

May 7, 2003

COMMISSION VOTING RECORD

DECISION ITEM: SECY-02-0204

TITLE: UPDATE OF URANIUM RECOVERY GUIDANCE
DOCUMENTS

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of May 7, 2003.

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

Annette L. Vietti-Cook
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Diaz
 Commissioner Dicus
 Commissioner McGaffigan
 Commissioner Merrifield
 OGC
 EDO
 PDR

VOTING SUMMARY - SECY-02-0204

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. DIAZ	X					4/22/03
COMR. DICUS	X					4/25/03
COMR. McGAFFIGAN	X					4/23/03
COMR. MERRIFIELD	X					2/11/03

COMMENT RESOLUTION

In their vote sheets, all Commissioners approved the staff's recommendation and provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on May 7, 2003.

Commissioner Comments on SECY-02-0204

Chairman Diaz

I approve publication of NUREG-1569 and NUREG-1620, Revision 1, subject to the following comments:

Federal Register Notice (FRN) Announcing Availability of NUREG-1569 (Attachment 1)

- The second paragraph on page 2 should include a very brief description of the uranium recovery issues addressed in Regulatory Issue Summary 2000-23 so the reader is aware of the major policy decisions that have required changes in the earlier (1997) draft Standard Review Plan.
- Staff should clarify the response to the health physics issue on page 17. The response states that staff agrees that certain information on radiation safety programs at *in situ* leach uranium extraction facilities is not necessary to fulfill the agency mission of protecting the public health and safety and the environment from the effects of radiation. This response requires a more thorough explanation of why staff agrees with the commenters on this issue.

Federal Register Notice (FRN) Announcing Availability of NUREG-1620 (Attachment 2)

- The FRN needs to be revised to make it clearer that this document is actually Revision 1 to a NUREG that was finalized in June 2000. For example, the Summary begins by stating that NRC “has developed a Standard Review Plan (NUREG-1620,” when actually NRC has revised a previous SRP. I have noted several places where “Revision 1” should be added to clarify that this is an update of an earlier NUREG. This is another example where we need to ensure that our communications with our stakeholders and the public are clear and accurate.
- The Summary should briefly state why the NUREG was revised.

Additional edits for both documents are provided in the attached pages.

Commissioner Dicus

I complement staff on completing the long process of updating and finalizing these Standard Review Plans for the uranium recovery program. These documents incorporate the elements of the Commission's policy decisions put forward in SRMs to SECY-99-012, SECY-99-013, SECY-99-277, and SECY-02-026. The publication and utilization of these documents are an acceptable means of implementing the Commission's policy decisions for uranium recovery facilities, *in lieu* of rulemaking. I approve the publication of the Federal Register Notices and the updated uranium recovery guidance documents, as presented in SECY-02-0204, with the following edits, clarifications, and revisions:

- 1) Attachment 1 and Attachment 2, Federal Register Notices (FRNs). The "ADDRESSES"

section of each FRN should be revised to discuss the appropriate single NUREG for each FRN, not "NUREGs 1569 and 1620" as is now described.

- 2) Attachment 3, NUREG-1569, page 5-1, section 5.1.1, eighth line. Reference to the regulations should read, " 10 CFR Part 20, Subpart M and 10 CFR 40.60," not 10 CFR 60.40.
- 3) Attachment 3, NUREG-1569, page 6-4 section 6.1.2, and page 6-11 section 6.1.3. Revise these sections of the SRP to include direction to staff on acceptable methods for reviewing effluent disposal applications, as recommended in staff's responses to our 2/26/03 questions:

"(10) ONSITE EVAPORATION

"Liquid waste and solid wastes (sludge) from surface impoundments resulting from *in situ* leach operations is 11 e.(2) byproduct material. Licensees must demonstrate that surface impoundments are designed, operated, and decommissioned in a manner that prevents migration of waste from the surface impoundment to subsurface soil, ground water, or surface water in accordance with 10 CFR Part 40, Appendix A. Applicants must also demonstrate that monitoring requirements are adequately established to detect any migration of contaminants to the ground water. Solid waste material must be disposed of in an existing tailings impoundment or 11e.(2) disposal cell in accordance with 10 CFR Part 40, Appendix A, Criterion 2.

"Surface impoundments will be found acceptable if they comply with the design provisions for surface impoundments [Criteria 5A(1) through 5A(5)]; installation of liners and leak detection (Criterion 5E); seepage control (Criterion 5F); and radium cleanup standards [Criterion 6(6)] of 10 CFR Part 40, Appendix A.

