

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



May 7, 2003

SECRETARY

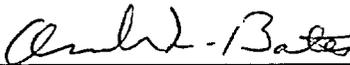
COMMISSION VOTING RECORD

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.

  
\_\_\_\_\_  
for 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				X	4/22/03
COMR. DICUS	X				X	4/25/03
COMR. McGAFFIGAN	X				X	4/23/03
COMR. MERRIFIELD	X				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.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: CHAIRMAN DIAZ  
SUBJECT: **SECY-02-0204 - UPDATE OF URANIUM RECOVERY  
GUIDANCE DOCUMENTS**

Approved xx <sup>w/comments and edits</sup> *lvj* Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_  
Not Participating \_\_\_\_\_

COMMENTS:

See attached comments and edits.

*Annette Vietti-Cook*  
\_\_\_\_\_  
SIGNATURE

*April 22, 2003*  
\_\_\_\_\_  
DATE

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

## COMMENTS OF CHAIRMAN DIAZ ON SECY-02-0204

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

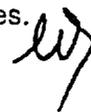
### Federal Register Notice (FRN) Announcing Availability of NUREG-1569 (Attachment 1)

- 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.



**ATTACHMENT 1**

control limit by 20 percent, where previous guidance considered an excursion to have occurred only when two or more excursion indicators exceed their upper control limits by any amount.

Response: Acceptance criterion (5) in Section 5.7.8.3 <sup>is the draft</sup> of NUREG-1569 was revised by deleting the statement regarding a single excursion indicator exceeding its upper control limit by 20 percent for determination of when an excursion has occurred. However, the same acceptance criterion retains the requirement that corrective action for an excursion is deemed complete when all excursion indicators are below their respective upper control limits, or when no single indicator exceeds its control limit by more than 20 percent. Ideally, corrective action for an excursion would be to restore all indicators to below their upper control limits. However, in the past, corrective action has been considered acceptable when a monitor well no longer meets the criteria for being on excursion status. Excursion status criteria allow one indicator to be above the respective upper control limit. However, once an excursion has occurred, the reduction in concentrations of indicator constituents by corrective action may not occur at the same rate. Therefore, corrective action may be terminated prematurely if one of two indicators are brought below upper control limits while another remains substantially above its control limit. X

Issue: The NRC is unduly concerned with protection of ground water in aquifers where exemptions have been obtained from the requirements of the Safe Drinking Water Act.

Comment: Several commenters took exception to Acceptance Criterion (4) in Section 6.1.3 of the draft standard review plan, which states that the primary goal for restoration of well fields, following uranium extraction, is to return each well field to its pre-operational baseline water quality conditions. The commenters correctly pointed out that EPA requirements for the

Underground Injection Control program result in the uranium production zones being classified as "Exempted Aquifers." This means they are not considered a potential source of drinking water and, therefore, are not subject to requirements of the Safe Drinking Water Act.

X Response: Acceptance Criterion (4) of Section 6.1.3 in the <sup>draft</sup> standard review plan was revised to clarify that the goal of ground-water restoration at *in situ* leach uranium extraction facilities is to protect present or potential future sources of drinking water outside of the exempted production zone. Generally, if water quality within the production zone is restored to the pre-operational baseline water quality, then protection of water resources outside the exempted zone is assured. Hence, restoration <sup>(of water quality within the production zone)</sup> to pre-operational conditions is considered a primary goal whenever degradation of water outside of the exempted zone is a possibility. It is recognized, however, that restoration to pre-operational baseline conditions may not be practicable or feasible, owing to geochemical changes in the production zone during operations. Hence, applicants may propose secondary standards for monitored constituents that are protective of water resources outside of the exempted zone. This has also been clarified in the final standard review plan.

#### 4. Operations

Issue: It is unclear which hazardous chemicals have the potential to impact safety at *in situ* leach uranium extraction facilities.

Resolution: The staff agrees that clarification of Safety and Environmental Review Panel responsibilities and authorities would facilitate use of the standard review plan. These portions of the <sup>draft</sup> plan were rewritten for clarity. However, consistent with a risk-informed, performance-based licensing approach, use of Safety and Environmental Review Panels has been accepted by NRC staff, and an evaluation of their use was left in NUREG-1569.

