# Colorado Radiation Program NRC Audit

Colorado Department of Public Health and Environment

The Colorado Department of Public Health and Environment (CDPHE) Radiation Program was audited by U.S. Nuclear Regulatory Commission (NRC) in April 2014. The audit occurs through the Integrated Materials Performance Evaluation Program (IMPEP) process. The review was conducted from April 7-11, 2014 by a review team composed of technical staff members from the NRC, the State of Texas and the Commonwealth of Pennsylvania.

**IMPEP Process**

The NRC designed a review process for Agreement State and NRC Regional radioactive materials programs called the Integrated Materials Performance Evaluation Program (IMPEP). The process exists to ensure that public health and safety are adequately protected from the potential hazards associated with the use of radioactive materials and that Agreement State programs are compatible with NRC's program.

*Details on NRC's IMPEP process can be seen online: http://nrc-stp.ornl.gov/impeptoolbox/impep.html*

**Summary of Colorado Agreement State Program Audit:**

- Colorado's performance was found satisfactory for seven of the eight performance indicators reviewed: Technical Staffing and Training, Status of Materials Inspection Program, Technical Quality of Inspections, Technical Quality of Licensing Actions, Technical Quality of Incident and Allegation Activities, Sealed Source and Device Evaluation Program, and Uranium Recovery Program. Compatibility Requirements was determined to be unsatisfactory.*
- The review team identified a Good Practice during the review, regarding the State's implementation of the NRC's Web Based Licensing program.
- The review team recommends that the Colorado Agreement State Program be found adequate to protect public health and safety but not compatible with the NRC's program.

**The unsatisfactory finding in the compatibility indicator was due to modifications to Colorado statutes which are not compatible with NRC requirements. The modifications were made by the State Legislature without concurrence by the Radiation Control Program. The Program provided the review team with a proposed plan to make those corrections.*

*A draft of the full report can be view and downloaded from NRC website: http://pbadupws.nrc.gov/docs/ML1413/ML14135A455.pdf.*

*Results of the IMPEP were discussed at the **NRC's Management Review Board** meeting on **June 30, 2014** in Rockville, MD. Information about that meeting can be found on the following website: http://meetings.nrc.gov/pmns/mtg?do=details&Code=20140406.*

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# Radiation Control Act Revisions

In response to audit findings by the US Nuclear Regulatory Commission (NRC) in the April 2014 audit, CDPHE is proposing revisions to the Radiation Control Act (RCA) n the next legislative session. The proposed drafts of the RCA can be found on the CDPHE website: https://www.colorado.gov/pacific/cdphe/radiation-law-and-regulation-update.

**Upcoming Radiation Control Act Stakeholders Meetings:**

- Thursday, July 17, 2014, from 6:00 p.m. to 8:00 p.m.
  Best Western Canon City, 110 Latigo Lane, Canon City, Colorado.
- Tuesday, July 22, 2014 from 6:00 p.m. to 8:00 p.m. (Sabin-Cleere conference room)
  CDPHE main campus, 4300 Cherry Creek Drive South in Denver, Colorado.
- Thursday, July 31, 2014 from 6:00 p.m. to 8:00 p.m.
  Holiday Inn Express, 1391 S. Townsend Avenue, Montrose, Colorado.

Telephone access to each meeting is available, however it may be limited. Call **1-877-663-3863** and use Conference ID **6923303**.

**A brief background on the changes:**

**2013 Part 18 Process**

The Radiation Program evaluated revisions to 6 CCR 1007-1, Part 18, "Licensing Requirements for Uranium and Thorium Processing," and several issues connected to enabling the Colorado Radiation Control Act. The changes are driven by comments received from the NRC in an October 2011 letter addressing incompatibility issues between the RCA and NRC. Other issues were created by legislative changes made in 2002, 2003 and 2010.

**2014 Legislation**

Several external groups developed proposed changes to the Radiation Control Act to be submitted to the Colorado 2014 legislative session, and as a result the Part 18 process was paused. The language contained in the bill was discussed among the external parties and the department regarding the inclusion of language necessary to restore compatibility with NRC requirements; however, the ultimate legislation passed by the Legislature only addressed limited compatibility issues.

