}$	$3 \times 10^{-5}$
	Cf 251	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$6 \times 10^{-14}$	$4 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$3 \times 10^{-12}$	$3 \times 10^{-5}$
	Cf 252	S	$2 \times 10^{-11}$	$7 \times 10^{-4}$	$7 \times 10^{-13}$	$2 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$7 \times 10^{-4}$	$4 \times 10^{-12}$	$2 \times 10^{-5}$
	Cf 253	S	$8 \times 10^{-10}$	$4 \times 10^{-3}$	$3 \times 10^{-11}$	$1 \times 10^{-4}$
		I	$8 \times 10^{-10}$	$4 \times 10^{-3}$	$3 \times 10^{-11}$	$1 \times 10^{-4}$
	Cf 254	S	$5 \times 10^{-12}$	$4 \times 10^{-6}$	$2 \times 10^{-13}$	$1 \times 10^{-7}$
		I	$5 \times 10^{-12}$	$4 \times 10^{-6}$	$2 \times 10^{-13}$	$1 \times 10^{-7}$
Carbon (6)	C 14	S	$4 \times 10^{-6}$	$2 \times 10^{-2}$	$1 \times 10^{-7}$	$8 \times 10^{-4}$
	[CO (2)]	Sub	$5 \times 10^{-5}$		$1 \times 10^{-6}$	
Cerium (58)	Ce 141	S	$4 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$3 \times 10^{-3}$	$5 \times 10^{-9}$	$9 \times 10^{-5}$
	Ce 143	S	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$9 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$7 \times 10^{-9}$	$4 \times 10^{-5}$



**PROPOSED RULES**

Cesium (55)	Ce 144	S	$1 \times 10^{-8}$	$3 \times 10^{-4}$	$3 \times 10^{-10}$	$1 \times 10^{-5}$	
		I	$6 \times 10^{-9}$	$3 \times 10^{-4}$	$2 \times 10^{-10}$	$1 \times 10^{-5}$	
	Cs 131	S	$1 \times 10^{-5}$	$7 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$	
		I	$3 \times 10^{-6}$	$3 \times 10^{-2}$	$1 \times 10^{-7}$	$9 \times 10^{-4}$	
	Cs 134m	S	$4 \times 10^{-5}$	$2 \times 10^{-1}$	$1 \times 10^{-6}$	$6 \times 10^{-3}$	
		I	$6 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$1 \times 10^{-3}$	
	Cs 134	S	$4 \times 10^{-8}$	$3 \times 10^{-4}$	$1 \times 10^{-9}$	$9 \times 10^{-6}$	
		I	$1 \times 10^{-8}$	$1 \times 10^{-3}$	$4 \times 10^{-10}$	$4 \times 10^{-5}$	
	Cs 135	S	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$	
		I	$9 \times 10^{-8}$	$7 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$	
Chlorine (17)	Cs 136	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$9 \times 10^{-5}$	
		I	$2 \times 10^{-7}$	$2 \times 10^{-3}$	$6 \times 10^{-9}$	$6 \times 10^{-5}$	
	Cs 137	S	$6 \times 10^{-8}$	$4 \times 10^{-4}$	$2 \times 10^{-9}$	$2 \times 10^{-5}$	
		I	$1 \times 10^{-8}$	$1 \times 10^{-3}$	$5 \times 10^{-10}$	$4 \times 10^{-5}$	
	Cl 36	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$8 \times 10^{-5}$	
		I	$2 \times 10^{-8}$	$2 \times 10^{-3}$	$8 \times 10^{-10}$	$6 \times 10^{-5}$	
	Cl 38	S	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$4 \times 10^{-4}$	
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$7 \times 10^{-8}$	$4 \times 10^{-4}$	
	Chromium (24)	Cr 51	S	$1 \times 10^{-5}$	$5 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$
		I	$2 \times 10^{-6}$	$5 \times 10^{-2}$	$8 \times 10^{-8}$	$2 \times 10^{-3}$	
Cobalt (27)	Co 57	S	$3 \times 10^{-6}$	$2 \times 10^{-2}$	$1 \times 10^{-7}$	$5 \times 10^{-4}$	
		I	$2 \times 10^{-7}$	$1 \times 10^{-2}$	$6 \times 10^{-9}$	$4 \times 10^{-4}$	
	Co 58m	S	$2 \times 10^{-5}$	$8 \times 10^{-2}$	$6 \times 10^{-7}$	$3 \times 10^{-3}$	
		I	$9 \times 10^{-6}$	$6 \times 10^{-2}$	$3 \times 10^{-7}$	$2 \times 10^{-3}$	
	Co 58	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$	
		I	$5 \times 10^{-8}$	$3 \times 10^{-3}$	$2 \times 10^{-9}$	$9 \times 10^{-5}$	
	Co 60	S	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$1 \times 10^{-8}$	$5 \times 10^{-5}$	
		I	$9 \times 10^{-9}$	$1 \times 10^{-3}$	$3 \times 10^{-10}$	$3 \times 10^{-5}$	
	Copper (29)	Cu 64	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$7 \times 10^{-6}$	$3 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$6 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$	
Curium (96)	Cm 242	S	$1 \times 10^{-10}$	$7 \times 10^{-4}$	$4 \times 10^{-12}$	$2 \times 10^{-5}$	
		I	$2 \times 10^{-10}$	$7 \times 10^{-4}$	$6 \times 10^{-12}$	$3 \times 10^{-5}$	
	Cm 243	S	$6 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$5 \times 10^{-6}$	
		I	$1 \times 10^{-10}$	$7 \times 10^{-4}$	$3 \times 10^{-12}$	$2 \times 10^{-5}$	
	Cm 244	S	$9 \times 10^{-12}$	$2 \times 10^{-4}$	$3 \times 10^{-13}$	$7 \times 10^{-6}$	
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$3 \times 10^{-12}$	$3 \times 10^{-5}$	
	Cm 245	S	$5 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$	
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$	
	Cm 246	S	$5 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$	
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$	
Dysprosium (66)	Cm 247	S	$5 \times 10^{-12}$	$1 \times 10^{-4}$	$2 \times 10^{-13}$	$4 \times 10^{-6}$	
		I	$1 \times 10^{-10}$	$6 \times 10^{-4}$	$4 \times 10^{-12}$	$2 \times 10^{-5}$	
	Cm 248	S	$6 \times 10^{-13}$	$1 \times 10^{-5}$	$2 \times 10^{-14}$	$4 \times 10^{-7}$	
		I	$1 \times 10^{-11}$	$4 \times 10^{-5}$	$4 \times 10^{-13}$	$1 \times 10^{-6}$	
	Cm 249	S	$1 \times 10^{-5}$	$6 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$	
		I	$1 \times 10^{-5}$	$6 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$	
	Dy 165	S	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$4 \times 10^{-4}$	
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$7 \times 10^{-8}$	$4 \times 10^{-4}$	
	Dy 166	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$4 \times 10^{-5}$	
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$7 \times 10^{-9}$	$4 \times 10^{-5}$	
Einsteinium (99)	Es 253	S	$8 \times 10^{-10}$	$7 \times 10^{-4}$	$3 \times 10^{-11}$	$2 \times 10^{-5}$	
		I	$6 \times 10^{-10}$	$7 \times 10^{-4}$	$2 \times 10^{-11}$	$2 \times 10^{-5}$	
	Es 254m	S	$5 \times 10^{-9}$	$5 \times 10^{-4}$	$2 \times 10^{-10}$	$2 \times 10^{-5}$	
		I	$6 \times 10^{-9}$	$5 \times 10^{-4}$	$2 \times 10^{-10}$	$2 \times 10^{-5}$	
	Es 254	S	$2 \times 10^{-11}$	$4 \times 10^{-4}$	$6 \times 10^{-13}$	$1 \times 10^{-5}$	

**PROPOSED RULES**

		I	$1 \times 10^{-10}$	$4 \times 10^{-4}$	$4 \times 10^{-12}$	$1 \times 10^{-5}$
	Es 255	S	$5 \times 10^{-10}$	$8 \times 10^{-4}$	$2 \times 10^{-11}$	$3 \times 10^{-5}$
		I	$4 \times 10^{-10}$	$8 \times 10^{-4}$	$1 \times 10^{-11}$	$3 \times 10^{-5}$
Erbium (68)	Er 169	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$4 \times 10^{-7}$	$3 \times 10^{-3}$	$1 \times 10^{-8}$	$9 \times 10^{-5}$
	Er 171	S	$7 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Europium (63)	Eu 152	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
	(T/2=9.2 hrs)	I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
	Eu 152	S	$1 \times 10^{-8}$	$2 \times 10^{-3}$	$4 \times 10^{-10}$	$8 \times 10^{-5}$
	(T/2=13 yrs)	I	$2 \times 10^{-8}$	$2 \times 10^{-3}$	$6 \times 10^{-10}$	$8 \times 10^{-5}$
	Eu 154	S	$4 \times 10^{-9}$	$6 \times 10^{-4}$	$1 \times 10^{-10}$	$2 \times 10^{-5}$
		I	$7 \times 10^{-9}$	$6 \times 10^{-4}$	$2 \times 10^{-10}$	$2 \times 10^{-5}$
	Eu 155	S	$9 \times 10^{-8}$	$6 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$
		I	$7 \times 10^{-8}$	$6 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$
Fermium (100)	Fm 254	S	$6 \times 10^{-8}$	$4 \times 10^{-3}$	$2 \times 10^{-9}$	$1 \times 10^{-4}$
		I	$7 \times 10^{-8}$	$4 \times 10^{-3}$	$2 \times 10^{-9}$	$1 \times 10^{-4}$
	Fm 255	S	$2 \times 10^{-8}$	$1 \times 10^{-3}$	$6 \times 10^{-10}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-8}$	$1 \times 10^{-3}$	$4 \times 10^{-10}$	$3 \times 10^{-5}$
	Fm 256	S	$3 \times 10^{-9}$	$3 \times 10^{-5}$	$1 \times 10^{-10}$	$9 \times 10^{-7}$
		I	$2 \times 10^{-9}$	$3 \times 10^{-5}$	$6 \times 10^{-11}$	$9 \times 10^{-7}$
Flourine (9)	F 18	S	$5 \times 10^{-6}$	$2 \times 10^{-2}$	$2 \times 10^{-7}$	$8 \times 10^{-4}$
		I	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$5 \times 10^{-4}$
Gadolinium (64)	Gd 153	S	$2 \times 10^{-7}$	$6 \times 10^{-3}$	$8 \times 10^{-9}$	$2 \times 10^{-4}$
		I	$9 \times 10^{-8}$	$6 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$
	Gd 159	S	$5 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$8 \times 10^{-5}$
		I	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$8 \times 10^{-5}$
Gallium (31)	Ga 72	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
Germanium (32)	Ge 71	S	$1 \times 10^{-5}$	$5 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$
		I	$6 \times 10^{-6}$	$5 \times 10^{-2}$	$2 \times 10^{-7}$	$2 \times 10^{-3}$
Gold (79)	Au 196	S	$1 \times 10^{-6}$	$5 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$6 \times 10^{-7}$	$4 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
	Au 198	S	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$5 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$5 \times 10^{-5}$
	Au 199	S	$1 \times 10^{-6}$	$5 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
Hafnium (72)	Hf 181	S	$4 \times 10^{-8}$	$2 \times 10^{-3}$	$1 \times 10^{-9}$	$7 \times 10^{-5}$
		I	$7 \times 10^{-8}$	$2 \times 10^{-3}$	$3 \times 10^{-9}$	$7 \times 10^{-5}$
Holmium (67)	Ho 166	S	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$7 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
Hydrogen (1)	H 3	S	$5 \times 10^{-6}$	$1 \times 10^{-1}$	$2 \times 10^{-7}$	$3 \times 10^{-3}$
		I	$5 \times 10^{-6}$	$1 \times 10^{-1}$	$2 \times 10^{-7}$	$3 \times 10^{-3}$
Indium (49)	In 113m	S	$8 \times 10^{-6}$	$4 \times 10^{-2}$	$3 \times 10^{-7}$	$1 \times 10^{-3}$
Indium (49)	In 113m	S	$8 \times 10^{-6}$	$4 \times 10^{-2}$	$3 \times 10^{-7}$	$1 \times 10^{-3}$
		I	$7 \times 10^{-6}$	$4 \times 10^{-2}$	$2 \times 10^{-7}$	$1 \times 10^{-3}$
	In 114m	S	$1 \times 10^{-7}$	$5 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$2 \times 10^{-8}$	$5 \times 10^{-4}$	$7 \times 10^{-10}$	$2 \times 10^{-5}$
	In 115m	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$8 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$6 \times 10^{-8}$	$4 \times 10^{-4}$
	In 115	S	$2 \times 10^{-7}$	$3 \times 10^{-3}$	$9 \times 10^{-9}$	$9 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$3 \times 10^{-3}$	$1 \times 10^{-9}$	$9 \times 10^{-5}$
Iodine (53)	I 125	S	$5 \times 10^{-9}$	$4 \times 10^{-5}$	$8 \times 10^{-11}$	$2 \times 10^{-7}$
		I	$2 \times 10^{-7}$	$6 \times 10^{-3}$	$6 \times 10^{-9}$	$2 \times 10^{-4}$
	I 126	S	$8 \times 10^{-9}$	$5 \times 10^{-5}$	$9 \times 10^{-11}$	$3 \times 10^{-7}$

**PROPOSED RULES**

	I-129	I	$3 \times 10^{-7}$	$3 \times 10^{-3}$	$1 \times 10^{-8}$	$9 \times 10^{-5}$
		S	$2 \times 10^{-9}$	$1 \times 10^{-5}$	$2 \times 10^{-11}$	$6 \times 10^{-8}$
		I	$7 \times 10^{-8}$	$6 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
		S	$9 \times 10^{-9}$	$6 \times 10^{-5}$	$1 \times 10^{-10}$	$3 \times 10^{-7}$
	I-132	I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		S	$2 \times 10^{-7}$	$2 \times 10^{-3}$	$3 \times 10^{-9}$	$8 \times 10^{-6}$
		I	$9 \times 10^{-7}$	$5 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
	I-133	S	$3 \times 10^{-8}$	$2 \times 10^{-4}$	$4 \times 10^{-10}$	$1 \times 10^{-6}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$7 \times 10^{-9}$	$4 \times 10^{-5}$
	I-134	S	$5 \times 10^{-7}$	$4 \times 10^{-3}$	$6 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$3 \times 10^{-6}$	$2 \times 10^{-2}$	$1 \times 10^{-7}$	$6 \times 10^{-4}$
	I-135	S	$1 \times 10^{-7}$	$7 \times 10^{-4}$	$1 \times 10^{-9}$	$4 \times 10^{-6}$
		I	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$7 \times 10^{-5}$
Iridium (77)	Ir-190	S	$1 \times 10^{-6}$	$6 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$4 \times 10^{-7}$	$5 \times 10^{-3}$	$1 \times 10^{-8}$	$2 \times 10^{-4}$
	Ir-192	S	$1 \times 10^{-7}$	$1 \times 10^{-3}$	$4 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$1 \times 10^{-3}$	$9 \times 10^{-10}$	$4 \times 10^{-5}$
	Ir-194	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
Iron (26)	Fe-55	S	$9 \times 10^{-7}$	$2 \times 10^{-2}$	$3 \times 10^{-8}$	$8 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$7 \times 10^{-2}$	$3 \times 10^{-8}$	$2 \times 10^{-3}$
	Fe-59	S	$1 \times 10^{-7}$	$2 \times 10^{-3}$	$5 \times 10^{-9}$	$6 \times 10^{-5}$
		I	$5 \times 10^{-8}$	$2 \times 10^{-3}$	$2 \times 10^{-9}$	$5 \times 10^{-5}$
Krypton (36)	Kr-85m	Sub	$6 \times 10^{-6}$	-----	$1 \times 10^{-7}$	-----
	Kr-85	Sub	$1 \times 10^{-5}$	-----	$3 \times 10^{-7}$	-----
	Kr-87	Sub	$1 \times 10^{-6}$	-----	$2 \times 10^{-8}$	-----
	Kr-88	Sub	$1 \times 10^{-6}$	-----	$2 \times 10^{-8}$	-----
Lanthanum (57)	La-140	S	$2 \times 10^{-7}$	$7 \times 10^{-4}$	$5 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$7 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
Lead (82)	Pb-203	S	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$6 \times 10^{-8}$	$4 \times 10^{-4}$
	Pb-210	S	$1 \times 10^{-10}$	$4 \times 10^{-6}$	$4 \times 10^{-12}$	$1 \times 10^{-7}$
		I	$2 \times 10^{-10}$	$5 \times 10^{-3}$	$8 \times 10^{-12}$	$2 \times 10^{-4}$
	Pb-212	S	$2 \times 10^{-8}$	$6 \times 10^{-4}$	$6 \times 10^{-10}$	$2 \times 10^{-5}$
		I	$2 \times 10^{-8}$	$5 \times 10^{-4}$	$7 \times 10^{-10}$	$2 \times 10^{-5}$
Lutetium (71)	Lu-177	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Manganese (25)	Mn-52	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$7 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$9 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
	Mn-54	S	$4 \times 10^{-7}$	$4 \times 10^{-3}$	$1 \times 10^{-9}$	$1 \times 10^{-4}$
		I	$4 \times 10^{-8}$	$3 \times 10^{-3}$	$1 \times 10^{-9}$	$1 \times 10^{-4}$
	Mn-56	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Mercury (80)	Hg-197m	S	$7 \times 10^{-7}$	$6 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$8 \times 10^{-7}$	$5 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
	Hg-197	S	$1 \times 10^{-6}$	$9 \times 10^{-3}$	$4 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$5 \times 10^{-4}$
	Hg-203	S	$7 \times 10^{-8}$	$5 \times 10^{-4}$	$2 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$3 \times 10^{-3}$	$4 \times 10^{-9}$	$1 \times 10^{-4}$
Molybdenum (42)	Mo-99	S	$7 \times 10^{-7}$	$5 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$7 \times 10^{-9}$	$4 \times 10^{-5}$
Neodymium (60)	Nd-144	S	$8 \times 10^{-7}$	$2 \times 10^{-3}$	$3 \times 10^{-12}$	$7 \times 10^{-5}$
		I	$3 \times 10^{-10}$	$2 \times 10^{-3}$	$1 \times 10^{-11}$	$8 \times 10^{-5}$
	Nd-147	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$2 \times 10^{-3}$	$8 \times 10^{-9}$	$6 \times 10^{-5}$



**PROPOSED RULES**

	Nd 149	S	$2 \times 10^{-6}$	$8 \times 10^{-3}$	$6 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$8 \times 10^{-3}$	$5 \times 10^{-8}$	$3 \times 10^{-4}$
Neptunium (93)	Np 237	S	$4 \times 10^{-12}$	$9 \times 10^{-5}$	$1 \times 10^{-13}$	$3 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$9 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	Np 239	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$7 \times 10^{-7}$	$4 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Nickel (28)	Ni 59	S	$5 \times 10^{-7}$	$6 \times 10^{-3}$	$2 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$8 \times 10^{-7}$	$6 \times 10^{-2}$	$3 \times 10^{-8}$	$2 \times 10^{-3}$
	Ni 63	S	$6 \times 10^{-8}$	$8 \times 10^{-4}$	$2 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-2}$	$1 \times 10^{-8}$	$7 \times 10^{-4}$
	Ni 65	S	$9 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Niobium (Columbium) (41)	Nb 93m	S	$1 \times 10^{-7}$	$1 \times 10^{-2}$	$4 \times 10^{-9}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-2}$	$5 \times 10^{-9}$	$4 \times 10^{-4}$
	Nb 95	S	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$3 \times 10^{-3}$	$3 \times 10^{-9}$	$1 \times 10^{-4}$
	Nb 97	S	$6 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$9 \times 10^{-4}$
		I	$5 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$9 \times 10^{-4}$
Osmium (76)	Os 185	S	$5 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$5 \times 10^{-8}$	$2 \times 10^{-3}$	$2 \times 10^{-9}$	$7 \times 10^{-5}$
	Os 191m	S	$2 \times 10^{-5}$	$7 \times 10^{-2}$	$6 \times 10^{-7}$	$3 \times 10^{-3}$
		I	$9 \times 10^{-6}$	$7 \times 10^{-2}$	$3 \times 10^{-7}$	$2 \times 10^{-3}$
	Os 191	S	$1 \times 10^{-6}$	$5 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$4 \times 10^{-7}$	$5 \times 10^{-3}$	$1 \times 10^{-8}$	$2 \times 10^{-4}$
	Os 193	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$9 \times 10^{-9}$	$5 \times 10^{-5}$
Palladium (46)	Pd 103	S	$1 \times 10^{-6}$	$1 \times 10^{-2}$	$5 \times 10^{-6}$	$3 \times 10^{-4}$
		I	$7 \times 10^{-7}$	$8 \times 10^{-3}$	$3 \times 10^{-8}$	$3 \times 10^{-4}$
	Pd 109	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$7 \times 10^{-5}$
Phosphorus (15)	P 32	S	$7 \times 10^{-8}$	$5 \times 10^{-4}$	$2 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$8 \times 10^{-8}$	$7 \times 10^{-4}$	$3 \times 10^{-9}$	$2 \times 10^{-5}$
Platinum (78)	Pt 191	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
	Pt 193m	S	$7 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$1 \times 10^{-3}$
		I	$5 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$1 \times 10^{-3}$
	Pt 197m	S	$6 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$1 \times 10^{-3}$
		I	$5 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$9 \times 10^{-4}$
	Pt 197	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Plutonium (94)	Pu 238	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$7 \times 10^{-14}$	$5 \times 10^{-6}$
		I	$3 \times 10^{-11}$	$8 \times 10^{-4}$	$1 \times 10^{-12}$	$3 \times 10^{-5}$
	Pu 239	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$6 \times 10^{-14}$	$5 \times 10^{-6}$
		I	$4 \times 10^{-11}$	$8 \times 10^{-4}$	$1 \times 10^{-12}$	$3 \times 10^{-5}$
	Pu 240	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$6 \times 10^{-14}$	$5 \times 10^{-6}$
		I	$4 \times 10^{-11}$	$8 \times 10^{-4}$	$1 \times 10^{-12}$	$3 \times 10^{-5}$
	Pu 241	S	$9 \times 10^{-11}$	$7 \times 10^{-3}$	$3 \times 10^{-12}$	$2 \times 10^{-4}$
		I	$4 \times 10^{-8}$	$4 \times 10^{-2}$	$1 \times 10^{-9}$	$1 \times 10^{-3}$
	Pu 242	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$6 \times 10^{-14}$	$5 \times 10^{-6}$
		I	$4 \times 10^{-11}$	$9 \times 10^{-4}$	$1 \times 10^{-12}$	$3 \times 10^{-5}$
	Pu 243	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$6 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$8 \times 10^{-8}$	$3 \times 10^{-4}$
	Pu 244	S	$2 \times 10^{-12}$	$1 \times 10^{-4}$	$6 \times 10^{-14}$	$4 \times 10^{-6}$
		I	$3 \times 10^{-11}$	$3 \times 10^{-4}$	$1 \times 10^{-12}$	$1 \times 10^{-5}$
Polonium (84)	Po 210	S	$5 \times 10^{-10}$	$2 \times 10^{-5}$	$2 \times 10^{-11}$	$7 \times 10^{-7}$

**PROPOSED RULES**

		I	$2 \times 10^{-10}$	$8 \times 10^{-4}$	$7 \times 10^{-12}$	$3 \times 10^{-5}$
Potassium (19)	K 42	S	$2 \times 10^{-6}$	$9 \times 10^{-3}$	$7 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
Praseodymium (59)	Pr 142	S	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$7 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
	Pr 143	S	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$1 \times 10^{-8}$	$5 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$5 \times 10^{-5}$
Promethium (61)	Pm 147	S	$6 \times 10^{-8}$	$6 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$6 \times 10^{-3}$	$3 \times 10^{-9}$	$2 \times 10^{-4}$
	Pm 149	S	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$1 \times 10^{-8}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$4 \times 10^{-5}$
Protoactinium (91)	Pa 230	S	$2 \times 10^{-9}$	$7 \times 10^{-3}$	$6 \times 10^{-11}$	$2 \times 10^{-4}$
		I	$8 \times 10^{-10}$	$7 \times 10^{-3}$	$3 \times 10^{-11}$	$2 \times 10^{-4}$
	Pa 231	S	$1 \times 10^{-12}$	$3 \times 10^{-5}$	$4 \times 10^{-14}$	$9 \times 10^{-7}$
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$2 \times 10^{-5}$
	Pa 233	S	$6 \times 10^{-7}$	$4 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$3 \times 10^{-3}$	$6 \times 10^{-9}$	$1 \times 10^{-4}$
Radium (88)	Ra 223	S	$2 \times 10^{-9}$	$2 \times 10^{-5}$	$6 \times 10^{-11}$	$7 \times 10^{-7}$
		I	$2 \times 10^{-10}$	$1 \times 10^{-4}$	$8 \times 10^{-12}$	$4 \times 10^{-6}$
	Ra 224	S	$5 \times 10^{-9}$	$7 \times 10^{-5}$	$2 \times 10^{-10}$	$2 \times 10^{-6}$
		I	$7 \times 10^{-10}$	$2 \times 10^{-4}$	$2 \times 10^{-11}$	$5 \times 10^{-6}$
	Ra 226	S	$3 \times 10^{-11}$	$4 \times 10^{-7}$	$3 \times 10^{-12}$	$3 \times 10^{-8}$
		I	$5 \times 10^{-11}$	$9 \times 10^{-4}$	$2 \times 10^{-12}$	$3 \times 10^{-5}$
	Ra 228	S	$7 \times 10^{-11}$	$8 \times 10^{-7}$	$2 \times 10^{-12}$	$3 \times 10^{-8}$
		I	$4 \times 10^{-11}$	$7 \times 10^{-4}$	$1 \times 10^{-12}$	$3 \times 10^{-5}$
Radon (86)	Rn 220	S	$3 \times 10^{-7}$	—	$1 \times 10^{-8}$	—
		I	—	—	—	—
	Rn 222	S	$1 \times 10^{-7}$	—	$3 \times 10^{-9}$	—
Rhenium (75)	Re 183	S	$3 \times 10^{-6}$	$2 \times 10^{-2}$	$9 \times 10^{-8}$	$6 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$8 \times 10^{-3}$	$5 \times 10^{-9}$	$3 \times 10^{-4}$
	Re 186	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$5 \times 10^{-5}$
	Re 187	S	$9 \times 10^{-6}$	$7 \times 10^{-2}$	$3 \times 10^{-7}$	$3 \times 10^{-3}$
		I	$5 \times 10^{-7}$	$4 \times 10^{-2}$	$2 \times 10^{-8}$	$2 \times 10^{-3}$
	Re 188	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
Rhodium (45)	Rh 103m	S	$8 \times 10^{-5}$	$4 \times 10^{-1}$	$3 \times 10^{-6}$	$1 \times 10^{-2}$
		I	$6 \times 10^{-5}$	$3 \times 10^{-1}$	$2 \times 10^{-6}$	$1 \times 10^{-2}$
	Rh 105	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Rubidium (37)	Rb 86	S	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$7 \times 10^{-8}$	$7 \times 10^{-4}$	$2 \times 10^{-9}$	$2 \times 10^{-5}$
	Rb 87	S	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$7 \times 10^{-8}$	$5 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
Ruthenium (44)	Ru 97	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$8 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$6 \times 10^{-8}$	$3 \times 10^{-4}$
	Ru 103	S	$5 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$8 \times 10^{-5}$
		I	$8 \times 10^{-8}$	$2 \times 10^{-3}$	$3 \times 10^{-9}$	$8 \times 10^{-5}$
	Ru 105	S	$7 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
	Ru 106	S	$8 \times 10^{-8}$	$4 \times 10^{-4}$	$3 \times 10^{-9}$	$1 \times 10^{-5}$
		I	$6 \times 10^{-9}$	$3 \times 10^{-4}$	$2 \times 10^{-10}$	$1 \times 10^{-5}$
Samarium (62)	Sm 147	S	$7 \times 10^{-11}$	$2 \times 10^{-3}$	$2 \times 10^{-12}$	$6 \times 10^{-5}$
		I	$3 \times 10^{-10}$	$2 \times 10^{-3}$	$9 \times 10^{-12}$	$7 \times 10^{-5}$
	Sm 151	S	$6 \times 10^{-8}$	$1 \times 10^{-2}$	$2 \times 10^{-9}$	$4 \times 10^{-4}$

**PROPOSED RULES**

		I	$1 \times 10^{-7}$	$1 \times 10^{-2}$	$5 \times 10^{-9}$	$4 \times 10^{-4}$
	Sm 153	S	$5 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$8 \times 10^{-5}$
		I	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$8 \times 10^{-5}$
Seandium (21)	Se 46	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-6}$	$1 \times 10^{-3}$	$8 \times 10^{-10}$	$4 \times 10^{-5}$
	Se 47	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$5 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$9 \times 10^{-5}$
	Se 48	S	$2 \times 10^{-7}$	$8 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$8 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
Selenium (34)	Se 75	S	$1 \times 10^{-6}$	$9 \times 10^{-3}$	$4 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$8 \times 10^{-3}$	$4 \times 10^{-9}$	$3 \times 10^{-4}$
Silicon (14)	Si 31	S	$6 \times 10^{-6}$	$3 \times 10^{-2}$	$2 \times 10^{-7}$	$9 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$6 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
Silver (47)	Ag 105	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$8 \times 10^{-8}$	$3 \times 10^{-3}$	$3 \times 10^{-9}$	$1 \times 10^{-4}$
	Ag 110m	S	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$7 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-8}$	$9 \times 10^{-4}$	$3 \times 10^{-10}$	$3 \times 10^{-5}$
	Ag 111	S	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$1 \times 10^{-8}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$4 \times 10^{-5}$
Sodium (11)	Na 22	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$9 \times 10^{-9}$	$9 \times 10^{-4}$	$3 \times 10^{-10}$	$3 \times 10^{-5}$
	Na 24	S	$1 \times 10^{-6}$	$6 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$8 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
Strontium (38)	Sr 85m	S	$4 \times 10^{-5}$	$2 \times 10^{-1}$	$1 \times 10^{-6}$	$7 \times 10^{-3}$
		I	$3 \times 10^{-5}$	$2 \times 10^{-1}$	$1 \times 10^{-6}$	$7 \times 10^{-3}$
	Sr 85	S	$2 \times 10^{-7}$	$3 \times 10^{-3}$	$8 \times 10^{-9}$	$1 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$5 \times 10^{-3}$	$4 \times 10^{-9}$	$2 \times 10^{-4}$
	Sr 89	S	$3 \times 10^{-8}$	$3 \times 10^{-4}$	$3 \times 10^{-10}$	$3 \times 10^{-6}$
		I	$4 \times 10^{-8}$	$8 \times 10^{-4}$	$1 \times 10^{-9}$	$3 \times 10^{-5}$
	Sr 90	S	$1 \times 10^{-9}$	$1 \times 10^{-5}$	$3 \times 10^{-11}$	$3 \times 10^{-7}$
		I	$5 \times 10^{-9}$	$1 \times 10^{-3}$	$3 \times 10^{-10}$	$4 \times 10^{-5}$
	Sr 91	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$1 \times 10^{-3}$	$9 \times 10^{-9}$	$5 \times 10^{-5}$
	Sr 92	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
Sulfur (16)	S 35	S	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$9 \times 10^{-9}$	$6 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$8 \times 10^{-3}$	$9 \times 10^{-9}$	$3 \times 10^{-4}$
Tantalum (73)	Ta 182	S	$4 \times 10^{-8}$	$1 \times 10^{-3}$	$1 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$2 \times 10^{-8}$	$1 \times 10^{-3}$	$7 \times 10^{-10}$	$4 \times 10^{-5}$
Technetium (43)	Tc 96m	S	$8 \times 10^{-5}$	$4 \times 10^{-1}$	$3 \times 10^{-6}$	$1 \times 10^{-2}$
		I	$3 \times 10^{-5}$	$3 \times 10^{-1}$	$1 \times 10^{-6}$	$1 \times 10^{-2}$
	Tc 96	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$5 \times 10^{-5}$
	Tc 97m	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$8 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$5 \times 10^{-3}$	$5 \times 10^{-9}$	$2 \times 10^{-4}$
	Tc 97	S	$1 \times 10^{-5}$	$5 \times 10^{-2}$	$4 \times 10^{-7}$	$2 \times 10^{-3}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-2}$	$1 \times 10^{-8}$	$8 \times 10^{-4}$
	Tc 99m	S	$4 \times 10^{-5}$	$2 \times 10^{-1}$	$1 \times 10^{-6}$	$6 \times 10^{-3}$
		I	$1 \times 10^{-5}$	$8 \times 10^{-2}$	$5 \times 10^{-7}$	$3 \times 10^{-3}$
	Tc 99	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$7 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$6 \times 10^{-8}$	$5 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
Tellurium (52)	Te 125m	S	$4 \times 10^{-7}$	$5 \times 10^{-3}$	$1 \times 10^{-8}$	$2 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$3 \times 10^{-3}$	$4 \times 10^{-9}$	$1 \times 10^{-4}$
	Te 127m	S	$1 \times 10^{-7}$	$2 \times 10^{-3}$	$5 \times 10^{-9}$	$6 \times 10^{-5}$
		I	$4 \times 10^{-8}$	$2 \times 10^{-3}$	$1 \times 10^{-9}$	$5 \times 10^{-5}$



**PROPOSED RULES**

	Te 127	S	$2 \times 10^{-6}$	$8 \times 10^{-3}$	$6 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$9 \times 10^{-7}$	$5 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
	Te 129m	S	$8 \times 10^{-8}$	$1 \times 10^{-3}$	$3 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$6 \times 10^{-4}$	$1 \times 10^{-9}$	$2 \times 10^{-5}$
	Te 129	S	$5 \times 10^{-6}$	$2 \times 10^{-2}$	$2 \times 10^{-7}$	$8 \times 10^{-4}$
		I	$4 \times 10^{-6}$	$2 \times 10^{-2}$	$1 \times 10^{-7}$	$8 \times 10^{-4}$
	Te 131m	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$4 \times 10^{-5}$
	Te 132	S	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$7 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
Terbium (65)	Tb 160	S	$1 \times 10^{-7}$	$1 \times 10^{-3}$	$3 \times 10^{-9}$	$4 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$1 \times 10^{-3}$	$1 \times 10^{-9}$	$4 \times 10^{-5}$
Thallium (81)	Tl 200	S	$3 \times 10^{-6}$	$1 \times 10^{-2}$	$9 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$1 \times 10^{-6}$	$7 \times 10^{-3}$	$4 \times 10^{-8}$	$2 \times 10^{-4}$
	Tl 201	S	$2 \times 10^{-6}$	$9 \times 10^{-3}$	$7 \times 10^{-8}$	$3 \times 10^{-4}$
		I	$9 \times 10^{-7}$	$5 \times 10^{-3}$	$3 \times 10^{-8}$	$2 \times 10^{-4}$
	Tl 202	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$2 \times 10^{-3}$	$8 \times 10^{-9}$	$7 \times 10^{-5}$
	Tl 204	S	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$3 \times 10^{-8}$	$2 \times 10^{-3}$	$9 \times 10^{-10}$	$6 \times 10^{-5}$
Thorium (90)	Th 228	S	$9 \times 10^{-12}$	$2 \times 10^{-4}$	$3 \times 10^{-13}$	$7 \times 10^{-6}$
		I	$6 \times 10^{-12}$	$4 \times 10^{-4}$	$2 \times 10^{-13}$	$1 \times 10^{-5}$
	Th 230	S	$2 \times 10^{-12}$	$5 \times 10^{-5}$	$8 \times 10^{-14}$	$2 \times 10^{-6}$
		I	$1 \times 10^{-11}$	$9 \times 10^{-4}$	$3 \times 10^{-13}$	$3 \times 10^{-5}$
	Th 232	S	$3 \times 10^{-11}$	$5 \times 10^{-5}$	$1 \times 10^{-12}$	$2 \times 10^{-6}$
		I	$3 \times 10^{-11}$	$1 \times 10^{-3}$	$1 \times 10^{-12}$	$4 \times 10^{-5}$
	Th natural	S	$3 \times 10^{-11}$	$3 \times 10^{-5}$	$1 \times 10^{-12}$	$1 \times 10^{-6}$
		I	$3 \times 10^{-11}$	$3 \times 10^{-4}$	$1 \times 10^{-12}$	$1 \times 10^{-5}$
	Th 234	S	$6 \times 10^{-8}$	$5 \times 10^{-4}$	$2 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$5 \times 10^{-4}$	$1 \times 10^{-9}$	$2 \times 10^{-5}$
Thulium (69)	Tm 170	S	$4 \times 10^{-8}$	$1 \times 10^{-3}$	$1 \times 10^{-9}$	$5 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$1 \times 10^{-3}$	$1 \times 10^{-9}$	$5 \times 10^{-5}$
	Tm 171	S	$1 \times 10^{-7}$	$1 \times 10^{-2}$	$4 \times 10^{-9}$	$5 \times 10^{-4}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-2}$	$8 \times 10^{-9}$	$5 \times 10^{-4}$
Tin (50)	Sn 113	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$9 \times 10^{-5}$
		I	$5 \times 10^{-8}$	$2 \times 10^{-3}$	$2 \times 10^{-9}$	$8 \times 10^{-5}$
	Sn 125	S	$1 \times 10^{-7}$	$5 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$8 \times 10^{-8}$	$5 \times 10^{-4}$	$3 \times 10^{-9}$	$2 \times 10^{-5}$
Tungsten (Wolfram) (74)	W 181	S	$2 \times 10^{-6}$	$1 \times 10^{-2}$	$8 \times 10^{-8}$	$4 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$1 \times 10^{-2}$	$4 \times 10^{-9}$	$3 \times 10^{-4}$
	W 185	S	$8 \times 10^{-7}$	$4 \times 10^{-3}$	$3 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$1 \times 10^{-7}$	$3 \times 10^{-3}$	$4 \times 10^{-9}$	$1 \times 10^{-4}$
	W 187	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$2 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
Uranium (92)	U 230	S	$3 \times 10^{-10}$	$1 \times 10^{-4}$	$1 \times 10^{-11}$	$5 \times 10^{-6}$
		I	$1 \times 10^{-10}$	$1 \times 10^{-4}$	$4 \times 10^{-12}$	$5 \times 10^{-6}$
	U 232	S	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$3 \times 10^{-12}$	$3 \times 10^{-5}$
		I	$3 \times 10^{-11}$	$8 \times 10^{-4}$	$9 \times 10^{-13}$	$3 \times 10^{-5}$
	U 233	S	$5 \times 10^{-10}$	$9 \times 10^{-4}$	$2 \times 10^{-11}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$9 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	Us 234	S	$6 \times 10^{-10}$	$9 \times 10^{-4}$	$2 \times 10^{-11}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$9 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	Us 235	S	$5 \times 10^{-10}$	$8 \times 10^{-4}$	$2 \times 10^{-11}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$8 \times 10^{-4}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	U 236	S	$6 \times 10^{-10}$	$1 \times 10^{-3}$	$2 \times 10^{-11}$	$3 \times 10^{-5}$

**PROPOSED RULES**

		I	$1 \times 10^{-10}$	$1 \times 10^{-3}$	$4 \times 10^{-12}$	$3 \times 10^{-5}$
	U 238	S	$7 \times 10^{-11}$	$1 \times 10^{-3}$	$3 \times 10^{-12}$	$4 \times 10^{-5}$
		I	$1 \times 10^{-10}$	$1 \times 10^{-3}$	$5 \times 10^{-12}$	$4 \times 10^{-5}$
	U 240	S	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$8 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$2 \times 10^{-7}$	$1 \times 10^{-3}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
	U natural	S	$7 \times 10^{-11}$	$5 \times 10^{-4}$	$3 \times 10^{-12}$	$2 \times 10^{-5}$
		I	$6 \times 10^{-11}$	$5 \times 10^{-4}$	$2 \times 10^{-12}$	$2 \times 10^{-5}$
Vanadium (23)	V 48	S	$2 \times 10^{-7}$	$9 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$6 \times 10^{-8}$	$8 \times 10^{-4}$	$2 \times 10^{-9}$	$3 \times 10^{-5}$
Xenon (54)	Xe 131m	Sub	$2 \times 10^{-5}$		$4 \times 10^{-7}$	
	Xe 133m	Sub	$1 \times 10^{-5}$		$3 \times 10^{-7}$	
	Xe 133	Sub	$1 \times 10^{-5}$		$3 \times 10^{-7}$	
	Xe 135	Sub	$4 \times 10^{-6}$		$1 \times 10^{-7}$	
Ytterbium (70)	Yb 175	S	$7 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
		I	$6 \times 10^{-7}$	$3 \times 10^{-3}$	$2 \times 10^{-8}$	$1 \times 10^{-4}$
Yttrium (39)	Y 90	S	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$6 \times 10^{-4}$	$3 \times 10^{-9}$	$2 \times 10^{-5}$
	Y 91m	S	$2 \times 10^{-5}$	$1 \times 10^{-1}$	$8 \times 10^{-7}$	$3 \times 10^{-3}$
		I	$2 \times 10^{-5}$	$1 \times 10^{-1}$	$6 \times 10^{-7}$	$3 \times 10^{-3}$
	Y 91	S	$4 \times 10^{-8}$	$8 \times 10^{-4}$	$1 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$8 \times 10^{-4}$	$1 \times 10^{-9}$	$3 \times 10^{-5}$
	Y 92	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
	Y 93	S	$2 \times 10^{-7}$	$8 \times 10^{-4}$	$6 \times 10^{-9}$	$3 \times 10^{-5}$
		I	$1 \times 10^{-7}$	$8 \times 10^{-4}$	$5 \times 10^{-9}$	$3 \times 10^{-5}$
Zinc (30)	Zn 65	S	$1 \times 10^{-7}$	$3 \times 10^{-3}$	$4 \times 10^{-9}$	$1 \times 10^{-4}$
		I	$6 \times 10^{-8}$	$5 \times 10^{-3}$	$2 \times 10^{-9}$	$2 \times 10^{-4}$
	Zn 69m	S	$4 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$7 \times 10^{-5}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-3}$	$1 \times 10^{-8}$	$6 \times 10^{-5}$
	Zn 69	S	$7 \times 10^{-6}$	$5 \times 10^{-2}$	$2 \times 10^{-7}$	$2 \times 10^{-3}$
		I	$9 \times 10^{-6}$	$5 \times 10^{-2}$	$3 \times 10^{-7}$	$2 \times 10^{-3}$
Zirconium (40)	Zr 93	S	$1 \times 10^{-7}$	$2 \times 10^{-2}$	$4 \times 10^{-9}$	$8 \times 10^{-4}$
		I	$3 \times 10^{-7}$	$2 \times 10^{-2}$	$1 \times 10^{-8}$	$8 \times 10^{-4}$
	Zr 95	S	$1 \times 10^{-7}$	$2 \times 10^{-3}$	$4 \times 10^{-9}$	$6 \times 10^{-5}$
		I	$3 \times 10^{-8}$	$2 \times 10^{-3}$	$1 \times 10^{-9}$	$5 \times 10^{-5}$
	Zr 97	S	$1 \times 10^{-7}$	$5 \times 10^{-4}$	$4 \times 10^{-9}$	$2 \times 10^{-5}$
		I	$9 \times 10^{-8}$	$5 \times 10^{-4}$	$3 \times 10^{-9}$	$2 \times 10^{-5}$
Any single radionuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radioactive half-life less than two hours:		Sub	$1 \times 10^{-6}$		$3 \times 10^{-8}$	
Any single radionuclide not listed above with decay mode other than alpha emission or spontaneous fission and with radioactive half-life greater than two hours:			$3 \times 10^{-4}$	$9 \times 10^{-5}$	$1 \times 10^{-10}$	$3 \times 10^{-6}$

Any single radio- nuclide not listed above, which decays by alpha emission or spontaneous fission:	$6 \times 10^{-3}$	$4 \times 10^{-7}$	$2 \times 10^{-12}$	$3 \times 10^{-5}$
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- (2) In Subparagraph (a)(1) of this Rule, "sub" means that values given are for submersion in a semi-spherical infinite cloud of airborne material.
- (3) In Subparagraph (a)(1) of this Rule, "S" means soluble and "I" means insoluble.
- (4) For purposes of these Regulations, it may be assumed that the daughter activity concentrations in the following table are equivalent to an air concentration of  $10E^{-7}$  microcuries of radon-222 per milliliter of air in equilibrium with the daughters RaA, RaB, RaC, and RaC'.

Maximum Time	Alpha-Emitting Daughter Activity Collected per Milliliter of Air	
Between Collection and Measurement (Hours)	Microcuries /ml	Total Alpha disintegrations per minute per ml.
0.5	$7.2 \times 10^{-5}$	0.16
1.0	$4.5 \times 10^{-5}$	0.10
2.0	$1.3 \times 10^{-5}$	0.028
3.0	$0.3 \times 10^{-5}$	0.0072

The duration of sample collection and the duration of measurement should be sufficiently short compared to the time between collection and measurement, as not to have a statistically significant effect upon the results.

- (5) For soluble mixtures of U-238, U-234 and U-235 in air chemical toxicity may be the limiting factor. If the percent by weight enrichment of U-235 is less than five, the concentration value for a 40-hour workweek, Table I, is 0.2 milligram uranium per cubic meter of air average. For any enrichment, the product of the average concentration and time of exposure during a 40-hour workweek shall not exceed  $8 \times 10^{-3}$  SA microCi hr/ml, where SA is the specific activity of the uranium inhaled. The concentration value for Table II is 0.007 milligram uranium per cubic meter of air. The specific activity for natural uranium is  $6.77 \times 10^{-7}$  curies per gram U. The specific activity for other mixtures of U-238, U-235 and U-234, if not known, shall be:

$$SA = 3.6 \times 10^{-7} \text{ curies/gram U} \quad \text{U depleted}$$

$$SA = (0.4 + 0.38E + 0.0034E^2) \cdot 10^{-6} \text{ E is greater than or equal to } 0.72$$

where E is the percentage by weight of U-235, expressed as percent.

(b) In any case where there is a mixture in air or water of more than one radionuclide, the limiting values for purposes of this Section may be determined as follows:

- (1) If the identity and concentration of each radionuclide in the mixture are known, the limiting values may be derived as follows: Determine, for each radionuclide in the mixture, the ratio between the quantity present in the mixture and the limit otherwise established in the tables in Subparagraph (a)(1) of this Rule for the specific radionuclide when not in a mixture. The sum of these ratios for all the radionuclides in the mixture may not exceed unity.
- (2) If radionuclides a, b, and c are present in concentrations  $C_a$ ,  $C_b$ , and  $C_c$ , and if the applicable MPC's and  $MPC_a$ ,  $MPC_b$ , and  $MPC_c$  respectively, then the concentrations shall be limited so that the



following relationship exists:

$$\frac{C_1}{MPC_1} + \frac{C_2}{MPC_2} + \frac{C_3}{MPC_3} \text{ is less than or equal to } 1$$

- (3) If either the identity or the concentration of any radionuclide in the mixture is not known, the limiting values for purposes of this Rule shall be:
- (A) for purposes of Table I, Column 1:  $6 \times 10^{-13}$
  - (B) for purposes of Table I, Column 2:  $4 \times 10^{-7}$
  - (C) for purposes of Table II, Column 1:  $2 \times 10^{-14}$
  - (D) for purposes of Table II, Column 2:  $3 \times 10^{-8}$
- (4) If any of the conditions specified below are met, the corresponding values specified below may be used in lieu of those specified in Subparagraph (b)(3) of this Rule:
- (A) If the identity of each radionuclide in the mixture is known but the concentration of one or more of the radionuclides in the mixture is not known, the concentration limit for the mixture is the limit specified in the tables in Subparagraph (a)(1) of this Rule for the radionuclide in the mixture having the lowest concentration limit; or
  - (B) If the identity of each radionuclide in the mixture is not known, but it is known that certain radionuclides specified in the tables in Subparagraph (a)(1) of this Rule are not present in the mixture, the concentration limit for the mixture is the lowest concentration limit specified in those tables for any radionuclide which is not known to be absent from the mixture; or
  - (C) If certain radionuclides are known not to be present, the concentration limit for the mixture is the appropriate concentration limit from the following table:

Table I

Table II

Element (atomic number) and isotope	Column 1	Column 2	Column 1	Column 2
	Air	Water	Air	Water
	micro	micro	micro	micro
	Curie/ml	Curie/ml	Curie/ml	Curie/ml

If it is known that Sr

90, I-125, I-126, I-129,

I-131, (I-133, Table II

only), Pb-210, Po-210,

At-211, Ra-223, Ra-224,

Ra-226, Ac-227, Ra-228,

Th-230, Pa-231, Th-232,

Th-nat, Cm-248, Cf-254,

and Fm-256 are not present  $9 \times 10^{-5}$   $3 \times 10^{-6}$

If it is known that Sr

90, I-125, I-126, I-129

(I-131, I-133, Table II

only), Pb-210, Po-210,

~~Ra 223, Ra 226, Ra 228,~~

~~Pa 231, Th nat, Cm 248,~~

~~Cf 254, and Fm 256 are~~

~~not present~~ ~~9x10<sup>-5</sup>~~ ~~3x10<sup>-6</sup>~~

~~If it is known that Sr~~

~~90, I 129, (I 125, I 126,~~

~~I 131, Table II only),~~

~~Pb 210, Ra 226, Ra 228,~~

~~Cm 248, and Cf 254 are~~

~~not present~~ ~~2x10<sup>-5</sup>~~ ~~6x10<sup>-7</sup>~~

~~If it is known that~~

~~(I 129, Table II only),~~

~~Ra 226, and Ra 228 are~~

~~not present~~ ~~3x10<sup>-9</sup>~~ ~~1x10<sup>-7</sup>~~

~~If it is known that~~

~~alpha emitters and Sr 90,~~

~~I 129, Pb 210, Ae 227,~~

~~Ra 228, Pa 230, Pu 241,~~

~~and Bk 249 are not present~~ ~~3x10<sup>-9</sup>~~ ~~1x10<sup>-10</sup>~~

~~If it is known that~~

~~alpha emitters and Pb~~

~~210, Ae 227, Ra 228, and~~

~~Pu 241 are not present~~ ~~3x10<sup>-10</sup>~~ ~~1x10<sup>-11</sup>~~

~~If it is known that~~

~~alpha emitters and Ae~~

~~227 are not present~~ ~~3x10<sup>-11</sup>~~ ~~1x10<sup>-12</sup>~~

~~If it is known that Ae~~

~~227, Th 230, Pa 231, Pu~~

238, Pu 239, Pu 240, Pu

242, Pu 244, Cm 248, Cf

249 and Cf 251 are not

present  $3 \times 10^{-12}$   $1 \times 10^{-13}$

(5) If the mixture of radionuclides consists of uranium and its daughter products in ore dust prior to chemical processing of the uranium ore, the values specified below may be used in lieu of those determined in accordance with Subparagraphs (b)(1), (3), and (4) of this Rule.

