

February 1, 2002

Mr. Lawrence E. Nanney, Director  
Division of Radiological Health  
Department of Environment and Conservation  
L & C Annex, Third Floor  
401 Church Street  
Nashville, TN 37243-1532

Dear Mr. Nanney:

As requested, we have reviewed the final Tennessee regulations, State Regulations for the Protection Against Radiation, that were sent electronically on December 21, 2001. The final regulations are in response to 15 amendments identified in the enclosed State Regulation Status (SRS) Data Sheet. The regulations were reviewed by comparison to the equivalent NRC regulations in 10 CFR Parts 19, 20, 30, 34, 35, 40, 61, 71, and 150. We also discussed our review of the regulations with you on January 25 and January 31, 2002.

As a result of our review, we have seven comments that apply to adequacy and compatibility and seven editorial items that have been identified in the enclosures. We also noted that one comment from our June 8, 2001 letter was not addressed; this comment is also included. Please note that we have limited our review to regulations required for compatibility and/or health and safety. The comments stated in this letter may be addressed by the State in a future scheduled amendment of its regulations.

Several of the new comments stem from editorial errors. Due to the error location, in Category A and B items, the editorial errors take on a greater significance because they may impact the essential objectives of the Tennessee regulation. We suggest the State would benefit from a more thorough technical editorial review of these regulations.

The SRS Data Sheet summarizes our knowledge of the status of other Tennessee regulations. Please let us know if you note any inaccuracies or have any comments on the information contained in the SRS Data Sheet. This letter, including the SRS Data Sheet, is posted on the STP Web Site: <http://www.hsrdo.org/nrc/rulemaking.htm>.

If you have any questions regarding the comments, the compatibility and health categories, or any of the NRC regulations used in the review, please contact me or Richard Woodruff of Region II at 404-562-4704 or [RLW@NRC.GOV](mailto:RLW@NRC.GOV).

Sincerely,

/RA/

Josephine M. Piccone, Deputy Director  
Office of State and Tribal Programs

Enclosures:  
As stated

Distribution:

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STP-AG-26

**COMMENTS ON PROPOSED TENNESSE REGULATIONS  
AGAINST COMPATIBILITY AND HEALTH AND SAFETY CATEGORIES**

| <b>State Regulation</b>    | <b>NRC Regulation</b> | <b>Category</b> | <b>RATS ID</b> | <b>Subject and Comments</b>   |
|----------------------------|-----------------------|-----------------|----------------|---|
| 1200-2-4-.04(1)(eee)(1)(i) | 71.4                  | B               | 1996-1         | <p><u>Definition: Surface Contaminated Object</u></p> <p>TN regulation reads “10 microcuries... per cm<sup>2</sup> for all other alpha emitters.” This value should be 10<sup>-5</sup> microcuries/cm<sup>2</sup>.</p>  |
| 1200-2-5-.32(35)           | 20.1003               | A               |                | <p><u>Definition: High Radiation Area</u></p> <p>In determining what areas are high radiation areas, NRC requires consideration of the effect radiation levels from sources external to the body have upon individuals entering the area. The TN regulation does not include the “sources external to the body” limitation, and is therefore more restrictive.</p> <p>The phrase “from sources external to the body” should be added after the phrase “radiation levels” so that the TN regulation is essentially identical to 10 CFR 20.1003.</p>                            |
| 1200-2-5-.60(1)(a)         | 20.1301(a)            | A               |                | <p><u>Dose Limits for Individual Members of the Public</u></p> <p>When calculating the total effective dose equivalent to an individual member of the public, the licensee should not consider dose contributions from exposures to individuals administered radioactive material and released. TN fails to reference this exclusion.</p> <p>The phrase “from exposure to individuals administered radioactive material and released” should be added to the list of excluded dose contributions so that the TN regulation is essentially identical to 10 CFR 20.1301(a).</p> |