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**Proposed Radiation Control Act Changes 2015**

The U.S. Nuclear Regulatory Commission (NRC) has authority over radioactive materials nationwide under the Atomic Energy Act (AEA); however, the AEA also prescribes a process where NRC can cede their authority to a state under an agreement between the NRC and the Governor. Part of this agreement requires that the NRC audit the Agreement State program periodically to ensure compatibility with NRC requirements.

Colorado became an Agreement State in 1969 and NRC has conducted audits on a four-year cycle since then, including the most recent in 2014. Over the last few years NRC has commented on Colorado regulation or statute compatibility discrepancies; and in the 2014 audit determined the program to be unsatisfactory for compatibility. Many of the issues with the statute were introduced by modifications approved in the 2002, 2003, 2010 and 2014 legislatures.

The program attempted to address some of these compatibility issues through a regulatory change process in 2013, but the effort was paused when external parties submitted legislation in the 2014 session to modify the Radiation Control Act. Department-proposed additions to these modifications were not accepted and the final legislation did not address the majority of the incompatible language. As a result, the Department and Governor's Office committed to proposed revisions to the statute in the 2015 legislative session.

The proposed changes are identified on the following pages and include some additional modifications to clarify language or remove unnecessary language. NRC-driven changes must be implemented; however, in some cases there may be flexibility in how the language is changed.

**The following are NRC required changes for the Radiation Control Act to be compatible with NRC requirements under the state agreement:**

- **<u>Add</u> definitions for "byproduct material", "source material", and "special nuclear material" (25-11-101; Line 81, 135, 147)**
  - Required by NRC for compatibility
  - Definitions equivalent to those in 10 CFR 20.1003
  - References: NRC Letters dated 05/16/14; 10/24/11

- **<u>Modify</u> definition for "radioactive waste" (25-11-201(3); Line 1214)**
  - Required by NRC for compatibility
  - Definition revised to meet definition for "waste" found in 10 CFR 61.2.
  - Reference(s): NRC Letters dated 05/16/14; 10/24/11.

- **<u>Modify</u> definition for "radioactive" (25-11-201(2); Line 1207)**
  - Required by NRC for compatibility
  - Second sentence deleted due to inconsistency with responsibilities/authority under the 274b Agreement w/NRC
  - For technical clarity and consistency with similar definitions, the words "rays" and "high level" are deleted.
  - As written, created a gap in the orderly pattern of regulations nationally.
  - Reference(s): NRC Letters dated 05/16/14; 10/24/11.

- **<u>Incorporate</u> reference for basic standards for groundwater (25-11-109; Line 703)**
  - Reference to 5 CCR 1002-41 and CFR added to address the (05/29/14) NRC comment
  - NOTE: Current draft contains an error – reference to 10 CFR 40 should be 40 CFR Part 192
  - Modifies language added under SB 14-192 during 2014 legislative session.
  - NRC noted that provision is unclear as to its intent regarding "...historical use...".
  - NRC requested that provision be deleted or modified; CDPHE proposing modification of language
  - Reference(s): NRC Letter dated 05/29/14

- **<u>Delete</u> section 25-11-109 in its entirety - provisional license language (medical) (25-11-109; Line 789)**
  - Required by NRC for compatibility
  - Obsolete language pertaining to provisional (medical) licenses is deleted.
  - Department has never issued such provisional licenses for medical use
  - Reference(s): NRC Letter dated 05/16/14; 10/24/11

- **<u>Change</u> long term care (surety) interest rate from 6 % to 1% (25-11-110(4)(d); Line 870)**
  - Required by NRC for compatibility
  - Long term care funds deposited now (when licensed) but used for maintenance after site closure
  - Current assumed (growth) rate of 6 % for funds deposited, is not realistic in today's market, results in less "up front" money being deposited, underestimates the amount of needed funding, and results in less money available at time of use (post closure)
  - 1 % is consistent with federal rule (10 CFR Part 40, App. A, Criterion 10)
  - Reference(s): NRC Letters dated 05/16/14; 01/14/14; 6/28/12; 10/24/11.