(A) For purposes of Table I, Column 1 in Subparagraph (b)(4)(C) of this Rule,  $1 \times 10^{-10}$  microCi/ml natural uranium; or 75 micrograms of natural uranium per cubic meter of air.

(B) For purposes of Table II, Column 1 in Subparagraph (b)(4)(C) of this Rule,  $3 \times 10^{-12}$  microCi/ml natural uranium; or three micrograms of natural uranium per cubic meter of air.

(C) For purposes of this Rule, a radionuclide may be considered as not present in a mixture if:

(i) The ratio of the concentration of that radionuclide in the mixture ( $C_a$ ) to the concentration limit for that radionuclide specified in Table II in Subparagraph (a)(1) of this Rule,  $MPC_a$ , does not exceed 1/10, i.e.,  $C_a/MPC_a$  less than or equal to 1/10; and

(ii) The sum of the ratios for all radionuclides considered as not present in the mixture does not exceed one fourth, i.e.,  $C_a/MPC_a + C_b/MPC_b + \dots$  less than or equal to 1/4.

Statutory Authority G.S. 104E-7(2).

#### .0424 REFERENCE FOR LABELING AND DISPOSAL REQUIREMENTS

(a) The following table of radionuclides and activities is for use in conjunction with rules in this Section pertaining to labeling and disposal requirements:

Material	Microcuries
Americium 241	0.01
Antimony 122	100
Antimony 124	10
Antimony 125	10
Arsenic 73	100
Arsenic 74	10
Arsenic 76	10
Arsenic 77	100
Barium 131	10
Barium 133	10
Barium 140	10
Bismuth 210	1
Bromine 82	10
Cadmium 109	10
Cadmium 115m	10
Cadmium 115	100
Calcium 45	10
Calcium 47	10
Carbon 14	100
Cerium 141	100
Cerium 143	100
Cerium 144	1
Cesium 131	1,000



Cesium-134m	100
Cesium-134	1
Cesium-135	10
Cesium-136	10
Cesium-137	10
Chlorine-36	10
Chlorine-38	10
Chromium-51	1,000
Cobalt-58m	10
Cobalt-58	10
Cobalt-60	10
Copper-64	100
Dysprosium-165	10
Dysprosium-166	100
Erbium-169	100
Erbium-171	100
Europium-152 (9.2 h)	100
Europium-152 (13-yr)	1
Europium-154	1
Europium-155	10
Fluorine-18	1,000
Gadolinium-153	10
Gadolinium-159	100
Gallium-72	10
Germanium-71	100
Gold-198	100
Gold-199	100
Hafnium-181	10
Holmium-166	100
Hydrogen-3	1,000
Indium-113m	100
Indium-114m	10
Indium-115m	100
Indium-115	10
Iodine-125	1
Iodine-126	1
Iodine-129	0.1
Iodine-131	1
Iodine-132	10
Iodine-133	1
Iodine-134	10
Iodine-135	10
Iridium-192	10
Iridium-194	100
Iron-55	100
Iron-59	10
Krypton-85	100
Krypton-87	10
Lanthanum-140	10
Lutetium-177	100
Manganese-52	10
Manganese-54	10
Manganese-56	10
Mercury-197m	100
Mercury-197	100

*PROPOSED RULES*

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Mereury 203	10
Molybdenum 99	100
Neodymium 147	100
Neodymium 149	100
Nickel 59	100
Nickel 63	10
Nickel 65	100
Niobium 93m	10
Niobium 95	10
Niobium 97	10
Osmium 185	10
Osmium 191m	100
Osmium 191	100
Osmium 193	100
Palladium 103	100
Palladium 109	100
Phosphorus 32	10
Platinum 191	100
Platinum 193m	100
Platinum 193	100
Platinum 197m	100
Platinum 197	100
Plutonium 239	0.01
Polonium 210	0.1
Potassium 42	10
Praseodymium 142	100
Praseodymium 143	100
Promethium 147	10
Promethium 149	10
Radium 226	0.01
Rhenium 186	100
Rhenium 188	100
Rhodium 103m	100
Rhodium 105	100
Rubidium 86	10
Rubidium 87	10
Ruthenium 97	100
Ruthenium 103	10
Ruthenium 105	10
Ruthenium 106	1
Samarium 151	10
Samarium 153	100
Scandium 46	10
Scandium 47	100
Scandium 48	10
Selenium 75	10
Silicon 31	100
Silver 105	10
Silver 110m	1
Silver 111	100
Sodium 24	10
Strontium 85	10
Strontium 89	1
Strontium 90	0.1
Strontium 91	10

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*PROPOSED RULES*

Strontium-92	10
Sulphur-35	100
Tantalum-182	10
Technetium-96	10
Technetium-97m	100
Technetium-97	100
Technetium-99m	100
Technetium-99	10
Tellurium-125m	10
Tellurium-127m	10
Tellurium-127	100
Tellurium-129m	10
Tellurium-129	100
Tellurium-131m	10
Tellurium-132	10
Terbium-160	10
Thallium-200	100
Thallium-201	100
Thallium-202	100
Thallium-204	10
Thorium (natural)	100
Thulium-170	10
Thulium-171	10
Tin-113	10
Tin-125	10
Tungsten-181	10
Tungsten-185	10
Tungsten-187	100
Uranium (natural)	100
Uranium-233	0.01
Uranium-234	
Uranium-235	0.01
Vanadium-48	10
Xenon-131m	1,000
Xenon-133	100
Xenon-135	100
Ytterbium-175	100
Yttrium-90	10
Yttrium-91	10
Yttrium-92	100
Yttrium-93	100
Zinc-65	10
Zinc-69m	100
Zinc-69	1,000
Zirconium-93	10
Zirconium-95	10
Zirconium-97	10

Any alpha-emitting radionuclide not listed above or mixtures of alpha emitters of unknown composition	0.01
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Any radionuclide other  
than alpha emitting  
radionuclides, not  
listed above or  
mixtures of beta  
emitters of unknown  
composition

0.01

(b) For the purposes of the table in (a) of this Rule:

- (1) Thorium (natural) is based on alpha disintegration rate of Th-232, Th-230 and their daughter products; and
- (2) Uranium (natural) is based on alpha disintegration rate of U-238, U-234, and U-235.

(c) For purposes of Rules .0411 and .0416(d) of this Section, where there is involved a combination of isotopes in known amounts, the limit for the combination may be derived as follows:

- (1) Determine, for each isotope in the combination, the ratio between the quantity present in the combination and the limit otherwise established for the specific isotope when not in combination.
- (2) The sum of such ratios for all the isotopes in the combination may not exceed unity.

Statutory Authority G.S. 104E-7.

#### .0425 CLASSIFICATION/RADIOACTIVE WASTE FOR NEAR-SURFACE DISPOSAL

(a) The following are definitions of and special requirements applicable to the different classes of waste:

- (1) "Class A Waste" means radioactive waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste shall meet the minimum requirements set forth in Rule .0426(a) of this Section. If Class A waste also meets the stability requirements set forth in Rule .0426(b) of this Section, it is not necessary to segregate the waste for disposal.
- (2) "Class B Waste" means radioactive waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste shall meet both the minimum requirements and stability requirements set forth in Rule .0426 of this Section.
- (3) "Class C Waste" means radioactive waste that not only must meet more rigorous requirements on waste form to ensure stability, but also requires additional measures at the disposal facility to protect against inadvertent human intrusion. The physical form and characteristics of Class C waste shall meet both the minimum requirements and stability requirements set forth in Rule .0426 of this Section.

(b) If the waste contains only radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall determine the classification as follows:

- (1) If the concentration does not exceed 0.1 times the value in the table in Subparagraph (b)(5) of this Rule, the waste is Class A waste.
- (2) If the concentration exceeds 0.1 times the value in the table in Subparagraph (b)(5) of this Rule, the waste is Class C waste.
- (3) If the concentration exceeds the value in the table in Subparagraph (b)(5) of this Rule, the waste is not generally acceptable for near surface disposal.
- (4) For wastes containing mixtures of radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall determine the concentration by the "sum of fractions rule" described in (f) of this Rule.
- (5) The following is the table of long lived radionuclides and concentrations for use in conjunction with waste classification rules of this Section:

radionuclides	concentration
---------------	---------------

carbon-14	8 curies/cubic meter
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# PROPOSED RULES

carbon 14 in activated metal	80	curies/cubic meter
nickel 59 in activated metal	220	curies/cubic meter
niobium 94 in activated metal	10.2	curies/cubic meter
technetium 99	3	curies/cubic meter
iodine 129	0.08	curies/cubic meter
radium, and alpha emitting		
transuranic radionuclides		
with half lives greater		
than five years		
plutonium 241	100	nanocuries/gram
plutonium 242	3,500	nanocuries/gram
curium 242	20,000	nanocuries/gram

(e) If the waste does not contain any of the radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall use the data for short-lived radionuclides and concentrations in the table in Subparagraph (e)(7) of this Rule to determine the classification as follows:

- (1) If the concentration does not exceed the value in column 1, the waste is Class A waste.
- (2) If the concentration exceeds the value in column 1, but does not exceed the value in column 2, the waste is Class B waste.
- (3) If the concentration exceeds the value in column 2, but does not exceed the value in column 3, the waste is Class C waste.
- (4) If the concentration exceeds the value in column 3, the waste is not generally acceptable for near-surface disposal.
- (5) For wastes containing mixtures of the radionuclides listed in the table in Subparagraph (e)(7) of this Rule, the total concentration shall be determined by the "sum of the fractions rule" described in (f) of this Rule.
- (6) In determining the waste classifications in Subparagraphs (e)(1) through (5) of this Rule, the licensee may disregard any radionuclides not listed in the tables in Subparagraphs (b)(5) and (e)(7) of this Rule.
- (7) The following is the table of short-lived radionuclides for use in conjunction with the waste classification rules of this Section:

radionuclide	concentration in curies/cubic meter		
	column 1	column 2	column 3
total of all radionuclides			
with less than 5 year			
half-life	700	see (e)(8)	see (e)(8)
hydrogen 3	40	see (e)(8)	see (e)(8)
cobalt 60	700	see (e)(8)	see (e)(8)
nickel 63	3.5	70	700
nickel 63 in activated metal	35	700	7000
strontium 90	0.04	150	7000
cesium 137	1	44	4600

- (8) There are no limits established for the radionuclides noted by "see (e)(8)" in the table in Subparagraph (e)(7) of this Rule for Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation or transportation, handling, and disposal will limit the concentrations for these wastes. The licensee shall classify these wastes as Class B, unless the concentrations of other radionuclides in the table in Subparagraph (e)(7) of this Rule dictate classification as Class C waste independent of these radionuclides.

(d) If waste contains a mixture of radionuclides, some of which are listed in the table in Subparagraph (b)(5) of this Rule and some of which are listed in the table in Subparagraph (e)(7) of this Rule, the licensee shall determine the classification and suitability for near-surface disposal as follows:

- (1) In accordance with Paragraph (b) of this Rule, determine the class and suitability for near-surface disposal for only the radionuclides in the mixture which are listed in the table in Subparagraph (b)(5) of this Rule;
- (2) In accordance with Paragraph (e) of this Rule, determine the class and suitability for near-surface disposal for only the radionuclides in the mixture which are listed in the table in Subparagraph (e)(7) of this Rule; and
- (3) Classify the waste as the more restrictive of the two determinations in Subparagraphs (d)(1) and (d)(2) of this Rule where "not generally suitable for near-surface disposal" is the most restrictive and "Class A" is the least restrictive.

(e) If waste contains none of the radionuclides listed in the tables in Subparagraphs (b)(5) and (e)(7) of this Rule, the licensee shall determine the waste to be Class A waste.

(f) When required in Paragraphs (b) and (e) of this Rule, the licensee shall use the "sum of the fractions rule" described in Subparagraph (f)(1) of this Rule.

- (1) For determining the classification for waste that contains a mixture of radionuclides, the licensee shall determine the sum of the fractions by dividing the concentration of each radionuclide by the appropriate limit, where the appropriate limits shall all be taken from the same column of the same table, and by adding the resultant values. The sum of the fractions for the column must be less than 1.0, if the waste class is to be determined by that column.
- (2) The following is an example calculation:

(A) A waste contains strontium 90 with a concentration of 50 curies per cubic meter and cesium 137 with a concentration of 22 curies per cubic meter.

(B) Since the concentrations of both exceed the values in column 1 of the table in Subparagraph (e)(7) of this Rule, they must be compared with the values in column 2.

(C) The strontium 90 fraction is  $50/150$  or  $0.33$ , the cesium 137 fraction is  $22/44$  or  $0.5$ , and the sum of the fractions is  $0.83$ ; therefore, since the sum is less than 1.0, the waste is Class B waste.

(g) Provided that there is reasonable assurance that an indirect method can be correlated with actual measurements, the licensee may determine radionuclide concentrations by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured or use of radioactive material accountability records. The licensee may average a radionuclide concentration over the volume of the waste or over the weight of the waste in the case of radionuclides with nanocurie per gram limits specified in the table in Subparagraph (b)(5) of this Rule.

Statutory Authority G.S. 104E-7(2).

## .0426 RADIOACTIVE WASTE CHARACTERISTICS

(a) The following are minimum requirements for all classes of radioactive waste and are intended to facilitate handling and to provide protection of health and safety of personnel at the radioactive waste disposal site. The licensee shall:

- (1) package wastes in conformance with the conditions of the license issued to the site operator to which the waste will be shipped to the extent that such conditions are more restrictive or in addition to the requirements contained in this Rule;
- (2) not package wastes for disposal in cardboard or fiberboard boxes;
- (3) package liquid waste in sufficient absorbent material to absorb twice the vol-

ume of the liquid;

- (4) limit the volume of freestanding liquid in solid wastes containing liquid to as little freestanding and non-corrosive liquid as is reasonably achievable, but in no case to more than one percent of the volume;
- (5) limit wastes to those which are not readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water;
- (6) except for radioactive gaseous waste packaged in accordance with Subparagraph (a)(8) of this Rule, limit wastes to those which do not contain, or are not capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or



disposing of the waste;

- (7) — ~~treat, prepare and package pyrophoric materials contained in waste in a manner to render them nonflammable;~~
- (8) — ~~package wastes in a gaseous form at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees C and limit the total activity to no more than 100 curies per container; and~~
- (9) — ~~treat wastes containing hazardous, biological, pathogenic, or infectious material to reduce the potential hazard from the non radiological material to the maximum extent practicable.~~

(b) ~~Stability is intended to ensure that the waste does not degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste. The licensee shall comply with the following requirements, which are intended to provide stability of waste, when the waste is either Class B or Class C waste.~~

- (1) — ~~The licensee shall ensure that the waste has structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.~~
- (2) — ~~Notwithstanding the provisions in Subparagraphs (a)(3) and (4) of this Rule, the licensee shall convert liquid wastes or wastes containing liquids into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable; but in no case more than one percent of the volume of the waste when the waste is in a disposable container designed to ensure stability; or 0.5 percent of the volume of the waste for waste processed to a stable form.~~
- (3) — ~~The licensee shall reduce void spaces within the waste and between the wastes and its package to the extent~~

~~practicable.~~

*Statutory Authority G.S. 104E-7(2).*

#### **.0427 LABELING**

~~The licensee shall clearly label each package of waste to identify the waste as Class A, Class B or Class C waste as determined in accordance with the provisions of Rule .0425 of this Section.~~

*Statutory Authority G.S. 104E-7(2).*

#### **.0428 TRANSFER OF RADIOACTIVE WASTE FOR DISPOSAL AND MANIFESTS**

(a) ~~The licensee shall prepare a shipment manifest which shall accompany each shipment of waste and which shall include the following information:~~

- (1) — ~~the name, address and telephone number of the person generating the waste;~~
- (2) — ~~the name, address and telephone number of the person transporting the waste to the waste disposal facility;~~
- (3) — ~~as complete a statement as practicable of the following information:~~
  - (A) — ~~a physical description of the waste;~~
  - (B) — ~~the waste volume;~~
  - (C) — ~~the radionuclide identity and quantity;~~
  - (D) — ~~the total quantity of radioactivity;~~
  - (E) — ~~the total quantity of the radionuclides; hydrogen-3, carbon-14, technetium-99 and iodine-129; and~~
  - (F) — ~~the principal chemical form;~~
- (4) — ~~the solidification agent, if any;~~
- (5) — ~~if the waste contains more than 0.1 percent chelating agents by weight, the identity and estimated weight percent of the chelating agents; and~~
- (6) — ~~a clear statement of the waste class, if determined to be either Class A, Class B or Class C waste pursuant to the provisions of Rule .0425 of this Section.~~

(b) ~~In each manifest the waste generator shall include a certification that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation and the agency. An authorized representative of the waste generator shall sign and date the manifest.~~

(c) ~~The manifest required in Paragraph (a) of this Rule may be shipping papers used to meet U.S. Department of Transportation or U.S. Envi-~~

Environmental Protection Agency regulations or requirements of the receiver, provided all information required in Paragraphs (a) and (b) of this Rule is included:

(d) ~~Any licensee who transfers waste to a licensed land waste disposal facility or a licensed waste collector shall comply with the requirements in Subparagraphs (d)(1) through (8) of this Rule. Any licensee who transfers waste to a licensed waste processor who treats or repackages waste shall comply with the requirements in Subparagraphs (d)(4) through (8) of this Rule. The licensee shall:~~

- ~~(1) prepare all wastes so that the waste is classified in accordance with the provisions of Rule .0425 of this Section and meets the waste characteristics requirements in Rule .0426 of this Section;~~
- ~~(2) label each package of waste as Class A, Class B or Class C as determined in accordance with the provisions of Rule .0425 of this Section;~~
- ~~(3) conduct a quality control program to assure compliance with the provisions of Rules .0425 and .0426 of this Section and to include management evaluation of audits;~~
- ~~(4) prepare shipping manifests in accordance with the provisions of Paragraphs (a) and (b) of this Rule;~~
- ~~(5) at the time of shipment, forward a copy of the manifest to the intended recipient; or, at the time the waste is collected, have the collector acknowledge receipt by signing the licensee's copy of the manifest and provide a copy of the manifest to the collector;~~
- ~~(6) include one copy of the manifest with the shipment;~~
- ~~(7) retain a copy of the manifest, with documentation of acknowledgement of receipt, as the record of transfer of licensed material as required in Rules .0115 and .0417 of this Chapter; and~~
- ~~(8) conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.~~

(e) ~~Any waste collector licensee who handles only prepackaged waste shall:~~

- ~~(1) acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the~~

~~manifest to the generator;~~

- ~~(2) prepare a new manifest which shall reflect consolidated shipments, serve as a listing or index for the detailed generator manifests, and include copies of the generator manifests; or prepare a new manifest without attaching the generator manifests, provided the new manifest contains for each package the information specified in Paragraph (a) of this Rule;~~
- ~~(3) certify that nothing has been done to the waste which would invalidate the generator's certification;~~
- ~~(4) forward a copy of the new manifest to the land disposal facility operator at the time of shipment;~~
- ~~(5) include the new manifest with the shipment to the disposal site;~~
- ~~(6) retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed radioactive material as required in Rules .0115 and .0116 of this Chapter, and retain information from generator manifests until disposition is authorized by the agency; and~~
- ~~(7) conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.~~

(f) ~~Any licensed waste processor who treats or repackages wastes shall:~~

- ~~(1) acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest to the generator;~~
- ~~(2) prepare a new manifest that meets the requirements of Paragraphs (a), (b) and (c) of this Rule, thereby reflecting the fact that the processor is responsible for the waste;~~
- ~~(3) prepare all wastes so that the waste is classified in accordance with the provisions of Rule .0425 of this Section and meets the waste characteristics requirements in Rule .0426 of this Section;~~
- ~~(4) label each package of waste as Class A, Class B or Class C as determined in accordance with the provisions of Rules .0425 and .0427 of this Section;~~
- ~~(5) conduct a quality control program to assure compliance with the provisions~~



of Rules .0425 and .0426 of this Section and to include management evaluation of audits;

- (6) ~~at the time of shipment, forward a copy of the manifest to the intended recipient; or, at the time the waste is collected, have the collector acknowledge receipt by signing the licensee's copy of the manifest and provide a copy of the manifest to the collector;~~
- (7) ~~include the new manifest with the shipment;~~
- (8) ~~retain a copy of the manifest, with documentation of acknowledgement of receipt, as the record of transfer of licensed material as required in Rules .0415 and .0417 of this Chapter; and~~
- (9) ~~conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.~~
- (g) ~~Any radioactive waste disposal facility operator shall:~~
  - (1) ~~acknowledge receipt of the waste within one week of receipt by returning a signed copy of the manifest or equivalent documentation to the shipper, where such shipper is the licensee who last possessed the waste and transferred the waste to the operator;~~
  - (2) ~~indicate on the returned copy of the manifest or equivalent documentation in Subparagraph (g)(1) of this Rule any discrepancies between materials listed on the manifest and materials received;~~
  - (3) ~~maintain copies of all completed manifests or equivalent documentation until the agency authorizes their disposition; and~~
  - (4) ~~notify the shipper (e.g., the generator, the collector, or processor) and the agency when any shipment or part of a shipment has not arrived within 60 days after the advance manifest was received;~~
- (h) ~~If the shipper does not receive a notification of receipt for any shipment or any part of a shipment within 20 days after transfer, the shipper shall conduct an investigation, to include a trace of the shipment. The shipper and any other licensee who conducts a trace investigation shall file a written report with the agency within two weeks of the completion of the investigation.~~

Statutory Authority G.S. 104E-7(2), (3); 104E-12(a).

## SECTION .0500 - SAFETY REQUIREMENTS FOR INDUSTRIAL RADIOGRAPHY OPERATIONS

### .0502 DEFINITIONS

(a) "Radiographer" means any individual who performs or who, in attendance at the site where sources of radiation are being used, personally supervises industrial radiographic operations and who is responsible to the licensee or registrant for assuring compliance with the requirements of these Regulations Rules and all license conditions.

(b) "Radiographer's assistant" means any individual who, under the personal supervision of a radiographer, uses sources of radiation, related handling tools, or survey instruments in industrial radiography.

(c) "Radiographic exposure device" means any instrument containing a sealed source fastened or contained therein, in which the sealed source or shielding thereof may be moved, or otherwise changed, from a shielded to unshielded position for purposes of making a radiographic exposure.

(d) "Industrial radiography" means the examination of materials by nondestructive methods utilizing sources of radiation.

(e) "Storage container" means a device in which sealed sources are transported or stored.

(f) "Cabinet radiography using radiation machines" means industrial radiography using radiation machines, which is conducted in an enclosed, interlocked cabinet, such that the radiation machine will not operate unless all openings are securely closed, and which cabinet is so shielded that every location on the exterior meets conditions for an unrestricted area as specified in Rule .0406 .1611 of this Chapter.

(g) "Shielded room radiography using radiation machines" means industrial radiography using radiation machines, which is conducted in an enclosed room, the interior of which is not occupied during radiographic operations, which is so shielded that every location on the exterior meets conditions for an unrestricted area as specified in Rule .0406 .1611 of this Chapter, and the only access to which is through openings which are interlocked so that the radiation machine will not operate unless all openings are securely closed.

(h) "Sealed source" means any radioactive material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.



(i) "Storage container" means a device in which sealed sources are transported or stored.

(j) "Source changer" means a device designed and used for replacement of sealed sources in radiographic exposure devices, including those also used for transporting and storage of sealed sources.

(k) "Permanent radiographic installation" means a shielded installation or structure designed or intended for radiography and in which radiography is regularly performed.

(l) "Storage area" means any location, facility or vehicle which is used to store, transport or secure a radiographic exposure device, a storage container or a sealed source when it is not in use and which is locked or has a physical barrier to prevent accidental exposure, tampering with or unauthorized removal of the device, container or source.

*Statutory Authority G.S. 104E-7.*

#### **.0506 SURVEY INSTRUMENTS**

(a) The licensee or registrant shall maintain sufficient calibrated and operable radiation survey instruments to make physical radiation surveys as required by this Rule and Rules ~~.0409~~ .1613 and ~~.0415(e) and (e)~~ .1627 of this Chapter.

(b) Each radiation survey instrument shall be calibrated at intervals not to exceed three months and after each instrument servicing and a record maintained of the latest date of calibration.

(c) Instrumentation required by this Rule shall have a range such that two milliroentgens per hour through one roentgen per hour can be measured.

*Statutory Authority G.S. 104E-7; 104E-12(a)(1).*

#### **.0513 OPERATING AND EMERGENCY PROCEDURES**

The licensee's or registrant's operating and emergency procedures shall include instructions in at least the following:

- (1) the handling and use of sources of radiation to be employed such that no individual is likely to be exposed to radiation doses in excess of the limits established in Rule ~~.0402~~ .1604 of this Chapter;
- (2) methods and occasions for conducting radiation surveys;
- (3) methods for controlling access to radiographic areas;
- (4) methods and occasions for locking and securing sources of radiation;
- (5) personnel monitoring and the use of personnel monitoring equipment;

(6) transportation to field locations, including packing of sources of radiation in the vehicles, posting of vehicles, and control of sources of radiation during transportation;

(7) minimizing exposure of individuals in the event of an accident;

(8) the procedure for notifying proper personnel in the event of an accident;

(9) maintenance of records;

(10) the inspection and maintenance of radiographic exposure devices and storage containers; and

(11) steps must be taken immediately by radiography personnel in the event a pocket dosimeter is found to be off scale.

*Statutory Authority G.S. 104E-7.*

#### **.0514 SECURITY**

During each radiographic operation the radiographer or radiographer's assistant shall maintain a direct surveillance of the operation to protect against unauthorized entry into a high radiation area, as defined in Rule ~~.0411(e)~~ .0104 of this Chapter, except where the high radiation area:

- (1) is equipped with a control device or an alarm system as described in Rule ~~.0411(e)~~ .1615 of this Chapter, or
- (2) is locked to protect against unauthorized or accidental entry.

*Statutory Authority G.S. 104E-7.*

#### **.0516 POSTING**

Notwithstanding any provisions in Rule ~~.0412~~ .1625 of this Chapter, areas in which radiography is being performed shall be conspicuously posted as required by Rule ~~.0411(b) and (e)(1)~~ .1624 of this Chapter.

*Statutory Authority G.S. 104E-7.*

#### **.0520 PERMANENT RADIOGRAPHIC INSTALLATIONS**

(a) Permanent radiographic installations having high radiation area entrance controls of the types described in Subparagraphs ~~(e)(2)(B), (e)(2)(C), and (e)(4)~~ (a)(1), (2) and (3) of Rule ~~.0411~~ .1615 of this Chapter shall also meet the following special requirements:

- (1) Each entrance that is used for personnel access to the high radiation area in a permanent radiographic installation to which this Section applies shall have

both visible and audible warning signals to warn of the presence of radiation.

- (2) The visible signal shall be actuated by radiation whenever the source is exposed.
- (3) The audible signal shall be actuated when an attempt is made to enter the installation while the source is exposed.

(b) The alarm system shall be tested at intervals not to exceed three months or prior to the first use thereafter of the source in the installation. Records of the tests shall be kept for two years by the licensee.

*Statutory Authority G.S. 104E-7; 104E-12(a)(1).*

## SECTION .0600 - X-RAYS IN THE HEALING ARTS

### .0601 PURPOSE AND SCOPE

This Section establishes requirements for use of x-ray equipment by or under the supervision of an individual authorized by and licensed in accordance with state statutes to engage in the healing arts or veterinary medicine. The provisions of this Section are in addition to, and not in substitution for, the provisions of Sections .0100, .0200, ~~.0400~~, .0900, ~~and~~ .1000, ~~and~~ .1600 of this Chapter.

*Statutory Authority G.S. 104E-7.*

### .0603 GENERAL REQUIREMENTS

#### (a) Administrative controls

- (1) The registrant shall be responsible for directing the operation of the x-ray machines which he has registered with the agency. He or his agent shall assure that the following provisions are met in the operation of the x-ray machine(s):
  - (A) An x-ray machine which does not meet the provisions of these ~~Regulations~~ Rules shall not be operated for diagnostic or therapeutic purposes, if so ordered by the agency in accordance with ~~Rule~~ Rules .0109 and .0110 of this Chapter.
  - (B) Individuals who will be operating the x-ray equipment should be adequately instructed in the safe operating procedures and should be competent in the safe use of the equipment.
  - (C) In the vicinity of each diagnostic x-ray system's control panel, a chart

shall be provided, which specifies for all usual examinations and associated projections which are performed by that system, a listing of information including patient's anatomical size versus technique factors to be utilized at a given source to image receptor distance. The chart should also provide:

- (i) type and size of the film or film-screen combination to be used.
  - (ii) type and ratio of grid to be used, if any, and focal spot to film distance.
  - (iii) type and placement of gonad shielding to be used.
- (D) Written safety procedures and rules shall be established and made available to each individual operating x-ray equipment under his control. The operator shall be familiar with these rules.
- (E) Only the professional staff and ancillary personnel required for the medical procedure or for training shall be in the room during the radiographic exposure. Other than the patient being examined:
- (i) All individuals shall be positioned such that no part of the body including the extremities which is not protected by 0.5 mm lead equivalent will be exposed to the useful beam.
  - (ii) Professional staff and ancillary personnel shall be protected from the direct scatter radiation by protective aprons or whole body protective barriers of not less than 0.25 mm lead equivalent.
  - (iii) Patients who cannot be removed from the room shall be protected from the direct scatter radiation by whole body protective barriers of 0.25 mm lead equivalent or shall be so positioned that the nearest portion of the body is at least six feet from both the tube head and the nearest edge of the image receptor.
  - (iv) When a portion of the body of a non- occupationally exposed professional staff or ancillary personnel is potentially subjected

- to stray radiation which would result in that individual receiving one-fourth of the maximum permissible dose as defined in Rule ~~0402(a)~~ .1604 of this Chapter, additional protective measures shall be employed.
- (v) Upon application to the agency with adequate justification, exceptions from ~~Subparagraphs~~ Subparts (a)(1)(E)(ii) and (a)(1)(E)(iii) of this Rule may be allowed.
- (F) Gonad shielding of not less than 0.5 mm lead equivalent shall be used for potentially procreative patients during radiographic procedures in which the gonads are in the direct, or useful beam, except for cases in which this would interfere with the diagnostic procedures.
- (G) Individuals shall not be exposed to the useful beam except for healing arts purposes. Such exposures shall have been authorized by a licensed practitioner of the healing arts. This provision specifically prohibits deliberate exposure of an individual for training, demonstration or other nonhealing arts purposes.
- (H) When a patient or film must be provided with auxiliary support during a radiographic exposure:
- (i) Mechanical holding devices shall be used whenever medical circumstances permit. Written safety procedures, as required in ~~Subparagraph Part~~ Part (a)(1)(D) of this Rule shall indicate the requirements for selecting a holder;
  - (ii) If a human holder is required, written safety procedures as required in ~~Subparagraph Part~~ Part (a)(1)(D) of this Rule, shall indicate the instructions provided to the holder;
  - (iii) The human holder shall be protected as required in ~~Subparagraph Part~~ Part (a)(1)(E) of this Rule;
  - (iv) No individual shall be used routinely to hold patients or film.
- (I) Procedures and auxiliary equipment designed to minimize patient and personnel exposure commensurate with the needed diagnostic information shall be utilized. This includes, but is not limited to, the following requirements:
- (i) The speed of film or screen and film combinations should be the fastest speed consistent with the diagnostic objective of the examinations.
  - (ii) The radiation exposure to the patient shall be the minimum exposure required to produce images of good diagnostic quality.
  - (iii) Portable or mobile equipment shall be used only for examinations where it is impractical for medical reasons to transfer the patient to a stationary radiographic installation.
- (J) All persons who are associated with the operation of an x-ray system are subject to the occupational exposure limits as defined in Rules ~~0402~~ .1604 and ~~0403~~ .1638, and personnel monitoring procedures in Rule ~~0410~~ .1614 of this Chapter. In addition, when protective clothing or equipment is worn on portions of the body and a monitoring device(s) is required, at least one such monitoring device shall be utilized as follows:
- (i) When an apron is worn the monitoring device shall be worn at the collar outside the apron.
  - (ii) The dose to the whole body shall be recorded in the reports required in Rule ~~0417~~ .1640 of this Chapter. If more than one device is used, each dose shall be identified with the area where the device was worn on the body.
- (2) The registrant shall maintain at least the following information for each x-ray machine:
- (A) current registration information and other correspondence with the agency regarding that machine;
  - (B) records of surveys and calibrations;
  - (C) records of maintenance or modifications which affect the useful beam after the effective date of these ~~Regulations~~ Rules, along with the names of persons who performed the service.
- (b) Plans Review. Prior to construction or structural modification, the floor plans and equipment arrangement of all installations utilizing



x-rays for diagnostic or therapeutic purposes shall be reviewed by a qualified expert. The registrant shall submit recommendations of the expert to the agency.

(c) Radiation Survey

- (1) For installations of x-ray equipment after the effective date of this Rule, an area radiation survey shall be performed within 30 days following initial operation of each radiation machine to show compliance with Rule .0604(b) of this Section. This survey shall include:
  - (A) a drawing of the room in which a stationary x-ray system is located and radiation levels in adjacent areas; and
  - (B) the name of the person approved by the agency performing the survey and the date the survey was performed.
- (2) Any modification to the x-ray room or adjacent areas which could increase the radiation dosage to any individual shall require a new survey.
- (3) Records of this survey shall be maintained in accordance with Subparagraph (a)(2) Rule .0603(a)(2) of this Section Rule.

*Statutory Authority G.S. 104E-7; 104E-12(a).*

**.0604 GENERAL REQUIREMENTS FOR ALL DIAGNOSTIC SYSTEMS**

(a) In addition to other requirements of this Section, all diagnostic x-ray systems shall meet the following requirements:

- (1) The control panel containing the main power switch shall bear the warning statement, legible and accessible to view: "WARNING: This x-ray unit may be dangerous to patient and operator unless safe exposure factors and operation instructions are observed."
- (2) Equivalent wording may be used on battery-powered generators, visual means shall be provided on the control panel to indicate whether the battery is in a state of charge adequate for proper operation.
- (3) The leakage radiation from the diagnostic source assembly measured at a distance of one meter in any direction from the source shall not exceed 100 millirem in one hour when the x-ray tube is operated at its leakage technique factors. Compliance shall be determined by measurements averaged over an area of 100 square centimeters with no linear dimension greater than 20 centimeters.
- (4) The radiation emitted by a component other than the diagnostic source assembly shall not exceed two millirem in one hour at five centimeters from any accessible surface of the component when it is operated in an assembled x-ray system under any conditions for which it was designed. Compliance shall be determined by measurements averaged over an area of 100 square centimeters with no linear dimension greater than 20 centimeters.
- (5) Beam Quality
  - (A) Half-Value Layer
    - (i) The half-value layer (HVL) of the useful beam for a given x-ray tube potential shall not be less than the appropriate value shown in the following table. "Specified Dental System" is any dental x-ray system designed for use with intraoral image receptors and manufactured after December 1, 1980. "Other X-Ray Systems" shall be all other x-ray systems subject to

this Section.

X-Ray Tube Voltage ( <u>millimeters</u> of Aluminum)	(kilovolt peak) ( <u>millimeters</u> of <u>Aluminum</u> )	Minimum HVL	<u>Minimum HVL</u>
Measured Designed operating range	Specified Operating Potential	Other Dental Systems	X-ray Systems
Below 50-----	30	1.5	0.3
	40	1.5	0.4
	49	1.50.5	
50 to 70-----	50	1.5	1.2
	60	1.5	1.2
	70	1.5	1.5
Above 70-----	71	2.1	2.1
	80	2.3	2.3
	90	2.5	2.5
	100	2.7	2.7
	110	3.0	3.0
	120	3.2	3.2
	130	3.5	3.5
	140	3.8	3.8
	150	4.1	4.1

If it is necessary to determine such half-value layer at an x-ray tube potential which is not listed in the table, linear interpolation or extrapolation may be made. Positive means shall be provided to insure that at least the minimum filtration needed to achieve the above beam quality requirements is in the useful beam during each exposure.

- (ii) The requirements of ~~Subparagraph~~ Subpart (a)(5)(A)(i) of this Rule shall be considered to be met if it can be demonstrated that the aluminum equivalent of the total filtration in the primary beam is not less than that shown in the following table:

Filtration Required versus Operating Voltage

Operating Voltage (kVp)	Minimum total filtration (inherent plus added) ( <u>millimeters aluminum</u> equivalent)
Below 50	0.5 millimeters
50 - 70	1.5 millimeters
Above 70	2.5 millimeters

- (iii) Notwithstanding the requirements of ~~Subparagraph~~ Subpart (a)(5)(A)(ii) of this Rule, all intraoral dental systems ~~manufactured~~ manufactured after December 1, 1980, shall have a minimum of 1.5 mm aluminum equivalent filtration permanently installed in the useful beam.
- (iv) Beryllium window tubes shall have a minimum of 0.5 mm aluminum equivalent filtration permanently mounted in the useful beam.
- (v) For capacitor energy storage equipment, compliance shall be determined with the maximum

quantity of charge per exposure.

- (vi) The required minimum aluminum equivalent filtration shall include the filtration contributed by all materials which are always present between the focal spot of the tube and the patient, such as a tabletop when the tube is mounted under the table and inherent filtration of the tube.
- (B) For x-ray systems installed after the effective date of these ~~Regulations~~ Rules and which have variable kVp and selectable filtration for the useful beam, a device should link the kVp selector with the filter(s), so that the minimum filtration is always present for the kVp selected.
- (6) Where two or more radiographic tubes are controlled by one exposure switch, the tube or tubes which have been selected and their location shall be clearly indicated on the master control panel prior to initiation of the exposure.
- (7) The tube housing assembly supports shall be adjusted such that the tube housing assembly will remain stable during an exposure unless the tube housing movement is a design function of the x-ray system.
- (8) The location of the focal spot should be indicated on a readily visible area of the x-ray source housing in the plane parallel to the image receptor when the image receptor is perpendicular to the beam axis.
- (9) Technique Indicators
  - (A) The technique factors to be used during an exposure should be indicated before the exposure begins, except when automatic exposure controls are used, in which case the technique factors which are set prior to the exposure should be indicated.
  - (B) Indication of technique factors should be visible from the operator's position except in the case of spot films made by the fluoroscopist.
  - (C) On equipment having fixed technique factors, the recommendation in ~~Subparagraph Part~~ (a)(9)(A) of this Rule may be met by permanent markings.
- (b) Structural Shielding
  - (1) For stationary diagnostic systems, except for intraoral dental systems which shall meet the requirements of Rule .0607(j) of this Section, structural shielding shall be provided to assure compliance with Rules ~~.0402~~ .1604 and ~~.0406~~ .1611 of this Chapter. The following shall be provided:
    - (A) All wall, floor and ceiling areas exposed to the useful beam shall have primary barriers. Primary barriers in walls shall extend to a minimum height of 84 inches above the floor;
    - (B) Secondary barriers in the wall, floor and ceiling areas not having a primary barrier or where the primary barrier requirements are lower than the secondary barrier requirements; and
    - (C) A window of lead-equivalent glass equal to that required by the adjacent barrier or a mirror system shall be provided large enough and so placed that the operator can see the patient without having to leave the protected area during exposures.
  - (2) When a mobile system is used routinely in one location, the structural shielding in that location shall meet the requirements for stationary diagnostic systems in Subparagraph (b)(1) of this Rule.

Statutory Authority G.S. 104E-7.

#### **.0607 INTRAORAL DENTAL RADIOGRAPHIC SYSTEMS**

(a) In addition to the provisions of Rule .0603 and .0605 of this Section, the requirements of this Rule apply to x-ray equipment and associated facilities used for dental radiography. Criteria for extraoral dental radiographic systems are covered in Rule .0606 of this Section.

(b) X-ray systems designed for use with an intraoral image receptor shall be provided with means to limit source-skin distance to not less than:

- (1) 18 centimeters, if operated above 50 kilovolts peak; or

- (2) ten centimeters, if operated at or below 50 kilovolts peak.

(c) The size of the direct radiation beam shall be limited in accordance with the following Rules rules:

- (1) Radiographic systems designed for use with an intraoral image receptor shall be provided with means to limit the x-ray beam such that:
  - (A) If the source-skin distance (SSD) is 18 centimeters or more, the x-ray field at the SSD shall be containable in a circle having a diameter of no more than seven centimeters; and
  - (B) If the SSD is less than 18 centimeters,



the x-ray field at the SSD shall be containable in a circle having a diameter of no more than six centimeters.

- (2) Effective February 1, 1981, equipment manufactured prior to August 1974 shall be equipped with a lead line open position indicating device with at least 0.79 mm lead.

(d) The timing device shall comply with the following requirements:

- (1) Termination of the exposure after a preset interval;
- (2) Termination of exposure shall cause automatic resetting of the timer to its initial setting or to zero;
- (3) It shall not be possible to make an exposure when the timer is set to a zero or "off" position if either position is provided; and
- (4) When four timer tests are performed at identical timer settings equal to five seconds or less, the average time period (T) shall be greater than five times the difference between the maximum period ( $T_{max}$ ) and the minimum period ( $T_{min}$ ) in accordance with the formula:

$$T > 5(T_{max} - T_{min})$$

- (5) Effective February 1, 1983, intraoral dental radiographic systems shall be equipped with an electronic timer.

- (6) Timer accuracy

- (A) For indicated values of 0.10 seconds and above, the measured value shall be within plus or minus 15 percent of the indicated values for equipment manufactured before August 1, 1974.

- (B) For equipment manufactured after August 1, 1974, the deviation of measured values from indicated values shall not exceed the limits specified for that system by its manufacturer.

(e) The exposure switch shall comply with the following requirements:

- (1) A control shall be incorporated into each x-ray system such that an exposure can be terminated at any time, except for exposures of one-half second or less.
- (2) Each x-ray control shall be located in such a way as to meet the following criteria:

- (A) For stationary x-ray systems installed after the effective date of this Rule,

the exposure switch shall be permanently mounted in a protected area (e.g., corridor outside the room) so that the operator is required to remain in that protected area during the entire exposure.

- (B) For stationary x-ray systems without a protected area and installed before the effective date of this Rule, the exposure switch shall be such that the operator shall stand at least six feet away from the tube and out of the direct beam.

- (C) For mobile and portable x-ray systems the switch shall meet the requirements of ~~Subparagraph~~ Part (e)(2)(B) of this Rule.

- (3) For equipment manufactured after August 1, 1974, the x-ray control shall provide visual indication observable at or from the operator's protected position whenever x-rays are produced. In addition, a signal audible to the operator shall indicate that the exposure has terminated.

(f) The exposure produced shall be reproducible to within the following criteria:

When all technique factors are held constant, the coefficient of variation shall not exceed 0.10. This shall be deemed to be met if, when four exposures at identical technique factors are made, the value of the average exposure (E) is greater than five times the difference between the maximum exposure ( $E_{max}$ ) and the minimum exposure ( $E_{min}$ ) in accordance with the formula:

$$E > 5(E_{max} - E_{min})$$

(g) Patient and film holding devices should be used when the techniques permit.

(h) Neither the tube housing nor the position indicating device shall be hand-held during an exposure.

(i) Dental fluoroscopy without image intensification shall not be used.

- (j) Structural shielding

- (1) All wall, floor and ceiling areas shall have protective barriers sufficient to meet the requirements of Rules ~~0402 .1604~~ and ~~0406 .1611~~ of this Chapter.

- (2) When intraoral x-ray systems are installed in adjacent rooms or areas, protective barriers as specified in Sub-

paragraph (j)(1) of this Rule shall be provided between the rooms or areas.

Statutory Authority: G.S. 104E-7.

**.0608 THERAPEUTIC X-RAY  
INSTALLATIONS: LESS THAN ONE  
MeV**

(a) Unless specifically provided otherwise by the Rules in this Chapter, the requirements in this Rule shall apply only to therapeutic x-ray installations which are not capable of operating at or above one MeV. Therapeutic x-ray equipment subject to the provisions of this Rule shall comply with the following requirements:

- (1) When the tube is operated at its leakage technique factors, the leakage radiation in any direction shall not exceed the value specified at the distance specified for the classification of that x-ray system.
  - (A) For contact therapy systems, the leakage radiation shall not exceed 100 mR/hr at five centimeters from the tube housing.
  - (B) Systems operating from zero to 150 kVp which are manufactured or installed prior to the effective date of this Rule shall have a leakage radiation which does not exceed one R in one hour at one meter from the source.
  - (C) Systems operating from zero to 150 kVp which are manufactured on or after the effective date of this Rule shall have a leakage radiation which does not exceed 100 mR in one hour at one meter from the source.
  - (D) Systems operating from 151 to 999 kVp shall have leakage radiation which does not exceed one R in one hour at one meter from the source, except systems which operate in excess of 500 kVp may have a leakage radiation in one hour at one meter from the source equivalent to 0.1 percent of the exposure in the useful beam in one hour at a distance of one meter from the source.
- (2) Permanent beam limiting devices used for collimating the useful beam shall provide the same or higher degree of protection as that required by the tube housing assembly.
- (3) Adjustable or removable beam limiting

devices shall transmit not more than five percent of the useful beam as determined at the maximum tube potential and maximum treatment filter.

- (4) The filter system shall be so designed that:
  - (A) Filters cannot be accidentally displaced from the useful beam at any tube orientation;
  - (B) Each filter is marked as to its material of construction and its thickness or wedge angle for wedges;
  - (C) It shall be possible for the operator to determine the presence of and identify each filter and the orientation of each wedge filter in the useful beam when the operator is positioned at the control panel either by display at the control panel or by direct observation;
  - (D) The filters and filter insertion slot opening shall be so designed that the radiation at five centimeters from the filter insertion slot opening does not exceed 30 roentgens per hour under all operating conditions; and
  - (E) Each machine equipped with a beryllium or other low filtration window shall be clearly labeled as such upon the tube head housing and upon the control panel.
- (5) The tube housing assembly shall be immobilized during stationary treatments.
- (6) The tube housing assembly shall be so marked that it is possible to determine the location of the focal spot to within five millimeters and such marking shall be readily accessible.
- (7) Equipment of greater than 150 kVp installed after the effective date of this Rule shall be provided with a beam monitor system.
- (8) The exposure timer shall meet the following requirements:
  - (A) A timer shall be provided which has a display at the treatment control panel. The timer shall have a preset time selector and shall terminate irradiation when a preselected time has elapsed.
  - (B) The timer shall switch on and off with the radiation and retain its reading after irradiation is interrupted or terminated.
- (9) The control panel shall have:

- (A) an indication of whether electrical power is present and activation of the x-ray tube is possible;
  - (B) an indication of whether x-rays are being produced;
  - (C) the means for indicating kVp and x-ray tube current;
  - (D) the means for terminating an exposure at any time;
  - (E) a locking device which will prevent unauthorized use of the x-ray system and, for systems not having a lock at the control panel, an alternate method of preventing unauthorized use, shall be provided;
  - (F) for equipment manufactured after the effective date of this Rule, a positive display of specific filter(s) in the beam.
- (10) When a control panel may energize more than one x-ray tube:
- (A) It shall be possible to activate only one x-ray tube during any one time interval;
  - (B) There shall be an indication at the control panel identifying which x-ray tube can be energized; and
  - (C) There shall be an indication at the x-ray tube if that tubehead can be energized.
- (11) There shall be means of determining the target to patient distance to within one centimeter.
- (12) If exposures are controlled by a timer, that timer:
- (A) shall permit the setting of exposure times at least as short as one second, and
  - (B) shall not permit an exposure if set at zero or "off".
- (13) Unless it is possible to bring the x-ray exposure rate to its prescribed value within five seconds of actuating the x-ray "on" control, the tube housing shall be fitted with a shutter operable only from the control panel, and of lead equivalent not less than that of the tube housing. In addition:
- (A) ~~the~~ The status of the shutter "Beam On", "Beam Off" or "Shutter Open", "Shutter Closed" or equivalent description, shall be indicated at the control panel.
  - (B) It shall not be possible to initiate an exposure sequence unless the shutter has first been placed in the "Beam Off" or "Shutter Closed" position.
  - (C) The shutter shall automatically go to the "Beam Off" or "Shutter Closed" position if the exposure is terminated by:
    - (i) the operation of the timer,
    - (ii) the dose monitoring system, if provided,
    - (iii) the operation of a safety interlock, or
    - (iv) a power failure.
- (b) In addition to shielding adequate to meet requirements of Section ~~0400~~ 1600 of this Chapter, the following treatment room design requirements shall be met:
- (1) Treatment room entrances shall be provided with warning lights in a readily observable position, which will indicate when the useful beam is "on".
  - (2) Provision shall be made for two-way communication with the patient from the control room.
  - (3) A system shall be provided to permit continuous observation of the patient during irradiation and shall be so located that the operator may see the patient and the control panel from the same position.
  - (4) Facilities which contain an x-ray system which may be operated above 150 kVp shall:
    - (A) have all necessary shielding, except for any beam interceptor, provided by fixed barriers;
    - (B) have the control panel in a protected area which is outside the treatment room;
    - (C) have all entrance doors to the treatment room electrically connected such that the x-ray production cannot be initiated unless all doors are closed and shall cease if any door is opened during x-ray production;
    - (D) if the radiation output of the x-ray tube is affected by any door opening, be so designed that it is possible to initiate x-ray production only by:
      - (i) closing all doors and, subsequently,
      - (ii) reinitiating the exposure by manual action at the control panel.
- (c) Operating procedures, surveys, and calibration shall comply with the following requirements:
- (1) All new facilities and existing facilities



not previously surveyed shall have a radiation protection survey made by, or under the direction of, a qualified expert. This shall also be done after any change in the facility which might produce a radiation hazard. The expert shall report his findings in writing to the person in charge of the facility, and a copy of this report shall be transmitted by the registrant to the agency at the address in Rule .0111 of this Chapter.

- (2) The radiation output of each therapeutic x-ray machine shall be calibrated by, or under the direction of a qualified expert who is physically present at the facility during the calibration procedure. The calibration shall be repeated after any change, in or replacement of, components of the x-ray generating equipment which could cause a change in x-ray output. Calibration of the therapy beam shall be performed with a measurement instrument, the calibration of which is traceable to national standards for exposure or absorbed dose, and which shall have been calibrated within the preceding 12 months. Records of radiation outputs shall be provided to and maintained by the registrant.
- (3) Each therapeutic x-ray machine shall be calibrated as described in Subparagraph (c)(2) of this Rule at time intervals not exceeding one year. The calibration shall include at least the following determinations:
  - (A) the accurate determination of the air exposure rate or the dose rate at a reference point within a suitable phantom, as appropriate;
  - (B) the congruence between the radiation field and light localizer, when such is used;
  - (C) the half-value layer for every combination of kVp and filter used for radiation therapy.
- (4) Therapeutic x-ray systems capable of operation at greater than 150 kVp, in addition to the annual calibration required in Subparagraphs (c)(2) and (3) of this Rule, shall have spot checks performed.
  - (A) The spot check methods and frequency shall be designed and in writing by a qualified expert. Spot checks shall

include verification of continued congruency between the radiation field and the localizing device where an optical field illuminator is used.