Issue: NRC is placing inappropriate restrictions on use of potentially hazardous process chemicals at *in situ* leach uranium extraction facilities.

Comment: The commenter refers to NUREG/CR-6733 (A Baseline Risk-Informed, Performance-Based Approach for *In Situ* Leach Uranium Extraction Licensees) and states that the analyses in this document were conservative. The commenter concludes that chemical safety must be based on a realistic analysis of the hazards.

Resolution: The NRC staff interpreted the conclusions from the analyses presented in NUREG/CR-6733 differently from the commenter. NUREG/<sup>CR</sup>6733 conducted deliberately conservative analyses for the purpose of evaluating whether risks at *in situ* leach uranium extraction facilities were significant. The conclusion presented in NUREG/CR-6733 for chemical hazards was that licensees should follow design and operating practices published in accepted codes and standards that govern hazardous chemical systems. This recommendation leaves licensees flexibility to establish chemical safety measures appropriate for a specific facility and consistent with good engineering and safety practice. NUREG-1569 places no specific strictures on chemical safety practices at *in situ* leach uranium extraction facilities.

## 5. Health Physics

Issue: NRC is requesting information on radiation safety programs that is unnecessary, based on the operational record at *in situ* leach uranium extraction facilities, or is outside NRC licensing authority.

Comment: Some commenters expressed a concern that the NRC was requesting information that is not necessary to fulfill the agency mission of protecting the public health and safety and the environment from the effects of radiation. An example cited was information on radiation safety programs, such as the qualifications of those people proposed for the health physics staff.

Response: The NRC agreed with many of these commenters and revised Chapter 5 of NUREG-1569 to ensure that it is consistent with NRC regulations and regulatory guidance applicable to *in situ* leach uranium extraction facilities.

} Response  
needs to  
be  
revised.

Issue: NUREG-1569 references regulatory guides that are outdated.

Comment: A number of commenters noted that the standard review plan referenced regulatory guides that have been revised or that are in the process of revision.

Response: The commenters correctly noted that some of the references in the draft standard review plan had been superseded or were in the process of revision. The standard review plan has been edited to reference current guidance. However, NRC has a number of regulatory

**7. Comments related to NRC Responsibilities under the National Environmental Policy Act**

Issue: NRC is requesting non-radiological information that is outside its area of regulatory authority.

Comment: Many ~~of~~ commenters expressed concern that the NRC was requesting information that is not necessary to fulfill the agency mission of protecting the public health and safety and the environment from the effects of radiation. The areas of concern included information on water quality, air quality, and historical and cultural information. X

Response: As a federal agency, the NRC is subject to the NEPA. NEPA requires the NRC to consider impacts to the human environment as a part of its decision making process for licensing actions. The regulations governing NRC implementation of NEPA requirements are in 10 CFR Part 51, Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions. Guidance to the NRC staff on conducting environmental reviews is also provided in NUREG-1748 "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs." In fulfilling its requirements under NEPA, the NRC routinely prepares an environmental impact assessment when evaluating applications for new materials licenses or amendments to such licenses. Areas of potential environmental impact that are investigated include water availability and quality, air quality, historical and cultural resources, ecology, aesthetic resources, socioeconomic effects, and environmental justice. In preparing its environmental impact assessment under NEPA, it is necessary for NRC to establish background conditions for the affected area. This may require collection of data over a larger

geographic area than the licensed area, as well as collection of data in technical and sociological areas that are beyond the traditional scope of radiation safety assessments. The commenters noted that detailed environmental impact assessments may not be necessary for all licensing actions, such as license amendment requests that may be minor in scope or short in duration. The text of the review plan has been modified to clarify those situations where NRC has traditionally performed a detailed environmental impact assessment, but the NRC necessarily reserves the right to determine the nature of the assessment on a site-specific basis in accordance with the requirements of 10 CFR Part 51.

Issue: The standard review plan inappropriately examines corporate financial information in evaluating the socioeconomic effects in cost-benefit analyses.

