

NDV - 1 1989

MEMORANDUM FOR: Willard B. Brown, Director
 Special Issues Group
 Office of Nuclear Material Safety
 and Safeguards

FROM: Richard L. Bangart, Director
 Division of Low-Level Waste Management
 and Decommissioning, NMSS

SUBJECT: ACNW COMMENTS ON STAFF TECHNICAL POSITION REGARDING EROSION
 PROTECTION COVERS

We have reviewed comments submitted by the Advisory Committee on Nuclear Waste (ACNW) on October 18, 1989 regarding the draft Staff Technical Position (STP) "Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites." Based on this review, we have developed additional information and clarification for each of the three comments. This information is enclosed and should be helpful in your preparation of a response to the ACNW.

If you have any questions, please contact Paul Lohaus (x2-0553) or Ted Johnson (x2-3440).

ORIGINAL SIGNED BY

Richard L. Bangart, Director
 Division of Low-Level Waste Management
 and Decommissioning, NMSS

Enclosure: Information regarding ACNW Comments

Distribution: TICKET # EDO 4839

Central File # 204.1

RBangart, LLWM	JGreeves, LLWM	MBell, LLRB	NMSS r/f
PLohaus, LLOB	MFliegel, LLOB	TJohnson, LLOB	JSurmeier, LLTB
JLepre, LLWM	JJones, LLOB t/f	JJones, LLOB r/f	CJenkins, PMPI

PDR YES
 PDR NO Category: Proprietary or CF Only

ACNW YES NO
 SUBJECT ABSTRACT: RESPONSE TO ACNW COMMENTS

OFC :LLOB	:LLOB	:LLOB	:LLWM	:LLWM	:NMSS	:NMSS
NAME: TJohnson	: MFliegel	: PLohaus	: JGreeves	: RBangart	:	:
Date: 10/31/89	: 10/31/89	: 11/1/89	: 11/10/89	: 11/10/89	:	:

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 11/14/89

INFORMATION REGARDING ACNW COMMENTS

ACNW Comment 1. Need to address other design features.

The statements that were made in the STP were provided only as guidance in dealing with one of the applicable regulations for uranium mill tailings reclamation. The design of an erosion protection cover is only a small part of the total reclamation design. For example, 10 CFR Part 40, Appendix A provides several other criteria that must be met and each of these criteria must be considered in developing a complete design.

Guidance is currently available in many other areas to determine compliance with other portions of the regulations. We will revise the STP to identify those design areas where guidance is available. We will also revise the STP to identify any long-term stability design considerations which could make it difficult to meet other portions of the regulations.

We agree with the necessity of using a systems approach to the problem of stabilizing uranium mill tailings. Uranium mill tailings regulations and associated guidance documents, including the subject draft position, were developed with a systems approach. Each regulation or guidance document was promulgated with full recognition of the importance of its integration into an overall regulatory framework. This integration was and is achieved through the use of technical staff that are knowledgeable of the total program, peer review within NRC, comments from interested members of the public, comments from ACRS or ACNW, and effective management direction and oversight. We believe that the subject draft position, when placed in context of other regulations and guidance, is appropriately integrated into a systems approach, and into a regulatory program that has placed all important technical issues in their proper relationship. We will revise any text that suggests or implies that this is not the case.

ACNW Comment 2. Justification for use of alternate approaches.

We agree with the ACNW that additional discussion is needed in the STP to justify the use of alternate design approaches. We will revise the STP to include additional discussions of (1) applicable regulations, (2) the flexibility provided in those regulations, and (3) the regulatory intent, as provided in the legislative history.

ACNW Comment 3. Criteria for Radon Releases.

The requirement for a release rate of 20 picocuries per square meter per second for radon-222 is not verified by actual measurements. This requirement is a design standard used to determine the radon barrier configuration and is

calculated using specific models. Regulatory Guide (RG) 3.64 (copy enclosed) is currently available to assist licensees and designers in calculating the release rate. Factors such as residual moisture, porosity, and thickness of earthen covers are fully integrated in the radon cover design strategy in RG 3.64. We will revise the STP to indicate the availability of this guidance for determining release rates.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

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10/23

ACT

EDO Principal Correspondence Control

FROM:

DUE: 11/09/89

EDO CONTROL: 0004839

DOC DT: 10/18/89

FINAL REPLY:

DADE W. MOELLER
ACNW

TO:

CHAIRMAN CARR

FOR SIGNATURE OF:

88 GRN 89

ACTING EDO

DESC:

DRAFT STAFF TECHNICAL POSITION ON THE DESIGN OF
EROSION PROTECTION COVERS FOR STABILIZATION OF
URANIUM MILL TAILINGS SITES

DATE: 10/20/89

ASSIGNED TO:

NMSS

CONTACT:

BERNERO

SPECIAL INSTRUCTIONS OR REMARKS:
PREPARED RESPONSE TO ACNW FOR EDO SIGNATURE.
PUT COMMISSIONERS AND SECY ON CC (SHOWN ON
ORIGINAL) FOR REPLY.