- (B) Whenever a spot check indicates a significant change in the operating characteristics of a machine, as specified in the qualified expert's spot check design, the machine shall be recalibrated as required.
- (C) A log shall be kept of all spot check measurements.
- (5) Therapeutic x-ray machines shall not be left unattended unless the locking device required by ~~Subparagraph Part~~ (a)(10)(E) of this Rule is set to prevent activation of the useful beam.
- (6) Except as provided in Rule .0603(a)(1)(H) of this Section, no individual other than the patient shall be in the treatment room during exposures unless he is protected by a barrier sufficient to meet the requirements of Rule ~~.0402~~ .1604 of this Chapter, and no individual other than the patient shall be in the treatment room when the kVp exceeds 150 during exposures.
- (7) The tube housing assembly shall not be held by hand during operation unless the system is designed to require such holding and the peak tube potential of the system does not exceed 50 kVp. In such cases the holder shall wear protective gloves and apron of not less than 0.5 mm lead equivalency at 100 kVp.

*Statutory Authority G.S. 104E-7; 104E-12(a).*

#### **.0609 X-RAY AND ELECTRON THERAPY INSTALLATIONS ONE MeV AND ABOVE**

(a) The requirements in Paragraphs (b) to (e) of this Rule shall apply only to medical facilities using medical x-ray and electron therapy equipment with energies one MeV and above. In addition, such medical facilities shall also comply with the requirements in Section .1200 of this Chapter.

(b) Equipment requirements are as follows:

- (1) For existing equipment and new equipment manufactured or installed after the effective date of these ~~Regulations~~ Rules:
  - (A) The leakage radiation, excluding neutrons, at a distance of one meter

from the source shall not exceed 0.1 percent of the useful beam dose rate at one meter from the source for any of its operating conditions.

- (B) Within one year after the effective date of these ~~Regulations~~ Rules the registrant shall determine or obtain from the manufacturer for each machine the leakage radiation specifications for electrons, x-rays and neutrons existing at the points specified in ~~Subparagraph Part~~ (b)(1)(A) of this Rule for specified operating conditions. Records on radiation leakage shall be maintained at the installation.
- (C) For equipment from which neutron leakage may be a hazard, a qualified expert shall specify such additional requirements as may be necessary to protect health or minimize danger to life or property. The adequacy of these additional requirements shall be confirmed by a survey. Survey records shall be maintained by the registrant.
- (2) Adjustable or interchangeable beam limiting devices shall be provided and shall meet the following requirements:
  - (A) For existing equipment and new equipment manufactured or installed after the effective date of these ~~Regulations~~ Rules:
    - (i) Adjustable or interchangeable beam limiting devices shall attenuate the radiation incident on the beam limiting devices such that the dose equivalent in rems at any distance from the source does not exceed two percent of the maximum dose equivalent in the useful beam measured at an equal distance from the radiation source.
    - (ii) If the beam limiting device does not meet the specifications in ~~Subparagraph Subpart~~ (b)(2)(A)(i) of this Rule, the agency may accept auxiliary equipment or methods for accomplishing attenuation.
  - (B) Dose equivalent measurements may be averaged over an area up to but not exceeding 100 square centimeters at a distance of one meter from the target.

- (3) In equipment which uses a system of wedge filters, interchangeable field flattening filters or beam scattering devices:
  - (A) Irradiation shall not be possible until a selection of filter has been made at the treatment control panel;
  - (B) An interlock system shall be provided to prevent irradiation if the filter is not in the correct position;
  - (C) An indication of the orientation of the wedge filter with respect to the treatment field shall be provided when wedge filters are used; and
  - (D) A display shall be provided at the treatment control panel showing the filter(s) in use, including an indication of "no filters".
- (4) Equipment installed after the effective date of these ~~Regulations~~ Rules shall be provided with at least one radiation detector in the radiation head. This detector shall be incorporated into a primary system.
  - (A) Each primary system shall have a detector which is a transmission detector and is a full beam detector and is placed on the patient side of any fixed added filters other than a wedge filter;
  - (B) The detector(s) shall be removable only with tools or shall be interlocked to prevent incorrect positioning.
  - (C) Each detector shall be capable of independently monitoring and turning "off" the useful beam.
  - (D) Each detector shall form part of a dose monitoring system from whose readings in dose monitor units the absorbed dose at a reference point in the treatment volume can be calculated.
  - (E) Each dose monitoring system shall have a legible display at the treatment control panel which shall:
    - (i) maintain a reading until intentionally reset;
    - (ii) in the event of power failure, have the capability of retrieving the information displayed at the time of failure.
- (5) Selection and display of dose monitor units shall comply with the following requirements:
  - (A) Irradiation shall not be possible until

- a selection of a number of dose monitor units has been made at the treatment control panel.
  - (B) After useful beam termination, it shall be necessary to reset the preselected dose monitor units before treatment can be reinitiated.
  - (C) The preselected number of dose monitor units shall be displayed at the treatment control panel until reset for the next irradiation.
- (6) Automatic termination of irradiation by the dose monitoring system shall comply with the following requirements:
    - (A) Each of the monitoring systems shall be capable of independently terminating irradiation. Provisions shall be made to test the correct operation of each system.
    - (B) Each primary system shall terminate irradiation when the preselected number of dose monitor units have been reached, and each secondary system shall be used as a backup.
  - (7) It shall be possible to terminate irradiation and equipment movements or to go from an interruption condition to termination conditions at any time from the treatment control panel.
  - (8) It shall be possible to interrupt irradiation and equipment movements at any time from the treatment control panel. Following an interruption it shall be possible to restart irradiation by operator action without any reselection of operating conditions. If any change is made of a pre-selected value during an interruption the equipment shall go to termination condition.
  - (9) A timer shall be provided and shall meet the following requirements:
    - (A) The timer shall have a display at the treatment control panel. The timer shall have a preset time selector and an elapsed time indicator.
    - (B) The timer shall be a cumulative timer which switches "on" and "off" with the radiation and retains its reading after irradiation is interrupted or terminated. It shall be necessary to zero the elapsed time indicator and the preset time selector after irradiation is terminated, before reactivation is possible.
  - (C) To guard against failure of the dose monitoring systems, the timer shall terminate irradiation when a preselected time has elapsed.
- (10) In equipment capable of both x-ray therapy and electron therapy:
    - (A) Irradiation shall not be possible until a selection of radiation type, x-rays or electrons, has been made at the treatment control panel;
    - (B) An interlock system shall be provided to prevent irradiation if any selected operations carried out in the treatment room do not agree with the selected operations carried out at the treatment control panel;
    - (C) An interlock system shall be provided to prevent irradiation with x-rays when electron applicators are fitted and irradiation with electrons when x-ray wedge filters are fitted; and
    - (D) The radiation type selected shall be displayed at the treatment control panel before and during irradiation.
  - (11) In equipment capable of generating radiation beams of different energies:
    - (A) Irradiation shall not be possible until a selection of energy has been made at the treatment control panel;
    - (B) An interlock system shall be provided to insure that the equipment emits primarily the energy of radiation which has been selected;
    - (C) An interlock system shall be provided to prevent irradiation if any selected operations carried out in the treatment room do not agree with the selected operations carried out at the treatment control panel; and
    - (D) The energy selected shall be displayed at the treatment control panel before and during irradiation.
  - (12) In equipment capable of both stationary-beam therapy and moving-beam therapy:
    - (A) Irradiation shall not be possible until a selection of stationary-beam therapy or moving-beam therapy has been made at the treatment control panel;
    - (B) An interlock system shall be provided to prevent irradiation if any selected operations carried out in the treatment room do not agree with the selected operations carried out at the treatment control panel;



- (C) An interlock system shall be provided to terminate irradiation if the movement stops during moving-beam therapy;
  - (D) Moving-beam therapy shall be so controlled that the required dose monitor units per degree of rotation is obtained; and
  - (E) The mode of operation shall be displayed at the treatment control panel.
- (13) The registrant shall determine or obtain from the manufacturer the location with reference to an accessible point on the radiation head of:
- (A) the x-ray target and the virtual source of x-rays;
  - (B) the electron window or the scattering foil; and
  - (C) all possible orientations of the useful beam.
- (14) Means shall be provided so that all radiation safety interlocks can be checked. When preselection of any of the operating conditions requires action in the treatment room and at the treatment control panel selection at one location shall not give a display at the other location until the requisite selection operations in both locations have been completed.
- (c) Facility shielding shall be adequate to meet the requirements of Section ~~.0400~~ .1600 of this Chapter.
- (d) Facility design shall meet the following requirements:
- (1) Except for entrance doors, all required barriers shall be fixed barriers.
  - (2) The control panel shall be located outside the treatment room. The door must be closed during radiation production.
  - (3) A viewing system shall be provided to permit continuous observation of the patient during irradiation and shall be so located that the operator may see the patient and the control panel from the same position. When the viewing system is by electronic means (e.g., television), an alternate viewing system should be available.
  - (4) Provision shall be made for two-way aural communication with the patient from the control room, however, where excessive noise levels make aural communication impractical, other methods of communication shall be used.
- (5) Treatment rooms to which access is possible through more than one entrance shall be provided with warning lights, in a readily observable position near the outside of all access doors, preferably at eye level, which will indicate when the useful beam is "on".
- (6) Have all entrance doors to the treatment room electrically connected such that the x-ray production cannot be initiated unless all doors are closed and shall cease if any door is opened during x-ray production.
- (e) The operating procedures which follow are in addition to those in Rule .0908 of this Chapter.
- (1) Radiation protection surveys shall comply with the following requirements:
    - (A) All new facilities and existing facilities not previously surveyed shall have a radiation protection survey made by, or under the direction of, a qualified expert. This shall also be done after any change in the facility or equipment which might cause a significant increase in radiation hazard.
    - (B) The expert shall report his findings in writing to the person in charge of the facility, and a copy of the report shall be transmitted by the registrant to the agency at the address in Rule .0111 of this Chapter.
  - (2) No person other than the patient shall be in the treatment room during treatment. When a patient must be held in position for radiation therapy, mechanical supporting or restraining devices shall be used.
  - (3) The output of each therapeutic x-ray machine shall be calibrated by, or under the direct supervision of a qualified expert, before it is first used for medical purposes. Calibrations shall be repeated at least once every 12 months and after any change which might significantly increase radiation hazards. Calibration of the therapy beam shall be performed with measurement instruments, the calibration of which is traceable to national standards for exposure or absorbed dose and which shall have been calibrated within the preceding 12 months. Records of calibrations shall be provided to and maintained by the

registrant. The calibration should include at least the following determinations:

- (A) the exposure rate or dose rate as appropriate for the field sizes used and for each effective energy and for each treatment distance used for radiation therapy;
  - (B) the beam quality (e.g., half-value layer when appropriate) for every proposed combination of operating conditions used for radiation therapy;
  - (C) the congruence between the radiation field and the field indicated by the localized device when used;
  - (D) verification that the equipment is operating in compliance with the design specifications concerning the light localizer, the side light and backpointer alignment with the isocenter, when applicable, variation in the axis of rotation for the table, gantry and jaw system and beam flatness and symmetry in air or at the specified depths in a water phantom.
- (4) Spot checks shall be performed monthly.
- (A) The spot check methods shall be in writing and shall be designed by a qualified expert.
  - (B) Whenever a spot check indicates a significant change (as specified in the qualified expert's spot check design) in the operating characteristics of a machine, the machine shall be recalibrated as required in Subparagraph (e)(3) of this Rule.
  - (C) A log shall be kept of all spot check measurements.

*Statutory Authority G.S. 104E-7; 104E-12(a).*

#### **.0610 VETERINARY MEDICINE RADIOGRAPHIC INSTALLATIONS**

(a) The provisions of this Rule shall apply only to veterinary medicine radiographic installations. Radiographic equipment used in veterinary medicine radiographic installations shall meet the following requirements:

- (1) The protective tube housing shall be of the diagnostic type.
- (2) Diaphragms or cones shall be provided for collimating the useful beam to the area of the image receptor and shall provide the same degree of protection

as is required in the housing.

- (3) The total filtration permanently in the useful beam shall not be less than 0.5 millimeters aluminum equivalent for machines operating up to 50 kVp, 1.5 millimeters aluminum equivalent for machines operating between 50-70 kVp, and 2.5 millimeters aluminum equivalent for machines operating above 70 kVp.
  - (4) A device shall be provided to terminate the exposure after a preset time or exposure.
  - (5) A dead-man type of exposure switch shall be provided, together with an electrical cord of sufficient length, so that the operator can stand out of the useful beam and at least six feet from the animal during all x-ray exposures or behind a protective barrier adequate to assure compliance with Rules ~~.0402~~ .1604 and ~~.0406~~ .1611 of this Chapter.
- (b) All wall, ceiling and floor areas shall be equivalent to or provided with primary and secondary protective barriers necessary to comply with Rules ~~.0402~~ .1604 and ~~.0406~~ .1611 of this Chapter.
- (c) Operating procedures shall meet the following requirements:
- (1) The operator shall stand well away from the useful beam and the animal during radiographic exposures.
  - (2) No individual other than the operator shall be in the x-ray room while exposures are being made unless such individual's assistance is required.
  - (3) When an animal must be held in position during radiography, mechanical supporting or restraining devices shall be used; except if the animal must be held by an individual, that individual shall be protected with appropriate shielding devices, such as protective gloves and apron, and shall be so positioned that no part of the individual's body will be struck by the useful beam. The exposure of any professional staff or ancillary personnel used for this purpose shall be monitored and permanently recorded. Exposures shall comply with Rules ~~.0402~~ .1604 and ~~.0405(a)~~ .1609 of this Chapter.

*Statutory Authority G.S. 104E-7.*

**SECTION .0700 - USE OF SEALED  
RADIOACTIVE SOURCES IN THE  
HEALING ARTS**

**.0702 INTERSTITIAL: INTRACAVITARY  
AND SUPERFICIAL APPLICATIONS**

- (a) Accountability, storage and transit
  - (1) Except as otherwise specifically authorized by the agency each licensee shall provide accountability of sealed sources and shall keep a record of the issue and return of all sealed sources. A physical inventory shall be made at least every six months and a written record of the inventory maintained.
  - (2) When not in use, sealed sources and applicators containing sealed sources shall be kept in a protective enclosure of such material and wall thickness as necessary to assure compliance with the provisions of Rules ~~.0402~~ .1604, ~~.0405~~ .1609 and ~~.0406~~ .1611 of this Chapter.
- (b) Testing sealed sources for leakage and contamination
  - (1) All sealed sources with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and contamination prior to initial use and at intervals not to exceed six months. If there is reason to suspect that a sealed source might have been damaged, or might be leaking, it shall be tested for leakage before further use.
  - (2) Leak tests shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample, or in the case of radium, the escape of radon at rate of 0.001 microcurie per 24 hours. Any test conducted pursuant to Subparagraph (b)(1) of this Rule which reveals the presence of 0.005 microcurie or more of removable contamination or, in the case of radium, the escape of radon at the rate of 0.001 microcurie or more per 24 hours shall be considered evidence that the sealed source is leaking. The licensee shall immediately withdraw the source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with applicable provisions of Section ~~.0400~~ .1600 of this Chapter. A report describing the sealed sources involved, the test results and the corrective action taken shall be

- submitted in writing to the agency at the address stated in Rule .0111 of this Chapter within five days after the test.
- (3) Leak test results shall be recorded in units of microcuries and maintained for inspection by the agency.
- (c) Radiation surveys
  - (1) The maximum radiation level at a distance of one meter from the patient in whom brachytherapy sources have been inserted shall be determined by measurement or calculation and preferably by both. This radiation level shall be entered on the patient's chart and other signs as required in Paragraph (d) of this Rule.
  - (2) The radiation surveying in Paragraph (c) of this Rule or a special survey shall be performed and shall include measurements necessary to comply with the following requirements:
    - (A) The therapeutic use of sealed sources shall not create radiation levels in areas occupied by patients not undergoing radiation therapy which would result in an accumulated dose in excess of 125 millirem if a patient were continuously present during the entire treatment period.
    - (B) The licensee shall maintain a record of this survey and the calculation which demonstrates compliance with Subparagraph (c)(1) of this Rule.
    - (C) The licensee shall select rooms for hospitalization of these sealed source therapy patients in a manner so as to minimize radiation exposure of other patients, hospital staff, visitors and the public, especially those who are under 18 years of age or who are pregnant females.
    - (D) This Rule does not relieve the licensee of responsibility to monitor or limit occupational radiation exposure for the licensee's staff as provided in Section ~~.0400~~ .1600 of this Chapter.
- (3) The licensee shall conduct a survey and a source count on all patients treated with cobalt-60, cesium-137, iridium-192, or radium-226 implants to ensure that all implants have been removed prior to release of the patient from the hospital. The results of these surveys shall be recorded and maintained for inspection by the agency for



two years from the time the implants are removed.

(d) Signs and records

- (1) In addition to the requirements of Rule ~~.0411~~ .1624 of this Chapter, the bed, cubicle, or room of the hospital brachytherapy patient shall be marked with a sign indicating the presence of brachytherapy sources. This sign shall incorporate the radiation symbol and specify the radionuclide, activity, date, and the individual(s) to contact for radiation safety instructions. The sign is not required provided the exception in Rule ~~.0412(2)~~ .1625 of this Chapter is satisfied.
- (2) The following information shall be included in the patient's chart:
  - (A) the radionuclide administered, number of sources, activity in millicuries and time and date of administration;
  - (B) the exposure rate at one meter, the time the determination was made, and by whom;
  - (C) the radiation symbol; and
  - (D) the precautionary instructions necessary to assure that the exposure of individuals does not exceed that permitted in Paragraph (c) of this Rule.

*Statutory Authority G.S. 104E-7; 104E-12(a).*

## SECTION .0800 - REQUIREMENTS FOR ANALYTICAL X-RAY EQUIPMENT

### .0804 AREA REQUIREMENTS

(a) The local components of an analytical x-ray system shall be so located and arranged and shall include sufficient shielding or access control that no radiation levels exist in any area surrounding the local component group which could result in a dose to an individual present therein in excess of the dose limits given in Rule ~~.0406~~ .1611 of this Chapter. For systems utilizing x-ray tubes, these levels shall be met at any specified tube rating. A registrant or licensee may apply to the agency for an exemption from this requirement. See Rule .0106(a) of this Chapter.

(b) Surveys

- (1) Radiation surveys, as required by Rule ~~.0409~~ .1613 of this Chapter, of all analytical x-ray systems sufficient to show compliance with Paragraph (a) of this Rule, shall be performed:
  - (A) upon installation of the equipment;

(B) following any change in the initial arrangement, number or type of local components in the system;

(C) following any maintenance requiring the disassembly or removal of a local component in the system which could affect the radiation exposure to personnel;

(D) radiation monitoring shall be performed during maintenance.

- (2) A licensee or registrant may apply to the agency for approval of procedures differing from those in Subparagraph (b)(1) of this Rule, provided that the licensee or registrant demonstrates satisfactory compliance with Paragraph (a) of this Rule.

(c) Each area or room containing analytical x-ray equipment shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words "CAUTION - X-RAY EQUIPMENT", or words having a similar intent.

*Statutory Authority G.S. 104E-7.*

## SECTION .0900 - REQUIREMENTS FOR PARTICLE ACCELERATORS

### .0901 PURPOSE AND SCOPE

(a) This Section establishes procedures for the licensing and the use of particle accelerators.

(b) In addition to the requirements of this Section, all licensees are subject to the requirements of Sections .0100, ~~.0400~~, ~~and~~ .1000, ~~and~~ .1600 of this Chapter and parts of Section .0200 of this Chapter, as deemed appropriate by the agency. Licensees engaged in industrial radiographic operations are subject to the requirements of Section .0500 of this Chapter, and licensees engaged in the healing arts are subject to Rule .0350 of this Chapter and the applicable requirements of Section .0600 of this Chapter. Licensees engaged in the production of radioactive material or possessing radioactive material incidental to an accelerator are subject to the requirements of Section .0300 of this Chapter.

(c) In addition to the requirements of this Section, all particle accelerator licensees are subject to the annual fee provisions contained in Section .1100 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-9(8); 104E-19(a).*

### .0905 SHIELDING AND SAFETY DESIGN

(a) A qualified expert as defined in Rule .0602(a)(45) of this Chapter and registered by the agency pursuant to Rule .0205 of this Chapter, shall be consulted in the design of a particle accelerator installation. A qualified expert shall be called upon to perform a radiation survey when the accelerator is first capable of producing radiation. A copy of the survey shall be submitted to the agency by the licensee prior to its use for its licensed purpose.

(b) Plans for construction of accelerator installations shall be submitted to the agency.

(c) Each particle accelerator installation shall be provided with such primary and secondary barriers as are necessary to assure compliance with Rules .0402 .1604 and .0406 .1611 of this Chapter.

*Statutory Authority G.S. 104E-7.*

#### **.0906 CONTROLS AND INTERLOCK SYSTEMS**

(a) Instrumentation, readouts and controls on the particle accelerator control console shall be clearly identified and easily discernible.

(b) All entrances into a target room or other high radiation area shall conform to the requirements of Rule .0411(e) .1615 of this Chapter.

(c) When an interlock system has been tripped, it shall only be possible to resume operation of the accelerator by manually resetting controls at the position where the interlock has been tripped and, subsequently at the main control console.

(d) Each safety interlock shall operate independently of all other safety interlocks.

(e) All safety interlocks shall be fail-safe, i.e., designed so that any defect or component failure in the interlock system prevents operation of the accelerator.

(f) A "Scram button" or other emergency power cut-off switch shall be located and easily identifiable in all high radiation areas and at the control console. Such a cut-off switch shall include a manual reset so that the accelerator cannot be restarted from the accelerator control console without first manually resetting the cut-off switch.

*Statutory Authority G.S. 104E-7.*

#### **.0907 WARNING DEVICES**

(a) All locations designated as high radiation areas, and entrances to such locations shall be equipped with easily observable warning lights that operate when, and only when, radiation is being produced.

(b) Except in facilities designed for human

exposure, each high radiation area shall have an audible warning device which shall be activated for 15 seconds prior to the possible creation of such high radiation area. This warning device shall be clearly discernible in all high radiation areas and all radiation areas.

(c) Barriers, temporary or otherwise, and pathways leading to high radiation areas shall be identified in accordance with Rule .0411 .1624 of this Chapter.

*Statutory Authority G.S. 104E-7.*

#### **.0910 VENTILATION SYSTEMS**

(a) Adequate ventilation shall be provided in areas where airborne radioactivity may be produced to comply with Rule .0404 .1604 of this Chapter.

(b) The licensee shall not vent, release or otherwise discharge airborne radioactive material to an unrestricted area in excess of the limits specified in Rule .0407 .1611 of this Chapter.

*Statutory Authority G.S. 104E-7.*

### **SECTION .1000 - NOTICES: INSTRUCTIONS: REPORTS AND INSPECTIONS**

#### **.1002 POSTING OF NOTICES TO WORKERS**

(a) Each licensee or registrant shall post current copies of the following documents:

- (1) the rules in this Section and in Section .0400 .1600 of this Chapter;
- (2) the license, certificate of registration, conditions or documents incorporated into the license by reference and amendments thereto;
- (3) the operating procedures applicable to work under the license or registration;
- (4) any notice of violation involving radiological working conditions, any order issued pursuant to Section .0100 of this Chapter and any response from the licensee or registrant.

(b) If posting of a document specified in Subparagraphs (a)(1), (2) or (3) of this Rule is not practicable, the licensee or registrant may post a notice which describes the document and states where it may be examined.

(c) The agency form "Notice to Employees" shall be posted by each licensee or registrant wherever individuals work in or frequent any portion of a restricted area.

(d) The agency form "Notice to Employees" contains information to employees regarding employer's responsibility, worker's responsibility, the subjects covered by this Section, reports on radiation exposure history, inspections, and any other information that the agency may include.

(e) Documents, notices or forms posted pursuant to this Rule shall appear in a sufficient number of places to permit individuals engaged in work under the license or registration to observe them on the way to or from any particular work location to which the document applies, shall be conspicuous, and shall be replaced if defaced or altered.

(f) Agency documents posted pursuant to Subparagraph (a)(4) of this Rule shall be posted within two working days after receipt of the documents from the agency; the licensee's or registrant's response, if any, shall be posted within two working days after dispatch from the licensee or registrant. Such documents shall remain posted for a minimum of five working days or until action correcting the violation has been completed, whichever is later.

*Statutory Authority G.S. 104E-7; 104E-10.*

#### **.1004 NOTIFICATIONS AND REPORTS TO INDIVIDUALS**

(a) Radiation exposure data for an individual and the results of any measurements, analyses, and calculations of radioactive material deposited or retained in the body of any individual shall be reported to the individual as specified in this Rule. The information reported shall include data and results obtained pursuant to rules of this Chapter, orders, or license conditions, as shown in records maintained by the licensee or registrant pursuant to provisions of this Chapter. Each notification and report shall: be in writing; include appropriate identifying data such as the name of the licensee or registrant, the name of the individual, and the individual's social security number; include the individual's exposure information; and contain the following statement:

This report is furnished to you under the provisions of Section 15A NCAC 11 .1000; NOTICES, INSTRUCTIONS, REPORTS AND INSPECTIONS. You should preserve this report for further reference.

(b) At the request of any worker, each licensee or registrant shall advise such worker annually of the worker's radiation dosage and exposure to radioactive materials as shown in records maintained by the licensee or registrant pursuant to Paragraphs (a) and (c) of this Rule.

(c) At the request of a worker formerly engaged in work controlled by the licensee or the registrant, each licensee or registrant shall furnish to the worker a report of the worker's radiation dosage and exposure to radioactive materials. Such report shall be furnished within 30 days from the time the request is made, or within 30 days after the exposure of the individual has been determined by the licensee or registrant, whichever is later; shall cover, within the period of time specified in the request, each calendar quarter in which the worker's activities involved exposure to radiation from radioactive material licensed by, or radiation machines registered with the agency; and shall include the dates and locations of work under the license or registration in which the worker participated during this period.

(d) When a licensee or registrant is required pursuant to Rule ~~.0420~~ .1647 of this Chapter to report to the agency any overexposure of an individual to radiation or radioactive material, the licensee or the registrant shall also provide the individual a report on his exposure data included therein. Such reports shall be transmitted at a time no later than the transmittal to the agency.

*Statutory Authority G.S. 104E-7; 104E-10; 104E-12.*

#### **SECTION .1200 - LAND DISPOSAL OF RADIOACTIVE WASTE**

##### **.1201 PURPOSE AND SCOPE**

(a) This Section establishes the procedures, criteria, and terms and conditions upon which the agency issues licenses authorizing land disposal of low-level radioactive waste received from other persons for disposal. Disposal of low-level radioactive waste by the specific licensee who generates such waste is subject to the provisions of Rule ~~.0416~~ .1628 of this Chapter.

(b) The rules in this Section do not apply to the disposal of:

- (1) low-level radioactive waste which is higher than Class C waste as defined in Rule ~~.0425~~ .1628 of this Chapter;
- (2) byproduct material as defined in Section 11e.(2) of the Atomic Energy Act of 1954, as amended, in quantities greater than 10,000 kilograms and containing more than five millicuries of radium-226; or
- (3) licensed radioactive material pursuant to provisions of Rule ~~.0416~~ .1628 of this Chapter.



(c) Nothing in this Section shall relieve any person of responsibility for complying with other applicable North Carolina laws and rules.

(d) This Section is designed to fulfill two objectives:

- (1) to meet the requirement of compatibility with the U.S. Nuclear Regulatory Commission regulations, and
- (2) to provide general guidance for the design, operation, closure and institutional control of a low-level radioactive waste disposal facility that has features to enhance its performance and provide additional confidence in its integrity.

As described in 10 CFR Part 61, Section 61.7 Concepts, land disposal is intended to further four safety objectives:

- (1) protection of the public from releases of radioactivity,
- (2) protection of an inadvertent intruder,
- (3) protection of workers at the facility, and
- (4) assurance of long-term stability after closure. There is every indication in research reports and environmental impact statements that land disposal with attention to site selection, waste classification, waste form, segregation and stability will limit radiation doses to those within the cited performance objectives of 10 CFR Part 61. Supplementary engineered barriers are included in the regulations for North Carolina, however, to fulfill a further objective, viz,
- (5) protection against the possibility of unforeseen differences between expected and actual behavior of the disposal system.

The five goals are to be sought through the design, construction, and operation of a system that involves a carefully chosen combination of features that are described in existing regulations plus additional requirements for engineered barriers. The total system will make use of selected processes and structures, such as compaction, solidification, packaging in high-integrity containers, placement of wastes, use of concrete for walls or fill, special trench covers, drainage systems, or other devices. The facility design objectives are to minimize contact of water with wastes, facilitate detection of water and contamination, retard release of radioactive materials, suppress the migration of wastes in the geologic medium, and accommodate timely recovery of wastes if neces-

sary. Account is to be taken of radiation dose limits for facility workers and the public, and efforts are to be made to reduce costs without sacrificing safety.

The concept of "reasonable assurance" is used throughout this Section. Reasonable assurance is to be understood as placing primary emphasis on protection of public health and the environment. The cost of achieving reasonable assurance will be only a secondary consideration.

(e) Persons licensed pursuant to the provisions of this Section are also subject to the Rules rules in Sections .0100, .0300, ~~.0400~~ .1000, and .1100, and .1600 of this Chapter, except as provided otherwise in this Section.

*Statutory Authority G.S. 104E-2; 104E-3; 104E-7; 104E-10; 104E-10.1; 104E-10.2; 104E-25; 104E-26.*

#### **.1206 SPECIFIC TECHNICAL INFORMATION**

(a) The specific technical information shall include the following information needed for demonstration that the performance objectives and the applicable technical requirements of this Section will be met:

- (1) a description of the principal design criteria and their relationship to the performance objectives, along with identification of operating facilities of the same or similar design;
- (2) a description of the design basis natural events or phenomena and their relationship to the principal design criteria;
- (3) a description of codes and standards which the applicant has applied to the design and which will apply to construction of the land disposal facility;
- (4) a description of the design features of the land disposal facility, the disposal units and engineered barriers, to include those design features related to:
  - (A) infiltration of water;
  - (B) leachate collection and removal;
  - (C) integrity of covers for disposal units and structural stability of backfill, engineered barriers, and covers;
  - (D) contact of wastes with standing water and groundwater;
  - (E) disposal site drainage;
  - (F) disposal site closure and stabilization;
  - (G) elimination to the extent practicable of long-term disposal site maintenance, inadvertent intrusion, occupational

- exposures, and disposal site monitoring;
- (H) adequacy of the size of the buffer zone for monitoring and potential mitigative measures; and
- (I) retrieval;
- (5) a description of the construction and operation of the land disposal facility, to include, as a minimum:
  - (A) the methods of construction of disposal units and engineered barriers;
  - (B) waste emplacement;
  - (C) the procedures for and areas of waste segregation;
  - (D) accurate drawings and descriptions of on-site buildings including, but not limited to, construction, foundation details, ventilation, plumbing and fire suppression systems, and proximity to creeks or culverts;
  - (E) types of intruder barriers;
  - (F) on-site traffic and drainage systems;
  - (G) physical security system;
  - (H) survey control program;
  - (I) methods and areas of waste storage;
  - (J) facilities for and methods of handling waste including improperly packaged shipments;
  - (K) methods to control surface water and groundwater access to the wastes;
  - (L) methods to be employed in the handling and disposal of wastes containing chelating agents or other nonradiological substances that might affect the meeting of the performance objectives of this Section; and
  - (M) a flow diagram of waste handling and disposal operations, a description and accurate drawings of handling equipment, and any special handling techniques to be employed;
- (6) a description of the types, chemical and physical forms, quantities, classification, and specifications of the radioactive material proposed to be received, possessed, handled, and disposed of at the land disposal facility, which shall include:
  - (A) estimated volume and activity of each waste class to be received annually at the facility, and
  - (B) method for control of the rate at which waste is received;
- (7) a description of the quality control program, including audits and managerial controls, for the determination of natural disposal site characteristics and for quality control during the design, construction, operation, and closure of the land disposal facility and during the receipt, handling, and emplacement of waste;
- (8) a description of the radiation safety program for control and monitoring of radioactive effluents to ensure compliance with the performance objective in Rule .1223 of this Section and occupational radiation exposure to ensure compliance with the requirements of Section ~~0400~~ .1600 of this Chapter and to control contamination of personnel, vehicles, equipment, buildings, and the disposal site; which description shall address
  - (A) both routine operations and accidents; and
  - (B) procedures, instrumentation, facilities, and equipment;
- (9) an emergency response plan which addresses:
  - (A) on-site response;
  - (B) public alert and notification;
  - (C) roles of local, county, state and regional agencies;
  - (D) training and public information; and
  - (E) if available, copies of most current emergency response plans submitted to the U.S. Nuclear Regulatory Commission or an agreement state;
- (10) a manual of operating procedures and emergency procedures including, but not limited to, those for fires, spills or other events which result in contamination;
- (11) a description of the administrative procedures that the applicant will apply to control activities at the land disposal facility including hours of proposed operation;
- (12) a description of the radiation protection program including provisions for keeping radiation doses to workers and to members of the public as low as reasonably achievable (ALARA) and within applicable limits specified in the Rules rules of this Chapter;
- (13) a description of the natural and demographic disposal site characteristics as determined by disposal site selection and characterization activities where the

description must include geologic, geotechnical, hydrologic, meteorologic, climatologic, air quality, natural radiation background and biotic features of the disposal site and vicinity; where the site characterization shall include sufficient and suitable data for design and performance analysis; and where the minimum requirements include, but are not limited to, the following:

- (A) geologic description to include:
  - (i) regional geologic framework including stratigraphy, tectonics, structure, physiography, seismology and geomorphology;
  - (ii) site specific stratigraphy, lithology, structural geology, geochemistry, topography, and an analysis of landforms including any evidence of destructive geomorphic processes;
  - (iii) a regional geologic map at a scale of 1:62,500;
  - (iv) a site specific topographic map at a scale of 1:1,200; and
  - (v) a site specific geologic map at a scale of 1:1,200 with accompanying cross-sections;
- (B) geotechnical description to include:
  - (i) soil and saprolite characteristics related to slope stability, cover integrity, erosion, compaction characteristics for backfill materials, foundation analyses, gradations for proposed filler material, and possible interactions between the soils and waste containers; and
  - (ii) bedrock characteristics related to foundation analyses and hydrology;
- (C) hydrologic description to include:
  - (i) surface water hydrology including the upstream drainage area contributing flow across the site and the downstream drainage area to a distance of approximately ten miles;
  - (ii) an inventory of existing surface water users and public water supplies within approximately ten miles downstream of the site;
  - (iii) an inventory of potential surface water impoundments that will be precluded by siting of a disposal

facility;

- (iv) an inventory and description of all significant hydrologic units underlying the site to a depth of 100 feet below the level of waste disposal;
- (v) site specific data sufficient to describe the characteristics, present water quality, occurrence and movement of water in both the unsaturated and saturated zones;
- (vi) an inventory of existing groundwater users within approximately two miles of the site, both from groundwater wells and at points of groundwater discharge, e.g. springs;
- (vii) identification of the nearest downgradient groundwater users and the nearest municipal supply relying on groundwater; and
- (viii) an inventory of potential groundwater supplies that will be precluded by siting of a disposal facility;
- (D) meteorologic description to include:
  - (i) determination of a water budget for the disposal site;
  - (ii) typical weather patterns; and
  - (iii) determination of the frequency, probability, and potential consequences of severe meteorological phenomena;
- (E) climatologic description to include:
  - (i) normal seasonal fluctuations and extremes predicated from historical records;
  - (ii) air temperatures and soil temperatures;
  - (iii) frost penetration; and
  - (iv) solar radiation;
- (F) air quality description to include:
  - (i) measurement of suspended particulates; and
  - (ii) the level of airborne radionuclides contributed by atmospheric fallout, natural radiation released from the soil, and agricultural activities;
- (G) natural radiation background description to include:
  - (i) sampling of air, soil (both on and off site), water (both on and off site), flora, fauna, and farm products (including grains and milk);



- and
- (ii) both total background and contribution from individual radionuclides; and
- (H) biotic description to include:
  - (i) an accurate, site-specific inventory of flora and fauna in and within three miles of the site;
  - (ii) inventory and distribution of livestock and crops within three miles of the site;
- (14) an identification of the known natural resources at the disposal site, whose exploitation could result in inadvertent intrusion into the wastes after removal of active institutional control;
- (15) a description of baseline, operational, and long-term environmental monitoring programs to include:
  - (A) inspection and monitoring of waste packages prior to disposal;
  - (B) criteria and procedures to stop acceptance of waste at the facility, including action levels; and
  - (C) if available, a copy of the last environmental monitoring reports filed with the U.S. Nuclear Regulatory Commission or agreement state program or other authorities;
- (16) decontamination, decommissioning and site closure plans, including:
  - (A) those design features which are intended to facilitate disposal site closure and to eliminate the need for ongoing active maintenance;
  - (B) schedule;
  - (C) procedure, including documentation that procedure is effective; and
  - (D) radioactive waste disposal plan; and
- (17) a description of an action plan which would be implemented in the event of unforeseen differences between expected and actual behavior of the disposal system and which includes:
  - (A) a description of conditions which require remedial action, such as:
    - (i) erosion and other damage to the stability of the site;
    - (ii) failure of physical security features, equipment or procedures;
    - (iii) deterioration of trench or disposal unit covers;
    - (iv) deterioration of leachate collection system;
    - (v) clogging or siltation of monitoring
  - and observation wells;
  - (vi) the presence of leachate in individual disposal units;
  - (vii) the migration of disposed radioactive material;
  - (viii) changes in site characteristics or other events which cause or threaten to cause failure of the facility to meet the performance objectives of this Section;
  - (ix) specific action levels, events or other conditions for which the licensee will institute specific remedial actions; and
  - (x) presence of radioactive concentrations in groundwater above preoperationally determined background;
- (B) provisions for early identification of conditions requiring remedial action, such as:
  - (i) detection of water in any disposal unit;
  - (ii) detection of radioactive contamination in ~~ground-water~~ groundwater with sufficient sampling locations and frequencies to permit identification of the disposal unit(s) causing the contamination;
  - (iii) establishment of specific sampling locations, sampling frequencies and sample types as part of the licensee's environmental monitoring program;
  - (iv) methods and frequencies for detection of water or leachate in disposal units or trenches;
  - (v) any methods and associated frequencies for inspecting, testing, maintaining or otherwise assessing the condition and performance of disposal units, trenches and covers;
  - (vi) method and frequency for monitoring condition and physical stability of the site;
  - (vii) any special monitoring, inspection or testing which the licensee will institute in response to specific natural or man-made occurrences which may affect the ability of the facility to meet the performance objectives of this Section; and
  - (viii) any periodic or ongoing evaluation of site characteristics or

changes in site characteristics which relate to the ability of the facility to meet the performance objectives of this Section;

- (C) a description of the corrective measures that will be taken to correct the condition and otherwise assure compliance with the performance objectives and technical requirements of this Section, such as:

- (i) continued vigilance;
- (ii) water and leachate detention;
- (iii) pumping or repair of the disposal unit;
- (iv) procedures for timely repair or waste retrieval after problem detection;
- (v) redesign of disposal units;
- (vi) repair or redesign of engineered barriers;
- (vii) revision of site operating procedures, site personnel training, waste segregation practices, and monitoring and testing programs;
- (viii) revision of disposal methodology; and
- (ix) revision of site waste acceptability criteria; and

- (D) identification of facility features which facilitate remedial actions, such as:

- (i) design of disposal units and engineered barriers which allows access for remedial action; and
- (ii) other features necessary to implement the action plan.

(b) Prior to implementation of detailed site investigations, the applicant or the North Carolina Low-Level Radioactive Waste Management Authority shall develop a site characterization plan and submit it for approval by the agency to ensure that:

- (1) all available data on the site is obtained;
- (2) unnecessary laboratory and field investigations are not done;
- (3) required or desired data is obtained;
- (4) a proper sequencing and timely acquisition of the required or desired data is planned and executed;
- (5) site survey data stations will be designed and located, insofar as feasible, so as to serve as planned permanent monitoring stations as necessary; and
- (6) technical and administrative coordination of laboratory and field efforts is planned and executed.

(c) As site characterization proceeds, the applicant or the North Carolina Low-Level Radioactive Waste Management Authority and the agency shall together review the site characterization results and the site characterization plan at least once every 90 days to ensure that the plan is still valid. The site characterization plan shall be modified as required by the agency.

(d) Time-variant site characteristics that require site-specific measurements shall be measured at such frequency and duration so as to adequately define the seasonal range of the values. The minimum period of measurement shall be one year and shall be supplemented, where possible, with regional data covering a longer time period.

*Statutory Authority G.S. 104E-7; 104E-9(3); 104E-10(b); 104E-25; 104E-26.*

## **.1208 TECHNICAL AND ENVIRONMENTAL ANALYSES**

The specific technical and environmental information shall also include the following analyses needed to demonstrate that the performance objectives of this Section will be met:

- (1) pathways analyzed in demonstrating protection of the general population from releases of radioactivity shall include air, soil, groundwater, surface water, plant uptake, and exhumation by burrowing animals. The analyses shall:
  - (a) clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolating and segregating the wastes; and
  - (b) clearly demonstrate that there is reasonable assurance that the potential exposures to humans from the release of radioactivity will not exceed the limits set forth in Rule .1223 of this Section.
- (2) Analyses of the protection of individuals from inadvertent intrusion shall include demonstration that there is reasonable assurance that the waste classification and segregation requirements will be met and that adequate barriers to inadvertent intrusion will be provided.
- (3) Analyses of the protection of individuals during operations shall include assessments of expected exposures due to routine operations and likely accidents during handling, storage, and disposal of waste. The analyses shall provide reasonable assurance that exposures will be

controlled to meet the requirements of Section ~~.0400~~ .1600 of this Chapter.

- (4) Analyses of the long-term stability of the disposal site and the need for ongoing active maintenance after closure shall be based upon analyses of active natural processes such as erosion, mass wasting, slope failure, settlement of wastes and backfill, infiltration through covers over disposal units and adjacent soils, and surface drainage of the disposal site. The analyses shall provide reasonable assurance that there will not be a need for ongoing active maintenance of the disposal site following closure.

*Statutory Authority G.S. 104E-7; 104E-9(3); 104E-10(b); 104E-25; 104E-26.*

#### **.1214 STANDARDS FOR ISSUANCE OF A LICENSE**

A license for the receipt, possession, and disposal of waste containing or contaminated with radioactive material will be issued by the agency upon finding that the issuance of the license and operation of the facility will not constitute an unreasonable risk to the health and safety of the public or have a long-term detrimental impact on the environment, and that:

- (1) The applicant is qualified by reason of training and experience to carry out the disposal operations requested in a manner that adequately protects public health and minimizes danger to life, property or the environment;
- (2) The applicant's proposed disposal site, disposal design, land disposal facility operations (including equipment, facilities, and procedures), disposal site closure, and postclosure institutional care are adequate to protect the public health and safety in that they provide reasonable assurance that the general population will be protected from releases of radioactivity as specified in this Section;
- (3) The applicant's proposed disposal site, disposal site design, land disposal facility operations (including equipment, facilities, and procedures), disposal site closure, and postclosure institutional control are adequate to protect the public health and safety in that they will provide reasonable assurance that individual inadvertent intruders are protected in accordance with this Section;

- (4) The applicant's proposed land disposal facility operations (including equipment, facilities, and procedures) are adequate to protect the public health and safety in that they will provide assurance that the standards for radiation protection set out in Section ~~.0400~~ .1600 of this Chapter will be met;
- (5) The applicant's proposed disposal site, disposal site design, land disposal facility operations, disposal site closure, and postclosure institutional control are adequate to protect the public health and safety and the environment in that they will provide reasonable assurance that long-term stability of the disposed waste and the disposal site will be achieved and will eliminate to the extent practicable the need for ongoing active maintenance of the disposal site following closure;
- (6) The applicant has provided reasonable assurance that the applicable technical requirements of this Section will be met;
- (7) The applicant's proposal for institutional control provides reasonable assurance that such control will be provided for the length of time found necessary to ensure the findings in ~~Subparagraphs~~ Items (2) through (5) of this Rule and that the institutional control meets the requirements in this Section;
- (8) The information on financial assurances meets the requirements of this Section;
- (9) Any additional information as requested by the agency pursuant to Rule .0317 of this Chapter is adequate; and
- (10) The requirements of this Section have been met; and
- (11) The applicant proposes a facility to be operated pursuant to G.S. 104G.

*Statutory Authority G.S. 104E-7; 104E-9(3); 104E-10(b); 104E-12; 104E-13(a); 104E-18; 104E-25; 104E-26.*

#### **.1225 PROTECTION OF INDIVIDUALS DURING OPERATIONS**

(a) Operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in Section ~~.0400~~ .1600 of this Chapter, except as provided in Rule .1223 of this Section for the off-site public.

(b) In accordance with the ALARA plan required by Rule .1206~~(+2)~~ of this Section, the licensee shall maintain occupational radiation doses



as low as reasonably achievable below the occupational radiation dose limits established in Section ~~.0400~~ .1600 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10; 104E-25; 104E-26.*

### **.1230 FACILITY OPERATION AND DISPOSAL SITE CLOSURE**

(a) Wastes designated as Class A pursuant to Rule ~~.0425~~ .1650 of this Chapter shall be segregated from other wastes by placement in disposal units which are sufficiently separated from disposal units for the other waste classes so that any interaction between Class A wastes and other wastes will not result in the failure to meet the performance objectives of this Section. This segregation is not necessary for Class A wastes if they meet the stability requirements in Rule ~~.0426(b)~~ .1651(b) of this Chapter.

(b) Wastes designated as Class C pursuant to Rule ~~.0425~~ .1650 of this Chapter shall be disposed of so that the top of the waste is a minimum of five meters below the top surface of the cover or shall be disposed of with intruder barriers that are designed to protect against an inadvertent intrusion for at least 500 years.

(c) Wastes shall be emplaced in a manner that maintains the package integrity during emplacement, minimizes the void spaces between packages, and permits the void spaces to be filled.

(d) Void spaces between waste packages shall be filled with earth or other material to reduce future subsidence within the fill.

(e) Waste shall be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of Rule ~~.0406~~ .1611 of this Chapter at the time the license is transferred pursuant to Rule .1220 of this Section.

(f) The boundaries and locations of each disposal unit shall be accurately located and mapped by means of land survey. Disposal units shall be marked in such a way that the boundaries of each unit can be easily defined. Three permanent survey marker control points, referenced to the North American Datum of 1983 (NAD83) and the current North American Vertical Datum (NAVD), as defined and maintained by the National Geodetic Survey, shall be established on the site to facilitate surveys. The three established control stations shall be positioned both horizontally and vertically by surveys tied to the NAD83 and NAVD as maintained in the North Carolina Geo-

detic Survey record files. All such surveys shall comply with standards and specifications as approved by North Carolina Geodetic Survey.

(g) A buffer zone of land shall be maintained between any buried waste and the disposal site boundary and beneath the disposed waste. The buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in Rule .1231(c) of this Section and to permit mitigative measures if needed.

(h) Closure and stabilization measures as set forth in the approved site closure plan shall be carried out as each disposal unit is filled and covered.

(i) Active waste disposal operations shall not have an adverse effect on completed closure and stabilization measures.

(j) The Radiation Protection Commission may by special order provide for the disposal of mixed waste. Any such order shall conform to all requirements of the federal Low-Level Radioactive Waste Policy Amendments Act of 1985, G.S. 104E as amended, G.S. 130A Article 9 as amended, and regulations issued pursuant thereto.

*Statutory Authority G.S. 104E-7; 104E-10; 104E-25; 104E-26.*

### **.1233 WASTE CLASSIFICATION AND CHARACTERISTICS**

(a) Waste shall be classified in accordance with provisions of Rule ~~.0425~~ .1650 of this Chapter.

(b) Waste shall meet the applicable characteristics prescribed in Rule ~~.0426~~ .1651 of this Chapter.

(c) Each container of waste shall be labelled in accordance with provisions of Rule ~~.0427~~ .1652 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-10(b); 104E-25; 104E-26.*

### **.1238 MAINTENANCE OF RECORDS: REPORTS AND TRANSFERS**

(a) Each licensee shall maintain any records and make any reports in connection with the licensed activities, as may be required by the conditions of the license or by the rules, and orders of the agency.

(b) Records which are required by the rules or by license conditions shall be maintained for a period specified by the appropriate rules or by license conditions. If a retention period is not otherwise specified, these records shall be maintained and transferred to the agency as specified in

Rule .0417 the rules in Section .1600 of this Chapter as a condition of license termination unless the agency otherwise authorizes their disposition.

(c) Records which shall be maintained pursuant to this Section may be the original or a copy or microfilm, provided the records are capable of being clearly and legibly reproduced. The following records shall be maintained in a permanent form specified by or approved by the agency in writing:

- (1) the location and inventory of disposed waste, to include generator-specific and other information which may be required by the agency;
- (2) personnel exposure, bioassay and other personnel dose assessment records;
- (3) geologic, hydrologic and other site characterization records; and
- (4) any other records that the agency deems appropriate to be maintained in a permanent form.

(d) If there is a conflict between the agency's rules, license conditions, or other written agency approval or authorization pertaining to the retention period for the same type of record, the longest retention period specified takes precedence.

(e) Notwithstanding Paragraphs (a) through (d) of this Rule, copies of records of the location and the quantity of wastes contained in the disposal site shall be transferred to the agency upon transfer of the license to the custodial agency or upon termination of the license.

(f) Following receipt and acceptance of a shipment of waste, the licensee shall record the date of receipt and disposal of the waste, the location in the disposal site, the condition of the waste packages as received, any discrepancies between materials listed on the manifest and those received, and any evidence of leaking or damaged packages or radiation or contamination levels in excess of limits specified in U.S. Department of Transportation and agency rules. The licensee shall briefly describe any repackaging operations of any of the waste packages included in the shipment, plus any other information required by the agency as a license condition.

(g) Each licensee authorized to dispose of waste received from other persons shall file a copy of its financial report or a certified financial statement annually with the agency in order to update the information base for determining financial qualifications.

(h) Each licensee authorized to dispose of waste materials received from other persons pursuant to

this Section shall submit annual reports to the agency in accordance with Subparagraphs (h)(1) through (h)(4) of this Rule.

