June 18, 2004

Mr. Dave Miesbach
Underground Injection Control Program Coordinator
Nebraska Department of Environmental Quality
Ground Water Section
1200 N street, Suite 400
P.O. Box 98922
Lincoln, Nebraska 68509-8922

SUBJECT: GUIDANCE FOR COMPARISON OF THE NEBRASKA UNDERGROUND INJECTION CONTROL PROGRAM WITH THE NUCLEAR REGULATORY COMMISSION GROUNDWATER PROTECTION PROGRAM FOR *IN SITU* LEACH URANIUM RECOVERY FACILITIES

Dear Mr. Miesbach:

As you are aware, the U.S. Nuclear Regulatory Commission (NRC) staff has scheduled an on-site review of Nebraska's Underground Injection Control (UIC) Program during the week of June 28, 2004. The purpose of this review is to compare the State's UIC Program with NRC's groundwater protection program for *in situ* leach (ISL) uranium recovery facilities as provided in NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications," June 2003. This review will provide the basis for the development of a Memorandum of Understanding with the State of Nebraska for the purpose of deferring NRC regulation of groundwater protection at the NRC-licensed ISL facilities in Nebraska to the State of Nebraska. In order to facilitate the staff's on-site comparability review of the Nebraska UIC Program with the NRC's groundwater protection program, the staff has prepared a guidance document for the conduct of the review. Enclosed is a copy of the staff's guidance document which identifies the focus areas of the staff's review. The staff appreciates your assistance for the forthcoming review.

If you have any questions regarding the guidance document or the forthcoming review, please contact Rick Weller of my staff at (301) 415-7287 or via e-mail to RMW2@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically 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.

Sincerely,

/RA

Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Enclosure: Guidance Document for Review
of the Nebraska UIC Program

cc: M. Linder, NDEQ
M. Salazar, USEPA

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DATE	6/18/04		6/18/04		6/18/04		6/18/04	

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GUIDANCE FOR COMPARISON OF ENVIRONMENTAL PROTECTION AGENCY-AUTHORIZED UNDERGROUND INJECTION CONTROL PROGRAMS IN NON-AGREEMENT STATES WITH THE U.S. NUCLEAR REGULATORY COMMISSION GROUNDWATER PROTECTION PROGRAM FOR *IN SITU* LEACH URANIUM RECOVERY FACILITIES

1. INTRODUCTION

In SECY-03-0186, "OPTIONS AND RECOMMENDATIONS FOR DEFERRING ACTIVE REGULATION OF GROUND-WATER PROTECTION AT *IN SITU* LEACH URANIUM EXTRACTION FACILITIES," dated October 29, 2003, the staff proposed several options for reducing or eliminating the dual regulation of ground-water protection at *in situ* leach (ISL) uranium recovery facilities by both the U.S. Nuclear Regulatory Commission (NRC) and non-Agreement States with Environmental Protection Agency (EPA)-authorized Underground Injection Control (UIC) programs. Of the several options proposed, the staff recommended that the Commission adopt the option to defer regulation of ground-water protection at ISL facilities to EPA-authorized non-Agreement States through development of Memoranda of Understanding (MOUs).

In a Staff Requirements Memorandum dated November 19, 2003, the Commission approved the staff's recommendation in SECY-03-0186 and directed the staff to prepare a Regulatory Issue Summary to inform the public about this proposal and proceed with the development of an MOU with each appropriate State. In this regard, the current licensed operating facilities affected by this proposal are located in the States of Wyoming and Nebraska. The development of the MOUs with the affected States will be based upon a review by the staff of the comparability of each State's ground-water protection program (i.e., the EPA-authorized UIC program) with NRC's ground-water protection program as provided in NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications," June 2003. State program areas identified as essentially equivalent to, or more restrictive than, NRC's program would be identified in the MOU as areas where NRC would defer active regulatory oversight to the State. Any areas of the State's program determined not essentially equivalent to the NRC's program would be identified in the MOU as areas where NRC would retain its direct regulatory oversight.

2. PURPOSE

The purpose of this document is to provide guidance for the conduct of the NRC team review of the comparability of the State's EPA-authorized UIC program with the NRC's groundwater protection program provided in NUREG-1569.

3. ROLES AND RESPONSIBILITIES

A. Fuel Cycle Facilities Branch Chief

The Fuel Cycle Facilities Branch (FCFB) Chief is responsible for the issuance of the draft and final reports of the results of the NRC team review of NRC and State ground-water protection program comparability.

