

NUCLEAR REGULATORY COMMISSION

Notice of Availability of Final Generic Environmental Impact Statement for

***In-Situ* Leach Uranium Milling Facilities**

[NRC-2008-0420]

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of Availability.

SUMMARY: Notice is hereby given that the U.S. Nuclear Regulatory Commission (NRC), with the cooperation of the Wyoming Department of Environmental Quality, Land Quality Division, is issuing a final Generic Environmental Impact Statement (GEIS) that assesses the potential environmental impacts of the construction, operation, aquifer restoration, and decommissioning at an *in-situ* leach (ISL) uranium milling facility located in particular regions of the western United States. The rationale for developing the GEIS is that ISL facilities use the same or very similar technology, such that the potential environmental impacts associated with the technology could be assessed on a generic (programmatic) basis. In this way repetitive reviews of certain of these impacts could be avoided, thus focusing NRC's evaluation on unique issues of concern for each ISL license application.

The NRC anticipates that it will receive numerous new license applications for ISL uranium milling within the next several years. NRC will use the GEIS to provide a starting point for the staff's National Environmental Policy Act (NEPA) analyses for site-specific license applications for new ISL facilities. Additionally, the NRC staff plans to use the GEIS, along with applicable previous site-specific environmental review documents, in its NEPA analysis for applications to renew or otherwise amend operations at existing NRC-licensed ISL facilities. In these analyses, NRC would evaluate the site-specific data to determine whether relevant

sections of the GEIS could be incorporated by reference into the site-specific environmental review. Additionally, NRC would determine which GEIS impact conclusions can be adopted in the site-specific review and whether additional data and analysis is needed to determine the potential impacts for a specific environmental resource area. NRC will prepare a Supplemental Environmental Impact Statement (SEIS) on a license application for a new ISL facility. NRC will prepare an Environmental Assessment (EA), SEIS, or Environmental Impact Statement (EIS) for license renewals or amendments to ISL facility applications.

ADDRESSES: The GEIS may be accessed on the internet at www.nrc.gov/reading-rm/doc-collections/nuregs/staff/ by selecting "NUREG-1910." Additionally, the NRC maintains an Agencywide Documents Access and Management System (ADAMS), which provides text and image files of the NRC's public documents. The GEIS and its appendices may also be accessed through the NRC's Public Electronic Reading Room on the internet at: www.nrc.gov/reading-rm/adams.html. If you either do not have access to ADAMS or if there is a problem accessing documents located in ADAMS, contact the NRC Public Document Room (PDR) reference staff at 1 (800) 397-4209, 1 (301) 415-4737 or by email to pdr.resource@nrc.gov.

Information and documents associated with the GEIS are also available for public review through the NRC Public Electronic Reading Room on the Internet at www.nrc.gov/reading-rm/adams.html and at the NRC's website for the GEIS, <http://www.nrc.gov/materials/uranium-recovery/geis.html>. Both information and documents associated with the Final GEIS also are available for inspection at the Commission's PDR, NRC's Headquarters Building, 11555 Rockville Pike (first floor), Rockville, Maryland. For those without access to the Internet, paper copies of any electronic documents may be obtained for a fee by contacting the NRC's PDR at 1-800-397-4209. The GEIS and related documents may also be found at the following public libraries:

Albuquerque Main Library
501 Copper NW
Albuquerque, New Mexico 87102
505-768-5141

Mother Whiteside Memorial Library
525 West High Street
Grants, New Mexico 87020
505-287-4793

Octavia Fellin Public Library
115 W Hill Avenue
Gallup, New Mexico 87301
505-863-1291

Natrona County Public Library
307 East Second Street
Casper, Wyoming 82601
307-332-5194

Carbon County Public Library
215 W Buffalo Street
Rawlins, Wyoming 82301
307-328-2618

