



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 20, 1997

Roland G. Fletcher, Manager
Radiological Health Program
Air and Radiation Management Administration
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

Dear Mr. Fletcher:

Thank you for your letter of May 8, 1997, that included a revised schedule for adoption of regulations. We acknowledge the positive actions you are taking to adopt compatible regulations within the recommended three-year time frame. The proposed Supplement 2 schedule for adoption, covering the Timeliness in Decommissioning rule, Sealed Source and Device rule, and the compatibility issues identified in NRC's February 28, 1997 letter to the Radiological Health Program, indicates that all of the regulations will meet the three-year adoption period with the exception of the following rule, "Timeliness in Decommissioning of Material Facilities," 10 CFR Parts 30, 40, and 70 amendments (59 FR 36026), which has an adoption date of August 15, 1997. The Supplement 2 proposed adoption date is October 1, 1997. The proposed Supplement 3 schedule for the adoption of 9 other regulations, indicates that all of the regulations will meet the three year adoption period.

As requested, we have reviewed the proposed revised regulations entitled Part C Licensing of Radioactive Material Sections C.2 Definitions, C.32 (a) and (c), Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas, C.33 Application for Renewal of Licenses, C.37 Registration of Sources or Devices Containing Radioactive Materials, C.50 (d) Modification and Revocation of Licenses, Part D Storage and Control of Licensed or Registered Sources of Radiation, Sections D.801 Security of Stored Sources of Radiation, D.1202 Notification of Incidents, D.1210 Additional Reporting Requirements for Radioactive Materials, D.1301 Vacating Premises, and Section W.108 (e), Use, Design, Performance, and Certification Criteria for Sealed Sources Used in Downhole Operations and W.305 Uranium Sinker Bars. The regulations were reviewed by comparison to the equivalent NRC regulations in 10 CFR Parts 19, 20, 30, 32, 34, 35, 39, 40, 61, 70, and 71. Craig Gordon, Region I State Agreements Officer, discussed the review of the regulations with you on June 5-6, 1997.

As a result of our review, we have one comment that has been identified in the enclosed chart. Please note that we have limited our review to only Division I or II rules or to issues that we believe affect the compatibility of your regulations. Under our current procedure, a finding that a State regulation meets the compatibility criteria of the equivalent NRC regulation may only be made based on a review of the final State regulation. However, we have determined that if your proposed regulations were adopted incorporating the enclosed comment, and without other significant change, they would meet the compatibility criteria contained in the Office of State Programs Internal Procedure B.7.

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PDR

SP-AG-14

Roland G. Fletcher

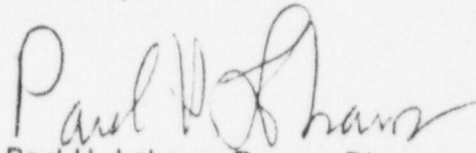
- 2 -

JUN 20 1997

We request that when the proposed regulations are adopted and published as final regulations, a copy of the "as published" regulations be provided to us for review. As requested in our All Agreement State Letter SP-96-027, "Request to Highlight Changes to Agreement State Regulations Submitted to NRC for Compatibility Review" (March 1, 1996), please highlight the final changes and send one copy in a computer readable format, if possible.

If you have any questions regarding the comments or any of the NRC regulations used in the review, please contact me or Craig Gordon at (610) 337-5216.

Sincerely,

A handwritten signature in cursive script, appearing to read "Paul H. Lohaus".

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosure:
As stated

Roland G. Fletcher

- 2 -

JUN 20 1997

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Sincerely,

Original Signed By:
PAUL H. LOHAUS

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosure:
As stated

Distribution:

DIR RF (7S121)
SDroggitis

DCD (SP05)
PDR (YES✓)

*See previous concurrence.

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NAME	PMLarkins:gd		CZGordon		PHLohaus		FXCameron		RLBangart
DATE	06/09/97*		06/06/97*		06/06/97*		06/13/97*		06/20/97

OSP FILE CODE SP-AG-21

SP-AG-21

Review of Proposed Revisions to Parts C, D, and W of Maryland Regulations Against Compatibility Division 1 and 2 Criteria

<u>Div.</u>	<u>State Rule</u>	<u>NRC Rule</u>	<u>Subject and Comments</u>
2	C.32	30.36 (h)(2)	Section C.32 (e)(3) does not include the numerical value "no later than 24 months" as set out in Section 30.36(h)(2). Under the current compatibility policy this rule is designated as a Division 2 matter of compatibility and should be adopted to maintain compatibility. Under the new compatibility policy, currently before the Commission for approval, this rule is designated as Compatibility Category D, Health and Safety (H&S). Under the new policy, Agreement States would have to adopt the essential objective of rules designated H&S. In most cases, such essential objectives would include a numerical value in a rule such as the 24 month time frame in 30.36(h)(2). As such the "no later than 24 months" language will continue to be needed for compatibility if the Commission approves the new policy.

Date of Review: June 3, 1997
Reviewer: Craig Gordon, RSAO, RI

Roland G. Fletcher

- 2 -

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Office of State Programs

Enclosure:
As stated

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DCD (SP05)
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NAME	PMLarkins:gd		CZGordon		PHLohaus		FXCameron		RLBangart	
DATE	06/09/97*		06/06/97*		06/06/97*		06/13/97		06/ /97	

OSP FILE CODE SP-AG-17



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

Roland G. Fletcher, Manager
Radiological Health Program
Air and Radiation Management Administration
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

Dear Mr. Fletcher:

Thank you for your letter of May 8, 1997, that included a revised schedule for adoption of regulations. We appreciate the positive actions you are taking to adopt compatible regulations within the recommended three-year time frame. The proposed Schedule 2 covering the Timeliness in Decommissioning rule, Sealed and Source and Device rule, and the compatibility issues identified in NRC's February 28, 1997 letter to the Radiological Health Program, indicates that all of the regulations will meet the three-year adoption period with the exception of the following rule, "Timeliness in Decommissioning of Material Facilities," 10 CFR Parts 30, 40, and 70 amendments (59 FR 36026), which has an adoption date of August 15, 1997. The Schedule 2 proposed adoption date is October 1, 1997. The proposed Schedule 3 for the adoption of 9 other regulations, indicates that all of the regulations will meet or exceed the three year adoption period.

