

October 24, 2011

Stephen Tarlton, Manager
Radiation Control Program
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver, CO 80246

Dear Mr. Tarlton:

We have reviewed Colorado's "Colorado Radiation Control Act" contained in 25-11-101 through 25-11-305 received by our office on April 13, 2011. The legislation was reviewed by comparison to 10 CFR 40, "Domestic Licensing of Source Material"; 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste"; and the Suggested State Legislation (SSL) on "Radiation Control," published 1983 by the Council of State Governments.

Please note that we have limited our review to program elements required for compatibility and/or health and safety and the identification of program elements that create conflicts, duplications or gaps in the orderly pattern of regulations on a nationwide basis (See the 1997 Policy Statement on Adequacy and Compatibility of Agreement State Programs). We note that Colorado became an Agreement State on January 1, 1968 and amended their Agreement to include Section 11e.(2) material of the Atomic Energy Act on April 20, 1982. During the negotiations for both the Agreement and the amendment to the Agreement, NRC reviewed Colorado's enabling legislation. We are unaware of additional reviews by NRC of changes to the Colorado enabling legislation since those reviews.

The Colorado legislation appears to loosely follow the SSL model legislation and the State has operated their agreement program under this legislation since becoming an Agreement State. Based on our review, we have some comments/concerns about the legislation in addition to the changes associated with revisions that occurred in 2002, 2003 and 2010 as noted below. We discussed our review of the legislation with James Jarvis on October 19, 2011.

We offer the following comments:

1. In 25-11-201-(3), Colorado Revised Statutes (C.R.S.), Colorado defines the term "Radioactive waste" which appears to encompass both high level and low-level radioactive waste. By defining this term in this manner, there appears to be duplication of regulatory authority with the inclusion of material not covered by the 274b agreement with Colorado and reserved to the NRC. Colorado does not have a specific definition for low-level radioactive waste, but does have a definition for waste found in Colorado regulations, 1.2.2 Definitions at <http://www.cdphe.state.co.us/regulations/radiationcontrol/index.html> which does meet the Compatibility Category B designation associated with the definition of "waste" in 10 CFR 61.2.

We recommend that the definition of "Radioactive Waste" in 25-11-201-(3) be revised to meet the Compatibility Category B designation assigned to the definition of "waste" in 10 CFR 61.2.

2. In 25-11-201-(1), Colorado defines a term “classified material” which is not used in the NRC regulation scheme. This definition appears to cause conflicts as it groups 11e.(2) material with the other materials that do not need to meet the additional requirements for 11e.(2) byproduct material under UMTRCA and Part 40. Although Part 2, “Radioactive Waste”, 25-11-201 to 25-11-203, appears to apply to radioactive material, the rest of Part 2 appears to mix the terms radioactive waste with classified material as it lays out requirements for both low-level radioactive waste and uranium recovery facilities.

We recommend that the definition of “classified material” in 25-11-201-(1) be removed and that the legislation be revised and restructured to clearly incorporate the appropriate definitions and requirements from the Part 40 and Part 61 that Colorado is responsible for under the Section 274b Agreement.

3. Colorado has two definitions for the term radioactive. In 25-11-101(5), the definition means “emitting radiation.” In 25-11-201(2), definition means “emitting alpha rays, beta rays, gamma rays, high-energy neutrons or protons, or other high-level radioactive particles. The term “radioactive” does not include material in which the estimated specific activity is not greater than .002 microcuries per gram of material, and in which the radioactivity is essentially uniformly distributed.”

The last sentence of the second definition is inconsistent with the responsibilities and authority assumed by the State of Colorado under the 274b Agreement and appears to create a gap in the orderly pattern of regulations on a nationwide basis. We recommend that the second definition be revised or removed.

4. In 25-11-101 and 25-11-201, Colorado does not define byproduct, source or special nuclear material, although these terms are defined in Colorado regulations in at <http://www.cdphe.state.co.us/regulations/radiationcontrol/index.html> and meet the compatibility categories designations assigned to them. We recommend that Colorado consider adding these definitions to the legislation to clarify the materials covered by the Agreement.
5. In 25-11-109, Colorado’s legislation permits the issuance of provisional license by the Colorado Department of Public Health and Environment (the Department). The provisional license is issued if the Department has failed to issue or has denied a request for a license, or an amendment thereto, as authorized by 25-11-109, within 30 days of the date of receipt by the Department of a completed application made on the appropriate forms designated by the Department to a hospital as licensed or certified pursuant to section 25-1.5(1)(a)(I) and (1)(a)(II). These provisional licenses can be in effect for up to 180 days and apply only to licensed or certified hospitals when the purpose is to acquire, possess, and use radioactive material for diagnostic or therapeutic human use.

