



NRC's Technical Evaluation Reports (TERs) on the Content of DOE's License Application for Yucca Mountain

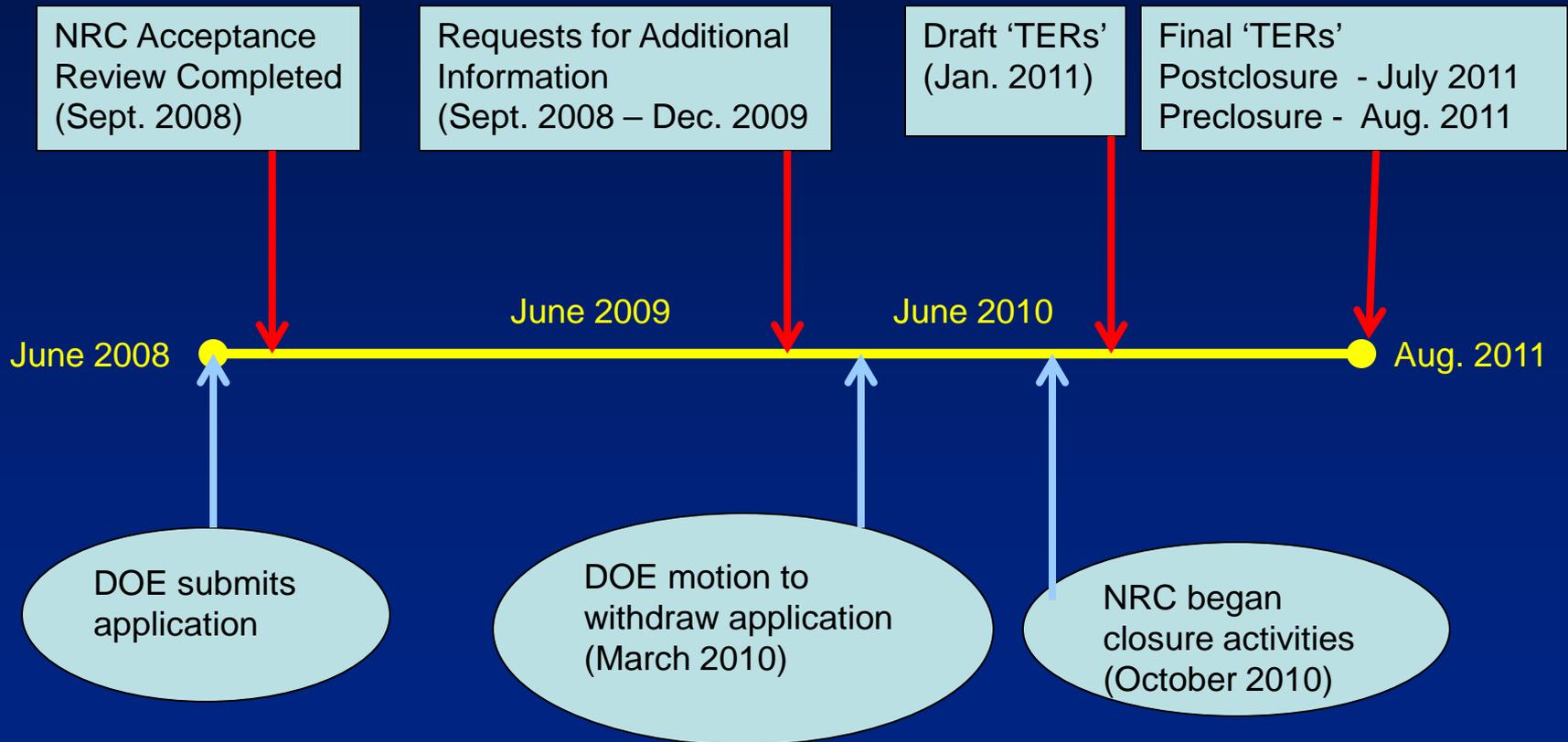
**Lawrence Kokajko and Timothy McCartin
Office of Nuclear Material, Safety and Safeguards
U.S. Nuclear Regulatory Commission**

