



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

MAR 22 1985

MEMORANDUM FOR: K. R. Goller, Director
Division of Radiation Programs and Earth Sciences, RES

FROM: Frank P. Gillespie, Chairman
RES Independent Review Board

SUBJECT: CONTROL OF NRC RULEMAKING: RES INDEPENDENT REVIEW
OF ONGOING RULEMAKING

Enclosed is a rulemaking review package received from a sponsoring office for RES independent review. (Enclosure 1)

In accordance with procedures approved by the EDO on May 30, 1984, the rule-making review package is assigned to your Division for action. (Enclosure 2).

The EDO-approved procedures allow a total of 20 working days for completing the RES independent review. To assist RES in completing its independent review in a timely manner, please submit the draft independent review package for this specific rulemaking to RAMRB by 7 working days from the date of this memorandum.

A handwritten signature in dark ink, appearing to read "Frank P. Gillespie", is positioned above the typed name.

Frank P. Gillespie, Chairman
RES Independent Review Board

Enclosures:

1. "Uranium Mill Tailings Regulations:
Conforming NRC Requirements to EPA Standards"
(10 CFR 40)
2. Procedures for Conducting RES
Independent Review of Rulemakings

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OFFICE REVIEW PACKAGE RECEIVED FROM

NMSS



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

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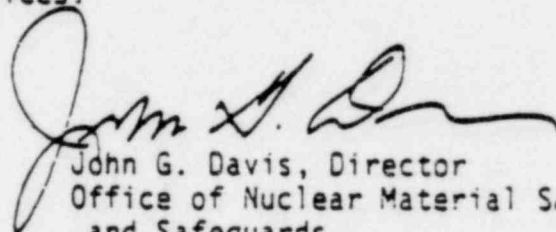
MEMORANDUM FOR: William J. Dircks
Executive Director for Operations

FROM: John G. Davis, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: CONTROL OF NRC RULEMAKING - EDO QUARTERLY REVIEW

In response to your memorandum of February 13, 1984, and in accordance with instructions provided in subsequent memoranda from the Office of Nuclear Regulatory Research (NRR), the Office of Nuclear Material Safety and Safeguards (NMSS) has reviewed the ongoing or proposed rulemaking activities listed in Attachment 1 to this memorandum. On the basis of our review, we recommend approval of continued activity on these rules, with the exception of "Certification of Industrial Radiographers" and "Shallow Land Disposal of Radioactive Waste". Staff efforts on these are now directed toward terminating the two rulemaking activities.

Also, as directed by your memorandum and the subsequent instructions from RES, we have prepared Review Packages for all of the listed rulemaking activities. These are included as attachments to this memorandum, with copies forwarded to RES and the other reviewing offices.


John G. Davis, Director
Office of Nuclear Material Safety
and Safeguards

Attachments:
As stated

bcc: RES ✓
RM
DRR

Dupe ~~9512040016~~

RES

DIVISION OF WASTE MANAGEMENT

"Uranium Mill Tailings Regulations: Conforming NRC Requirements
to EPA Standards"

Contact: Kitty Dragonette
427-4300

NRC REGULATORY AGENDA ENTRY

TITLE:

Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards

CFR CITATION:

10 CFR 40

ABSTRACT:

The proposed rule would revise the Nuclear Regulatory Commission's regulations governing the disposal of uranium mill tailings to conform them to regulations recently published by the Environmental Protection Agency that set standards for protecting the environment from these wastes. The proposed rule would remove inconsistencies between NRC and EPA requirements and incorporate in NRC regulations the stability, radon release, and other provisions of the EPA standard not related to groundwater. This action is necessary to comply with provisions of the Uranium Mill Tailings Radiation Control Act and the NRC Authorization Act for FY 1983; therefore no alternatives to this action need to be considered. EPA has estimated that compliance with their recently published regulations would cost the uranium milling industry from about \$310 million to \$540 million to dispose of all existing tailings and tailings to be generated by the year 2000. This includes the costs of the groundwater protection provisions which are to be addressed in future NRC rule changes. The EPA regulations are binding on NRC licensees in the interim. The final rule should be in place within 6 months after publication of the proposed rule, and require only nominal (less about ~~than~~ 0.2 FTE) NRC staff resources.

TIMETABLE:

NPRM ~~09/00/84~~ 11/26/84

(i.e. by the end of May 1985, but the extended comment period and other factors could impact this projection.)

LEGAL AUTHORITY:

42 USC 2014; 42 USC 2092; 42 USC 2093; 42 USC 2094; 42 USC 2095; 42 USC 2111; 42 USC 2113; 42 USC 2114; 42 USC 2201; 42 USC 2232; 42 USC 2233; 42 USC 2236; 42 USC 2282; 42 USC 2021; 42 USC 5841 (pro-
jection.)

EFFECTS ON SMALL BUSINESS AND OTHER ENTITIES: No

AGENCY CONTACT:

Kitty S. Dragonette
Office of Nuclear Material Safety and
Safeguards
Washington, DC 20555
301 427-4300

TITLE:

Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards

CFR CITATION:

10 CFR 40

ABSTRACT:

The proposed rule would revise the Nuclear Regulatory Commission's regulations governing the disposal of uranium mill tailings to conform them to regulations recently published by the Environmental Protection Agency that set standards for protecting the environment from these wastes. The proposed rule would remove inconsistencies between NRC and EPA requirements and incorporate in NRC regulations the stability, radon release, and other provisions of the EPA standard not related to groundwater. This action is necessary to comply with provisions of the Uranium Mill Tailings Radiation Control Act and the NRC Authorization Act for FY 1983; therefore no alternatives to this action need to be considered. EPA has estimated that compliance with their recently published regulations would cost the uranium milling industry from about \$310 million to \$540 million to dispose of all existing tailings and tailings to be generated by the year 2000. This includes the costs of the groundwater protection provisions which are to be addressed in future NRC rule changes. The EPA regulations are binding on NRC licensees in the interim. The final rule should be in place within 6 months after publication of the proposed rule and require only nominal (less than at \$25,044) NRC staff resources.

TIMETABLE:

NPRM 11/26/84 49 FR 48418
NPRM Comment Period Begin 11/26/84 49 FR 48418
NPRM Comment Period End 01/10/85
Next Action Undetermined

LEGAL AUTHORITY:

42 USC 2014; 42 USC 2092; 42 USC 2093; 42 USC 2094; 42 USC 2095;
42 USC 2111; 42 USC 2113; 42 USC 2114; 42 USC 2201; 42 USC 2232;
42 USC 2233; 42 USC 2236; 42 USC 2282; 42 USC 2021; 42 USC 5841

EFFECTS ON SMALL BUSINESS AND OTHER ENTITIES: No**AGENCY CONTACT:**

Kitty S. Dragonette
Office of Nuclear Material Safety and
Safeguards
Washington, DC 20555
301 427-4300

36 of NUREG-0936
Vol. 3, No. 4
Feb. 1985

RULEMAKING AS CURRENTLY PROPOSED

TEXT
OF
FINAL RULE
HAS NOT YET BEEN DRAFTED

BACKGROUND INFORMATION

Proposed Rules

Federal Register

Vol. 50, No. 11

Wednesday, January 16, 1985

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 40

Uranium Mill Tailing Regulations; Conforming NRC Requirements to EPA Standards

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule; extension of comment period.