|   |               |   |        |   |
|---|---------------|---|--------|---|
| 1200-2-8-.05(4)(5)                      | 34.42 (a) 2&3 | C | 1998-4 | <p><u>Radiation Safety Officer for Industrial Radiography</u></p> <p>TN regulation includes no special requirements for the training or qualification of an RSO.</p> <p>10 CFR 34.42 requires that, in addition to radiographer training, an RSO have 2000 hours of hands-on experience and formal training in the establishment and maintenance of a radiation protection program. The essential objectives of this section include ensuring that specially qualified and trained professionals be responsible for oversight of industrial radiography operations.</p> <p>TN should adopt the training and testing requirements in 34.42 to achieve compatibility.</p> |
| 1200-2-10-.30-(12)(a)(2)                | 71.88         | B | 1996-1 | <p><u>Air Transport of Plutonium</u></p> <p>TN regulation incorrectly lists a limit of 0.002 mCi/g instead of 0.002 <math>\mu</math>Ci/g.</p>   |
| 1200-2-10-.37; Schedule 10-6, Table A-1 | Pt. 71 App. A | B | 1996-1 | <p><u>Determination of <math>A_1</math> and <math>A_2</math></u></p> <p>The TN regulation contains the following errors:</p> <p>Cm-247: <math>A_2</math> (Ci) reads <math>5.41 \times 10^{23}</math>;<br/>Should read <math>5.41 \times 10^{-3}</math></p> <p>Gd-148: <math>A_2</math> (Tbq) reads <math>3 \times 10^{24}</math>;<br/>Should read <math>3 \times 10^{-4}</math></p> <p>Kr-81: Specific Activity (Ci/g) reads <math>2.1 \times 10^{22}</math>; should read <math>2.1 \times 10^{-2}</math></p> <p>Ra-228: <math>A_2</math> is illegible; should read <math>4 \times 10^{-2}</math></p>   |
| 1200-2-10-.37; Schedule 10-6, Table A-3 | Pt. 71 App. A | B | 1996-1 | <p><u>Activity-mass Relationships for Uranium</u></p> <p>The TN regulation incorrectly lists the Specific Activity in Tbq/g for 5.0, 10.0, 20.0, 35.0, and 50.0 Uranium Enrichment wt % U-235 present. The scientific notation for these figures should read <math>10^{-7}</math>, not <math>10^{-8}</math>.</p>  |

**Comment from the NRC June 8, 2001 Letter**

| <b>State Regulation</b> | <b>NRC Regulation</b> | <b>RATS ID</b> | <b>Category</b> | <b>Subject and Comments</b>  |
|-------------------------|-----------------------|----------------|-----------------|--|
| 1200-2-8                | 34.42(a)              | 1998-4         | C               | <p>There is no equivalent provision for “Radiation Safety Officer for Industrial Officer.” The essential objectives of paragraph 34.42(a) are omitted.</p> <p>This paragraph should be adopted to meet the compatibility category.</p> |

**Editorial Comments**

1. Rule 1200-2-5-.125(1)(a) contains an incorrect cross-reference to 1200-2-10-.161. This reference should be to 1200-2-5-.161.
2. Schedule RHS 8-33 defines “source material” by reference to 1200-2-4-.04(1)(mm). This reference should be to 1200-2-5-.32.
3. Rule 1200-2-8-.05(3)(a)(3) incorrectly refers to “NCLAP” instead of “NVLAP”.
4. Rule 1200-2-10-.13(10)(b)(1) contains a reference to 1200-2-4-.04(o). This cite does not exist in the TN regulations. The Rule should refer to the proper cite for the definition of “medical use,” (see 10 CFR 35.2) which is Category C for compatibility purposes.
5. Rule 1200-2-10-.30(13) contains a reference to 1200-2-5-.115(a). This reference should be to 1200-2-5-.115(a) and (b) to match the corresponding CFR reference to the requirements of 20.1906(e).
6. Rule 1200-2-10-.37, Schedule 10-6 should be edited so that the values for Specific Activity, expressed in Ci/g, are clearly listed in the proper row for Re (natural); U (enriched 5% or less), U (enriched more than 5%), and U (depleted).
7. 1200-2-10-.30(10)(b) - The requirement imposed by subparagraph (b) bears no relationship to the rest of the paragraph and should be deleted.