"(11) RELEASE IN SURFACE WATERS

"Process waste water resulting from *in situ* leach operations is 11e.(2) byproduct material. The U.S. Environmental Protection Agency (EPA), in accordance with 40 CFR 440.34, does not allow new ISL facilities to discharge process waste water to navigable waters. For release of this waste to surface waters, existing licensees must meet the requirements of 10 CFR 20.1302(b)(2), and should demonstrate that doses are maintained as low as reasonably achievable (ALARA). NRC has no specific requirements for non-radiological constituents, and may adopt the appropriate State limits. Anticipated discharge must be described in enough detail to evaluate environmental impacts. Appropriate State and Federal agency permits should be obtained in accordance with 10 CFR 20.2007.

"(12) LAND APPLICATIONS

"For the land application of process waste water, the applicant must meet the regulatory provisions in 10 CFR 20.2002 and demonstrate that doses are maintained as low as reasonably achievable (ALARA) within the dose limits in 10 CFR 20.1301. Proposed land application activities should be described in sufficient detail to satisfy the NRC need to assess environmental impacts. This may require analysis to assess the chemical toxicity of radioactive and non-radioactive constituents. Specifically, licensees must provide: (i) a

description of the waste, including its physical and chemical properties that are important to risk evaluation; (ii) the proposed manner and conditions of waste disposal; (iii) projected concentrations of radioactive contaminants in the soil; and (iv) projected impacts on ground-water and surface-water quality and on land uses, especially crops and vegetation. In addition, projected exposures and health risks that may be associated with radioactive constituents reaching the food chain must be analyzed to ensure that doses are ALARA. Proposals should include provisions for periodic soil surveys to verify that contaminant levels in the soil do not exceed those projected, and should also include a remediation plan that can be implemented if projected levels are exceeded. Appropriate State and Federal agency permits must be obtained in accordance with 10 CFR 20.2007. The applicant must also comply with NRC regulatory provisions for decommissioning. The applicant should also address whether the proposed land applications methodologies will comply with 10 CFR Part 40, Appendix A, Criterion 6(6), at the time of decommissioning.

“(13) DEEP-WELL INJECTION

“Proposals for disposal of liquid waste from process water by injection in deep wells must meet the regulatory provisions in 10 CFR 20.2002 and demonstrate that doses are ALARA and within the dose limits in 10 CFR 20.1301. The injection facility should be described in sufficient detail to satisfy the NRC need to assess environmental impacts. Specifically, proposals must include: (i) a description of the waste, including its physical and chemical properties important to risk evaluation; (ii) the proposed manner and conditions of waste disposal; (iii) an analysis and evaluation of pertinent information on the nature of the environment; (iv) information on the nature and location of other potentially affected facilities; and (v) analyses and procedures to ensure that doses are ALARA, and within the dose limits in 10 CFR 20.1301.

“In addition, pursuant to the provisions of 10 CFR 20.2007, proposals for disposal by injection in deep wells should also meet any other applicable Federal, State, and local government regulations pertaining to deep well injection. Applicants must obtain any necessary permits for this purpose. In particular, proposals must satisfy the EPA regulatory provisions in 40 CFR Part 146: Underground Injection Control (UIC) Program: Criteria and Standards, and applicants must obtain necessary permits from EPA and/or States authorized by EPA to enforce these provisions. In general, applications that satisfy EPA regulations under the UIC Program, which are approved by the EPA or an EPA-authorized State issuing the UIC permit and the applicable provisions of 10 CFR Part 20, will also be approved by the staff. Licensees and applicants disposing of liquid waste from process water by injection in deep wells are further required to comply with NRC regulatory provisions for decommissioning.”

- 4) Attachment 3, NUREG-1569, page 6-8, section 6.1.3 (4)(a), fifth line should read, “. . . restoration activities are **not** likely to return ground-water quality to the exact water . . .”
- 5) Attachment 4, NUREG-1620, Remove the words, “FINAL REPORT,” from the title pages.
- 6) Attachment 4, NUREG-1620, page 4-2, section 4.1.1 (1). Remove the “>” from the end of the sentences.
- 7) Attachment 4, NUREG-1620, page 4-25, fix the pagination at the bottom of the page.

- 8) Attachment 4, NUREG-1620, page 4-31, section 4.3.3.2. Add the following paragraph describing the acceptable lifetime risk for an alternate concentration limit review, as recommended in staff's responses to our 2/26/03 questions:

"Proposed human exposure levels should be reasonably conservative, defensible, and sufficiently protective to avoid a substantial present or potential hazard to people for the forecasted duration of the contamination. A proposed alternate concentration limit that does not exceed an excess lifetime risk of fatal cancer on the order of 10^{-4} is acceptable for an average exposed individual at the point of exposure, when considering the potential for the health risks from human exposure to known or suspected carcinogens contained in untreated ground-water used for drinking water."
- 9) Attachment 4, NUREG-1620, page 4-50, section 4.4.3(6). Remove the discussion of the need for a licensee to obtain an EPA NPDES permit for surface water discharge. This contradicts the Commission's direction in SECY-99-277, in which the Commission determined that the NRC has exclusive jurisdiction over 11 e.(2) byproduct material.
- 10) Attachment 4, NUREG-1620, page E-14, the reference to the SA-900 Procedure should be updated to reflect the final document recently issued by the Office of State and Tribal Programs.
- 11) Attachment 4, NUREG-1620, page F-1 and F-2, Revise the discussion of effluent releases in sections F1.3, F1.4 and F1.5 to be consistent with the corresponding revisions described in item 3 above.