Campbell County Public Library

2101 South 4J Road

Gillette, Wyoming 82718

307-687-0009

Weston County Library

23 West Main Street

Newcastle, Wyoming 82701

307-746-2206

Chadron Public Library

507 Bordeaux Street

Chadron, Nebraska 69337

308-432-0531

Rapid City Public Library

610 Quincy Street

Rapid City, South Dakota 57701

605-394-4171

FOR FURTHER INFORMATION CONTACT: Mr. James Park, Project Manager, Environmental Review Branch, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Telephone: (301) 415-6935; e-mail:

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SUPPLEMENTARY INFORMATION: The Atomic Energy Act (AEA) and the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) authorize NRC to issue licenses for the possession and use of source material and byproduct material. The statutes require NRC to license facilities that meet NRC regulatory requirements that were developed to protect public health and safety from radiological hazards. ISL uranium milling facilities must meet NRC regulatory requirements in order to obtain this license to operate. Under the NRC's environmental protection regulations in Title 10, Part 51 of the *Code of Federal Regulations* (10 CFR Part 51), which implements NEPA, issuance of a license to possess and use source material for uranium milling requires an EIS or a supplement to an EIS.

To help fulfill this requirement, the NRC staff and its contractor, the Center for Nuclear Waste Regulatory Analyses, in cooperation with the Wyoming Department of Environmental Quality (Land Quality Division), prepared the GEIS. The GEIS was prepared to assess the potential environmental impacts associated with the construction, operation, aquifer restoration, and decommissioning of an ISL facility in four specified geographic areas of the western United States (U.S.). The intent of the GEIS is to determine which impacts would be essentially the same for all ISL facilities and which ones would result in varying levels of impacts for different facilities, thus requiring further site-specific information to determine the potential impacts. As such, the GEIS provides a starting point for its NEPA analyses for site-specific license applications for new ISL facilities, as well as for applications to renew or amend existing ISL licenses.

The NRC is expecting numerous license applications for new ISL uranium milling facilities in the next several years. ISL milling facilities recover uranium from low grade ores that may not be economically recoverable by other methods. In this process, a leaching agent, such as oxygen with sodium bicarbonate, is added to native groundwater for injection through wells into the subsurface ore body to dissolve the uranium. Before ISL operations can begin, the

portion of the aquifer designated for uranium recovery must be exempted by EPA as an underground source of drinking water in accordance with the Safe Drinking Water Act (40 CFR 146.4). The leach solution, containing the dissolved uranium, is pumped back to the surface and sent to the processing plant, where ion exchange is used to separate the uranium from the solution. The underground leaching of the uranium also frees other metals and minerals from the host rock. Operators of ISL facilities are required to restore the groundwater affected by the leaching operations and decommission the facility when operations have ceased. The milling process concentrates the recovered uranium into the product known as "yellowcake," which is then shipped to uranium conversion facilities for further processing in the overall uranium fuel cycle.

The proposed federal action identified in the GEIS is to grant an application to obtain, renew, or amend a source material license for an ISL facility. In reviewing a license application for a new ISL facility, NRC will use the GEIS as starting point for its site-specific environmental reviews. NRC will evaluate site-specific data and information to determine if the applicant's proposed activities and the site characteristics are consistent with those evaluated in the GEIS. NRC will then determine which sections of the GEIS can be incorporated by reference and which impact conclusions can be adopted in the site-specific environmental review, and whether additional data or analysis is needed to determine the environmental impacts for a specific resource area. Additionally, the GEIS provides guidance in the evaluation for certain impact analyses (e.g., cumulative impacts, environmental justice) for which the GEIS did not make impact conclusions. No decision on whether to license an ISL facility will be made based on the GEIS alone. The licensing decision will be based, in part, on a site-specific environmental analysis that makes use of the GEIS.

The GEIS also addresses the no-action alternative. Under this alternative, NRC would deny the applicant's or licensee's request for a new ISL facility. As a result, the license

applicant may choose to resubmit the application to use an alternate uranium recovery method or decide to obtain the yellowcake from other sources. A licensee whose license renewal application is denied would have to commence shutting down operations in a timely manner. Denials of license amendments would require the licensee to continue operating under its previously approved license conditions. The no-action alternative serves as a baseline for comparison of the potential environmental impacts.