- (1) Reports shall be submitted by the end of the first calendar quarter of each year for the preceding year.
- (2) If the quantities of radioactive materials released during the reporting period, monitoring results, or maintenance performed are significantly different from those expected in the materials previously reviewed as part of the licensing action, the reports shall cover this specifically.
- (3) The reports shall include:
  - (A) specification of the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in airborne effluents during the preceding year;
  - (B) the results of the environmental monitoring program;
  - (C) a summary of licensee disposal unit survey and maintenance activities;
  - (D) the location and inventory of disposed waste, including location of each discrete waste shipment or portion thereof;
  - (E) a summary, by waste class, of activities and quantities of radionuclides disposed of;
  - (F) any instances in which observed site characteristics were significantly different from those described in the application for a license; and
  - (G) any other information the agency may require.
- (4) Reports shall be submitted in duplicate to the agency. The agency shall transfer one copy of each report to the State Records Center for permanent retention.

(i) Any transfer of radioactive materials by the licensee is subject to the requirements in Rule .0343 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-9(3); 104E-12; 104E-15; 104E-25; 104E-26.*

#### **.1241 INSPECTION**

(a) The agency may require at any disposal site that the licensee provide appropriate office and storage space for a resident inspector who is employed by the agency.

(b) The agency may require the licensee to

refuse acceptance of low-level radioactive waste from any generator, if the agency makes one or more of the following determinations:

- (1) the generator has shipped waste to the licensee's facility without filing the manifest required in Rule ~~.0428~~ .1633 of this Chapter;
- (2) the generator has improperly described waste in a manifest contrary to the requirements in Rule ~~.0428~~ .1633 of this Chapter;
- (3) the generator has shipped to the licensee's facility waste which is prohibited by any rule of this Chapter or by condition of the site operator's license;
- (4) the generator has shipped to the licensee's facility improperly labeled or packaged containers of waste; or
- (5) the generator has failed to comply with applicable ~~Rules~~ rules of this Chapter.

(c) In the event that the agency prohibits the licensee from receiving waste from any generator pursuant to Paragraph (b) of this Rule, the agency shall notify the licensee and the generator both verbally and in writing, stating the nature and basis for the prohibition, the corrective actions required to terminate the prohibition and the rights of the affected persons regarding the prohibition.

*Statutory Authority G.S. 104E-7; 104E-10(b); 104E-11; 104E-12; 104E-25; 104E-26.*

## **.1242 NOTIFICATIONS AND REPORTS**

(a) The licensee shall submit to the agency monthly reports of all containers or shipments of waste which arrive at the site and are found by licensee personnel to be in violation of any provision of the ~~Rules~~ rules of this Chapter. The monthly reports shall include the name, mailing address, telephone number, radioactive material license number, and description and date of the violation; shall cover a period of one calendar month; and shall be submitted to the agency within 20 days after the end of the calendar month covered by the report.

(b) The licensee shall immediately notify the agency in the event that the licensee determines that the limits imposed in Paragraph (b) of Rule .1223 of this Chapter have been exceeded.

(c) The licensee shall notify the agency within 30 days after the licensee determines that on-site migration in groundwater of disposed radioactivity has occurred along with an explanation of the remedial actions taken in accordance with applica-

ble requirements in this Section.

(d) The licensee shall notify the agency within 24 hours after the licensee determines that off-site migration of disposed radioactivity has occurred.

(e) The licensee shall also notify the agency in accordance with applicable requirements in Section ~~.0400~~ .1600 of this Chapter.

*Statutory Authority G.S. 104E-7; 104E-9(3); 104E-10(b); 104E-25; 104E-26.*

## **SECTION .1300 - REQUIREMENTS FOR WIRELINE-SERVICE OPERATORS AND SUBSURFACE-TRACER STUDIES**

### **.1301 PURPOSE AND SCOPE**

(a) The rules in this Section establish radiation safety requirements for persons using sources of radiation for wireline-service operations including mineral logging, radioactive markers, and subsurface-tracer studies.

(b) The requirements of this Section are in addition to, and not in substitution for, the requirements of ~~Section~~ Sections .0100, .0300, ~~.0400~~, .0900, .1000, ~~and~~ .1100 and .1600 of this Chapter.

(c) The rules in this Section apply to all licensees who use sources of radiation for wireline-service operations including mineral logging, radioactive markers, or subsurface tracer studies.

*Statutory Authority G.S. 104E-7.*

### **.1304 LIMITS ON LEVELS OF RADIATION**

Sources of radiation shall be used, stored, and transported in such a manner that the transportation requirements of Section .0300 of this Chapter and the dose limitation requirements of Section ~~.0400~~ .1600 of this Chapter are met.

*Statutory Authority G.S. 104E-7.*

### **.1307 RADIATION SURVEY INSTRUMENTS**

(a) The licensee shall maintain sufficient calibrated and operable radiation survey instruments at each field station to make physical radiation surveys as required by this Section and by Section ~~.0400~~ .1600 of this Chapter. Instrumentation shall be capable of measuring 0.1 milliroentgen per hour through at least 50 milliroentgens per hour.

(b) Each radiation survey instrument shall be calibrated:

- (1) at intervals not to exceed six months and after each instrument servicing;



- (2) at energies and radiation levels appropriate for use; and
- (3) so that ~~accuracy~~ accuracy within plus or minus 20 percent of the true radiation level can be demonstrated on each scale.

(c) Calibration records shall be maintained for a period of three years for inspection by the agency.

Statutory Authority G.S. 104E-7; 104E-12(a)(1).

#### **.1314 TRAINING REQUIREMENTS**

(a) No licensee shall permit any individual to act as a logging supervisor until such individual has:

- (1) received, in a course recognized by the agency, the U.S. Nuclear Regulatory Commission, an agreement state, or a licensing state, instruction in the subjects outlined in Rule .1325 of this Section and demonstrated an understanding thereof;
- (2) read, received instruction in and demonstrated an understanding of the rules contained in this Section and the applicable rules in Sections .0100, ~~.0400~~, ~~and .1000~~, and ~~.1600~~ of this Chapter or their equivalent, conditions of appropriate license or certificate of registration, and the licensee's operating and emergency procedures; and
- (3) demonstrated competence to use sources of radiation, related handling tools, and radiation survey instruments which will be used on the job.

(b) No licensee shall permit any individual to assist in the handling of sources of radiation until such individual has:

- (1) read or received instruction in the licensee's operating and emergency procedures and demonstrated an understanding thereof; and
- (2) demonstrated competence to use, under the personal supervision of the logging supervisor, the sources of radiation, related handling tools, and radiation survey instruments which will be used on the job.

(c) The licensee shall provide safety reviews for logging supervisors and logging assistants at least once during each calendar year.

(d) The licensee shall maintain employee ~~training~~ training records for inspection by the agency for two years following termination of employment.

Statutory Authority G.S. 104E-7; 104E-12(a)(1).

#### **.1315 OPERATING AND EMERGENCY PROCEDURES**

The licensee's operating and emergency procedures shall include instructions in at least the following:

- (1) handling and use of sources of radiation to be employed so that no individual is likely to be exposed to radiation doses in excess of the standards established in Section ~~.0400~~ .1600 of this Chapter;
- (2) methods and occasions for conducting radiation surveys;
- (3) methods and occasions for locking and securing sources of radiation;
- (4) personnel monitoring and the use of personnel monitoring equipment;
- (5) transportation to temporary jobsites and field stations, including the packaging and placing of sources of radiation in vehicles, placarding of vehicles, and securing sources of radiation during transportation;
- (6) minimizing exposure of individuals in the event of an accident;
- (7) procedure for notifying proper personnel in the event of an accident;
- (8) maintenance of records;
- (9) inspection and maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, and injection tools;
- (10) procedure to be followed in the event a sealed source is lodged downhole; and
- (11) procedures to be used for picking up, receiving, and opening packages containing radioactive materials.

Statutory Authority G.S. 104E-7.

#### **.1320 PARTICLE ACCELERATORS**

No licensee shall permit above-ground testing of particle accelerators, designed for used in well-logging, which results in the production of radiation, except in areas of facilities controlled or shielded so that the applicable requirements of Rules ~~.0402~~ .1604 and ~~.0406~~ .1611 of this Chapter are met.

Statutory Authority G.S. 104E-7.

#### **.1324 NOTIFICATION OF INCIDENTS: ABANDONMENT: AND LOST SOURCES**

(a) The licensee shall comply with the applicable notification requirements in Section ~~.0400~~ .1600 of

this Chapter for incidents and sources lost in other than downhole logging operations.

(b) Whenever a sealed source or device containing radioactive material is lodged downhole, the licensee shall:

- (1) monitor at the surface for the presence of radioactive contamination with a radiation survey instrument or logging tool during logging tool recovery operations; and
- (2) notify the agency immediately by telephone if radioactive contamination is detected at the surface or if the source appears to be damaged.

(c) When it becomes apparent that efforts to recover the radioactive source will not be successful, the licensee shall:

- (1) advise the well-operator of the rules of the appropriate state agency with jurisdiction over abandonment and appropriate method of abandonment, which shall include:
  - (A) the immobilization and sealing in place of the radioactive source with a concrete plug;
  - (B) the setting of a whipstock or other deflection device; and
  - (C) the mounting of a permanent identification plaque, at the surface of the well, containing the appropriate information required by Paragraph (d) of this Rule;
- (2) notify the agency by telephone, giving the circumstances of the loss and requesting approval of the proposed abandonment procedures; and
- (3) file a written report with the agency within 30 days of the abandonment, setting forth the following information:
  - (A) date of occurrence and a brief description of attempts to recover the source; and
  - (B) a description of the radioactive source involved, including radionuclide, quantity, and chemical and physical form:
    - (i) surface location and identification of well,
    - (ii) results of efforts to immobilize and set the source in place,
    - (iii) depth of the radioactive source,
    - (iv) depth of the top of the cement plug,
    - (v) depth of the well, and
    - (vi) information contained on the

permanent identification plaque.

(d) Whenever a sealed source containing radioactive material is abandoned downhole, the licensee shall provide a permanent plaque for posting the well or well-bore. This plaque shall:

- (1) be constructed of long-lasting material, such as stainless steel or monel, and
- (2) contain the following information engraved on its face:
  - (A) the word "CAUTION";
  - (B) the radiation symbol without the conventional color requirement;
  - (C) the date of abandonment;
  - (D) the name of the well-operator or well owner;
  - (E) the well name and well identification number(s) or other designation;
  - (F) the sealed source(s) by radionuclide and quantity of activity;
  - (G) the source depth and the depth to the top of the plug; and
  - (H) an appropriate warning, depending on the specific circumstances of each abandonment, which may include:
    - (i) "Do not drill below plug back depth",
    - (ii) "Do not enlarge casing", or
    - (iii) "Do not re-enter the hole" before contacting the Division of Radiation Protection at the address in Rule .0111 of this Chapter.

(e) The licensee shall immediately notify the agency by telephone and subsequently by confirming letter if the licensee knows or has reason to believe that radioactive material has been lost in or to an underground potable water source. Such notice shall designate the well location and shall describe the magnitude and extent of loss of radioactive material, assess the consequences of such loss, and explain efforts planned or being taken to mitigate the consequences.

*Statutory Authority G.S. 104E-7.*

## SECTION .1600 - STANDARDS FOR PROTECTION AGAINST RADIATION

### .1601 PURPOSE AND SCOPE

(a) The rules in this Section establish standards for protection against ionizing radiation resulting from activities conducted under licenses and registrations issued by the agency pursuant to the rules in this Chapter.

(b) It is the purpose of the rules in this Section to control the receipt, possession, use, transfer,

and disposal of sources of radiation by any licensee or registrant in such a manner that the total dose to an individual, including doses resulting from all sources of radiation other than background radiation, does not exceed the standards for protection against radiation prescribed in the rules in this Section. However, nothing in this Section shall be construed as limiting actions that may be necessary to protect health and safety.

(c) The rules in this Section apply to persons licensed or registered by the agency to receive, possess, use, transfer, or dispose of radioactive material or other sources of radiation. The limits in this Section do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, or to voluntary participation in medical research programs.

(d) Nothing in this Section shall relieve a licensee engaged in operation of a radioactive waste disposal facility, as defined in Rule .0104 of this Chapter, from responsibility for complying with the requirements in Section .1200 of this Chapter.

*Statutory Authority G.S. 104E-7(a)(2).*

## **.1602 IMPLEMENTATION**

(a) If the requirements of this Section are more restrictive than a license or registration condition established prior to January 1, 1994, the licensee or registrant shall comply with this Section unless exempted by Paragraph (c) of this Rule.

(b) If any existing license or registration condition is more restrictive than a requirement in this Section, the licensee or registrant shall comply with such conditions.

(c) If a license or registration condition established prior to January 1, 1994 exempts a licensee or registrant from a provision of Section .0400 of this Chapter, it also exempts the licensee or registrant from the corresponding provision of this Section.

(d) If a license or registration condition established prior to January 1, 1994 cites provisions in Section .0400 of this Chapter and there are no corresponding provisions in this Section, the licensee or registrant shall comply with such condition until there is a license or registration amendment or license or registration renewal that modifies or removes this condition.

*Statutory Authority G.S. 104E-7(a)(2).*

## **.1603 RADIATION PROTECTION PROGRAMS**

(a) Each licensee or registrant shall develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed or registered activities and sufficient to ensure compliance with the provisions of this Section. Recordkeeping requirements relating to these programs are provided in Rule .1636 of this Section.

(b) The licensee or registrant shall use, to the extent practicable, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public and releases of radioactive materials in effluents to unrestricted areas that are as low as is reasonably achievable (ALARA).

(c) The licensee or registrant shall annually review the radiation protection program content and implementation.

*Statutory Authority G.S. 104E-7(a)(2).*

## **.1604 OCCUPATIONAL DOSE LIMITS FOR ADULTS**

(a) The licensee or registrant shall control the occupational dose to individual adults, except for planned special exposures as provided in Rule .1608 of this Section, to the following dose limits:

- (1) an annual limit, which is the more limiting of:
  - (A) the total effective dose equivalent being equal to five rems (0.05Sv); or
  - (B) the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 50 rems (0.5 Sv); and
- (2) the annual limits to the lens of the eye, to the skin, and to the extremities which are:
  - (A) an eye dose equivalent of 15 rems (0.15 Sv), and
  - (B) a shallow-dose equivalent of 50 rems (0.50 Sv) to the skin or to each of the extremities.

(b) Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, shall be subtracted from the limits for planned special exposures that the individual may receive during the current year and during the individual's lifetime. Dose limits for planned special exposures are provided in Item (5) of Rule .1608 of this Section.

(c) The assigned deep-dose equivalent and shallow-dose equivalent shall be for the part of the



body receiving the highest exposure. The deep-dose equivalent, eye dose equivalent and shallow-dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure, or the results of individual monitoring are unavailable.

(d) Derived air concentration (DAC) and annual limit on intake (ALI) values are presented in Table 1 of Appendix B to 10 CFR §§ 20.1001 - 20.2401 and may be used to determine the individual's dose and to demonstrate compliance with the occupational dose limits.

(e) In addition to the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to 10 milligrams in a week in consideration of chemical toxicity. Requirements for annual limits on intake for uranium are provided in Appendix B to 10 CFR §§ 20.1001 - 20.2401.

(f) The licensee or registrant shall reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person. Requirements for determining prior occupational exposure are provided in Rule .1638(e) of this Section.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1605 REQUIREMENTS FOR SUMMATION OF EXTERNAL, INTERNAL DOSES**

(a) If the licensee is required to monitor under both Rules .1614(a) and (b) of this Section, the licensee shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee is required to monitor only by Rule .1614(a) of this Section or only by Rule .1614(b) of this Section, then summation is not required to demonstrate compliance with the dose limits. The licensee may demonstrate compliance with the requirements for summation of external and internal doses by meeting one of the conditions specified in Paragraph (b) of this Rule and the conditions in Paragraphs (c) and (d) of this Rule. The dose equivalents for the lens of the eye, the skin, and the extremities are not included in the summation, but are subject to separate limits.

(b) If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit is not exceeded if the sum of the deep-dose equivalent divided by the total effective dose equivalent limit, and one of the following, does not exceed unity:

- (1) the sum of the fractions of the inhalation ALI for each radionuclide, or
- (2) the total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000, or
- (3) the sum of the calculated committed effective dose equivalents to all significantly irradiated organs or tissues (T) calculated from bioassay data using appropriate biological models and expressed as a fraction of the annual limit. For the purposes of this Rule an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighing factors,  $w_T$ , and the committed dose equivalent,  $H_{T,50}$  per unit intake is greater than 10 percent of the maximum weighted value of  $H_{T,50}$  (i.e.,  $w_T H_{T,50}$ ) per unit intake for any organ or tissue.

(c) If the occupationally exposed individual also receives an intake of radionuclides by oral ingestion greater than 10 percent of the applicable oral ALI, the licensee shall account for this intake and include it in demonstrating compliance with the limits.

(d) The licensee shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin has been included in the calculation of DAC for hydrogen-3 and does not need to be further evaluated.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1606 EXTERNAL DOSE FROM AIRBORNE RADIOACTIVE MATERIAL**

Licensees shall, when determining the dose from airborne radioactive material, include the contribution to the deep-dose equivalent, eye dose equivalent, and shallow-dose equivalent from external exposure to the radioactive cloud. Airborne radioactivity measurements and DAC values should not be used as the primary means to assess the deep-dose equivalent when the airborne radioactive material includes radionuclides other than noble gases or if the cloud of airborne radioactive material is not relatively uniform. The determination of the deep-dose equivalent to an individual should be based upon measurements using instruments or individual monitoring devices.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1607 DETERMINATION OF INTERNAL**

## EXPOSURE

(a) For purposes of assessing dose used to determine compliance with occupational dose equivalent limits, the licensee shall, when required by Rule .1614 of this Section, take suitable and timely measurements of:

- (1) concentrations of radioactive materials in air in work areas; or
- (2) quantities of radionuclides in the body; or
- (3) quantities of radionuclides excreted from the body; or
- (4) combinations of these measurements.

(b) Unless respiratory protective equipment is used, as provided in Rule .1620 of this Section, or the assessment of intake is based on bioassays, the licensee shall assume that an individual inhales radioactive material at the airborne concentration in which the individual is present.

(c) When specific information on the physical and biochemical properties of the radionuclides taken into the body or the behavior of the material in an individual is known, the licensee may:

- (1) use that information to calculate the committed effective dose equivalent, provided the licensee documents that information in the individual's record; and
- (2) upon prior approval of the agency, adjust the DAC or ALI values to reflect the actual physical and chemical characteristics of airborne radioactive material (e.g., aerosol size distribution or density); and
- (3) separately assess the contribution of fractional intakes of Class D, W, or Y compounds of given radionuclide to the committed effective dose equivalent. Requirements for annual limits on intake are provided in Appendix B to 10 CFR §§ 20.1001 - 20.2401.

(d) If the licensee chooses to assess intakes of Class Y material using the measurements given in Subparagraph (a)(2) or (3) of this Rule, the licensee may delay the recording and reporting of the assessments for periods up to seven months, unless otherwise required by Rules .1646 or .1647 of this Section, in order to permit the licensee to make additional measurements basic to the assessments.

(e) If the identity and concentration of each radionuclide in a mixture are known, the fraction of the DAC applicable to the mixture for use in calculating DAC-hours shall be either:

- (1) the sum of the ratios of the concentration to the appropriate DAC value

(e.g., D, W, Y) from Appendix B to 10 CFR §§ 20.1001 - 20.2401 for each radionuclide in the mixture; or

- (2) the ratio of the total concentration for all radionuclides in the mixture to the most restrictive DAC value for any radionuclide in the mixture.

(f) If the identity of each radionuclide in a mixture is known, but the concentration of one or more of the radionuclides in the mixture is not known, the DAC for the mixture shall be the most restrictive DAC of any radionuclide in the mixture.

(g) When a mixture of radionuclides in air exists, licensees may disregard certain radionuclides in the mixture if:

- (1) the licensee uses the total activity of the mixture in demonstrating compliance with the dose limits in Rule .1604 of this Section and in complying with the monitoring requirements in Rule .1614 of this Section;
- (2) the concentration of any radionuclide disregarded is less than 10 percent of its DAC; and
- (3) the sum of these percentages for all of the radionuclides disregarded in the mixture does not exceed 30 percent.

(h) In order to calculate the committed effective dose equivalent, the licensee may assume that the inhalation of one ALI, or an exposure of 2,000 DAC-hours, results in a committed effective dose equivalent of five rems (0.05 Sv) for radionuclides that have their ALIs or DACs based on the committed effective dose equivalent.

(i) When the ALI and the associated DAC are determined by the nonstochastic organ dose limit of 50 rems (0.5 Sv), the stochastic ALI, which is the intake of radionuclides that would result in a committed effective dose equivalent of five rems (0.05 Sv), is listed in parentheses in Table 1 of Appendix B to 10 CFR §§ 20.1001 - 20.2401. In this case, the licensee may, as a simplifying assumption, use the stochastic ALIs to determine committed effective dose equivalent. However, if the licensee uses the stochastic ALIs, the licensee shall also demonstrate that the limit in Part (a)(1)(B) of Rule .1604 of this Section is met.

Statutory Authority G.S. 104E-7(a)(2).

## .1608 PLANNED SPECIAL EXPOSURES

A licensee or registrant may authorize an adult worker to receive doses in addition to and accounted for separately from the doses received under the



limits specified in Rule .1604 of this Section provided that each of the following conditions is satisfied:

- (1) The licensee or registrant authorizes a planned special exposure only in an exceptional situation when alternatives that might avoid the higher exposure are unavailable or impractical.
- (2) The licensee or registrant, and employer if the employer is not the licensee or registrant, specifically authorizes the planned special exposure, in writing, before the exposure occurs.
- (3) Before a planned special exposure, the licensee or registrant ensures that the individuals involved are:
  - (a) informed of the purpose of the planned operation;
  - (b) informed of the estimated doses and associated potential risks and specific radiation levels or other conditions that might be involved in performing the task; and
  - (c) instructed in the measures to be taken to keep the dose ALARA considering other risks that may be present.
- (4) Prior to permitting an individual to participate in a planned special exposure, the licensee or registrant ascertains prior doses as required by Rule .1638(b) of this Section during the lifetime of the individual for each individual involved.
- (5) Subject to Rule .1604(b) of this Section, the licensee or registrant does not authorize a planned special exposure that would cause an individual to receive a dose such that the individual's dose from all planned special exposures and all doses in excess of the limits would exceed:
  - (a) the numerical values of any of the dose limits in Rule .1604(a) of this Section in any year; and
  - (b) five times the annual dose limits in Rule .1604(a) of this Section during the individual's lifetime.
- (6) The licensee or registrant maintains records of the conduct of a planned special exposure in accordance with Rule .1639 of this Section and submits a written report in accordance with Rule .1648 of this Section.
- (7) The licensee or registrant records the best estimate of the dose resulting from the planned special exposure in the

individual's record and informs the individual, in writing, of the dose within 30 days from the date of the planned special exposure. The dose from planned special exposures is not to be considered in controlling future occupational dose of the individual under Rule .1604(a) of this Section but is to be included in evaluations required by Items (4) and (5) of this Rule.

Statutory Authority G.S. 104E-7(a)(2); 104E-12.

#### **.1609 OCCUPATIONAL DOSE LIMITS FOR MINORS**

The annual occupational dose limits for minors are 10 percent of the annual dose limits specified for adult workers in Rule .1604 of this Section.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1610 DOSE TO AN EMBRYO/FETUS**

(a) The licensee or registrant shall ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). Recordkeeping requirements for doses to an embryo/fetus are provided in Rule .1640 of this Section.

(b) The licensee or registrant shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in Paragraph (a) of this Rule.

(c) The dose to an embryo/fetus shall be taken as the sum of:

- (1) the deep-dose equivalent to the declared pregnant woman; and
- (2) the dose to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.

(d) If the dose to the embryo/fetus is found to have exceeded 0.5 rem (5 mSv), or is within 0.05 rem (0.5 mSv) of this dose, by the time the woman declares the pregnancy to the licensee or registrant, the licensee or registrant shall be deemed to be in compliance with Paragraph (a) of this Rule if the additional dose to the embryo/fetus does not exceed 0.05 rem (0.5 mSv) during the remainder of the pregnancy.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1611 DOSE LIMITS FOR INDIVIDUAL**



## MEMBERS OF THE PUBLIC

(a) Each licensee or registrant shall conduct operations so that:

- (1) The total effective dose equivalent to individual members of the public from the licensed or registered operation does not exceed 0.1 rem (1 mSv) in a year, exclusive of the dose contribution from the licensee's disposal of radioactive material into sanitary sewerage in accordance with Rule .1630 of this Section; and
- (2) The dose in any unrestricted area from external sources of radiation does not exceed 0.002 rem (0.02 mSv) in any one hour.

(b) If the licensee or registrant permits members of the public to have access to controlled areas, the limits for members of the public continue to apply to those individuals.

(c) A licensee, registrant, license applicant or registration applicant may apply to the agency for prior authorization to operate up to an annual dose limit for an individual member of the public of 0.5 rem (5 mSv). The licensee, registrant, license applicant or registration applicant shall include the following information in this application:

- (1) demonstration of the need for and the expected duration of operations in excess of the limit in Paragraph (a) of this Rule;
- (2) the licensee's program to assess and control dose within the 0.5 rem (5 mSv) annual limit; and
- (3) the procedures to be followed to maintain the dose as low as is reasonably achievable.

(d) The agency may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee may release in effluents in order to restrict the collective dose.

*Statutory Authority G.S. 104E-7(a)(2).*

## .1612 COMPLIANCE WITH DOSE LIMITS FOR MEMBERS OF THE PUBLIC

(a) The licensee or registrant shall make or cause to be made, as appropriate, surveys of radiation levels in unrestricted and controlled areas and measurements and surveys of radioactive materials in effluents released to unrestricted and controlled areas to demonstrate compliance with the dose limits for individual members of the public in Rule .1611 of this Section.

(b) A licensee or registrant shall show compliance with the annual dose limit in Rule .1611 of this Section by:

- (1) demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed or registered operation does not exceed the annual dose limit; or
- (2) demonstrating that:
  - (A) The annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in Table 2 of Appendix B to 10 CFR §§ 20.1001 - 20.2401; and
  - (B) If an individual were continually present in an unrestricted area, the dose from external sources of radiation would not exceed 0.002 rem (0.02 mSv) in an hour and 0.05 rem (0.5mSv) in a year.

(c) Upon approval from the agency, the licensee may adjust the effluent concentration values in Appendix B to 10 CFR §§ 20.1001 - 20.2401, Table 2, for members of the public, to take into account the actual physical and chemical characteristics of the effluents (e.g., aerosol size distribution, solubility, density, radioactive decay equilibrium, chemical form).

*Statutory Authority G.S. 104E-7(a)(2).*

## .1613 SURVEYS

(a) Each licensee or registrant shall make or cause to be made, surveys that:

- (1) may be necessary for the licensee or registrant to comply with the rules in this Section; and
- (2) are reasonable under the circumstances to evaluate:
  - (A) the extent of radiation levels;
  - (B) concentrations or quantities of radioactive material; and
  - (C) the potential radiological hazards that could be present.

(b) The licensee or registrant shall ensure that instruments and equipment used for quantitative radiation measurements (e.g., dose rate and effluent monitoring) are calibrated periodically for the radiation measured.

(c) All personnel dosimeters (except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to

the extremities) that require processing to determine the radiation dose and that are used by licensees or registrants to comply with Rule .1604 of this Section, with other applicable provisions of this Chapter, or with conditions specified in a license shall be processed and evaluated by a dosimetry processor:

- (1) Holding current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology; and
  - (2) Approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.
- (d) Exposure of a personnel monitoring device to deceptively indicate a dose delivered to an individual is prohibited.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1614 MONITORING OF EXTERNAL AND INTERNAL OCCUPATIONAL DOSE**

Each licensee or registrant shall monitor exposures to radiation and radioactive material at levels sufficient to demonstrate compliance with the occupational dose limits of this Section. As a minimum:

- (1) Each licensee or registrant shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by:
  - (a) adults likely to receive, in one year from sources external to the body, a dose in excess of 10 percent of the limits in Rule .1604(a) of this Section,
  - (b) minors and declared pregnant women likely to receive, in one year from sources external to the body, a dose in excess of 10 percent of any of the applicable limits in Rules .1609 or .1610 of this Section, and
  - (c) individuals entering a high or very high radiation area.
- (2) Each licensee shall monitor the occupational intake of radioactive material by and assess the committed effective dose equivalent to:
  - (a) adults likely to receive, in one year, an intake in excess of 10 percent of the applicable ALI(s) in Table 1, Columns

1 and 2, of Appendix B to 10 CFR §§ 20.1001 - 20.2401; and

- (b) minors and declared pregnant women likely to receive, in 1 year, a committed effective dose equivalent in excess of 0.05 rem (0.5 mSv).

Statutory Authority G.S. 104E-7(a)(2).

#### **.1615 CONTROL OF ACCESS TO HIGH RADIATION AREAS**

(a) The licensee or registrant shall ensure that each entrance or access point to a high radiation area has one or more of the following features:

- (1) a control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates;
- (2) a control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or
- (3) entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

(b) In place of the controls required by Paragraph (a) of this Rule for a high radiation area, the licensee or registrant may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

(c) Any licensee, registrant or applicant for a license or registration may apply to the agency for approval of alternative methods for controlling access to high radiation areas. The agency will approve alternatives if the licensee, registrant or applicant demonstrates that the alternative methods of control will prevent unauthorized entry into a high radiation area, and that the requirements of Paragraph (a) of this Rule are met.

(d) The licensee or registrant shall establish the controls required by Paragraphs (a) and (c) of this Rule in a way that does not prevent individuals from leaving a high radiation area.

(e) Control is not required for each entrance or access point to a room or other area that is a high radiation area solely because of the presence of radioactive materials prepared for transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transporta-



tion provided that:

- (1) the packages do not remain in the area longer than three days; and
- (2) the dose rate at one meter from the external surface of any package does not exceed 0.01 rem (0.1 mSv) per hour.

(f) Control of entrance or access to rooms or other areas in hospitals is not required solely because of the presence of patients containing radioactive material, provided that there are personnel in attendance who will take the necessary precautions to prevent the exposure of individuals to radiation or radioactive material in excess of the limits established in this Section and to operate within the ALARA provisions of the licensee's radiation protection program.

*Statutory Authority G.S. 104E-7(a)(2).*

#### **.1616 CONTROL OF ACCESS TO VERY HIGH RADIATION AREAS**

In addition to the requirements in Rule .1615 of this Section, the licensee or registrant shall institute additional measures to ensure that an individual is not able to gain unauthorized or inadvertent access to areas in which radiation levels could be encountered at 500 rads (5 grays) or more in one hour at one meter from a radiation source or any surface through which the radiation penetrates.

*Statutory Authority G.S. 104E-7(a)(2).*

#### **.1617 ACCESS TO VERY HIGH RADIATION AREAS: IRRADIATORS**

(a) Each area in which there may exist radiation levels in excess of 500 rads (5 grays) in one hour at one meter from a source of radiation that is used to irradiate materials shall meet the following requirements:

- (1) Each entrance or access point shall be equipped with entry control devices which:
  - (A) function automatically to prevent any individual from inadvertently entering the area when very high radiation levels exist;
  - (B) permit deliberate entry into the area only after a control device is actuated that causes the radiation level within the area, from the source of radiation, to be reduced below that at which it would be possible for an individual to receive a deep-dose equivalent in excess of 0.1 rem (1 mSv) in one

hour; and

- (C) prevent operation of the source of radiation if the source would produce radiation levels in the area that could result in a deep-dose equivalent to an individual in excess of 0.1 rem (1mSv) in one hour.
- (2) Additional control devices shall be provided so that, upon failure of the entry control devices to function as required by Subparagraph (a)(1) of this Rule:
  - (A) The radiation level within the area, from the source of radiation, is reduced below that at which it would be possible for an individual to receive a deep-dose equivalent in excess of 0.1 rem (1 mSv) in one hour; and
  - (B) Conspicuous visible and audible alarm signals are generated to make an individual attempting to enter the area aware of the hazard and at least one other authorized individual, who is physically present, familiar with the activity, and prepared to render or summon assistance, aware of the failure of the entry control devices.
- (3) The licensee or registrant shall provide control devices so that, upon failure or removal of physical radiation barriers other than the shielded storage container:
  - (A) The radiation level from the source of radiation is reduced below that at which it would be possible for an individual to receive a deep-dose equivalent in excess of 0.1 rem (1 mSv) in one hour; and
  - (B) Conspicuous visible and audible alarm signals are generated to make potentially affected individuals aware of the hazard and the licensee or registrant or at least one other individual, who is familiar with the activity and prepared to render or summon assistance, aware of the failure or removal of the physical barrier.
- (4) When the shield for the stored source of radiation is a liquid, the licensee or registrant shall provide means to monitor the integrity of the shield and to signal, automatically, loss of adequate shielding.
- (5) Physical radiation barriers that comprise permanent structural components,



such as walls, that have no credible probability of failure or removal in ordinary circumstances need not meet the requirements of Subparagraphs (a)(3) and (4) of this Rule.

- (6) Each area shall be equipped with a clearly identified control device which can prevent the source of radiation from being put into operation.
- (7) Each area shall be equipped with devices that will automatically generate conspicuous visible and audible alarm signals to alert personnel in the area before the source of radiation can be put into operation and in sufficient time for any individual in the area to operate the control device required by Subparagraph (a)(6) of this Rule.
- (8) Each area shall be controlled by use of such administrative procedures and such devices as are necessary to ensure that the area is cleared of personnel prior to each use of the source of radiation.
- (9) Each area shall be checked by a radiation measurement to ensure that, prior to the first individual's entry into the area after any use of the source of radiation, the radiation level from the source in the area is below that at which it would be possible for an individual to receive a deep-dose equivalent in excess of 0.1 rem (1 mSv) in one hour.
- (10) The entry control devices required in Subparagraph (a)(1) of this Rule shall have been tested for proper functioning. Recordkeeping requirements relating to these tests are provided in Rule .1643 of this Section.
  - (A) Testing shall be conducted prior to initial operation of the source of radiation on any day, unless operations were continued uninterrupted from the previous day;
  - (B) Testing shall be conducted prior to resumption of operation of the source of radiation after any unintended interruption; and
  - (C) The licensee or registrant shall submit and adhere to a schedule for periodic tests of the entry control and warning systems.
- (11) The licensee or registrant shall not conduct operations, other than those necessary to place the source of radia-

tion in safe condition or to effect repairs on controls, unless control devices are functioning properly.

- (12) Entry and exit portals that are used in transporting materials to and from the irradiation area, and that are not intended for use by individuals, shall be controlled by such devices and administrative procedures as are necessary to physically protect and warn against inadvertent entry by any individual through these portals. Exit portals for processed materials shall be equipped to detect and signal the presence of any loose radiation sources that are carried toward such an exit and to automatically prevent loose radiation sources from being carried out of the area.

(b) Any licensee, registrant or applicant for a license or registration for sources of radiation that are subject to Paragraph (a) of this Rule and that will be used in a variety of positions or in locations, such as open fields or forests, that make it impracticable to comply with certain requirements of Paragraph (a) of this Rule, such as those for the automatic control of radiation levels, may apply to the agency for approval of the use of alternative safety measures. Any alternative safety measures shall provide a degree of personnel protection at least equivalent to those specified in Paragraph (a) of this Rule. At least one of the alternative measures shall include an entry-preventing interlock control based on a measurement of the radiation that ensures the absence of high radiation levels before an individual can gain access to the area where such radiation sources are used.

(c) The entry control devices required by Paragraphs (a) and (b) of this Rule shall be established in such a way that no individual will be prevented from leaving the area.

(d) This Rule applies to radiation from non-self-shielded irradiators. This Rule does not apply to sources of radiation that are used in therapy, in radiography, or in completely self-shielded irradiators in which the source of radiation is both stored and operated within the same shielding radiation barrier and, in the designed configuration of the irradiator, is always physically inaccessible to any individual and cannot create high levels of radiation in an area that is accessible to any individual. This Rule also does not apply to sources of radiation from which the radiation is incidental to some other use.

Statutory Authority G.S. 104E-7(a)(2).

**.1618 USE OF PROCESS OR OTHER ENGINEERING CONTROLS**

The licensee shall use, to the extent practicable, process or other engineering controls (e.g., containment or ventilation) to control the concentrations of radioactive material in air.

Statutory Authority G.S. 104E-7(a)(2).

**.1619 USE OF OTHER CONTROLS TO RESTRICT INTERNAL EXPOSURE**

When it is not practicable to apply process or other engineering controls to control the concentrations of radioactive material in air to values below those that define an airborne radioactivity area, the licensee shall, consistent with maintaining the total effective dose equivalent ALARA, increase monitoring and limit intakes of radionuclides by one or more of the following means:

- (1) the control of access to the area;
- (2) the limitation of exposure times of personnel in the area;
- (3) the use of respiratory protection equipment; or
- (4) other controls.

Statutory Authority G.S. 104E-7(a)(2).

**.1620 USE OF INDIVIDUAL RESPIRATORY PROTECTION EQUIPMENT**

(a) If the licensee uses respiratory protection equipment to limit intakes pursuant to Rule .1619 of this Section the licensee shall:

- (1) use only respiratory protection equipment that is tested and certified or had certification extended by the National Institute for Occupational Safety and Health/Mine Safety and Health Administration (NIOSH/MSHA);
- (2) if the licensee wishes to use equipment that has not been tested or certified by NIOSH/MSHA, has not had certification extended by NIOSH/MSHA, or for which there is no schedule for testing or certification, submit an application for authorized use of that equipment, including a demonstration by testing, or a demonstration on the basis of reliable test information, that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use;
- (3) implement and maintain a respiratory protection program that includes:

- (A) air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate exposures;
  - (B) surveys and bioassays, as appropriate, to evaluate actual intakes;
  - (C) testing of respirators for operability immediately prior to each use;
  - (D) written procedures regarding selection, fitting, issuance, maintenance, and testing of respirators, including testing for operability immediately prior to each use; supervision and training of personnel; monitoring, including air sampling and bioassays; and record keeping; and
  - (E) determination by a physician prior to initial fitting of respirators, and at least every 12 months thereafter, that the individual user is physically able to use the respiratory protection equipment;
- (4) issue a written policy statement on respirator usage covering:
- (A) the use of process or other engineering controls, instead of respirators;
  - (B) the routine, non-routine, and emergency use of respirators; and
  - (C) the periods of respirator use and relief from respirator use.
- (5) advise each respirator user that the user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other conditions that might require such relief; and
- (6) use equipment within limitations for type and mode of use and shall provide proper visual, communication, and other special capabilities, such as adequate skin protection, when needed.
- (b) In estimating exposure of individuals to airborne radioactive materials, the licensee may make allowance for respiratory protection equipment used to limit intakes pursuant to Rule .1619 of this Section, provided that the following conditions, in addition to those in Paragraph (a) of this Rule, are satisfied:
- (1) The licensee selects respiratory protection equipment that provides a protection factor, as specified in Appendix A to 10 CFR §§ 20.1001 - 20.2401,



greater than the multiple by which peak concentrations of airborne radioactive materials in the working area are expected to exceed the values specified in Appendix B to 10 CFR §§ 20.1001 - 20.2401, Table 1, Column 3. If the selection of a respiratory protection device with a protection factor greater than the peak concentration is inconsistent with the goal specified in Rule .1619 of this Section of keeping the total effective dose equivalent ALARA, the licensee may select respiratory protection equipment with a lower protection factor only if such a selection would result in keeping the total effective dose equivalent ALARA. The concentration of radioactive material in the air that is inhaled when respirators are worn may be initially estimated by dividing the average concentration in air, during each period of uninterrupted use, by the protection factor. If the exposure is later found to be greater than estimated, the corrected value shall be used. If the exposure is later found to be less than estimated, the corrected value may be used.

(2) The licensee shall obtain authorization from the agency before assigning respiratory protection factors in excess of those specified in Appendix A to 10 CFR §§ 20.1001 - 20.2401. The agency may authorize a licensee to use higher protection factors on receipt of an application that:

(A) describes the situation for which a need exists for higher protection factors, and

(B) demonstrates that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.

(c) The licensee shall use as emergency devices only respiratory protection equipment that has been specifically certified or had certification extended for emergency use by NIOSH/MSHA.

(d) The licensee shall notify the agency, in writing, at least 30 days before the date that respiratory protection equipment is first used under the provisions of either Paragraph (a) or (b) of this Rule.

Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).

## **.1621 RESTRICTIONS ON THE USE OF RESPIRATORY PROTECTION EQUIPMENT**

The agency may impose restrictions in addition to those in Rules .1619 and .1620 of this Section, and Appendix A to 10 CFR §§ 20.1001 - 20.2401 to:

- (1) ensure that the respiratory protection program of the licensee is adequate to limit exposures of individuals to airborne radioactive materials; and
- (2) limit the extent to which a licensee may use respiratory protection equipment instead of process or other engineering controls.

Statutory Authority G.S. 104E-7(a)(2).

## **.1622 SECURITY OF SOURCES OF RADIATION**

(a) The licensee or registrant shall secure from unauthorized removal or access sources of radiation that are stored in controlled or unrestricted areas.

(b) The licensee or registrant shall control and maintain constant surveillance of sources of radiation that are in a controlled or unrestricted area and that are not in storage.

Statutory Authority G.S. 104E-7(a)(2).

## **.1623 CAUTION SIGNS**

(a) Unless otherwise authorized by the agency, the symbol prescribed by the rules of this Chapter shall use the colors magenta, or purple, or black on yellow background. The radiation symbol prescribed by the rules of this Chapter is the standard three-bladed design.

(1) The blades and interior circle shall be magenta, purple, or black; and

(2) The background shall be yellow.

(b) Notwithstanding the requirements of Paragraph (a) of this Rule, licensees and registrants are authorized to label sources, source holders, or device components containing sources of radiation that are subjected to high temperatures, with conspicuously etched or stamped radiation caution symbols and without a color requirement.

(c) In addition to the contents of signs and labels prescribed in the rules of this Chapter, the licensee or registrant may provide, on or near the required signs and labels, additional information, as appropriate, to make individuals aware of potential radiation exposures and to minimize the exposures.



Statutory Authority G.S. 104E-7(a)(2).

# **.1624 POSTING REQUIREMENTS**

(a) The licensee or registrant shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words:

CAUTION  
RADIATION AREA

(b) The licensee or registrant shall post each high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words:

CAUTION  
HIGH RADIATION AREA  
or the words:

DANGER  
HIGH RADIATION AREA

(c) The licensee or registrant shall post each very high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words:

GRAVE DANGER  
VERY HIGH RADIATION AREA

(d) The licensee shall post each airborne radioactivity area with a conspicuous sign or signs bearing the radiation symbol and the words:

CAUTION  
AIRBORNE RADIOACTIVITY AREA  
or the words:

DANGER  
AIRBORNE RADIOACTIVITY AREA

(e) The licensee shall post each area or room in which there is used or stored an amount of licensed radioactive material exceeding 10 times the quantity of such material specified in Appendix C to 10 CFR §§ 20.1001 - 20.2401 with a conspicuous sign or signs bearing the radiation symbol and the words:

CAUTION  
RADIOACTIVE MATERIAL(S)  
or the words:

DANGER  
RADIOACTIVE MATERIAL(S)

Statutory Authority G.S. 104E-7(a)(2).

# **.1625 EXCEPTIONS TO POSTING REQUIREMENTS**

(a) A licensee is not required to post caution signs in areas or rooms containing radioactive materials for periods of less than eight hours, if each of the following conditions is met:

- (1) The materials are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to radiation or radioactive materials in excess of the limits established in the rules in this Section; and
- (2) The area or room is subject to the licensee's control.

(b) Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs pursuant to Rule .1624 of this Section provided that:

- (1) The patient is being treated with sealed sources or has been treated with unsealed radioactive material in quantities less than 30 millicuries (110 MBq), or the measured dose rate at one meter from the patient is less than 0.005 rem (0.05 mSv) per hour; and
- (2) There are personnel in attendance who will take the necessary precautions to prevent the exposure of individuals to radiation or radioactive material in excess of the limits established in this Section and to operate within the ALARA provisions of the licensee's radiation protection program.

(c) A room or area is not required to be posted with a caution sign because of the presence of a sealed source provided the radiation level at 30 centimeters from the surface of the source container or housing does not exceed 0.005 rem (0.05 mSv) per hour.

Statutory Authority G.S. 104E-7(a)(2).

# **.1626 LABELING REQUIREMENTS AND EXEMPTIONS**

(a) The licensee shall ensure that each container of licensed radioactive material bears a durable, clearly visible label bearing the radiation symbol and the words:

CAUTION  
RADIOACTIVE MATERIAL

or the words:

DANGER  
RADIOACTIVE MATERIAL

The label shall also provide sufficient information (such as the radionuclide(s) present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, radiation levels, kinds of materials, and mass enrichment) to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

(b) Each licensee shall, prior to removal or disposal of empty uncontaminated containers to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.

(c) A licensee is not required to label:

- (1) containers holding licensed radioactive material in quantities less than the quantities listed in Appendix C to 10 CFR §§ 20.1001 - 20.2401;
- (2) containers holding licensed radioactive material in concentrations less than those specified in Table 3 of Appendix B to 10 CFR §§ 20.1001 - 20.2401;
- (3) containers attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established by this Section;
- (4) containers when they are in transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transportation;
- (5) containers that are accessible only to individuals authorized to handle or use them, or to work in the vicinity of the containers, if the contents are identified to these individuals by a readily available written record, for example, containers in locations such as water-filled canals, storage vaults, or hot cells, provided the record shall be retained as long as the containers are in use for the purpose indicated on the record; or
- (6) installed manufacturing or process equipment, such as piping and tanks.

Statutory Authority G.S. 104E-7(a)(2).

## .1627 PROCEDURES FOR RECEIVING AND OPENING PACKAGES

(a) Each licensee who expects to receive a package containing quantities of radioactive material in excess of a Type A quantity, as defined in Rule .0104 of this Chapter, shall make arrangements to receive:

- (1) the package when the carrier offers it for delivery; or
- (2) notification of the arrival of the package at the carrier's terminal and to take possession of the package expeditiously.

(b) Each licensee, upon receipt of a package containing radioactive material, shall monitor the external surfaces of the package for radioactive contamination and radiation levels if the package:

- (1) is labeled as containing radioactive material; or
- (2) has evidence of potential contamination, such as packages that are crushed, wet, or damaged.

(c) The licensee shall perform the monitoring required by Paragraph (b) of this Rule as soon as practicable after receipt of the package, but not later than three hours after the package is received at the licensee's facility if it is received during the licensee's normal working hours, or not later than three hours from the beginning of the next working day if it is received after working hours.

(d) The licensee shall immediately notify the final delivery carrier and, by telephone and telegram, mailgram, or facsimile, the agency when:

- (1) removable radioactive surface contamination exceeds the limits of 10 CFR § 71.87(i); or
- (2) external radiation levels exceed the limits of 10 CFR § 71.47.

(e) Each licensee shall:

- (1) establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and
- (2) ensure that the procedures are followed and that due consideration is given to special instructions for the type of package being opened.

(f) Licensees transferring special form sources in licensee-owned or licensee-operated vehicles to and from a work site are exempt from the contamination monitoring requirements of Paragraph (b) of this Rule, but are not exempt from the survey requirement in Paragraph (b) of this Rule for measuring radiation levels that is required to ensure that the source is still properly lodged in its shield.

Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).

## .1628 GENERAL REQUIREMENTS FOR WASTE DISPOSAL

(a) A licensee shall dispose of licensed radioactive material only:

- (1) by transfer to an authorized recipient as provided in Section .0300 of this Chapter;
- (2) by decay in storage;
- (3) by release in effluents within the limits in Rule .1611 of this Section; or
- (4) as authorized by Rules .1629, .1630, .1631, or .1632 of this Section; or
- (5) a land disposal facility licensed under Section .1200 of this Chapter or equivalent regulations of the U.S. Nuclear Regulatory Commission or an agreement state.

(b) Except as provided in Section .1200 of this Chapter, no licensee shall receive radioactive waste from other persons for:

- (1) treatment prior to disposal;
- (2) treatment or disposal by incineration;
- (3) decay in storage; or
- (4) disposal.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1629 METHOD FOR OBTAINING APPROVAL OF DISPOSAL PROCEDURES**

A licensee or applicant for a license may apply to the agency for approval of proposed procedures, not otherwise authorized in this Section, to dispose of licensed radioactive material generated in the licensee's activities. Each application shall include:

- (1) a description of the waste containing licensed radioactive material to be disposed of, including the physical and chemical properties important to risk evaluation, and the proposed manner and conditions of waste disposal;
- (2) an analysis and evaluation of pertinent information on the nature of the environment;
- (3) the nature and location of other potentially affected licensed and unlicensed facilities; and
- (4) analyses and procedures to ensure that doses are maintained ALARA and within the dose limits in this Section.

Statutory Authority G.S. 104E-7(a)(2).

#### **.1630 DISPOSAL BY RELEASE INTO SANITARY SEWERAGE**

(a) A licensee may discharge licensed radioactive material into sanitary sewerage if each of the following conditions is satisfied:

- (1) The material is readily soluble in water or is biological material that is readily dispersible in water; and
- (2) The quantity of licensed or other radioactive material that the licensee releases into the sewer in one month divided by the average monthly volume of water released into the sewer by the licensee does not exceed the concentration listed in Table 3 of Appendix B to 10 CFR §§ 20.1001 - 20.2401; and
- (3) If more than one radionuclide is released, the following conditions shall also be satisfied:

(A) The licensee shall determine the fraction of the limit in Table 3 of Appendix B to 10 CFR §§ 20.1001 - 20.2401 represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee into the sewer by the concentration of that radionuclide listed in Table 3 of Appendix B to 10 CFR §§ 20.1001 - 20.2401; and

(B) The sum of the fractions for each radionuclide required by Part (a)(3)(A) of this Rule does not exceed unity; and

- (4) The total quantity of licensed and other radioactive material that the licensee releases into the sanitary sewerage system in a year does not exceed five curies (185 GBq) of hydrogen-3, one curie (37 GBq) of carbon-14, and one curie (37 GBq) of all other radioactive materials combined.

(b) Excreta from individuals undergoing medical diagnosis or therapy with radioactive material is not subject to the limitations contained in Paragraph (a) of this Rule.

Statutory Authority G.S. 104E-7(a)(2); 104E-7(a)(5).

#### **.1631 TREATMENT OR DISPOSAL BY INCINERATION**

A licensee may treat or dispose of licensed radioactive material by incineration only in the amounts and forms specified in Rule .1632 or as specifically approved by the agency pursuant to Rule .1629 of this Section.

Statutory Authority G.S. 104E-7(a)(2).



