



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

May 18, 2012

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-12-0042

TITLE: COLORADO ALTERNATIVE STANDARDS;  
IMPLEMENTATION OF THE ALTERNATIVE STANDARDS  
PROVISION IN SECTION 274o OF THE ATOMIC ENERGY  
ACT OF 1954, AS AMENDED

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of May 18, 2012.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

A handwritten signature in black ink, appearing to read "Annette L. Vietti-Cook", written over a horizontal line.

Annette L. Vietti-Cook  
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
EDO  
PDR

VOTING SUMMARY - SECY-12-0042

RECORDED VOTES

|                   | APRVD | DISAPRVD | ABSTAIN | NOT<br>PARTICIP | COMMENTS | DATE    |
|-------------------|-------|----------|---------|-----------------|----------|---------|
| CHRM. JACZKO      | X     |          |         |                 | X        | 4/30/12 |
| COMR. SVINICKI    | X     |          |         |                 | X        | 5/9/12  |
| COMR. APOSTOLAKIS | X     |          |         |                 |          | 4/24/12 |
| COMR. MAGWOOD     | X     |          |         |                 | X        | 5/9/12  |
| COMR. OSTENDORFF  | X     |          |         |                 | X        | 4/4/12  |

**NOTATION VOTE**

**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary


FROM: Chairman Gregory B. Jaczko

SUBJECT: SECY-12-0042 – COLORADO ALTERNATIVE STANDARDS; IMPLEMENTATION OF THE ALTERNATIVE STANDARDS PROVISION IN SECTION 274o OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

Approved  X  Disapproved   Abstain

Not Participating

COMMENTS: Below   Attached  X  None

  
\_\_\_\_\_  
SIGNATURE

4/20/12  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  x  No

**Chairman Jaczko's Comments on SECY-12-0042,  
"Colorado Alternative Standards; Implementation of the Alternative Standards Provision  
in Section 274o of the Atomic Energy Act of 1954, as Amended"**


I approve the staff's recommendation that the Commission approve the State of Colorado's proposed alternative standards for soil cleanup at the Uravan site. The Commission is rarely asked to make a determination in this area, and I appreciate the years of challenging work that went into this analysis, both by the NRC staff as well as the Colorado Department of Public Health and Environment (CDPHE) staff.

I do, however, have some concerns with the phrasing of the basis used by the staff to approve the proposal by the State of Colorado. Under the Atomic Energy Act (AEA), a State is allowed to utilize alternative standards for remediation of 11e(2) material (after offering a hearing opportunity) if the Commission determines that the alternative standards are either: 1) equivalent to the extent practicable, or 2) more stringent. These are two very different approaches in my mind. In the first instance the AEA allows a State to propose alternative standards that are essentially based on an as-low-as-reasonably-achievable (ALARA) approach. This would allow the remediation to be determined to be completed as long as the State demonstrates the remediation will be equivalent from an overall health and safety perspective.

The NRC staff states that this is exactly what Colorado has done in Enclosure 2; "The CDPHE believes the licensee has remediated the site to the extent practical and has identified four discrete areas that are *not in full compliance* [emphasis added] with the soil remediation standards in 6 CCR 1007-1, Part 18, Appendix A, Criterion B. The licensee has proposed, and the CDPHE agrees that it is not practical to conduct further remediation for these four areas." In this case, the alternative standard from Colorado appears to be based on being equivalent to the extent practicable (rather than more stringent), because further remediation would "either put workers at unreasonable risk or cause significant environmental harm greater than the benefits to be achieved by additional remediation" (Enclosure 2 to SECY-12-0042).

The second approach provided in 274o appears to be one in which a State can adopt truly more stringent standards and preempt federal authority after a specific process had been established. Since the actual standard is given as a *concentration limit* of 5/15 pCi/g for soil cleanup, then to be more stringent an alternative standard would appear to me to be one which actually sets a more restrictive *concentration limit* for the purposes of providing even more protection to the public. This does not appear to be the approach used by Colorado in this case.