This is contrary to the requirement to issue licenses that have addressed health and safety requirements in the regulations and affects the adequacy of the State’s program under 274b. This provision needs to be removed from the legislation

6. In 25-11-110(4)(d), Colorado requires that the amount of a long-term care warranty shall be enough that, with the assumed six percent annual real interest rate, the annual interest earning will be sufficient to cover the annual costs of site surveillance by the Department,

including reasonable administrative costs incurred by the Department, in perpetuity, subsequent to the termination of the radioactive materials license for that site. This is less restrictive than the provision in Part 40, Appendix A, Criterion 10, which assumes a one percent annual real interest. The 6% annual real interest rate will greatly underestimate the amount of funding necessary for the long term surveillance necessary to meet the Compatibility Category C designation assigned to Part 40, Appendix A, Criterion 10.

We recommend that you address the six comments above concerning the authority provided to the Department under the 274b agreement with NRC. Colorado may resolve some of these comments through revision or interpretation of State law. Although NRC will review all submittals to determine acceptability, NRC may accept interpretations provided by the State Attorney General, or other attorney designated as legal advisor to the radioactive materials program.

If you have any questions regarding the comments, please contact Kathleen Schneider, State Regulation Review Coordinator at 301-415-2320 (Kathleen.schneider@nrc.gov).

Sincerely,

/RA/

A. Duncan White, Acting Deputy Director
Division of Materials Safety and State Agreements
Office of Federal and State Materials and
Environmental Management Programs

STATE REGULATION STATUS

State: Colorado

Tracking Ticket Number: 11-9

[Legislation reviewed is identified by a ★
at the beginning of the equivalent NRC requirement.]

Date: October 24, 2011

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Package	Outgoing Package	Notes
1991-1	Safety Requirements for Radiographic Equipment Part 34 55 FR 843 (Superceded by 1997-5)	01/10/1994	Final	Comments 05/29/1997	Colorado has adopted Final Regulations equivalent to RATS ID 1997-5.
1991-2	ASNT Certification of Radiographers Part 34 56 FR 11504 (Superceded by 1997-5)	none	Not Required	Not Required	Colorado has adopted Final Regulations equivalent to RATS ID 1997-5.
1991-3	Standards for Protection Against Radiation Part 20 56 FR 23360; 56 FR 61352; 57 FR 38588; 57 FR 57877; 58 FR 67657; 59 FR 41641; 60 FR 20183;	01/01/1994	Final	No Comments 08/18/1997	
1991-4	Notification of Incidents Parts 20, 30, 31, 34, 39, 40, 70 56 FR 64980;	10/15/1994	Final	Comments 05/29/1997	
1992-1	Quality Management Program and Misadministrations Part 35 56 FR 34104 (Superceded by 2002-2)	01/27/1995	Not Required	Not Required	Colorado has adopted Final Regulations equivalent with RATS ID: 2002-2.
1992-2	Eliminating the Recordkeeping Requirements for Departures from Manufacturer's Instructions Parts 30, 35 57 FR 45566	none	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Package	Outgoing Package	Notes
1993-1	Decommissioning Recordkeeping and License Termination: Documentation Additions [Restricted areas and spill sites] Parts 30, 40 58 FR 39628	10/25/1996	Final	No Comments 06/14/2000	
1993-2	Licensing and Radiation Safety Requirements for Irradiators Part 36 58 FR 7715	07/01/1996	Final	No Comments 05/29/1997	
1993-3	Definition of Land Disposal and Waste Site QA Program Part 61 58 FR 33886	07/22/1996	Final ML043290167	No Comments 01/05/2005 ML050050164	
1994-1	Self-Guarantee as an Additional Financial Mechanism Parts 30, 40, 70 58 FR 68726; 59 FR 1618	none	Final	No Comments 06/14/2000	These regulation changes are not required to be adopted for purposes of Compatibility.
1994-2	Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards Part 40 59 FR 28220	07/01/1997	Final ML043290167	No Comments 01/05/2005 ML050050164	
1994-3	Timeliness in Decommissioning Material Facilities Parts 30, 40, 70 59 FR 36026	08/15/1997	Final	No Comments 06/14/2000	
1995-1	Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use Parts 30, 32, 35 59 FR 61767; 59 FR 65243; 60 FR 322	01/01/1998	Final	No Comments 06/14/2000	