- **<u>Delete</u> term "classified material" throughout the RCA - <u>while retaining</u> equivalent language & requirements (25-11-201(1)(a); Line 1141)**
  - Required by NRC for compatibility
  - "Classified material" as defined in 25-11-201 as Type 2 byproduct material (~ 11e.(2) material), Non-11 e(2) material, NORM or TENORM and Ore
  - Per NRC - "Classified material" does not fit within NRC's national regulatory framework
  - Per NRC - term "classified material" groups 11e.(2) material with other materials not required to meet additional requirements for 11e.(2) byproduct material under Uranium Mill Tailings Radiation Control Act (UMTRCA) and 10 CFR Part 40.
  - The proposed/modified language clarifies that certain radioactive materials may (when authorized by license) be authorized for processing at a U or Th mill to include Type 2 byproduct material; NORM; TENORM; alternate feed; equivalent feed; or ore
  - The proposed/modified language is intended to provide an equivalent level of requirements, while avoiding conflict with NRC definitions/requirements.
  - Reference(s): NRC Letter dated 10/24/11.
  - NRC terms "Alternate feed" and "equivalent feed" added to ensure similar requirements for non-ore materials and alternative to the use of "classified material" which has been determined to be unacceptable to NRC. Addition of these terms is not an NRC requirement, but elimination of classified material is.
  - Reference(s): NRC Letter dated 10/24/11

**Changes not required by NRC but intended to clean up, clarify, or remove obsolete language.**

- <u>Modify</u> NORM definition (25-11-101(2.7); Line 123) to remove reference to byproducts of fossil fuel
  - Reference to fossil fuel language deleted to align definition with the national approach to regulation of "naturally occurring radioactive material" (NORM). Under proposed change, products of fossil fuel combustion would be considered NORM materials.

- **<u>Add</u> security of materials in subject matter of rules (25-11-104(1)(a); Line 370)**
  - Phrase "security of materials" added for consistency with heightened NRC security requirements.
  - Beginning in 2005, NRC required certain high activity sources (unrelated to U facilities) to have additional security measures in place – statement added to RCA reinforces this.

- **<u>Delete</u> prohibition on regulation development for TENORM (25-11-104(1)(b); Line 371)**
  - Obsolete language is deleted, since EPA has failed to provide regulations, and may not have the authority to do so. Under proposed language, and as TENORM policy stakeholders have suggested, removal of this restriction would allow the promulgation of TENORM regulations through the Board of Health if needed.

- **<u>Remove</u> limitation on non-governmental ownership of radiation sites (25-11-104(1)(b); Line 378)**
  - The proposed change removes limitation on non-governmental ownership of sites while retaining the necessary/listed protections.

- **<u>Eliminate</u> prohibition for sanitary sewer discharge or incineration in definition of "disposal" for certain materials (25-11-201(1.4); Line 1181)**
  - Currently, this definition prohibits disposal/discharge of materials such as NORM/TENORM by water treatment facilities.

- **<u>Remove</u> obsolete language regarding regulation of transportation (25-11-108(1)(c); Line 767)**
  - This removes obsolete language. The radiation regulations Part 17 already regulate transportation, in conjunction with the rules of the U.S. Department of Transportation in 49 CFR and the NRC at 10 CFR Part 71.

- **<u>Add</u> language to clarify compliance with NRC and State Suggested Regulations (25-11-104(2); Line 389)**
  - Added language reaffirms alignment with NRC requirements through the 274o Agreement and use of Suggested State Regulations where applicable.

- **<u>Clarify</u> limitations on non-processing material receipt at uranium or thorium facility (25-11-203(1)(b)(I); Line 1278)**
  - Added/revised language clarifies that facility may receive certain specified radioactive materials for non-processing purposes, where authorized by the license.

- **<u>Remove</u> language pertaining to five-year (license) renewals so requirements apply to any renewal (25-11-203(1)(b)(I); Line 1282)**
  - Licenses may be issued for periods different than 5 years.

- **<u>Remove</u> obsolete language related to UMTRA Title 1 sites (25-11-303(1)(b)(I); Line 1605)**
  - Consistent with subparagraph 25-11-303(1)(c)(IV), sub-section (d) is deleted in its entirety, due to being obsolete.