

POLICY ISSUE NOTATION VOTE

November 15, 2002

SECY-02-0204

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: UPDATE OF URANIUM RECOVERY GUIDANCE DOCUMENTS

PURPOSE:

To transmit the NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications," and NUREG-1620, Revision 1, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act," for Commission approval.

BACKGROUND:

SECY-01-0026 "Alternatives for Rulemaking: Domestic Licensing of Uranium and Thorium Recovery Facilities," dated February 15, 2001, proposed three alternatives to address incorporating new Commission guidance on several policy issues and to update the regulatory framework for the uranium recovery licensing program. The Commission approved alternative 3, which was to discontinue the development of a new Part 41, devoted to the regulation of uranium and thorium recovery facilities and disposal of 11e.(2) byproduct material, and instead, update guidance documents. In discussions with Commissioners' Assistants, it was agreed that the staff's primary efforts would be to update two standard review plans (SRPs); the first for the reclamation of mill tailings sites, which had been finalized as NUREG-1620 in June 2000, and the second for *in situ* Leach Uranium Extraction facilities, which had been published as a draft (NUREG-1569) in October 1997.

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DISCUSSION:

The staff has incorporated into the guidance documents the information from SECY-99-0011, SECY-99-0012, SECY-99-0013, SECY-01-0026, SECY-99-277, NRC Regulatory Issue Summary 2000-23 dated November 30, 2000, and other studies such as “Surety Estimation Methodology for Groundwater Corrective Action at Title II Conventional Mills” dated August 2001; NUREG-6733, “A Baseline Risk-Informed Performance-Based Approach for *In Situ* Leach Uranium Extraction Licensees” dated September 2001; and “Risk Informing Uranium Recovery” dated December 2001. Additionally, Chapter 4 of NUREG-1620, was completely revised to reflect the Commission’s decision on exclusive jurisdiction of all radiological and non-radiological constituents from tailings impoundments.

The SRPs were issued for public comment in the Federal Register on February 5, 2002. The public comment period ended April 22, 2002. Comments were received from the following: State of New Mexico, Environmental Department State of Texas, Texas Department of Health, Nuclear Energy Institute (NEI), National Mining Association (NMA), Wyoming Mining Association, Kennecott Energy, and Rio Algom Mining LLC. A synopsis of the comments relating to each NUREG appears below. Detailed discussions of those comments appear in Attachments 1 (NUREG-1569) and 2 (NUREG-1620).

NUREG-1569 COMMENTS:

In preparing the final version of NUREG–1569, the NRC staff carefully reviewed and considered more than 750 written comments received by the close of the public comment period. To simplify the analysis, the NRC staff grouped all comments into the following major topic areas:

- (1) Editorial and Organizational (322 comments)
- (2) Policy Issues (including administrative, quality assurance, and surety/financial issues) (103 comments)
- (3) Ground water (123 comments)
- (4) Operational (47 comments)
- (5) Health Physics (78 comments)
- (6) Monitoring (55 comments)
- (7) Environmental aspects related to NRC responsibilities under the National Environmental Policy Act (NEPA)(40 comments)

NUREG-1620 COMMENTS:

In preparing the final version of NUREG–1620, the NRC staff carefully reviewed and considered about 120 written comments received by the close of the public comment period. To simplify the analysis, the NRC staff grouped all comments into the following major topic areas:

- (1) Editorial and Organizational (31 comments)
- (2) Policy Issues (including administrative, quality assurance, and surety/financial issues) (51 comments)

- (3) Geotechnical Stability (17 comments)
- (4) Ground water (15 comments)
- (5) Environmental aspects related to NRC responsibilities under NEPA (4 comments)

Related Action:

An additional parallel action is being conducted that may affect the content of NUREG-1569. As directed by the Commission in the SRM for SECY01-0026, the staff is conducting discussions with the Environmental Protection Agency (EPA) and affected states to determine the extent the NRC can rely on the EPA Underground Injection Control (UIC) program for groundwater protection issues at *In Situ* leach facilities. This will potentially eliminate NRC/State dual regulation of these aspects of In Situ leach facilities. Part of the discussions with EPA and the States includes appropriate methods to implement any agreements, including MOUs. Once agreement is reached with the EPA and the States, the staff will prepare a paper for Commission approval of this proposed policy change. If this action is approved, the appropriate sections of NUREG 1569 would be modified.