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1995-2	Frequency of Medical Examinations for Use of Respiratory Protection Equipment Part 20 60 FR 7900	03/13/1998	Final	No Comments 06/14/2000	
1995-3	Low-Level Waste Shipment Manifest Information and Reporting Parts 20, 61 60 FR 15649; 60 FR 25983	03/01/1998	Final ML043290167	No Comments 01/05/2005 ML050050164	
1995-4	Performance Requirements for Radiography Equipment Part 34 60 FR 28323 (Superceded by 1997-5)	06/30/1998	Final	No Comments 06/14/2000	Colorado has adopted Final Regulations equivalent to RATS ID 1997-5.
1995-5	Radiation Protection Requirements: Amended Definitions and Criteria Parts 19, 20 60 FR 36038	08/14/1998	Final ML080770375	No Comments 05/02/2008 ML081221012	
1995-6	Clarification of Decommissioning Funding Requirements Parts 30, 40, 70 60 FR 38235	11/24/1998	Final ML043290167	No Comments 01/05/2005 ML050050164	
1995-7	Medical Administration of Radiation and Radioactive Materials Parts 20, 35 60 FR 48623 (Superceded by 2002-2 and 2005-2)	10/20/1998	Final ML043290167	No Comments 01/05/2005 ML050050164	Colorado has adopted Final Regulations equivalent to RATS IDs: 2002-2 and 2005-2.
1996-1	Compatibility with the International Atomic Energy Agency Part 71 60 FR 50248; 61 FR 28724 (Superceded by 2004-1)	04/01/1999	Final	No Comments 03/22/2001	Colorado has adopted Final Regulations equivalent to RATS ID 2004-1.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Package	Outgoing Package	Notes
1996-2	One Time Extension of Certain Byproduct, Source and Special Nuclear Materials Licenses Parts 30, 40, 70 61 FR 1109	02/15/1999	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1996-3	Termination or Transfer of Licensed Activities: Record keeping Requirements Parts 20, 30, 40, 61, 70 61 FR 24669	06/17/1999	Final ML043290167	No Comments 01/05/2005 ML050050164	
1997-1	Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act Part 20 61 FR 65120	01/9/2000	Final	No Comments 08/08/2000	
1997-2	Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction Within an Agreement State Part 150 62 FR 1662	02/27/2000	Final	No Comments 06/14/2000	
1997-3	Criteria for the Release of Individuals Administered Radioactive Material Parts 20, 35 62 FR 4120	05/29/2000	Final	No Comments 06/14/2000	
1997-4	Fissile Material Shipments and Exemptions Part 71 62 FR 5907 (Superseded by 2004-1)	02/10/2000	Not Required	Not Required	Colorado has adopted Final Regulations equivalent to RATS ID 2004-1. (See STP-97-078)
1997-5	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiography Operations Parts 30, 34, 71, 150 62 FR 28947	06/27/2000	Final	No Comments 08/08/2000	

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1997-6	Radiological Criteria for License Termination Parts 20, 30, 40, 70 62 FR 39057	08/20/2000	Final	No Comments 07/13/1999	
1997-7	Exempt Distribution of a Radioactive Drug Containing One Micro curie of Carbon-14 Urea Part 30 62 FR 63634	01/02/2001	Final	No Comments 06/14/2000	
1998-1	Deliberate Misconduct by Unlicensed Persons Parts 30, 40, 61, 70, 71, 150 63 FR 1890; 63 FR 13773	02/12/2001	Final ML010380248	No Comments 09/17/2001 ML012630207	
1998-2	Self-Guarantee of Decommissioning Funding by Nonprofit and Non-Bond-Issuing Licensees Parts 30, 40, 70 63 FR 29535	07/01/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1998-3	License Term for Medical Use Licenses Part 35 63 FR 31604 (Superseded by 2002-2)	07/10/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-98-074) Colorado has adopted Final Regulations equivalent to RATS ID: 2002-2.
1998-4	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations Part 34 63 FR 37059	07/09/2001	Final	No Comments 08/08/2000	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Package	Outgoing Package	Notes
1998-5	Minor Corrections, Clarifying Changes, and a Minor Policy Change Parts 20, 32, 35, 36, 39 63 FR 39477; 63 FR 45393	10/26/2001	Final ML043290167	No Comments 01/05/2005 ML050050164	
1998-6	Transfer for Disposal and Manifests: Minor Technical Conforming Amendment Part 20 63 FR 50127	11/20/2001	Final ML042440167	No Comments 01/05/2005 ML050050164	
1999-1	Radiological Criteria for License Termination of Uranium Recovery Facilities Part 40 64 FR 17506	06/11/2002	Final ML020320440	No Comments 03/28/2002 ML020880468	
1999-2	Requirements for Those Who Possess Certain Industrial Devices Containing Byproduct Material to Provide Requested Information Part 31 64 FR 42269	10/04/2002	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1999-3	Respiratory Protection and Controls to Restrict Internal Exposure Part 20 64 FR 54543; 64 FR 55524	02/02/2003	Final ML043290167	No Comments 01/05/2005 ML050050164	
2000-1	Energy Compensation Sources for Well Logging and Other Regulatory Clarifications Part 39 65 FR 20337	05/17/2003	Final ML051580379	No Comments 07/11/2005 ML051930014	
2000-2	New Dosimetry Technology Parts 34, 36, 39 65 FR 63750	01/08/2004	Final ML043290167	No Comments 01/05/2005 ML050050164	