Schedule for Supplement
As requested, we have reviewed the proposed revised regulations entitled Part C Licensing of Radioactive Material, Sections C.2 Definitions, C.32 (a) and (c), Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas, C.33 Application for Renewal of Licenses, C.37 Registration of Sources or Devices Containing Radioactive Materials, C.50 (d) Modification and Revocation of Licenses, Part D Storage and Control of Licensed or Registered Sources of Radiation, Sections D.801 Security of Stored Sources of Radiation, D.1202 Notification of Incidents, D.1210 Additional Reporting Requirements for Radioactive Materials, D.1301 Vacating Premises, and Section W.108 (e), Use, Design, Performance, and Certification Criteria for Sealed Sources Used in Downhole Operations and W.305 Uranium Sinker Bars. The regulations were reviewed by comparison to the equivalent NRC regulations in 10 CFR Parts 19, 20, 30, 32, 34, 35, 39, 40, 61, 70, and 71. Craig Gordon, Region I State Agreements Officer, discussed the review of the regulations with you on June 5-6, 1997.

As a result of our review, we have one comment that has been identified in the enclosed chart. Please note that we have limited our review to only Division I or II rules or to issues that we believe affect the compatibility of your regulations. Under our current procedure, a finding that a State regulation meets the compatibility criteria of the equivalent NRC regulation may only be made based on a review of the final State regulation. However, we have determined that if your proposed regulations were adopted incorporating the enclosed comment, and without other significant change, they would meet the compatibility criteria contained in the Office of State Programs Internal Procedure B.7.

We request that when the proposed regulations are adopted and published as final regulations, a copy of the "as published" regulations be provided to us for review. As requested in our All Agreement State Letter SP-96-027, "Request to Highlight Changes to Agreement State Regulations Submitted to NRC for Compatibility Review" (March 1, 1996), please highlight the final changes and send one copy in a computer readable format, if possible.

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Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosure:
As stated

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for approval

would have

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Such essential objectives would ~~not~~ include
a numerical value in a rule such as the
24 month time frame in 30.36(h)(2).
As such, the "no later than 24 months"
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Date of Review:
Reviewer:

June 3, 1997
Craig Gordon, RSAO, RI

Roland G. Fletcher

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Sincerely

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosure:
As stated

Distribution:

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DCD (SP05)
PDR (YES✓)

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NAME	PMLarkins:gd		CZGordon		PHLohaus		RLBangart		
DATE	06/06/97		06/6/97		06/6/97		06/ /97		

OSP FILE CODE SF-AG-17

EXECUTIVE TASK MANAGEMENT SYSTEM

<<< PRINT SCREEN UPDATE FORM >>>

TASK # - 7S121

DATE- 05/13/97

MAIL CTRL. - 1997

TASK STARTED - 05/13/97

TASK DUE - 05/26/97

TASK COMPLETED - / /

TASK DESCRIPTION - LTR TO BANGART FROM R. FLETCHER REGARDING REGULATIONS
FOR MD.

REQUESTING OFF. - MD

REQUESTER - FLETCHER

WITS -

0

FYP - N

PROG. - PML

PERSON -

STAFF LEAD - PML

PROG. AREA -

PROJECT STATUS -

OSP DUE DATE: 5/27/97

PLANNED ACC. - N

LEVEL CODE - 1

1. Acknowledgment. *ben.*

2. Date from Craig--call Monday.

Craig - complete his review by 6/3/97,
Then legal review.



MARYLAND DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway • Baltimore, Maryland 21224
(410) 631-3000

PHL
SCP
PML
KXS

Parris N. Glendening
Governor

MAY 8 1997

Jane T. Nishida
Secretary

Mr. Richard L. Bangart, Director
Office of States Programs
United States Nuclear Regulatory Commission (NRC)
One Whiteflint
Rockville, MD 20852

Dear Mr. Bangart:

This correspondence refers to the Maryland Department of the Environment (MDE) Radiological Health Program's (RHP) commitment to review and improve its Regulations Adoption Plan. As part of RHP's continuing response to NRC recommendations from the Final Report of the September 23-27, 1996 "Integrated Materials Performance Evaluation Program" (IMPEP), an update of RHP's schedule for regulation adoption is enclosed.

Please be assured that all compatibility concerns outlined in NRC's February 28, 1997 letter to RHP have been fully addressed within regulation Supplement 2. Copies of Supplement 2 were sent for review to MDE's Office of Attorney General and to Region I NRC (Craig Gordon) on, or about, May 1, 1997.

As noted in the Regulations Adoption Management Plan dated August 30, 1996, the RHP regulations committee meets to develop, revise, and promulgate radiation regulations. Particular emphasis is given to NRC regulations that must be incorporated for compatibility within three years of issue. The first major amendment to Chapter .01, Supplement 1, became effective on December 16, 1996, and published as a revision to COMAR 26.12.01.01. These "Regulations For the Control of Ionizing Radiation were thereby amended to incorporate Part X: Licensing and Radiation Safety Requirements for Irradiators (58 FR 7715, July 1, 1993).

The RHP regulation adoption management plan for 1997 is divided into several groups of amendments. NRC regulations that need to be adopted will be grouped into two more supplements, which are as follows:

Supplement 2 The following topics will be addressed in Supplement 2:

- (1) Timeliness in Decommissioning of Material Facilities (59 FR 36026); and by 8/15/97 30, 40, 70
- (2) Sealed Source and Device Regulations Comparable to 10 CFR 30.32.g and 10 CFR 32.210; and
- (3) Compatibility issues pursuant to NRC's February 28, 1997 letter to RHP.

The schedule for adoption of Supp.2 is as follows:

NRC and AG review	4/30/97- 5/21/97
Notice of Proposed Action	6/15/97
Close of comment period	7/15/97
Adoption by Secretary	9/28/97
Effective date of regulations	10/1/97

Supplement 3 The following topics will be addressed in Supplement 3:

"Together We Can Clean Up"

SP-AG-14

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- (1) Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use (59 FR 61767, 59 FR 65243 and 60 FR 322, January 1, 1995); 30, 32, 35
- (2) Low-level Waste Shipment Manifest Information 20, 61 and Reporting (60 FR 15649 and 60 FR 25983, March 1, 1998);
- (3) Frequency of Medical Examinations for Use of Respiratory Equipment (60 FR 7900, March 13, 1995); 20
- (4) Performance Requirements for Radiography Equipment (60 FR 28323, June 30, 1995); 34
- (5) Radiation Protection Requirements: Amended Definitions and Criteria (60 FR 36038, August 14, 1995); 19 + 20
- (6) Medical Administration of Radiation and Radioactive Materials (60 FR 48623, October 20, 1995); 20, 35
- (7) Clarification of Decommissioning Funding Requirements (60 FR 38235, November 24, 1995); 30, 40, 70
- (8) Compatibility with International Atomic Energy Agency (60 FR 50248 and 61 FR 28724, April 1, 1996); and 71
- (9) Parent and Self-guarantee as an Additional Financial Mechanism (58 FR 68726 and 59 FR 1618, January 28, 1994). 30, 40 + 70