RECOMMENDATION

The staff recommends approval of the SRPs by the Commission for publication.

COORDINATION:

The Office of the General Counsel has no legal objection to the approval of the SRPs.

RESOURCES:

Minimal for publication of the SRPs.

/RA by William F. Kane Acting For/

William D. Travers
Executive Director
For Operations

Attachments:

1. Draft Notice of Availability of NUREG-1569
2. Draft Notice of Availability of NUREG-1620
3. NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extra License Applications"
4. NUREG-1620, Revision 1, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act"

- (3) Geotechnical Stability (17 comments)
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- Accession #: **ML012990062**

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NAME	JLusher*		GJanosko*		DGillen*		RPierson*		PLohaus	
DATE	9/19/02		9/23/02		10/11/02		10/16/02		per email	
OFC	OGC		CFO		D/NMSS		DEDMRS		EDO	
NAME	STreby		JFunches*		MVirgilio*		CJPaperiello		WDTravers WFKane for	
DATE	per email		11/12/02		10/16/02		11/15/02		11/15/02	

*see previous concurrence

ATTACHMENT 1

NUCLEAR REGULATORY COMMISSION

Notice of Availability of a Standard Review Plan (Nureg–1569) for Staff Reviews for
in Situ Leach Uranium Extraction License Applications

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Notice of availability

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has developed a Standard Review Plan (NUREG–1569) which provides guidance for staff reviews of applications to develop and operate uranium *in situ* leach facilities. 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 to conduct uranium recovery by *in situ* leach extraction techniques. Applicants for a new license and operators seeking an amendment or renewal of an existing license are required to provide detailed information on the facilities, equipment, and procedures used in the proposed activities. In addition, the applicant for a new license also provides an Environmental Report that discusses the effects of proposed operations on the health and safety of the public and assesses impacts to the environment. For amendment or renewal of an existing license, the original Environmental Report is supplemented, as necessary. This information is used by the NRC staff to determine whether the proposed activities will be protective of public health and safety and the environment and to fulfill NRC responsibilities under the National Environmental Policy Act (NEPA). The purpose of the Standard Review Plan (NUREG–1569) is to provide the NRC staff with guidance on performing reviews of information provided by the applicant, and 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–1569 is also intended to improve 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 applicant has the flexibility to propose other methods as long as it demonstrates how it will meet regulatory requirements.

A draft of NUREG–1569 was issued in October 1997, and subsequently revised to reflect responses to public comments, and the results of Commission policy decisions affecting uranium recovery issues described in NRC Regulatory Issue Summary 2000–23, dated November 30, 2000. On February 5, 2002 (FR5347), the NRC made the revised second draft of NUREG–1569 available for a 75-day public comment.

In preparing the final version of NUREG–1569, the NRC staff carefully reviewed and considered more than 750 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 (322 comments)
- (2) Policy Issues (including administrative, quality assurance, and surety/financial issues)
(103 comments)

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ADDRESSES: Electronic copies of this document are available for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room). NUREGs 1569 and 1620 are under Adams Accession Number ML012990062. The documents are also available for inspection or copying for a fee at the NRC's Public Document Room, 11555 Rockville Pike, Room O1-F21, Rockville, Maryland, 20852. These guidance documents are not copyrighted, and Commission approval is not required to reproduce them.

FOR FURTHER INFORMATION CONTACT: John Lusher, Office of Nuclear Material Safety and Safeguards, Division of Fuel Cycle Safety and Safeguards, Mail Stop T-8 A33, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Telephone (301) 415-7694, or e-mail jhl@nrc.gov .

SUPPLEMENTARY INFORMATION: The following provides a more detailed discussion of the NRC evaluation of the major topic areas and the NRC responses to comments.

1. Editorial and Organizational Comments

Issue: The standard review plan has a number of redundancies and editorial errors.

Comment. Several commenters identified editorial concerns, text omissions, or areas where the organization of the 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.