The language in the Federal Register notice and the paper appear to interchange these two approval options, creating some potential for confusion about the actual basis for our approval. In my view it appears the alternate standard is acceptable under the "equivalent to the extent practicable" and the staff should simply clarify the responses throughout to make that clear.

  
\_\_\_\_\_  
Gregory B. Jaczke

7/30/12  
Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER SVINICKI  
SUBJECT: SECY-12-0042 – COLORADO ALTERNATIVE STANDARDS; IMPLEMENTATION OF THE ALTERNATIVE STANDARDS PROVISION IN SECTION 274o OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_ Attached XX None \_\_\_

  
\_\_\_\_\_  
SIGNATURE

05/9/12  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No \_\_\_\_\_

**Commissioner Svinicki's Comments on SECY-12-0042**  
**Colorado Alternative Standards; Implementation of the Alternative Standards Provision**  
**in Section 274o of the Atomic Energy Act of 1954, as Amended**

I approve the staff's recommended determination that the Colorado proposed alternative standards for soil cleanup at the Uravan site provide a level of protection that is more stringent than that provided by the federal standards for 11e.(2) byproduct material.

In making the first alternative standards determination for an Agreement State in 2003, the Commission referred to the regulations in 10 CFR Part 40, Appendix A, which pertain to NRC licensees and provide that "[l]icensees or applicants may propose alternatives to the specific requirements in this appendix. The alternative proposals may take into account local or regional conditions, including geology, topography, hydrology, and meteorology. The Commission may find that the proposed alternatives meet the Commission's requirements if the alternatives will achieve a level of stabilization and containment of the sites concerned, and a level of protection for public health, safety, and the environment from radiological and nonradiological hazards associated with the sites, which is the **equivalent to**, to the extent practicable, **or more stringent than** the level which would be achieved by the requirements of this appendix and the standards promulgated by the Environmental Protection Agency in 40 CFR Part 192, Subparts D and E." (emphasis added)

The proposed alternative soil cleanup standards for portions of the Uravan uranium mill site do not substitute a more stringent standard, per se, than the level prescribed in Federal standards for 11e.(2) byproduct material. Rather, the proposed alternative soil cleanup standards for portions of the Uravan uranium mill site provide a level of protection that is more stringent than the level that would be provided by federal standards implemented by the NRC for the same purposes. The staff concluded that further remediation of the areas affected by the alternative standards would either put workers at unreasonable risk or cause significant environmental harm greater than the benefits to be achieved by additional remediation.

I note that the State of Colorado will implement the alternative standards for the Uravan site upon publication of the Commission's final determination in the *Federal Register*. I approve the edits to the comment resolution document and the draft *Federal Register* notice submitted by Commissioner Ostendorff in his vote.

  
\_\_\_\_\_  
Kristine L. Svinicki                      05/ 9 /12

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: Commissioner Apostolakis  
SUBJECT: SECY-12-0042 – COLORADO ALTERNATIVE STANDARDS; IMPLEMENTATION OF THE ALTERNATIVE STANDARDS PROVISION IN SECTION 274o OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

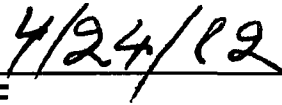
Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_ Attached \_\_\_ None  X



\_\_\_\_\_  
SIGNATURE



\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No \_\_\_\_\_



**NOTATION VOTE**

**RESPONSE SHEET**


TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MAGWOOD  
SUBJECT: SECY-12-0042 – COLORADO ALTERNATIVE STANDARDS; IMPLEMENTATION OF THE ALTERNATIVE STANDARDS PROVISION IN SECTION 274o OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

Approved  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below  Attached \_\_\_\_\_ None \_\_\_\_\_

I approve staff's recommendation to approve the State of Colorado's proposed alternative standard for soil cleanup at the Uravan site in Montrose County, Colorado. The alternative standards proposed will meet or exceed the level of protection provided by Federal requirements and I agree with staff's determination that that Colorado's proposal satisfies the requirements of Section 274o of the Atomic Energy Act of 1954, as amended.

