

## Summary Highlights of NRC/DOE Technical Exchange on Electronic Submissions

June 25-26, 2002  
Las Vegas, Nevada

### Introduction and Objectives

This meeting is the first Technical Exchange between the U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE) concerning the electronic submission of documents associated with a potential license application and associated proceedings for a Yucca Mountain high-level waste (HLW) repository. The NRC and DOE discussed technical issues and potential challenges that could affect electronic submission of documents. Future meetings on electronic submissions are anticipated between NRC, DOE, and other potential parties. The agenda and attendance list are provided as Attachments 1 and 2, respectively. Copies of the presenters' handouts and related written materials are provided as Attachment 3. Highlights from the Technical Exchange are discussed below.

### Meeting Summary

#### **1) HLW Information Architecture**

The NRC provided a conceptual overview of the information collection system that will be used to support the potential HLW proceedings. The staff discussed the various internal and external systems for managing electronic information using a graphic representation entitled, "HLW Information Architecture." This graphic served as a basis for subsequent presenters to discuss input, processing, and output of electronic information using NRC systems and components. The staff also discussed the system interfaces and electronic "firewall" for controlling access to information and databases. The staff provided a glossary of terms and a list of acronyms for use by the participants and attendees during this meeting.

#### **2) Electronic Information Exchange (EIE) Process and Pilots**

The NRC staff provided a presentation on the use of EIE which allows the NRC to exchange material electronically with stakeholders and other Federal agencies via the Internet. The staff discussed guidance provided in Regulatory Issue Summary (RIS) 2001-05, "Guidance on Submitting Documents to the NRC by Electronic Information Exchange or on CD-ROM." The EIE uses public key infrastructure (PKI) and digital signaling technology to authenticate documents and to validate user information. Currently, files are limited to 15 Megabyte (MB) per transmission, but larger documents can be sent via CD-ROM. No paper copy is needed to accompany EIE or CD-ROM submittals. The EIE accepts a wide range of formats but preferred formats include: PDF Image+Text, PDF Normal, PDF Image, and Multi-page TIFF. EIE does not accept classified material, safeguards material, Privacy Act information, or other non-public documents. Currently, the only acceptable web-site browsers are Netscape and Internet Explorer. DOE may participate in the current EIE process. However, the current process has a number of constraints.

The NRC is considering revising its regulations to permit voluntary electronic submissions by all licensees, vendors, and applicants using EIE, e-mail, CD-ROM, or diskettes. Formats would likely be those preferred in the current process described above and future guidance may include specifications concerning submittal size and will likely exclude information such as restricted data, national security information, Privacy Act information, and other non-public information. The NRC may request one paper copy be submitted with a CD-ROM. The NRC is conducting two EIE pilot projects. One is an adjudicatory pilot project to test the submittal, distribution and service of hearing documents. The other is a criminal history file pilot to test submittal, encryption, transmission, and decoding of criminal history file information. The NRC will also test file sizes up to and larger than 25 MB. At the conclusion of this session, the staff provided a demonstration of EIE process using the NRC Internet home page.

DOE asked a number of questions concerning EIE including possible revision to the regulations in 10 CFR Part 2, Subpart J; use of CD-ROM or digital video disk (DVD); potential requirements for paper submittals; and participation in the current process. Of particular importance were questions related to the 15 MB constraint and the handling of multiple documents in a single submittal. The NRC stated that there is no current rulemaking on Subpart J, the EIE process in place today is exclusively an Internet-based system, DVD is not currently an acceptable media for submissions, and total document volume may not exceed 15 MB for a single EIE submittal.

A representative from the State of Nevada questioned the integrity of the EIE firewall for protection against computer "viruses" and management of documents to preclude changes being made subsequent to receipt by the NRC. The State representative also questioned the certification process and maintenance of the NRC list of authorized persons. The NRC confirmed that the firewall has virus protection and that documents cannot be changed after being made an official record in PDF format. The staff stated that certificate holders will need to inform the NRC of changes to their list of authorized persons.

### **3) EHD for a Potential HLW Proceeding**

The NRC discussed the electronic hearing docket (EHD) regulatory requirements in 10 CFR Part 2, Subpart J for a HLW proceeding including submission requirements, content of the EHD, location on the NRC web site, content of folders, and search capability. The staff discussed how EIE may be used to facilitate the service of pleadings, orders, and other documents. EIE provides document authentication and allows for the secure submission of protective order documents. The NRC plans to adopt the Adobe Acrobat® Portable Document Format (PDF) file format as a requirement for pleadings and other submissions to the docket. The NRC also plans to provide additional guidance on filing submissions and file format at the conclusion of the EIE pilot studies and after completing a study on how to manage large documents. The staff provided a list of EHD terminology descriptions and sample web pages to illustrate methods of accessing the HLW-EHD Internet home page.

DOE stated that many of their documents are in Tagged Image File Format (TIFF), a format that would not be acceptable for the EHD. DOE asked who would convert the documents into PDF and how long it would take the NRC to get documents loaded on the EHD after submittal. The NRC stated that a majority of textual documents can be converted into PDF, but acknowledged that some document formats are acceptable for

LSN but not for EHD. The NRC stated their goal was to make documents available the next day following receipt. The NRC noted that the burden of document acceptability is the responsibility of the submitter.

A representative from the State of Nevada questioned whether a document, not containing sensitive information, could be submitted under protective order as a means of controlling access. The State representative also questioned whether a document could be withdrawn if the NRC decides the document should be made publicly available. The staff stated that it is the responsibility of the submitter to determine the need to withhold documents from public disclosure (e.g., proprietary information) and that the NRC routinely evaluates requests for withholding. The NRC discussed the procedures that may be pursued to have a document withdrawn (e.g., motion to abort to Presiding Officer, Atomic Safety Licensing Board Panel, (ASLBP)).