Response. NUREG–1569 is structured consistent with NRC practice for standard review plan style and format. While this 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. Editorial comments on inconsistent terminology, typographical and grammatical mistakes, or the accuracy of reference documents were accepted and incorporated in preparing the final standard review plan, as appropriate. The individual editorial comments are not addressed in this comment summary document.

An appendix (Effluent Disposal at Licensed *In Situ* Leach Uranium Extraction Facilities) was deleted since the guidance therein was superseded by SECY–99–013 which provided staff with direction on classification of liquid wastes at these facilities.

Issue: There is sometimes a lack of agreement between the topics to be reviewed and the corresponding acceptance criteria.

Comment: Commenters stated that in several review plan sections, the areas of review identified at the beginning of the section did not correspond well to the acceptance criteria that would be used to make the evaluation findings.

Response: The staff concurs with this comment. NUREG-1569 was edited to provide correspondence among areas of review, review methods, acceptance criteria, and evaluation findings in each section.

Issue: Chapter 5 (Operations) of the standard review plan has many editorial and technical discrepancies.

Comment: Several commenters identified editorial and technical concerns with Chapter 5 of the draft standard review plan. In some cases, the editorial problems may have made the regulatory guidance difficult to implement.

Resolution: The staff concurs with the commenters. Chapter 5 was rewritten to incorporate editorial and regulatory guidance improvements. The separate section on record keeping and reporting was combined with the section on the management control program to more closely match Regulatory Guide 3.46.1 (Standard Format and Content of License Applications, Including Environmental Reports, for *In Situ* Uranium Solution Mining). Editorial comments are

not addressed individually in this comment summary document except where they have particular impact on the standard review plan.

Issue: Additional clarifying or background information should be included in NUREG–1569.

Comment: Several commenters suggested that specific additional information related to proceedings for a given site or that would provide general background information on *in situ* uranium extraction techniques and hazards be included.

Resolution: The NRC has elected not to include the suggested information in NUREG–1569 because the standard review plan is not written for application to a specific site, and general information is available in other references on *in situ* uranium extraction operations.

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

Issue: NUREG–1569 attempts to apply a risk-informed, performance-based regulatory philosophy without a regulatory basis for doing so.

Comment: Commenters, while noting that risk-informed, performance-based regulatory philosophies could be applied to *in situ* leach uranium extraction facilities, argued that no regulatory basis exists for implementing such philosophies. The commenters stated that 10 CFR Part 40 should be modified to incorporate risk-informed, performance-based regulatory concepts before the associated standard review plan is modified in that way, because standard

review plans are not to be used to promulgate regulatory policy. Commenters also stated that the NRC should not expect license applicants to conduct the accident analyses; consequence evaluations; and probability determinations associated with risk-informed, performance-based regulation. Finally, the commenters argued that the risk-informed, performance-based approach presented in NUREG–1569 was too cursory, contained undefined terms, assumed the existence of a facility change mechanism, and that the review plan contained highly prescriptive acceptance criteria.

Response: The NRC agrees that standard review plans cannot be used to promulgate regulatory requirements, and has no intent to do so using NUREG–1569. In related action, the Commission considered promulgating a new regulation (10 CFR Part 41) that would specifically address regulatory requirements for *in situ* leach uranium extraction facilities and that would formally incorporate risk-informed, performance-based regulatory philosophies. However, considering feedback from the uranium extraction industry and other stakeholders, and taking into account the economic status of the uranium extraction industry, the Commission determined that rulemaking was not an appropriate action at this time. Instead, in making this decision, the Commission directed the staff to update its regulatory guidance related to *in situ* leach uranium extraction facilities, and in so doing, to provide guidance on use of risk-informed, performance-based regulatory philosophies. NUREG - 1569 incorporates this direction from the Commission. It outlines risk-informed, performance-based approaches that staff reviewers may apply to *in situ* leach uranium extraction facilities that are also consistent with existing NRC regulations at 10 CFR Part 40.