SUMMARY: On November 28, 1984, (49 FR 40418), the NRC published for public comment a proposed rule amending its regulations governing the disposal of uranium mill tailings. The proposed changes are intended to conform existing NRC regulations to the regulations published by the Environmental Protection Agency. The comment period for this proposed rule was to have expired on January 10, 1985. A number of commenters have requested an extension of the comment period. In view of the importance of the proposed rule, and the desire of the Commission to allow all parties to fully express their views, the NRC has decided to extend the comment period for an additional thirty days. The extended comment period now expires on February 10, 1985.

DATES: The comment period has been extended and now expires February 10, 1985. Comments received after this date will be considered if it is practical to do so but assurance of consideration cannot be given except as to comments received before this date.

ADDRESSES: Send written comments or suggestions to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch. Copies of comments received may be examined at the NRC Public Document Room, 1717 H Street NW, Washington, D.C.

FOR FURTHER INFORMATION CONTACT: Robert Fonner, Office of the Executive Legal Director, on (301) 492-8682, or Kitty S. Dragonette, Division of Waste Management on (301) 427-4300, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Dated at Washington, D.C., this 11th day of January, 1985.

For the Nuclear Regulatory Commission,
Samuel J. Chilk.

Secretary of the Commission.

[FR Doc. 85-1258 Filed 1-15-85; 8:45 am]

SELLING CODE 7590-01-0

consideration may not be given except for comments received on or before this date.

ADDRESSES: Mail comments to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Attention: Docketing and Service Branch. Deliver comments to Room 1121, 1717 H Street NW, Washington, DC between 8:15 a.m. and 5:00 p.m. weekdays.

FOR FURTHER INFORMATION CONTACT: Robert Fonner, Office of the Executive Legal Director, telephone (301) 492-8892, or Kitty S. Dragonette, Division of Waste Management, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 427-4300.

SUPPLEMENTARY INFORMATION: The Nuclear Regulatory Commission (NRC or Commission) is proposing modifications to its regulations for the purpose of conforming them to generally applicable requirements recently promulgated by the Environmental Protection Agency (EPA). These new EPA requirements are contained in Subparts D and E of 40 CFR Part 192 (48 FR 45926, October 7, 1983), are applicable to the management of uranium and thorium byproduct material, and became effective for NRC and Agreement State licensees and license applicants on December 6, 1983. The action proposed herein would modify previously existing regulations of the Commission to conform them to the new EPA requirements, and would incorporate certain of the new EPA requirements into the Commission's regulations. The affected Commission regulations are contained in Appendix A to 10 CFR Part 40, which was promulgated in final form on October 3, 1980 (45 FR 65521).

The modifications to Commission regulations proposed herein will incorporate within NRC regulations some of the new EPA requirements. The action that the Commission will take with respect to the remainder of these new EPA requirements is the subject of an Advanced Notice of Proposed Rulemaking (ANPRM), which requests comment on that subject, also issued this day. These new EPA requirements were developed and issued by EPA pursuant to section 275b. of the Atomic Energy Act (42 U.S.C. 2022), as added by section 206 of Pub. L. 95-604, the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). Under section 18(a) of Pub. L. 97-415, the Nuclear Regulatory Commission Authorization Act for fiscal years 1982 and 1983, the Commission was directed to conform its regulations to EPA's with notice and

opportunity for public comment. Today's proposal addresses that responsibility.

Previous Actions

In keeping with section 18(a) of the NRC Authorization Act, the Commission suspended portions of its October 3, 1980 mill tailings regulations after notice and opportunity for public comment (48 FR 35350, August 4, 1983). As required by the Act, this suspension terminated automatically April 1, 1984. Those portions of the Commission's regulations which were suspended were those that were determined to be in conflict or inconsistent with EPA's proposed requirements. More specifically, the suspended portions were those that would require a major commitment or major action by licensees which would be unnecessary if: (1) The EPA proposed standards were promulgated in final form without modification, and (2) the Commission's regulations were modified to conform to the EPA standards. The objective of the suspension was to avoid a situation where a licensee or applicant might make a major commitment or take a major action which would be unnecessary or ill-advised after subsequent rulemaking to modify permanently the existing regulations on the basis of EPA's final standards.

The final EPA standards are very similar to those that were proposed. Nevertheless, the Commission has reconsidered the appropriateness of changes to Appendix A to 10 CFR Part 40 in light of the new EPA standards, and the need for additional supporting documentation. The changes proposed today are more modest than the previous suspension.

Scope of This Proposal

In addition to conforming its existing regulations to new EPA standards, under the provisions of the UMTRCA, the Commission has a further legislated responsibility: it must establish general requirements, for the management of byproduct material, with EPA concurrence, which are, to the maximum extent practicable, at least comparable to requirements applicable to the management of similar hazardous material regulated by the EPA under the Solid Waste Disposal Act (SWDA), as amended. The Commission deliberated as to how best to deal with these related rulemaking needs and decided on the course of action resulting in this proposal and the accompanying ANPRM. This proposal addresses all the changes to the existing Commission regulations in Appendix A to 10 CFR Part 40 that can be legally promulgated without additional supporting

NUCLEAR REGULATORY COMMISSION

10 CFR Part 40

Uranium Mill Tailings Regulations; Conforming NRC Requirements to EPA Standards

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations governing the disposal of uranium mill tailings. The proposed rule changes are intended to conform existing NRC regulations to the regulations published by the Environmental Protection Agency for the protection of the environment from these wastes. This action is being taken to comply with the legislative mandate set out in the Uranium Mill Tailings Radiation Control Act and the NRC Authorization Act for FY 1983.

DATE: The comment period expires on January 10, 1985. Comments received after this date will be considered, if it is practical to do so but assurance of

documentation. Other changes to the Commission's regulations for mill tailings management resulting from the EPA standard are the subject of the accompanying ANPRM.

The content of these two rulemakings also may be characterized in terms of the need for EPA concurrence, although that was not the deciding factor. This proposal consists of modifications not requiring EPA concurrence, including conforming changes to existing NRC rules and incorporation of EPA requirements not deriving from the SWDA. Those modifications that are the subject of the ANPRM accompanying this proposal deriving from the SWDA require EPA concurrence pursuant to section 84 of the Atomic Energy Act. Modifications addressed in the ANPRM include: (1) Incorporation into NRC regulations of SWDA requirements already imposed by the EPA, (2) any further modifications to NRC regulations necessary to establish SWDA-comparable requirements as called for by the UMTRCA, and (3) any further modifications needed to address prescriptive provisions that were suspended prior to April 1, 1984 but not proposed for modification by this action. This course of action was chosen to allow the Commission to both conform its regulations to EPA's and incorporate non-SWDA provisions in a prompt and orderly manner and deal with the complex of SWDA requirements and issues in a separate, comprehensive and unified rulemaking.