X Comment: A number of commenters noted that the standard review plan examines detailed internal corporate financial data as part <sup>of</sup> the review of cost-benefit analyses for a licensing action. The commenters expressed concern that this information was proprietary and beyond the scope of information necessary for an evaluation of the socioeconomic impact of a facility.

Response: The commenters correctly noted that some of the information identified in the draft standard review plan was beyond the scope of information typically required for cost-benefit analyses. The text of the standard review plan has been revised to eliminate requests for proprietary corporate financial information and to clarify the purpose and use of the financial information that is addressed in the standard review plan.

Comment: Several commenters expressed concern that the standard review plan requires a licensee or applicant to select the alternative that has the least impact on the environment, or requires that NRC use license conditions to mitigate adverse environmental impacts that are deemed outside the scope of NRC responsibilities.

Response: The NRC agrees that while NEPA requires the agency to identify a preferred alternative, it does not require that the alternative with the least impact on the environment be selected. However, if an environmental impact statement (EIS) is necessary for a proposed action, NEPA requires that all reasonable alternatives be evaluated and that the environmentally preferable alternative be identified in the final EIS. NUREG-1569 does not require the applicant or licensee to select the most environmentally benign alternative. As guidance to the NRC staff, the standard review plan asks the reviewers to determine whether the choice of a particular uranium recovery method has been adequately justified and whether different techniques and processes were evaluated as part of this justification. The standard review plan also directs the staff ~~is~~ to evaluate the bases and rationales used by an applicant in evaluating and ranking alternatives.

As stated in Council on Environmental Quality regulations (40 CFR 1502.16), in preparing an EIS, federal agencies are to identify all reasonable mitigation measures that can offset the environmental impacts of a proposed action, even if they are outside the jurisdiction of the lead agency. These mitigation measures are intended to avoid, minimize, rectify, reduce, or compensate for significant impacts of a proposed action. If an environmental assessment identifies potentially significant impacts that can be reduced to less-than-significant levels by mitigation, an agency may issue a mitigated finding of no significant impact (FONSI). In the

**ATTACHMENT 2**

## NUCLEAR REGULATORY COMMISSION

Notice of Availability of a Standard Review Plan (Nureg-1620)  
for Staff Reviews of Reclamation Plans for Mill Tailings Sites  
under Title II of the Uranium Mill Tailings Radiation Control Act

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Notice of availability.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has <sup>revised the</sup> ~~developed a~~ Standard Review Plan (NUREG-1620) <sup>that was developed</sup> to provide guidance for staff reviews of reclamation plans for uranium mill tailings sites covered by Title II of the Uranium Mill Tailings Radiation Control Act. Under the provisions of Title 10 of the Code of Federal Regulations, Part 40 (10 CFR Part 40), Domestic Licensing of Source Material, an NRC Materials License is required in conjunction with uranium or thorium milling, or with byproduct material at sites formerly associated with such milling. The licensee's site Reclamation Plan documents how the proposed activities demonstrate compliance with the criteria in Appendix A of 10 CFR Part 40. This information, combined with the licensee's Environmental Report, is used by the NRC staff to determine whether the proposed activities will be protective of public health and safety and the environment. The purpose of the Standard Review Plan (NUREG-1620) is to provide the NRC staff with guidance on performing reviews of information provided by licensees. The use of the Standard Review Plan is also intended to ensure a consistent quality and uniformity of staff reviews. Each section in the review plan provides guidance on what is to be reviewed, the basis for the review, how the staff review is to be accomplished, what the staff will find acceptable in a demonstration of compliance with the regulations, and the conclusions that are sought regarding the applicable sections in 10 CFR Part 40, Appendix A. NUREG-1620 will

also assist in improving the understanding of the staff review process by interested members of the public and the uranium recovery industry. The review plan provides general guidance on acceptable methods for compliance with the existing regulatory framework. As described in an NRC white paper on risk-informed, performance-based regulation (SECY-98-144), however, the licensee has the flexibility to propose other methods as long as it demonstrates how it will meet regulatory requirements.

A draft of NUREG-1620 was issued in January 1999 for public comment. A final NUREG-1620, which incorporated NRC staff responses to the comments received on the draft, was issued in June 2000. <sup>A</sup> On February 5, 2002 (FR5348), the NRC made the ~~revised second~~ draft of NUREG-1620, <sup>Revision 1</sup> available for a 75-day public comment.

