



General Training On Methodologies For Geological Disposal in North America
IAEA Network of Centers of Excellence



**Communicating with the Regulator:
Prelicensing Interactions between the
U.S. Department of Energy and the
U.S. Nuclear Regulatory Commission**



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Presented to: General Training on Methodologies
for Geologic Disposal in North America
IAEA Network of Centers of Excellence
October 18, 2004

Outline

- History: legislation and regulations
 - Atomic Energy Act, 1946
 - Nuclear Waste Policy Act, 1982
- Agency roles: EPA, NRC, DOE
- Regulatory Interactions vs. Effective Communication
 - (are they mutually exclusive?)
 - Or, the “Who, What, Where, When, Why, How”
of Interactions with the Regulator
- Licensing “Rules”
- Conclusions

History

- Atomic Energy Act of 1946
 - Established Atomic Energy Commission
 - Assigned dual (conflicting) roles of promoter and
regulator of new technology
 - Amended in 1954 to emphasize civilian applications
of nuclear technology
 - Commercial nuclear power industry support
 - Use of nuclear technology and radionuclides in
“Atoms for Peace” program

History

- Energy Reorganization Act, 1974
 - Congress addressed the conflict of interest in AEC by separating regulator and promoter/implementer roles:
 - U.S. Nuclear Regulatory Commission (regulator)
 - Energy Research and Development Administration (implementer)
- Department of Energy Organization Act, 1977
 - Created DOE as a cabinet level agency
 - Consolidated energy functions of Federal government
 - Develop energy related technologies
 - Energy conservation
 - Nuclear weapons program

History

- Nuclear Waste Policy Act of 1982
 - Created policies governing the permanent disposal of high-level radioactive waste and spent fuel
 - Established Federal responsibility for waste
 - Deep geologic disposal chosen as solution
- Amended in 1987
 - Yucca Mountain, Nevada specified as the single candidate site for characterization as a potential geologic repository
 - Maintained NRC's role as regulator
 - Impacted public opinion

History Nuclear Waste Policy Act

- Federal agencies with role in the disposal of high-level radioactive waste:
 - Environmental Protection Agency (EPA)
 - develop environmental standards to evaluate the safety of a geologic repository
 - Nuclear Regulatory Commission (NRC)
 - develop regulations to implement the EPA safety standards
 - license the geologic repository (regulator)
 - Department of Energy (DOE)
 - develop permanent disposal capacity for spent fuel and other high-level radioactive waste (implementer).

History - Regulatory Framework

- Agencies created regulations to implement their responsibilities under the NWPA:

EPA 40 CFR Part 197: *Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada*

NRC 10 CFR Part 63: *Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada*

DOE 10 CFR Part 963: *Yucca Mountain Site Suitability Guidelines*

NRC's Responsibilities

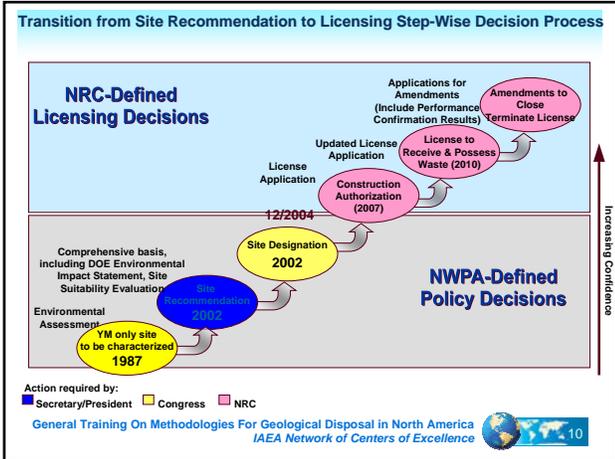
NRC's role includes regulation and oversight of DOE's repository activities:

- Concurrence on Siting Guidelines;
- Receive reports during Site Characterization;
- Provide comments on Site Recommendation for submission to the President by DOE;
- Consultation and review during precicensing phase of program;
- Evaluate the adequacy of DOE's license application to construct a geologic repository and dispose of high-level nuclear waste and spent fuel.

DOE's Responsibilities

DOE must keep NRC informed:

- Facilitate NRC's review and comment on activities;
- Provide semi-annual reports during site characterization;
- Support NRC's information gathering for preparation of sufficiency comments on Site Recommendation;
- Conduct on-going regulatory interactions during precicensing phase of program;
- Submit a high quality license application for NRC's review.