Content of This Proposal

The new EPA requirements in 40 CFR Part 192, (48 FR 45928) included by reference several sections from 40 CFR Part 264, promulgated by the EPA pursuant to authority provided by the Resource Conservation and Recovery Act (RCRA), which modified the SWDA. These SWDA (or RCRA) requirements imposed under 40 CFR Part 192 are addressed in the ANPRM accompanying this proposal. The few conforming changes to NRC's existing Appendix A regulations made necessary by these newly imposed SWDA requirements are addressed in this document, as are conforming changes and other changes necessary to reflect and incorporate the non-SWDA elements of EPA's new requirements. These non-SWDA provisions include requirements to—

(1) Adhere to applicable requirements in 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations" for uranium byproduct material, and essentially the same requirements for thorium byproduct material;

(2) Adhere to applicable requirements in 40 CFR Part 440, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory."

(3) Maintain releases of radon to the atmosphere during operations as low as is practicable;

(4) Close disposal areas so as to provide reasonable assurance of effective control for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years;

(5) Limit average post-closure releases of radioactive radon gas to no more than 20 picocuries per square meter per second (pCi/m²-s); and

(6) Set limits for residual concentrations of radioactive radium left in soil, above background, in onsite areas not subject to the closure requirements for longevity and radon release control.

Proposed Modifications and Rationale

In accordance with the above, the Commission proposes the following modifications to Appendix A to 10 CFR Part 40:

1. Introduction

(a) In the second sentence of the third paragraph, change "amendability" to "amenability."

Reason: This change corrects a typographical error.

(b) Delete the fourth paragraph in its entirety.

Reason: This change deletes an information submittal requirement which was established in connection with implementation of the original Appendix A criteria. The due date originally set for submittals is past. A new due date for revised submittals is not considered necessary.

(c) Add the following paragraph at the end: "Licensees 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 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."

Reason: The flexibility to propose alternatives to the Commission's and EPA standards was included in Pub. L. 99-415 changes to the AEA. The added paragraph paraphrases the language in Section 84c. The added paragraph explicitly acknowledges the legislative intent and provides licensees and applicants the opportunity to propose alternatives as a routine licensing matter. Licensees would have to provide a site specific rationale to enable the Commission to make the required finding. This generic approach was taken instead of modifying individual criteria to provide flexibility. A generic approach avoids the chance of not identifying all areas where flexibility may be needed and preserves the existing support for Appendix A. Administratively, alternatives are easier to process under an explicit provision than exceptions to rules.

2. Criterion 1

(a) In the first paragraph delete the phrase " * * * for thousands of years * * *" and insert " * * *."

Reason: The thousands of years language conflicts with the 40 CFR 192.32(b) standard of design of control measures to be effective for 1,000 years.

(b) In the second listed item of the first paragraph, delete the word "usable."

Reason: Both 40 CFR 264.221 and 40 CFR 264.92, which are included by reference in 40 CFR 192.32(a), require isolation of contaminants from all qualities of groundwater, not just usable groundwater sources.

3. Criterion 3

(a) Delete the modifiers "high quality" for groundwater in the second sentence of the second paragraph.

Reason: The EPA standards require protection of all qualities of groundwater, not just high quality sources.

4. Criterion 4

(a) Revise paragraph (a) by deleting "maximum possible flood" and inserting "Probable Maximum Flood."

Reason: Probable Maximum Flood reflects the appropriate hydrologic terms for a design basis and the original intent of the provision when Appendix A was promulgated.

5. Criterion 5

(a) In the first paragraph, delete the first two sentences beginning "Steps shall be taken * * *" and ending

"potential uses," and the phrase " * * * in order to accomplish this objective." in the third sentence.

Reason: The EPA groundwater protection standards referenced in 40 CFR 192.32(a) do not permit any seepage to groundwater.

(b) In the first listed item under the first paragraph beginning with "Installation of * * *" delete the words "low permeability" as a characteristic of bottom liners.

Reason: The EPA groundwater protection standard referenced in 40 CFR 192.32(a) requires a liner that prevents migration of wastes out of the impoundment into the adjacent soil and groundwater. Low permeability implies that some migration is allowed.

(c) In the second paragraph beginning "Where groundwater impacts * * *" delete the phrase "to its potential use before milling operations began to the maximum extent practicable."

Reason: The EPA standard in 40 CFR 192.33, by referencing 40 CFR 264.100, requires a corrective action program to restore groundwater to standards established under 40 CFR 264.92-264.94. This standard is essentially a nondegradation standard. Restoration of groundwater quality only to the extent necessary to restore its potential use is inconsistent with EPA standard.

(d) Delete in its entirety the third paragraph beginning "While the primary method of protecting groundwater shall be isolation * * *" and ending " * * * from current or potential uses."

Reason: The EPA standards for groundwater protection in 40 CFR 192.32(a) protect groundwater primarily on the basis of background-level concentration limits for hazardous constituents, and not in terms of current or potential uses. The deleted sentence allowed consideration of tailings in contact with groundwater. The EPA standard permits no seepage to groundwater.

(e) In the first sentence of the fifth paragraph beginning "This information shall be gathered * * *" delete the word "usable" where it modifies "groundwater."

Reason: The EPA standard in 40 CFR 192.32(a) does not distinguish between "usable" and nonusable aquifers. The groundwater protection standard applies universally to aquifers of any quality or potential use.

6. Criterion 6

(a) Delete the first sentence in entirety, beginning with "Sufficient earth cover * * *" and ending with " * * * meter per second.", and in its place insert "In cases where waste byproduct material is to be permanently disposed,

an earthen cover shall be placed over tailings or wastes at the end of milling operations and the waste disposal area shall be closed in accordance with a design ¹ which shall provide reasonable assurance of control of radiological hazards to (i) Be effective for one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years, and (ii) limit releases of radon-222 from uranium byproduct materials, and radon-220 from thorium byproduct materials, to the atmosphere so as to not exceed an average ² release rate of 20 picocuries per square meter per second (pCi/m²s)."

Reason: The change replaces previous Commission requirements for minimum cover thickness and post-closure radon control with the EPA standards for longevity and radon control. The EPA standard in 40 CFR 192.32(b) for environmental protection after closure specifies that the control method must provide reasonable assurance that releases of radon-222 do not exceed 20 picocuries per square meter per second, rather than 2 picocuries. Under the EPA standard the thickness of cover will be a function of longevity and radon release and will be determined based on meeting the 20 value instead of 2. The three meter minimum prescriptive requirement was developed to achieve a 2 picocurie emanation rate based on the assumed typical soil conditions.

(b) Add to Criterion 6 the following two footnotes which accompany the revised first sentence: footnote (1) "The standard applies to design. Monitoring for radon after installation of an appropriately designed cover is not required," and footnote (2) "This average shall apply to the entire surface of each disposal area over periods of at least one year, but short compared to 100 years. Radon will come from both uranium byproduct materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from byproduct materials to the atmosphere."

