

**U.S.NRC**

UNITED STATES NUCLEAR REGULATORY COMMISSION

*Protecting People and the Environment*

**GENERIC ENVIRONMENTAL IMPACT  
STATEMENT FOR URANIUM RECOVERY**

**Public Scoping Meeting**

**Gallup, NM**

**September 27, 2007**

**Scott Flanders**

**Director, Environmental Protection and  
Performance Assessment Directorate,**

**Division of Waste Management and Environmental Protection**

# Meeting Objectives

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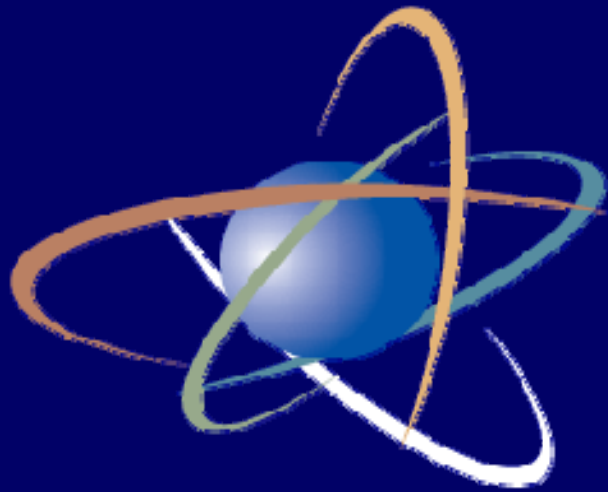
- **NRC's Role and Responsibility**
- **NRC's Environmental Review Process**
- **NRC's Safety Review Process**
- **Public Comments on proposed GEIS**

# NRC Role and Responsibility

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- **INDEPENDENT** Federal Commission
- Report directly to **CONGRESS**
- Regulatory **RESPONSIBILITY**
  - Safety and security review
  - Environmental review
  - Licensing
  - Inspection
  - Enforcement

**OUR  
MISSION:  
Protect  
Public  
Health and  
Safety,  
and the  
Environment**



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# **SAFETY REVIEW OF URANIUM RECOVERY LICENSING ACTIONS**

**Paul Michalak  
Project Manager,  
Uranium Recovery Licensing Branch,  
Division of Waste Management and  
Environmental Protection**