Conventional mining/milling and the heap leach process are two other methods of uranium recovery. However, in as much as the suitability and practicality of using these alternative milling methodologies depends upon site-specific conditions, a generic discussion of potential environmental impacts associated with these methodologies in the GEIS is not appropriate. Accordingly, the GEIS does not contain a detailed analysis of alternative milling methodologies to the ISL process. A detailed analysis of reasonable alternative milling methodologies that can be applied at a specific site will be addressed in the NRC's site-specific environmental review for individual ISL license applications.

The GEIS is structured in the following manner. The NRC staff began by identifying four uranium milling regions in the western U.S. to use as a framework for discussions in the document. Two regions are found in Wyoming, one in New Mexico, and a final region encompasses portions of Nebraska, South Dakota, and Wyoming.

Next, the GEIS provides a description of the ISL process and addresses the construction, operation, aquifer restoration, and decommissioning activities for an ISL facility. Financial assurance is also discussed, whereby the ISL licensee or applicant establishes a bond or other financial mechanism prior to operations to ensure that sufficient funds are available to complete aquifer restoration, decommissioning, and reclamation activities for the site.

Then, the GEIS describes the affected environment in each uranium milling region, using the environmental resource areas and topics identified through public scoping comments on the

GEIS and from NRC guidance to its staff found in NUREG–1748, “Environmental Review Guidance for Licensing Actions Associated With NMSS Programs,” issued by NRC in 2003.

Finally, the GEIS provides an evaluation of the potential environmental impacts of constructing, operating, aquifer restoration, and decommissioning at an ISL facility in each of the four uranium milling regions. Impacts are examined for the following resource areas:

- Land use
- Transportation
- Geology and soils
- Water resources
- Ecology
- Air Quality
- Noise
- Historical and cultural resources
- Visual and scenic resources
- Socioeconomic
- Public and occupational health

Following the discussion of potential environmental impacts, the GEIS addresses cumulative impacts; environmental justice; practices, measures, and actions to mitigate potential impacts; environmental monitoring activities; and the consultation process with federal and tribal entities.

To document its review of the potential environmental impacts for a new ISL facility, NRC will prepare an SEIS. NRC’s decision to prepare a SEIS is a change to its previously stated position (72 FR 54947; September 27, 2007) that allowed for the possibility of NRC preparing an EA on a new ISL license application. NRC’s decision to prepare a SEIS will more clearly meet the requirement for completing an EIS for new ISL facilities and considers public comments received on the draft GEIS. The NRC will follow the public participation procedures outlined in 10 CFR Part 51, which can include requests for public input on the scope of the SEIS and requires public comment on the draft SEIS.

For applications to renew or amend existing ISL licenses, NRC will conduct an environmental review, consistent with the provisions in 10 CFR Part 51. This review may be an

EA, SEIS, or an EIS. The NRC previously stated in the *Federal Register* on September 27, 2007 (72 FR 54947) that all draft EAs prepared for ISL facility license applications would be available for public comment. This statement was made in anticipation that NRC would be preparing EAs for applications for new ISL facilities. As noted, based on public comments NRC received on the draft GEIS, NRC has decided to prepare a SEIS for new license applications. The NRC will follow the public participation procedures outlined in 10 CFR Part 51, which require public comment on the draft SEIS. The NRC may make a draft EA and accompanying Finding of No Significant Impact (FONSI) available for public comment. The decision to submit a draft EA for public comment would take into account the provisions in 10 CFR 51.33 concerning the similarity of the proposed actions to actions normally requiring preparation of an EIS and the precedent setting nature of the proposed action. Additionally, the NRC may consider the level of public interest and the contentious nature of the proposed action in determining whether to publish a draft EA/FONSI for public comment. The NRC staff would address public comments received on the draft EA/FONSI in the staff's final environmental review document. This approach is consistent with NRC regulations.

Dated at Rockville, Maryland, this 29th day of May, 2009.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

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Performance Assessment Directorate
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