  
\_\_\_\_\_  
SIGNATURE

9 May 2012  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No \_\_\_\_\_

**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

**FROM:** COMMISSIONER OSTENDORFF

**SUBJECT:** SECY-12-0042 – COLORADO ALTERNATIVE STANDARDS; IMPLEMENTATION OF THE ALTERNATIVE STANDARDS PROVISION IN SECTION 274o OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

Approved  X  Disapproved   Abstain

Not Participating

COMMENTS: Below  X  Attached  X  None

I approve the staff's conclusion that the alternative standards for soil cleanup at the Uravan site provide a level of protection that is more stringent than the federal standards for Atomic Energy Act § 11e.(2) byproduct material, subject to the attached edits.

  
\_\_\_\_\_  
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9/9/12  
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DATE

Entered on "STARS" Yes  X  No

The specific soil cleanup standard in the regulations (10 CFR Part 40, Appendix A, Criterion 6 or Colorado equivalent, 6 CCR 1007-1, Part 18, Appendix A, Criterion 6) requires soils concentrations of radium-226 to not exceed the background level by more than 5 picocuries/gram (pCi/g) (0.18 Bq/g) of radium-226 averaged over the first 15 centimeters (cm) (0.5 feet) below the surface and 15 pCi/g (0.56 Bq/g) of radium-226 averaged over 15 cm (0.5 feet) thick layers more than 15 cm below the surface. The CDPHE approved background concentration is 2.1 pCi/g (0.078 Bq/g) of radium-226. The Uravan soil cleanup standards were 7.1 pCi/g (0.26 Bq/g) for the first 15 cm (0.5 feet) below the surface and 17.1 pCi/g (0.63 Bq/g) for the layers below 15 cm (0.5 feet).

The alternative standard would leave the material in place for the four areas identified by the Colorado licensee, Umetco Minerals Corporation. The licensee remediated the areas to the extent practical as described in the licensee's report submitted to the CDPHE (ML081150505). The CDPHE has accepted the licensee's report and has concluded that, while the current levels are higher than the standards above, believes the areas were remediated to current levels, and they are protective of public health (ML092820404). The licensee performed dose calculations based on reasonable future use after the termination of the specific license and transfer to the U.S. Department of Energy (DOE) for long-term care of the site. Based on this evaluation, the licensee concluded that the doses received would be less than the doses associated with the clean-up standards due to physical limitations, which would reduce the potential for human exposure. These dose calculations identified that the level of protection provided by the alternative standards is more stringent than the level of protection that was the basis for the current standards This conclusion is further supported by applying the criteria for supplemental standards in Uranium Mill Tailings Radiation Control Act of 1978, (UMTRCA) Title I standards in 40 CFR 192.21 "Supplemental Standards". The four areas each qualified under the 10 CFR 192.21 criteria. ~~In addition, the licensee performed dose calculations for reasonable future use based on the status of the areas after the termination of the specific license and transfer to the U.S. Department of Energy (DOE) for long term care of the site. These dose calculations identified that the level of protection provided by the alternative standards is more stringent than the level of protection that was the basis for the current standards.~~

The NRC staff found that the proposed alternative standards for soil cleanup for the Uravan uranium mill site are more stringent than the standards implemented by the NRC for the same purposes. Further remediation of the areas affected by the alternative standards would either put workers at unreasonable risk or cause significant environmental harm greater than the benefits to be achieved by additional remediation. In addition, the areas affected will be under the control of the DOE as part of the long-term care of the Uravan disposal site.

**Comment 3 (Marv Ballantyne):**

I believe there is a requested change of the standard associated with radium only, not other radioactive materials. From the proposal: "This standard is that the background level is not exceeded by more than 5 pCi/g (picocuries per gram) of radium-226 averaged over the first 15 centimeters (cm) below the surface and 15 pCi/g of radium-226 averaged over 15 cm thick layers more than 15 cm below the surface." Not knowing what the existing standard is in pCi/g makes it difficult to know whether 5 more is significant. I think, from looking at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part040/part040-appa.html>, the standard is 5 mg/L, so I don't know how to compare the two.