In NUREG/CR-6733 (A Baseline Risk-Informed, Performance-Based Approach for *In Situ* Leach Uranium Extraction Licensees) the staff presents analyses of *in situ* leach uranium extraction facility operations and accidents that consider both likelihood of occurrence and consequence (and therefore, risk). The analyses in NUREG-6733 are conservative and demonstrate that *in situ* leach uranium extraction facilities operated with properly trained workers and effective emergency response procedures generally pose low levels of radiologic risk. The staff considers analyses similar to, or based on, those in NUREG-6733 to be an appropriate basis for licensee safety analyses. NUREG-1569 is not intended to require applicants to prepare complex accident analyses, consequence evaluations, and probability determinations. However, site-specific conditions and circumstances must be addressed in any application.

For several years, the NRC staff has been approving *in situ* leach uranium extraction facility license renewals that incorporate a performance-based license condition that provides a facility change mechanism using a Safety and Environmental Review Panel. This accepted practice is continued in NUREG-1569.

Finally, the staff has not attempted to implement overly prescriptive acceptance criteria in NUREG-1569. Rather, standard practices that have been found acceptable in demonstrating compliance at *in situ* leach uranium extraction facilities have been placed in the standard review plan as one approach that the staff may use in determining compliance. Other approaches may be found acceptable as long as the staff can determine that such approaches comply with applicable regulations. In addition, the introduction to 10 CFR Part 40, Appendix A, allows applicants to propose alternative standards to the specific requirements in the Appendix A to

demonstrate compliance, and the staff will review any such alternative standards that are submitted.

NUREG–1569 has been edited to remove inconsistent use of terms or undefined terms. Where useful, acceptance criteria have been modified to be less prescriptive. However, risk-informed, performance-based approaches to determining compliance have been incorporated in the standard review plan to the extent consistent with existing regulations.

Issue: Standard review plan guidance with respect to overlapping jurisdiction is not adequate.

Comment: Commenters were concerned that NUREG–1569 did not provide sufficiently clear guidance on coordinating license application reviews with federal and state agencies. Commenters also stated that NRC should accept state guidelines in conducting reviews.

Response: NUREG–1569 implements Commission direction in SECY–99–013 regarding ground-water issues at *in situ* leach uranium extraction facilities. While this direction requires the staff to determine the extent to which it can rely on the U.S. Environmental Protection Agency's (EPA) Underground Injection Control program and to work to implement agreements with appropriate states on these issues, it does not suggest that the NRC broadly accept state guidelines. As appropriate, minimizing dual regulation and implementing agreements with affected states remains an objective of the NRC, and interactions with the EPA and the states continue on these issues. The review plan has been revised to clarify this intent.

Issue: The standard review plan directs the staff to inappropriately seek disclosure of an applicant's primary corporate internal costs.

Comment: Commenters argued that corporate internal costs such as capital costs of land acquisition and improvement, capital costs of facility construction, and other operating and maintenance costs addressed in the draft standard review plan were not appropriate for staff review. The commenters suggested that only the forecast costs for plant decommissioning and site reclamation should be examined by the staff.

Resolution: The staff agrees with the commenters. The standard review plan has been revised to remove guidance that the staff examine costs outside of those associated with plant decommissioning and site reclamation.

Issue: NRC is exceeding its legal authority by requiring that a determination be made that a proposed licensing action is appropriate prior to allowing construction to proceed.

Comment: The Executive Summary to NUREG-1569 states that "beginning construction of process facilities, well fields, or other substantial actions that would adversely affect the environment of the site, before the staff has concluded that the appropriate action is to issue the proposed license, is grounds for denial of the application." The commenter disagrees with the "sweeping nature" of this statement and asserts that NRC has no jurisdiction over wells in an exempted aquifer until lixiviant injection begins.

Response: The NRC considers this statement to be consistent with the requirements of 10 CFR 40.32(e) and believes it to be appropriate for the agency's responsibilities to protect public health and safety and the environment. The license applicant should not conduct actions with a potential for adverse impacts prior to the NRC completing its safety evaluation and environmental assessment.

3. Ground Water

Issue: Some acceptance criteria for ground-water protection seem overly prescriptive or inconsistent with current practices at specific *In situ* leach uranium extraction facilities.