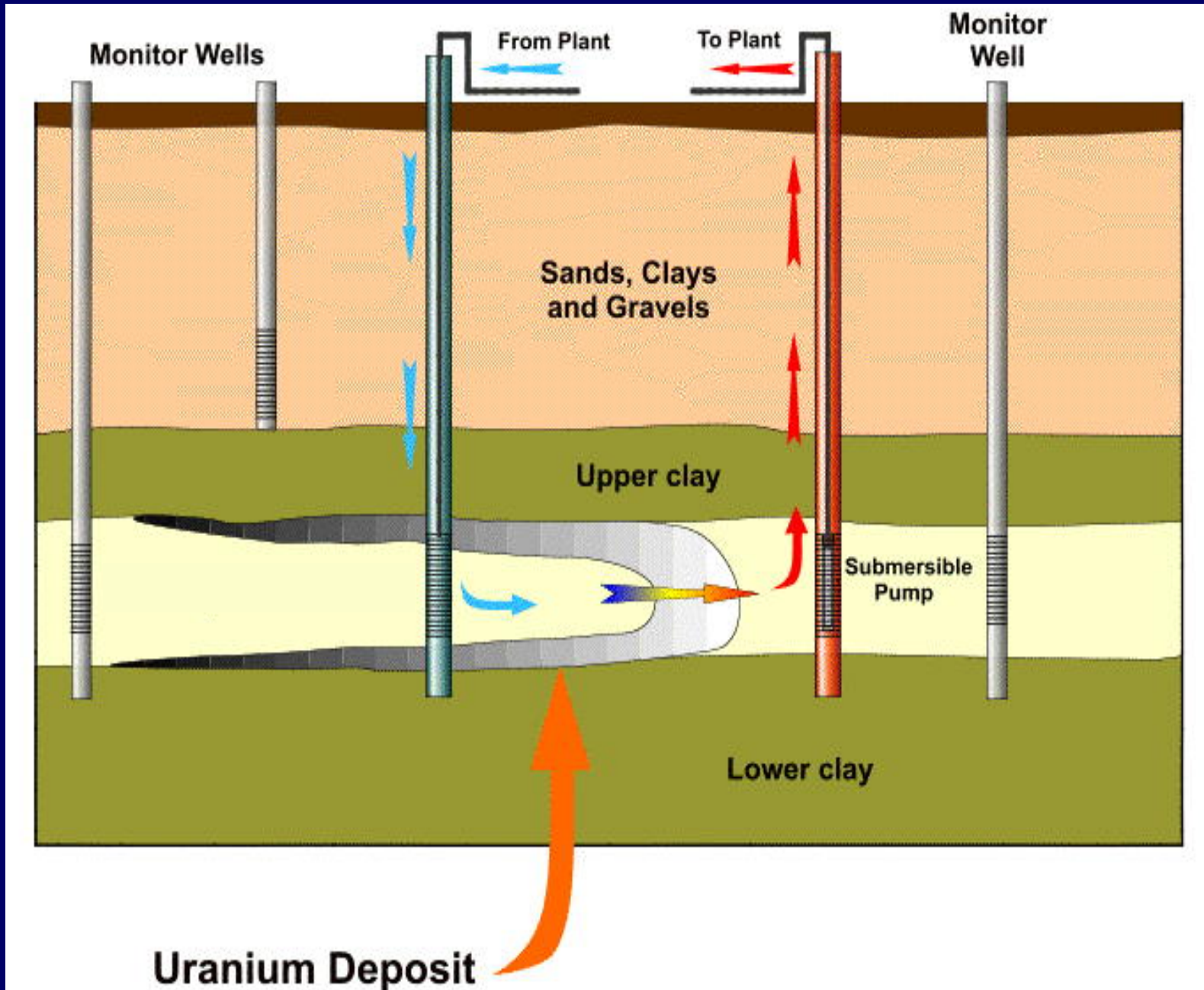
# **In Situ Leach (ISL) Process**

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## **Three general components:**

- **Subsurface – injection/recovery**
- **Surface – further processing**
- **Restoration – restore ground water**

# 1) Subsurface Component – Injection/Recovery



## 2) Surface Component - ISL Processing Plant



# **Review of Site-Specific In Situ Leach License Applications**

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- **10 CFR 40, Appendix A**
- **NUREG-1569, Standard Review Plan (SRP) for ISL Uranium Extraction License Applications**



# **Applicant must design and operate an In Situ Leach facility in which**

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- **Radiation dose is within specified regulatory limits**
- **Implement monitoring programs that verify radiation dose is within specified regulatory limits**
- **Radiation is As Low As Reasonability Achievable (ALARA)**
- **Personnel have appropriate radiation safety training**

# Scope of Safety Review

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- a) Effluent Control Systems**
- b) Operations**
- c) Radiation Safety Controls and Monitoring**
- d) Ground Water**
- e) Plant Decommissioning**

## **a) Effluent Control Systems**

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**Evaluate applicants proposed effluent control systems with respect to:**

- **Gaseous and Airborne Particulates**
- **Liquids and Solids**
- **Contaminated Equipment**

## **b) Operations**

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**Review applicants detailed description of the following operational components:**

- **Corporate Organization/ Administrative Procedures**
- **Management Control Program**
- **Management Audit and Inspection**
- **Radiation Safety Qualifications for Personnel**
- **Radiation Safety Training**
- **Security**

## **c) Radiation Safety Controls and Monitoring**

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**Review applicants detailed description of the following Radiation Safety components:**

- **Effluent Control Techniques**
- **External Radiation Exposure Monitoring Program**
- **Airborne Radiation Monitoring Program**
- **Exposure Calculations**
- **Bioassay Program**
- **Contamination Control Program**
- **Airborne Effluent and Environmental Monitoring Program**
- **Quality Assurance**