ROUTING
THOMPSON
MURPHY
CENTRAL FILE

LLWM/SIG Action
Due to NMSS Director's Office
By 11/1/89 / 11/6/89
acid 10/23/89

SIG has lead.

LLWM - Please provide input to SIG (Brcm/Eiss) by 11/1/89.

SIG - Input is due to NMSS Director's Office by 11/6/89.

Response is due to EDO on 11/9/89.

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-89-1141
ACTION OFFICE: EDO
AUTHOR: Dade Moeller
AFFILIATION: ADVISORY COMMITTEE ON NUCLEAR WASTE
LETTER DATE: Oct 18 89 FILE CODE: O&M-7 ACNW
SUBJECT: Draft staff tech position on the design of erosion protection covers for stabilization of uranium mill tailings sites
ACTION: Appropriate
DISTRIBUTION: RF
SPECIAL HANDLING: None
NOTES:
DATE DUE:
SIGNATURE: .
AFFILIATION: DATE SIGNED:

Rec'd Off. EDO
Date 10-20-89
Time 1:30 P

EDO---004839



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE
WASHINGTON, D.C. 20555

October 18, 1989

The Honorable Kenneth M. Carr
Chairman
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: DRAFT STAFF TECHNICAL POSITION ON THE DESIGN OF EROSION PROTECTION
COVERS FOR STABILIZATION OF URANIUM MILL TAILINGS SITES

During its 14th meeting, October 11-13, 1989, the Advisory Committee on Nuclear Waste met with representatives of the NRC staff to discuss the subject Draft Technical Position (referenced). On the basis of these discussions, we offer the following comments:

1. The Draft Technical Position being proposed by the NRC staff acknowledges that the procedures for prevention of erosion (described in the position) may increase the probability for increased infiltration of water which, in turn, could lead to groundwater contamination. While the NRC staff cautions that "The decision to use a particular reclamation strategy should consider all the possible failure modes with respect to all applicable EPA and NRC standards," they also state that "The 'systematic' process to address certain design aspects, other than the surface water erosion considerations for cover designs, is beyond the scope of this Staff Technical Position and is, therefore, not addressed." In addition, they state that "addressing only the concerns and criteria detailed in this position may not be sufficient to address the other features necessary to comply with other applicable regulations and standards."

We find this limited approach disturbing and unsatisfactory. We believe it would be better to employ a systems approach to the problem of stabilizing uranium mill tailings, wherein all related aspects of regulatory concerns would be taken into consideration. Alternatively, the Technical Position should identify and limit those activities pertinent to stabilization that could result in violations of other regulations. We believe the Technical Position should be rewritten to reflect these comments.

2. There is inadequate justification for the exemptions that the NRC staff is willing to grant for difficulties in meeting the standards for the control of uranium mill tailings. For example, where designing for the Probable Maximum Flood or Probable Maximum Precipitation is "impracticable," the staff will accept the Standard Project Flood. Where the provision of combined stable soil top slopes and/or rock-protected side slopes is "excessively costly," other approaches may be acceptable. We believe that additional discussion of and justification for these positions needs to be provided.

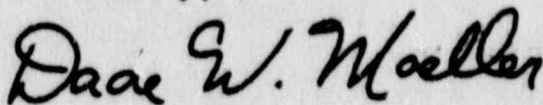
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October 18, 1989

3. Lastly is the matter of performance assessment and/or the determination of compliance with the NRC regulations. For example, the Technical Position states that the limit of 20 picocuries per square meter per second for radon-222 releases is for a value "averaged over the entire surface of the disposal site and over at least a one-year period, for the control period of 200 to 1000 years." The criteria for determining the numbers and frequency of the required measurements should be specified. Additional discussion and clarification of this and other aspects of the Technical Position to ensure compliance with NRC regulations are needed.

In summary, while the Draft Technical Position provides a considerable amount of explanation with respect to details of the various alternatives for the designs of covers for the control of uranium mill tailings, certain fundamental aspects of the philosophy and justification for the approaches being taken are lacking. We believe that additional discussion of these broader aspects is necessary and justified.

Sincerely,



Dade W. Moeller
Chairman

Reference:

U.S. Nuclear Regulatory Commission, "Draft Staff Technical Position, Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites," dated August, 1988 (Predecisional)