Reason: This change fully incorporates the EPA radon control standard.

(c) In the fifth sentence of the first paragraph, replace "non-soiled" with "non-soil," and replace the words "to reduce tailings covers to less than three meters" with the words "as cover materials."

Reason: The first change corrects a typographical error. The second is an editorial change to be consistent with the deletion of the three meter minimum requirement as discussed in (a) above.

(d) At the end of Criterion 6, add a new paragraph to read: "The design requirements in this Criterion for longevity and control of radon releases shall apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged over areas of 100 square meters, which, as a result of byproduct material does not exceed the background level by more than: (i) 5 picocuries per gram (pCi/g) of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over the first 15 centimeters (cm) below the surface, and (ii) 15 pCi/g of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over 15-cm thick layers more than 15 cm below the surface."

Reason: This change incorporates the EPA requirements for site cleanup outside the actual disposal area, in areas where the longevity and radon control closure standards are not applicable (see 40 CFR 192.32(b)(2) and 192.41).

7. Criterion 8

(a) At the end of the first full paragraph, add a new sentence to read "During operations and prior to closure, radiation doses from radon emissions from surface impoundments shall be kept as low as is practicable."

Reason: This change incorporates the EPA requirement imposed under 40 CFR 192.32(a)(4).

(b) Following the third full paragraph of Criterion 8, just before Criterion 8A, insert the following two new paragraphs:

"Milling operations producing or involving thorium byproduct material shall be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as a result of exposure to the planned discharge of radioactive materials, radon-220 and its daughters excepted, to the general environment."

"Uranium and thorium byproduct materials shall be managed so as to conform to the applicable provisions of Title 40 of the Code of Federal Regulations, Part 440, Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory, as modified on January 1, 1983."

Reason: These new paragraphs incorporate EPA requirements imposed

under 40 CFR 192.41(d) and 40 CFR 192.52(a)(3), respectively.

8. Criteria 2, 7, 9, 10, 11, and 12 are not affected by the new EPA standards or editorial changes and no modification is proposed for any portion of those criteria.

Commission Authority and Responsibility

Section 84c of the Atomic Energy Act state that: A licensee may propose alternatives to specific requirements adopted and enforced by the Commission under this act. Such alternative proposals may take into account local or regional conditions, including geology, topography, hydrology and meteorology. The Commission may treat such alternatives as satisfying Commission requirements if the Commission determines that such 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 such sites, which is equivalent to, to the extent practicable, or more stringent than the level which would be achieved by standards and requirements adopted and enforced by the Commission for the same purpose and any final standards promulgated by the Administrator of the Environmental Protection Agency in accordance with section 275.

The Commission historically has had the authority and responsibility to regulate the activities of persons licensed under the Atomic Energy Act of 1954, as amended. Consistent with that authority and in accordance with section 84c of that Act, the Commission has the discretion to review and approve site specific alternatives to standards promulgated by the Commission and by the Administrator of the Environmental Protection Agency. In the exercise of this authority, Section 84c does not require the Commission to obtain the concurrence of the Administrator in any site specific alternative which satisfies Commission requirements for the level of protection for public health, safety, and the environment from radiological and nonradiological hazards at uranium mill tailing sites. As an example, the Commission need not seek concurrence of the Administrator in case-by-case determinations of alternative concentration limits and delisting of hazardous constituents for specific sites. It should be understood that the proposed conforming regulations deal with the exercise of the Commission's responsibility and authority under the Atomic Energy Act of 1954, solely as

regards uranium mill tailings sites and have no broader connotation.

The Commission believes that licensee proposals for alternatives can be an important and effective way to help deal with the problems associated with implementing the new EPA standards. The Commission expects that it may require several years to have its conforming regulations fully in place. It expects to use the flexibility provided by section 84 in the interim to consider and approve alternative proposals from licensees. Section 84c provides NRC sufficient authority to independently approve alternatives so long as the Commission can make the required determination.

Impact of the Proposed Amendments

The Commission's action in proposing these modifications to its regulations in Appendix A to 10 CFR Part 40 is to conform them to the new EPA standards. These changes are for the purpose of avoiding conflicts and inconsistencies, and for clarifying previously existing language so as to be compatible with the new requirements. The action proposed here by the Commission is a consequence of previous actions taken by the Congress and the EPA, and is legally mandated in section 275b(3) of the Atomic Energy Act of 1954, as amended.

Commission action in this case is essentially nondiscretionary in nature, and for purposes of environmental analysis, rests upon existing environmental and other impact evaluations in the following documents: (1) "Final Environmental Impact Statement for Standards for the Control of Byproduct Materials from Uranium Ore Processing (40 CFR Part 192)," Volumes 1 and 2, EPA 520/1-83-008-1 and 2, September 1983, and (2) "Regulatory Impact Analysis of Final Environmental Standards for Uranium Mill Tailings at Active Sites," EPA 520/1-83-010, September 1983, both prepared in support of Subparts D and E of 40 CFR Part 192, and (3) "Final Generic Environmental Impact Statement on Uranium Milling," NUREG-0706, September 1980, prepared in support of Appendix A of 10 CFR Part 40. The Commission believes that these supporting analyses for the new EPA standards and the existing Commission regulations provide a more than adequate environmental review for the standards addressed herein, and that no additional impact analysis is warranted by the conforming actions proposed herein. The EPA engaged in and completed a NEPA process with full consideration of environmental concerns, and for the purposes of this

rulemaking action, can be viewed as the lead agency.

Paperwork Reduction Act Statement

This proposed rule does not concern a new or amended information collection requirement subject to the requirements of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget approval number 3150-0020.

Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this rule will not, if promulgated, have a significant economic impact upon a substantial number of small entities. Therefore, we have not performed a Regulatory Flexibility Analysis. The basis for this finding is that of the licensed uranium mills, only one qualifies as a small entity. Almost all the mills are owned by large corporations. Three of the mills are partly-owned by companies that could qualify as small businesses, according to the Small Business Administration generic small entity definition of 500 employees. However, under the Regulatory Flexibility Act, a small business is one that is independently owned and operated. Since these three mills are not independently owned they do not qualify as small entities.

List of Subjects in 10 CFR Part 40

Government contracts, Hazardous materials-transportation, Nuclear materials, Penalty, Reporting and recordkeeping requirements, Source material, and Uranium.

Under the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, 5 U.S.C. 553, and the Uranium Mill Tailings Radiation Control Act of 1978, as amended, the NRC is proposing the following amendments to 10 CFR Part 40.

PART 40—DOMESTIC LICENSING OF SOURCE MATERIAL

1. The authority citation for Part 40 is revised to read as follows:

Authority: Secs. 82, 83, 84, 85, 81, 161, 182, 183, 186, 66 Stat. 932, 933, 935, 944, 951, 954, 955, as amended, sec. 11e(2), 83, 84, Pub. L. 95-604, 92 Stat. 3033, as amended, 3039, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2014(e)(2), 2082, 2083, 2094, 2095, 2111, 2113, 2114, 2201, 2232, 2233, 2236, 2282); sec. 274, Pub. L. 95-373, 73 Stat. 688 (42 U.S.C. 2021); sec. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); Section 275, 82 Stat. 3021, as amended by Pub. L. 97-415, 88 Stat. 2087 (42 U.S.C. 2022).