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2001-1	Requirements for Certain Generally Licensed Industrial Devices Containing Byproduct Material Parts 30, 31, 32 65 FR 79162	02/16/2004	Final ML043290167	Comments 08/31/2006 ML062400296	
2002-1	Revision of the Skin Dose Limit Part 20 67 FR 16298	04/05/2005	Final ML043290167	No Comments 01/05/2005 ML050050164	
2002-2	Medical Use of Byproduct Material Parts 20, 32, 35 67 FR 20249	10/24/2005	Final ML 051580379	No Comments 07/11/2005 ML051930014	
2003-1	Financial Assurance for Materials Licensees Parts 30, 40, 70 68 FR 57327	12/03/2006	Final ML043290167	No Comments 01/05/2005 ML050050164	
2004-1	Compatibility With IAEA Transportation Safety Standards and Other Transportation Safety Amendments Part 71 69 FR 3697	10/01/2007	Final ML072620303	Comments 10/15/2007 ML072900374	
2005-1	Security Requirements for Portable Gauges Containing Byproduct Material Part 30 70 FR 2001	07/11/2008	Final ML052010436	No Comments 08/05/2005 ML052220212	
2005-2	Medical Use of Byproduct Material - Recognition of Specialty Boards Part 35 70 FR 16336; 71 FR 1926	04/29/2008	Final ML051580379	No Comments 07/11/2005 ML051930014	
2005-3	Increased Controls for Risk-Significant Radioactive Sources (NRC Order EA-05-090) 70 FR 72128	12/01/2005	License Condition ML052580384	No Comments 09/19/2005 ML052630557	

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2006-1	Minor Amendments Parts 20, 30, 32, 35, 40 and 70 71 FR 15005	03/27/2009	Final ML111190436	Comments 10/13/2011 ML112630566	Parts 20, 30, 32 only Requirements of Part 35 have not yet been reviewed.
2006-2	National Source Tracking System - Serialization Requirements Part 32 with reference to Part 20 Appendix E 71 FR 65685	02/06/2007			
2006-3	National Source Tracking System Part 20 71 FR 65685, 72 FR 59162	01/31/2009	License Condition ML082730235	No Comments 10/21/2008 ML082880091	
2007-1	Medical Use of Byproduct Material - Minor Corrections and Clarifications Parts 32 and 35 72 FR 45147, 54207	10/29/2010			
2007-2	Exemptions From Licensing, General Licenses, and Distribution of Byproduct Material: Licensing and Reporting Requirements Parts 30, 31, 32, 150 72 FR 58473	12/17/2010	Final ML111190436	Comments 10/13/2011 ML112630566	
2007-3	Requirements for Expanded Definition of Byproduct Material Parts 20, 30, 31, 32, 33, 35, 61, 150 72 FR 55864	11/30/2010	Final ML111190436	Comments 10/13/2011 ML112630566	Requirements of Parts 20 and 35 have not yet been reviewed.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Package	Outgoing Package	Notes
2007-4	Order Imposing Fingerprinting Requirements and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material NRC Order EA-07-305 72 FR 70901	06/05/2008	License Condition ML081070079	No Comments 05/13/2008 ML081260713	
2008-1	Occupational Dose Records, Labeling Containers, and Total Effective Dose Equivalent Parts 19, 20 72 FR 68043	02/15/2011	Proposed ML100960326	Comments 05/04/2010 ML101040019	
2009-1	Medical Use of Byproduct Material – Authorized User Clarification Part 35 74 FR 33901	09/28/2012			
2011-1	Decommissioning Planning Parts 20, 30, 40, 70 76 FR 35512	12/17/2015			
2011-2	Licenses, Certifications, and Approvals for Materials Licensees Parts 30, 36, 39, 40, 51, 70, and 150 76 FR 56951	11/14/2014			
N/A	10 CFR 20.1003, 34.20, 34.35 and 34.43	N/A	Final ML093020612	Comments 12/29/2009 ML093360435	
N/A	10 CFR Part 40	N/A	Final ML111220013	Comments 10/13/2011 ML112630566	
N/A	Legislation	N/A	Final ML111080623	Comments 10/24/2011 ML112630034	