## STATE REGULATION STATUS

**State: TENNESSEE**

**[15 amendments reviewed are identified by a ★  
at the beginning of each equivalent NRC regulation.]**

**Tracking Ticket Number: 2-15**

**Date: February 1, 2002**

| NRC Chronology Identification  | FR Notice<br>(State Due Date)  | RATS ID | Proposed (P)<br>/ Final (F) <sup>1</sup><br>Rule / ML # <sup>5</sup> | NRC Review /<br>Y, N <sup>2</sup> / Date /<br>ML # <sup>5</sup> | Final State<br>Regulation <sup>1</sup><br>(Effective Date) |
|--|--|---------|--|---|--|
| Standards for Protection Against Radiation-Part 20   | 56 FR 23360; 56 FR 61352;<br>57 FR 38588; 57 FR 57877;<br>58 FR 67657; 59 FR 41641;<br>60 FR 20183; (1/1/94) | 1991-3  | F  | N 12/18/97  |  |
| Safety Requirements for Radiographic Equipment-Part 34   | 55 FR 843; (1/10/94)   | 1991-1  |  |   |  |
| ASNT Certification of Radiographers-Part 34  | 56 FR 11504; (none)  | 1991-2  |  |   | Not required <sup>3</sup>                                  |
| Notification of Incidents-Parts 20, 30, 31, 34, 39, 40, 70   | 56 FR 64980; (10/15/94)  | 1991-4  | F  | N 12/2/96   | 12/28/96   |
| Quality Management Program and Misadministrations-Part 35  | 56 FR 34104; (1/27/95)   | 1992-1  |  |   |  |
| Eliminating the Recordkeeping Requirements for Departures from Manufacturer's Instructions-Parts 30,35                         | 57 FR 45566; (none)  | 1992-2  |  |   | Not required <sup>3</sup>                                  |
| Licensing and Radiation Safety Requirements for Irradiators-Part 36  | 58 FR 7715; (7/1/96)   | 1993-2  |  |   | Not applicable<br>SECY-95-112 <sup>4</sup>                 |
| Definition of Land Disposal and Waste Site QA Program-Part 61  | 58 FR 33886; (7/22/96)   | 1993-3  | F  | N 12/2/96   | 12/28/96   |
| Decommissioning Recordkeeping and License Termination: Documentation Additions [Restricted areas and spill sites]-Parts 30, 40 | 58 FR 39628; (10/25/96)  | 1993-1  |  |   | 1997-Current LBR<br>adequate per MRB                       |
| Self-Guarantee as an Additional Financial Mechanism-Parts 30, 40, 70   | 58 FR 68726; 59 FR 1618<br>(none)  | 1994-1  | F  | N 12/2/96   | Not required <sup>3</sup><br>Alternate rule 1987           |
| Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards-Part 40  | 59 FR 28220; (7/1/97)  | 1994-2  |  |   | Not applicable to<br>TN                                    |
| Timeliness in Decommissioning Material Facilities-Parts 30, 40, 70   | 59 FR 36026; (8/15/97)   | 1994-3  |  |   |  |
| ★Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use-Parts 30, 32, 35             | 59 FR 61767; 59 FR 65243<br>60 FR 322; (1/1/98)  | 1995-1  | F<br>ML020320229   | N 2/5/02<br>ML020360223   | 2/4/02   |
| ★Frequency of Medical Examinations for Use of Respiratory Protection Equipment-Part 20   | 60 FR 7900; (3/13/98)  | 1995-2  | F<br>ML020320229   | N 2/5/02<br>ML020360223   | 2/4/02   |

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|---|---------------------------------------|----------------|---|--|--|
| ★Low-Level Waste Shipment Manifest Information and Reporting-Parts 20, 61   | 60 FR 15649; 60 FR 25983<br>(3/1/98)  | 1995-3         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★Performance Requirements for Radiography Equipment-Part 34   | 60 FR 28323; (6/30/98)                | 1995-4         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★Radiation Protection Requirements: Amended Definitions and Criteria-Parts 19, 20   | 60 FR 36038; (8/14/98)                | 1995-5         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| Clarification of Decommissioning Funding Requirements-Parts 30, 40, 70  | 60 FR 38235; (11/24/98)               | 1995-6         |   |  |  |
| ★Medical Administration of Radiation and Radioactive Materials-Parts 20, 35   | 60 FR 48623; (10/20/98)               | 1995-7         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★10 CFR Part 71: Compatibility with the International Atomic Energy Agency-Part 71  | 60 FR 50248; 61 FR 28723<br>(4/1/99)  | 1996-1         | F<br>ML020320229  | Y 2/5/02<br>ML020360223  | 2/4/02   |
| One Time Extension of Certain Byproduct, Source and Special Nuclear Materials<br>Licenses-Parts 30, 40, 70                            | 61 FR 1109; (none)                    | 1996-2         |   |  | Not required <sup>3</sup>  |
| Termination or Transfer of Licensed Activities: Recordkeeping Requirements-Parts 20,<br>30, 40, 61, 70                                | 61 FR 24669; (6/17/99)                | 1996-3         |   |  |  |
| ★Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air<br>Act-Part 20                               | 61 FR 65120; (1/9/00)                 | 1997-1         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| Fissile Material Shipments and Exemptions-Part 71   | 62 FR 5907; (none)                    | 1997-4         |   |  | Not required <sup>3</sup>  |
| ★Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction<br>Within an Agreement State-Part 150          | 62 FR 1662; (2/27/00)                 | 1997-2         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★Criteria for the Release of Individuals Administered Radioactive Material-Parts 20, 35   | 62 FR 4120; (5/29/00)                 | 1997-3         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial<br>Radiography Operations-Parts 30, 34, 71, 150 | 62 FR 28948; (6/27/00)                | 1997-5         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| Radiological Criteria for License Termination-Parts 20, 30, 40, 70  | 62 FR 39058; (8/20/00)                | 1997-6         |   |  |  |
| ★Exempt Distribution of a Radioactive Drug Containing One Microcurie of Carbon-14<br>Urea-Part 30                                     | 62 FR 63634; (1/02/01)                | 1997-7         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| ★Deliberate Misconduct by Unlicensed Persons-Parts 30, 40, 61, 70, 150  | 63 FR 1890; 63 FR 13773<br>(2/12/01)  | 1998-1         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |

| <b>NRC Chronology Identification</b>   | <b>FR Notice<br/>(State Due Date)</b>  | <b>RATS ID</b> | <b>Proposed (P)<br/>/ Final (F)<sup>1</sup><br/>Rule / ML #<sup>5</sup></b> | <b>NRC Review /<br/>Y, N<sup>2</sup> / Date /<br/>ML #<sup>5</sup></b> | <b>Final State<br/>Regulation<sup>1</sup><br/>(Effective Date)</b> |
|--|--|----------------|---|--|--|
| Self-Guarantee of Decommissioning Funding by Nonprofit and Non-Bond-Issuing Licensees- Parts 30, 40, 70                              | 63 FR 29535; (none)                    | 1998-2         |   |  | Not required <sup>3</sup>  |
| License Term for Medical Use Licenses-Part 35  | 63 FR 31604; (none)                    | 1998-3         |   |  | Not required <sup>3</sup>  |
| ★Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations-Part 34                | 63 FR 37059; (7/9/01)                  | 1998-4         | F<br>ML020320229  | Y 2/5/02<br>ML020360223  | 2/4/02   |
| Minor Corrections, Clarifying Changes, and a Minor Policy Change-Parts 20, 35, 36  | 63 FR 39477; 63 FR 45393<br>(10/26/01) | 1998-5         |   |  |  |
| ★Transfer for Disposal and Manifests: Minor Technical Conforming Amendment-Part 20   | 63 FR 50127; (11/20/01)                | 1998-6         | F<br>ML020320229  | N 2/5/02<br>ML020360223  | 2/4/02   |
| Radiological Criteria for License Termination of Uranium Recovery Facilities-Part 40   | 64 FR 17506; (6/11/02)                 | 1999-1         |   |  | Not applicable to<br>TN  |
| Requirements for Those Who Possess Certain Industrial Devices Containing Byproduct Material to Provide Requested Information-Part 31 | 64 FR 42269; (none)                    | 1999-2         |   |  | Not required <sup>3</sup>  |
| Respiratory Protection and Controls to Restrict Internal Exposure-Part 20  | 64 FR 54543; 64 FR 55525<br>(2/2/03)   | 1999-3         |   |  |  |
| Energy Compensation Sources for Well Logging and Other Regulatory Clarifications-Part 39   | 65 FR 20337; (5/17/03)                 | 2000-1         |   |  |  |
| New Dosimetry Technology-Parts 34, 36, 39  | 65 FR 63749; (1/8/04)                  | 2000-2         |   |  |  |

1. Or other generic Legally Binding Requirements.
2. (Y/N) Y means "Yes," there are comments in the review letter that the State needs to address.  
N means "No," there are no comments in the review letter.
3. Not required means these regulations are not required for purposes of compatibility.
4. A State need not adopt a specific regulation if the State has no licensees that would be subject to that regulation. See: "Final Policy Statement on Adequacy and Compatibility of Agreement State Programs," III.1. Time Frame for Adoption of Compatible State Regulations, p. 6, SECY-95-112, May 3, 1995.
5. ADAMS ML Number