Section 40.7 also issued under Pub. L. 95-601, sec. 10.82 Stat. 2951 (42 U.S.C. 5851). Section 40.31(g) also issued under sec. 122, 88 Stat. 939 (42 U.S.C. 2132). Section 40.49 also issued under sec. 184, 88 Stat. 884, as amended (42 U.S.C. 2234). Section 40.71 also issued under sec. 187, 88 Stat. 885 (42 U.S.C. 2237).

For the purposes of sec. 223, 88 Stat. 958, as amended (42 U.S.C. 2273): §§ 40.3, 40.25(d)(1)-(3), 40.33(a)-(d), 40.41(b) and (c), 40.46, 40.51(a) and (c), and 40.63 are issued under sec. 181b, 88 Stat. 944, as amended, (42 U.S.C. 2207(b)); and §§ 40.28(c), and (d)(3) and (4), 40.29(c)(2), 40.33(e), 40.42, 40.61, 40.62, 40.64 and 40.66 are issued under sec. 181c, 88 Stat. 950, as amended (42 U.S.C. 2207(c)).

Appendix A—[Amended]

2. Appendix A to Part 40 is revised to read as follows:

Appendix A to Part 40—Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for Their Source Material Content

Introduction

Every applicant for a license to possess and use source material in conjunction with uranium or thorium milling, or byproduct material at sites formerly associated with such milling, is required by the provisions of § 40.31(h) to include in a license application proposed specifications relating to milling operations and the disposition of tailings or wastes resulting from such milling activities. This appendix establishes technical, financial, ownership, and long-term site surveillance criteria relating to the siting, operation, decontamination, decommissioning, and reclamation of mills and tailings or waste systems and sites at which such mills and systems are located. As used in this appendix, the term "as low as is reasonably achievable" has the same meaning as in § 20.1(c) of 10 CFR Part 20 of this chapter.

In many cases, flexibility is provided in the criteria to allow achieving an optimum tailings disposal program on a site-specific basis. However, in such cases the objectives, technical alternatives and concerns which must be taken into account in developing a tailings program are identified. As provided by the provisions of § 40.31(h) applications for licenses must clearly demonstrate how the criteria have been addressed.

The specifications shall be developed considering the expected full capacity of tailings or waste systems and the lifetime of mill operations. Where later expansions of systems or operations may be likely (for example, where large quantities of ore now marginally uneconomical may be stockpiled), the amendability of the disposal system to accommodate increased capacities without degradation in long-term stability and other performance factors shall be evaluated.

Licensees 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 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.

1. Technical Criteria

Criterion 1—In selecting among alternative tailings disposal sites or judging the adequacy of existing tailings sites, the following site features, which will determine the extent to which a program meets the broad objective of isolating the tailings and associated contaminants from man and the environment for 1,000 years, thereafter, without ongoing active maintenance shall be considered:

- Remoteness from populated areas;
- Hydrologic and other natural conditions as they contribute to continued immobilization and isolation of contaminants from groundwater sources; and
- Potential for minimizing erosion, disturbance, and dispersion by natural forces over the long term.

The site selection process shall be an optimization to the maximum extent reasonably achievable in terms of these features.

In the selection of disposal sites, primary emphasis shall be given to isolation of tailings or wastes, a matter having long-term impacts, as opposed to consideration only of short-term convenience or benefits, such as minimization of transportation or land acquisition costs. While isolation of tailings will be a function of both site and engineering design, overriding consideration shall be given to siting features given the long-term nature of the tailings hazards.

Tailings shall be disposed of in a manner that no active maintenance is required to preserve conditions of the site.

Criterion 2—To avoid proliferation of small waste disposal sites and thereby reduce perpetual surveillance obligations, byproduct material from in situ extraction operations, such as residues from solution evaporation or contaminated control processes, and wastes from small remote above ground extraction operations shall be disposed of at existing large mill tailings disposal sites; unless, considering the nature of the wastes, such as their volume and specific activity, and the costs and environmental impacts of transporting the wastes to a large disposal site, such offsite disposal is demonstrated to be impracticable or the advantages of onsite burial clearly outweigh the benefits of reducing the perpetual surveillance obligations.

Criterion 3—The "prime option" for disposal of tailings is placement below grade, either in mines or specially excavated pits

(that is, where the need for any specially constructed retention structure is eliminated).

The evaluation of alternative sites and disposal methods performed by mill operators in support of their proposed tailings disposal program (provided in applicants' environmental reports) shall reflect serious consideration of this disposal mode. In some instances, below grade disposal may not be the most environmentally sound approach, such as might be the case if a groundwater formation is relatively close to the surface or not very well isolated by overlying soils and rock. Also, geologic and topographic conditions might make full below grade burial impracticable; for example, bedrock may be sufficiently near the surface that blasting would be required to excavate a disposal pit at excessive cost, and more suitable alternative sites are not available. Where full below grade burial is not practicable, the size of retention structures, and size and steepness of slopes of associated exposed embankments shall be minimized by excavation to the maximum extent reasonably achievable or appropriate given the geologic and hydrologic conditions at a site. In these cases, it must be demonstrated that an above grade disposal program will provide reasonably equivalent isolation of the tailings from natural erosional forces.

Criterion 4—The following site and design criteria shall be adhered to whether tailings or wastes are disposed of above or below grade.

(a) Upstream rainfall catchment areas must be minimized to decrease erosion potential and the size of the Probable Maximum Flood which could erode or wash out sections of the tailings disposal area.

(b) Topographic features should provide good wind protection.

(c) Embankment and cover slopes shall be relatively flat after final stabilization to minimize erosion potential and to provide conservative factors of safety assuring long-term stability. The broad objective should be to contour final slopes to grades which are as close as possible to those which would be provided if tailings were disposed of below grade; this could, for example, lead to slopes about 10 horizontal to 1 vertical (10H:1V) or less steep. In general, slopes should not be steeper than about 5H:1V. Where steeper slopes are proposed, reasons why a slope less steep than 5H:1V would be impracticable should be provided, and compensating factors and conditions which make such slopes acceptable should be identified.

(d) A full self-sustaining vegetative cover shall be established or rock cover employed to reduce wind and water erosion to negligible levels.

Where a full vegetative cover is not likely to be self-sustaining due to climatic or other conditions, such as in semi-arid and arid regions, rock cover shall be employed on slopes of the impoundment system. The NRC will consider relaxing this requirement for extremely gentle slopes such as those which they may exist on the top of the pile.

The following factors shall be considered in establishing the final rock cover design to avoid displacement of rock particles by

human and animal traffic or by natural process, and to preclude undermining and piping:

- Shape, size, composition, and gradation of rock particles (excepting bedding material average particle size shall be at least cobble size or greater);

- Rock cover thickness and zoning of particles by size; and

- Steepness of underlying slopes.