Comment: Several comments pertained to the use of examples of acceptable methods and approaches cited in the various acceptance criteria for ground-water protection. These comments expressed concern that the examples cited were not consistent with current practices at some *in situ* leach uranium extraction facilities. For example, several comments stated that the examples of acceptable methods for conducting mechanical integrity tests on injection wells are not consistent with methods currently employed or with state-approved practices.

Response: Examples of acceptable practices cited in the review plan acceptance criteria for ground-water protection were obtained from operations plans of currently operating *in situ* leach uranium extraction facilities. These examples refer to methods used to implement ground-water protection requirements that have been considered acceptable in past NRC licensing reviews. The NRC recognizes that an optimal approach to ground-water protection at

one facility is not necessarily applicable or appropriate at all *in situ* leach uranium extraction facilities. As stated in the introduction to NUREG–1569, applicants may take approaches to demonstrating compliance that are different from the acceptance criteria in the standard review plan so long as the staff can make the requisite decisions concerning environmental acceptability and compliance with applicable regulations. Where appropriate, these comments were addressed by modifying text to clarify that the given examples are not prescriptive requirements.

Comment: Several comments recommended deletion of constituents from the list of typical baseline water quality indicators in Table 2.7.3-1 of NUREG–1569. In a specific example, a rationale was provided for eliminating radium-228 from the list of baseline water quality indicators to be sampled in each new well field.

Response: The rationales provided by the commenters for elimination of certain chemical constituents from the list of typical baseline water quality indicators are not necessarily applicable for all *in situ* leach uranium extraction facilities. A licensee may provide the rationale for the exclusion of water quality indicators in a license application or amendment request if operational experience or site-specific data demonstrate that concentrations of constituents such as radium-228 are not significantly affected by *in situ* leach operations. NRC reviewers will determine whether proposed exclusions are justified by the information provided. No changes to Table 2.7.3-1 were made for the final standard review plan.

Comment: Two commenters pointed out an apparently new policy that an excursion of lixiviant solutions will be deemed to have occurred if any single excursion indicator exceeds its upper

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 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.

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.

Response: Acceptance Criterion (4) of Section 6.1.3 in the 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 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.

Comment: Some commenters expressed concern that the standard review plan addressed hazardous chemicals that were not realistic concerns at *in situ* leach uranium extraction facilities.

Response: In 10 CFR Part 40, Appendix A, regulations implement EPA Standards at 40 CFR Part 192, as required by law. Specifically, 10 CFR Part 40, Appendix A, Criterion 13 identifies those hazardous constituents for which standards must be set and complied with if the specific constituent is reasonably expected to be in, or derived from, the byproduct material, and has been detected in ground water. At the same time, the introduction to 10 CFR Part 40, Appendix A allows applicants to submit alternative proposals for meeting the requirements that take into account local or regional conditions. 10 CFR Part 40, Appendix A, Criterion 13 also notes that the Commission does not consider the subsequent list of hazardous constituents to be exhaustive. In summary, NUREG–1569 reflects the regulatory requirements but also allows the reviewer to consider any demonstration presented by an applicant that addresses the potential hazardous constituents at a specific site.

Issue: The responsibilities of the Safety and Environmental Review Panel are not well defined.

Comment: Various commenters stated that the responsibilities of the Safety and Environmental Review Panel, and their authority to authorize changes without a license amendment were either not clear or had no regulatory basis.

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 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–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.

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

guides that are being updated, and revised versions may only be referenced when they have been formally approved. This has necessitated retaining reference to some draft regulatory guides.

Issue: NUREG–1569 introduces a new and undefined concept in discussing “control systems relevant to safety.”

Comment: Several commenters objected to inconsistent use of terms and a lack of definition for terms related to control systems that may affect safety.

Response: NUREG–1569 was edited to incorporate consistent use of terms, and the term “controls” was defined consistent with other NRC regulatory guidance.

6. Monitoring

Issue: *In situ* leach uranium extraction facility licensees are not subject to long-term surveillance costs.

Comment: A commenter stated that including long-term surveillance costs in financial surety requirements, as addressed in the draft standard review plan is inappropriate.

