

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF FEDERAL AND STATE MATERIALS  
AND ENVIRONMENTAL MANAGEMENT PROGRAMS  
WASHINGTON, D.C. 20555

April 29, 2009

**NRC REGULATORY ISSUE SUMMARY 2009-05  
URANIUM RECOVERY POLICY REGARDING: (1) THE PROCESS FOR  
SCHEDULING LICENSING REVIEWS OF APPLICATIONS FOR NEW  
URANIUM RECOVERY FACILITIES AND (2) THE RESTORATION OF  
GROUNDWATER AT LICENSED URANIUM IN SITU RECOVERY  
FACILITIES**

**ADDRESSEES**

All holders of operating licenses for uranium recovery facilities and all companies who have submitted applications to construct new uranium recovery facilities of all types (conventional mills, heap leach operations, and in situ recovery (ISR) facilities) or letters of intent to submit such applications.

**INTENT**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to inform addressees of the NRC's policy regarding: (1) the process for scheduling licensing reviews of applications for new uranium recovery facilities and (2) the restoration of groundwater at uranium ISR facilities. The NRC is issuing this RIS, in part, to request that those companies who have submitted letters of intent to submit applications for new uranium recovery facilities provide advance information, on a voluntary basis, pertaining to the estimated date for submittal of such applications.

**BACKGROUND**

Process for Scheduling Licensing Reviews:

During the past 15 months, the NRC has received four applications for new uranium recovery facilities and expects to receive an additional 15 applications for new facilities over the next several years. Because these licensing reviews will place significant resource demands on its staff, the NRC must establish a predictable and consistent review process for these applications and communicate this process to the uranium recovery industry.

Restoration of Groundwater at ISR Facilities:

With renewed interest in domestic nuclear reactor power facilities, there has been a corresponding resurgence in the uranium recovery industry. Among the various uranium recovery techniques, ISR has become the most common method. The NRC has received applications for four new ISR facilities during the past 15 months and expects an additional eight ISR applications over the next several years. In light of this renewed interest in uranium ISR,

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the NRC staff needs to clarify the appropriate standards for groundwater restoration at ISR facilities following the cessation of uranium recovery at individual wellfields. In this regard, the NRC, in consultation with the Environmental Protection Agency (EPA), is in the process of revising the regulations in 10 CFR Part 40, Appendix A, to clarify the groundwater restoration standards for ISR facilities. In the interim, pending issuance of the proposed ISR rule for public comment, this RIS provides clarification of NRC's existing groundwater restoration standards in Appendix A. However, it should be recognized that the ongoing rulemaking process and consultation with EPA may lead to changes in requirements that could be inconsistent with the Appendix A clarifications that are discussed below.

## **SUMMARY OF ISSUES**

### Process for Scheduling Licensing Reviews:

In order to establish accurate estimates of future applications for new uranium recovery facilities, the NRC has requested that prospective applicants submit "letters of intent" for planned application submittals. Based on letters of intent received to date from prospective applicants, the NRC anticipates that approximately 15 applications for new uranium recovery facilities will be submitted during fiscal years 2009 through 2012. To effectively schedule resources for these licensing reviews, the NRC requests that applicants provide their best estimates of planned submission dates. The accuracy of these estimates may have a significant impact on the start date and duration of both the acceptance review (i.e., review for completeness) and the subsequent detailed technical and environmental reviews of the applications. The advanced notification of application submission dates will facilitate NRC resource planning and the completion of the acceptance and technical and environmental reviews in a timely manner. The NRC staff will strive to have resources available to initiate the acceptance review on the expected date of application submittal. To facilitate the effectiveness of the review process, the NRC staff expects each potential applicant to declare in writing its expected application submission date at least 90 days ahead of its arrival. Significant deviation from the expected date of the application submittal may adversely impact the initiation of the staff's acceptance review. As such, potential applicants should update the NRC regarding any changes to application submittal dates previously provided.

It is the staff's goal to complete acceptance reviews within 90 days of physical receipt of the submitted application by the Uranium Recovery Licensing Branch, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs. Electronic filing of an application may expedite its placement into the NRC's Agencywide Documents Access and Management Systems (ADAMS). However, the NRC staff's review of an application also requires access to paper copies to facilitate the reading of large maps and figures that are typically included. Following acceptance and docketing of the application, the staff's goal is to complete the detailed technical review (safety and environmental) within two years.