**NWTRB Meeting to Focus on
Geologic Disposal of Nuclear Waste
March 7, 2012**

Outline

- Review Timeline
- NRC Preparations
- Review Approach and Lessons Learned
- Summary

Review Timeline



Preparations: Staff

- Developed independent technical bases with Center for Nuclear Waste Regulatory Analyses (over 20+ years)
 - laboratory and field investigations
 - detailed process models
 - risk insights from performance assessment codes
- Develop regulations and implementing guidance
- Interact extensively with DOE and stakeholders
 - detailed technical reviews
 - public understanding of NRC's role

Preparations: Process

- Project management
 - organization of project teams and management
 - detailed project plan
 - write, review, and publish evaluation reports
- Licensing Support Network (LSN) to manage documents
- Yucca Mountain Review Plan (YMRP)

Acceptance Review

- Goal: determine if information in application sufficient to begin review
- Secondary benefit was identification of:
 - potential Requests for Additional Information (RAIs)
 - key support documents
 - key areas for integration
 - potential resource issues

Lessons Learned: Acceptance Review

- Outcomes
 - all staff involved at the start
 - broad range of regulatory perspectives
- Areas of Improvement
 - further training to improve understanding and focus of review (prior to start of review)

Request for Additional Information

- Approach for generating RAIs
 - clarification of information in application
 - safety information necessary to write evaluation
 - Safety Integration Review team
 - weekly meetings for all reviewers to discuss status and continue ‘training’

Lessons Learned: RAIs

- Outcomes
 - maintained tight schedule while providing RAIs for all evaluations chapters (over 600 RAIs)
 - timely transition to writing evaluations
 - very limited need for second RAI
- Areas of Improvement
 - Risk-informed (comprehensive meeting to discuss the risk significance prior to generation of RAIs)
 - Possibly too many authors

Draft Technical Evaluation Reports (TERs)

- Approach for generating draft documents
 - lead author coordinating input from many authors (designated staff for integration between chapters)
 - weekly meetings to review status and resources
 - weekly meeting for all “reviewers” to discuss issues and continue ‘training’ (e.g., focus of review, clarity in describing basis for evaluations)
 - special ‘teams’ set up on an ‘as-needed’ basis

Lessons Learned: Draft Reports

- Outcomes
 - constant vigilance and discipline required to remain on schedule
 - understanding of safety significance was key to documenting basis
 - ability to perform independent calculations proved important to support review

Lessons Learned: Draft Reports (cont.)

- Areas of Improvement
 - risk-informed (comprehensive meeting to discuss the risk significance prior to preparing draft report)
 - continued vigilance needed to keep focus of review on ‘what is needed’ versus what a reviewer ‘wants’
 - transition from development of RAIs to development of evaluation was more difficult than anticipated

Final Technical Evaluation Reports (TERs)

- Approach for generating final reports
 - legal review
 - management review
 - small team reviewed and made necessary changes to ensure consistency across final reports

Lessons Learned: TERs

- Outcomes
 - deadlines met (flexibility and creativity)
 - broad range of regulatory perspectives enhanced final reports
- Areas of Improvement
 - getting to a final report sooner may have been useful as a means of assisting risk informing and regulatory focus (this may not be possible)

Summary: How was it accomplished?

- Meeting the tight schedule was accomplished through:
 - vigilant project management
 - creative Division management
 - dedicated legal and technical staff
 - flexibility and understanding from everyone
 - well prepared, highly trained staff and contractors
- Never losing sight of our mission
 - independent safety review that we could defend

Summary: Lessons Learned

- Detailed Project management necessary for success
- Early agreement on level of detail for evaluation reports very useful
- Ability to quantify safety significance important for resolving concerns
- Input from legal reviewers and management was helpful
- Consensus on regulatory concepts important
- Technical preparedness was critical to efficiency
- Consensus meetings at critical times may have assisted efficiency