The schedule for adoption of Supplement 3 is as follows:

Preliminary draft complete	6/23/97
Internal review	5/30/97-7/9/97
Final draft	7/24/97
NRC and AG review	7/25/97- 8/15/97
Notice of Proposed Action	9/10/97
Close of comment period	10/10/97
Adoption by Secretary	11/24/97
Effective date of regulations	12/29/97

In addition to the federally directed or initiated changes, the committee has been actively involved in other regulation amendments as follows:

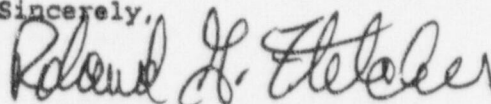
1. A final draft of proposed amendments for the revision of Chapter 3 "State Radiation Control Fund" has been completed and sent to a select group of stakeholders for comment. The stakeholders meeting was held on February 27, 1997. Turn-out was low and no major obstacles to adoption have been raised. The proposal is now being finalized for Secretary Nishida's signature. The anticipated promulgation schedule appears below:

Complete AG Review	5/16/97
Notice of Proposed Action	6/14/97
Close of Comments	7/14/97
Adoption by Secretary	7/28/97
Effective date	8/28/97

2. A Notice of Proposed Action for amendments to Chapter .02 "Inspection and Certification of Radiation Machines", necessary to renew the schedule of inspections for the x-ray machines subject to the State certification program, appeared in the Maryland Register on April 25, 1997. The comment period will close on May 27, 1997 and the amendments should be effective in mid July, 1997.

Should you have any questions concerning this letter please contact me at (410) 631-3301.

Sincerely,



Roland G. Fletcher, Environmental Manager
Radiological Health Program

cc: Craig Gordon, NRC Reg I
Ann Marie DeBiase

FEB 28 1997

Mr. Roland G. Fletcher, Administrator
Radiological Health Program
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

Dear Mr. Fletcher:

We have completed a review and evaluation of the Final Maryland Rules, COMAR 26.12.01.01, for compatibility with equivalent NRC regulations contained in the Code of Federal Regulations, Title 10, "Energy," Chapter I, "Nuclear Regulatory Commission, Parts 0-199. We indicated, in the Draft IMPEP Report, dated December 12, 1996, that NRC staff had reviewed the 13 amendments to the final COMAR regulations adopted by the State, that became effective October 9, 1995, and, based on the review, found that our earlier comments had been addressed. However, as a result of our review for compatibility, several new comments having compatibility significance were found and have been identified in the enclosure. Therefore, we are unable to find the final Maryland regulations compatible.

As you are aware, Agreement States have flexibility to adopt rules required for compatibility in the form of legally binding requirements (LBR), as opposed to regulations. For example, since Maryland has no well logging licensees, comments in the enclosure regarding the Maryland well logging rule can be addressed through a general LBR, such as a generic or standard license condition if an application for a well-logging license is received. If our comments need clarification, or you disagree with them, we recommend a meeting after you have completed your review.

If you have any questions regarding the comments, please contact me at (301) 415-2326 or Mr. Craig Gordon at (610) 337-5216.

Sincerely,

Original Signed By:
PAUL H. LOHAUS

Paul H. Lohaus, Deputy Director
Office of State Programs

Distribution:

DIR RF
RLBangart
PLohaus
SDroggitis
CGordon, RSAO, RI

DCD (SP05)
PDR (YES ☒ NO ☐)

FCameron
PLarkins
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DATE	02/27/97 *	02/28/97 *	02/28/97 *	02/ /970

* See Previous Concurrence.

OSP FILE CODE: SP-A-74

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Mr. Roland G. Fletcher, Administrator
Radiological Health Program
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

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DATE	02/27/97 *	02/28/97 *	02/28/97 *	02/ /970	

* See Previous Concurrence.

OSP FILE CODE:

DATED: FEBRUARY 28, 1997

SIGNED BY: PAUL H. LOHAUS

Mr. Roland G. Fletcher, Administrator
Radiological Health Program
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

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Office of State Programs

Enclosure:
As stated

Review of COMAR 26.12.01.01 Against Compatibility Division 1 and 2 Requirements

<u>Div.</u>	<u>State Rule</u>	<u>NRC Rule</u>	<u>Subject and Comments</u>
1	D.703	20.1703	<p>Use of Individual Respiratory Protection Equipment.</p> <p>Section D.703 a.vi. uses the words "the licensee shall use equipment within the equipment manufacturer's expressed limitations for type and mode..." Reference only to the manufacturer's limitations may narrow the scope of the rule. This narrowing may inadvertently result in a licensee failing to comply with limitations established by NIOSH or MSHA, especially if those limitations are not included (for any reason) in the manufacturer's literature. This rule is a Division 1 matter of compatibility. We suggest that Maryland use the more general wording set out in Section 20.1703(a)(6), which would encompass both the manufacturer's and any NIOSH or MSHA limitations.</p>
2	D.801	20.1801	<p>Security of Stored Material.</p> <p>Section D.801 does not include the entire phrase "...shall secure from unauthorized removal or access..." as set out in Section 20.1801. The words "or access" have been deleted. This section, as written, may not require an equivalent level of security. For example, the rule may not cover a situation where an unauthorized individual gained access to a storage location and removed radioactive material from it's shielding/packaging, but did not physically remove the material from the storage location. This rule is a Division 2 matter of compatibility. We suggest you amend this section to include the additional wording, "or access".</p>
1	D.1202	20.2202	<p>Notification of Incidents.</p> <p>In order to assure compatibility in subsections a.i.(3) and b.i.(3), the phrase "or a total organ dose equivalent" should be deleted. In subsection a.ii, the word "occupational" should be deleted.</p>
2	None	30.50	<p>Reporting Requirements.</p> <p>Staff was unable to find incident reporting requirements equivalent to those contained in § 30.50 in the</p>

*Later
retracted
See CO,
reg. review*

<u>Div.</u>	<u>State Rule</u>	<u>NRC Rule</u>	<u>Subject and Comments</u>
			Maryland regulations. This rule is designated as a Division 2 matter of compatibility and should be adopted to maintain compatibility.
2	None	39.49	Uranium Sinkers Bars. Staff was unable to find an equivalent section in the Maryland regulations. This rule is designated as a Division 2 matter of compatibility and should be adopted to maintain compatibility.
2	None	39.51	Use of Sealed Source in Well Without Surface Casing. Staff was unable to find an equivalent section in the Maryland regulations. If Maryland has other requirements that would preclude well logging from being performed in an uncased well, staff sees no need for Maryland to adopt this requirement. However, these provisions are designated as a Division 2 matter of compatibility. Therefore, if well logging operations could be performed in wells without surface casing, the provisions of this section should be adopted to maintain compatibility.