Commissioner McGaffigan

I approve the staff's recommendation to publish both NUREG-1569 and NUREG-1620 subject to the edits discussed below. I also approve the publication of the Notice of Availability for both NUREGs.

In general, I agree with Commissioner Merrifield that the SRP is well written, readable and clear. However, after reviewing the specific comments from the National Mining Association (NMA), there are a few concerns that I believe need to be discussed.

In a recent letter to the Commission, NMA states that "...the NRC staff does not understand or is unwilling to accept the fact that restoration of groundwater in the mining zone must be addressed with extreme flexibility." The NMA also states that "...the mining zone is exempted by EPA under its underground injection control (UIC) regulatory program because the water is not now and cannot be a future source of drinking water due to the mineralization involved," and that based on the above reasons "... attempting to tie licensees to prescriptive restoration requirements is unrealistic, unnecessary, and an expensive approach to final closure of ISL mines." I read NMA's argument to be that since EPA exempts the groundwater in the mining zone coupled with the fact that this water is not considered drinking water, the NRC should not require licensees to restore this exempt mining zone.

I understand NMA's concerns and agree that the SRP should allow flexibility in all areas,

especially in the area of groundwater restoration. The SRP should clearly indicate the staff should consider all methods proposed by the licensees for meeting the regulatory requirements. The staff should use the SRP only as a guideline which describes one method for meeting the regulatory requirements which is acceptable to the staff. The staff should not reject a proposal by the licensee simply because it is not the method outlined in the SRP. I believe the SRP allows for this flexibility. Page xx of the Introduction to the SRP states that "Review plans are not substitutes for the Commission's regulations, and compliance with a particular standard review plan is not required. This standard review plan provides descriptions of methodologies that have been found acceptable for demonstrating regulatory compliance. Methods and solutions different from those set out in the standard review plan will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a license by NRC." Page xxvi states "Flexibility is provided to enable licensee to achieve the type of operation desired at their facilities. Applicants may take approaches to demonstrating compliance that are different from the acceptance criteria in this standard review plan as long as staff can make the requisite decisions concerning environmental acceptability and compliance with applicable regulations." However, to make it extremely clear in the SRP that the staff should consider alternative proposals submitted by the licensees, the staff should revise the SRP to include a similar statement of flexibility at the beginning of Section 6.1 which contains the guidance for reviewing groundwater restoration plans.

I also understand NMA's concern with restoration of the exempted mining zone. NMA argues that since this groundwater zone has been exempted by EPA, NRC should also exempt it and not require restoration in that area. However, the issue is not this simple because the groundwater in the exempt mining zone may migrate to other areas or to other aquifers. NRC's mission is to regulate licensee operations to protect the public health and safety. In the case of in situ uranium mining, the staff's concern is not with the exempted mining zone, but with the groundwater outside of the exempted zone. The staff must have reasonable assurance that licensee's actions do not have an unacceptable public health impact, now or in the future, on groundwater outside the exempt mining zone. The SRP specifically outlines three ways the licensee can demonstrate that it is not adversely impacting the groundwater outside the exempted zone. One option is for the licensee to remediate the exempted mining zone to some predetermined level (not necessarily baseline levels). A second option is that the licensee can provide a demonstration that the groundwater from the exempted zone will not flow into other non-exempted groundwater and contaminate those waters to unacceptable levels. A third option is for the licensee to propose institutional controls to prevent possible public health and safety impacts as a result of contaminants flowing from the exempted zone into a non-exempted zone. Section 6.1 of the SRP clearly allows a licensee to use any of these options and the staff will consider other options proposed by the licensee.

NMA has also argued that the aquifers containing the mining zone are often not considered drinking water sources. I agree that this is true in the EPA exempted portion of the aquifer, which is designated for ISL operation. However, the portion of the aquifer outside of the mining area maybe of sufficient quality to meet the EPA's primary drinking water standards or it may just barely exceed those criteria. An aquifer that barely exceeds the EPA drinking water criteria may not preclude it from being used as a domestic water source, particularly in western states where water resources are scarcer. Although the staff must exercise flexibility when reviewing groundwater restorations, the staff must also assure that public health and safety is protected.