## **d) Ground Water**

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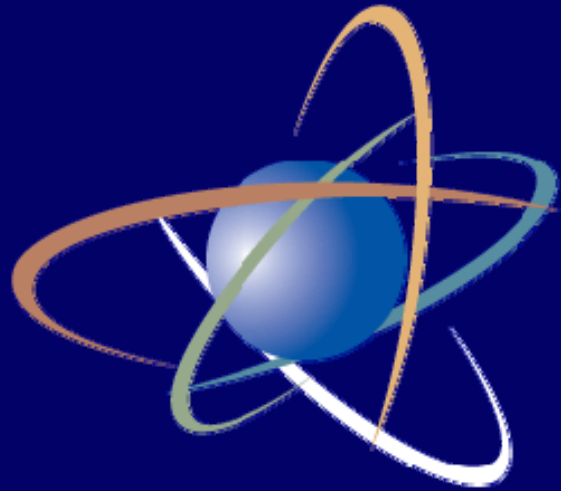
**Evaluate ground water related data/information to ensure applicant has proposed a program to**

- **Establish pre-operation ground water quality**
- **Confirm the hydraulic connection of the ground water monitoring network**
- **Verify inward hydraulic gradient in well field during production**
- **Monitor for excursions during production**
- **Conduct ground water restoration of the production zone**
- **Establish and verify criteria for evaluating the success of the ground water restoration**

## **e) Plant Decommissioning**

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- **Evaluate methodologies for removal and disposal of all contaminated structures and equipment.**
- **Evaluate methodologies for conducting post-reclamation and decommissioning radiological surveys.**
- **Review Financial Surety**



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**GENERIC ENVIRONMENTAL  
IMPACT STATEMENT FOR  
URANIUM RECOVERY LICENSING**

**Gregory F. Suber**

**Chief, Environmental Review Branch,  
Division of Waste Management and  
Environmental Protection,  
U.S. Nuclear Regulatory Commission**



# **National Environmental Policy Act of 1969**

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- **Set national environmental policy**
- **Requires detailed statement for all major federal actions significantly affecting the human environment**
- **Established the Council on Environmental Quality (CEQ)**