PART C

LICENSING OF RADIOACTIVE MATERIAL

Sec. C.1 Purpose and Scope.

(a) This part, and Parts G and T, of these regulations, provide for the licensing of radioactive material. No person shall receive, possess, use, transfer, own, or acquire radioactive material except as authorized pursuant to this part or Parts G or T, of these regulations, or as otherwise provided in these parts.

(b) In addition to the requirements of this part, all licensees are subject to the requirements of Parts A, D, J, and T of these regulations. Furthermore, licensees engaged in industrial radiographic operations are subject to the requirements of Part E of these regulations. Licensees using radionuclides in the healing arts are subject to the requirements of Part G of these regulations, and licensees engaged in wireline and subsurface tracer studies are subject to the requirements of Part W of these regulations.

Sec. C.2 Definitions.

"Principal activities," as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.
~~Reserved.~~

Exemptions from the Regulatory Requirements

Sec. C.3 Source Material.

(a) Any person is exempt from this part to the extent that such person receives, possesses, uses, owns, or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than 1/20 of 1 percent (0.05 percent) of the mixture, compound, solution, or alloy.

(b) Any person is exempt from this part to the extent that such person receives, possesses, uses, or transfers unrefined and unprocessed ore containing source material; provided that, except as authorized in a specific license, such person shall not refine or process such ore.

(c) Any person is exempt from this part to the extent that such person receives, possesses, uses, or transfers:

- (1) any quantities of thorium contained in
 - (i) incandescent gas mantles,
 - (ii) vacuum tubes,
 - (iii) welding rods,

PART C

LICENSING OF RADIOACTIVE MATERIAL

Sec. C.1 Purpose and Scope.

(a) This part, and Parts G and T, of these regulations, provide for the licensing of radioactive material. No person shall receive, possess, use, transfer, own, or acquire radioactive material except as authorized pursuant to this part or Parts G or T, of these regulations, or as otherwise provided in these parts.

(b) In addition to the requirements of this part, all licensees are subject to the requirements of Parts A, D, J, and T of these regulations. Furthermore, licensees engaged in industrial radiographic operations are subject to the requirements of Part E of these regulations. Licensees using radionuclides in the healing arts are subject to the requirements of Part G of these regulations, and licensees engaged in wireline and subsurface tracer studies are subject to the requirements of Part W of these regulations.

Sec. C.2 Definitions.

"Principal activities," as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination are not principal activities.

Reserved.

Exempt

Sec. C.3 Source Material.

(a) Any person is exempt from uses, owns, or transfers source material in which the source material is the mixture, compound, solution,

(b) Any person is exempt from uses, or transfers unrefined source material except as authorized in a special

(c) Any person is exempt from uses, or transfers:

(1) any quantities of thorium contained in

(i) incandescent gas mantles,

(ii) vacuum tubes,

(iii) welding rods,

SUPPLEMENT 2

(REDLINE VERSION)

Rec'd 6/5/97 from Craig Gordon

(iv) electric lamps for illuminating purposes provided that each lamp does not contain more than 50 milligrams of thorium,

(v) germicidal lamps, sunlamps, and lamps for outdoor or industrial lighting provided that each lamp does not contain more than 2 grams of thorium,

(vi) rare earth metals and compounds, mixtures, and products containing not more than 0.25 percent by weight thorium, uranium, or any combination of these, or

(vii) personnel neutron dosimeters, provided that each dosimeter does not contain more than 50 milligrams of thorium;

(2) source material contained in the following products:

(i) glazed ceramic tableware, provided that the glaze contains not more than 20 percent by weight source material,

(ii) glassware containing not more than 10 percent by weight source material, but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction,

(iii) glass enamel or glass enamel frit containing not more than 10 percent by weight source material imported or ordered for importation into the United States, or initially distributed by manufacturers in the United States, before July 25, 1983, or

(iv) piezoelectric ceramic containing not more than 2 percent by weight source material;

(3) photographic film, negatives, and prints containing uranium or thorium;

(4) any finished product or part fabricated of, or containing, tungsten-thorium or magnesium-thorium alloys, provided that the thorium content of the alloy does not exceed 4 percent by weight and that this exemption shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of any such product or part;

(5) uranium contained in counterweights installed in aircraft, rockets, projectiles, and missiles, or stored or handled in connection with installation or removal of such counterweights, provided that

(i) the counterweights are manufactured in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, authorizing distribution by the licensee pursuant to 10 CFR Part 40,

(3) an affiliate (as that term is defined in 11 U.S.C. 101(2)) of the licensee.

(f) The notification specified in C.31(e) shall indicate the bankruptcy court in which the petition for bankruptcy was filed, a copy of the bankruptcy petition, and the date of the filing of the petition.

Sec. C. 32 Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas. (See also D.1301 "Vacating Premises.").

(a) Except as provided in Md. Code Ann., State Gov't Sec. 10-226 (1996),"

~~(a) — Except as provided in Title 10, Government Procedures, Section 10-404 "Protection from expiration of license,"~~ and provided that the licensee is applying for the same activities as allowed in the current license, each specific license expires at the end of the day, in the month and year stated in the license.

(b) No less than 30 days before expiration of a license, the licensee shall notify the Agency promptly, in writing, and request termination of the license when the licensee decides to terminate all activities involving materials authorized under the license.

(c) Within 60 days of the occurrence of any of the following, each licensee shall provide notification to the Agency in writing, as specified in subsections (d) and (e)(1)(i)-(iv) or by license conditions, of such occurrence, and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity so that the building or outdoor area is suitable for release in accordance with Agency requirements, or submit within 12 months of notification a decommissioning plan, if required by subsection (e)(1) of this section, and begin decommissioning upon approval of that plan if:

(1) The license has expired pursuant to subsection (a) of this section; or

(2) The licensee has decided to permanently cease principal activities, as defined in this part, at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Agency requirements; or

(3) No principal activities under the license have been conducted for a period of 24 months; or

(4) No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Agency requirements.