Individual rock fragments shall be dense, sound, and resistant to abrasion, and shall be free from cracks, seams, and other defects that would tend to unduly increase their destruction by water and frost actions. Weak, friable, or laminated aggregate shall not be used.

Rock covering of slopes may not be required where top covers are very thick (on the order of 10m or greater). Impoundment slopes are very gentle (on the order of 10 h:1v or less); bulk cover materials have inherently favorable erosion resistance characteristics, and there is negligible drainage catchment area upstream of the pile and good wind protection as described in points (a) and (b) of this Criterion.

Furthermore, all impoundment surfaces shall be contoured to avoid areas of concentrated surface runoff or abrupt or sharp changes in slope gradient. In addition to rock cover on slopes, areas toward which surface runoff might be directed shall be well protected with substantial rock cover (np rap). In addition to providing for stability of the impoundment system itself, overall stability, erosion potential, and geomorphology of surrounding terrain shall be evaluated to assure that there are not ongoing or potential processes, such as gully erosion, which would lead to impoundment instability.

(e) The impoundment shall not be located near a capable fault that could cause a maximum credible earthquake larger than that which the impoundment could reasonably be expected to withstand. As used in this criterion, the term "capable fault" has the same meaning as defined in section III(g) of Appendix A of 10 CFR 100. The term "maximum credible earthquake" means the earthquake which cause the maximum vibratory ground motion based upon an evaluation of earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material.

(f) The impoundment, where feasible, should be designed to incorporate features which will promote deposition. For example, design features which promote deposition of sediment suspended in any runoff which flows into the impoundment area might be utilized; the object of such a design feature would be to enhance the thickness of cover over time.

Criterion 5—The following shall be considered:

- Installation of bottom liners (Where synthetic liners are used, a leakage detection system shall be installed immediately below the liner to ensure major failures are detected if they occur. This is in addition to the groundwater monitoring program conducted as provided in Criterion 7. Where clay liners are proposed or relatively thin, in-situ clay

soils are to be relied upon for seepage control, tests shall be conducted with representative tailings solutions and clay materials to confirm that no significant deterioration of permeability or stability properties will occur with continuous exposure of clay to tailings solutions. Tests shall be run for a sufficient period of time to reveal any effects if they are going to occur (in some cases deterioration has been observed to occur rather rapidly after about nine months of exposure).

- Mill process designs which provide the maximum practicable recycle of solutions and conservation of water to reduce the net input of liquid to the tailings impoundment.

- Dewatering of tailings by process devices and/or in-situ drainage systems (At new sites, tailings shall be dewatered by a drainage system installed at the bottom of the impoundment to lower the phreatic surface and reduce the driving head for seepage, unless tests show tailings are not amenable to such a system. Where in-situ dewatering is to be conducted, the impoundment bottom shall be graded to assure that the drains are at a low point. The drains shall be protected by suitable filter materials to assure that drains remain free running. The drainage system shall also be adequately sized to assure good drainage).

- Neutralization to promote immobilization of toxic substances.

Where groundwater impacts are occurring at an existing site due to seepage, action shall be taken to alleviate conditions that lead to excessive seepage impacts and restore groundwater quality. The specific seepage control and groundwater protection method, or combination of methods, to be used must be worked out on a site-specific basis. Technical specifications shall be prepared to control installation of seepage control systems. A quality assurance, testing, and inspection program, which includes supervision by a qualified engineer or scientist, shall be established to assure the specifications are met.

In support of a tailings disposal system proposal, the applicant/operator shall supply information concerning the following:

- The chemical and radioactive characteristics of the waste solutions.

- The characteristics of the underlying soil and geologic formations particularly as they will control transport of contaminants and solutions. This shall include detailed information concerning extent, thickness, uniformity, shape, and orientation of underlying strata. Hydraulic gradients and conductivities of the various formations shall be determined.

This information shall be gathered from borings and field survey methods taken within the proposed impoundment area and in surrounding areas where contaminants might migrate to groundwater. The information gathered on boreholes shall include both geologic and geophysical logs in sufficient number and degree of sophistication to allow determining significant discontinuities, fractures, and channelled deposits of high hydraulic conductivity. If field survey methods are used, they should be in addition to and calibrated with borehole logging. Hydrologic

parameters such as permeability shall not be determined on the basis of laboratory analysis of samples alone; a sufficient amount of field testing to pump test shall be conducted to assure actual field properties are adequately understood. Testing shall be conducted to allow estimating chemisorption attenuation properties of underlying soil and rock.

- Location, extent, quality, capacity and current uses of any groundwater at and near the site.

Furthermore, steps shall be taken during stockpiling of ore to minimize penetration of radionuclides into underlying soils; suitable methods include lining and/or compaction of ore storage areas.

Criterion 6—In cases where waste byproduct material is to be permanently disposed an earthen cover shall be placed over tailings or wastes at the end of milling operations and the waste disposal area shall be closed in accordance with a design¹ which shall provide reasonable assurance of control of radiological hazards to: (i) Be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years, and (ii) limit releases of radon-222 from uranium byproduct materials, and radon-220 from thorium byproduct materials, to the atmosphere so as to not exceed an average² release rate of 20 picocuries per square meter per second (pCi/m²s). In computing required tailings cover thicknesses, moisture in soils in excess of amounts found normally in similar soils in similar circumstances shall not be considered. Direct gamma exposure from the tailings or wastes should be reduced to background levels. The effects of any thin synthetic layer shall not be taken into account in determining the calculated radon exhalation level. If non-soil materials are proposed as cover materials, it must be demonstrated that such materials will not crack or degrade by differential settlement, weathering, or other mechanism, over long-term time intervals.

Near surface cover materials (i.e., within the top three meters) shall not include waste or rock that contains elevated levels of radium. Soils used for near surface cover must be essentially the same as far as radioactivity is concerned, as that of surrounding surface soils. This is to ensure that surface radon exhalation is not significantly above background because of the cover material itself.

The design requirements in this criterion for longevity and control of radon releases shall apply to any portion of a licensed and/or disposal site unless such portion contains a concentration of radium in land, averaged

¹ The standard applies to design. Monitoring for radon after installation of an appropriately designed cover is not required.

² This average shall apply to the entire surface of each disposal area over periods of at least 1 year, but short compared to 100 years. Radon will come from both uranium byproduct materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from uranium byproduct materials to the atmosphere.

over areas of 100 square meters, which, as a result of byproduct material does not exceed the background level by more than: (i) 5 picocuries per gram (pCi/g) of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over the first 15 centimeters (cm) below the surface; and (ii) 15 pCi/g of radium-226, or, in the case of thorium byproduct material, radium-228, averaged over 15-cm thick layers more than 15 cm below the surface.

Criterion 7.—At least one full year prior to any major site construction, a preoperational monitoring program shall be conducted to provide complete baseline data on a milling site and its environs. Throughout the construction and operating phases of the mill, an operational monitoring program shall be conducted to measure or evaluate compliance with applicable standards and regulations; to evaluate performance of control systems and procedures; to evaluate environmental impacts of operation; and to detect potential long-term effects.