### .1632 DISPOSAL OF SPECIFIC WASTES

(a) A licensee may dispose of the following licensed radioactive material without regard to its radioactivity:

- (1) 0.05 microcurie (1.85 kBq), or less, of hydrogen-3, carbon-14 or iodine-125 per gram of medium used for liquid scintillation counting; and
- (2) 0.05 microcurie (1.85 kBq), or less, of hydrogen-3, carbon-14 or iodine-125 per gram of animal tissue, averaged over the weight of the entire animal.

(b) A licensee may not dispose of tissue pursuant to Subparagraph (a)(2) of this Rule in a manner that would permit its use either as food for humans or as animal feed.

(c) The licensee shall maintain records of disposals made pursuant to Subparagraph (a)(2) of this Rule in accordance with Rule .1642 of this Section.

*Statutory Authority G.S. 104E-7(a)(2); 104E-7(a)(5); 104E-12(a).*

### .1633 TRANSFER FOR DISPOSAL AND MANIFESTS

(a) The licensee shall prepare a shipment manifest which shall accompany each shipment of waste and which shall include the following information:

- (1) the name, address and telephone number of the person generating the waste;
- (2) the name, address and telephone number of the person transporting the waste to the waste disposal facility;
- (3) as complete a statement as practicable of the following information:
  - (A) a physical description of the waste,
  - (B) the waste volume,
  - (C) the radionuclide identity and quantity,
  - (D) the total quantity of radioactivity,
  - (E) the total quantity of the radionuclides: hydrogen-3, carbon-14, technetium-99 and iodine-129, and
  - (F) the principal chemical form;
- (4) the solidification agent, if any;
- (5) if the waste contains more than 0.1 percent chelating agents by weight, the identity and estimated weight percent of the chelating agents; and
- (6) a clear statement of the waste class, if determined to be either Class A, Class B or Class C waste pursuant to the provisions of Rule .1650 of this Section.

(b) In each manifest the waste generator shall

include a certification that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation and the agency. An authorized representative of the waste generator shall sign and date the manifest.

(c) The manifest required in Paragraph (a) of this Rule may be shipping papers used to meet U.S. Department of Transportation or U.S. Environmental Protection Agency regulations or requirements of the receiver, provided all information required in Paragraphs (a) and (b) of this Rule is included.

(d) Any licensee who transfers waste to a licensed land waste disposal facility or a licensed waste collector shall comply with the requirements in Subparagraphs (d)(1) through (8) of this Rule. Any licensee who transfers waste to a licensed waste processor who treats or repackages waste shall comply with the requirements in Subparagraphs (d)(4) through (8) of this Rule. The licensee shall:

- (1) prepare all wastes so that the waste is classified in accordance with the provisions of Rule .1650 of this Section and meets the waste characteristic requirements in Rule .1651 of this Section;
- (2) label each package of waste as Class A, Class B or Class C as determined in accordance with the provisions of Rule .1650 of this Section;
- (3) conduct a quality control program to assure compliance with the provisions of Rules .1650 and .1651 of this Section and to include management evaluation of audits;
- (4) prepare shipping manifests in accordance with the provisions of Paragraphs (a) and (b) of this Rule;
- (5) at the time of shipment, forward a copy of the manifest to the intended recipient; or, at the time the waste is collected, have the collector acknowledge receipt by signing the licensee's copy of the manifest and provide a copy of the manifest to the collector;
- (6) include one copy of the manifest with the shipment;
- (7) retain a copy of the manifest, with documentation of acknowledgement of receipt, as the record of transfer of licensed radioactive material as required in Rules .0115 and .1642 of this Chap-

ter; and

- (8) conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.

(e) Any waste collector licensee who handles only prepackaged waste shall:

- (1) acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest to the generator;
- (2) prepare a new manifest which shall reflect consolidated shipments, serve as a listing or index for the detailed generator manifests, and include copies of the generator manifests; or prepare a new manifest without attaching the generator manifests, provided the new manifest contains for each package the information specified in Paragraph (a) of this Rule;
- (3) certify that nothing has been done to the waste which would invalidate the generator's certification;
- (4) forward a copy of the new manifest to the land disposal facility operator at the time of shipment;
- (5) include the new manifest with the shipment to the disposal site;
- (6) retain a copy of the manifest with documentation of acknowledgement of receipt as the record of transfer of licensed radioactive material as required in Rules .0115 and .1642 of this Chapter, and retain information from generator manifests until disposition is authorized by the agency; and
- (7) conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.

(f) Any licensed waste processor who treats or repackages wastes shall:

- (1) acknowledge receipt of the waste from the generator within one week of receipt by returning a signed copy of the manifest to the generator;
- (2) prepare a new manifest that meets the requirements of Paragraphs (a), (b) and (c) of this Rule, thereby reflecting the fact that the processor is responsible for

the waste;

- (3) prepare all wastes so that the waste is classified in accordance with the provisions of Rule .1650 of this Section and meets the waste characteristics requirements in Rule .1651 of this Section;
- (4) label each package of waste as Class A, Class B or Class C as determined in accordance with the provisions of Rules .1650 and .1652 of this Section;
- (5) conduct a quality control program to assure compliance with the provisions of Rules .1650 and .1651 of this Section and to include management evaluation of audits;
- (6) at the time of shipment, forward a copy of the manifest to the intended recipient; or, at the time the waste is collected, have the collector acknowledge receipt by signing the licensee's copy of the manifest and provide a copy of the manifest to the collector;
- (7) include the new manifest with the shipment;
- (8) retain a copy of the manifest, with documentation of acknowledgement of receipt, as the record of transfer of licensed radioactive material as required in Rules .0115 and .1642 of this Chapter;
- (9) conduct an investigation in accordance with Paragraph (g) of this Rule for any shipments or any part of a shipment for which notification of receipt has not been received within 20 days after transfer.

(g) Any radioactive waste disposal facility operator shall:

- (1) acknowledge receipt of the waste within one week of receipt by returning a signed copy of the manifest or equivalent documentation to the shipper, where such shipper is the licensee who last possessed the waste and transferred the waste to the operator;
- (2) indicate on the returned copy of the manifest or equivalent documentation in Subparagraph (g)(1) of this Rule any discrepancies between materials listed on the manifest and materials received;
- (3) maintain copies of all completed manifests or equivalent documentation until the agency authorizes their disposition; and
- (4) notify the shipper (e.g., the generator,



the collector, or processor) and the agency when any shipment or part of a shipment has not arrived within 60 days after the advance manifest was received.

(h) If the shipper does not receive a notification of receipt for any shipment or any part of a shipment within 20 days after transfer, the shipper shall conduct an investigation, to include a trace of the shipment. The shipper and any other licensee who conducts a trace investigation shall file a written report with the agency within two weeks of the completion of the investigation.

*Statutory Authority G.S. 104E-7(a)(2), (a)(3); 104E-12(a).*

#### **.1634 COMPLIANCE WITH ENV. AND HEALTH PROTECTION REGULATIONS**

Nothing in this Section relieves the licensee from complying with other applicable federal, state, and local regulations governing any other toxic or hazardous properties of materials that may be disposed of under this Section.

*Statutory Authority G.S. 104E-7(a)(2).*

#### **.1635 GENERAL PROVISIONS FOR RECORDS**

(a) Each licensee or registrant shall use the units: curie, rad and rem, including multiples and subdivisions thereof, and shall clearly indicate the units of all quantities on records required by this Section.

(b) The licensee or registrant shall make a clear distinction between the quantities entered on the records required by this Section (e.g., total effective dose equivalent, shallow-dose equivalent, eye dose equivalent, deep-dose equivalent, committed effective dose equivalent).

(c) The discontinuance or curtailment of activities does not relieve the licensee or registrant of responsibility for retaining all records required by the rules in this Section. A licensee or registrant, may, however request the agency to accept such records. If the agency accepts such records, the licensee or registrant is relieved of subsequent responsibility only in respect to their preservation as required by the rules in this Section.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1636 RECORDS OF RADIATION PROTECTION PROGRAMS**

(a) Each licensee or registrant shall maintain records of the radiation protection program, including:

- (1) The provisions of the program; and
- (2) Audits and other reviews of program content and implementation.

(b) The licensee or registrant shall retain the records required by Subparagraph (a)(1) of this Rule until the agency terminates each pertinent license or registration requiring the record. The licensee or registrant shall retain the records required by Subparagraph (a)(2) of this Rule for three years after the record is made.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1637 RECORDS OF SURVEYS**

(a) Each licensee or registrant shall maintain records showing the results of surveys and calibrations required by Rules .1613 and .1627(b) of this Section. The licensee or registrant shall retain these records for three years after the record is made.

(b) The licensee or registrant shall retain each of the following records until the agency terminates each pertinent license or registration requiring the record:

- (1) records of the results of surveys to determine the dose from external sources and used, in the absence of or in combination with individual monitoring data, in the assessment of individual dose equivalents;
- (2) records of the results of measurements and calculations used to determine individual intakes of radioactive material and used in the assessment of internal dose;
- (3) records showing the results of air sampling, surveys, and bioassays required pursuant to Rule .1620(a) of this Section; and
- (4) Records of the results of measurements and calculations used to evaluate the release of radioactive effluents to the environment.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1638 DETERMINATION OF PRIOR OCCUPATIONAL DOSE**

(a) For each individual who may enter the licensee's or registrant's restricted or controlled area and is likely to receive, in a year, an occupational dose requiring monitoring pursuant to Rule



.1614 of this Section, the licensee or registrant shall:

- (1) determine the occupational radiation dose received during the current year; and
- (2) attempt to obtain the records of lifetime cumulative occupational radiation dose.

(b) Prior to permitting an individual to participate in a planned special exposure, the licensee or registrant shall determine:

- (1) the internal and external doses from all previous planned special exposures; and
- (2) all doses in excess of the limits received during the lifetime of the individual, including doses received during accidents and emergencies.

(c) In complying with the requirements of Paragraph (a) of this Rule, a licensee or registrant may:

- (1) accept, as a record of the occupational dose that the individual received during the current year, a written signed statement from the individual, or from the individual's most recent employer for work involving radiation exposure, that discloses the nature and the amount of any occupational dose that the individual may have received during the current year;
- (2) accept, as the record of lifetime cumulative radiation dose, an up-to-date agency form for recording occupational radiation dose history, or equivalent, signed by the individual and countersigned by an appropriate official of the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee or registrant; and
- (3) obtain reports of the individual's dose equivalent(s) by telephone, telegram, electronic media, or letter from the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee or registrant. The licensee or registrant shall request a written verification of the dose data if the authenticity of the transmitted report cannot be established.

(d) The licensee or registrant shall record the exposure history, as required by Paragraph (a) of this Rule, on the agency form for recording occu-

pational radiation dose history, or other clear and legible record of all the information required on that form. The form or record shall show each period in which the individual received occupational exposure to radiation or radioactive material and shall be signed by the individual who received the exposure. For each period for which the licensee or registrant obtains reports, the licensee or registrant shall use the dose shown in the report in preparing the agency form for recording occupational radiation dose history. For any period in which the licensee or registrant does not obtain a report, the licensee or registrant shall place a notation on the agency form for recording occupational radiation dose history indicating the periods of time for which data are not available. Licensees or registrants are not required to reevaluate the separate external dose equivalents and internal committed dose equivalents or intakes of radionuclides assessed prior to January 1, 1994 under Section .0400 of this Chapter. Further, occupational exposure histories obtained and recorded before January 1, 1991, may not have included effective dose equivalent, but may be used in the absence of specific information on the intake of radionuclides by the individual.

(e) If the licensee or registrant is unable to obtain a complete record of an individual's current and previously accumulated occupational dose, the licensee or registrant shall assume:

- (1) in establishing administrative controls under Rule .1604(f) of this Section for the current year, that the allowable dose limit for the individual is reduced by 1.25 rems (12.5 mSv) for each quarter for which records were unavailable and the individual was engaged in activities that could have resulted in occupational radiation exposure; and
- (2) that the individual is not available for planned special exposures.

(f) The licensee or registrant shall retain the records on the agency form for recording occupational radiation dose history or equivalent until the agency terminates each pertinent license or registration requiring this record. The licensee or registrant shall retain records used in preparing the agency form for recording occupational radiation dose history for three years after the record is made.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

## **.1639 RECORDS OF PLANNED EXPOSURES**

(a) For each use of the provisions of Rule .1608 of this Section for planned special exposures, the licensee or registrant shall maintain records that describe:

- (1) the exceptional circumstances requiring the use of a planned special exposure;
- (2) the name of the management official who authorized the planned special exposure and a copy of the signed authorization;
- (3) what actions were necessary;
- (4) why the actions were necessary;
- (5) how doses were maintained ALARA; and
- (6) what individual and collective doses were expected to result, and the doses actually received in the planned special exposure.

(b) The licensee or registrant shall retain the records until the agency terminates each pertinent license or registration requiring these records.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1640 RECORDS OF INDIVIDUAL MONITORING RESULTS**

(a) Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required pursuant to Rule .1614 of this Section, and records of doses received during planned special exposures, accidents, and emergency conditions. These records shall include, when applicable:

- (1) the deep-dose equivalent to the whole body, eye dose equivalent, shallow-dose equivalent to the skin, and shallow-dose equivalent to the extremities;
- (2) the estimated intake or body burden of radionuclides (see Rule .1605 of this Section);
- (3) the committed effective dose equivalent assigned to the intake or body burden of radionuclides;
- (4) the specific information used to calculate the committed effective dose equivalent pursuant to Rule .1607(c) of this Section;
- (5) the total effective dose equivalent when required by Rule .1605 of this Section; and
- (6) the total of the deep-dose equivalent and the committed dose to the organ receiving the highest total dose.

(b) The licensee or registrant shall make entries of the records specified in Paragraph (a) of this

Rule at least annually.

(c) The licensee or registrant shall maintain the records specified in Paragraph (a) of this Rule on the agency form for recording occupational radiation doses, in accordance with the instructions provided with the form, or in clear and legible records containing all the information required by the agency form for recording occupational radiation doses.

(d) Assessments of dose equivalent and records made using units in effect before the licensee's or registrant's adoption of the rules in this Section need not be changed.

(e) The records required under this Rule should be protected from public disclosure because of their personal privacy nature.

(f) The licensee or registrant shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy shall also be kept on file, but may be maintained separately from the dose records.

(g) The licensee or registrant shall retain each required form or record until the agency terminates each pertinent license or registration requiring the record.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1641 RECORDS OF DOSE TO INDIVIDUAL MEMBERS OF THE PUBLIC**

(a) Each licensee or registrant shall maintain records sufficient to demonstrate compliance with the dose limit for individual members of the public required by Rule .1611 of this Section. These records may include such things as survey results, monitoring results, calculations and other documents pertaining to the determination of doses to individual members of the public.

(b) The licensee or registrant shall retain the records required by Paragraph (a) of this Rule until the agency terminates each pertinent license or registration requiring the record.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1642 RECORDS OF WASTE DISPOSAL**

(a) Each licensee shall maintain records of the disposal of licensed radioactive materials made pursuant to Rules .1629, .1630, .1631, .1632 and .1633 of this Section, and disposal by burial in soil.

(b) The licensee shall retain the records required by Paragraph (a) of this Rule until the agency terminates each pertinent license requiring the



record.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1643 RECORDS OF TESTING ENTRY CONTROL DEVICES**

(a) Each licensee or registrant shall maintain records of tests made pursuant to Subparagraph (a)(10) of Rule .1617 of this Section on entry control devices for very high radiation areas. These records shall include the date, time, and results of each such test of function.

(b) The licensee or registrant shall retain the records required by Paragraph (a) of this Rule for three years after the record is made.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1644 FORM OF RECORDS**

Each record required by this Section shall be legible throughout the specified retention period. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, shall include all pertinent information, such as stamps, initials, and signatures. The licensee or registrant shall maintain adequate safeguards against tampering with and loss of records.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1645 REPORTS OF THEFT OR LOSS OF LICENSED RADIOACTIVE MATERIAL**

(a) Each licensee shall report by telephone as follows:

- (1) immediately after its occurrence becomes known to the licensee, any lost, stolen, or missing licensed radioactive material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in Appendix C to 10 CFR §§ 20.1001 - 20.2401 under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas; or
- (2) within 30 days after the occurrence of any lost, stolen, or missing licensed

radioactive material becomes known to the licensee, all licensed radioactive material in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR §§ 20.1001 - 20.2401 that is still missing at this time.

(b) Telephone reports in Paragraph (a) of this Rule shall be made to the agency as specified in Rule .0111 of this Chapter.

(c) Each licensee required to make a report under Paragraph (a) of this Rule shall, within 30 days after making the telephone report, make a written report setting forth the following information:

- (1) a description of the licensed radioactive material involved, including kind, quantity, and chemical and physical form;
- (2) a description of the circumstances under which the loss or theft occurred;
- (3) a statement of disposition, or probable disposition, of the licensed radioactive material involved;
- (4) exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas;
- (5) actions that have been taken, or will be taken, to recover the material; and
- (6) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed radioactive material.

(d) Written reports shall be addressed to the agency as specified in Rule .0111 of this Chapter.

(e) Subsequent to filing the written report, the licensee shall also report any additional substantive information on the loss or theft within 30 days after the licensee learns of such information.

(f) The licensee shall prepare any report filed with the agency pursuant to this Rule so that names of individuals who may have received exposure to radiation are stated in a separate and detachable part of the report.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1646 NOTIFICATION OF INCIDENTS**

(a) Notwithstanding any other requirements for notification, each licensee or registrant shall immediately report any event involving a source of radiation possessed by the licensee or registrant that may have caused or threatens to cause any of the following conditions:



- (1) an individual to receive:
    - (A) a total effective dose equivalent of 25 rems (0.25 Sv) or more; or
    - (B) an eye dose equivalent of 75 rems (0.75 Sv) or more; or
    - (C) a shallow-dose equivalent to the skin or extremities of 250 rads (2.5 Gy) or more; or
  - (2) the release of radioactive material, inside or outside of a restricted area, except locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures, so that, had an individual been present for 24 hours, the individual could have received an intake five times the occupational annual limit on intake; or
  - (3) a loss of one working week or more of the operation of any facilities affected; or
  - (4) damage to property in excess of \$200,000.
- (b) Each licensee or registrant shall, within 24 hours of discovery of the event, report any event involving loss of control of any source of radiation possessed by the licensee or registrant that may have caused, or threatens to cause, any of the following conditions:
- (1) an individual to receive, in a period of 24 hours:
    - (A) a total effective dose equivalent exceeding five rems (0.05 Sv);
    - (B) an eye dose equivalent exceeding 15 rems (0.15 Sv); or
    - (C) a shallow-dose equivalent to the skin or extremities exceeding 50 rems (0.5 Sv);
  - (2) the release of radioactive material, inside or outside of a restricted area, except locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational annual limit on intake;
  - (3) a loss of one day or more of the operation of any facilities affected; or
  - (4) damage to property in excess of \$2,000.
- (c) The licensee or registrant shall prepare any report filed with the agency pursuant to this Rule so that names of individuals who have received

exposure to radiation or radioactive material are stated in a separate and detachable part of the report.

(d) Reports made by licensees or registrants in response to the requirements of this Rule shall be addressed to the agency as specified in Rule .0111 of this Chapter.

(e) The provisions of this Rule do not include doses that result from planned special exposures, that are within the limits for planned special exposures, and that are reported pursuant to Rule .1648 of this Section.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1647 REPORTS OF RADIATION EXCEEDING THE LIMITS**

(a) In addition to the notification required by Rule .1646 of this Section, each licensee or registrant shall submit a written report within 30 days after learning of any of the following occurrences:

- (1) any incident for which notification is required by Rule .1646 of this Section;
- (2) doses in excess of any of the following:
  - (A) the occupational dose limits for adults in Rule .1604 of this Section;
  - (B) the occupational dose limits for a minor in Rule .1609 of this Section;
  - (C) the limits for an embryo/fetus of a declared pregnant woman in Rule .1610 of this Section;
  - (D) the limits for an individual member of the public in Rule .1611 of this Section; or
  - (E) any applicable limit in the license;
- (3) levels of radiation or concentrations of radioactive material in:
  - (A) a restricted area in excess of any applicable limit in the license; or
  - (B) an unrestricted area in excess of 10 times any applicable limit set forth in this Section or in the license, whether or not involving exposure of any individual in excess of the limits in Rule .1611 of this Section.

(b) Each report required by Paragraph (a) of this Rule shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

- (1) estimates of each individual's dose;
- (2) the levels of radiation and concentrations of radioactive material involved;
- (3) the cause of the elevated exposures, dose rates, or concentrations; and
- (4) corrective steps taken or planned to

ensure against a recurrence, including the schedule for achieving conformance with applicable limits, generally applicable environmental standards, and associated license conditions.

(c) Each report filed pursuant to Paragraph (a) of this Rule shall include for each individual exposed: the name, social security account number, and date of birth. With respect to the limit for the embryo/fetus required by Rule .1610 of this Section, the identifying information shall be that of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable part of the report.

(d) Reports made by licensees or registrants in response to the requirements of this Rule shall be addressed to the agency as specified in Rule .0111 of this Chapter.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1648 REPORTS OF PLANNED SPECIAL EXPOSURES**

The licensee or registrant shall submit a written report to the agency within 30 days following any planned special exposure conducted in accordance with Rule .1608 of this Section, informing the agency that a planned special exposure was conducted and indicating the date the planned special exposure occurred and the information required by Rule .1639 of this Section.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1649 REPORTS OF INDIVIDUAL MONITORING**

The agency may require by license condition, registration condition, or order pursuant to Rule .0108 of this Chapter, annual reports of the results of individual monitoring carried out by the licensee or registrant for each individual for whom monitoring was required by Rule .1614 of this Section.

*Statutory Authority G.S. 104E-7(a)(2); 104E-12(a).*

#### **.1650 CLASSIFICATION/RADIOACTIVE WASTE FOR NEAR-SURFACE DISPOSAL**

(a) The following are definitions of and special requirements applicable to the different classes of waste:

- (1) "Class A Waste" means radioactive waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste shall meet the minimum requirements set forth in Rule .1651(a) of this Section. If Class A waste also meets the stability requirements set forth in Rule .1651(b) of this Section, it is not necessary to segregate the waste for disposal.
- (2) "Class B Waste" means radioactive waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste shall

meet both the minimum requirements and stability requirements set forth in Rule .1651 of this Section.

- (3) "Class C Waste" means radioactive waste that not only must meet more rigorous requirements on waste form to ensure stability, but also requires additional measures at the disposal facility to protect against inadvertent human intrusion. The physical form and characteristics of Class C waste shall meet both the minimum requirements and stability requirements set forth in Rule .1651 of this Section.

(b) If the waste contains only radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall determine the classification as follows:

- (1) If the concentration does not exceed 0.1 times the value in the table in Subparagraph (b)(5) of this Rule, the waste is Class A waste.
- (2) If the concentration exceeds 0.1 times the value in the table in Subparagraph (b)(5) of this Rule, the waste is Class C waste.
- (3) If the concentration exceeds the value in the table in Subparagraph (b)(5) of this Rule, the waste is not generally acceptable for near-surface disposal.
- (4) For wastes containing mixtures of radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall determine the concentration by the "sum of fractions rule" described in Paragraph (f) of this Rule.
- (5) The following is the table of long-lived radionuclides and concentrations for use in conjunction with waste classification rules of this Section:

<u>Radionuclide</u>	<u>Concentration</u>	
<u>carbon 14</u>	8	<u>curies/cubic meter</u>
<u>carbon 14 in activated metal</u>	80	<u>curies/cubic meter</u>
<u>nickel 59 in activated metal</u>	220	<u>curies/cubic meter</u>
<u>niobium 94 in activated metal</u>	0.2	<u>curies/cubic meter</u>
<u>technetium 99</u>	3	<u>curies/cubic meter</u>
<u>iodine 129</u>	0.08	<u>curies/cubic meter</u>
<u>radium, and alpha emitting transuranic radionuclides with half-lives greater than five years</u>	100	<u>nanocuries/gram</u>
<u>plutonium 241</u>	3,500	<u>nanocuries/gram</u>
<u>curium 242</u>	20,000	<u>nanocuries/gram</u>

(c) If the waste does not contain any of the radionuclides listed in the table in Subparagraph (b)(5) of this Rule, the licensee shall use the data for short-lived radionuclides and concentrations in the table in Subparagraph (c)(7) of this Rule to determine the classification as follows:

- (1) If the concentration does not exceed the value in column 1, the waste is Class A waste.
- (2) If the concentration exceeds the value in column 1, but does not exceed the value in column 2, the waste is Class B waste.
- (3) If the concentration exceeds the value in column 2, but does not exceed the value in column 3, the waste is Class C waste.
- (4) If the concentration exceeds the value in column 3, the waste is not generally acceptable for near-surface disposal.
- (5) For wastes containing mixtures of the radionuclides listed in the table in Subparagraph (c)(7) of this Rule, the total concentration shall be determined by the "sum of the fractions rule" described in Paragraph (f) of this Rule.
- (6) In determining the waste classifications in Subparagraphs (c)(1) through (5) of this Rule, the licensee may disregard any radionuclides not listed in the tables in Subparagraphs (b)(5) and (c)(7) of this Rule.
- (7) The following is the table of short-lived radionuclides for use in conjunction with the waste classification rules of this Section:



<u>radionuclide</u>	<u>concentration in curies/cubic meter</u>		
	<u>column 1</u>	<u>column 2</u>	<u>column 3</u>
<u>total of all radionuclides</u> <u>with less than 5-year</u> <u>half-life</u>	<u>700</u>	<u>see (c)(8)</u>	<u>see (c)(8)</u>
<u>hydrogen 3</u>	<u>40</u>	<u>see (c)(8)</u>	<u>see (c)(8)</u>
<u>cobalt 60</u>	<u>700</u>	<u>see (c)(8)</u>	<u>see (c)(8)</u>
<u>nickel 63</u>	<u>3.5</u>	<u>70</u>	<u>700</u>
<u>nickel 63 in activated metal</u>	<u>35</u>	<u>700</u>	<u>7000</u>
<u>strontium 90</u>	<u>0.04</u>	<u>150</u>	<u>7000</u>
<u>cesium 137</u>	<u>1</u>	<u>44</u>	<u>4600</u>

(8) There are no limits established for the radionuclides noted by "see (c)(8)" in the table in Subparagraph (c)(7) of this Rule for Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation or transportation, handling, and disposal will limit the concentrations for these wastes. The licensee shall classify these wastes as Class B, unless the concentrations of other radionuclides in the table in Subparagraph (c)(7) of this Rule dictate classification as Class C waste independent of these radionuclides.

(d) If waste contains a mixture of radionuclides, some of which are listed in the table in Subparagraph (b)(5) of this Rule and some of which are listed in the table in Subparagraph (c)(7) of this Rule, the licensee shall determine the classification and suitability for near-surface disposal as follows:

- (1) In accordance with Paragraph (b) of this Rule, determine the class and suitability for near-surface disposal for only the radionuclides in the mixture which are listed in the table in Subparagraph (b)(5) of this Rule;
- (2) In accordance with Paragraph (c) of this Rule, determine the class and suitability for near-surface disposal for only the radionuclides in the mixture which are listed in the table in Subparagraph (c)(7) of this Rule; and
- (3) Classify the waste as the more restrictive of the two determinations in Subparagraphs (d)(1) and (d)(2) of this Rule where "not generally suitable for near-surface disposal" is the most restrictive and "Class A" is the least restrictive.

(e) If waste contains none of the radionuclides listed in the tables in Subparagraphs (b)(5) and (c)(7) of this Rule, the licensee shall determine the waste to be Class A waste.

(f) When required in Paragraphs (b) and (c) of this Rule, the licensee shall use the "sum of the fractions rule" described in Subparagraph (f)(1) of this Rule.

- (1) For determining the classification for waste that contains a mixture of radionuclides, the licensee shall determine the sum of the fractions by dividing the concentration of each radionuclide by the appropriate limit, where the appropriate limits shall all be taken from the same column of the same table, and by adding the resultant values. The sum of the fractions for the column must be less than 1.0, if the waste class is to be determined by that column.

(2) The following is an example calculation:

- (A) A waste contains strontium-90 with a concentration of 50 curies per cubic meter and cesium-137 with a concentration of 22 curies per cubic meter.
- (B) Since the concentrations of both exceed the values in column 1 of the table in Subparagraph (c)(7) of this Rule, they must be compared with the values in column 2.
- (C) The strontium-90 fraction is 50/150 or 0.33, the cesium-137 fraction is 22/44 or 0.5, and the sum of the fractions is 0.83; therefore, since the sum is less than 1.0, the waste is Class B waste.

(g) Provided that there is reasonable assurance that an indirect method can be correlated with actual measurements, the licensee may determine radionuclide concentrations by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured or use of radioactive material accountability records. The licensee may average a radionuclide concentration over the volume of the waste or over the weight of the waste in the case of radionuclides with nanocurie per gram limits specified in the table in Subparagraph (b)(5) of this Rule.

*Statutory Authority G.S. 104E-7(a)(2).*

**.1651 RADIOACTIVE WASTE CHARACTERISTICS**

(a) The following are minimum requirements for all classes of radioactive waste and are intended to facilitate handling and to provide protection of health and safety of personnel at the radioactive waste disposal site. The licensee shall:

- (1) package wastes in conformance with the conditions of the license issued to the site operator to which the waste will be shipped to the extent that such conditions are more restrictive or in addition to the requirements contained in this Rule;
- (2) not package wastes for disposal in cardboard or fiberboard boxes;
- (3) package liquid waste in sufficient absorbent material to absorb twice the volume of the liquid;
- (4) limit the volume of freestanding liquid in solid wastes containing liquid to as little freestanding and non-corrosive liquid as is reasonably achievable, but in no case to more than one percent of the volume;
- (5) limit wastes to those which are not readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water;
- (6) except for radioactive gaseous waste packaged in accordance with Subparagraph (a)(8) of this Rule, limit wastes to those which do not contain, or are not capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste;
- (7) treat, prepare and package pyrophoric materials contained in waste in a manner to render them nonflammable;
- (8) package wastes in a gaseous form at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees C and limit the total activity to no more than 100 curies per container; and
- (9) treat wastes containing hazardous, biological, pathogenic, or infectious material to reduce the potential hazard from the non-radiological material to the maximum extent practicable.

(b) Stability is intended to ensure that the waste does not degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltra-

tion. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste. The licensee shall comply with the following requirements, which are intended to provide stability of waste, when the waste is either Class B or Class C waste.

- (1) The licensee shall ensure that the waste has structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.
- (2) Notwithstanding the provisions in Subparagraphs (a)(3) and (4) of this Rule, the licensee shall convert liquid wastes or wastes containing liquids into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable; but in no case more than one percent of the volume of the waste when the waste is in a disposable container designed to ensure stability; or 0.5 percent of the volume of the waste for waste processed to a stable form.
- (3) The licensee shall reduce void spaces within the waste and between the wastes and its package to the extent practicable.

*Statutory Authority G.S. 104E-7(a)(2).*

**.1652 LABELING**

The licensee shall clearly label each package of waste to identify the waste as Class A, Class B or Class C waste as determined in accordance with the provisions of Rule .1650 of this Section.

*Statutory Authority G.S. 104E-7(a)(2).*

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*Notice is hereby given in accordance with G.S. 150B-21.2 that EHNH - Commission for Health Services intends to repeal rule cited as 15A NCAC*



16A .0401.

*The proposed effective date of this action is April 1, 1993.*

*The public hearing will be conducted at 1:30 p.m. on January 11, 1993 at the Highway Building, First Floor Auditorium, 1 South Wilmington Street, Raleigh, North Carolina.*

*Reason for Proposed Action: It is necessary to repeal this rule to conform with the adoptions that were published as 15A NCAC 16A .1101 - .1108; .1150 - .1151; .1201 - .1209 in the December 1, 1992 North Carolina Register.*

*Comment Procedures: All persons interested in these matters are invited to attend the public hearing. Written comments may be presented at the public hearing or submitted to John P. Barkley, Department of Justice, P.O. Box 629, Raleigh, NC 27602-0629, (919) 733-4618. If you desire to speak at the public hearing, notify John P. Barkley at least three days prior to the public hearing. Oral presentation lengths may be limited depending on the number of people that wish to speak at the public hearing. Only persons who have made comments at a public hearing or who have submitted written comments will be allowed to speak at the Commission meeting. Comments made at the Commission meeting must either clarify previous comments or address proposed changes from staff pursuant to comments made during the public hearing process.*

IT IS VERY IMPORTANT THAT ALL INTERESTED AND POTENTIALLY AFFECTED PERSONS, GROUPS, BUSINESSES, ASSOCIATIONS, INSTITUTIONS, OR AGENCIES MAKE THEIR VIEWS AND OPINIONS KNOWN TO THE COMMISSION FOR HEALTH SERVICES THROUGH THE PUBLIC HEARING AND COMMENT PROCESS, WHETHER THEY SUPPORT OR OPPOSE ANY OR ALL PROVISIONS OF THE PROPOSED RULES. THE COMMISSION MAY MAKE CHANGES TO THE RULES AT THE COMMISSION MEETING IF THE CHANGES COMPLY WITH G.S. 150B-21.2(f).

*Editor's Note: This Rule was filed as a temporary repeal effective on December 1, 1992 for a period of 180 days or until the permanent rule*

*becomes effective, whichever is sooner.*

## CHAPTER 16 - ADULT HEALTH

### SUBCHAPTER 16A - CHRONIC DISEASE

#### SECTION .0400 - CANCER PROGRAM

##### .0401 DEFINITIONS FOR BREAST AND CERVICAL CANCER SERVICES

~~(a) The Comprehensive Breast and Cervical Cancer Control Program provides:~~

- ~~(1) breast cancer screening and follow-up services; or~~
- ~~(2) cervical cancer screening and follow-up services;~~

~~(b) The cancer program provides financial assistance for the medical care of indigent patients requiring inpatient or outpatient:~~

- ~~(1) diagnostic services for cancer; or~~
- ~~(2) treatment services for cancer.~~

~~(c) The following definitions shall apply throughout this Section:~~

- ~~(1) "breast cancer screening services" means a clinical breast examination; a mammogram in accordance with the American Cancer Society Guidelines for the Cancer-related Check up: Recommendations; instruction in breast self-examination; and documentation of screening test results in the patient's medical record and notification to the patient of the screening test results. The American Society Guidelines for the Cancer-related Check up: Recommendations is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Adult Health, 1330 St. Mary's Street, Raleigh, North Carolina. Copies may be obtained from the Division of Adult Health, Department of Environment, Health, and Natural Resources, PO Box 27687, Raleigh, North Carolina 27611-7687 at a cost set by that office.~~

- ~~(2) "cervical cancer screening services" means a pelvic examination; a Pap test in accordance with the American Society Guidelines for the cancer-related check up: Recommendations and documentation of the screening test results in the patient's medical record and~~



notification to the patient of the screening test results.

(3) ~~"follow up for breast cancer screening services" means a repeat mammogram and, when medically appropriate, a diagnostic mammogram.~~

(4) ~~"follow up for cervical cancer screening services" means a repeat Pap smear and, when medically appropriate, colposcopy directed biopsy.~~

~~(d) The cancer program and The Comprehensive Breast and Cervical Cancer Control Program are administered by the Division of Adult Health, Department of Environment, Health, and Natural Resources, P.O. Box 27687, Raleigh, NC 27611-7687.~~

Statutory Authority G.S. 130A-205; Sec. 301 & 317, Public Health Services Act, as amended.

## TITLE 21 - OCCUPATIONAL LICENSING BOARD

*Notice is hereby given in accordance with G.S. 150B-21.2 that the Division of Facility Services (NC Board of Medical Examiners) intends to amend rules cited as 21 NCAC 32H .0101 - .0102, .0201 - .0202, .0301 - .0303, .0401 - .0407, .0501 - .0505, .0601 - .0602, .0701, .0801 - .0802, .0901, .1001 - .1004.*

*The proposed effective date of this action is April 1, 1993.*

*The public hearing will be conducted at 1:30 p.m. on January 15, 1993 at the Council Building, Room 201, 701 Barbour Drive, Raleigh, NC 27603.*

*Reason for Proposed Action: To amend Advanced Life Support (ALS) Rules to reflect changes in the standards of care, definitions, and certification procedures related to prehospital care.*

*Comment Procedures: Written comments should be submitted to Jackie R. Sheppard, APA Coordinator, 701 Barbour Drive, Raleigh, NC 27603, by January 14, 1993.*

## CHAPTER 32 - BOARD OF MEDICAL EXAMINERS

## SUBCHAPTER 32H - EMERGENCY MEDICAL SERVICES ADVANCED LIFE SUPPORT

### SECTION .0100 - GENERAL INFORMATION

#### .0101 AUTHORITY: INTENT AND GOALS

(a) In establishing and approving rules pursuant to G.S. 143-514, it is the intent of the Board of Medical Examiners and the Department of Human Resources to respond to an ongoing need for critical shortage of professionally trained educated medical and nursing personnel for the delivery of fast, efficient to deliver effective emergency medical care to the sick and injured at the scene of a medical emergency and during transport to a health care facility.

(b) Improved emergency medical services are required to reduce the mortality and morbidity rate during the first critical minutes immediately following trauma or the onset of a medical emergency ~~such as an acute myocardial infarction~~. Within the goals of the Board of Medical Examiners and the Department of Human Resources in establishing these rules is the provision of the best and most economical delivery of emergency medical care.

Statutory Authority G.S. 143-514.

#### .0102 DEFINITIONS

The following definitions apply in this Subchapter:

- (1) "Audit and review panel" means a committee composed of representatives of the medical, nursing, administrative and prehospital care service elements of an mobile intensive care advanced life support (ALS) program that has the responsibility for the on-going monitoring and evaluation of the program. The chairman of the panel shall be a physician and a majority of the voting members shall be physicians.
- (2) "Emergency medical technician-advanced intermediate (EMT-AI)" means a person specially ~~trained~~ educated in a program approved by the Office of Emergency Medical Services who has been certified or recertified by the Board of Medical Examiners as qualified to render the services enumerated in Rule .0406 of this Subchapter.

- (3) "Emergency medical technician-defibrillation (EMT-D)" means a person specially ~~trained~~ educated in a program approved by the Office of Emergency Medical Services who has been certified or recertified by the Board of Medical Examiners as qualified to render the services enumerated in Rule .0407 of this Subchapter.
- (4) "Emergency medical technician-intermediate (EMT-I)" means a person specially ~~trained~~ educated in a ~~training~~ program approved by the Office of Emergency Medical Services who has been certified or recertified by the Board of Medical Examiners as qualified to render the services enumerated in Rule .0403 of this Subchapter.
- (5) "Emergency medical technician-paramedic (EMT-P)" means a person specially ~~trained~~ educated in ~~emergency medical care~~ in a ~~training~~ program approved by the Office of Emergency Medical Services who has been certified or recertified by the Board of Medical Examiners as qualified to render the services enumerated in Rule .0402 of this Subchapter.
- (6) "~~Field technician~~ Advanced Life Support Professional (ALS Professional)" means a certified emergency medical technician-defibrillation, emergency medical technician-intermediate, emergency medical technician-advanced intermediate, or emergency medical technician-paramedic whether working on a paid or volunteer basis.
- (7) "Medical control " means the management and accountability for the medical care aspects of an ~~mobile intensive care~~ ALS program. It entails physician direction and oversight of the initial education and continuing training education of the ~~field technicians~~ ALS professionals; development and monitoring of both operational and treatment protocols; evaluation of the medical care rendered by the ~~mobile intensive care~~ ALS personnel; participation in system evaluation; and directing, by radio or telephone, the medical care rendered by the ~~field technicians~~ ALS professionals.
- (8) "Medical director" means the physician responsible for the medical aspects of the management of an ~~mobile intensive care~~ ALS program.
- (9) "Mobile intensive care nurse (MICN)" means a registered nurse who has been approved or reapproved by the Board of Medical Examiners to issue instructions to ~~field technicians~~ ALS professionals in accordance with protocols approved by the sponsor hospital and under the direction of the ~~responsible physician~~ medical director.
- (10) "~~Mobile intensive care~~ Advanced life support program (ALS program)" means a program of prehospital emergency medical care whereby definitive medical care is delivered to a victim of sudden injury or illness by appropriately ~~trained~~ educated and certified ~~prehospital technicians~~ ALS professionals operating under the direction of a sponsor hospital. All ~~mobile intensive care~~ ALS programs shall conform to the criteria established in the rules contained in this Subchapter and must be approved by the Office of Emergency Medical Services.
- (11) "Mobile intensive care unit" means any emergency vehicle staffed by ~~field technicians~~ ALS professionals and equipped in accordance with standards established by the North Carolina Medical Care Commission as found in 10 NCAC 3M .0202, .0203, .0204, ~~and~~ .0205, ~~and~~ .0207 to provide remote intensive care to sick and injured persons at the scene of a medical emergency and during transport to a health care facility.
- (12) "Oral interview panel" means a committee ~~that is~~ composed of physicians, ~~and~~ nurses ALS professionals certified at or above the level of application and other medical personnel involved in the ALS program, whose The responsibility of the oral interview panel is to interview each applicant for certification, ~~or approval~~ either collectively or individually, and evaluate his suitability to perform successfully at the certification level sought. The panel must be approved by the medical director and consist of a minimum of three members including one physician and one ALS professional with a majority being physicians appointed by the medical director of the mobile intensive care program in which the oral interview panel is functioning.
- (13) "Office of Emergency Medical Services" means an official agency of the State of North Carolina, Department of Human

Resources, that serves in an administrative capacity to the Board of Medical Examiners.

- (14) "Physician" means an individual licensed by the Board of Medical Examiners to practice medicine in the State of North Carolina.
- (15) "Sponsor hospital" means a hospital and its medical staff which actively participates in an ~~mobile intensive care~~ ALS program and has responsibility for providing or ensuring the provision of initial education, continuing education, training education and medical ~~direction control~~ to the ~~field technicians~~ ALS professionals. The sponsor hospital shall meet criteria adopted by the Board of Medical Examiners and be approved by the Office of Emergency Medical Services.
- (16) "Study project" means a proposal involving exceptions to the provisions of this Subchapter for the purpose of evaluating the efficiency and effectiveness of alternate means of providing ~~mobile intensive care~~ ALS services to the citizens of North Carolina.
- (17) "Blind insertion airway device" means an airway adjunct designed to be used as a pharyngeal or esophageal device which is inserted without the use of direct visualization. For the purposes of these Rules, this definition does not include esophageal obturator airways, esophageal gastric tube airways, or endotracheal tubes.

Statutory Authority G.S. 143-514.

## SECTION .0200 - PROGRAM STANDARDS AND APPROVAL

### .0201 ADVANCED LIFE SUPPORT PROGRAM CRITERIA

~~Mobile intensive care~~ ALS programs shall cover a defined service area of generally not less than one county and must have the following:

- (1) a plan, as specified in Rule .0302 of this Subchapter, for the coordination of the sponsor hospitals participating in the program;
- (2) a designated medical director who shall be responsible either directly or by clearly established delegation to the other licensed physicians at the sponsor hospital(s) for the following:
  - (a) the initial establishment and periodic

- updating of treatment protocols;
  - (b) medical supervision of the selection, initial ~~training~~ education, continuing education and performance of the ~~field technicians~~ ALS professionals and MICN personnel;
  - (c) the medical review of the care provided to patients;
  - (d) keeping the care provided ~~up-to-date~~ current with advanced biomedical science and technology; and
  - (e) participation in the overall management of the ~~mobile intensive care~~ ALS program in liaison with nursing, technical, and administrative staff of the program. The medical director has the authority to suspend temporarily, pending ~~formal~~ due process review, an ~~field technician~~ ALS professional or MICN from further participation in the ~~mobile intensive care~~ ALS program when in his determination the activities or medical care rendered by such personnel may be detrimental to the care of the patient;
- (3) an organized and defined system of communications that provides for:
  - (a) public access through a central ~~medical emergency~~ communications center preferably utilizing a single, well publicized ~~telephone number~~;
  - (b) dispatch and coordination of all resources (manpower, vehicles and equipment) essential to the effective and efficient management of requests for emergency medical assistance;
  - (c) communications linkages for interacting with other public safety agencies to obtain additional resources required to support emergency medical services activities; and
  - (d) two-way voice communications as specified in Rule .0303 (a) (2) (H) of this Subchapter between the ~~field technicians~~ ALS professionals and the personnel at the sponsor hospital responsible for directing the medical treatment rendered by the ~~technicians~~ ALS professionals;
- (4) adequate certified manpower to ensure that the program will be continuously available on a 24 hour-a-day basis; and
- (5) an audit and review panel that meets at a minimum on a ~~regular~~ quarterly basis and whose responsibilities include at least the following:



- (a) reviewing ~~mobile intensive care~~ ALS cases to determine the appropriateness of the medical care rendered by all personnel involved in the cases;
- (b) making recommendations to the medical director for the continuing education program for ~~mobile intensive care~~ ALS personnel; and
- (c) reviewing the policies, procedures and protocols ~~for~~ of the mobile intensive care ALS program and making recommendations for improvement.

*Statutory Authority G.S. 143-514.*

## **.0202 PROGRAM APPROVAL**

(a) A complete proposal to establish or expand an mobile intensive care ALS program must be submitted to the Office of Emergency Medical Services at least 60 days prior to the planned field implementation or expansion of the program.

(b) The proposal must demonstrate that the program meets the standards found in Rule .0201 of this Section and must follow the format specified by the Office of Emergency Medical Services.

*Statutory Authority G.S. 143-514.*

## **SECTION .0300 - HOSPITAL UTILIZATION**

### **.0301 HOSPITAL INVOLVEMENT**

Hospital and hospital medical staff participation in the establishment, operation and ongoing evaluation of ~~mobile intensive care~~ ALS programs is essential. The role of each participating hospital within the service area of an ~~mobile intensive care~~ ALS program must be defined, and the operational procedures outlined and agreed to by all participants so as to help ensure proper coordination. ~~Sponsor Hospitals approved by the Office of Emergency Medical Services as a sponsor hospital~~ may provide services utilizing ~~mobile intensive care~~ ALS personnel for the delivery of emergency medical care to the sick and injured at the scene of an emergency and during training education of the ~~technicians~~ ALS professionals. While functioning pursuant to these rules, the ~~field technicians~~ ALS professionals shall be under the control and supervision of the physician or approved MICN of the sponsor hospital from which they are receiving instructions.

*Statutory Authority G.S. 143-514.*

### **.0302 PLAN FOR PARTICIPATING**

## **HOSPITALS**

(a) Each ~~mobile intensive care~~ ALS program shall have a written plan which outlines the roles and responsibilities of each of the sponsor hospitals that will function ~~as a sponsor hospital~~ in the program. The plan shall allow for the participation of all hospitals within the service area of the ~~mobile intensive care~~ ALS program that meet the sponsor hospital criteria even though one or more hospitals may choose not ~~want~~ to participate at the initiation of the program. One hospital shall be designated as being administratively responsible for the ~~mobile intensive care~~ ALS program and as such have overall responsibility for administration and coordination of the program and ensuring compliance with the requirements of this Subchapter. Changes in this designation must be approved by the Office of Emergency Medical Services.

(b) The plan shall be approved by the chief of staff and chief executive officer of each participating hospital and shall include at a minimum:

- (1) a description of the role each hospital is to have in the ~~mobile intensive care~~ ALS program;
- (2) a description of the operational procedures to be followed by the ~~mobile intensive care~~ ALS professionals and MICN personnel to obtain medical direction;
- (3) the treatment protocols to be utilized in the program and a description of the procedure to be followed to modify them;
- (4) a description of how the audit and review function will be established and carried out;
- (5) a description of the methodology for providing continuing education for the ~~mobile intensive care~~ ALS professionals and MICN personnel; and
- (6) a description of the mechanism for providing physician backup to the MICN personnel in programs where they are utilized.

*Statutory Authority G.S. 143-514.*

### **.0303 SPONSOR HOSPITAL**

(a) To be approved by the Office of Emergency Medical Services as a sponsor hospital, a hospital must:

- (1) demonstrate that it will function as part of a ~~mobile intensive care~~ ALS program in accordance with a plan meeting the requirements of Rule .0302 of this

Section;

- (2) meet all of the following criteria:
  - (A) ~~have an active cardiac care unit or intensive care unit of at least four beds if the mobile intensive care program is functioning at the EMT-P level;~~
  - (BA) have, at a minimum, MICN coverage available 24 hours per day in the emergency department or critical care unit for communication with the field technicians ALS professionals;
  - (CB) ensure 24 hour availability of a registered nurse who is primarily responsible to meet ~~mobile intensive care~~ ALS patients upon arrival at the emergency department;
  - (CC) have a physician available to provide backup to the MICN issuing instructions to the ~~field technicians~~ ALS professionals;
  - (CD) appoint a registered nurse to act as a liaison between the ~~field technicians~~ ALS professionals and the hospital. The nurse liaison must meet the requirements set forth in the "Guidelines for the Selection and Performance of the Emergency Medical Services Nurse Liaison" dated October 1990 and incorporated herein by reference including subsequent amendments and editions;
  - (CE) appoint a physician to serve as a medical director or liaison to the medical director of the ~~mobile intensive care~~ ALS program;
  - (CF) have written support letters for the program from both the chief executive officer and chief of staff of the hospital;
  - (CG) establish or participate in an audit and review panel that meets regularly at a minimum quarterly;
  - (CH) have access to and operate a communications system that will provide, at a minimum, two-way voice communications to ~~mobile intensive care field technicians~~ ALS professionals anywhere in the service area of the ~~mobile intensive care~~ ALS program. The program medical director must verify that, in his opinion, the communications system is satisfactory for on-line medical control. The communications system shall provide for

communication from the onset of patient treatment through the delivery of the patient at the medical treatment facility. The communications system shall be operational 24 hours per day and shall allow for initiation of communication by either the ~~field technicians~~ ALS professionals or by the sponsor hospital that is directing the patient care procedures and treatment. Approved first responder organizations functioning at the EMT-D level of care as part of approved ALS programs are exempt from the requirements of this Paragraph;

- (JI) provide orientation regarding the ~~mobile intensive care~~ ALS program to appropriate medical and nursing personnel at the hospital;
- (KJ) have treatment protocols adopted by the medical staff covering the performance of ~~field technicians~~ ALS professionals which are consistent with those being used throughout the ~~mobile intensive care~~ ALS program;
- (LK) provide or ensure provision of a continuing education program ~~of at least four hours per month approved by the Office of Emergency Medical Services for mobile intensive care~~ ALS professionals and MICN personnel; and
- (ML) provide or ensure provision of supervised clinical experience for those participating in the training educational program.