**NRC Response:**

of the material being left in place at this site shows that the impacts are less than those considered in the development of the regulatory requirements. Therefore, the NRC staff concluded that the alternative standards provide a level of protection that is more stringent than the level of protection provide by the soil cleanup standards in the regulations.

The milligrams per liter (mg/L) designation referenced on the NRC web site is a measure for chemical constituents in ground water which is not applicable to the alternative standard addressed in this notice.

**Comment 4 (Marv Ballantyne):**

I don't understand why standards should be relaxed based on the geography of the locations.

**NRC Response:**

See Comment 2 response above.

The commenter's suggestion is that the current standards are being relaxed. The standards (for NRC -10 CFR Part 40, Appendix A or the State of Colorado equivalent - 6 CCR 1007-1, Part 18) provide for alternative standards to the specific standards in the regulations when such alternatives provide equivalent or more stringent protection of public health and safety and are protective of the environment. The licensee remediated the four areas to the extent practical. In this site-specific case, the licensee proposed and the State of Colorado agreed that the proposed alternative standards are at least as protective as the specific standards in the regulations based on physical limitations of the areas, which would reduce the possibility of human exposure. The proposed standards also ~~and~~ avoid significant environmental damage that would occur if additional remediation activities were required. Such additional remediation would pose an unreasonable risk to the workers given the steep slopes and other unique operational concerns and would cause significant harm to the environment. Therefore, the NRC has determined that, considering the geography (geology and topography) of the site, leaving the materials in place provides acceptable levels of protection to public health and safety and protection of the environment from radiological and nonradiological hazards associated with each of the four areas.

**Comment 5 (Marv Ballantyne):**

What the Colorado Department of [Public] Health and the Environment is actually proposing is that Alternative Standards, which reflect the existing conditions, should be applied such that no additional effort or expense is necessary.

**NRC Response:**

The comment is correct that no additional action would be taken by the CDPHE. However, the NRC staff did not explicitly and quantitatively consider monetary costs in evaluating the acceptability of the alternative standards. The licensee remediated the four discrete areas of the site to the extent practical to meet the standard for levels of radium-226 in soil, found in 6 CCR 1007-1, Part 18, Appendix A, Criterion 6. The NRC staff determined that any additional effort to remediate the four areas would be unsafe to those involved in the remediation, lead to damage to the existing environment or habitat, and would have very limited benefits with respect to hazard reduction.

**Comment 6 (Marv Ballantyne):**

**FOR FURTHER INFORMATION CONTACT:** Dennis M. Sollenberger at 301-415-2819 or by e-mail: [Dennis.Sollenberger@nrc.gov](mailto:Dennis.Sollenberger@nrc.gov), or Stephen Poy at 301-415-7135 or by e-mail: [Stephen.Poy@nrc.gov](mailto:Stephen.Poy@nrc.gov). Both serve in the Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

**SUPPLEMENTARY INFORMATION:** Since Congress added Section 274 of the Act in 1959, the Commission has entered into Agreements with 37 States that relinquished Federal authority. Under these Agreements, each State assumed regulatory authority under State law to regulate certain radioactive materials within the State. The NRC periodically reviews the performance of the Agreement States to ensure compliance with the provisions of Section 274. Congress further amended the Act In 1978 by adding a new subsection, Section 274o, which required Agreement States to specifically amend their agreements to regulate uranium mill tailings (11e.(2) byproduct material). Six Agreement States have this authority as part of their agreements. Under Section 274o of the Act, an Agreement State may adopt site-specific alternative standards with respect to sites at which ores are processed primarily for their source material content or at sites used for the disposal of Section 11e.(2) byproduct material. Before a State can adopt alternative standards, the Commission must make a determination that the alternative standards will achieve a level of stabilization and containment of the site concerned, and the alternative standards will provide an equivalent or more stringent ~~adequate~~ level of protection for public health, safety, and the environment from radiological and nonradiological hazards associated with the site. In addition, before making a determination, the NRC must provide notice and an opportunity for public hearing before approving the site-specific alternative standards.