Guidelines for Communication

“Agreement Between DOE and NRC Regarding Prelicensing Interactions” (aka “Prelicensing Agreement”)

- Formal written policy
- First issued in December, 1989
 - Revised in 1991, 1993, 1998 to reflect changing needs
 - Subsequent revisions were significantly simpler
- Drafted cooperatively by NRC and DOE staff
 - Approved by senior managers
 - Comments solicited from stakeholders
 - Participation by the public in interactions to build public confidence in the regulatory framework

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Guidelines for Communication

Prelicensing Agreement

- Defined types of interactions
 - Management meetings – commitments can be made
 - Technical exchanges – discuss issues
 - “Appendix 7” meetings* - informal information exchange
 - Site visits – discuss technical topics in the field
- Describes conduct of interactions
 - Publicly announced and open to observers
 - Pre-meeting preparation (telecons)
 - Preparation of minutes/meeting summaries documenting interactions

*Appendix 7 of the agreement is reserved for a description of interactions with the NRC On-Site Representatives

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Guidelines for Communication

Prelicensing Agreement

- Identifies points of contact for each agency
- Provides NRC access to data, documents, records, field tests, and samples
- Provides structure and format

However, **content** of meeting is critical

Regulatory Interactions

Importance of effective communication

Logistics: Who, what, where, when, why, how ?

Who should represent your program?

What is purpose of the interaction? What is the message?

Where will the meeting take place?

When will you be ready to engage the regulator?

Why are you meeting? What's the goal of the meeting?

How will the interaction be conducted? Has the format, content, and scope been agreed to? How do you determine success?

Who should represent your program?

- Communication skills are imperative
- Technical excellence is required
- Topic: Management or Technical ?
- Federal, Contractor, National Laboratory, U.S. Geological Survey, Consultants
 - DOE will be the applicant and licensee and is responsible
- Personal credibility and established trust
- Continuity, longevity, and long-term relationships
- Motivation
- Knowledge and experience
- Authority to speak for the agency
- Correct organizational level

Who should represent your program?

- NRC

*Commission
Division of HLW Safety
NRC Managers
NRC Staff*

On-Site Representatives
Regional Inspectors

Located in Washington, DC

- DOE

*Secretary and Undersecretaries
of Energy
OCWRM Director*

Office of Repository
Development
Office of License Application
and Strategy
Regulatory Interactions and
Strategy Division

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What is the purpose of the interaction?

- Clarification and documentation of agency position
 - Correspondence
 - Meeting summaries
 - Policy statements
 - Data sharing
- Provide opportunity to get regulator's feedback
- Demonstrate DOE's progress and readiness
- Address issues
- Share information, engage in discussion
 - use of the WWW as a communication tool
- Understand each other's views

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Regulatory Work vs. Scientific Work

"The vision is that you have got to be nimble, you have got to be flexible, you have got to bring the crosscutting mix of scientific talents to bear on projects as they are needed in real time, not in geologic time."

Chip Groat, Director, United States Geologic Survey

"Policy making is about rapid, timely decisions made in the face of constantly inadequate information. Science is about tentative conclusions made only after thorough examination of well-researched data."

Melody Brown Burskins, former Geological Society of America Congressional Science Fellow

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Where should the meeting take place?

- Logistics are important considerations
- Location, location, location
 - Messages may be inferred based on location
 - Policy issues vs. technical meetings
 - Facilitate public participation
 - Las Vegas? Washington, DC? Denver? San Antonio? Albuquerque? Pahrump?
 - Neutral location
- Resource issues for travel and time away from office
 - Competing priorities

When will you be ready to discuss issues with the regulator?

- Sharing predecisional or draft information
- After development of final position
- Scheduling interactions
- Preparations
 - Strategy sessions
 - "Dry runs" – practice
 - "Murder Boards" – management review
- Availability of presentation materials before meetings
- "Cleaning house before company comes" or using interactions as an internal management tool

Why are we meeting?

- Clearly define goals, objectives, strategies, contingencies
 - Consider program's stage and technical maturity
 - Status meetings may be OK early in program
 - Issue resolution possible and necessary as program matures
- Identify actions for follow-up from previous meetings
- Present regulatory, technical, or management positions
- Provide convincing arguments
- Resolve regulator concerns early
- Meeting to meet agency goals
 - Public outreach goals are different for DOE and NRC

How will the interaction be conducted?

- Establish lead for “running the meeting”
Use of Technical and Regulatory leads is recommended
- Ensure everyone knows their role
- Sending messages
 - Who is seated at the table?
 - Who should be (and should **not** be) at the meeting?
 - Who will answer the tough questions? The policy questions?
- Taking notes
 - Timely meeting summary preparation can be a real challenge
 - Formal documentation of agency position and agreements

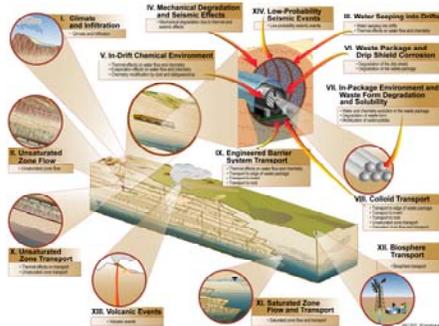
Examples of Successful Interactions

- NRC developed ten Key Technical Issues (KTI) related to repository performance:
 - 9 address post-closure performance issue
(Preclosure issues are also handled as a KTI)
 - 293 agreements were reached in a series of interactions between August, 2000 and September, 2001
 - Issues were determined to be “closed” or “closed pending” additional information from DOE
- DOE and NRC held over 40 interactions between August, 2000 and September, 2004 to discuss KTI's:
 - Although original schedule and approach for KTI submittals revised due to delays in completion of technical work,
 - Revised approach has been very successful.