In preparing the final version of NUREG-1620, <sup>Revision 1</sup> the NRC staff carefully reviewed and considered about 120 written comments received by the close of the public comment period on April 22, 2002. To simplify the analysis, the NRC staff grouped all comments into the following major topic areas:

- (1) Editorial and Organizational Comments (31 comments);
- (2) Policy Issues (including administrative, quality assurance, and surety/financial issues) (51 comments);
- (3) Geotechnical Stability (17 comments);

## 1. Editorial and Organizational Comments

x Issue: The <sup>draft</sup> standard review plan has a number of redundancies and editorial errors.

x Comment: Several commenters identified editorial concerns, text omissions, or areas where the organization of the <sup>draft</sup> standard review plan could be improved. Most of the organizational comments addressed perceived redundancies in the standard review plan or opportunities to streamline the style. Most editorial comments addressed inconsistent terminology, identified typographical and grammatical mistakes, or questioned the accuracy of reference documents.

x Response: NUREG-1620 <sup>Revisions 1,</sup> is structured consistent with NRC practice for standard review plan style and format. While the style and format may be considered complex or redundant by some commenters, no substantive changes have been made. This will preserve consistency with other NRC standard review plans. The commenters have provided numerous suggestions for improving the readability and clarity of the review plan. Most editorial comments that addressed inconsistent terminology, typographical and grammatical mistakes, or the accuracy of reference documents were accepted and incorporated in preparing the final standard review plan. The individual editorial comments are not addressed in this comment summary document.

## 2. Policy Issues (Including Administrative, Quality Assurance, and Surety/Financial Issues)

Issue: NRC is inappropriately examining economic assessments that are the prerogative of the applicant.

Comment: The draft standard review plan asked the reviewer to examine the economic benefits when slopes steeper than <sup>(5 horizontal : 1 vertical)</sup> 5h:1v are proposed by an applicant. The NRC staff should be concerned only with whether the slope design will be stable enough to protect the tailings. x

Resolution: The NRC agrees with the commenter. The final standard review plan has been edited to remove consideration of economic factors in slope design.

Issue: Guidance provided on alternate feed materials and non-11e.(2) byproduct material is not informative.

Comment: Commenters stated that information presented in Appendix I [Guidance on Disposal of Alternate Feed Materials and Non-11e.(2) Byproduct Materials in Uranium Mill Tailings Impoundments] of the draft standard review plan was not useful. The commenter suggested that additional guidance was not needed and recommended that the appendix be deleted from the review plan.

Resolution: The NRC staff agrees with the commenters to some extent. Appendix I did not contain sufficient information to assist the reviewers in examining requests for disposal of these materials in mill tailings impoundments. However, recent guidance from the Commission on these subjects is relevant to such reviews. Accordingly, Regulatory Issue Summary 2000-23, which presents Commission guidance on these matters has been included in the appendix to facilitate staff reviews.

Issue: NUREG-1620 should present guidance on examining multi-site problems.

the licensee and the long-term custodian may not have a mutual understanding on the extent of land transfer, and the text <sup>on this issue</sup> has been clarified to avoid any potential misunderstanding. X

Issue: NUREG-1620 guidance on consideration of reasonably attainable corrective actions and economic constraints is unclear.

Comment: One commenter was concerned that standard review plan guidance to not eliminate potential corrective actions because of economic constraints is inconsistent with guidance to assess three reasonably attainable, practicable corrective actions. The commenter notes that in some cases there may not be three reasonably attainable, practicable corrective actions to assess.

Resolution: While the NRC understands the commenter's concern, the language in the standard review plan on this matter is appropriate to the intent of the guidance and needs no further detail. The guidance to evaluate three reasonably attainable, practicable corrective actions is not a regulatory requirement. The NRC expects that an applicant will present corrective action alternatives that are reasonable and practicable for a specific site and a specific set of circumstances.

Issue: Guidance that equipment owned by the licensee not be considered in reducing surety cost evaluations is inappropriate.