(b) In addition, the sponsor hospital designated as administratively responsible for the ~~mobile intensive care~~ ALS program must have a physician in the emergency department 24 hours a day who is available to give orders and medical direction to the ~~field technicians~~ ALS professionals. For ~~mobile intensive care~~ ALS programs that do not have a participating hospital within their area with a physician in the emergency department 24 hours a day, this requirement may be met by the sponsor hospital designated as administratively responsible for the program defining a mechanism to provide physician backup to the MICN and medical control to the ~~field technicians~~ ALS professionals.

Statutory Authority G.S. 143-514.

#### SECTION .0400 - EDUCATION AND PERFORMANCE OF ADVANCED LIFE

## SUPPORT PERSONNEL

### .0401 EDUCATIONAL PROGRAMS

(a) An ~~training~~ educational program intended to qualify personnel as ~~field technicians~~ ALS professionals or MICNs must be approved by the Office of Emergency Medical Services. Proposals for ~~training~~ educational programs must be submitted for approval at least 20 days prior to the date on which ~~training the~~ program is scheduled to start.

(b) ~~Field technician trainees~~ ALS professional students may perform the services and functions permitted by the rules contained in this Subchapter for their certification level during:

- (1) the clinical ~~training~~ educational portion of an approved ~~training~~ educational program while caring for patients in the sponsor hospital or other facility approved by the medical director and the Office of Emergency Medical Services, provided that the related didactic work has been completed and that they are under the direct supervision of a physician or registered nurse;
- (2) a field internship provided that:
  - (A) the related didactic ~~and clinical~~ work of an approved ~~training~~ educational program has been completed;
  - (B) they are directly supervised and accompanied by an ~~field technician~~ ALS professional certified at a like or higher certification level or a physician; and
  - (C) the internship is conducted within an ~~mobile intensive care~~ ALS program approved at the same or higher certification level ~~for which the personnel are being trained of the educational program~~.

Statutory Authority G.S. 143-514.

### .0402 EMERGENCY MEDICAL TECHNICIAN-PARAMEDIC PERFORMANCE

EMT-Ps ~~trained~~ educated in approved ~~training~~ programs, certified by the Board of Medical Examiners to perform medical acts, and functioning in an approved ~~mobile intensive care~~ ALS program may do any of the following in accordance with the protocols established by their sponsor hospital:

- (1) While at the scene of a medical emergency where the capability of continuous two-way voice communication, ~~or the~~

~~capability of continuous two-way voice communication supplemented by a telemetered electrocardiogram~~, is maintained with a physician or approved MICN located in the sponsor hospital, and upon order of such physician or MICN:

- (a) establish an intravenous line in a peripheral vein and administer any ~~intravenous solution approved by the Board of Medical Examiners for use by EMT-Ps of the following intravenous solutions:~~
  - (i) Dextrose 5% in Water;
  - (ii) Lactated Ringers Solution;
  - (iii) Normal Saline;
  - (iv) Dextrose 5% Lactated Ringers;
  - (v) Dextrose 5% 1/2 Normal Saline;
  - (vi) Dextrose 5% 1/4 Normal Saline;
  - (vii) Dextrose 10% in Water; and
  - (viii) Dextrose 5% Normal Saline;
- (b) obtain blood for laboratory analysis;
- (c) administer ~~parenterally, orally, sublingually, or topically in an approved fashion via an appropriate route~~ any of the following drugs medications approved by the Board of Medical Examiners for use by EMT-Ps:

#### ADVANCED CARDIAC LIFE SUPPORT MEDICATIONS:

- (i) Atropine;
- (ii) Bretylium;
- (iii) Calcium Chloride/Gluconate;
- (iv) Dobutamine;
- (v) Epinephrine 1:1000;
- (vi) Epinephrine 1:10,000;
- (vii) Isoproterenol;
- (viii) Lidocaine;
- (ix) Sodium Chloride Injection;
- (x) Procainamide;
- (xi) Sodium Bicarbonate;

#### ANESTHETICS:

- (i) Lidocaine 1% or 2%;
- (ii) Procaine 1% or 2%;

#### CARDIORESPIRATORY AGENTS:

- (i) Adenosine;
- (ii) Albuterol (by inhalation);
- (iii) Aminophylline;
- (iv) Furosemide;
- (v) Isoetharine (by inhalation);
- (vi) Metaproterenol (by inhalation);
- (vii) Nifedipine;
- (viii) Nitroglycerin Sublingual;
- (ix) Nitroglycerin Paste;
- (x) Propranolol;



- (xi) Racemic Epinephrine (by inhalation);
- (xii) Terbutaline (injectable or by inhalation);
- (xiii) Verapamil;

OTHER MEDICATIONS:

- (i) Diazepam Injectable;
- (ii) Diphenhydramine Injectable;
- (iii) Dextrose 50%;
- (iv) Glucagon (Intramuscular or Subcutaneous);
- (v) Heparin (for use with heparin locks);
- (vi) IV Steroid Preparations;
- (vii) Mannitol;
- (viii) Naloxone;
- (ix) Phenytoin Injectable;
- (x) Promethazine;
- (xi) Thiamine (intramuscular or intravenous);

ANALGESICS:

- (i) Meperidine;
- (ii) Morphine Sulfate;
- (iii) Nalbuphine Hydrochloride;
- (iv) Nitrous Oxide (via respiratory route);
- (d) ~~perform pulmonary ventilation by means of an esophageal obturator airway, esophageal gastric tube airway, pharyngo-tracheal lumen airway or endotracheal tube;~~
- (ed) ~~perform defibrillation or cardioversion;~~
- (fe) ~~use gas-powered or hand-powered nebulizers;~~
- (gf) ~~decompress a tension pneumothorax by use of a catheter-flutter-valve device;~~
- (hg) ~~use positive end expiratory pressure respirators;~~
- (ih) ~~perform cricothyrotomy for relief of upper airway obstruction;~~
- (ji) ~~perform gastric suction by intubation;~~
- (kj) ~~perform urinary catheterization;~~
- (lk) ~~perform external cardiac pacing; and~~
- (ml) ~~establish an intraosseous infusion line in appropriate patients under 60 months of age and use it to administer any appropriate intravenous fluid or drugs medication approved by the Board of Medical Examiners for use by EMT-Ps, specified in this Rule;~~
- (m) administer fluids and medications using previously established indwelling semi-permanent central venous catheters; and
- (n) place and maintain heparin or saline locks.
- (2) When confronted with a pulseless non-breathing patient life threatening clinical situations as defined in the patient care

protocols established by the sponsor hospital of the ALS program and approved by the Office of Emergency Medical Services, perform as necessary under standing orders any of the following prior to contacting the sponsor hospital: cardiopulmonary resuscitation, defibrillation, pulmonary ventilation by means of an esophageal obturator airway, esophageal gastric tube airway, pharyngo-tracheal lumen airway or endotracheal tube, and administer appropriate cardiac drugs.

- (a) cardiopulmonary resuscitation;
- (b) defibrillation;
- (c) pulmonary ventilation by means of a blind insertion airway device or endotracheal tube;
- (d) establish an intravenous line in a peripheral vein. If the intravenous line is not successfully established after two attempts, the EMT-P must contact the sponsor hospital prior to making another attempt;
- (e) administer the following medications:
  - (i) Albuterol (by inhalation);
  - (ii) Bretylium;
  - (iii) Epinephrine 1:1000;
  - (iv) Epinephrine 1:10,000;
  - (v) Furosemide;
  - (vi) Metaproterenol (by inhalation);
  - (vii) Nitroglycerin;
  - (viii) Terbutaline (injectable or by inhalation);
  - (ix) Atropine;
  - (x) Dextrose 50%;
  - (xi) Lidocaine;
  - (xii) Naloxone; and
  - (xiii) Sodium Bicarbonate.
- (3) Establish an intravenous line in a peripheral vein and administer any intravenous solution approved by the Board of Medical Examiners for use by EMT-Ps under standing orders prior to contacting the sponsor hospital. If the intravenous line is not successfully established after two attempts, the EMT-P must contact the sponsor hospital prior to making another attempt. When transporting from one medical facility to another a patient who is receiving intravenous therapy begun at the transferring facility, and where the capability of continuous two-way voice communication is maintained with a physician or approved MICN located in

the sponsor hospital, and upon order of such physician or MICN, EMT-Ps may maintain intravenous lines for the following medications:

- (a) IV Antibiotics;
- (b) Whole Blood and Components;
- (c) Heparin Drip;
- (d) Magnesium Sulfate Drip;
- (e) Nitroglycerin Drip;
- (f) Potassium Chloride;
- (g) Urokinase;
- (h) Streptokinase; and
- (i) Tissue Plasminogen Activator.

Statutory Authority G.S. 143-514.

#### **.0403 EMERGENCY MEDICAL TECHNICIAN-INTERMEDIATE PERFORMANCE**

EMT-I's ~~trained~~ educated in approved ~~training~~ programs, certified by the Board of Medical Examiners to perform medical acts, and functioning in an approved ~~mobile intensive care~~ ALS program may do any of the following in accordance with the protocols established by their sponsor hospital:

- (1) While at the scene of a medical emergency where the capability of continuous two-way voice communication is maintained with a physician or approved MICN located in the sponsor hospital, and upon order of such physician or MICN:
  - (a) establish an intravenous line in a peripheral vein and administer any of the following solutions ~~by intravenous solutions infusion~~:
    - (i) Dextrose 5 % in Water;
    - (ii) Lactated Ringers Solution; and
    - (iii) Normal Saline; ~~and~~
    - (iv) ~~dextrose 50 percent~~;
  - (b) perform pulmonary ventilation by means of an ~~esophageal obturator airway, esophageal gastric tube airway or pharyngeal-tracheal lumen airway~~ blind insertion airway device;
  - (c) obtain blood for laboratory analysis; ~~and~~
  - (d) administer ~~subcutaneously 1:1000 epinephrine to treat systemic allergic reactions~~; in an approved fashion via an appropriate route any of the following medications:
    - (i) Dextrose 50%;
    - (ii) Epinephrine 1:1000;

- (iii) Albuterol;
- (iv) Heparin (for use with heparin locks);
- (v) Metaproterenol (by inhalation);
- (vi) Terbutaline (injectable or by inhalation); and
- (vii) Naloxone;

- (e) place and maintain heparin or saline locks; and
  - (f) use gas-powered or hand-powered nebulizers.
- (2) When confronted with ~~a pulseless, non-breathing patient~~ life threatening clinical situations as defined in the patient care protocols established by the sponsor hospital of the ALS program and approved by the Office of Emergency Medical Services, perform as necessary under standing orders any of the following prior to contacting the sponsor hospital: ~~cardio-pulmonary resuscitation including, when appropriate, defibrillation by means of an automatic or semi-automatic defibrillator, pulmonary ventilation by means of an esophageal obturator airway, esophageal gastric tube airway or pharyngeal-tracheal lumen airway and establish an intravenous line in a peripheral vein when assisting an EMT Paramedic~~
    - (a) cardiopulmonary resuscitation;
    - (b) defibrillation by means of an automatic or semi-automatic defibrillator;
    - (c) pulmonary ventilation by means of a blind insertion airway device or endotracheal tube only when confronted with a pulseless non-breathing patient;
    - (d) establish an intravenous line in a peripheral vein. If the intravenous line is not successfully established after two attempts, the EMT-I must contact the sponsor hospital prior to making another attempt;
    - (e) administer the following medications:
      - (i) Albuterol;
      - (ii) Dextrose 50%;
      - (iii) Epinephrine 1:1000;
      - (iv) Metaproterenol (by inhalation);
      - (v) Terbutaline (injectable or by inhalation); and
      - (vi) Naloxone.
  - (3) When in the presence of an EMT-P or EMT-AI, perform any act listed in this Rule upon direction of the EMT-P or EMT-AI as defined by the patient care protocols of the ALS program and approved by the Office of Emergency Med-

ical Services.

*Statutory Authority G.S. 143-514.*

**.0404 MOBILE INTENSIVE CARE  
NURSE PERFORMANCE**

MICNs currently approved by the Board of Medical Examiners, while functioning under the direction of a physician in the sponsor hospital of an approved ~~mobile intensive care~~ ALS program, may direct ~~field technicians~~ ALS professionals to perform actions as defined in the adopted patient care protocols established by the sponsor hospital for that ~~mobile intensive care~~ ALS program. All orders issued to ALS professionals by MICNs must be co-signed by a physician.

*Statutory Authority G.S. 143-514.*

**.0405 ALS PROFESSIONAL  
PERFORMANCE IN THE  
PRESENCE OF A PHYSICIAN**

When there is a physician licensed to practice medicine present at the scene of a medical or traumatic emergency and that physician chooses to assume medical responsibility for the patient, the ~~field technicians~~ ALS professionals at the scene shall:

- (1) require and allow that physician to contact the sponsor hospital and the physician who receives the call at the sponsor hospital shall make the decision as to whether or not the physician on the scene is to be allowed to take charge of the patient and give orders;
- (2) if the physician on the scene is allowed to take charge, permit that physician's orders to take precedence over all other procedures or protocols normally utilized within that ~~mobile intensive care~~ ALS program; and
- (3) follow the orders of the physician within the limits enumerated in Rules .0402, .0403, .0406 and .0407 of this Section.

*Statutory Authority G.S. 143-514.*

**.0406 EMERGENCY MEDICAL  
TECHNICIANS: ADVANCED  
INTERMEDIATE PERFORMANCE**

EMT-advanced intermediates ~~trained~~ educated in approved ~~training~~ programs, certified by the Board of Medical Examiners to perform medical acts and functioning in an approved ~~mobile intensive care~~ ALS program, may do any of the following in

accordance with the protocols established by their sponsor hospital:

- (1) While at the scene of a medical emergency where the capability of continuous two-way voice communication is maintained with a physician or approved MICN located in the sponsor hospital, and upon order of such physician or MICN:
  - (a) establish an intravenous line in a peripheral vein and administer any ~~intravenous solution approved by the Board of Medical Examiners for use by EMT-As of the following intravenous solutions:~~
    - (i) Dextrose 5% in Water;
    - (ii) Lactated Ringer's Solution;
    - (iii) Normal Saline;
    - (iv) Dextrose 5% 1/2 Normal Saline;
    - (v) Dextrose 5% 1/4 Normal Saline;
    - (vi) Dextrose 5% Normal Saline
    - (vii) Dextrose 10% in Water; and
    - (viii) Dextrose 5% Lactated Ringer's Solution;
  - (b) obtain blood for laboratory analysis;
  - (c) administer ~~parenterally, orally, sublingually, or topically in an approved fashion via an appropriate route~~ any of the following drugs medications approved by the Board of Medical Examiners for use by EMT-As:
    - (i) Albuterol (by inhalation);
    - (ii) Atropine;
    - (iii) Dextrose 50%;
    - (iv) Epinephrine 1:1000;
    - (v) Epinephrine 1:10,000;
    - (vi) Heparin (for use with heparin locks);
    - (vii) Lidocaine;
    - (viii) Metaproterenol (by inhalation);
    - (ix) Naloxone;
    - (x) Sodium Bicarbonate; and
    - (xi) Terbutaline (injectable or by inhalation);
  - (d) ~~administer subcutaneously 1:1000 epinephrine to treat systemic allergic reactions;~~
  - (ed) perform pulmonary ventilation by means of an ~~esophageal obturator airway, esophageal-gastric tube airway, pharyngeal-tracheal lumen airway blind insertion airway device~~ or endotracheal tube;
  - (fe) perform defibrillation;
  - (gf) perform external cardiac pacing; and
  - (hg) establish an intraosseous infusion line in



- appropriate patients under 60 months of age and administer any appropriate intravenous fluid or ~~drugs~~ medications approved by the Board of Medical Examiners for use by EMT-AIs;
- (h) administer fluids and medications using previously established indwelling semi-permanent central venous catheters;
  - (i) use positive end expiratory pressure respirators; and
  - (j) place and maintain heparin or saline locks;
  - (k) use gas-powered or hand-powered nebulizers.
- (2) When confronted with a ~~pulseless, non-breathing~~ patient life threatening clinical situations as defined in the patient care protocols established by the sponsor hospital of the ALS program and approved by the Office of Emergency Medical Services, perform as necessary under standing orders any of the following prior to contacting the sponsor hospital: ~~perform cardiopulmonary resuscitation; defibrillation, pulmonary ventilation by means of an esophageal obturator airway; esophageal gastric tube airway; pharyngeal tracheal lumen airway or endotracheal tube and administer appropriate cardiac drugs prior to contacting the sponsor hospital.~~
- (a) cardiopulmonary resuscitation;
  - (b) defibrillation;
  - (c) pulmonary ventilation by means of a blind insertion airway device or endotracheal tube only when confronted with a pulseless non-breathing patient;
  - (d) establish an intravenous line in a peripheral vein. If the intravenous line is not successfully established after two attempts, the EMT-AI must contact the sponsor hospital prior to making another attempt;
  - (e) administer the following medications:
    - (i) Albuterol (by inhalation);
    - (ii) Atropine;
    - (iii) Dextrose 50%;
    - (iv) Epinephrine 1:1000;
    - (v) Epinephrine 1:10,000;
    - (vi) Lidocaine;
    - (vii) Metaproterenol (by inhalation);
    - (viii) Naloxone;
    - (ix) Sodium Bicarbonate; and
    - (x) Terbutaline (injectable or by inhalation).

- (3) When transporting a patient from one medical facility to another who is receiving intravenous therapy begun at the transferring facility, and where the capability of continuous two-way voice communication is maintained with a physician or approved MICN located in the sponsor hospital, and upon order of such physician or MICN, EMT-AIs may maintain intravenous lines for the following medications:

- (a) Whole Blood and Components; and
  - (b) Potassium Chloride.
- (4) When in the presence of an EMT-P, perform any act listed in this Rule upon direction of the EMT-P as defined by the patient care protocols of the ALS program and approved by the Office of Emergency Medical Services.

*Statutory Authority: G.S. 143-514.*

#### **.0407 EMERGENCY MEDICAL TECHNICIAN - DEFIBRILLATION PERFORMANCE**

EMT-Ds trained educated in approved programs, certified by the Board of Medical Examiners to perform medical acts, and functioning in an approved ~~mobile intensive care~~ ALS program may perform any of the following in accordance with the protocols established by their sponsor hospital:

- (1) ~~When confronted with a pulseless non-breathing patient, perform as necessary under standing orders any of the following prior to contacting the sponsor hospital: defibrillation by means of an automatic or semi-automatic defibrillator. Defibrillation may be performed prior to contacting the sponsor hospital.~~
- (a) defibrillation by means of an automatic or semi-automatic defibrillator;
- (b) pulmonary ventilation by means of a blind insertion airway device; and
- (c) cardiopulmonary resuscitation.
- (2) When confronted with life threatening clinical situations as defined in the patient care protocols established by the sponsor hospital of the ALS program and approved by the Office of Emergency Medical Services, administer subcutaneously 1:1000 epinephrine to treat systemic allergic reactions under standing orders prior to contacting the sponsor hospital.

*Statutory Authority: G.S. 143-514.*

**SECTION .0500 - CERTIFICATION AND  
APPROVAL REQUIREMENTS FOR  
ADVANCED LIFE SUPPORT PERSONNEL**

**.0501 CERTIFICATION REQUIREMENTS:  
EMT-PARAMEDIC**

(a) To become certified as an EMT-P, a person shall meet the following criteria:

- (1) be currently certified as an emergency medical technician in the State of North Carolina;
- (2) be affiliated on a continuous basis with an ambulance provider that has been issued a permit by the Office of Emergency Medical Services and functions as part of an approved ~~mobile intensive care~~ ALS program;
- ~~(3) present evidence that he is of suitable character and physically capable of performing as an EMT-P;~~
- (43) successfully complete, within one year of application, an EMT-P ~~training course~~ educational program approved meeting the requirements of the "North Carolina EMT-P Curriculum Outline" dated November 1990 incorporated herein by reference including subsequent amendments and editions, by the Office of Emergency Medical Services, following guidelines established by the Board of Medical Examiners. If the training educational program was completed over one year prior to application, a person must submit evidence of completion of pertinent refresher training continuing education in emergency medicine taken in the past year and have the training continuing education approved by the Office of Emergency Medical Services;
- (54) successfully complete a performance evaluation conducted under the direction of the medical director of the ~~mobile intensive care~~ ALS program assessing his ability to perform the skills and procedures specified in Rule .0402 of this Subchapter;
- (65) be recommended for certification upon examination by an oral interview panel established by the ~~mobile intensive care~~ ALS program in which he is proposing to function;
- (76) pass a basic life support practical examination approved or administered by the Office of Emergency Medical Services;

and

- (87) pass the EMT-P written examination administered by the Office of Emergency Medical Services.

(b) Persons holding current certification as an EMT-P with the National Registry of Emergency Medical Technicians or in another state where the ~~training educational~~ and certification requirements have been approved for ~~reciprocity~~ legal recognition by the Office of Emergency Medical Services may become certified by:

- (1) presenting evidence of such certification for verification by the Office of Emergency Medical Services; and
- (2) meeting the criteria specified in Subparagraphs (a)(1), (a)(2), ~~(a)(3)~~, (a)(54), and (a)(65) of this Rule.

(c) Certification obtained through ~~reciprocity~~ legal recognition shall be valid for ~~two~~ four years or the unexpired term of the certification that was used to obtain a certification in this state, whichever is shorter. All certifications shall be valid for the period stated on the certificate issued to the applicant. This period shall not exceed ~~two~~ four years. Persons must be recertified by presenting documentation to the Office of Emergency Medical Services that they have successfully completed either of the following options:

**OPTION I:**

- (1) an ongoing continuing education program under the direction of the medical director, ~~approved meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions; by the Office of Emergency Medical Services following guidelines approved by the Board of Medical Examiners;~~
- (2) an ALS performance evaluation conducted under the direction of the medical director meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions following guidelines established by the Board of Medical Examiners, assessing the ability to perform the skills specified in Rule .0402 of this

- (3) Subchapter; and basic life support practical and EMT-P written examinations administered by the Office of Emergency Medical Services; or

**OPTION II:**

- (1) the criteria specified in Subparagraph (c)(1) and (c)(2) of OPTION I of this Rule;
- (2) at least one basic life support skills evaluation following guidelines established by the Office of Emergency Medical Services conducted under the direction of the medical director assessing the ability to perform the skills required of an emergency medical technician as specified by the North Carolina Medical Care Commission ~~following guidelines established by the Board of Medical Examiners;~~ and
- (3) at least one EMT-P written examination following guidelines established by the Office of Emergency Medical Services administered under the direction of the medical director in compliance with the test specifications of the state EMT-P written examination ~~and the guidelines established by the Board of Medical Examiners.~~

*Statutory Authority G.S. 143-514.*

**.0502 CERTIFICATION REQUIREMENTS:  
EMT-INTERMEDIATE**

(a) To become certified as an EMT-I a person must meet the following criteria:

- (1) be currently certified as an emergency medical technician in the State of North Carolina;
- (2) be affiliated on a continuous basis with an ambulance provider that has been issued a permit by the Office of Emergency Medical Services and functions as part of an approved ~~mobile intensive care~~ ALS program;
- (3) ~~present evidence that he is of suitable character and physically capable of performing as an EMT-I;~~
- (4) ~~successfully complete, within one year of application, an EMT-I training course educational program meeting the requirements of the "North Carolina EMT-I Curriculum Outline" dated November 1990 incorporated herein by reference including subsequent amend-~~

~~ments and editions, approved by the Office of Emergency Medical Services, following guidelines established by the Board of Medical Examiners.~~ If the training educational program was completed over one year prior to application, a person must submit evidence of completion of pertinent ~~refresher training~~ continuing education in emergency medicine taken in the past year and have the training continuing education approved by the Office of Emergency Medical Services;

- (54) successfully complete a performance evaluation conducted under the direction of the medical director of the ~~mobile intensive care~~ ALS program assessing his ability to perform the skills and procedures specified in Rule .0403 of this Subchapter;
- (65) be recommended for certification upon examination by an oral interview panel established by the ~~mobile intensive care~~ ALS program in which he is proposing to function;
- (76) pass a basic life support practical examination approved or administered by the Office of Emergency Medical Services; and
- (87) pass the EMT-I written examination administered by the Office of Emergency Medical Services.

(b) Persons holding current certification as an EMT-I with the National Registry of Emergency Medical Technicians or in another state where the training educational and certification requirements have been approved for ~~reciprocity~~ legal recognition by the Office of Emergency Medical Services may become certified by:

- (1) presenting evidence of such certification for verification by the Office of Emergency Medical Services; and
- (2) meeting the criteria specified in Subparagraphs (a)(1), (a)(2), ~~(a)(3),~~ (a)(54), and (a)(65) of this Rule.

(c) Certification obtained through reciprocity legal recognition shall be valid for ~~two~~ four years or the unexpired term of the certification that was used to obtain a certification in this state, whichever is shorter. All certifications shall be valid for the period stated on the certification issued to the applicant. This period shall not exceed ~~two~~ four years. Persons must be recertified by presenting documentation to the Office of Emergency Medical Services that they have successfully completed



either of the following options:

**OPTION I:**

- (1) an ongoing continuing education program under the direction of the medical director, ~~approved meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions; by the Office of Emergency Medical Services following guidelines approved by the Board of Medical Examiners;~~
- (2) an ALS performance evaluation conducted under the direction of the medical director meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions following guidelines established by the Board of Medical Examiners; assessing the ability to perform the skills specified in Rule . 0403 of this Subchapter; and
- (3) basic life support practical and EMT-I written examinations administered by the Office of Emergency Medical Services; or

**OPTION II:**

- (1) the criteria specified in Subparagraph (c)(1) and (c)(2) of OPTION I of this Rule;
- (2) at least one basic life support skills evaluation following guidelines established by the Office of Emergency Medical Services conducted under the direction of the medical director assessing the ability to perform the skills required of an emergency medical technician as specified by the North Carolina Medical Care Commission ~~following guidelines established by the Board of Medical Examiners;~~ and
- (3) at least one EMT-I written examination following guidelines established by the Office of Emergency Medical Services administered under the direction of the medical director in compliance with the test specifications of the state EMT-I written examination ~~and the guidelines~~

~~established by the Board of Medical Examiners.~~

*Statutory Authority G.S. 143-514.*

**.0503 APPROVAL REQUIREMENTS:**

**MOBILE INTENSIVE CARE NURSE**

(a) To be approved as a MICN, a person must meet the following criteria:

- (1) be currently licensed as a registered nurse in the State of North Carolina;
- (2) be affiliated on a continuous basis with a sponsor hospital which is part of an approved ~~mobile intensive care~~ ALS program;
- (3) have a minimum of two years emergency or critical care nursing experience, or a combination of this experience;
- (4) present evidence of successful completion of a MICN educational program ~~an Emergency Nurse Education Program that included current information taught in Advanced Cardiac Life Support and Basic Trauma Life Support courses meeting the requirements of the "North Carolina MICN Curriculum Outline" dated November 1990 incorporated herein by reference including subsequent amendments and editions, by the Office of Emergency Medical Services, following guidelines established by the Board of Medical Examiners.~~ If the training educational program was completed over one year prior to application, a person must submit evidence of completion of pertinent ~~refresher training~~ continuing education in emergency medicine taken in the past year and have the training continuing education approved by the Office of Emergency Medical Services; and
- (5) ~~complete a minimum of five emergency calls on a field ambulance that requires a patient to be transported; and~~
- (6) ~~be recommended by the medical director of the mobile intensive care~~ ALS program after determining that the applicant is adequately familiar with the patient care and operational protocols of the mobile intensive care ALS program.

(b) Approval shall be valid for a period not to exceed ~~two~~ four years at which time the person may be reapproved by ~~either of the following options:~~ successfully completing an approved MICN reapproval program under the direction of

the medical director, meeting the requirements of "Guidelines for Reapproval of Mobile Intensive Care Nurses" dated May 1992 incorporated herein by reference including subsequent amendments and editions.

~~OPTION I:~~

- ~~(1) present evidence of current certification in Advanced Cardiac Life Support;~~
- ~~(2) present evidence of current certification in Basic Trauma Life Support or equivalent;~~
- ~~(3) be recommended by the medical director of the mobile intensive care program after an audit of at least ten calls supervised by the applicant; and~~
- ~~(4) complete a minimum of five emergency calls on a field ambulance that requires a patient to be transported; or~~

~~OPTION II:~~

- ~~(1) complete a minimum of 48 hours of continuing medical education approved by the local audit and review panel;~~
- ~~(2) pass a written examination administered by the Office of Emergency Medical Services which evaluates current information contained in Advanced Cardiac Life Support and Basic Trauma Life Support courses;~~
- ~~(3) be recommended by the medical director of the mobile intensive care program after an audit of at least ten calls supervised by the applicant; and~~
- ~~(4) complete a minimum of five emergency calls on a field ambulance that requires a patient to be transported.~~

Statutory Authority G.S. 143-514.

**.0504 CERTIFICATION REQUIREMENTS:  
EMT-ADVANCED INTERMEDIATE**

(a) To become certified as an EMT-AI a person must meet the following criteria:

- (1) be currently certified as an emergency medical technician in the State of North Carolina;
- (2) be affiliated on a continuous basis with an ambulance provider that has been issued a permit by the Office of Emergency Medical Services and functions as part of an approved mobile intensive care ALS program;
- (3) present evidence that he is of suitable character and physically capable of performing as an EMT-AI;
- (4) successfully complete, within one year

of application, an EMT-AI training course educational program approved meeting the requirements of the "North Carolina EMT-AI Curriculum Outline" dated November 1990 incorporated herein by reference including subsequent amendments and editions, by the Office of Emergency Medical Services, following guidelines established by the Board of Medical Examiners. If the training educational program was completed over one year prior to application, a person must submit evidence of completion of pertinent refresher training continuing education in emergency medicine taken in the past year and have the training continuing education approved by the Office of Emergency Medical Services;

- (5) successfully complete a performance evaluation conducted under the direction of the medical director of the mobile intensive care ALS program assessing his ability to perform the skills and procedures specified in Rule .0406 of this Subchapter;
- (6) be recommended for certification upon examination by an oral interview panel established by the mobile intensive care ALS program in which he is proposing to function;
- (7) pass a basic life support practical examination approved or administered by the Office of Emergency Medical Services; and
- (8) pass the EMT-AI written examination administered by the Office of Emergency Medical Services.

(b) Persons holding current certification equivalent to an EMT-AI with the National Registry of Emergency Medical Technicians or in another state where the training educational and certification requirements have been approved for reciprocity legal recognition by the Office of Emergency Medical Services may become certified by:

- (1) presenting evidence of such certification for verification by the Office of Emergency Medical Services; and
- (2) meeting the criteria specified in Subparagraphs (a)(1), (a)(2), ~~(a)(3)~~, (a)(5), and (a)(6) of this Rule.

(c) Certification obtained through reciprocity legal recognition shall be valid for ~~two~~ four years or the unexpired term of the certification that was used to obtain a certification in this state, whichever

er is shorter. All certifications shall be valid for the period stated on the certificate issued to the applicant. This period shall not exceed ~~two~~ four years. Persons must be recertified by presenting documentation to the Office of Emergency Medical Services that they have successfully completed either of the following options:

OPTION I:

- (1) an ongoing continuing education program under the direction of the medical director, ~~approved meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions; by the Office of Emergency Medical Services following guidelines approved by the Board of Medical Examiners;~~
- (2) an ALS performance evaluation conducted under the direction of the medical director meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions following guidelines established by the Board of Medical Examiners, assessing the ability to perform the skills specified in Rule .0406 of this Subchapter; and
- (3) basic life support practical and EMT-AI written examinations administered by the Office of Emergency Medical Services; or

OPTION II:

- (1) the criteria specified in Subparagraph (c)(1) and (c)(2) of OPTION I of this Rule;
- (2) at least one basic life support skills evaluation following guidelines established by the Office of Emergency Medical Services and conducted under the direction of the medical director assessing the ability to perform the skills required of an emergency medical technician as specified by the North Carolina Medical Care Commission ~~following guidelines established by the Board of Medical Examiners;~~ and
- (3) at least one EMT-AI written examina-

tion following guidelines established by the Office of Emergency Medical Services and administered under the direction of the medical director in compliance with the test specifications of the state EMT-AI written examination ~~and the guidelines established by the Board of Medical Examiners.~~

*Statutory Authority G. S. 143-514.*

**.0505 CERTIFICATION REQUIREMENTS:  
EMT-DEFIBRILLATION**

(a) To become certified as an EMT-D a person must meet the following criteria:

- (1) be currently certified as an emergency medical technician in the State of North Carolina;
- (2) be affiliated on a continuous basis with an ambulance provider that has been issued a permit by the Office of Emergency Medical Services, or an approved first responder organization which functions as part of an approved ~~mobile intensive care~~ ALS program;
- (3) ~~present evidence that he is of suitable character and physically capable of performing as an EMT-D;~~
- (43) successfully complete, within one year of application, an EMT-D ~~training course~~ educational program approved meeting the requirements of the "North Carolina EMT-D Curriculum Outline" dated November 1990 incorporated herein by reference including subsequent amendments and editions, by the Office of Emergency Medical Services, following guidelines established by the Board of Medical Examiners. If the ~~training~~ educational program was completed over one year prior to application, a person must submit evidence of completion of pertinent ~~refresher training~~ continuing education in emergency medicine taken in the past year and have the ~~training~~ continuing education approved by the Office of Emergency Medical Services;
- (54) successfully complete a performance evaluation conducted under the direction of the medical director of the ~~mobile intensive care~~ ALS program assessing his ability to perform the skills and procedures specified in Rule .0407 of this Subchapter;



(6) ~~be recommended for certification upon examination by an oral interview panel established by the mobile intensive care program in which he is proposing to function;~~

(75) pass a basic life support practical examination approved or administered by the Office of Emergency Medical Services; and

(86) pass the EMT-D written examination administered by the Office of Emergency Medical Services.

(b) Persons holding current certification equivalent to EMT-D with the National Registry of Emergency Medical Technicians or in another state where the ~~training educational~~ and certification requirements have been approved for ~~reciprocity~~ legal recognition by the Office of Emergency Medical Services may become certified by:

(1) presenting evidence of such certification for verification by the Office of Emergency Medical Services; and

(2) meeting the criteria specified in Subparagraphs (a)(1), (a)(2), ~~(a)(3)~~, (a)(54), and (a)(65) of this Rule.

(c) Certification obtained through ~~reciprocity~~ legal recognition shall be valid for ~~two~~ four years or the unexpired term of the certification that was used to obtain a certification in this state, whichever is shorter. All certifications shall be valid for the period stated on the certificate issued to the applicant. This period shall not exceed ~~two~~ four years. Persons must be recertified by presenting documentation to the Office of Emergency Medical Services that they have successfully completed either of the following options:

**OPTION I:**

(1) an ongoing continuing education program under the direction of the medical director, ~~approved meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions; by the Office of Emergency Medical Services following guidelines approved by the Board of Medical Examiners;~~

(2) an ALS performance evaluation conducted under the direction of the medical director meeting the requirements of "Guidelines for Continuing Education and Performance Evaluation of Emer-

gency Medical Services Advanced Life Support Personnel" dated February 1988 incorporated herein by reference including subsequent amendments and editions following guidelines established by the Board of Medical Examiners, assessing the ability to perform the skills specified in Rule .0407 of this Subchapter; and

(3) basic life support practical and EMT-D written examinations administered by the Office of Emergency Medical Services; or

**OPTION II:**

(1) the criteria specified in Subparagraph (c)(1) and (c)(2) of OPTION I of this Rule;

(2) at least one basic life support skills evaluation following guidelines established by the Office of Emergency Medical Services and conducted under the direction of the medical director assessing the ability to perform the skills required of an emergency medical technician as specified by the North Carolina Medical Care Commission following guidelines established by the Board of Medical Examiners; and

(3) at least one EMT-D written examination following guidelines established by the Office of Emergency Medical Services and administered under the direction of the medical director in compliance with the test specifications of the state EMT-D written examination ~~and the guidelines established by the Board of Medical Examiners.~~

*Statutory Authority: G.S. 143-514.*

**SECTION .0600 - ENFORCEMENT**

**.0601 GROUNDS FOR DENIAL, SUSPENSION, OR REVOCATION**

(a) The Board of Medical Examiners may deny, suspend or revoke the approval of an ~~mobile intensive care~~ ALS program or sponsor hospital for any of the following reasons:

(1) failure to comply with the requirements as found in Sections .0200 and .0300 of this Subchapter; or

(2) obtaining approval through fraud or misrepresentation.

(b) The Board of Medical Examiners may deny, suspend or revoke the certification of an field

~~technician~~ ALS professional or the approval of a MICN for any of the following reasons:

- (1) failure to comply with the applicable performance and certification and approval requirements as found in Rules .0402, .0403, .0404, .0406, .0407, .0501, .0502, .0503, .0504, and .0505 of this Subchapter;
- (2) obtaining or attempting to obtain certification, recertification, ~~or~~ approval or reapproval through fraud or misrepresentation;
- (3) aiding a person in obtaining or attempting to obtain certification, recertification, approval or reapproval through fraud or misrepresentation;
- (34) failure to perform a prescribed procedure, failure to perform a prescribed procedure competently or performance of a procedure which is not within the scope and responsibility of the certificate holder; ~~or~~
- (45) performance of a procedure which is detrimental to the health and safety of a patient;
- (6) any felony conviction;

Statutory Authority G.S. 143-514.

#### **.0602 PROCEDURES FOR DENIAL: SUSPENSION OR REVOCATION**

(a) The Board of Medical Examiners may deny, suspend or revoke the certification of ~~an field technician~~ ALS professional or the approval of a MICN, sponsor hospital, or ~~mobile intensive care~~ ALS program in accordance with Article 3A of Chapter 150B.

(b) Notwithstanding Paragraph (a) of this Rule, the Board of Medical Examiners may summarily suspend the certification of ~~an field technician~~ ALS professional, the approval of a MICN, sponsor hospital, or ~~mobile intensive care~~ ALS program as specified in G. S. 150B-3(c).

Statutory Authority G.S. 143-514.

### **SECTION .0700 - EXCEPTIONS**

#### **.0701 CONDITIONS**

Upon application of interested citizens in North Carolina, the Board of Medical Examiners is authorized to and reserves the right to approve the furnishing and providing of ~~mobile intensive care~~ ALS programs in North Carolina by persons who have been approved to provide these services by

an agency of a state or federal jurisdiction adjoining North Carolina. This approval may be granted where the Board of Medical Examiners finds and concludes that the requirements enumerated in Rule .0201 of this Subchapter for ~~mobile intensive care~~ ALS programs cannot be reasonably obtained by reason of lack of geographical access.

Statutory Authority G.S. 143-514.

### **SECTION .0800 - FORMS AND DOCUMENTS**

#### **.0801 REQUIRED FORMS AND DOCUMENTS**

(a) The following forms are required for certification or approval:

- (1) Certification Application Form;
- (2) ~~EMT-I Verification Form~~ ALS Personnel Verification Form.
- (3) ~~EMT-AI Verification Form;~~
- (4) ~~EMT-P Verification Form;~~
- (5) ~~EMT-D Verification Form;~~
- (6) ~~MICN Verification Form;~~

(b) The following documents are required for educational and evaluation programs and referenced in the Rules:

- (1) "North Carolina EMT-P Curriculum Outline";
- (2) "North Carolina EMT-AI Curriculum Outline";
- (3) "North Carolina EMT-I Curriculum Outline";
- (4) "North Carolina EMT-D Curriculum Outline";
- (5) "North Carolina MICN Curriculum Outline";
- (6) "Guidelines for Continuing Education and Performance Evaluation of Emergency Medical Services Advanced Life Support Personnel";
- (7) "Guidelines for Reapproval of Mobile Intensive Care Nurses"; and
- (8) "Guidelines for the Selection and Performance of the Emergency Medical Services Nurse Liaison".

Statutory Authority G.S. 143-514.

#### **.0802 SOURCE OF FORMS AND DOCUMENTS**

Forms and documents may be secured free of charge from the Office of Emergency Medical Services, Division of Facility Services, Department of Human Resources, ~~701 Barbour Drive~~ P.O.

Box 29530, Raleigh, N. C. 27603 27626-0530,  
(919) 733-2285.

Statutory Authority G.S. 143-514.

## SECTION .0900 - STUDY PROJECTS

### .0901 CONDITIONS

(a) Persons proposing to undertake a study project shall have a project director who is a physician licensed to practice medicine in the State of North Carolina and shall submit a written proposal to the Office of Emergency Medical Services for presentation to the Board of Medical Examiners. The proposal must include the following:

- (1) a description of the purpose of the project, an explanation of the proposed project, the methodology to be used in implementing the project, and the geographical area to be covered by the proposed project;
- (2) a list of the ~~mobile intensive care~~ ALS programs, ambulance providers, and hospitals participating in the project;
- (3) a signed statement of endorsement from the medical director of each participating ~~mobile intensive care~~ ALS program, the chief executive officer of each participating hospital, and the director of each participating ambulance provider;
- (4) a description of the skills to be utilized by the ~~field technicians~~ ALS professionals if different from those specified in this Subchapter, the provisions for training and supervising the personnel who are to utilize these skills and the names of such personnel; and
- (5) the name and signature of the project director attesting to his approval of the proposal.

(b) The hospitals and ambulance providers participating in the project must be a part of an approved ~~mobile intensive care~~ ALS program.

(c) The time period for the project shall not exceed three years.

~~(d) Only one project on any given subject shall be conducted within the state at any given time.~~

(e) When considering any study project, the Board of Medical Examiners may, at its discretion, require additional conditions to be met.

Statutory Authority G.S. 143-514.

## SECTION .1000 - MEDICAL CONTROL

### .1001 MEDICAL CONTROL PROCEDURES

Each ~~mobile intensive care~~ ALS program must have procedures established to ensure medical control over the medical care rendered in the ~~mobile intensive care~~ ALS program. This shall include, at a minimum:

- (1) a designated medical director to carry out the tasks as specified in Rule .0201 (2)(a)-(e) of this Subchapter;
- (2) treatment protocols;
- (3) operational protocols for obtaining medical direction from the sponsor hospital(s); and
- (4) audit and review of the medical care rendered in the program.

Statutory Authority G.S. 143-514.

### .1002 MEDICAL CONTROL FROM HOSPITAL OUTSIDE SERVICE AREA

~~Field technicians~~ ALS professionals transporting patients to a facility other than their own sponsor hospital may receive orders from the facility to perform the skills allowed in Section .0400 of this Subchapter provided that:

- (1) the facility is a sponsor hospital;
- (2) the care level of the ALS orders issued is consistent with the hospital's approved level of sponsorship;
- (3) the patient care protocols used by the receiving facility are consistent with those of the provider;
- (4) the respective audit and review committees establish a mechanism for the routine exchange of information;
- (5) the ~~field technicians~~ ALS professionals establish and maintain two-way voice communications with the receiving facility; and
- (6) the Office of Emergency Medical Services has received and approved documentation from the administrator and medical director of each facility specifying how Paragraphs (1) through (5) of this Rule have been met.

Statutory Authority G.S. 143-514.

### .1003 MEDICAL CONTROL FOR TRANSPORTS BETWEEN FACILITIES



~~Field technicians~~ ALS professionals transporting patients between facilities may accept orders from sponsor hospitals other than their own sponsor hospital provided that:

- (1) the care level of the ALS orders issued is consistent with the hospital's approved level of sponsorship;
- (2) the patient is transported to the hospital issuing the orders; and
- (3) the ~~field technicians~~ ALS professionals establish and maintain two-way voice communications with the hospital issuing the orders.

Statutory Authority G.S. 143-514.

#### **.1004 AIR AMBULANCE PROGRAM CRITERIA**

(a) Air ambulance programs operating under the authority of 10 NCAC 3D .04801(b)(4)(B) must submit a proposal for program approval to the Office of Emergency Medical Services at least 60 days prior to field implementation. The proposal must document that the program has:

- (1) a defined service area;
- (2) a physician medical director responsible for:
  - (A) the establishment and updating of treatment and transfer protocols;
  - (B) medical supervision of the selection, training education, and performance of medical crew members as defined in 10 NCAC 3D ~~.0445~~ .1204;
- (C) the medical review of patient care; and
- (D) medical management of the program. Pending formal review, the medical director may temporarily suspend from the program any medical crew member whose actions or medical care are determined to be detrimental to patient care;
- (3) adequate medical crew members ~~trained~~ educated, in accordance with 10 NCAC 3D ~~.0445~~ .1204, to ensure that the program will be continuously available on a 24 hour-a-day basis;
- (4) an audit and review panel which meets at a minimum on a ~~regular~~ quarterly basis to:
  - (A) review cases and determine the appropriateness of medical care rendered;
  - (B) make recommendations to the medical director about the continuing education needed by medical crew mem-

bers; and

- (C) review and revise policies, procedures, and protocols for the program;
- (5) patient transfer protocols that have been reviewed and approved by the Office of Emergency Medical Services.

(b) Air ambulance programs based outside of North Carolina may be granted approval by the Office of Emergency Medical Services to operate in North Carolina under 10 NCAC 3D .04801(b)(4)(B) by submitting a proposal for program approval. The proposal must document that the program meets all criteria specified in Paragraph .1004(a) of this Rule.

Statutory Authority G. S. 143-514.

#### **TITLE 25 - OFFICE OF STATE PERSONNEL**

*Notice is hereby given in accordance with G.S. 150B-21.2 that the Office of State Personnel intends to amend rules cited as 25 NCAC 1D .0511; 25 NCAC 1I .2301 and 25 NCAC 1J .0604.*

*The proposed effective date of this action is April 1, 1993.*

*The public hearing will be conducted at 9:00 a.m. on February 2, 1993 at the State Personnel Development Center, 101 W. Peace Street, Raleigh, N. C.*

#### **Reason for Proposed Action:**

**25 NCAC 1D .0511** - This rule is proposed to be amended in order to increase the potential of successfully placing employees affected by reduction in force who are eligible for priority reemployment by allowing the employing agencies to require a new probationary period in specified instances.

**25 NCAC 1I .2301** - This rule is proposed to be amended to establish guidelines for implementing the State Personnel Commission's rules on discipline and dismissal for cause.

**25 NCAC 1J .0604** - This rule is proposed to be amended to establish guidelines for implementing the State Personnel Commission's rules on discipline and dismissal for cause.

*Comment Procedures: Interested persons may present statements either orally or in writing at the*

*Public Hearing or in writing prior to the hearing by mail addressed to: Barbara A. Coward, Office of State Personnel, 116 W. Jones Street, Raleigh, N. C. 27603..*

## CHAPTER 1 - OFFICE OF STATE PERSONNEL

### SUBCHAPTER 1D - COMPENSATION

#### SECTION .0500 - SEPARATION

##### .0511 REDUCTION IN FORCE PRIORITY CONSIDERATION

Upon notification of imminent separation through reduction in force, an employee shall receive priority reemployment consideration for a period of 12 months pursuant to G.S. 126-7.1(c1). The following conditions apply:

- (1) Within the agency or institution where the notification of separation occurred (parent agency), an employee scheduled to be separated through reduction in force shall be offered any available vacant position of a salary grade level equal or below that held at the time of notification, provided the employee meets the qualifications for the position and could perform the job in a reasonable length of time, including normal orientation and training given any new employee.
- (2) Within all other state agencies and institutions, an employee with priority status and qualified for the vacant position, shall be interviewed and offered the position prior to employing anyone who is not a permanent state employee.
- (3) For employees receiving notification of separation from trainee or flat-rate positions, who are eligible for priority reemployment consideration, the salary grade for which priority is to be afforded shall be determined as follows. For employees in flat rate positions, the salary grade level shall be the salary grade which has as its mid-point, a rate nearest the flat rate salary of the eligible employee. For employees in trainee status the salary grade level shall be the salary grade of the full class.
- (4) An employee notified of imminent separation through reduction-in-force while actively possessing priority reemployment consideration shall retain the initial priority for the remainder of the twelve month

priority period. A new priority period shall then be afforded at the salary grade and status of the position held at the most recent notification of separation. The length of this additional priority period shall be equal to the time between the expiration dates of the old and the new priority, assuming that the second twelve month period started on the date of the most recent notification.

- (5) Priority reemployment consideration will not be afforded to an employee who, after receiving formal notice of impending reduction-in-force, retires or applies for retirement prior to the separation date. An employee who applies for retirement after being separated through reduction-in-force may exercise priority reemployment consideration.
- (6) Priority reemployment consideration is intended to provide employment at an equal employment status to that held at the time of notification. Acceptance of a position at a lower appointment status will not affect priority. Employees notified of separation from permanent full-time positions shall have priority to permanent full-time and permanent part-time positions. Employees notified of separation from permanent part-time positions shall have priority to permanent part-time positions only.
- (7) Employees who have priority reemployment status at the time of application for a vacant position, and who apply during the designated agency recruitment period, will be continued as priority applicants until the selection process is complete.
- (8) An employee with priority status, may not decline interviews or offers for positions within 35 miles of the employee's original work station without losing his priority, if the position is at an appointment status and salary grade equal to or greater than that held at the time of notification.
- (9) An employee with priority status may accept a temporary position at any level and retain his/her priority consideration.
- (10) When priority has been granted for a lower salary grade than held at the time of notification, the employee retains priority for higher salary grades between that of his current position and that held at the time of his notification of separation.

tion.

- (11) An employee with priority reemployment consideration may accept employment outside state government or in a state position not subject to the State Personnel Act and retain such consideration through the twelve months priority period.
- (12) Priority reemployment consideration is terminated when an eligible employee:
  - (a) refuses an interview or offer for a position within 35 miles of the employee's original work station if the position is at an appointment status and salary grade equal to or greater than that held at the time notification;
  - (b) accepts a position equal to or greater than the salary grade level and employment status of the position held at the time of notification; or
  - (c) has received 12 months priority reemployment consideration.
- (13) Priority reemployment consideration for employees notified of or separated through reduction-in-force does not include priority to any policy-making/confidential exempt position.
- (14) When an employee with priority status accepts a position at a lower salary grade and is subsequently terminated by disciplinary action, any remaining priority consideration ceases.
- (15) An employee with priority status may be required to serve a new probationary period when the essential duties and responsibilities of the position into which he/she is being reemployed are significantly different from those of the position held at the time of reduction in force notification, and/or when the prior, documented performance history of the employee indicates performance or conduct difficulties which would make a probationary period a prudent protection of agency interests. A decision by an agency to require a new probationary period shall not, however, nullify the employee's right to another future period of priority reemployment status, should that employee receive reduction in force notification again while serving in probationary status.

Statutory Authority G.S. 126-4(6),(10).

## SUBCHAPTER II - SERVICE TO LOCAL GOVERNMENT

### SECTION .2300 - DISCIPLINARY ACTION: SUSPENSION, DISMISSAL AND APPEALS

#### .2301 CAUSES

(a) Any employee, regardless of occupation, position or profession may be warned, demoted, suspended or dismissed by the appointing authority. Such actions may be taken against permanent employees as defined at G.S. 126-39, only for just cause. The degree and type of action taken shall be based upon the sound and considered judgment of the ~~appointment~~ appointing authority in accordance with the provisions of this ~~policy~~ Rule.