To meet this goal, applicants need to provide complete and timely responses to any requests for additional information (RAIs) that are necessary for the staff to complete its review. Responses to RAIs generally should be submitted within 30 days of receipt by the applicant or an alternative schedule should be provided if responses can not be provided within 30 days.

### Restoration of Groundwater at ISR Facilities:

ISR facility operators inject a processing solution (lixiviant) into subsurface ore bodies to dissolve uranium which is subsequently concentrated and processed into yellowcake. The lixiviant injections result in waste water – both in the subsurface and above-ground – and the contaminants in this waste water must be properly managed. Following the cessation of uranium recovery operations in a particular wellfield, the groundwater must be restored to appropriate standards.

The NRC's generic requirements for the siting, operation, decontamination, reclamation, and decommissioning of uranium recovery facilities and the associated tailings or wastes are provided in 10 CFR Part 40, Appendix A. When these requirements were established in 1985, uranium ore was recovered and processed predominantly at conventional mills and, as such, Appendix A focused primarily on operations and closure at conventional mill sites.

However, the legislation pursuant to which Appendix A was established (the Uranium Mill Tailings Radiation Control Act of 1978 as amended, UMTRCA) amended the Atomic Energy Act's section 11e definition of byproduct material to include "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content" (emphasis added). In a 1979 final rule implementing UMTRCA requirements, the NRC added to 10 CFR Part 40.4, a definition of byproduct material that, in addition to tracking the above-quoted portion of the Atomic Energy Act's 11e.2 definition of byproduct material, states that the term includes "discrete surface wastes resulting from uranium solution extraction processes." The 1979 rule's preamble further reflects the NRC's finding that, properly construed, UMTRCA covers the "above-ground wastes" from ISR operations as published in the *Federal Register* on August 24, 1979 (44 FR 50012). Additionally, in 2000, the NRC determined that all waste water generated during ISR operations would be classified as 11e.(2) byproduct material. Staff Requirements Memorandum on SECY-99-0013 ("Recommendations on Ways to Improve the Efficiency of NRC Regulation at [ISR] Facilities").

The 10 CFR Part 40 definition of byproduct material is relevant to Criterion 5B of Appendix A, because this Criterion pertains to uranium byproduct materials, and Sections (5) and (6) of Criterion 5B govern the setting of site-specific concentration limits of hazardous constituents for purposes of protecting and restoring groundwater quality at all uranium mill operations. Accordingly, the requirements in Criterion 5B of Appendix A apply to restoration of groundwater at uranium ISR facilities.

The staff recognizes that NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications," provides guidance that is not consistent with the requirements in Criterion 5B of Appendix A discussed above. In particular, the NUREG-1569 discussion of groundwater restoration to "pre-operational class of use" as being a secondary standard is not accurate, and is not an appropriate standard to use in evaluating license applications. Criterion 5B contains the appropriate standards that will be applied to groundwater restoration at ISR facilities.

As indicated above, the staff is now working with the EPA to resolve groundwater protection issues at ISR facilities and to revise Appendix A of 10 CFR Part 40 accordingly. The NRC

expects that a draft of the proposed revisions to Appendix A will be published for public comment in 2010. Additionally, NUREG-1569 will be revised to correctly identify the standards for groundwater restoration at ISR facilities and to address the new requirements codified by the rulemaking.

Under the existing requirements in Appendix A of 10 CFR Part 40, the staff will apply the Criterion 5B standards in evaluating all ISR groundwater restoration plans currently under review or submitted in the future. This policy includes reviews of applications for new ISR facilities, reviews of restoration plans at existing, licensed ISR facilities, and reviews of ISR license renewal applications.

## **VOLUNTARY RESPONSE**

### Process for Scheduling Licensing Reviews:

To ensure that the NRC will have adequate time to effectively schedule resources and to facilitate the staff's ability to complete the acceptance review and overall licensing review of an application for a new uranium recovery facility within established goals for timeliness, the staff requests that each potential applicant declare in writing its expected submission date (month, day, year) for the application at least 90 days ahead of its arrival.

## **FEDERAL REGISTER NOTIFICATION**

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because this RIS is informational and does not represent a departure from current regulatory requirements. This RIS pertains in part to an administrative aspect of the regulatory process that involves the voluntary submission of information on the part of addressees.