(d) If a licensee does not submit an application for license renewal under C.33, ~~This notification and request for termination of the license must include the reports and information specified in paragraphs (e)(1)(iv) and (v) of this section and a plan for completion of decommissioning if~~

~~required by paragraph (e)(2) of this section or by license conditions.~~

~~(e) If a licensee does not submit an application for license renewal under C.24, the licensee shall on or before the expiration date specified in the license~~

- (1) terminate use of radioactive material;
- (2) properly dispose of radioactive material and submit a report that certifies information concerning the disposition of radioactive materials; and
- (3) conduct an appropriate radiation survey, as determined by the agency, of the premises where the licensed activities were carried out and submit a report of the results of this survey, unless the licensee demonstrates that the premises are suitable for release for unrestricted use in some other manner. The licensee shall, as appropriate--

(i) report levels of radiation in units of microrads per hour of beta and gamma radiation at one centimeter and gamma radiation at one meter from surfaces, and report levels of radioactivity, including alpha, in units of disintegrations per minute (or microcuries) per 100 square centimeters removable and fixed for surfaces, microcuries per milliliter for water, and picocuries per gram for solids such as soils or concrete; and

(ii) specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

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(1) Prior to final closure of the facility, the licensee shall submit a decommissioning plan that describes the actions necessary to carry out the final closure, if such plan has not been previously approved by the Agency. The proposed decommissioning plan shall include:

(i) A description of planned decommissioning activities;

(ii) A description of methods used to assure protection of workers and the environment against radiation hazards during decommissioning;

(iii) A description of the planned final radiation survey; and

(iv) An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and plan for assuring the availability of adequate funds for completion of decommissioning.

(2) The decommissioning plan shall provide that procedures, or amendments to procedures shall not be carried out prior to approval by the Agency:

(i) Where procedures are employed that would involve techniques not applied routinely during cleanup or maintenance operations; or

(ii) Where workers would be entering areas not normally occupied where surface

contamination and radiation levels are significantly higher than routinely encountered during operation; or

(iii) Where procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or

(iv) Where procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.

SKS (3) The proposed decommissioning plan will be approved by the Agency if the information therein demonstrates that the decommissioning will be completed as soon as is reasonable (as determined by the Agency) and that the health and safety of workers and the public will be adequately protected.

(4) Upon approval of the decommissioning plan by the Agency, the licensee shall complete decommissioning in accordance with the approved plan. As a final step in decommissioning, the licensee shall again submit the information required in paragraph (e)(1) of this section and shall certify the disposition of accumulated wastes from decommissioning.

(f) If the information submitted under subsection (e) of this section does not adequately demonstrate that the premises are suitable for release for unrestricted use, ~~the licensee shall again submit the information required in paragraph (e)(1)(v) of this section and shall certify the disposition of accumulated wastes from decommissioning.~~

~~(e) If the information submitted under paragraphs (e)(1)(v) or (e)(3) of this section does not adequately demonstrate that the premises are suitable for release for unrestricted use, the Agency will inform the licensee of the appropriate further actions required for termination of license.~~

(g) ~~(f)~~ Each specific license continues in effect beyond the expiration date if necessary, with respect to possession of residual radioactive material present as contamination, until the Agency notifies the licensee in writing that the license is terminated. During this time, the licensee shall:

(1) Limit actions involving radioactive material to those related to decommissioning; and

(2) Continue to control entry to restricted areas until they are suitable for release for unrestricted use and the Agency notifies the licensee in writing that the license is terminated.

(h) ~~(g)~~ Specific licenses will be terminated by written notice to the licensee when the Agency determines that:

(1) Radioactive material has been properly disposed of;

(2) Reasonable effort (as determined by the Agency) has been made to eliminate residual radioactive contamination if present; and

(3) (i) A radiation survey has been performed which demonstrates that the premises

are suitable for release for unrestricted use; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release for unrestricted use.

Sec. C.33 Application for Renewal of Licenses.

Subject to Section C.32(a), an application for renewal of a specific license must be filed on a form prescribed by the Agency, in accordance with Section C.24.

~~33-Reserved.~~

Sec. C.34 Amendment of Licenses at Request of Licensee.

Applications for amendment of a license shall be filed in accordance with C.24 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

Sec. C.35 Agency Action on Applications to Renew or Amend. In considering an application by a licensee to renew or amend the license, the Agency will apply the criteria set forth in C.25, C.26, C.27, and C.28 and in Parts E, G, or W of these regulations, as applicable.

Sec. C. 36 Person Possessing a License for Medical Use of Radioactive Material on Effective Date of These Regulations. Any person or institution possessing a specific license for the medical use of radioactive material issued prior to October 9, 1995 when the licensee was authorized according to Groups I through VI of Schedule C, Part C, shall be deemed to possess a license issued under the revised regulations, according to Part G. The existing license will be valid until its stated expiration date and the renewal will be issued in accordance with the regulations dated October 9, 1995.

Sec. C.37 Registration of Sources or Devices Containing Radioactive Materials.

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(a) Any manufacturer or initial distributor of a sealed source or device containing a sealed source whose product is intended for use under a specific or general license may submit a request to the Agency for evaluation of radiation safety information about its product and for its registration.

(b) The request for review of a sealed source or a device must include sufficient information about the design, manufacture, prototype testing, quality control program, labeling, proposed uses and leak testing and, for a device, the request must also include sufficient information about installation, service and maintenance, operating and safety instructions, and its potential hazards, to provide reasonable assurance that the radiation safety properties of the source or device are adequate to protect health and minimize danger to life and property.

(c) The Agency normally evaluates a sealed source or a device using radiation safety criteria in accepted industry standards. If these standards and criteria do not readily apply to a particular case, the agency formulates reasonable standards and criteria with the help of the manufacturer or distributor. The Agency shall use criteria and standards sufficient to ensure that the radiation safety properties of the device or sealed source are adequate to protect health and minimize danger to life and property.

(d) After completion of the evaluation, the Agency issues a certificate of registration to the person making the request. The certificate of registration acknowledges the availability of the submitted information for inclusion in an application for a specific license proposing use of the product.

(e) The person submitting the request for evaluation and registration of safety information about the product shall manufacture and distribute the product in accordance with:

(1) The statements and representation, including quality control program, contained in the request; and

(2) The provisions of the registration certificate.

~~Sec. C.38 - C.39 Reserved.37—C.39—Reserved.~~

Transfer of Material

Sec. C.40 Transfer of Material.

(a) No licensee shall transfer radioactive material except as authorized pursuant to C.40.