Response: NRC staff agrees with the commenter. Reference to long-term surveillance costs has been removed from NUREG–1569.

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.

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.

Comment: A number of commenters noted that the standard review plan examines detailed internal corporate financial data as part 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.

Issue: Commenters questioned whether the standard review plan applies to facilities planned for private land as well as those on public land.

Comment: Several commenters expressed uncertainty as to whether the review methods and acceptance criteria developed in the standard review plan were also applicable to *in situ* leach facilities wholly located on private lands.

Response: The NRC must consider the environmental impacts of activities on both private and public lands to meet its responsibilities under NEPA, particularly with regard to assessment of direct, indirect, and cumulative impacts of proposed actions. The specific information to be provided by a licensee, and the level of the NRC staff review, will be determined on a site-specific basis considering the nature of the proposed action. The standard review plan is general guidance to the staff on the type of information that is commonly acceptable for evaluating the environmental impact of a proposed licensing action. Consistent with the NRC risk-informed, performance-based licensing philosophy, licensees may use compliance demonstration methods different from those presented in the standard review plan so long as the staff can determine whether public health and safety and the environment are protected. The standard review plan text has been revised for clarity, but it has not been changed to reflect different approaches for facilities operating on private and public lands.

Issue: Licensees should not be required to choose the alternative that has the least impact on the environment.

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

case of a mitigated FONSI, the mitigation measures should be specific and tangible, such as may be stated as license conditions. The standard review plan states that NRC has responsibilities under NEPA to identify and implement measures to mitigate adverse environmental impacts of the proposed action.

Dated at Rockville, Maryland this day of November, 2002.

For the Nuclear Regulatory Commission

Robert C. Pierson, Director
Division of Fuel Cycle Safety
and Safeguards,
Office of Nuclear Material Safety
and Safeguards

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 developed a Standard Review Plan (NUREG-1620) 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. On February 5, 2002 (FR5348), the NRC made the revised second draft of NUREG-1620 available for a 75-day public comment.

In preparing the final version of NUREG-1620, 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)

- (4) Ground water (15 comments)

- (5) Environmental aspects related to NRC responsibilities under NEPA (4 comments)

ADDRESSES: Electronic copies of this document are available for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room). NUREGs 1569 and 1620 are under ADAMS Accession Number ML012990062. The documents are also available for inspection or copying for a fee at the NRC's Public Document Room, 11555 Rockville Pike, Room O1-F21, Rockville, Maryland, 20852. These guidance documents are not copyrighted, and Commission approval is not required to reproduce them.

FOR FURTHER INFORMATION CONTACT: John Lusher, Office of Nuclear Material Safety and Safeguards, Division of Fuel Cycle Safety and Safeguards, Mail Stop T-8 A33, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Telephone (301) 415-7694, or e-mail jhl@nrc.gov .

The following provides a more detailed discussion of the NRC evaluation of the major topic areas and the NRC responses to comments.

1. Editorial and Organizational Comments

Issue: The standard review plan has a number of redundancies and editorial errors.

Comment: Several commenters identified editorial concerns, text omissions, or areas where the organization of the 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.

Response: NUREG–1620 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 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.

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.

Comment: One commenter noted that guidance on review of multi-site problems should be included in the final standard review plan. The reviewer stated that if a group of licensees raise a common issue, it would be cost effective to address it generically.

Response: The NRC staff agrees that addressing multi-site problems in an integrated manner could be cost effective and potentially beneficial to public health and safety and the environment. Omitting this information from NUREG–1620 is not meant to reflect a lack of staff interest in multi-site problems. Rather, the standard review plan is meant to address licensing reviews that can be completed using well-accepted techniques. The staff believes that the technical and regulatory aspects of multi-site problems are such that it is best to examine them on a case-by-case basis.

Issue: The long-term custodian must accept transfer of property at termination of the specific license.

Comment: One commenter expressed concern regarding language in NUREG–1620 that there must be assurance that the long-term custodian will accept the property necessary to protect public health and safety. The commenter was concerned that the language in the standard review plan implied that the long-term custodian has the option to refuse transfer of the property.