(b) ~~The basis for any disciplinary action taken in accordance with this policy falls into one of the two following categories. There are two bases for the discipline and/or dismissal of employees under the statutory standard of "just cause" as set out in G.S. 126-35. These two bases are:~~

- (1) Discipline or dismissal imposed on the basis of unacceptable job performance;
- (2) Discipline or dismissal imposed on the basis of personal conduct.

(c) The term "unacceptable job performance" means the failure to adequately perform job requirements as specified in the job description, work plan, or as directed by management of the work unit or agency. Adequate performance is that performance which is reasonable under all the circumstances. Determination of adequacy of performance shall be made by the supervisor; there is a presumption that the determination is proper and factually supported.

(d) The term "unacceptable personal conduct" is defined as:

- (1) conduct for which no reasonable person should expect to receive prior warnings;
- (2) conduct which constitutes a violation of state or federal laws;
- (3) the willful violation of known or written work rules; or
- (4) conduct unbecoming an employee.

(e) Either unacceptable job performance or unacceptable personal conduct constitutes just cause for discipline or dismissal. The categories are not mutually exclusive, as certain actions by employees may fall into both categories, depending upon the facts of each case.

**Note:** The Job Performance category is intended to be used in addressing performance-related inadequacies for which a reasonable person would



expect to be notified of and allowed an opportunity to improve. Personal Conduct discipline is intended to be imposed for those actions for which no reasonable person could, or should, expect to receive prior warnings.

*Statutory Authority G.S. 126-35.*

## SUBCHAPTER 1J - EMPLOYEE RELATIONS

### SECTION .0600 - DISCIPLINARY ACTION: SUSPENSION AND DISMISSAL

#### .0604 CAUSES

(a) Any employee, regardless of occupation, position or profession may be warned, demoted, suspended or dismissed by the appointing authority. Such actions may be taken against permanent employees as defined at G.S. 126-39, only for just cause. The degree and type of action taken shall be based upon the sound and considered judgment of the ~~appointment~~ appointing authority in accordance with the provisions of this ~~policy~~ Rule.

(b) ~~The basis for any disciplinary action taken in accordance with this policy falls into one of the two following categories. There are two bases for the discipline and/or dismissal of employees under the statutory standard of "just cause" as set out in G.S. 126-35. These two bases are:~~

- (1) Discipline or dismissal imposed on the basis of unacceptable job performance;
- (2) Discipline or dismissal imposed on the basis of personal conduct.

(c) The term "unacceptable job performance" means the failure to adequately perform job requirements as specified in the job description, work plan, or as directed by management of the work unit or agency. Adequate performance is that performance which is reasonable under all the circumstances. Determination of adequacy of performance shall be made by the supervisor; there is a presumption that the determination is proper and factually supported.

(d) The term "unacceptable personal conduct" is defined as:

- (1) conduct for which no reasonable person should expect to receive prior warnings;
- (2) conduct which constitutes a violation of state or federal laws;
- (3) the willful violation of known or written work rules; or
- (4) conduct unbecoming a state employee.
- (e) Either unacceptable job performance or

unacceptable personal conduct constitutes just cause for discipline or dismissal. The categories are not mutually exclusive, as certain actions by employees may fall into both categories, depending upon the facts of each case.

**Note:** The Job Performance category is intended to be used in addressing performance-related inadequacies for which a reasonable person would expect to be notified of and allowed an opportunity to improve. Personal Conduct discipline is intended to be imposed for those actions for which no reasonable person could, or should, expect to receive prior warnings.

*Statutory Authority G.S. 126-35.*

*The Rules Review Commission (RRC) objected to the following rules in accordance with G.S. 143B-30.2(c). State agencies are required to respond to RRC as provided in G.S. 143B-30.2(d).*

## **ADMINISTRATION**

### **Motor Fleet Management Division**

*1 NCAC 38 .0205 - Accident Reporting  
Agency Revised Rule*

*RRC Objection 09/17/92  
Obj. Removed 10/15/92*

## **AGRICULTURE**

### **Structural Pest Control Division**

*2 NCAC 34 .0406 - Spill Control  
Agency Responded  
Agency Revised Rule*

*RRC Objection 07/16/92  
No Action 08/20/92  
Obj. Removed 10/15/92*

*2 NCAC 34 .0603 - Waivers  
Agency Responded  
Agency Revised Rule*

*RRC Objection 07/16/92  
No Action 08/20/92  
Obj. Removed 10/15/92*

*2 NCAC 34 .0902 - Financial Responsibility  
Agency Responded  
Agency Revised Rule*

*RRC Objection 07/16/92  
No Action 08/20/92  
Obj. Removed 10/15/92*

## **ECONOMIC AND COMMUNITY DEVELOPMENT**

### **Banking Commission**

*4 NCAC 3E .0201 - Operation of other Business in same Office  
Agency Revised Rule*

*RRC Objection 11/19/92  
Obj. Removed 11/19/92*

### **Community Assistance**

*4 NCAC 19S .0101 - Overview and Purpose  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 11/19/92*

*4 NCAC 19S .0102 - Definition  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 11/19/92*

*4 NCAC 19S .0103 - Waiver  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 11/19/92*

*4 NCAC 19S .0202 - Prohibited Costs  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 11/19/92*

*4 NCAC 19S .0401 - Distribution of Funds  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 11/19/92*

*4 NCAC 19S .1101 - Grant Agreement  
Agency Revised Rule*

*RRC Objection 10/15/92  
Obj. Removed 10/15/92*

### **Departmental Rules**

*4 NCAC 1K .0103 - Eligible Applicants*

*RRC Objection 11/19/92*

*4 NCAC 1K .0204 - Discretionary Public Hearing by the Department*

*RRC Objection 11/19/92*

4 NCAC 1K .0205 - Formal Application Procedures: Approval	RRC Objection	11/19/92
4 NCAC 1K .0206 - Formal Application Procedures: Denial	RRC Objection	11/19/92
4 NCAC 1K .0207 - Reimbursement of Extraordinary Expense	RRC Objection	11/19/92
4 NCAC 1K .0302 - Criteria for Making Necessary Findings	RRC Objection	11/19/92

## **ENVIRONMENT, HEALTH, AND NATURAL RESOURCES**

### **Coastal Management**

15A NCAC 7H .0308 - Specific Use Standards for Ocean Hazard Areas	RRC Objection	11/19/92
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### **Departmental Rules**

15A NCAC 1J .0204 - Loans from Emergency Revolving Loan Accounts	RRC Objection	06/18/92
15A NCAC 1J .0302 - General Provisions	RRC Objection	06/18/92
15A NCAC 1J .0701 - Public Necessity: Health: Safety and Welfare	RRC Objection	06/18/92

### **Environmental Management**

15A NCAC 2B .0216 - Outstanding Resource Waters	RRC Objection	11/19/92
Agency Revised Rule	Obj. Removed	11/19/92
15A NCAC 2H .0801 - Purpose	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
15A NCAC 2H .0803 - Definitions	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
15A NCAC 2H .0805 - Certification and Renewal of Certification	RRC Objection	10/15/92
Agency Revised Rule	RRC Objection	10/15/92
Rule Returned to Agency		11/19/92
15A NCAC 2L .0107 - Compliance Boundary	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
15A NCAC 2O .0302 - Self Insurance	RRC Objection	06/18/92

### **Wildlife Resources and Water Safety**

15A NCAC 10I .0001 - Definitions	RRC Objection	10/15/92
Agency Responded	No Action	11/19/92

## **HUMAN RESOURCES**

### **Facility Services**

10 NCAC 3R .3001 - Certificate of Need Review Categories	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92

### **Individual and Family Support**

10 NCAC 42C .3601 - Administrative Penalty Determination Process	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
10 NCAC 42T .0001 - Definitions	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
10 NCAC 42T .0006 - Service Delivery	RRC Objection	10/15/92
Agency Revised Rule	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	11/19/92

### **Mental Health: General**



10 NCAC 14C .1115 - Funding Group Homes for Mentally Retarded Adults	RRC Objection	08/20/92
Agency Revised Rule	Obj. Removed	10/15/92
10 NCAC 14K .0216 - Waiver of Licensure Rules	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
10 NCAC 14T .0101 - Scope	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92
10 NCAC 14T .0103 - Advance Care Directives	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92

**Mental Health: Other Programs**

10 NCAC 18A .0125 - Definitions	RRC Objection	11/19/92
Agency Revised Rule	Obj. Removed	11/19/92
10 NCAC 18A .0132 - Decertification	RRC Objection	11/19/92
Agency Revised Rule	Obj. Removed	11/19/92
10 NCAC 18D .0117 - Purpose and Scope	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	10/15/92

**INDEPENDENT AGENCIES**

**N.C. Housing Finance Agency**

24 NCAC 1M .0202 - Eligibility	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0204 - Selection Procedures	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0205 - Administration	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0206 - Program Fees	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0301 - Goal and Objectives	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0302 - Eligibility Requirements	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0303 - Threshold Review Criteria	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0306 - Funding Commitment	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0401 - Goals and Objectives	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0402 - Eligibility Requirements	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0403 - Threshold Review Criteria	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0404 - Ranking Criteria	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1M .0405 - Agency Board Approval	RRC Objection	10/15/92
No Response from Agency	No Action	11/19/92
24 NCAC 1O .0101 - Purpose	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	11/19/92
24 NCAC 1O .0102 - Eligibility	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	11/19/92
24 NCAC 1O .0201 - Application Procedures	RRC Objection	10/15/92
Agency Revised Rule	Obj. Removed	11/19/92
24 NCAC 1O .0202 - Selection Procedures	RRC Objection	10/15/92

*Agency Revised Rule*  
24 NCAC 1O .0203 - Administration  
*Agency Revised Rule*

*Obj. Removed* 11/19/92  
*RRC Objection* 10/15/92  
*Obj. Removed* 11/19/92

## **INSURANCE**

### **Financial Evaluation Division**

11 NCAC 11A .0602 - Licensure  
*Agency Revised Rule*

*RRC Objection* 11/19/92  
*RRC Objection* 11/19/92

### **Multiple Employer Welfare Arrangements**

11 NCAC 18 .0019 - Description of Forms

*RRC Objection* 06/18/92

### **Seniors' Health Insurance Information Program**

11 NCAC 17 .0005 - SHIP Inquiries to Insurers and Agents

*RRC Objection* 06/18/92

## **JUSTICE**

### **General Statutes Commission**

12 NCAC 8 .0506 - Declaratory Rulings  
*Agency Revised Rule*

*RRC Objection* 10/15/92  
*Obj. Removed* 11/19/92

## **LABOR**

### **Occupational Safety and Health Act**

13 NCAC 7C .0108 - Building Code  
*Rule Returned to Agency*  
*Agency Filed Rule with OAH*  
13 NCAC 7C .0109 - Fire Prevention Code  
*Rule Returned to Agency*  
*Agency Filed Rule with OAH*

*RRC Objection* 09/17/92  
10/15/92  
*Eff.* 10/22/92  
*RRC Objection* 09/17/92  
10/15/92  
*Eff.* 10/22/92

## **LICENSING BOARDS AND COMMISSIONS**

### **Architecture**

21 NCAC 2 .0108 - Fees  
*Agency Revised Rule*

*RRC Objection* 11/19/92  
*Obj. Removed* 11/19/92

### **Cosmetic Art Examiners**

21 NCAC 14L .0301 - Applicants Licensed as Teachers in Other States  
21 NCAC 14L .0302 - Requirements for Obtaining a Teacher's License

*RRC Objection* 11/19/92  
*RRC Objection* 11/19/92

### **Dietetics/Nutrition**

21 NCAC 17 .0016 - Violations, Complaints, Subsqnt Board Action, & Hearings  
*Agency Revised Rule*

*RRC Objection* 11/19/92  
*Obj. Removed* 11/19/92

### **Professional Engineers and Land Surveyors**

21 NCAC 56 .0501 - Requirement for Licensing Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92
21 NCAC 56 .0502 - Application Procedure: Individual Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92
21 NCAC 56 .0701 - Rules of Professional Conduct Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92
21 NCAC 56 .1603 - Classification of Surveys Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92
21 NCAC 56 .1604 - Mapping Requirements Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92
21 NCAC 56 .1605 - Classification of Topographic Surveys Agency Revised Rule	RRC Objection 10/15/92 Obj. Removed 10/15/92

## **PUBLIC EDUCATION**

### **Elementary and Secondary Education**

16 NCAC 6C .0206 - Consortium-Based Programs Agency Revised Rule	RRC Objection 11/19/92 Obj. Removed 11/19/92
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## **REVENUE**

### **Individual Income, Inheritance and Gift Tax Division**

17 NCAC 3B .0401 - Penalties	RRC Objection 08/20/92
17 NCAC 3B .0402 - Interest	RRC Objection 08/20/92

### **Individual Income Tax Division**

17 NCAC 6B .0107 - Extensions	RRC Objection 08/20/92
17 NCAC 6B .0115 - Additions to Federal Taxable Income	RRC Objection 08/20/92
17 NCAC 6B .0116 - Deductions from Federal Taxable Income	RRC Objection 08/20/92
17 NCAC 6B .0117 - Transitional Adjustments	RRC Objection 08/20/92
17 NCAC 6B .3406 - Refunds	RRC Objection 08/20/92

## **TRANSPORTATION**

### **Division of Highways**

19A NCAC 2B .0164 - Use of Right of Way Consultants Agency Revised Rule	RRC Objection 09/17/92 Obj. Removed 10/15/92
19A NCAC 2B .0165 - Asbestos Contracts with Private Firms Agency Revised Rule	RRC Objection 08/20/92 Obj. Removed 10/15/92



***This Section of the Register lists the recent decisions issued by the North Carolina Supreme Court, Court of Appeals, Superior Court (when available), and the Office of Administrative Hearings which invalidate a rule in the North Carolina Administrative Code.***

**1 NCAC 5A .0010 - ADMINISTRATIVE PROCEDURES**

Thomas R. West, Administrative Law Judge with the Office of Administrative Hearings, declared two portions of Rule 1 NCAC 5A .0010 void as applied in *Stauffer Information Systems, Petitioner v. The North Carolina Department of Community Colleges and The North Carolina Department of Administration, Respondent and The University of Southern California, Intervenor-Respondent* (92 DOA 0666).

**15A NCAC 19A .0202(d)(10) - CONTROL MEASURES - HIV**

Brenda B. Becton, Administrative Law Judge with the Office of Administrative Hearings, declared Rule 15A NCAC 19A .0202(d)(10) void as applied in *ACT-UP TRIANGLE (AIDS Coalition to Unleash Power Triangle), Steven Harris, and John Doe, Petitioners v. Commission for Health Services of the State of North Carolina, Ron Levine, as Assistant Secretary of Health and State Health Director for the Department of Environment, Health, and Natural Resources of the State of North Carolina, William Cobey, as Secretary of the Department of Environment, Health, and Natural Resources of the State of North Carolina, Dr. Rebecca Meriwether, as Chief, Communicable Disease Control Section of the North Carolina Department of Environment, Health, and Natural Resources, Wayne Bobbitt Jr., as Chief of the HIV/STD Control Branch of the North Carolina Department of Environment, Health, and Natural Resources, Respondents* (91 EHR 0818).

*This Section contains the full text of some of the more significant Administrative Law Judge decisions along with an index to all recent contested cases decisions which are filed under North Carolina's Administrative Procedure Act. Copies of the decisions listed in the index and not published are available upon request for a minimal charge by contacting the Office of Administrative Hearings, (919) 733-2698.*

### KEY TO CASE CODES

ABC	Alcoholic Beverage Control Commission	DST	Department of State Treasurer
BDA	Board of Dental Examiners	EDC	Department of Public Instruction
BME	Board of Medical Examiners	EHR	Department of Environment, Health, and Natural Resources
BMS	Board of Mortuary Science	ESC	Employment Security Commission
BOG	Board of Geologists	HAF	Hearing Aid Dealers and Fitters Board
BON	Board of Nursing	HRC	Human Relations Committee
BOO	Board of Opticians	IND	Independent Agencies
CFA	Commission for Auctioneers	INS	Department of Insurance
COM	Department of Economic and Community Development	LBC	Licensing Board for Contractors
CPS	Department of Crime Control and Public Safety	MLK	Milk Commission
CSE	Child Support Enforcement	NHA	Board of Nursing Home Administrators
DAG	Department of Agriculture	OAH	Office of Administrative Hearings
DCC	Department of Community Colleges	OSP	Office of State Personnel
DCR	Department of Cultural Resources	PHC	Board of Plumbing and Heating Contractors
DCS	Distribution Child Support	POD	Board of Podiatry Examiners
DHR	Department of Human Resources	SOS	Department of Secretary of State
DOA	Department of Administration	SPA	Board of Examiners of Speech and Language Pathologists and Audiologists
DOJ	Department of Justice	WRC	Wildlife Resources Commission
DOL	Department of Labor		
DSA	Department of State Auditor		

CASE NAME	CASE NUMBER	ALJ	FILED DATE
Harold Keith & Associates v. NRC, Division of Environmental Management	89 NRC 0493	Gray	11/24/92
Anne R. Gwaltney, Milton H. Askew, Jr. and Anna L. Askew v. EHR and Pamlico County Health Department	89 DHR 0699	Reilly	07/17/92
Eleanor R. Edgerton-Taylor v. Cumberland County Department of Social Services	89 OSP 1141	Morrison	08/18/92
Annette Carlton v. Cleveland County Department of Social Services	90 OSP 0024	Chess	08/14/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Janice Parker Haughton v. Halifax County Mental Health, Mental Retardation, Substance Abuse Program	90 OSP 0221	West	08/18/92
Sarah P. Wilder v. N.C. State University	90 OSP 0268	Reilly	11/03/92
Carolina Water Service, Inc. v. EHR, Division of Environmental Management	90 EHR 0415	West	09/11/92
CSX Transportation, Inc. v. Department of Environment, Health, & Natural Resources	90 EHR 0628	Reilly	07/17/92
Bruce Keeter v. Beaufort County Health Department	90 EHR 0666	Morgan	07/28/92
R. Anthony White v. Department of Human Resources	90 CSE 0756	Morgan	10/05/92
Christine Hill v. Crime Victims Compensation Commission	90 CPS 0876	Morgan	08/24/92
Tommy D. Hunt v. Department of Correction	90 OSP 1011	Morgan	10/05/92
Cherokee Resources, Inc. v. EHR, Division of Environmental Management	90 EHR 1075	West	10/19/92
Leslie W. Hall v. EHR, Division of Marine Fisheries	90 EHR 1397	Gray	10/13/92
JHY Concord, Inc. v. Department of Labor	90 DOL 1421	Morgan	07/28/92
Lick Fork Hills, Inc., Marion Bagwell, President v. Department of Environment, Health, & Natural Resources	91 EHR 0023	Morgan	07/28/92
Albert J. Johnson v. N.C. Victims Compensation Commission	91 CPS 0038	Morgan	07/28/92
Frank Beal, T/A Wild Wild West v. Alcoholic Beverage Control Commission	91 ABC 0164	Morgan	09/10/92



**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
William B. Holden v. Department of Environment, Health, & Natural Resources	91 EHR 0176	Morgan	08/18/92
Brenda P. Price v. North Carolina Central University	91 OSP 0219	Morrison	08/21/92
Century Care of Laurinburg, Inc. v. DHR, Division of Facility Services, Licensure Section	91 DHR 0257	West	06/30/92
Kenneth E. Fletcher v. University of North Carolina at Greensboro	91 OSP 0315	Chess	09/15/92
Richard L. Gainey v. Department of Justice	91 OSP 0341	Becton	08/10/92
Wade Charles Brown, Jr. v. N.C. Crime Victims Compensation Commission	91 CPS 0345	Chess	07/08/92
Jackie Bruce Edwards v. DHR, Western Carolina Center	91 OSP 0354	West	08/20/92
Central Transport, Inc. v. Department of Environment, Health, & Natural Resources	91 EHR 0402	Morrison	09/25/92
Robert C. Howell v. Department of Correction	91 OSP 0407	Morgan	08/26/92
Harvey Fertilizer and Gas Company v. EHR, Division of Environmental Management	91 EHR 0446	Morgan	10/01/92
Charles E. Roe v. Department of Environment, Health, & Natural Resources	91 OSP 0520	Nesnow	07/23/92
Jerry J. Parker v. Department of Correction	91 OSP 0546	Morgan	08/26/92
Deborah Binkley v. Crime Victims Compensation Commission	91 CPS 0561	Morgan	10/02/92
Air-A-Plane Corporation v. Department of Environment, Health, & Natural Resources	91 EHR 0636	Nesnow	09/04/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Lisa M. Reichstein v. Office of Student Financial Aid, East Carolina University	91 OSP 0662	Nesnow	06/24/92
Hudson's "The Acres" Rest Home v. DHR, Division of Facility Services, Licensure Section	91 DHR 0665	Chess	09/09/92
Bobby R. Graham v. DHR, Caswell Center	91 OSP 0695	Nesnow	09/21/92
DHR, Division of Facility Svcs, Child Day Care Section v. Mary Goodwin, Jean Dodd, D/B/A Capital City Day Care Center	91 DHR 0720	Morgan	07/30/92
Kenneth Helms v. Department of Human Resources	91 OSP 0729	Chess	07/15/92
Lloyd C. Neely v. Department of Correction	91 OSP 0756	Morgan	09/10/92
Alcoholic Beverage Control Commission v. Daniels Investments, Inc., t/a Leather & Lace - East 4205 Monroe Road, Charlotte, N.C. 28205	91 ABC 0799	Mann	07/14/92
Zelma Babson v. Brunswick County Health Department	91 OSP 0804	Gray	08/14/92
ACT-UP Triangle (AIDS Coalition to Unleash Power Triangle, Steven Harris, and John Doe v. Commission for Health Services of the State of N.C., Ron Levine, as Assistant Secretary of Health and State Health Director for EHR of the State of N.C., William Cobey, as Secretary of EHR of the State of N.C., Dr. Rebecca Meriwether, as Chief, Communicable Disease Control Section of the N.C. EHR, Wayne Bobbitt, Jr., as Chief of the HIV/STD Control Branch of the N.C.EHR	91 EHR 0818	Becton	07/08/92
Jane C. O'Malley, Melvin L. Cartwright v. EHR and District Health Department Pasquotank- Perquimans-Camden-Chowan	91 EHR 0838	Becton	07/02/92
Geraldine Sims v. N.C. Agricultural and Technical State University	91 OSP 0859	Chess	10/29/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Cheryl Veronica McNeal v. Criminal Justice Education & Training Stds Comm	91 DOJ 0861	Morgan	09/22/92
Thomas E. Vass v. James E. Long, Department of Insurance	91 INS 0876	Morrison	08/14/92
Coastal Ready Mix Concrete, et. al. v. EHR, Division of Coastal Management	91 EHR 0889	Chess	10/12/92
William Paul Fearington v. University of North Carolina at Chapel Hill	91 OSP 0905	Reilly	08/28/92
Olde Towne Partnership and Tryon Realty Co. v. EHR, Division of Coastal Management	91 EHR 0909	Morrison	09/16/92
Gerald R. Pruitt v. Department of Correction	91 OSP 0933	Gray	09/14/92
Jones Grading & Fencing, Inc. v. EHR, Solid Waste Management	91 EHR 0956 91 EHR 0324	Nesnow	09/28/92
Grotgen Nursing Home, Inc., Britthaven, Inc. v. Certificate of Need Section, Div of Facility Svcs, DHR	91 DHR 0964 91 DHR 0966	Nesnow	07/06/92
Ralph E. Brown v. Carla O'Konek, Department of Correction	91 OSP 0970	Morgan	10/07/92
Anthony J. Carter v. DHR, Division of Social Services, CSE	91 CSE 0975	Nesnow	09/17/92
Ramona S. Smith, R.N. v. N.C. Teachers'/St Emps' Comp Major Medical Plan	91 DST 0984	Chess	06/18/92
Jarrett Dennis Swearengin v. DHR, Division of Social Services, CSE	91 CSE 0986	Becton	09/14/92
Charles H. Yates, Power of Attorney for Ruth Yates v. N.C. Teachers'/St Emps' Comp Major Medical Plan	91 INS 1008	Reilly	08/21/92
John McMillan v. DHR, Division of Social Services, CSE	91 CSE 1009	Reilly	10/01/92



## CONTESTED CASE DECISIONS

CASE NAME	CASE NUMBER	ALJ	FILED DATE
Walter McGlone v. DHR, Division of Social Services, CSE	91 CSE 1030	Morrison	07/13/92
William Oscar Smith v. DHR, Division of Social Services, CSE	91 CSE 1042	Gray	07/24/92
William Watson v. DHR, Division of Social Services, CSE	91 CSE 1047	Becton	07/08/92
Robert D. Daniels Jr. v. DHR, Division of Social Services, CSE	91 CSE 1048	Morrison	08/27/92
Joseph L. Wilmer v. DHR, Division of Social Services, CSE	91 CSE 1049	Becton	10/20/92
Marie McNeill-Pridgen v. Department of Environment, Health, & Natural Resources	91 EHR 1059	Nesnow	07/17/92
Catawba Memorial Hospital v. DHR, Div of Facility Svcs, Certificate of Need Section and Frye Regional Medical Ctr, Inc. and Amireit (Frye), Inc. and Thoms Rehabilitation Hospital Health Services Corp. and Frye Regional Medical Ctr, Inc. and Amireit (Frye), Inc. v. DHR, Div of Facility Svcs, Certificate of Need Section and Thoms Rehabilitation Hospital Health Services Corp. and Catawba Memorial Hospital	91 DHR 1061           91 DHR 1087	Reilly	07/13/92
Edward R. Peele v. Sheriffs' Education & Training Stds. Commission	91 DOJ 1092	Morrison	08/18/92
Willie Turner v. DHR, Division of Social Services, CSE	91 CSE 1096	Morrison	10/23/92
Charles Lawton Roberts v. DHR, Division of Social Services, CSE	91 CSE 1097	Becton	09/14/92
William Torres v. Dept of Justice, Lacy H. Thornburg, Attorney General	91 DOJ 1098	Morrison	08/07/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Wade A. Burgess v. DHR, Division of Social Services, CSE	91 CSE 1114	Gray	07/01/92
Devoux A. Olliver v. Department of Human Resources, O'Berry Center	91 OSP 1151	Gray	09/30/92
Sammie L. Anderson v. DHR, Division of Social Services, CSE	91 CSE 1155	Mann	09/01/92
Harry L. King v. Department of Transportation	91 OSP 1162	Morgan	07/13/92
Bobby M. Siler v. DHR, Division of Social Services, CSE	91 CSE 1169	Morrison	10/12/92
Gilbert Lockhart v. DHR, Division of Social Services, CSE	91 CSE 1178	Morrison	07/30/92
Isaac H. Galloway v. DHR, Division of Social Services, CSE	91 CSE 1190	Reilly	06/30/92
Russell A. Barclift v. DHR, Division of Social Services, CSE	91 CSE 1207 92 CSE 0275	Reilly	06/30/92
Barnabas D. Frederick v. DHR, Division of Social Services, CSE	91 CSE 1216	Nesnow	09/15/92
Herman Edward Main II v. DHR, Division of Social Services, CSE	91 CSE 1225	Nesnow	07/07/92
Robert L. Hicks v. DHR, Division of Social Services, CSE	91 CSE 1241	Morgan	11/18/92
Albert Louis Stoner III v. DHR, Division of Social Services, CSE	91 CSE 1244	Gray	07/01/92
James E. Greene v. DHR, Division of Social Services, CSE	91 CSE 1245	Nesnow	07/14/92
Joseph W. Harris v. DHR, Division of Social Services, CSE	91 CSE 1247	Morgan	07/28/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Michael Lee Cadogan v. DHR, Division of Social Services, CSE	91 CSE 1254	Nesnow	11/17/92
Celvis M. Burns v. DHR, Division of Social Services, CSE	91 CSE 1256	Mann	09/01/92
Rodney Powell v. DHR, Division of Social Services, CSE	91 CSE 1257	Morgan	07/29/92
Miles G. Griffin Jr. v. DHR, Division of Social Services, CSE	91 CSE 1270	Gray	08/27/92
Gerald E. Anthony v. DHR, Division of Social Services, CSE	91 CSE 1274	Mann	09/01/92
Floyd L. Rountree v. DHR, Division of Social Services, CSE	91 CSE 1275	Morgan	07/22/92
Ruth Smith Hensley Shondales v. ABC Commission	91 ABC 1280	Chess	08/05/92
Willie Simpson Smith III v. DHR, Division of Social Services, CSE	91 CSE 1288	Morrison	11/18/92
William James Terry v. Victims Compensation Commission	91 CPS 1302	Morrison	10/02/92
Rasoul Behboudi v. DHR, Division of Social Services, CSE	91 CSE 1313	Morrison	09/15/92
John D. Gaines v. DHR, Division of Social Services, CSE	91 CSE 1321	Chess	10/05/92
Ann W. Grush, as Collector for the Estate of Johnny L. Wilson, Deceased and Individually v. Bd of Trustees Teachers' & State Emp Retirement Sys	91 DST 1354	Morgan	11/19/92
City-Wide Asphalt Paving, Inc. v. Department of Environment, Health, & Natural Resources	91 EHR 1360	Chess	07/01/92



**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Alcoholic Beverage Control Commission v. Tre Three, Inc., T/A Crackers, Airport Rd., Rockingham, NC 28379	91 ABC 1372	Chess	07/07/92
Alcoholic Beverage Control Commission v. Rode Enterprises, Inc., T/A Jordan Dam Mini Mart	91 ABC 1388	Gray	07/30/92
Carol J. Brown-L 238-96-9304 for Joel A. Brown-M 350-70-9378 v. DHR, Division of Social Services, CSE	91 DHR 1397	Morrison	10/29/92
Carlton M. Smith v. Department of Human Resources	91 OSP 1419	Reilly	11/05/92
Blythe M. Bragg v. University of North Carolina at Chapel Hill	91 OSP 1421	Nesnow	09/08/92
David W. Williams v. DHR, Division of Social Services, CSE	91 CSE 1423	Morrison	09/10/92
Donald R. Allison v. DHR, Caswell Center	91 OSP 1427	Reilly	06/30/92
Alfred Rees v. Department of Environment, Health, & Natural Resources	92 EHR 0004	Reilly	09/03/92
Mrs. S. v. Washington County Board of Education	92 EDC 0023	Mann	08/28/92
Rudolph Tripp v. Department of Correction	92 OSP 0024	Gray	08/27/92
Gonzalo Rodriguez T/A Gonzalo's Baile Mexicano 227 S. Scales Street, Reidsville, NC 27323 v. Alcoholic Beverage Control Commission	92 ABC 0026	Chess	10/01/92
Ella L. Cobb v. Department of Correction, Aaron J. Johnson	92 OSP 0028	Gray	11/30/92
Lavern Fesperman v. Mecklenburg County	92 OSP 0030	Chess	07/17/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Vale B. Sims v. Winston-Salem State University	92 OSP 0031	Gray	10/13/92
Paul J. Nonkes v. Halifax County Health Dept. (Jeff Dillard, Sanitarian)	92 EHR 0058	Becton	08/28/92
Carrolton of Williamston, Inc. v. DHR, Division of Facility Services, Licensure Section	92 DHR 0071	Becton	08/19/92
Ron C. W. Spencer v. Criminal Justice Education & Training Stds Commission	92 DOJ 0076	Morgan	11/05/92
Mattie S. Bryant v. Department of Transportation	92 OSP 0081	Reilly	10/07/92
Fred Jennings Moody Jr. v. Sheriffs' Education & Training Stds. Commission	92 DOJ 0084	Chess	07/17/92
Ronnie Lamont Donaldson v. Sheriffs' Education & Training Standards Commission	92 DOJ 0092	Reilly	07/27/92
Vernice V. Battle v. Sheriffs' Education & Training Standards Commission	92 DOJ 0093	Becton	08/28/92
Hudson's "The Acres" Rest Home v. DHR, Division of Facility Services, Licensure Section	92 DHR 0100	Chess	09/04/92
Marvin Helton, Jean Helton v. DHR, Division of Facility Services	92 DHR 0102	Chess	08/14/92
Leo Scott Wilson v. Department of Environment, Health, & Natural Resources	92 EHR 0112	Reilly	08/26/92
Ray Charles Ramsey D/B/A Triples Night Club v. Alcoholic Beverage Control Commission	92 ABC 0116 92 ABC 0360	West	10/12/92
Peggy N. Barber v. The University of North Carolina at Chapel Hill	92 OSP 0120	Reilly	07/13/92
Luther Dawson Jr. v. DHR, Division of Facility Services	92 DHR 0121	Nesnow	10/09/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Rodney A. Cranfill v. Dept of Labor, Division of Occupational Safety & Health	92 DOL 0122	Nesnow	10/22/92
Robert C. Thomas v. Sheriffs' Education & Training Stds. Commission	92 DOJ 0130	Chess	10/02/92
Alcoholic Beverage Control Commission v. John Wade Lewis, t/a Tasty Grill	92 ABC 0145	Nesnow	07/15/92
Perry L. Grogans v. DHR, Division of Social Services, CSE	92 CSE 0170	Reilly	11/17/92
Licensing Board for General Contractors v. Wright's Construction, Inc. (Lic. No. 23065)	92 LBC 0172	Gray	07/31/92
Richard L. Banks v. Pasquotank-Perquimans-Camden-Chowan District Health Department (PPCC) & Department of Environment, Health, & Natural Resources	92 EHR 0175	West	08/25/92
America's Management Group, Inc. d/b/a America's Health Care of Nashville v. DHR, Division of Facility Services, Licensure Section	92 DHR 0183	West	10/06/92
Hudson's "The Acres" Rest Home v. DHR, Division of Facility Services, Licensure Section	92 DHR 0186	Chess	09/04/92
Ray Bryant v. Department of Labor, OSHA	92 DOL 0187	Nesnow	08/07/92
Herbert Hines Jr., H & H v. Alcoholic Beverage Control Commission	92 ABC 0189	Becton	07/22/92
James T. Scruggs v. Department of Transportation	92 OSP 0193	Chess	11/02/92
William Stevenson v. Department of Correction	92 OSP 0201	Chess	09/03/92
Frances B. Billingsley v. Bd. of Trustees/Teachers & St Employees Retirement Sys	92 DST 0205	Morgan	08/18/92



<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Glenn E. Myers v. Department of Correction	92 OSP 0217	Reilly	09/14/92
Lawrence Neal Murrill T/A Knox, 507 1st St SW, Hickory, NC 28602 v. Alcoholic Beverage Control Commission	92 ABC 0220	Chess	08/03/92
William Oats v. Elizabeth City State University	92 OSP 0226	Nesnow	10/09/92
Town of Denton v. Department of Environment, Health, & Natural Resources	92 EHR 0241	Reilly	07/30/92
Alcoholic Beverage Control Commission v. Byrum's of Park Road, Inc., T/A Byrum's Restaurant	92 ABC 0252	Gray	07/30/92
Alcoholic Beverage Control Commission v. Leo's Delicatessen #2, Inc., T/A Leo's #2	92 ABC 0255	Gray	07/30/92
North Topsail Water & Sewer, Inc. v. Department of Environment, Health, & Natural Resources	92 EHR 0266	Morrison	08/12/92
Raymond O. and Rita Halle, and the Town of Boone v. EHR, Division of Land Resources	92 EHR 0267 92 EHR 0376	Gray	09/18/92
James L. Stubbs v. Department of Correction	92 OSP 0282	Chess	10/02/92
Henry Thomas Tart v. DHR, Division of Social Services, CSE	92 CSE 0283	Nesnow	09/15/92
Virginia Devenny v. The University of North Carolina at Charlotte	92 OSP 0301	Reilly	09/22/92
Friends of Hatteras Island National Historic Maritime Forest Land Trust for Preservation, Inc. v. Coastal Resources Commission of the State of NC and Cape Hatteras Water Association, Inc.	92 EHR 0303	West	10/19/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Henry Lane, D/B/A Emerald Health Care Acute Care Ctr v. DHR, Div of Facility Services, Certificate of Need Section and Bowman-Richardson Health Care, Inc. D/B/A Wilkes Senior Village	92 DHR 0308	Gray	08/28/92
Azmi Sider, Midtown Mini Mart v. EHR, Division of Maternal and Child Health, WIC Section	92 EHR 0317	Nesnow	09/16/92
Gerald G. Strickland v. Crime Control and Public Safety	92 CPS 0320	Chess	09/10/92
Charles Wesley McAdams v. Division of Motor Vehicles	92 OSP 0332	Gray	10/13/92
Jonathan L. Fann v. U.N.C. Physical Plant, Herb Paul, Louis Herndon, Dean Justice, Bruce Jones	92 OSP 0363	Becton	08/19/92
Carolyn Owen v. UNC-G Physical Plant	92 OSP 0370	Nesnow	11/17/92
Douglas A. Bordeaux v. Department of Correction	92 OSP 0378	Chess	07/10/92
Clifton R. Johnson v. O'Berry Center, Department of Human Resources	92 OSP 0381	West	07/08/92
Southeastern Machine & Tool Company, Inc. v. Department of Environment, Health, & Natural Resources	92 EHR 0386	Becton	07/20/92
Louvenia Clark v. Edgecombe County Department of Social Services	92 OSP 0402	Reilly	08/21/92
Raleigh F. LaRoche v. Child & Family Services of Wake County	92 OSP 0409	Becton	08/24/92
Matthew R. Anderson v. DHR, Division of Social Services, CSE	92 CSE 0418	Gray	10/06/92
Ellwin C. Wetherington Jr. v. DHR, Division of Social Services, CSE	92 CSE 0419	Morrison	09/28/92

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Paul Reeves, Youth University Child Care v. Child Day Care Section, Division of Facility Svcs	92 DHR 0424	West	08/21/92
Mr. & Mrs. James C. Stanton v. Charlotte-Mecklenburg School System	92 EDC 0430	Nesnow	08/04/92
James Cooper Lewis v. Sheriffs' Education & Training Standards Commission	92 DOJ 0461	Reilly	09/15/92
Virgil Blaine Poole v. Department of Correction	92 OSP 0463	Reilly	11/03/92
Alcoholic Beverage Control Commission v. Roy William Teague, T/A Jamie's	92 ABC 0474	Reilly	10/15/92
Alcoholic Beverage Control Commission v. 508 Investors, Inc., t/a Johnathon's Restaurant	92 ABC 0476	Nesnow	09/24/92
Jon David Amundson v. Davidson County Mental Health	92 OSP 0503	Becton	09/10/92
Northview Mobile Home Park v. Department of Environment, Health, & Natural Resources	92 EHR 0507	Reilly	07/13/92
Nathan R. Harris v. DHR, Division of Social Services, CSE	92 CSE 0512	West	11/12/92
Yolanda Lynn Bethea v. DHR, Division of Social Services, CSE	92 DCS 0513	Becton	08/14/92
Frank Humphrey v. EHR, Division of Environmental Management	92 EHR 0514	Morrison	10/08/92
Alice Hunt Davis v. Department of Human Resources	92 OSP 0526	West	07/16/92
Waynette Hagler v. DHR, Division of Social Services, CSE	92 DCS 0529	Becton	11/18/92
Jimmy F. Bailey Sr. v. Department of State Treasurer, Retirement Systems Div	92 DST 0536	Morgan	08/18/92



**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Alcoholic Beverage Control Commission v. Partnership (Rollo Corrothers) t/a Corrothers Community Center and Private Club	92 ABC 0539	Mann	10/19/92
James R. Coley Sr. v. Department of Crime Control & Public Safety	92 CPS 0551	Morgan	10/28/92
Bramar, Inc., t/a Spike's v. Alcoholic Beverage Control Commission	92 ABC 0554	Mann	08/13/92
Grady Lockhart Jr. v. DHR, Division of Social Services, CSE	92 CSE 0565	Becton	09/28/92
Ralph J. Ogburn v. Private Protective Services Board	92 DOJ 0571	Nesnow	08/07/92
Clemon Evans, Glamor Inn v. Alcoholic Beverage Control Commission	92 ABC 0574	West	11/10/92
George M. Hagans v. DHR, (Cherry Hospital)	92 OSP 0583	Morgan	09/21/92
Gilbert Todd Sr. v. Public Water Supply Section	92 EHR 0586	Morrison	08/06/92
Candance Y. Johnson v. Division of Motor Vehicles	92 DOT 0589	Becton	08/24/92
John W. Surles v. N.C. Crime Victims Compensation Commission	92 CPS 0595	Reilly	07/13/92
Michelle Umstead v. Crime Victims Compensation Commission	92 CPS 0599	Morrison	10/26/92
Alcoholic Beverage Control Commission v. Teresa Henderson Burnett T/A Tiffany's Lounge	92 ABC 0611	Gray	11/05/92
Alcoholic Beverage Control Commission v. Richard Henry Bradley T/A Nite Lite	92 ABC 0613	Gray	10/30/92
Pamela Jean Gass v. DHR, Division of Social Services, CSE	92 DCS 0623	Morrison	08/14/92

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Vanester Morrison v. Social Services of Mecklenburg County	92 DHR 0635	West	11/23/92
J.W. Reed v. Department of Correction	92 OSP 0638	Morrison	08/11/92
Debra G. Conner v. Caswell Center, Department of Human Resources	92 OSP 0647	Morgan	10/28/92
Carson Davis v. Department of Correction	92 OSP 0650	Reilly	08/10/92
Kevin Stringer v. DHR, Division of Social Services, CSE	92 CSE 0651	Gray	10/23/92
Luther Hall Clontz v. Western Carolina Center (NC of Human Resources)	92 OSP 0652	Becton	09/10/92
Private Protective Services Board v. Mark Andrew Perry	92 DOJ 0662	Becton	09/10/92
Stauffer Information Systems v. Department of Community Colleges and the N.C. Department of Administration and The University of Southern California	92 DOA 0666	West	07/08/92
Dortheia B. Marley v. Department of Correction	92 OSP 0667	West	09/28/92
Nancy J. Tice v. Administrative Off of the Courts, Guardian Ad Litem Svcs	92 OSP 0674	Morrison	08/11/92
L. Stan Bailey v. Chancellor Moran and UNC-Greensboro	92 OSP 0679	West	07/10/92
Arnold McCloud T/A Club Castle v. Alcoholic Beverage Control Commission	92 ABC 0681	Morrison	07/25/92
Alcoholic Beverage Control Commission v. Alfonzo Damon T/A The New Zanza Bar	92 ABC 0690	Gray	10/30/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Alcoholic Beverage Control Commission v. Ronald Rubin Hicks T/A Country Sports Bar & Grill	92 ABC 0695	Becton	11/25/92
Alcoholic Beverage Control Commission v. Nina Katheryn Delk, T/A Nina's Billiards	92 ABC 0704	Gray	11/10/92
Joyce Faircloth, T/A Showcase Lounge v. Alcoholic Beverage Control Commission	92 ABC 0713	Morrison	07/25/92
James B. Price v. Department of Transportation	92 OSP 0725	Mann	09/02/92
Dianne G. Brawley v. Sheriffs' Education & Training Standards Commission	92 DOJ 0729	Gray	11/05/92
Edmonia Lang v. Carteret County Board of Education	92 OSP 0736	Mann	08/28/92
Beatrice Wheless v. Lise M. Miller, University Payroll Off, NC St University	92 OSP 0744	Morgan	11/05/92
Larry Bruce High v. Alarms Systems Licensing Board	92 DOJ 0755 92 DOJ 0785	Nesnow	08/25/92
Ezra Meir v. EHR, Division of Environmental Management	92 EHR 0764	Morgan	11/12/92
Wyoming Gilliam v. DHR, Division of Social Services, CSE	92 CSE 0772	Gray	09/29/92
Alcoholic Beverage Control Commission v. Robert Norman Hatem, t/a Spanky's	92 ABC 0778	Mann	11/25/92
Wilma P. Howard v. Bd of Trustees of the Teachers' & St Emp Retirement Sys	92 DST 0787	Becton	11/09/92
Timothy Wylie v. Department of State Treasurer, Retirement Systems Div	92 DST 0793	Morrison	09/29/92
Jolynn S. Collins v. Department of Crime Control & Public Safety	92 CPS 0798	Morgan	11/25/92



<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Margaret Keys v. Crime Victims Compensation Commission	92 CPS 0807	Becton	11/06/92
Rosie W. Harrell v. Administrative Office of the Courts	92 OSP 0846	West	09/17/92
Resteyne M. Wilkinson v. Employment Security Commission	92 OSP 0870	Chess	10/27/92
Robert Aiken v. Department of Correction	92 OSP 0872	Gray	09/25/92
Daniel N. Jones v. N.C. Victims Compensation Commission	92 CPS 0879	Chess	08/28/92
Paul Hunter v. Dorothea Dix Hospital	92 OSP 0878	Chess	09/29/92
David V. Cates v. Alarm Systems Licensing Board	92 DOJ 0892	Becton	10/05/92
Kiddie Kountry Day Care, Elaine Stephenson v. Public Water Supply System	92 EHR 0901	Becton	10/28/92
Larry E. Foreman, L. Reginald Caroon, Benny C. Leary, Zool Ireland, Mitchie Midgette, and Arthur Leary v. DHR, Division of Marine Fisheries	92 EHR 0908 92 EHR 0909 92 EHR 0910 92 EHR 0911 92 EHR 0912 92 EHR 0924	Gray	10/28/92
Ronnie Campbell v. Department of Environment, Health, & Natural Resources	92 EHR 0921	Reilly	11/16/92
Patricia Guyton Watson v. Medicaid-Division of Medical Assistance	92 DHR 0944	West	11/23/92
Larry Donnel Williams v. DHR, O'Berry Center	92 OSP 0950	Gray	10/19/92
Tomenah W. Hudson v. Department of Environment, Health, & Natural Resources	92 EHR 0983	Reilly	10/21/92

**CONTESTED CASE DECISIONS**

<b>CASE NAME</b>	<b>CASE NUMBER</b>	<b>ALJ</b>	<b>FILED DATE</b>
Heritage Environmental Services, Inc. v. Department of Environment, Health, & Natural Resources	92 EHR 1039	Gray	10/27/92
Piedmont Fiberglass Inc. v. Department of Environment, Health, & Natural Resources	92 EHR 1057	West	11/09/92
Jimmie Lee Thorne Jr. v. Victims Compensation Commission	92 CPS 1059	Nesnow	10/20/92
Leo Tew v. Board of Dental Examiners	92 BDA 1131	Reilly	11/17/92

STATE OF NORTH CAROLINA  
COUNTY OF WAKE

IN THE OFFICE OF  
ADMINISTRATIVE HEARINGS  
91 DST 1354

ANN W. GRUSH, AS COLLECTOR FOR THE	)	
ESTATE OF JOHNNY L. WILSON, DECEASED	)	
AND INDIVIDUALLY,	)	
Petitioner,	)	
	)	
v.	)	RECOMMENDED DECISION
	)	
BOARD OF TRUSTEES TEACHERS' AND STATE	)	
EMPLOYEES' RETIREMENT SYSTEMS,	)	
Respondent.	)	
	)	

The above-captioned matter was heard by Michael Rivers Morgan, Administrative Law Judge, on August 27, 1992 in Raleigh, North Carolina.

**APPEARANCES**

M. Jackson Nichols, Crisp, Davis, Schwenkter, Page, Currin and Nichols, for the Petitioner.

Alexander McC. Peters, Assistant Attorney General, for the Respondent.

**ISSUE**

Whether the Respondent correctly denied the payment of a decedent's retirement allowance to the decedent's daughter in favor of the decedent's ex-husband as the nominated recipient at the time of the decedent's death, after the decedent allegedly changed her nominated recipient in a proper manner from her ex-husband to her daughter.

**FINDINGS OF FACT**

Based upon the evidence admitted at the hearing, the undersigned administrative law judge finds the following facts:

1. The Petitioner is the daughter of the late Johnny L. Wilson.
2. Wilson was employed as a teacher's aide until her retirement in 1984.
3. Johnny L. Wilson was married to Jack D. Wilson, the Petitioner's father, until the Wilsons were divorced after thirty-nine years of marriage.
4. Johnny L. Wilson resided in a rest home in Conover, North Carolina and Jack D. Wilson resided in Supply, North Carolina after the divorce, with the two having no contact.
5. Johnny L. Wilson elected Option 2 on her May 4, 1984 Election of Benefits form with Jack D. Wilson designated as the beneficiary.
6. After the Wilsons' divorce, the Petitioner and Johnny L. Wilson discussed the need for Johnny L.



Wilson to change her beneficiary for survivor retirement benefits.

7. There are two circumstances under which a beneficiary designation can be changed under Option 2 of the Election of Benefits: the individual's return to State employment or a divorce from the elected spouse.
8. The Petitioner contacted the Respondent's offices by telephone on two occasions concerning Johnny L. Wilson's need to change her beneficiary for survivor retirement benefits, but does not know with whom she spoke on these occasions.
9. On the occasions when the Petitioner spoke with someone by telephone at the Respondent's offices concerning her mother's retirement allowance, the Petitioner identified herself as Johnny Wilson's daughter, stated that Johnny L. Wilson was retired due to disability, stated the Petitioner's understanding that a beneficiary could only be changed if the spouse had been divorced or had died, stated that Johnny L. Wilson was divorced and requested that papers be sent to change Johnny L. Wilson's beneficiary.
10. The Petitioner held a discussion by telephone with someone at the Respondent's offices concerning the way in which Johnny L. Wilson should change her beneficiary since she was divorced.
11. The Petitioner arranged to have the Respondent's forms sent to the Petitioner's home.
12. Two forms arrived at the Petitioner's home, which had instructions on the back of each form.
13. The Petitioner read the forms' instructions and Johnny L. Wilson executed the forms.
14. The Petitioner did not receive any assistance in completing the forms which the Respondent provided.
15. The form which the Petitioner completed and Johnny L. Wilson executed was a Change of Beneficiary form in which the Petitioner was designated as the principal beneficiary.
16. In the Designation of Beneficiary section of the Change of Beneficiary, form which Johnny L. Wilson executed, it was stated: "I hereby revoke my previous designation of beneficiary(ies) and now designate beneficiary(ies) to whom I request the Board of Trustees to pay, in the event of my death ... if retired, the guaranteed return of contributions under Option 1, 4, or 5..."
17. Johnny L. Wilson executed her Change of Beneficiary form on October 1, 1991.
18. Johnny L. Wilson died on October 3, 1991.
19. The Petitioner had not sent the executed Change of Beneficiary paperwork, and therefore the Respondent had not received the executed Change of Beneficiary paperwork, prior to the death of Johnny L. Wilson.
20. The Petitioner forwarded Johnny L. Wilson's Change of Beneficiary form to the Respondent during the week following the death of Johnny L. Wilson.
21. A female at the Respondent's offices informed the Petitioner that Johnny L. Wilson's Change of Beneficiary paperwork could not be processed because Johnny L. Wilson had died before this paperwork was received in the Respondent's offices.
22. In a November 5, 1991 letter to the Petitioner from the Respondent's Chief of Member Services Section Timothy S. Bryan, the Petitioner was informed that her request to be the designated beneficiary of Johnny L. Wilson would not be honored because a Revocation of Option form and an Election of Benefits form were not completed and the Change of Beneficiary form was not received

by the Respondent prior to the death of the Petitioner's mother.