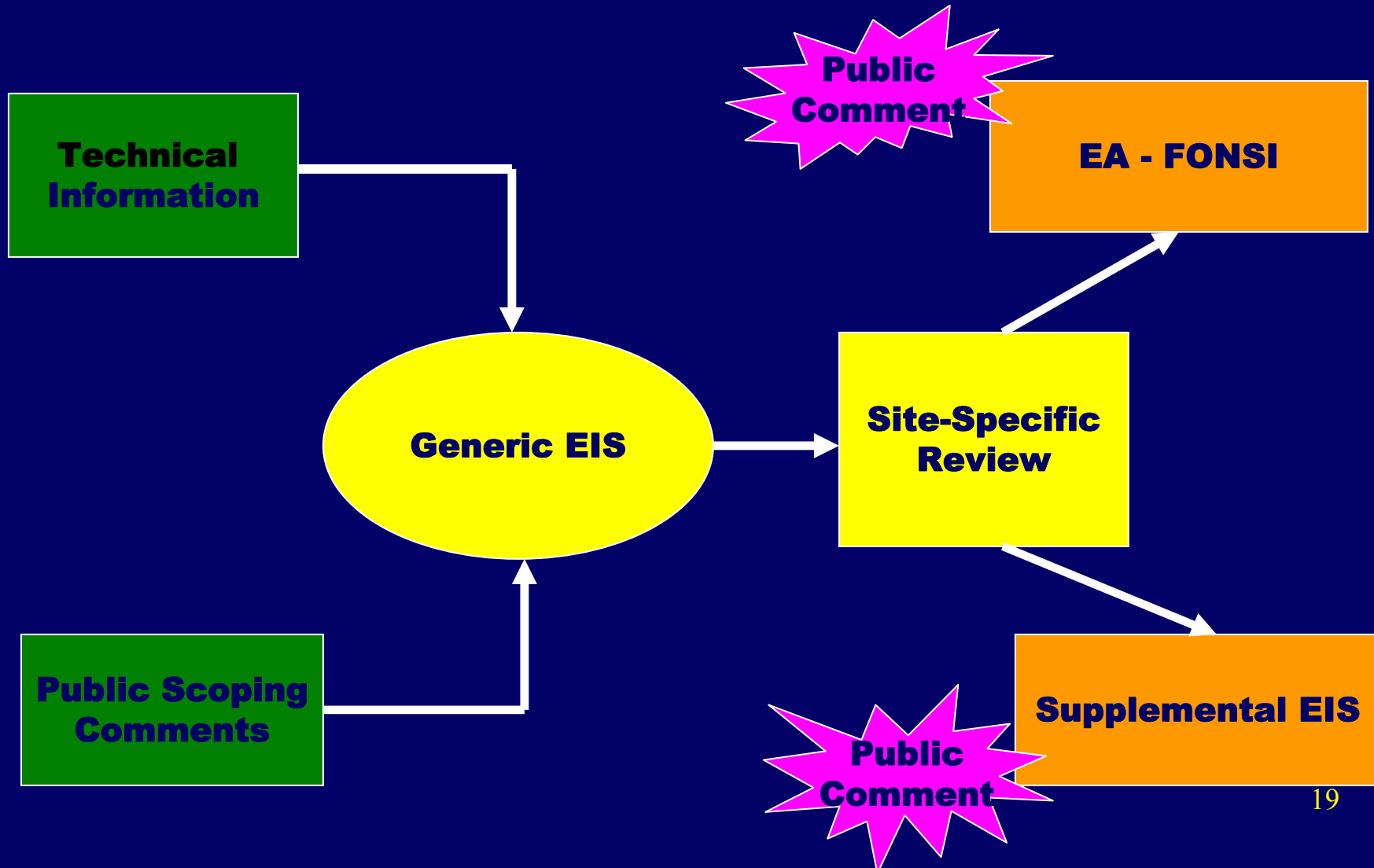
# **Purpose of Uranium Recovery GEIS**

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- **Evaluate environmental issues common to in-situ leach uranium milling and alternate methods of uranium recovery (e.g., conventional milling)**
- **Make efficient use of NRC staff resources**
- **Fulfill NRC's NEPA requirements**

# GEIS Review Process

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# **NRC Examples of GEISs**

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- **Final GEIS on Uranium Milling (NUREG-0706)**
- **GEIS for License Renewal of Nuclear Plants (NUREG-1437)**
- **GEIS on Decommissioning of Nuclear Facilities (NUREG-0586)**

# **Scope of Uranium Recovery GEIS**

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- **Address construction, operation, and decommissioning / reclamation of uranium recovery facilities**
- **Discuss direct, indirect, and cumulative radiological & non-radiological impacts**
- **Evaluate potential environmental impacts to various resource areas**

# **Environmental Impact Resource Areas**

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- **Land Use**
- **Geology and Soils**
- **Water Resources**
- **Ecological Resources**
- **Air Quality**
- **Waste Management**
- **Environmental Justice**
- **Historic and Cultural Resources**
- **Transportation**
- **Socioeconomics**
- **Public and Occupational Health**
- **Wildlife**

# **GEIS Schedule**

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- **Publish Notice of Intent (July 24, 2007)**
- **Scoping Comment Period (July 24 to October 31, 2007)**
- **Scoping Summary Report**
- **Draft GEIS prepared (April 2008)**
- **Draft GEIS Public Comment Period**
- **Final GEIS Prepared (January 2009)**

# GEIS Scoping Comments

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- **By regular mail postmarked by October 31, 2007,**
  - **Chief, Rules Review and Directives Branch, Mail Stop T-6D59, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.**
- **By email by midnight October 31, 2007,**
  - **Send to [URLGEIS@nrc.gov](mailto:URLGEIS@nrc.gov) or [nrcrep@nrc.gov](mailto:nrcrep@nrc.gov) with “Uranium Recovery GEIS” in the subject line.**



# Contact Information

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- **NEPA and GEIS questions, contact:**

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- Gregory Suber at (800) 368-5642, x8087

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- **Uranium recovery questions, contact:**

- William Von Till at (800) 368-5642, x0598

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- Paul Michalak at (800) 368-5642, x 7612

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