B. Uranium Processing Section Chief

The Uranium Processing Section Chief is responsible for designating the team leader for the comparability review and other members of the team.

C. Comparability Review Team Leader

The comparability review team leader is responsible for: (1) the coordination and conduct of the review to determine the equivalence of NRC and State ground-water protection programs, and, (2) the writing of the draft and final reports of the results of the comparability review. Coordination includes responsibility for establishing contacts with appropriate EPA and State representatives (the UIC Program Directors) and arranging the necessary on-site meetings, audits, or inspections for the conduct of the review. Prior to any meetings, audits, or inspections, the team leader also prepares the correspondence, questionnaires, or requests for information that may be necessary for the conduct of the on-site review.

D. Comparability Review Team Member

The comparability review team member is responsible for assisting the team leader in the conduct of the review and the preparation of the draft and final review reports.

4. On-site Comparability Review

A. Comparability of State UIC Program with NRC Ground-Water Protection Program (NUREG-1569)

NRC's ground-water protection program is embodied within Section 2.7 (Hydrology), Section 3.1 (*In Situ* Leaching Process and Equipment), Section 3.3 (Instrumentation and Control), Section 5.7.8 (Ground-Water and Surface-Water Monitoring Programs) and Section 6.1 (Plans and Schedules for Ground-Water Quality Restoration) of NUREG-1569. These Sections establish the criteria for determining the acceptability of a licensee's ground-water protection program in the general areas of site characterization, ISL process methodology and equipment design, ISL process instrumentation and control, pre-operational or baseline water quality monitoring, production or operational monitoring, restoration monitoring, and ground-water quality restoration. Within these general areas, the staff evaluates the adequacy of the licensee's programs to characterize the ISL facility site hydrology, develop an acceptable ISL process and well design, monitor and control ISL operations, establish baseline water quality, locate and emplace excursion monitoring wells, select excursion indicators and upper control limits, implement an excursion monitoring program with provisions for corrective action, establish well-field test procedures for determination of well-field flow characteristics, develop plans, techniques, schedules, and methodologies for ground-water restoration, characterize the lateral and vertical extent of ground-water contamination, provide for post-restoration stability monitoring, evaluate potential restoration impacts to ground-waters outside production zones, develop plans for well plugging and abandonment, and provide for disposal of effluents. The staff should compare

the detailed elements of NRC's ground-water protection program, as described in the specific "Areas of Review", "Review Procedures", and "Acceptance Criteria" of Sections 2.7, 3.1, 3.3, 5.7.8, and 6.1 of NUREG-1569, with the State UIC program to determine whether the programs are comparable. This determination should identify any areas of NRC's regulatory interest that are not included in the State UIC program. These areas of non-comparability can be addressed in either of two ways. At the State's option, the State can enhance their UIC program to include such areas or the NRC can retain regulatory oversight of areas not included in the State UIC program. Resolution of areas of non-comparability should be addressed and discussed in the NRC/State MOU.

B. Technical Quality of State UIC Program Permitting Actions

The review team should review representative examples of issued UIC permits as well as any technical evaluations or reports that provide the underlying bases for the issuance of the permits. These reviews are to be conducted to assess the technical quality of State actions with regard to completeness, thoroughness, and consistency with corresponding NRC ground-water protection program evaluations. The review team should confirm that State permitting actions have been made in a technically sound fashion, and in a manner consistent with approved State guidance. State actions should also demonstrate that all health and safety issues have been properly addressed. The review team should especially focus on the adequacy of State oversight of lixiviant excursion corrective actions by NRC licensees and State ground-water restoration evaluations of NRC licensees.

C. Technical Quality of State UIC Program Inspection Activities

The review team should accompany State representatives on scheduled inspections of licensee facilities for a firsthand assessment of the overall status of the State UIC inspection program and the knowledge and capabilities of State inspectors. The review team should verify that inspections are complete and focus on health, safety, and environmental issues. The review team should verify that inspection procedures are in place and used to help identify areas of poor licensee performance and that inspection findings lead to appropriate and prompt regulatory action. The review team should confirm that inspection findings are well-founded and documented in reports which describe the scope of the inspection, all violations, all health, safety, and environmental matters, discussions with licensee management, and licensee responses to inspection findings. The review team should conduct in-depth, on-site reviews of selected inspection reports for their scope, completeness, and technical accuracy of completed inspections.