Criterion 8.—Milling operations shall be conducted so that all airborne effluent releases are reduced to levels as low as is reasonably achievable. The primary means of accomplishing this shall be by means of emission controls. Institutional controls, such as extending the site boundary and exclusion area, may be employed to ensure that offsite exposure limits are met, but only after all practicable measures have been taken to control emissions at the source. Notwithstanding the existence of individual dose standards, strict control of emissions is necessary to assure that population exposures are reduced to the maximum extent reasonably achievable and to avoid site contamination. The greatest potential sources of offsite radiation exposure (aside from radon exposure) are dusting from dry surfaces of the tailing disposal area not covered by tailings solution and emissions from yellowcake drying and packaging operations. During operations and prior to closure, radiation doses from radon emissions from surface impoundments of uranium or thorium byproduct materials shall be kept as low as is practicable.

Checks shall be made and logged hourly of all parameters (e.g., differential pressures and scrubber water flow rates) which determine the efficiency of yellowcake stack emission control equipment operation. It shall be determined whether or not conditions are within a range prescribed to ensure that the equipment is operating consistently near peak efficiency; corrective action shall be taken when performance is outside of prescribed ranges. Effluent control devices shall be operative at all times during drying and packaging operations and whenever air is exhausting from the yellowcake stack. Drying and packaging operations shall terminate when controls are inoperative. When checks indicate the equipment is not operating within the range prescribed for peak efficiency, actions shall be taken to restore parameters to the prescribed range. When this cannot be done without shutdown and repairs, drying and packaging operations shall cease as soon as practicable. Operations may not be re-started after cessation due to off-normal performance until

needed corrective actions have been identified and implemented. All such cessations, corrective actions, and re-starts shall be reported to the appropriate NRC regional office as indicated in Criterion 8A, in writing, within 10 days of the subsequent restart.

To control dusting from tailings, that portion not covered by standing liquids shall be wetted or chemically stabilized to prevent or minimize blowing and dusting to the maximum extent reasonably achievable. This requirement may be relaxed if tailings are effectively sheltered from wind, such as may be the case where they are disposed of below grade and the tailings surface is not exposed to wind. Consideration shall be given in planning tailings disposal programs to methods which would allow phased covering and reclamation of tailings impoundments since this will help in controlling particulate and radon emissions during operation. To control dusting from diffuse sources, such as tailings and ore pads where automatic controls do not apply, operators shall develop written operating procedures specifying the methods of control which will be utilized.

Milling operations producing or involving thorium byproduct material shall be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as a result of exposures to the planned discharge of radioactive materials, radon-220 and its daughters excepted, to the general environment.

Uranium and thorium byproduct materials shall be managed so as to conform to the applicable provisions of Title 40 of the Code of Federal Regulations, Part 440, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory," as codified on January 1, 1983.

Criteria 8A.—Daily inspections of tailings or waste retention systems shall be conducted by a qualified engineer or scientist and documented. The appropriate NRC regional office as indicated in Appendix D of 10 CFR Part 20, or the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555, shall be immediately notified of any failure in a tailings or waste retention system which results in a release of tailings or waste into unrestricted areas, and/or of any unusual conditions (conditions not contemplated in the design of the retention system) which if not corrected could indicate the potential or lead to failure of the system and result in a release of tailings or waste into unrestricted areas.

II. Financial Criteria

Criterion 9.—Financial surety arrangements shall be established by each mill operator prior to the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the mill and site and for the reclamation of any tailings or waste disposal areas. The amount of funds to be ensured by such surety arrangements shall be

based on Commission-approved cost estimates in a Commission-approved plan for: (1) Decontamination and decommissioning of mill buildings and the milling site to levels which would allow unrestricted use of these areas upon decommissioning; and (2) the reclamation of tailings and/or waste disposal areas in accordance with technical criteria delineated in Section I of this Appendix. The licensee shall submit this plan in conjunction with an environmental report that addresses the expected environmental impacts of the milling operation, decommissioning and tailings reclamation, and evaluates alternatives for mitigating these impacts. The surety shall also cover the payment of the charge for long-term surveillance and control required by Criterion 10. In establishing specific surety arrangements, the licensee's cost estimates shall take into account total costs that would be incurred if an independent contractor were hired to perform the decommissioning and reclamation work. In order to avoid unnecessary duplication and expense, the Commission may accept financial sureties that have been consolidated with financial or surety arrangements established to meet requirements of other Federal or state agencies and/or local governing bodies for such decommissioning, decontamination, reclamation, and long-term site surveillance and control, provided such arrangements are considered adequate to satisfy these requirements and that the portion of the surety which covers the decommissioning and reclamation of the mill, mill tailings site and associated areas, and the long-term funding charge is clearly identified and committed for use in accomplishing these activities. The licensee's surety mechanism will be reviewed annually by the Commission to assure that sufficient funds would be available for completion of the reclamation plan if the work had to be performed by an independent contractor. The amount of surety liability should be adjusted to recognize any increases or decreases resulting from inflation, changes in engineering plans, activities performed, and any other conditions affecting costs. Regardless of whether reclamation is phased through the life of the operation or takes place at the end of operations, an appropriate portion of surety liability shall be retained until final compliance with the reclamation plan is determined. This will yield a surety that is at least sufficient at all times to cover the costs of decommissioning and reclamation of the areas that are expected to be disturbed before the next licensee renewal. The term of the surety mechanism must be open ended, unless it can be demonstrated that another arrangement would provide an equivalent level of assurance. This assurance could be provided with a surety instrument which is written for a specified period of time (e.g., 3 years) yet which must be automatically renewed unless the surety notifies the beneficiary (the Commission or the State regulatory agency) and the principal (the licensee) some reasonable time (e.g., 90 days) prior to the renewal date of their intention not to renew. In such a situation the surety

requirement still exists and the licensee would be required to submit an acceptable replacement surety within a brief period of time to allow at least 60 days for the regulatory agency to collect.

Proof of forfeiture must not be necessary to collect the surety so that in the event that the licensee could not provide an acceptable replacement surety within the required time, the surety shall be automatically collected prior to its expiration. The conditions described above would have to be clearly stated on any surety instrument which is not open-ended, and must be agreed to by all parties. Financial surety arrangements generally acceptable to the Commission are:

- (a) Surety bonds;
- (b) Cash deposits;
- (c) Certificates of deposit;
- (d) Deposits of government securities;
- (e) Irrevocable letters or lines of credit; and
- (f) Combinations of the above or such other

types of arrangements as may be approved by the Commission. However, self insurance, or any arrangement which essentially constitutes self insurance (e.g., a contract with a state or Federal agency), will not satisfy the surety requirement since this provides no additional assurance other than that which already exists through license requirements.

Criterion 10—A minimum charge of \$250,000 (1978 dollars) to cover the costs of long-term surveillance shall be paid by each mill operator to the general treasury of the United States or to an appropriate State agency prior to the termination of a uranium or thorium mill license.