Therefore, I do not agree with NMA that the NRC should not consider the restoration of the exempt mining zone. The NRC staff must consider possible impacts on public health and safety

outside of the exempt mining zone and restoration of the mining zone is one way to demonstrate this. Further, the SRP provides the necessary flexibility to the licensee to propose alternative methods for demonstrating that it is not adversely impacting non-exempt groundwater.

I do agree with three of NMA's concerns regarding testing of Ra-228, well integrity tests and dual regulation of groundwater. Regarding the inclusion of Ra-228 as a constituent for sampling in Table 2.7.3-1, NMA states that Ra-228 should be excluded from this list for the same reasons NRC cites for excluding Th-230 from the list, namely that studies have shown that Ra-228 is found at very low levels at ISL facilities, that these levels are not increased or mobilized by mining activities, and that testing for Ra-228 is expensive. I agree and believe the staff should remove Ra-228 from automatic sampling in Table 2.7.3-1. If the sampling of Ra-228 could be important under certain circumstances, the staff should revise this section of the SRP to include a more detailed discussion of Ra-228 and the procedures for the staff to review the need for Ra-228 values on a case-by-case basis.

The NMA is also concerned with the length of time specified in the SRP for testing well integrity. The SRP specifies a testing period of 30 minutes to 1 hour. NMA notes that no licensees currently perform testing for that period of time. Tests currently approved in several ISL licenses are typically performed from 10 to 30 minutes. These time periods are set on a site specific basis with agreement from the States. The staff has not provided any justification for the dramatic increase in measurement time. I agree with NMA and the staff should revise this section of the SRP to reduce the testing interval to be consistent with current testing intervals, and to include a more detailed discussion of these tests and the factors that the staff should consider when reviewing the time interval.

And finally, an underlying factor in many of NMA's concerns, including the restoration of the exempt mining zone, is the issue of dual regulation of groundwater between the NRC and the States. NMA has stated that the States are fully capable of regulating the groundwater in their respective jurisdictions and that additional regulation by NRC, which can sometimes conflict with the State regulations, is costly, time consuming and does not increase the protection of the public. I agree.

In my vote on SECY-01-0026, I encouraged staff to "... work closely with the industry, States, Environmental Protection Agency and the Department of Energy to find efficient and effective means to reduce any unnecessary regulatory burden to licensees." It is my understanding that the staff is completing a Commission Paper in response to the SRM for SECY-01-0026 to address dual regulation of groundwater protection at ISL facilities. This paper will contain options for the Commission to consider which could reduce or eliminate this dual regulation. If the State regulations are fully protective of public health and safety, I do not see any reason for NRC to add redundant requirements which increase regulatory costs with no additional health and safety benefit.

I also have the following specific edits:

NUREG-1569

Page 6-2 Under the heading "Areas of Review" Section 6.1.1(8) lists the methods of effluent disposal as an area for review. However Section 6.1.2 "Review Procedures" does not include any procedures or information concerning this type of review.

Page 6-8 Section 4(a) 5th line should be revised to read "...restoration activities are **not** likely to return ground-water quality..."

Commissioner Merrifield

I approve the publication of the updated uranium recovery guidance documents as presented in SECY-02-0204 with several editorial comments as provided in the following paragraphs. But first I want to compliment the staff on the development of these guidance documents. Overall I found the documents well written, readable, and clear. In addition, they both implemented specific Commission guidance and provided needed clarification in other important areas as well.

My editorial comments are as follows:

Attachment 1, Notice of availability of NUREG-1569 for *in Situ Leach* Uranium Extraction

Page 7, Response (to first issue addressed under item 2 beginning on page 6), 3rd sentence. Modify the phrase "... and taking into account the economic status of the uranium extraction industry ..." to state "... and taking into account the economic status of the uranium extraction industry which would have to bear the cost of the rulemaking ...".

Page 19, Item 7 (Comments related to NEPA), Response, sentence 5. As currently written, this sentence implies that environmental justice is a separate review in addition to a review of socioeconomic effects. Environmental justice conclusions are a subset of the socioeconomic review, as is clearly indicated in 7.6.1.3 of the Standard Review Plan (NUREG-1569). This sentence should be modified to delete the specific reference to environmental justice and should read "Areas of potential environmental impact that are investigated include water availability and quality, air quality, historical and cultural resources, ecology, aesthetic resources, and socioeconomic effects."

Attachment 4, NUREG-1620 Standard Review Plan for Reclamation Plan for Mill Tailings Sites

Page 4-53, Chapter 4, item 4.4.3 (Acceptance Criteria) item (10) (Financial Surety is Provided), last sentence. As written, the last sentence of this item is confusing and needs to be clarified. It currently reads "Any staff assessment of surety amounts is reasonably consistent with the applicant's." It is written as a fact and not an acceptance criteria. Alternative wording for the sentence could be "The financial surety review is acceptable if the applicant's assessment and any staff assessment of the surety amounts are reasonably consistent."