## **CONGRESSIONAL REVIEW ACT**

This RIS is a rule as designated in the Congressional Review Act (5 U.S.C. §§ 801-886). The Office of Management and Budget (OMB) has determined this is not a major rule.

## **PAPERWORK REDUCTION ACT STATEMENT**

This RIS contains information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, et seq.). These information collections were approved by the Office of Management and Budget (OMB), approval 3150-0020.

The burden to the public for this voluntary information collection is estimated to average 8 hours for the response, including the time reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspects of these information collections to the Records and FOIA/Privacy Services Branch (T-5F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to [INFOCOLLECTS.Resource@nrc.gov](mailto:INFOCOLLECTS.Resource@nrc.gov); and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0020), OMB, Washington, DC 20503.

## PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information collection requirement unless the requesting document displays a currently valid OMB clearance number.

### **CONTACT**

This RIS requires no specific action or written response. If you have any questions about this summary, please contact the technical contact listed below.

**/RA/**

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and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

Technical Contact: Bill von Till  
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Enclosure: List of Recently Issued FSME  
Generic Communications

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<b>OFC</b>	DWMEP	FSME	DWMEP	DWMEP	DWMEP	OGC
<b>NAME</b>	RWeller	AMcIntosh	BGarrett	MFliegel	BVonTill	JAdler
<b>DATE</b>	12/17/08	02/27/09	12/22/08	12/17/08	01/21/09	12/18/08
<b>OFC</b>	OGC	DWMEP	OIS	OE	DWMEP	
<b>NAME</b>	JHull/nlo-via email	KMcConnell	TDonnell	NHilton	LCamper	
<b>DATE</b>	12/31/08	02/13/09	03/ 24 /09	03/ 30 /09	4/29/09	

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<b>List of Recently Issued Office of Federal and State Material and Environmental Management Programs Generic Communications</b>			
<b>Date</b>	<b>GC No.</b>	<b>Subject</b>	<b>Addressees</b>
05/13/08	RIS-2008-10	Notice Regarding Forthcoming Federal Firearms Background Checks	All U.S. Nuclear Regulatory Commission licensees, certificate holders, and applicants for a license or certificate of compliance who use armed security personnel as part of their physical protection system and security organization. All Radiation Control Program Directors and State Liaison Officers.
05/12/08	RIS-2008-11	Precautions to Protect Children Who May Come in Contact with Patients Released After Therapeutic Administration of Iodine-131	All U.S. Nuclear Regulatory Commission medical-use licensees, master material licensees, Agreement State Radiation Control Program Directors, and State Liaison Officers
05/09/08	RIS-2008-12	Considerations for Extended Interim Storage of Low-level Radioactive Waste by Fuel Cycle and Materials Licensees	All holders of U.S. Nuclear Regulatory Commission fuel cycle and materials licenses. All Radiation Control Program Directors and State Liaison Officers
06/16/08	RIS-2008-13	Status And Plans for Implementation of NRC Regulatory Authority for Certain Naturally Occurring and Accelerator-Produced Radioactive Material	All U.S. Nuclear Regulatory Commission materials licensees, Radiation Control Program Directors, State Liaison Officers, and the NRC's Advisory Committee on the Medical Uses of Isotopes
07/18/08	RIS-2008-17	Voluntary Security Enhancements for Self-Contained Irradiators Containing Cesium Chloride Sources	All U.S. Nuclear Regulatory Commission Materials Licensees Authorized to Possess Self-Contained Irradiators Containing Cesium Chloride (CsCl) ; all Agreement State Radiation Control Program Directors and State Liaison Officers; all members of the Advisory Committee on the Medical Uses of Isotopes.
05/16/08	IN-2008-03	Precautions to Take Before Sharing Sensitive Security-Related Information	All U.S. Nuclear Regulatory Commission licensees who are implementing U.S. Nuclear Regulatory Commission's Order Imposing Increased Controls (IC Order) or implementing IC requirements by license condition; all Agreement State Radiation Control Program Directors and State Liaison Officers
<p>Note: This list contains the six most recently issued generic communications, issued by the Office of Federal and State Materials and Environmental Management Programs (FSME). A full listing of all generic communications may be viewed at the NRC public website at the following address: <a href="http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html">http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html</a></p>			

Enclosure