(b) Except as otherwise provided in his license and subject to the provisions of C.40(c) and (d), any licensee may transfer radioactive material:

(1) to the Agency;¹¹

(2) to the U.S. Department of Energy;

(3) to any person exempt from these regulations to the extent permitted under such exemption;

(4) to any person authorized to receive such material under terms of a general license or its equivalent, or a specific license or equivalent licensing document, issued by the Agency, the U.S. Nuclear Regulatory Commission, any Agreement State or any Licensing State, or to any person otherwise authorized to receive such material by the Federal Government or any agency thereof, the Agency, an Agreement State, or a Licensing State; or

(5) as otherwise authorized by the Agency in writing.

¹¹ A licensee may transfer material to the Agency only after receiving prior written approval from the Agency.

(c) Before transferring radioactive material to a specific licensee of the Agency, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State, or to a general licensee who is required to register with the Agency, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State prior to receipt of the radioactive material, the licensee transferring the material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred.

(d) Any of the following methods for the verification required by C.40(c) is acceptable:

(1) The transferor may possess and read a current copy of the transferee's specific license or registration certificate.

(2) The transferor may possess a written certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date.

(3) For emergency shipments, the transferor may accept oral certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date; provided, that the oral certification is confirmed in writing within 10 days.

(4) The transferor may obtain other information compiled by a reporting service from official records of the Agency, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State regarding the identity of licensees and the scope and expiration dates of licenses and registration.

(5) When none of the methods of verification described in C.40(d)(1) through (4) are readily available or when a transferor desires to verify that information received by one of such methods is correct or up-to-date, the transferor may obtain and record confirmation from the Agency, the U.S. Nuclear Regulatory Commission, or an Agreement State, or a Licensing State that the transferee is licensed to receive the radioactive material.

(e) Shipment and transport of radioactive material shall be in accordance with the provisions of Part T of these regulations.

Sec. C.41 - C.49 Reserved.

Modification and Revocation of Licenses

Sec. C.50 Modification and Revocation of Licenses.

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, or

(b) Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Act or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Agency to refuse to grant a license on an original application, or for violation of, or failure to observe any of the terms and conditions of the Act, or of the license, or of any rule, regulation, or order of the Agency.

(c) Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

(d) Each specific license revoked by the Agency expires at the end of the day on the date of the Agency's final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by Agency order.

Sec. C.51 - C.89 Reserved.

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.

- iii. The licensee shall implement and maintain a respiratory protection program that includes:
 - (1) Air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate exposures; and
 - (2) Surveys and bioassays, as appropriate, to evaluate actual intakes; and
 - (3) Testing of respirators for operability immediately prior to each use; and
 - (4) 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 recordkeeping; and
 - (5) 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.
- iv. The licensee shall issue a written policy statement on respirator usage covering:
 - (1) The use of process or other engineering controls, instead of respirators; and
 - (2) The routine, nonroutine, and emergency use of respirators; and
 - (3) The length of periods of respirator use and relief from respirator use.
- v. The licensee shall 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.
- vi. The licensee shall use equipment within limitations for type and mode of use and shall provide proper visual, ~~The licensee shall use equipment within the equipment manufacturer's expressed limitations for type and mode of use and shall provide proper visual, communication, and other special capabilities (such as adequate skin protection) when needed. and other special capabilities, such as adequate skin protection, when needed.~~

- b. When estimating exposure of individuals to airborne radioactive materials, the licensee may make allowance for respiratory protection equipment used to limit intakes pursuant to D.702, provided that the following conditions, in addition to those in D.703a., are satisfied:
- i. The licensee selects respiratory protection equipment that provides a protection factor, specified in Appendix A, 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, Table I, Column 3. However, if the selection of respiratory protection equipment with a protection factor greater than the peak concentration is inconsistent with the goal specified in D.702 of keeping the total effective dose equivalent ALARA, the licensee may select respiratory protection equipment with a lower protection factor provided that such a selection would result in a total effective dose equivalent that is 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 initially estimated, the corrected value shall be used; if the exposure is later found to be less than initially estimated, the corrected value may be used.
 - ii. The licensee shall obtain authorization from the Agency before assigning respiratory protection factors in excess of those specified in Appendix A. The Agency may authorize a licensee to use higher protection factors on receipt of an application that:
 - (1) Describes the situation for which a need exists for higher protection factors, and
 - (2) Demonstrates that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.
- c. In an emergency, the licensee shall use as emergency equipment only respiratory protection equipment that has been specifically certified or had certification extended for emergency use by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration.
- d. The licensee shall notify the Agency in writing at least 30 days before the date that respiratory protection equipment is first used pursuant to either D.703a. or b.

STORAGE AND CONTROL OF LICENSED OR REGISTERED SOURCES OF RADIATION

Sec. D.801 Security of Stored Sources of Radiation. Sources of radiation shall be secured against unauthorized removal or access from the place of storage. ~~Sources of radiation shall be secured against unauthorized removal from the place of storage.~~

Sec. D.802 Control of Sources of Radiation not in Storage.

- a. The licensee shall control and maintain constant surveillance of licensed

- iii. A statement of disposition, or probable disposition, of the licensed or registered source of radiation involved; and
 - iv. Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas; and
 - v. Actions that have been taken, or will be taken, to recover the source of radiation; and
 - vi. Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed or registered sources of radiation.
- c. Subsequent to filing the written report required in D.1201(b), the licensee or registrant shall also report additional substantive information on the loss or theft within 30 days after the licensee or registrant learns of such information.
- d. The licensee or registrant shall prepare any report filed with the Agency pursuant to D.1201 so that names of individuals who may have received exposure to radiation are stated in a separate and detachable portion of the report.

Sec. D.1202 Notification of Incidents.

- a. Immediate Notification. In addition to other requirements for notification, each licensee or registrant shall immediately report by telephone each 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:
- i. An individual to receive:
 - (1) A total effective dose equivalent of 0.25 Sv (25 rem) or more; or
 - (2) An eye dose equivalent of 0.75 Sv (75 rem) or more; or,
 - (3) A shallow dose equivalent to the skin or extremities 2. ~~(3) A shallow dose equivalent to the skin or extremities or a total organ dose equivalent of 2.5 Gy (250 rad) or more; or~~
 - ii. The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, ~~the individual could have received an intake five times the ALI. the individual could have received an intake five times the occupational ALI.~~ This provision does not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.
- b. Twenty-Four Hour Notification. Each licensee or registrant shall, within 24 hours of discovery of the event, report to the Agency in writing by telegram, mailgram or facsimile, each event involving loss of control of a licensed or registered source of radiation possessed

by the licensee or registrant that may have caused, or threatens to cause, any of the following conditions:

- i. An individual to receive, in a period of 24 hours:
 - (1) A total effective dose equivalent exceeding 0.05 Sv (5 rem); or
 - (2) An eye dose equivalent exceeding 0.15 Sv (15 rem); or
 - (3) A shallow dose equivalent to the skin or extremities exceeding 0. ~~(3)~~
~~A shallow dose equivalent to the skin or extremities or a total organ dose equivalent exceeding 0.5 Sv (50 rem); or~~
- ii. The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational ALI. This provision does not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.
- c. The licensee or registrant shall prepare each report filed with the Agency pursuant to D.1202 so that names of individuals who have received exposure to sources of radiation are stated in a separate and detachable portion of the report.
- d. The provisions of D.1202 do not apply to doses that result from planned special exposures, provided such doses are within the limits for planned special exposures and are reported pursuant to D.206a and D.1204.