23. In the November 5, 1991 letter, the Petitioner was informed that Johnny L. Wilson did not complete the proper forms to effectively revoke her previous beneficiary designation of Jack D. Wilson.
24. The Respondent's benefits counselors have access to a retirement system member's information and selected options.

### CONCLUSIONS OF LAW

1. North Carolina General Statutes Section 135-5(g) states, in pertinent part:  
"...any member having elected Options 2, 3, 5 or 6 and nominated his or her spouse to receive a retirement allowance upon the member's death may, after divorce from his or her spouse, revoke the nomination and elect a new option..."
2. Johnny L. Wilson elected Option 2 in her Election of Benefits form executed on May 4, 1984 and nominated her spouse Jack D. Wilson to receive a retirement allowance upon her death.
3. After her divorce from Jack D. Wilson, Johnny L. Wilson did not effectively revoke her nomination of Jack D. Wilson as the recipient of her retirement allowance and did not elect a new option.
4. Johnny L. Wilson's execution of a Change of Beneficiary form prior to her death was not legally effective to revoke her nomination of Jack D. Wilson as the recipient of her retirement allowance, to nominate the Petitioner in the stead of Jack D. Wilson and to elect a new option.
5. The Respondent correctly denied the payment of Johnny L. Wilson's retirement allowance to the Petitioner in favor of Jack D. Wilson as the nominated recipient at the time of Johnny L. Wilson's death.

### DISCUSSION

While the undersigned administrative law judge is obliged to heed and apply the express provisions of N.C.G.S. 5135-5(g) in reaching a recommended decision in the instant case, the undersigned is nonetheless troubled by the seeming inequity of this recommended result. It is apparent that the Petitioner and her mother formulated an intent to replace the mother's ex-spouse as the nominee for survivor retirement benefits, dutifully contacted the Respondent in order to implement this intent and trusted that they had clearly conveyed their intent to the Respondent in order to accomplish their desired end. Although the Petitioner likely did not utilize the most artful language in this complex area to trigger the Respondent's identification of the Petitioner's need to obtain a Revocation of option form and an Election of Benefits form for her mother instead of a Change of Beneficiary form, nonetheless the average layperson who is a member of the Retirement System deserves to feel some measure of confidence that his or her choices are accurately recorded in this often-intimidating area. The Respondent is urged to identify methods by which to more safely insure that unintended results like those which have evolved in the present case do not recur.

### RECOMMENDATION

It is recommended that Jack D. Wilson, instead of the Petitioner, be determined to be the nominated recipient of Johnny L. Wilson's retirement allowance.

### ORDER

It is hereby ordered that the agency serve a copy of the final decision on the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, N.C. 27611-7447, in accordance with North Carolina General Statute 150B-36 (b).

NOTICE

The agency making the final decision in this contested case is required to give each party an opportunity to file exceptions to this recommended decision and to present written arguments to those in the agency who will make the final decision. G.S. 15OB-36(a).

The agency is required by G.S. 15OB-36(b) to serve a copy of the final decision on all parties and to furnish a copy to the parties' attorney of record and to the Office of Administrative Hearings.

The agency that will make the final decision in this contested case is the Teachers' and State Employees' Retirement System of North Carolina.

This the 19th day of November, 1992.

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Michael Rivers Morgan  
Administrative Law Judge



STATE OF NORTH CAROLINA

COUNTY OF GUILFORD

IN THE OFFICE OF  
ADMINISTRATIVE HEARINGS  
91 OSP 0859

GERALDINE SIMS,  
Petitioner,

v.

N.C. AGRICULTURAL AND TECHNICAL STATE  
UNIVERSITY,  
Respondent.

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**RECOMMENDED DECISION**

### BACKGROUND

This matter was heard in High Point, North Carolina, on April 6, 1992, by Administrative Law Judge Sammie Chess, Jr. The Petitioner initiated the case on September 23, 1991, in order to appeal the decision of the Respondent agency to terminate her from the position of Administrative Officer I on April 10, 1990. The record closed on October 19, 1992, when the parties completed the filing of their proposed findings and conclusions and final arguments.

### ISSUES

Whether Petitioner was dismissed in contravention to North Carolina General Statute Section 126-35, SPA Regulations, and the Business and Finance Manual?

### STATUTES AND RULES INVOLVED

North Carolina General Statute Section 126-35  
25 N. C. A. C. 1J: .0605 - .0606

State Personnel Manual Section 9, pp. 3-6

SPA Grievance and Appeals Procedure Regulations Business and Finance Manual; Employee Relations;  
Personnel Manual Chapter 126  
Discipline Form BP 109

### SUMMARY OF DECISION

Petitioner's appeal should be granted in her favor because the Respondent Agency terminated the Petitioner in contravention to North Carolina General Statute Section 126-35, SPA Regulations and the Business and Finance Manual.

### APPEARANCES

For Petitioner:

Cheryl K. David  
Attorney at Law  
EGERTON, QUINN & DAVID  
Post Office Box 1920  
Greensboro, North Carolina 27402

For Respondent:

Anne J. Brown  
Associate Attorney General  
N.C. Department of Justice  
P.O. Box 629  
Raleigh, North Carolina 27602-0629

**WITNESSES**

The Petitioner presented the following witnesses:

Geraldine Sims

The Respondent presented the following witnesses:

Mrs. Lillian Couch

Mr. Charles McIntyre

Mr. James E. Collins

**EXHIBITS**

**Editor's Note:** The list of Exhibits has been omitted from publication. A copy may be obtained by contacting the Office of Administrative Hearings.

Based on a preponderance of the substantial evidence admitted into the record of this case, the Administrative Law Judge makes the following:

**STIPULATIONS**

1. Petitioner was first employed by the Respondent on January 1, 1963, as an Accounting Clerk I in the Treasury Department.
2. Petitioner became a permanent full-time State employee on January 1, 1963.
3. Petitioner was employed as an Administrative Officer I, in the Treasury Department of the Respondent University from October 1, 1975, until her separation from employment on April 10, 1990.
4. At the time of her separation, Petitioner's pay grade was 67.
5. At the time of her separation, Petitioner's service with the Respondent University was 27 years.

Based on a preponderance of the evidence admitted into the record of this case, the Administrative Law Judge makes the following:

**FINDINGS OF FACT**

1. Ms. Geraldine Sims, Petitioner, was employed by North Carolina Agricultural and Technical State University for 27 years.
2. Petitioner occupied the position from which she was fired, Administrative Officer I, for fifteen (15) years.
3. Petitioner received annual raises during her employment with the University.

4. Petitioner's job performance rating for the past 27 years, prior to being terminated, was at least satisfactory.

5. That Petitioner was awarded a Certificate acknowledging diligence and supervision in the Division of Business and Finance in September, 1989, commending on her good work. Less than 7 months later she was terminated.

6. That same month, September 1989, a new treasurer, James Collins, was hired at North Carolina A & T from outside the North Carolina University System.

7. That Mr. Collins was not aware of State procedures and policies enumerated above, regarding progressive discipline.

8. That the intention of North Carolina General Statute Section 126-35 is to give an employee notice that her performance is unsatisfactory and give her a reasonable fair chance to remedy deficiencies.

9. If warnings are not properly given or if they are insufficient to put the employee on notice, then said warnings and subsequent disciplinary actions violate the employee's right to procedural due process.

10. In this case, a total of nine letters were written to Petitioner from October 1989 until April 1990.

11. Each letter addressed new issues and no time was given for Petitioner to improve performance.

12. Most of the letters dealt with changes the new treasurer sought to implement. The letters did not indicate that Petitioner's job would be terminated until the end.

13. Mr. Collins did not present any documented evidence of counselling sessions with the Petitioner as provided for by University policy to improve performance.

14. The first "warning" letter, dated January 26, 1990, was insufficient to satisfy the statutory level of warning required under North Carolina General Statute Section 126-35. It proposed to give Petitioner 30 days to improve her performance; but, within 20 days of the counselling letter titled "First Warning," Petitioner received a letter marked "Final Warning," dated February 15, 1990.

15. The final warning did not set forth issues and means of improvement as required by University Policy and Statutes.

16. Termination occurred less than two months after the final warning on April 10, 1990.

17. The University fiscal affairs policy and procedure manual expands on North Carolina General Statute Section 126-35 and required greater responsibility on the part of the University to give the employee warning of specified deficiencies and corrective steps to remedy the problem. Petitioner was not given such "warnings". Each proposed warning letter dealt with different areas. The January 26 letter dealt with failure to deposit receipts on a daily basis. Petitioner corrected this problem pursuant to the first warning. The February 15, 1990 "warning" letter dealt with absenteeism and quality of performance. The termination letter of April 10, 1992, dealt with other issues which Petitioner had not been given previous warning: a check held over in a cash drawer, failure to bill Child Development Lab and a late certification to the State of a wire transfer.

18. According to the University Policy and Procedure, the Personnel Director Ms. Lillian Couch was to oversee all letters of dismissal before presented to an employee.

19. Ms. Couch testified that she did not see the dismissal letter before it was presented to



Petitioner.

20. University policy and procedure required two (2) weeks severance pay upon termination in like situations, yet Petitioner was not given such.

21. University Policy and North Carolina General Statute Section 126-35 require that appeal procedures be set out in the letter of dismissal. Such was not done in Petitioner's case.

22. Mr. Collins did not follow the University's designated procedures, nor did he comply with North Carolina General Statute Section 126-35.

Based on the foregoing Stipulations and Findings of Fact, the Administrative Law Judge makes the following:

### CONCLUSIONS OF LAW

1. The Agency action grieved by Petitioner in this contested case is her termination from the position of Administrative Officer I.

2. Petitioner showed by a preponderance of the evidence that the Agency failed to follow North Carolina General Statute Section 126-35 and failed to follow University policy and procedure with regard to progressive discipline and proper notice of warning and termination.

3. The Agency admitted that certain procedures and policies were not followed with regard to notice, appeal rights and severance pay. Ms. Lillian Couch, Personnel Director, admitted that in contravention to University policy, she did not see the Notice of Dismissal until after the fact, appeal rights were not given until after the fact, and severance pay was not given at all. The Business and Finance Manual states that dismissal actions must be coordinated with Personnel Department, as outlined in the progressing discipline policy. Moreover, the following progressive discipline steps are mandated:

a) 3 Warnings

1. oral warning;

2. Written warning which sets forth the points covered in the discussion;

3. Final written warning, which will serve notice that a continuation of the unacceptable practices may result in dismissal;

b) Predissmissal conference

1. Written summary of the case prepared by supervisor as a letter of dismissal for review and approval by the Personnel Director;

2. The letter must set forth in numerical order specific acts that are reasonable for dismissal;

3. Two (2) weeks notice;

4. Letter must inform employee of right to appeal.

4. Procedural due process in taking an individual's right to make a livelihood is violated if sufficient warnings are not given. Jesse Jones, Jr. v. Department of Human Resources, 300 NC 687 (1980). North Carolina General Statute Section 126-35 creates a reasonable expectation of continued employment and a chance to remedy deficiencies.

5. The Agency must be able to show that the Petitioner has failed to perform with reasonable care and attention before just cause for dismissal may be upheld. Walker v. N.C. Department of Human Resources, 100 NC App. 498.

6. Failure to complete certain tasks to the complete satisfaction of the supervisor is not enough to establish just cause. Id.

7. In order to show just cause, the Agency must prove that requirements were reasonable and the employee made no reasonable effort to meet these requirements.

8. Petitioner submitted evidence that she attempted her best to perform all of the requirements of a job which she had performed satisfactorily for 15 years under different treasurers; a job for which she received a Certificate of Acknowledgement just 7 months prior to her dismissal, a job which she received annual job increases and a career she had spent 27 years of her life perfecting.

Based on the foregoing Stipulations, Findings of Facts, Conclusions of Law, and a preponderance of the substantial evidence in the record, the Administrative Law Judge makes the following:

### RECOMMENDED DECISION

The State Personnel Commission should find that the Respondent dismissed Petitioner in contravention to North Carolina General Statute Section 126-35, and University Policy and Procedure.

### ORDER

It is hereby ordered that the agency serve a copy of the final decision on the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, N.C. 27611-7447, in accordance with North Carolina General Statute 150B-36(b).

### NOTICE

The agency making the final decision in this contested case is required to give each party an opportunity to file exceptions to this recommended decision and to present written arguments to those in the agency who will make the final decision. G.S. 150B-36(a).

The agency is required by G.S. 150B-36(b) to serve a copy of the final decision on all parties and to furnish a copy to the parties' attorney of record and to the Office of Administrative Hearings.

The agency that will make the final decision in this contested case is the Office of State Personnel.

This the 29th day of October, 1992.

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Sammie Chess, Jr.  
Administrative Law Judge

STATE OF NORTH CAROLINA

COUNTY OF DARE

IN THE OFFICE OF  
ADMINISTRATIVE HEARINGS  
91 EHR 0889

COASTAL READY MIX CONCRETE, ET. AL.,  
Petitioners,

v.

STATE OF NORTH CAROLINA, DEPARTMENT  
OF ENVIRONMENT, HEALTH, AND NATURAL  
RESOURCES, DIVISION OF COASTAL  
MANAGEMENT,  
Respondent.

RECOMMENDED DECISION

### BACKGROUND

THIS CAUSE COMING TO BE HEARD and being heard before Administrative Law Judge Sammie Chess, Jr., on June 22 and 23, 1992, in Manteo, Dare County, North Carolina.

### APPEARANCES

For Petitioner: W. Mark Spence, Esquire  
Betsy S. Butler, Esquire  
AYCOCK, SPENCE and BUTLER  
Post Office Box  
Nags Head, North Carolina 27959

For Respondent: David G. Heeter  
Associate Attorney General  
N.C. Department of Justice  
P.O. Box 629  
Raleigh, North Carolina 27602-0629

### ISSUES

Whether the Coastal Resources Commission's designation of Petitioners' property as an Area of Environmental Concern, and regulate development therein as provided in Rule 15A NCAC 7H .0507(d) and (e) constitute a "taking" in violation of North Carolina General Statute Section 113A-128, the Constitution of the United States or the Constitution of North Carolina?

### BURDEN OF PROOF

The burden of proof is upon the Petitioners to show by the greater weight of the evidence that the Respondent violated the applicable statutes, rules or Constitutional provisions.

### FINDINGS OF FACT

1. Coastal Ready Mix Concrete Company, Incorporated, is a North Carolina corporation with its principal office and place of business being situate in Dare County, North Carolina.



2. Alfred McCoy Tillett, Jr., and St. Clair Tillett are citizens and residents of Dare County, North Carolina.

3. Alfred McCoy Tillett, Jr., and St. Clair Tillett are the sole shareholders of all of the stock of Coastal Ready-Mix.

4. Coastal Ready Mix Concrete Co., Inc., is the owner of Lot 17, Gertrude Suero Subdivision, Nags Head, Dare County, North Carolina, having acquired same by Deed recorded March 18, 1985 in the office of the Register of Deeds of Dare County, North Carolina. Coastal Ready Mix Concrete Co., Inc. acquired said property for the sole and specific purpose of removing sand therefrom to be used in the manufacture of concrete and fill material.

5. Alfred McCoy Tillett, Jr., and St. Clair Tillett are the owners of Lot 18, which adjoins Lot 17, Gertrude Suero Subdivision, Dare County, North Carolina, having acquired same by Deed recorded July 10, 1987, in the office of the Register of Deeds of Dare County, North Carolina. Alfred McCoy Tillett, Jr. and St. Clair Tillett acquired said property for the purpose of removing sand from said property for the purpose of the manufacture of concrete and for fill material.

6. That Coastal Ready Mix Concrete Co., Inc., Alfred McCoy Tillett, Jr., and St. Clair Tillett have used both of said lots for the sole and specific purpose of removing sand from same for the manufacturing of concrete and for fill material in their business, continuously, since acquiring said property.

7. Predecessors in title to this property have used said property for the purpose of either removing sand for commercial purposes or selling sand for profit from said property, continuously, for more than 20 years prior to the Petitioners' acquiring of said property.

8. This property is located in a southwesterly direction from the main ridge of Jockey's Ridge which is a large sand dune situate in the Town of Nags Head on the Outer Banks of North Carolina. The location of Jockey's Ridge varies, to some extent, due to prevailing northeast winds in the winter and prevailing southwest winds during the summer months. During the winter when northeast winds prevail, the ridge shifts, or moves by the blowing of sand from its surface, in a generally southwesterly direction. The opposite occurs during the summer months when the prevailing winds are from the southwest. Because the prevailing northeast winds occur during a longer portion of the year than the prevailing southwest winds, the ridge itself is moving in a generally southwesterly direction toward the property in question.

9. Sand, blown by the winds, accumulates upon the property in question in large quantities where it is easily removed by the owners of the property for commercial use. When removed, the sand upon the property in question replenishes itself through the natural process of winds blowing the sand onto the property. According to Dr. Stanley Riggs, an expert geologist who testified at the hearing, sand upon these properties in question is, indeed, a renewable resource and that it would continue to renew itself indefinitely.

10. In April of 1987, the State of North Carolina, by and through Alton Phillips, real property agent for the North Carolina Department of Administration, attempted to purchase Lot 17, Gertrude Suero Subdivision from Petitioner, Coastal Ready Mix Concrete Co., Inc. for addition to the Jockey's Ridge State Park. The Jockey's Ridge State Park is a state park owned by the North Carolina Department of Administration, State of North Carolina. The Jockey's Ridge State Park boundary adjoins both of the lots in question to the north. Alton Phillips offered Coastal Ready Mix Concrete Co., Inc., the sum of \$20,000.00 for Lot 17.

11. Subsequently, the State of North Carolina, by and through the said Alton Phillips, offered to purchase both lots from the Petitioners for the total price of \$48,000.00.

12. Neither offer was accepted by Petitioners.

13. The appraisals conducted by the State of North Carolina to determine the value of said lots

were conducted assuming the highest and best use of the property to be residential. However, the appraisal conducted at the request and at the expense of the State of North Carolina by Collice C. Moore & Associates, Real Estate Appraisers and Consultants of Greenville, North Carolina, made a determination that, because of shifting sand and the volume of sand blowing on to the properties, they are generally not suitable for residential purposes.

14. By letter dated January 29, 1988, Petitioners were notified that the North Carolina Coastal Resources Commission had designated these properties as being within the Jockey's Ridge Area of Environmental Concern.

15. The rules and regulations of the Jockey's Ridge Area of Environmental Concern forbid the removal of sand from these properties except as necessary for construction purposes or for maintenance of residential property and, further, that any sand removed from the properties be redeposited at designated locations within the Jockey's Ridge State Park area. No sand could be removed from the property for business purposes of the Petitioners subsequent to the properties' designation as an Area of Environmental Concern.

16. The A. E. C. became effective in February of 1988, and pursuant to the rules and regulations of the A. E. C., Petitioner ceased all removal of sand from the two (2) lots in question as mandated by the Coastal Resources Commission.

17. Thereafter, the State of North Carolina, Department of Administration, advised Petitioners that it no longer had any interest in acquiring these properties for addition to the Jockey's Ridge State Park.

18. In February of 1988, when Petitioners ceased the removal of sand from the two (2) lots, the lots had been excavated to the level of the street or highway passing in front of the property. From March 1, 1985 through the date of this hearing, approximately 25,000 tons of sand have accumulated on the property in question, an average accumulation of 6,000 tons of sand per year.

19. From March of 1985 through February of 1988, when the Petitioners were forced to cease removing sand from the property, Petitioners removed 25,814 tons of sand from the property for use in its business operations.

20. From March of 1988 through February of 1992, the Petitioners used 24,834 tons of sand in its business operations which it purchased from Wallace Sand Company in Camden, North Carolina. The Petitioners pay \$3.00 per ton for sand at that location in Camden, North Carolina and expend \$5.00 per ton transporting said sand to Dare County for a total cost of \$8.00 per ton. Further, Petitioners used 14,992 tons of sand in their business operations which they purchased from Outer Banks Contractors, Inc. of Nags Head, North Carolina. However, the source of sand from which Outer Banks Contractors, Inc. supplied these 14,992 tons of sand has also been closed as a result of being included in a separated Area of Environmental Concern.

21. The sand which accumulates on the property in question is a high quality sand, free of trash and ideal for the manufacture of concrete.

22. That, as of March 1, 1988, the value of a ton of the sand located on the property in question at that location was \$2.00.

23. The cost of removing a ton of sand from this property to the north side of Jockey's Ridge State Park, including a front end loader, the operator for the front end loader, a dump truck and gasoline and oil, and other expenses, by a company engaged in that type of business is \$2.00 per ton. Therefore the cost to the property owner of removing 6,000 tons of sand per year to the north side of Jockey's Ridge State Park would be \$12,000.00. The encroachment of 6,000 tons of sand upon this property would threaten any residence constructed there and, therefore, said sand would have to be removed on a periodic basis.

24. On August 22, 1991, Petitioners filed an application seeking a CAMA Minor Development Permit to authorize them to continue to remove sand from the property in question for use in manufacturing concrete and for fill material in Petitioners' business.

25. That on September 19, 1992, the local permit officer for the town of Nags Head, denied the Petitioners' application based upon his findings that the two (2) lots were located within the Jockey's Ridge Area of Environmental Concern and the rules and regulations of the Jockey's Ridge Area of Environmental Concern prevented that use.

26. The property is not reasonably suitable for single family residential purposes. The property is zoned for residential purposes by the Nags Head Zoning Ordinance.

27. While the mining of sand from residential lots may be a non-conforming use under the Nags Head Zoning ordinance, the use of these particular lots for this purpose began substantially prior to the adoption of the Nags Head Zoning ordinance and, therefore, is "grandfathered" and that use is therefore not prohibited by the ordinance.

28. The designation of Petitioners' property as being included within the Jockey's Ridge State Park Area of Environmental Concern by the Respondent denies Petitioners all beneficial and economically viable use and enjoyment of this property.

29. Respondent produced no evidence tending to prove that the Jockey's Ridge State Park Area of Environmental Concern is not an unreasonable exercise of the police power as applied to Petitioners' property. Respondent has the burden of proof of same.

Based upon the foregoing Findings of Fact, the undersigned makes the following:

#### **CONCLUSIONS OF LAW**

1. That the designation of the subject properties as being within the Jockey's Ridge State Park Area of Environmental Concern, pursuant to North Carolina General Statute Section 113A-103 and Chapter 7H of the North Carolina Administrative Code constitutes a taking of property in violation of the Constitutions of the State of North Carolina and of the United States, in direct violation of North Carolina General Statute Section 113-128, and deprives Petitioners of the practical uses of their property, and is an unreasonable exercise of the police power as contemplated in North Carolina General Statute Section 113A-124.

Based upon the foregoing Findings of Fact and Conclusions of Law, and as a recommended decision pursuant to North Carolina General Statute Section 150B-34, the undersigned Administrative Law Judge makes the following:

#### **RECOMMENDED DECISION**

It is recommended that the North Carolina Department of Environment, Health and Natural Resources, Division of Coastal Management enter a Final Decision providing the following:

That the Jockey's Ridge State Park Area of Environmental Concern does not apply to Lot 17 and Lot 18, Gertrude Suero Subdivision, Nags Head, Dare County, North Carolina, the property of the Petitioners herein.

#### **ORDER**

It is hereby ordered that the agency serve a copy of the final decision on the office of Administrative Hearings, P.O. Drawer 27447, Raleigh, N.C. 27611-7447, in accordance with North Carolina General Statute 150B-36(b).



**NOTICE**

The agency making the final decision in this contested case is required to give each party an opportunity to file exceptions to this recommended decision and to present written arguments to those in the agency who will make the final decision. G.S. 150B-36(a).

The agency is required by G.S. 150B-36(b) to serve a copy of the final decision on all parties and to furnish a copy to the parties' attorney of record and to the Office of Administrative Hearings.

The agency that will make the final decision in this contested case is the North Carolina Department of Environment, Health and Natural Resources, Division of Coastal Management.

This the 12th day of October, 1992.

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Sammie Chess, Jr.  
Administrative Law Judge

STATE OF NORTH CAROLINA  
COUNTY OF GUILFORD

IN THE OFFICE OF  
ADMINISTRATIVE HEARINGS  
92 OSP 0370

CAROLYN OWEN,  
Petitioner,

v.

UNC-G PHYSICAL PLANT,  
Respondent.

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**RECOMMENDED DECISION**

The above-captioned matter was heard before Dolores O. Nesnow, Administrative Law Judge, on August 27-28, 1992, in High Point, North Carolina, and September 10-11, and 18, 1992, in Greensboro, North Carolina.

**APPEARANCES**

For Petitioner: Judith Behar  
Attorney At Law  
437 W. Friendly Avenue  
Greensboro, North Carolina 27401  
Attorney for Petitioner

For Respondent: David M. Parker  
Assistant Attorney General  
North Carolina Department of Justice  
P.O. Box 629  
Raleigh, North Carolina 27602-0629  
Attorney for Respondent

**ISSUE**

1. Did the Respondent dismiss Petitioner because of her sex?
2. Did the Respondent have just cause to dismiss the Petitioner for personal misconduct?

**STATUTES AND RULES IN ISSUE**

N.C. Gen. Stat. 126-4, 126-16, 126-17, 126-35  
N.C. Admin. Code, tit. 11, r. .0203  
N.C. Admin. Code, tit. 1J, r. .0604, .0605, .0606, .0608, .0610

**WITNESSES**

For Petitioner: Charles Bell, Retired Grounds Superintendent  
John White, Retired Grounds employee  
Sam Anderson, Retired Plumbing, Steam, Welding employee  
Malcolm Andrews, Grounds employee  
Ginny Myers, previous Grounds employee  
Bernice De Bragg, Secretary

Jack Colby, Director - Physical Plant  
Christopher Fay, Grounds Superintendent  
Carolyn Owen, Petitioner

**For Respondent:**

Anora Robbins, Assistant Director of Human Resources  
Tony Connally, Grounds employee  
Hal Shelton, Grounds employee  
David Kimball, Grounds employee  
Walter Wilson, Grounds employee  
Jerome Isley, Grounds employee  
Christopher Fay, Grounds Superintendent

**MOTIONS**

At the close of Petitioner's evidence, Respondent Moved to Dismiss the Petitioner's sex, age, and retaliation claims for failure to establish a prima facie case.

1. The Respondent's Motion as to age discrimination was ALLOWED.
2. The Respondent's Motion as to sex discrimination was DENIED.
3. A ruling on the Respondent's Motion as to Retaliation was reserved. After due and deliberate consideration, it is the undersigned's opinion that the Petitioner has failed to establish a prima facie case of retaliation.

Petitioner's protected activity occurred in 1985. The two supervisors immediately above Petitioner in the chain of command were replaced between the time of the protected activity and Petitioner's dismissal, though David Lumpkin became Petitioner's third line supervisor. Mr. Lumpkin, however, was Facilities Manager and was, from all indications, far removed from Petitioner's day to day work operations. Additionally, and more importantly, there is a lengthy time span between 1985 - the protected activity, and 1991 - the dismissal. It does not appear from the evidence presented that a causal connection exists between the protected activity and the adverse action.

It is, therefore, **ORDERED** that Respondent's Motion to Dismiss the issue of retaliation for failure to establish a prima facie case is ALLOWED.

**STIPULATIONS**

1. The Respondent stipulates that the Petitioner was qualified for purposes of the prima facie case in the discrimination issues.
2. Petitioner was a permanent State employee and was subject to the protections of the State Personnel Act.

Based upon careful consideration of the testimony and evidence presented at the hearing, the documents and exhibits received into evidence, and the entire record in this proceeding, the undersigned makes the following:

**FINDINGS OF FACT**

1. Petitioner was employed at the University of North Carolina at Greensboro (UNCG) until her dismissal for personal misconduct on November 22, 1991.
2. At the time of her dismissal Petitioner was employed as a Grounds Supervisor.



3. Petitioner's supervisor was Chris Fay, Superintendent of the Grounds Section in the Department of Physical Plant.

4. On November 18, 1991, Mr. Fay conducted a pre-disciplinary conference with Petitioner.

5. On November 22, 1991, Petitioner was dismissed and was so notified in a letter of that date from Chris Fay.

6. The dismissal letter stated that Petitioner had made statements of a derogatory and inflammatory nature to her employees, and that, during the course of an investigation, Petitioner attempted to discourage her employees from pursuing their complaints by intimidation.

7. The letter ended by outlining Petitioner's appeal rights.

8. Earlier, in August of 1990, Petitioner had received a written warning because of complaints from her grounds crew, particularly Jerome Hayes, alleging that she used abusive language, profanity, and sex and ethnic based comments. Petitioner was warned not to take any retaliatory action toward her crew. The warning also stated that it was a "conduct" warning and that Petitioner had received two previous "personal conduct" warnings, August 14, 1989 and June 15, 1990.

9. Petitioner appealed her August 14, 1989 warning and it was reversed at the grievance level.

10. Petitioner appealed her June 15, 1990 warning and it was upheld at the grievance level.

11. As a result of the discipline in the fall of 1990, Jerome Hayes was transferred off Petitioner's crew and David Kimball was transferred on to her crew.

12. During that winter, Kimball spoke with Chris Fay a number of times complaining about Petitioner but Mr. Fay advised him to "work it out."

13. In the Spring of 1991, Mr. Kimball went to see Anora Robbins, Assistant Director of Human Resources at UNCG, to complain about Petitioner.

14. After he had made his complaint, Kimball was asked to meet with Chris Fay and Petitioner to discuss the problem, but Kimball became upset at the prospect of confronting Petitioner and left work.

15. Kimball's complaint concerned the way he was treated by Petitioner. Mr. Kimball felt he was being ridiculed. Petitioner had said more than once, "If Charles Bell was still Superintendent, you wouldn't have this job."

16. In June of 1991, another one of Petitioner's employees, Tony Connally, an African American, was working on concrete for a handicap ramp. The day was very hot and Mr. Connally, at one point, took a break. Petitioner saw him resting and said, "If I was a black man, I could do this work all day."

17. Mr. Connally did not respond but was hurt and angry.

18. At approximately the same time as Mr. Kimball's meeting with Anora Robbins, Mr. Connally reported this incident to Ms. Robbins.

19. Petitioner testified that she enjoyed masonry and concrete work but had heard that opportunities in that field were not plentiful for women but were open for black males.

20. Mr. Connally testified, and it is found as fact, that Petitioner "...criticized my job performance all the time."

21. Mr. Connally complained to Ms. Robbins instead of discussing it with Petitioner because Petitioner had "...an obnoxious attitude."

22. On another occasion, Mr. Connally would not enter one of the University buildings after hours because he'd been instructed not to do so. Petitioner said, "I can enter the building. I'm not a black man."

23. Mr. Connally testified that Petitioner did not treat him any differently than other employees because "...she treated everybody like dirt."

24. Hal Shelton had also been an employee of Petitioner's. Mr. Shelton was considering quitting because there was a lot of conflict between himself and Petitioner.

25. Mr. Shelton had been a brick mason for 17 years but during the time he was supervised by Petitioner, she would not allow him to discuss masonry projects with project managers. She insisted that the managers speak to her and she would speak to Mr. Shelton.

26. Mr. Shelton testified that Petitioner cursed him, was defiant to his suggestions, did not respect him or treat him professionally, that she'd "blow up" at him and was hard to please, impolite and very "bossy."

27. Mr. Shelton talked to Chris Fay on a number of occasions about problems with Petitioner but Mr. Fay usually said to "just work it out."

28. Mr. Shelton also then complained to Anora Robbins.

29. In June of 1991, Mr. Fay moved Mr. Shelton to a different crew.

30. Walter Wilson was also a member of Petitioner's crew and had reported complaints about Petitioner to Anora Robbins on two or three occasions.

31. On one occasion, Petitioner stated to Mr. Wilson, "No man will ever meet my standards."

32. Jerome Isley, an African American, was also a member of Petitioner's crew and reported complaints about Petitioner to Anora Robbins.

33. On one occasion, Petitioner said to Isley, "You're stupid." and "Stop assing around."

34. In mid September of 1991, Mr. Fay learned that David Kimball, Tony Connally, Jerome Isley, Hal Shelton and Walter Wilson had all gone to Anora Robbins to complain about Petitioner. Mr. Fay initiated an investigation.

35. During this time, Petitioner went to see Anora Robbins to discuss the complaints. Petitioner made derogatory remarks about Ms. Robbins' reputation saying it was "a joke", and saying that, Ms. Robbins has no credibility at UNCG. Ms. Robbins told Petitioner to consult with other members of the Human Resources staff.

36. Ms. Robbins had each of the complaining employees reduce their statements to writing which they then signed.

37. During the period of the investigation, Petitioner gave copies of her 1990 written warning to Hal Shelton and said, "Read 'em and keep 'em." and "this goes to show how Human Resources will twist things around."

38. Petitioner also gave a copy of her 1990 warning to David Kimball and said, "If I go, I'm taking some others with me." She also accused him of "pulling a Jerome Hayes", meaning that he was trying to get removed from her crew.
39. Petitioner also gave a copy of her 1990 warning to Walter Wilson and said "This Jerome Hayes thing is starting up again."
40. Mr. Fay reviewed the statements the employees had written for Anora Robbins. Fay had also been informed that Petitioner had given out copies of her earlier warning. He then arranged for a meeting with Petitioner, himself and the Physical Plant Director, Jack Colby.
41. As a result of that meeting, and because Mr. Colby and Mr. Fay believed Petitioner was interfering with the investigation by giving out copies of her previous warning, Petitioner was suspended without pay.
42. Subsequently, Mr. Fay wrote Petitioner to arrange for a predissmissal conference. The date was set and the meeting held on November 18, 1991, with Fay, Colby and Petitioner.
43. During that conference, Petitioner denied making the statements to her employees and denied giving them her disciplinary warning.
44. Petitioner had been with the grounds section for 17 years at the time of her dismissal and was very skilled in many of the areas of expertise required for her job, particularly gardens and plantings.
45. Mr. Fay had been hired as a grounds worker in approximately 1985 while Charles Bell was superintendent. Mr. Fay had worked for about two years under Petitioner's supervision.
46. When Mr. Bell left in December of 1985, Petitioner became Acting Superintendent. She remained in that capacity until March of 1986 when Sam Rivers was hired as Superintendent.
47. Rivers resigned in 1987 and Chris Fay and Petitioner both applied for the position.
48. Jack Colby, the Physical Plant Director, appointed Chris Fay as superintendent because he believed Petitioner did not have good supervisory skills.
49. Bernice De Bragga, a secretary at the Shop and Maintenance Building, which was the grounds crews home base, testified that Chris Fay never spoke to Petitioner in a civil manner but that he never raised his voice to Mike Moore or Bill Hardin, other grounds supervisors, even though Bill Hardin spent a lot of time sitting in the break area of the grounds building.
50. Ms. De Bragga testified that Chris Fay was very open about his feelings toward Petitioner and that he had stated that he didn't like her and was going to give her all the dirty jobs and hope he could get rid of her. Ms. De Bragga later told Mary Carter, another secretary, and Petitioner what Mr. Fay said.
51. Ms. De Bragga saw Bill Hardin drunk many times and testified that his breath "would knock you over."
52. Ms. De Bragga testified that Mr. Fay shouts at her and that she had complained about Mr. Fay particularly because he didn't do the 3:00 p.m. mail run which included material for which she was responsible.
53. During this time, Mr. Fay required Petitioner to keep a day calendar of her daily activities. He had also sent her a memo in 1988 telling her how to fill out work orders properly and copied that memo to their Supervisor, Jack Colby.



54. Malcolm Andrews, an African American, who had previously been on Petitioner's crew, testified that although he had once complained about Petitioner's cursing, he was very grateful to her because she had arranged for him to go to Greensboro Technical Community College to learn brick masonry and concrete work and she had paid for it and had been unable to get reimbursed from UNCG.

55. Ginny Myers, a female grounds employee, was put in temporary charge of a work crew when the supervisor had an accident and was unable to return to work.

56. Ms. Myers had also observed that Bill Hardin came to work with alcohol on his breath and she occasionally saw him stumbling. She had complained, but Mr. Fay did not take any action.

57. Subsequently, Chris Fay gave the crew supervisor's position to Bill Hardin. Ms. Myers complained to Mr. Fay and Mr. Fay replied that Mr. Hardin had been at UNCG longer than she had.

58. Ms. Myers heard Mike Moore say to Chris Fay that he shouldn't hire another female because "we don't need any other bitches; we have two already."

59. Ms. Myers testified that Petitioner's crew was pushed harder than other crews and got a lot of undesirable jobs.

60. Ms. Myers testified that she had a full license and no drinking problem but admitted on cross examination that she had a DWI in February of 1991, and that limited driving privileges were still in effect.

61. Ms. Myers received a warning in June 1988, for calling a male co-worker, who had just hit her, a "motherfucker"; in May 1990 for profanity to her supervisor; and in June 1991 for excessive absenteeism and for profanity during a meeting. Ms. Myers was fired in September 1991 for absenteeism.

62. Mr. Fay testified that he didn't see anything unusual in Mr. Hardin's performance, didn't smell alcohol, did not see stumbling, and did not see Mr. Hardin sitting in the break area a lot. Upon being recalled to the witness stand, Mr. Fay testified that he had smelled alcohol on Mr. Hardin's breath but believed it to be the odor of stale alcohol which had been consumed the night before.

63. Mr. Fay testified that, although he is a "hyper" person, he had never raised his voice to Petitioner.

64. Mr. Fay testified that he does not have a good working relationship with Ms. De Bragga and that she and Petitioner are friends.

65. Mr. Fay testified that he doesn't remember anyone making a comment about "two bitches."

66. Based upon observation of the witnesses, the facts to which they testified, and the credibility of their testimony, it is found as fact that Mr. Fay had favorites among his employees and often resolved disputes in favor of those people he liked; that Mr. Fay did not treat Petitioner as pleasantly as he treated the other Grounds Supervisors and that he gave Petitioner unfair amounts of work.

67. Mr. Colby testified that in the Summer of 1991, a job offer was made to a female applicant who had been RIF'd from the Chinqua Penn Plantation, but that she'd turned down the offer.

68. A position which was open in the Fall of 1991, was filled by a male. Jerome Isley's position was filled by a male. Petitioner's position was filled by a male.

69. Petitioner testified that Hal Shelton was removed from her crew after she'd had a conflict with him over the rating she gave him on the annual employee appraisal report. After he was transferred, Chris Fay raised the rating on his report.

70. Petitioner sent a large number of memos to Mr. Fay concerning job related matters but Mr. Fay did not usually respond.

71. Petitioner does not remember saying "no man will ever meet my standards but does remember saying her employee was "stupid." She testified that she said this because he was behaving childishly.

72. Petitioner testified that she wasn't aware her employees were having any problem with her supervision.

Based upon the above Findings of Fact, the undersigned makes the following:

### CONCLUSIONS OF LAW

#### Sex Discrimination

1. In order to meet the burden of proof to show that Petitioner was dismissed because of her sex, the Petitioner must first establish a prima facie case. To that end, Petitioner has shown (a) that she is a member of a protected category, (b) that she was qualified for the position she held, and (c) that an adverse personnel action was taken against her.

Petitioner must also show that there is some other evidence to indicate that she was dismissed because of her sex. To this end, Petitioner has shown that two out of nine grounds employees were female and that both female employees were fired. Additionally, Petitioner has put forth evidence to show that both females were disciplined on a number of occasions and that a grounds supervisor made the statement to the Superintendent that they already had "two bitches" and didn't need anymore.

It is concluded that Petitioner has established a prima facie case of sex discrimination.

2. After having established a prima facie case, the Respondent must come forward to show legitimate non-discriminatory reasons for the dismissal.

To this end, Respondent has shown that Petitioner had a history of difficulty with her supervisory style and handling her employees. In 1991, all of Petitioner's employees officially reported their complaints concerning Petitioner's supervision. When Mr. Fay did not satisfactorily handle the problem, Petitioner's employees persisted and went to the Human Resources representative reporting the incidents involving Petitioner. Subsequently, when the Respondent was investigating these complaints, Petitioner's employees reported that Petitioner had approached them, handing out copies of her previous warnings.

It is concluded that Respondent has presented evidence sufficient to show legitimate, non-discriminatory reasons for Petitioner's dismissal.

3. After Respondent has shown legitimate, non-discriminatory reasons, Petitioner may go forward to show that these reasons were a pretext for sex discrimination. Evidence presented as part of Petitioner's prima facie case may be considered again as part of Petitioner's evidence to show pretext and that evidence is so considered.

Additionally, Petitioner has shown that her supervisor, Mr. Fay, spoke to her in a harsh manner and that her crew received a large portion of the work assignments. Additionally, Petitioner has shown that Mr. Fay treated the grounds supervisors in an uneven manner and showed favoritism toward the other grounds supervisors.

Petitioner has also shown that both female grounds workers were disciplined and ultimately dismissed. However, these female employees were not without fault in contributing to their dismissals. Additionally, while Mr. Fay treated Petitioner harshly, Petitioner had established a history of causing dissension among her employees, offending co-workers and supervisors, and making insulting and derogatory remarks.

It is therefore the opinion of the undersigned that Petitioner has not presented sufficient evidence to show that Respondent's legitimate, non-discriminatory reasons were a pretext for sex discrimination.

4. It is further concluded that Petitioner has not met her burden of proof to show that she was discriminated against because of her sex.

**Just Cause**

5. The actions of Petitioner which were the basis of her dismissal were categorized as personal misconduct rather than job performance. The dismissal letter noted that Petitioner was determined to have stated, "If I were a black man, I would like to do this kind of work all day long," and "no man will ever meet my standards", and calling an employee "stupid." Additionally, Petitioner was dismissed for disseminating copies of her previous disciplinary warning during the investigation of the 1991 actions, and for saying, "If I go, I will take others with me."

Respondent determined that these actions constituted personal misconduct. The undersigned agrees and hereby concludes that Respondent had just cause to dismiss the Petitioner for personal misconduct.

Based upon the foregoing Conclusions of Law, the undersigned makes the following:

**RECOMMENDATION**

That the decision to dismiss Petitioner be affirmed.

**ORDER**

It is hereby ordered that the agency serve a copy of the final decision on the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, N.C. 27611-7447, in accordance with North Carolina General Statute 150B-36(b).

**NOTICE**

The agency making the final decision in this contested case is required to give each party an opportunity to file exceptions to this recommended decision and to present written arguments to those in the agency who will make the final decision. G.S. 150B-36(a).

The agency is required by G.S. 150B-36(b) to serve a copy of the final decision on all parties and to furnish a copy to the parties' attorney of record and to the Office of Administrative Hearings.

The agency that will make the final decision in this contested case is the North Carolina State Personnel Commission.

This the 17th day of November, 1992.

---

Dolores O. Nesnow  
Administrative Law Judge



*The North Carolina Administrative Code (NCAC) has four major subdivisions of rules. Two of these, titles and chapters, are mandatory. The major subdivision of the NCAC is the title. Each major department in the North Carolina executive branch of government has been assigned a title number. Titles are further broken down into chapters which shall be numerical in order. The other two, subchapters and sections are optional subdivisions to be used by agencies when appropriate.*

## TITLE/MAJOR DIVISIONS OF THE NORTH CAROLINA ADMINISTRATIVE CODE

TITLE	DEPARTMENT	LICENSING BOARDS	CHAPTER
1	Administration	Architecture	2
2	Agriculture	Auctioneers	4
3	Auditor	Barber Examiners	6
4	Economic & Community Development	Certified Public Accountant Examiners	8
5	Correction	Chiropractic Examiners	10
6	Council of State	General Contractors	12
7	Cultural Resources	Cosmetic Art Examiners	14
8	Elections	Dental Examiners	16
9	Governor	Dietetics/Nutrition	17
10	Human Resources	Electrical Contractors	18
11	Insurance	Electrolysis	19
12	Justice	Foresters	20
13	Labor	Geologists	21
14A	Crime Control & Public Safety	Hearing Aid Dealers and Fitters	22
15A	Environment, Health, and Natural Resources	Landscape Architects	26
		Landscape Contractors	28
16	Public Education	Marital and Family Therapy	31
17	Revenue	Medical Examiners	32
18	Secretary of State	Midwifery Joint Committee	33
19A	Transportation	Mortuary Science	34
20	Treasurer	Nursing	36
*21	Occupational Licensing Boards	Nursing Home Administrators	37
22	Administrative Procedures	Occupational Therapists	38
23	Community Colleges	Opticians	40
24	Independent Agencies	Optometry	42
25	State Personnel	Osteopathic Examination & Reg. (Repealed)	44
26	Administrative Hearings	Pharmacy	46
		Physical Therapy Examiners	48
		Plumbing, Heating & Fire Sprinkler Contractors	50
		Podiatry Examiners	52
		Practicing Counselors	53
		Practicing Psychologists	54
		Professional Engineers & Land Surveyors	56
		Real Estate Commission	58
		Refrigeration Examiners	60
		Sanitarian Examiners	62
		Social Work	63
		Speech & Language Pathologists & Audiologists	64
		Veterinary Medical Board	66

**Note:** Title 21 contains the chapters of the various occupational licensing boards.

**CUMULATIVE INDEX**  
*(April 1992 - March 1993)*

Pages	Issue
1 - 105 . . . . .	1 - April
106 - 173 . . . . .	2 - April
174 - 331 . . . . .	3 - May
332 - 400 . . . . .	4 - May
401 - 490 . . . . .	5 - June
491 - 625 . . . . .	6 - June
626 - 790 . . . . .	7 - July
791 - 902 . . . . .	8 - July
903 - 965 . . . . .	9 - August
966 - 1086 . . . . .	10 - August
1087 - 1154 . . . . .	11 - September
1155 - 1253 . . . . .	12 - September
1254 - 1350 . . . . .	13 - October
1351 - 1463 . . . . .	14 - October
1464 - 1640 . . . . .	15 - November
1641 - 1720 . . . . .	16 - November
1721 - 1828 . . . . .	17 - December
1829 - 2059 . . . . .	18 - December

**ADMINISTRATION**

Auxiliary Services, 4  
Motor Fleet Management Division, 794

**AGRICULTURE**

Gasoline and Oil Inspection Board, 336  
Pesticide Board, 1276  
Plant Industry, 904  
Structural Pest Control Committee, 332  
Veterinary Division, 342

**COMMUNITY COLLEGES**

Community Colleges, 1535  
General Provisions, 1531  
Miscellaneous Programs, 1598

**CULTURAL RESOURCES**

U.S.S. Battleship Commission, 911

**ECONOMIC AND COMMUNITY DEVELOPMENT**

Banking Commission, 629, 1467  
Community Assistance, 909, 968  
Departmental Rules, 801  
Savings Institutions Division, 1833

**ENVIRONMENT, HEALTH, AND NATURAL RESOURCES**

Adult Health, 1199  
Coastal Management, 211, 655, 1098, 1507  
Departmental Rules, 826, 1852  
Environmental Health, 223  
Environmental Management, 190, 416, 500, 644, 830, 1013, 1487, 1856

Governor's Waste Management Board, 564, 920, 1197  
Health: Epidemiology, 140, 1212  
Health: Personal Health, 1217  
Health Services, 52, 659, 1174, 1736, 1985  
Marine Fisheries, 530  
NPDES Permits Notices, 1, 107  
Radiation Protection, 136, 1520, 1863  
Sedimentation Control, 920  
Vital Records, 565  
Wildlife Resources Commission, 28, 133, 408, 449, 551, 921, 1299, 1414, 1658, 1736  
Wildlife Resources Commission Proclamation, 176

#### **FINAL DECISION LETTERS**

Voting Rights Act, 106, 174, 406, 493, 628, 793, 966, 1090, 1275, 1465, 1644, 1721

#### **GENERAL STATUTES**

Chapter 150B, 1254

#### **GOVERNOR/LT. GOVERNOR**

Executive Orders, 401, 491, 626, 791, 903, 1087, 1155, 1351, 1464, 1641, 1829

#### **HUMAN RESOURCES**

Aging, Division of, 121, 346  
Day Care Rules, 123  
Economic Opportunity, 5  
Facility Services, 111, 177, 496, 634, 980, 1352, 1647  
Medical Assistance, 4, 415, 496, 816, 989, 1156, 1295, 1391, 1649, 1723, 1842  
Mental Health, Developmental Disabilities and Substance Abuse Services, 111, 297, 409, 809, 1092, 1276  
Social Services Commission, 183, 911, 1471

#### **INDEPENDENT AGENCIES**

Housing Finance Agency, 450, 576, 928, 1219

#### **INSURANCE**

Actuarial Services Division, 1411  
Agent Services Division, 1410  
Consumer Services Division, 125, 1157  
Departmental Rules, 7, 1095, 1405  
Engineering and Building Codes, 19, 643  
Financial Evaluation Division, 1162, 1849  
Fire and Rescue Services Division, 17, 1406  
Hearings Division, 124, 1096  
Life and Health Division, 22, 347, 1167  
Market Conduct Division, 1850  
Medical Database Commission, 1650  
Property and Casualty Division, 20, 1848  
Seniors' Health Insurance Information Program, 132

#### **JUSTICE**

Alarm Systems Licensing Board, 27, 189, 643, 919, 1414, 1486, 1732  
Criminal Information, 1097  
General Statutes Commission, 353  
Private Protective Services, 918, 1731  
Sheriffs Education and Training, 990  
State Bureau of Investigation, 188, 499, 1413



**LICENSING BOARDS**

Architecture, 1111  
Certified Public Accountant Examiners, 355  
Chiropractic Examiners, 1416  
Cosmetic Art Examiners, 360, 922, 1669  
Dietetics/Nutrition, 923  
Electrical Contractors, 1785  
Electrolysis Examiners, 69, 700  
Geologists, 1792  
Medical Examiners, 1304, 1417, 1987  
Nursing, Board of, 232, 700, 1528  
Opticians, 1793  
Pharmacy, Board of, 1418  
Professional Engineers and Land Surveyors, 566  
Speech and Language and Pathologists and Audiologists, 705

**LIST OF RULES CODIFIED**

List of Rules Codified, 72, 362, 452, 584, 1671

**PUBLIC EDUCATION**

Departmental Rules, 1108  
Elementary and Secondary, 852, 1108, 1666

**REVENUE**

License and Excise Tax, 712  
Motor Fuels Tax, 361

**STATE PERSONNEL**

Office of State Personnel, 237, 705, 1113, 1419, 2005

**TAX REVIEW BOARD**

Orders of Tax Review, 494

**TRANSPORTATION**

Highways, Division of, 228, 856, 1062, 1110, 1669, 1781  
Motor Vehicles, Division of, 68, 142

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