Response: The language in the standard review plan is included to ensure that the reviewer verifies that the long-term custodian is aware of the full extent of required land transfer prior to termination of the specific license. The intent is to avoid delays in license termination because

the licensee and the long-term custodian may not have a mutual understanding on the extent of land transfer, and the text has been clarified.

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

licensee and the availability of licensee staff should not be considered in reducing costs was inappropriate. The commenter added that extreme interpretations of this approach could lead to extravagantly expensive or even unattainable surety requirements.

Resolution: It is appropriate not to consider equipment owned by the licensee and the availability of licensee staff in calculating costs for surety. The purpose of the surety to ensure that there will be adequate funds available to complete site reclamation in the event that the licensee is unable to do so. The most likely circumstance that would result in the licensee being unable to complete reclamation is bankruptcy by the licensee. Unless the licensee can show that the equipment and staff would be available during and after a bankruptcy, credit for such can not be taken. The text has been clarified to address this issue.

Issue: NUREG-1620 should be used as a tool for public education.

Comment: Several commenters suggested that discussions could be expanded in various sections of the standard review plan to improve public understanding of regulatory issues at Title II uranium mill tailings sites.

Response: Discussions in several sections of the standard review plan were revised to improve clarity and to correct editorial errors. Although it is made available to the public, the primary intent of the Standard Review Plan is to provide guidance to the NRC staff, not to serve as a tool for public education. The staff believes that the standard review plan contains the appropriate level of detail for its intended purpose as a guide for staff reviews of reclamation plans for Title II mill tailings sites.

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.

Issue: The NRC is requiring detailed seismic hazard analysis, even in zero seismic risk areas identified in the Uniform Building Code.

Comment: One commenter noted that for cases where a given site is located in a “zero” seismic risk area as identified in the Uniform Building Code, no further seismic characterization, explanation, or description should be needed for the licensee or applicant.

Response: Maps for the maximum considered earthquake ground motion for the United States in the most recent version of the building code (2000 International Building Code) are based on probabilistic seismic hazard maps with additional modifications incorporating deterministic ground motions in selected areas and the application of engineering judgement. These maps were prepared for the National Earthquake Hazards Reduction Program by the United States Geological Survey. Because it is based on probabilistic methods, within the new update, the “zero” seismic risk areas no longer exist.

The NRC is currently establishing risk-informed and performance-based regulations. One example of this philosophy is the application of a risk-graded approach in developing seismic design requirements for nuclear facilities. Under this approach for example, nuclear power plants have to meet the most stringent design requirements because they pose the greatest radiological risk to public health and safety. Other nuclear facilities like dry cask and canister storage facilities or uranium mining operations could be designed to less stringent design criteria because they pose substantially less radiological risk to public health and safety. This type of graded approach to radiological hazard is described in U.S. Department of Energy (DOE) Standard 1020–2002, “Natural Phenomena Hazards Design and Evaluation Criteria for

Department of Energy Facilities.” In that guidance, the DOE developed five performance categories according to the relative risks posed by the potential failure of a structure, system, or components (SSCs) to perform its intended safety function. Performance Category (PC)–2 is intended for occupational safety and the design requirements for this category match those in the IBC–2000. PC–3 SSCs are for hazard confinement and the design requirements go beyond those within IBC–2000. Given the potential radiological hazards posed by Mill Tailing sites, evaluations of seismic hazards should therefore exceed those prescribed in the IBC–2000 for buildings. In addition, the National Earthquake Hazards Reduction Program maps do not take site effects into account. Local site effects, such as soil amplification, can greatly increase the level, spectral frequency content, and duration of vibratory ground motions at a site that is produced during an earthquake. Therefore, these effects need to be understood in order to accurately predict the seismic hazard at any site.

Based on these two considerations (graded risk approach and possible site amplification effects), staff conclude that site-specific seismic evaluations are necessary for all sites.

Issue: The NRC has not provided an adequate definition of the intent of using probabilistic seismic hazard analysis to satisfy the consideration of the maximum credible earthquake.