Sec. D.1203 Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits.

- a. Reportable Events. In addition to the notification required by D.1202, each licensee or registrant shall submit a written report to the Agency within 30 days after learning of any of the following occurrences:
 - i. Incidents for which notification is required by D.1202; or
 - ii. Doses in excess of any of the following:
 - (1) The occupational dose limits for adults in D.201; or
 - (2) The occupational dose limits for a minor in D.207; or
 - (3) The limits for an embryo/fetus of a declared pregnant woman in D.208; or
 - (4) The limits for an individual member of the public in D.301; or

- (5) Any applicable limit in the license or registration; or
- iii. Levels of radiation or concentrations of radioactive material in a restricted or unrestricted area in excess of the applicable limits set

the licensee or registrant.

- b. Each licensee or registrant shall retain a record of each misadministration for five years. The record must contain the names of all individuals involved (including the prescribing physician, the patient, and the patient's referring physician), the patient's social security number or identification number if one has been assigned, a brief description of the misadministration, why it occurred, the effect on the patient, what improvements are needed to prevent recurrence, and the actions taken to prevent reoccurrence.
- c. Aside from the notification requirement, nothing in this section affects any rights or duties of licensees or registrants and physicians in relation to each other, patients, or the patient's responsible relatives or guardians.

Sec. D.1210 Additional Reporting Requirements for Radioactive Materials.

- a. Immediate report. Each licensee shall notify the Agency as soon as possible but no later than 4 hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or release of licensed material that could exceed regulatory limits (events may include fires, explosions, toxic gas releases, etc.).
- b. Twenty-four hour report. Each licensee shall notify the Agency within 24 hours after the discovery of any of the following events involving licensed material:
 - 1. An unplanned contamination event that:
 - i. Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;
 - ii. Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of Part D; and
 - iii. Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.
 - 2. An event in which equipment is disabled or fails to function as designed when:
 - i. The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;
 - ii. The equipment is required to be available and operable when it is disabled

- or fails to function; and
 - iii. No redundant equipment is available and operable to perform the required safety function.
 - 3. An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.
 - 4. An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:
 - i. The quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of Part D; and
 - ii. The damage affects the integrity of the licensed material or its container.
- c. Preparation and submission of reports. Reports made by licensees in response to the requirements of this section must be made as follows:
 - 1. Licensees shall make reports required by paragraphs (a) and (b) of this section by telephone to the Agency. To the extent that the information is available at the time of notification, the information provided in these reports must include:
 - i. The caller's name and call back number;
 - ii. A description of the event, including date and time;
 - iii. The exact location of the event;
 - iv. The isotopes, quantities, and chemical and physical form of the licensed material involved; and
 - v. Any personnel radiation exposure data available.
 - 2. Written report. Each licensee who makes a report required by paragraph (a) or (b) of this section shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These reports must be sent to the Agency. The reports must include the following:
 - i. A description of the event, including the probable cause and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

- ii. The exact location of the event;
- iii. The isotopes, quantities, and chemical and physical form of the licensed material involved;
- iv. Date and time of event;
- v. Corrective actions taken or planned and the results of any evaluations or assessments; and
- vi. The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

ADDITIONAL REQUIREMENTS

Sec. D.1301 Vacating Premises.

(See also C.32, "Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas")

~~"Expiration and Termination of Licenses")~~

Each specific licensee shall, no less than 30 days before vacating or relinquishing possession or control of premises or other authorized use location which may have been contaminated with radioactive material as a result of his activities, notify in writing of intent to vacate and submit a written decontamination survey to the Agency. When deemed necessary by the Agency, the licensee shall decontaminate the premises in such a manner as the Agency may specify.

shall immediately withdraw the source from use and shall cause it to be decontaminated, repaired, or disposed of in accordance with these regulations. A report describing the equipment involved, the test results, and the corrective action taken shall be filed with the Agency within 5 days of receiving the test results.

(e) Exemptions. The following sources are exempted from the periodic leak test requirements of W.105(a) through (d):

- (1) hydrogen-3 sources;
- (2) sources of radioactive material with a half-life of 30 days or less;
- (3) sealed sources of radioactive material in gaseous form;
- (4) sources of beta- or gamma-emitting radioactive material with an activity of 100 microcuries (3.7 MBq) or less; and
- (5) sources of alpha-emitting radioactive material with an activity of 10 microcuries (0.370 MBq) or less.

Sec. W.106 Quarterly Inventory. Each licensee or registrant shall conduct a quarterly physical inventory to account for all sources of radiation. Records of inventories shall be maintained for 2 years from the date of the inventory for inspection by the Agency and shall include the quantities and kinds of sources of radiation, the location where sources of radiation are assigned, the date of the inventory, and the name of the individual conducting the inventory.

Sec. W.107 Utilization Records. Each licensee or registrant shall maintain current records, which shall be kept available for inspection by the Agency for 2 years from the date of the recorded event, showing the following information for each source of radiation:

- (a) make, model number, and a serial number or a description of each source of radiation used;
- (b) the identity of the well-logging supervisor or field unit to whom assigned;
- (c) locations where used and dates of use; and
- (d) in the case of tracer materials and radioactive markers, the utilization record shall indicate the radionuclide and activity used in a particular well.

Sec. W.108 Use, Design, Performance, and Certification Criteria for Sealed Sources Used in Downhole Operations.