Comment: One commenter expressed concern that in estimating costs to complete reclamation by a third-party independent contractor, direction that the equipment owned by the

### 3. Geotechnical Stability

Issue: NUREG-1620 requires additional flexibility in criteria for selection of rock erosion protection materials.

Comment: One commenter suggested that criteria in the standard review plan should provide more flexibility in selecting a less durable rock for erosion protection when obtaining more durable rock is not practical.

Response: Flexibility in selecting rock types for erosion protection is implicitly provided in several locations in NUREG-1620 (e.g., Section 3.5.3) as long as the applicant can demonstrate with reasonable assurance that the radon barrier will be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years. Clarifying text has been added to indicate explicitly that this option is available.

Issue: Terminology for erosion protection covers needs to be clarified.

Comment: One commenter requested clarification in use of the terms "unprotected soil cover" and "vegetative soil cover."

Response: The staff agrees with the commenter. Section 3.5 of the standard review plan has been retitled "Design of Erosion Protection," and the review guidance in that section has been clarified to avoid confusion in the use of terms.

X Response: The application of a probabilistic seismic hazard analysis in place of a deterministic approach is not intended to be an alternative requirement to, as defined in the question, but another way of satisfying the existing move toward risk-informed and performance-based regulations. In addition, other NRC regulations clearly recommend the use of a probabilistic approach as an acceptable way to account for uncertainties [e.g., 10 CFR 100.23(d)(1)].

Issue: The NRC has provided only general guidance to seismic hazard analysis, rather than guidance specific to certain geographic provinces.

Comment: One commenter noted that references cited in the standard review plan did not provide useful guidance with regard to site-specific seismicity issues, and suggested other references specific to Wyoming and the intermountain region of the western United States.

Response: The standard review plan is intended to provide general guidance to the NRC staff on reviewing license applications, license renewals, and amendment requests. The standard review plan does not preclude licensees from providing additional site-specific information as necessary in their license application or amendment requests, and identifying how this information supports a specific licensing action.

#### 4. Ground Water

Issue: NUREG-1620 should be consistent in use of terminology related to ground water.

Comment: The term "constituent of concern" seems to be used interchangeably with the term



**Comments and Edits of Commissioner Dicus**  
**Concerning SECY 02-0204**

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

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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

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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

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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

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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.

*g/ra*  
*4-25-07*

NOTATION VOTE

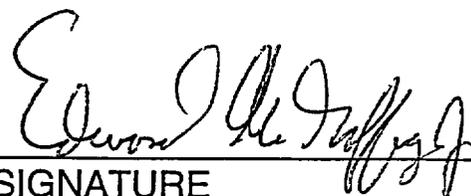
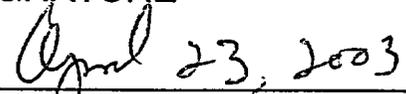
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MCGAFFIGAN  
SUBJECT: **SECY-02-0204 - UPDATE OF URANIUM RECOVERY  
GUIDANCE DOCUMENTS**

w/comments and edits.  
Approved  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_  
Not Participating \_\_\_\_\_

COMMENTS:

See attached comments and edits.

  
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DATE

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

### Commissioner McGaffigan's Comments on SECY-02-0204

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) 5<sup>th</sup> line should be revised to read "...restoration activities are ~~not~~ likely to return ground-water quality..."

A handwritten signature in black ink, appearing to be 'EWS', located at the bottom right of the page.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MERRIFIELD  
SUBJECT: **SECY-02-0204 - UPDATE OF URANIUM RECOVERY  
GUIDANCE DOCUMENTS**

Approved  Disapproved  Abstain

Not Participating

COMMENTS:

*See attached comments.*

  
\_\_\_\_\_  
SIGNATURE

*2/11/03*  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No

Comments from Commissioner Merrifield on SECY-02-0204:

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:

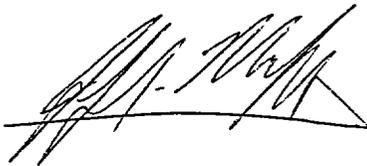
Attachment 1, Notice of availability of NUREG-1569 for *in Situ Leach* Uranium Extraction

Page 7, Response (to first issue addressed under item 2 beginning on page 6), 3<sup>rd</sup> 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."



2/11/03