Examples of Successful Interactions

- As of August 31, 2004, DOE has addressed all 293 KTI's in correspondence submitted to NRC:
 - 115 are considered “closed” by NRC;
 - 178 are in NRC review;
 - Discussions continue to assist NRC's review;
 - NRC intends to provide DOE feedback on KTI agreements currently in review.
- Provided framework for DOE/NRC interactions and effective issue resolution
 - Supported NRC's sufficiency finding as required by the Nuclear Waste Policy Act (1987)
 - Allowed DOE and NRC to demonstrate progress.

DOE's Revised Approach to KTI Agreements



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Ten Pretty Good Licensing Rules

- 1) Do not ask the question if you cannot live with the answer.
- 2) The cost of issue resolution is inversely proportional to the licensing effort put into it.
- 3) When you can define "licensing" you've been in the business too long.
- 4) With lack of clear basis, the highest placed whim wins.
- 5) Disagreement is healthy if handled professionally and opposing views are fully developed.

Source: Southern Technical Services, Bethesda, MD, 1992

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Ten Pretty Good Licensing Rules

- 6) Be proactive – not reactive or radioactive.
- 7) Never intentionally irritate the NRC; the results would be useless.
- 8) Limit your commitments, make them thoughtfully and keep them faithfully.
- 9) Respect your peers, your management, and the regulator, even if you don't admire them.
- 10) Doing the best thing is never as good as doing the right thing.

Source: Southern Technical Services, Bethesda, MD, 1992

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April's Rule

Do not surprise the regulator !

Challenges

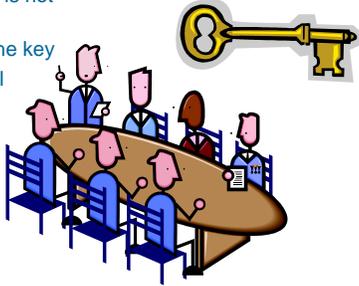
- Perception vs. reality
 - To be effective, NRC must maintain objectivity and provide aggressive oversight
 - NRC's goals and DOE's goals overlap, but are not equivalent; e.g. NRC is not concerned with schedule or cost
 - DOE has traditionally been self-regulating
 - Organizational culture development
- Public participation in DOE/NRC Regulatory Interactions
 - NRC has an obligation to involve the public
- Separation of powers
 - Democracy can be messy

Conclusions

- Don't schedule interactions until you are ready.
 - **But:** It's better to cancel an interaction than to have a bad interaction.
- Carefully consider and craft your message; know what you're going to say and who's going to say it at the interaction.
 - **But:** Listen to what the regulator tells you at the meeting and react appropriately.
- Maintain communication at all organizational levels in order to keep the regulator informed; they have a need and a right to know.
 - **But:** Select the messenger carefully.

Conclusions

- Technical excellence is essential but is not enough;
- People are the key to successful interactions and to a successful program.



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Background

DOE Role after License Application Submittal:

- Transition from scientific/design activities to licensee construction/operational processes and activities
- commitment management, NRC reporting, organizational readiness
 - corrective action program, self-evaluation and lessons-learned
- Participate in licensing proceedings and public hearings which includes:
- Addressing NRC questions on the submitted LA
 - Address contentions (points of disagreement with DOE's license application) submitted to the NRC adjudicatory board by affected parties (Affected parties include the state of Nevada, and others whose interests are affected by the proceedings)
- Maintain and update LA, as necessary, with new or more detailed information as acquired.

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Background - Site Recommendation

- February 14, 2002, the DOE Secretary of Energy recommended to the President the Yucca Mountain site and submitted the site recommendation report
- Report consisted of:
 - description of the proposed repository
 - description of the waste form, waste package, and their interaction with the geologic system
 - discussion of safety-related site characterization data.
 - final environmental impact statement.
 - **NRC sufficiency comments on whether the site characterization and waste form proposal are sufficient for inclusion in a potential license application**
 - DOE responses to comments from the public, state and local governments, or governing body of affected Indian tribe

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Background - Site Recommendation (contd)

- Feb. 15, 2002: President approves Yucca Mountain site recommendation and submits it to Congress
- April 8, 2002: Nevada Governor submits Notice of Disapproval of the Yucca Mountain site to Congress
- May 8, 2002: U.S. House approves Yucca Mountain joint resolution
- July 9, 2002: U.S. Senate approves Yucca Mountain joint resolution
- July 23, 2002: President signs congressional resolution approving Yucca Mountain, allowing the project to proceed to the licensing phase

Background: Regulatory Framework

- Licensing Support Network codified in 10CFR Part 2 Subpart J
 - web-based information system intended to support NRC licensing process
 - requires potential parties to the NRC's licensing proceeding, including the DOE and NRC, place and make electronically retrievable relevant documentary material to the DOE license application
 - provides the public and parties to the NRC's licensing proceeding to electronically access to information relevant to the licensing of a repository .