Comment: One commenter noted that the draft standard review plan indicates that licensees can use an alternative to the maximum credible earthquake, such as probabilistic seismic hazard analysis, but does not indicate whether the intent is to allow probabilistic analyses to satisfy 10 CFR Part 40, Appendix A, Criterion 4(e) or it is being considered as an alternative requirement.

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 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

“hazardous constituent.” Constituents of concern are not necessarily hazardous constituents unless they have migrated into “non-exempted” aquifers.

Response: Section 4.2.1 of the standard review plan was revised to delete a sentence equating constituents of concern with hazardous constituents. The term “hazardous constituent” is now used consistent with the definition in 10 CFR Part 40, Appendix A, Criterion 5B(2)

Issue: The difference in an As Low As Reasonably Achievable (ALARA) analysis for radiological and nonradiological parameters needs to be more clearly presented.

Comment: An ALARA analysis for a nonradiological parameter differs from that for a radiological parameter in that once the concentration of a nonradiological parameter falls below the maximum concentration limit, the licensee has no obligation to further reduce the parameter’s concentration. NRC should distinguish between the two types of ALARA studies.

Response: The NRC concurs with the commenter. A sentence was added to Section 4.3.3.3 of the standard review plan to indicate that, when a nonradiological hazardous constituent concentration is below its regulatory maximum concentration level, the licensee has no further obligation to reduce the constituent concentrations.

Issue: The benefits of ground-water corrective action requirements at remote sites are questionable.

Comment: Two commenters noted that NRC should provide further guidance on addressing instances where the benefits of ground-water correction action may not justify the cost. One comment referred to circumstances where restrictions on site access or site-specific physical characteristics may make it infeasible for members of the public to access ground water. Another comment suggested that the future value of the ground water removed and evaporated during corrective actions may exceed any risk posed by the contaminant.

Response: No changes to the standard review plan were made to address these comments. In such site-specific circumstances as described by the commenters, the burden is on the licensee to demonstrate that termination of ground-water corrective actions would pose no significant threat to human health and the environment. Licensees may propose alternate concentration limits that meet the requirements of 10 CFR Part 40, Appendix A, Criterion 5B(6). Consideration of the remoteness of a site, potential future water uses, and future value may be included in a licensee's basis for determining that alternate concentration limits are protective of human health and the environment, and that limits are as low as reasonably achievable. These and other factors for consideration by the Commission are specifically mentioned in 10 CFR, Part 40, Appendix A, Criterion 5B(6), which is appropriately cited in the standard review plan.

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

Issue: The NRC is reviewing information that is outside its areas of regulatory authority.

Comment: Several commenters noted that NRC is asking for information that appears to be beyond its regulatory authority. This includes information on nonradiological hazardous constituents and review of restoration plans for borrow areas.

Response: As a federal agency, the NRC is subject to the National Environmental Policy Act (NEPA). This requires the NRC to consider impacts to the human environment as a part of its decision making process. The regulations governing NRC implementation of NEPA are described in 10 CFR Part 51. 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.” With regard to NEPA, the NRC must consider the environmental impacts of both radiological and nonradiological aspects of a proposed action, particularly with regard to assessment of direct, indirect, and cumulative impacts of the proposed action. The exact nature of the information to be provided by a licensee, and the level of NRC staff review will be determined on a site-specific basis. The standard review plan is intended as general guidance to the staff on the type of information that is commonly acceptable for evaluating the environmental impact of a proposed licensing action. Under the risk-informed, performance-based licensing philosophy used by the NRC, the licensee is free to present alternative approaches for NRC consideration.

With regard to restoration plans for borrow areas, the intent of the section of the standard review plan identified by the commenter is to have staff review restoration plans for borrow areas as part of characterizing the stratigraphy and materials at a given site, and fulfilling NRC

requirements under NEPA. The NRC also needs to consider the cumulative impacts of both radiological and nonradiological hazardous constituents to meet its obligations under NEPA. General guidance to NRC staff for the evaluation of cumulative impacts is provided in Section 4.2.5 of NUREG–1748 “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs.”

Dated at Rockville, Maryland this day of November, 2002.

For the Nuclear Regulatory Commission

Robert C. Pierson, Director
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

ATTACHMENT 3

ATTACHMENT 4