If site surveillance or control requirements at a particular site are determined, on the basis of a site-specific evaluation, to be significantly greater than those specified in Criterion 12 (e.g., if fencing is determined to be necessary), variance in funding requirements may be specified by the Commission. In any case, the total charge to cover the costs of long-term surveillance shall be such that, with an assumed 1 percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance. The total charge will be adjusted annually prior to actual payment to recognize inflation. The inflation rate to be used is that indicated by the change in the Consumer Price Index published by the U.S. Department of Labor, Bureau of Labor Statistics.

III. Site and Byproduct Material Ownership

Criterion 11—

A. These criteria relating to ownership of tailings and their disposal sites become effective on November 8, 1981, and apply to all licenses terminated, issued, or renewed after that date.

B. Any uranium or thorium milling license or tailings license shall contain such terms and conditions as the Commission determines necessary to assure that prior to termination of the license, the licensee will comply with ownership requirements of this criterion for sites used for tailings disposal.

C. Title to the byproduct material licensed under this Part and land, including any interests therein (other than land owned by the United States or by a State) which is used

for the disposal of any such byproduct material, or is essential to ensure the long-term stability of such disposal site, shall be transferred to the United States or the State in which such land is located, at the option of such State. In view of the fact that physical isolation must be the primary means of long-term control, and Government land ownership is a desirable supplementary measure, ownership of certain severable subsurface interests (for example, mineral rights) may be determined to be unnecessary to protect the public health and safety and the environment. In any case, however, the applicant/operator must demonstrate a serious effort to obtain such subsurface rights, and must, in the event that certain rights cannot be obtained, provide notification in local public land records of the fact that the land is being used for the disposal of radioactive material and is subject to either an NRC general or specific license prohibiting the disruption and disturbance of the tailings. In some rare cases, such as may occur with deep burial where no ongoing site surveillance will be required, surface land ownership transfer requirements may be waived. For licenses issued before November 8, 1981, the Commission may take into account the status of the ownership of such land, and interests therein, and the ability of a licensee to transfer title and custody thereof to the United States or a State.

D. If the Commission subsequent to title transfer determines that use of the surface or subsurface estates, or both, of the land transferred to the United States or to a State will not endanger the public health, safety, welfare, or environment, the Commission may permit the use of the surface or subsurface estates, or both, of such land in a manner consistent with the provisions provided in these criteria. If the Commission permits such use of such land, it will provide the person who transferred such land with the right of first refusal with respect to such use of such land.

E. Material and land transferred to the United States or a State in accordance with this Criterion shall be transferred without cost to the United States or a State other than administrative and legal costs incurred in carrying out such transfer.

F. The provisions of this Part respecting transfer of title and custody to land and tailings and wastes shall not apply in the case of lands held in trust by the United States for any Indian tribe or lands owned by such Indian tribe subject to a restriction against alienation imposed by the United States. In the case of such lands which are used for the disposal of byproduct material, as defined in this Part, the licensee shall enter into arrangements with the Commission as may be appropriate to assure the long-term surveillance of such lands by the United States.

IV. Long-Term Site Surveillance

Criterion 12—The final disposition of tailings or wastes at milling sites should be such that ongoing active maintenance is not necessary to preserve isolation. As a minimum, annual site inspections shall be conducted by the government agency

retaining ultimate custody of the site where tailings, or wastes are stored to confirm the integrity of the stabilized tailings or waste systems and to determine the need, if any, for maintenance and/or monitoring. Results of the inspection shall be reported to the Commission within 60 days following each inspection. The Commission may require more frequent site inspections if, on the basis of a site-specific evaluation, such a need appears necessary due to the features of a particular tailings or waste disposal system.

Dated at Washington, DC, this 20th day of November 1984.

For the Nuclear Regulatory Commission,
Samuel J. Chalk,

Secretary of the Commission.

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BILLING CODE 7550-01-01

NMSS

TASK LEADER EVALUATION

NMSS OFFICE / FINDING ON PROPOSED RULEMAKING

Uranium Mill Tailings Regulations:
Conforming NRC Requirements to EPA Standards1. Issue

Comply with Congressional mandate to conform existing NRC regulations for uranium mill tailings to Environmental Protection Agency standards for these wastes published October 3, 1983.

2. Need

In addition to the Congressional mandate, certain provisions of Appendix A of 10 CFR Part 40 are in conflict or inconsistent with the more recent EPA standards. Since licensees are subject to both regulations, these conflicts and inconsistencies should be removed.

3. Alternatives

None other than ignoring the law and handling conflicts and inconsistencies on a case basis.

4. Proposed Action

Proposed rule changes were published for public comment in the Federal Register November 26, 1984. The comment period was extended from January 10 to February 10, 1985. A final rule package will be prepared after the public comments are analyzed.

5. Effects of Proposed Action

The final rule should remove all conflicts and inconsistencies between EPA and NRC's rules. The final rule will also contain all the provisions of the EPA standard not related to ground water and eliminate the need to refer to two rules on all topics except ground water.

6. Resources and Schedule

Resources to analyse the comments and prepare a final rule are estimated to be about 0.2-0.4 FTE in FY 85 depending on the comments received. No contractual support is planned. The final rule is expected to be in place within 6 months after publication (i.e., by the end of May). The nature of the comments and the need for Commission approval could impact this target.

BACKGROUND REFERENCES

Documents relating to this rulemaking include the following:

1. Uranium Mill Tailings Radiation Control Act of 1976, as amended.
2. SECY-83-523, "Proposed Amendments to Uranium Mill Tailings Regulations and Advance Notice of Proposed Rulemaking", December 28, 1983.
3. SECY-83-523A, "Proposed Amendments to Uranium Mill Tailings Regulations (SECY-83-523)", February 3, 1984.
4. Memorandum for the Commissioners from Dircks, "Proposed Amendments to Uranium Mill Tailings Regulations (SECY-83-523 and 523A)", March 2, 1984.
5. Memorandum for the Commissioners from OGC, "Proposed Amendments to Uranium Mill Tailings Regulations (SECY-83-523 and -523A)", March 14, 1984.
6. Memorandum for the Commissioners from the Chairman, "Tentative Recommendations Concerning Mill Tailings Resulting from Meeting on April 19, 1984", April 20, 1984.
7. Memorandum for Dircks from Chilk, "SECY-83-523/523A - Proposed Amendments to Uranium Mill Tailings Regulations and Advance Notice of Proposed Rulemaking", July 10, 1984.
8. Memorandum for Chilk from Rehm, "SECY-83-523/523A - Proposed Amendments to Uranium Mill Tailings Regulations and Advance Notice of Proposed Rulemaking - Policy Statement", July 25, 1984.
9. Memorandum for Dircks from Chilk, "Commission Action on Uranium Mill Tailings Regulations", November 2, 1984.
10. FRN 49 FR 46418 dated November 26, 1984.
11. FRN 50 FR 2293 dated January 16, 1985.

NOTE: Items 10 and 11 are included as B.2. Other documents are available in the files if desired. In view of the scope and mandate, the other documents were not considered necessary for EDO review.