- (a) Each sealed source, except those containing radioactive material in gaseous form, used in downhole operations and manufactured after September 21, 1987 shall be certified by the manufacturer, or other testing organization acceptable to the Agency, to meet the following minimum criteria:

- (1) be of doubly encapsulated construction;
 - (2) contain radioactive material whose chemical and physical forms are as insoluble and non-dispersible as practical; and
 - (3) has been individually pressure tested to at least 24,656 pounds per square inch absolute (170 MN/m²) without failure.
- (b) For sealed sources, except those containing radioactive material in gaseous form, acquired after September 21, 1987 in the absence of a certificate from a transferor certifying that an individual sealed source meets the requirements of W.108(a), the sealed source shall not be put into use until such determinations and testing have been performed.
- (c) Each sealed source, except those containing radioactive material in gaseous form, used in downhole operations after September 21, 1988 shall be certified by the manufacturer, or other testing organization acceptable to the Agency, as meeting the sealed source performance requirements for oil well-logging as contained in the American National Standard N43.6, "Classification of Sealed Radioactive Sources," (formerly N542, ANSI/NBS 126) in effect on September 21, 1986.
- (d) Certification documents shall be maintained for inspection by the Agency for a period of 2 years after source disposal. If the source is abandoned downhole, the certification documents shall be maintained until the Agency authorizes disposition.
- (e) The licensee may use a sealed source in a well without a surface casing for protecting fresh water aquifers only if the licensee follows a procedure for reducing the probability of the source becoming lodged in the well. The procedure must be approved by the Nuclear Regulatory Commission pursuant to 10 C.F.R. Sec. 39.13(c) or by the Agency.

Sec. W.109 Labeling.

- (a) Each source, source holder, or logging tool containing radioactive material shall bear a durable, legible, and clearly visible marking or label, which has, as a minimum, the standard radiation caution symbol, without the conventional color requirement, and the following wording:

DANGER 1/
RADIOACTIVE

This labeling shall be on the smallest component transported as a separate piece of equipment.

- (b) Each transport container shall have permanently attached to it a durable, legible, and clearly visible label which has, as a minimum, the standard radiation caution symbol and the following wording:

DANGER 1
RADIOACTIVE
NOTIFY CIVIL AUTHORITIES [OR NAME OF COMPANY]

Sec. W.110 Inspection and Maintenance.

- (a) Each licensee or registrant shall conduct, at intervals not to exceed 6 months, a program of inspection and maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, and injection tools to assure proper labeling and physical condition. Records of inspection and maintenance shall be maintained for a period of 2 years for inspection by the Agency.
- (b) If any inspection conducted pursuant to W.110(a) reveals damage to labeling or components critical to radiation safety, the device shall be removed from service until repairs have been made.
- (c) If a sealed source is stuck in the source holder, the licensee shall not perform any operation, such as drilling, cutting, or chiseling, on the source holder unless the licensee is specifically approved by the Agency.
- (d) The repair, opening, or modification of any sealed source shall be performed only by persons specifically authorized to do so by the Agency, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State.

Requirements for Personnel Safety

Sec. W.201 Training Requirements.

- (a) No licensee or registrant shall permit any individual to act as a logging supervisor as defined in this part 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 Appendix A of this part and demonstrated an understanding thereof;
 - (2) read and received instruction in the regulations contained in this part and the applicable sections of Parts A, D, and J of these regulations or their equivalent, conditions of appropriate license or certificate of registration, and the licensee's or registrant's operating and emergency procedures, and demonstrated an understanding thereof; 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 or registrant 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 or registrant'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 or registrant shall maintain employee training records for inspection by the Agency for 2 years following termination of the individual's employment.

Sec. W.202 Operating and Emergency Procedures. The licensee's or registrant's operating and emergency procedures shall include instructions in at least the following:

- (a) 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 Part D of these regulations;
- (b) methods and occasions for conducting radiation surveys;
- (c) methods and occasions for locking and securing sources of radiation;
- (d) personnel monitoring and the use of personnel monitoring equipment;
- (e) 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;
- (f) minimizing exposure of individuals in the event of an accident;
- (g) maintenance of records;
- (h) use, inspection and maintenance of source holders, logging tools, source handling tools, storage containers, transport containers, and injection tools;
- (i) procedure to be followed in the event a sealed source is lodged downhole;
- (j) procedures to be used for picking up, receiving, and opening packages containing radioactive material;
- (k) for the use of tracers, decontamination of the environment, equipment, and personnel;
- (l) maintenance of records generated by logging personnel at temporary jobsites;
- (m) notifying proper persons in the event of an accident; and
- (n) actions to be taken if a sealed source is ruptured, including actions to prevent the spread of contamination and minimize inhalation and ingestion of radioactive material and actions to obtain suitable radiation survey instruments as required by W.104.

Sec. W.203 Personnel Monitoring.

- (a) No licensee or registrant shall permit any individual to act as a logging supervisor or to assist in the handling of sources of radiation unless each such individual wears either a film badge or a thermoluminescent dosimeter (TLD). Each film badge or TLD shall be assigned to and worn by only one individual. Film badges must be replaced at least monthly and TLDs replaced at least quarterly. After replacement, each film badge or TLD must be promptly processed.
- (b) Personnel monitoring records shall be maintained for inspection until the Agency authorizes

disposition.

Precautionary Procedures in Logging and Subsurface Tracer Studies

Sec. W.301 Security. During each logging or tracer application, the logging supervisor or other designated employee shall maintain direct surveillance of the operation to protect against unauthorized or unnecessary entry into a restricted area, as defined in Part A of these regulations.

Sec. W.302 Handling Tools. The licensee shall provide and require the use of tools that will assure remote handling of sealed sources other than low-activity calibration sources.

Sec. W.303 Subsurface Tracer Studies.

(a) Protective gloves and other appropriate protective clothing and equipment shall be used by all personnel handling radioactive tracer material. Precautions shall be taken to avoid ingestion or inhalation of radioactive material.

(b) No licensee shall cause the injection of radioactive material into potable aquifers without prior written authorization from the Agency.

Sec. W.304 Particle Accelerators. No licensee or registrant shall permit above-ground testing of particle accelerators, designed for use in well-logging, which results in the production of radiation, except in areas or facilities so controlled or shielded that the requirements of D.201 and D.301 of these regulations, as applicable, are met.

Sec. W.305 Uranium Sinker Bars. The licensee may use a uranium sinker bar in well logging only if it is legibly impressed with the words "CAUTION -- RADIOACTIVE-DEPLETED URANIUM" and "NOTIFY CIVIL AUTHORITIES (or COMPANY NAME) IF FOUND."

Radiation Surveys and Records

Sec. W.401 Radiation Surveys.

(a) Radiation surveys or calculations shall be made and recorded for each area where radioactive materials are used and stored.

(b) Radiation surveys shall be made and recorded for the radiation levels in occupied positions and on the exterior of each vehicle used to transport radioactive material. Such surveys shall include each source of radiation or combination of sources to be transported in the vehicle.

(c) If the sealed source assembly is removed from the logging tool before departing the jobsite, the logging tool detector shall be energized, or a survey meter used, to assure that the logging tool is free of contamination.