D. Technical Staffing and Training for the State UIC Program

The review team should evaluate the staffing and training provided for the conduct of the State UIC program to assess the ability of the State to implement an effective permitting and inspection program. The review team should verify

that the State has a sufficient number of knowledgeable, experienced, and well-trained technical personnel for the conduct of the UIC program. The resources provided by the State should be comparable to, or greater than, the level of effort expended to oversee NRC's ground-water protection program for the non-Agreement State ISL facilities. The State technical staff should have a bachelor's degree or equivalent training in the physical and/or life sciences. The training provided by the State should be roughly comparable to the type of training provided for NRC license reviewers and inspectors of ground-water protection activities. State technical staff training should include a combination of classroom instruction and practical on-the-job activities. The training may also include opportunities for attendance at technical workshops, industry meetings, and conventions.

5. Preparation of Draft and Final Reports

The review team leader is responsible for the preparation of the draft and final reports of the results of the NRC team review of NRC and State ground-water protection program comparability. The reports will be prepared for the signature of the FCFB Chief to be sent to the State UIC Program Directors. The draft report will be sent for review and comment by the State, and State comments will be addressed and incorporated in the final report. The draft report should be transmitted within 30 days of completion of the on-site comparability review. The reports should provide conclusions regarding the comparability of NRC and State ground-water protection programs, including identification of any areas of non-comparability or deficiency in the State program.

6. Periodic Reassessment of State UIC Program

At the 9 month point following the transfer of regulatory authority over ground-water protection at ISL facilities to the non-Agreement States, the review team should conduct a preliminary assessment of the State's application of its UIC program at these facilities. At the 18 month point following transfer of regulatory authority, the review team should conduct a comprehensive review of the State's oversight of ground-water protection activities at the ISL facilities. Thereafter, follow-up assessments may be conducted at 24 month intervals, unless assessment findings warrant an alternative schedule. The results of the review team assessments should be documented in reports to be provided to the State UIC Program Directors.

7. Checklist for the On-site Comparability Review

A checklist for the conduct of the on-site comparability review is provided in the attachment to this guidance.

ATTACHMENT

Checklist for Conduct of On-site Comparability Review

1. **Groundwater Restoration:**

   A. Review the State's primary restoration standards.

   B. Review the State's secondary restoration standards.

   C. Evaluate the State's restoration standards to determine if they are as stringent as, or more stringent than, NRC's restoration standards.

   D. Review the State's procedures for appropriate guidance when restoration standards are not achieved.

   E. Evaluate the State's post-restoration stability monitoring program to determine if it is equivalent to, or more stringent than, NRC's stability monitoring program.

   F. Review two examples of the State's review of well-field restoration reports, including the State's review of the stability data for the period following the completion of groundwater restoration activities.

   G. Review the State's procedures for assessment of potential impacts to water quality outside of the production zone or mining areas (aquifer exemption area).

2. **Groundwater Monitoring/Excursion Monitoring/Corrective Action:**

   A. Evaluate the State's criteria for an acceptable operational groundwater monitoring program to ensure the early detection and timely restoration of well-field excursions and determine if the State's criteria are equivalent to, or more stringent than, NRC's criteria.

   B. Evaluate the State's criteria for acceptable licensee corrective action and notification procedures for excursions and determine if the criteria are as stringent as, or more stringent than, NRC's criteria.

   C. Review the State's evaluation of an operational groundwater monitoring program for one facility.

   D. Review two examples of the State's review of an excursion, the State's requirements for corrective action, and the implementation of the State's corrective action criteria.

   E. Review the State's criteria for establishing the appropriate monitoring well spacing for vertical and horizontal excursion monitoring.

3. **In Situ Leaching Process and Equipment:**

A. Review the State's procedures for well integrity testing to determine if they are equivalent to, or more stringent than, NRC's acceptance criteria for well integrity testing.

B. Review one example of the State's inspection report for well integrity testing.

C. Evaluate the State's criteria for establishing appropriate well operating pressures and determine if they are equivalent to, or more stringent than, NRC's criteria.

D. Review one example of the State's evaluation report for establishment of appropriate well operating pressures.

E. Review the State's inspection procedures for assessment of the licensee's balancing of production and injection flow rates.

F. Review one example of the State's inspection of the licensee's balancing of production and injection flow rates.