#### **4) Electronic Courtroom**

The NRC staff presented a graphic representation to illustrate the functioning of the electronic courtroom. The staff discussed the entry of documents in the Licensing Support Network (LSN), access to repositories of discovery documents, participant submittal through EIE, loading of documents on the EHD, downloading to the Digital Document Management System (DDMS), use of DDMS in courtroom proceedings, upload of DDMS output into EHD via the Document Processing Center (DPC), broadcast of input via electronic media (e.g., videoconferencing, videostreaming, etc.), and generation of a case record. The objectives of the electronic courtroom are to provide an integrated HLW licensing proceeding environment for judges and counsel through effective and efficient management of information. The operational approach is to have pre-filed potential exhibits downloaded from the EHD into the courtroom database as they are introduced in the proceeding. The courtroom database will be updated daily to refresh the EHD. The staff discussed electronic media issues including the introduction of large documents, courtroom retrieval and use during proceedings, navigation within documents to display pages quickly and clearly, digital recording for case file, rules/criteria for evidence, retirement to National Archives, and courtroom case management and web site accessibility. Implementation of the electronic courtroom will require training for judges, counsel, clerks, and support staff personnel. The Presiding Officer, ASLBP, can decide on document submission and announce the determination at the start of the proceeding if electronic media cannot sustain needs of the court environment.

DOE questioned when the NRC might conduct training sessions, dry-runs, and demonstrations of document usage. DOE requested guidelines on the electronic courtroom similar to guidelines for LSN. The NRC stated that training-related activities have not yet been scheduled, but the NRC agreed to provide some documentation for DOE to consider in preparing for courtroom activities. The NRC stated that, because DDMS is in procurement process, they could not discuss certain details at this time.

#### **5) Technical Issues with a Potential Electronic License Application Submission and Other Large Documents**

The NRC staff discussed the technical issues associated with a potential electronic license application submission. In particular, the staff discussed the electronic format and resolution standards and challenges associated with moving large documents

through the EIE and making them available in a practical or usable way. The NRC plans to adopt PDF and a minimum resolution of 200 dpi as a standard for electronic submission to the HLW proceeding. The current EIE does not accommodate large segmented files such as DOE's Final Environmental Impact Statement (FEIS). The staff discussed the need to ensure document integrity, fidelity, and currency; records management challenges; retrieval, search, and navigational issues; file types and electronic media that pose substantial problems; and the inability to support external hyperlinks. The staff is exploring these issues to better determine needs in terms of document characteristics, the number of very large documents, timing of planned submissions, planned usage, technology limitations, additional guidance, and associated costs for candidate solutions.

DOE noted that many of these challenges are related to submission of documents through the EIE process. DOE requested the staff to discuss explicit problems the NRC has observed in documents submitted via CD-ROM. DOE also questioned the possible use of PDF print- screen-optimized conversion of source documents. The NRC identified problems in a submittal related to the Structural Deformation and Seismicity Key Technical Issue (KTI) and the aforementioned FEIS report (e.g., lack of folder descriptions, large file sizes, unsupported file formats, executable files, etc.). The NRC will provide additional details on problems in DOE submittals subsequent to this meeting.

A representative from the Las Vegas Paiute Tribe stated that DOE should be responsive to the NRC and that the electronic submission process should be designed to function correctly. The NRC staff agreed and noted that the NRC gained valuable experience from implementing the Agencywide Documents Access and Management System (ADAMS).

A representative from the State of Nevada questioned how the NRC would get stakeholder input concerning document characteristics, size, and complexity. The NRC staff stated that the NRC has established an Executive Steering Committee and Working Group to evaluate these issues/alternatives and to make recommendations, including how to solicit stakeholder input on these issues.

A representative of the Nevada Nuclear Waste Task Force expressed the view that documents are not publicly available unless they are made available in paper form.

#### **6) Status of DOE's Effort for Putting its Documentary Material on the Licensing Support Network**

The DOE discussed its schedule for LSN compliance including software development and participation in NRC LSN testing; hardware procurement, installation, and testing; identification and processing of documentary material; operational readiness review; and initial LSN Certification. DOE plans to build a system to identify and process a large number of documents. DOE is procuring and installing production hardware and software for its LSN web site with a target date of March 2003. Development and testing of a "content management system" is targeted for completion in August 2003. Identification and processing of documentary material is expected to begin in October 2002. An operational readiness review will be conducted prior to DOE LSN initial certification in June 2004.

The NRC staff asked about the timing of DOE plans to submit documents to the EHD, how many documents would be submitted, how DOE plans to submit the license application and supporting documentation electronically, what supporting documents will be submitted, and how DOE plans to submit documents to the EHD. DOE stated that it could not predict the population of documents and document types needed to support a proceeding without knowing the contentions in the adjudicatory process.

A representative of Nye County stated that it is fundamental that DOE work with the NRC to make the license application electronically available in the proceeding. A representative of the Las Vegas Paiute Tribe noted that late, heavily loaded submittal of large documents would put a lot of pressure on the NRC in acting on submittals in a timely manner.

A representative of the State of Nevada asked how DOE would handle large maps and geological images. DOE stated that they may provide headers or image only but were not prepared to discuss the details during this meeting. Another participant asked how DOE documents could be obtained in paper form. DOE stated that certain documents could be obtained via requests under the Freedom of Information Act.

#### **7) Status of Putting NRC's High-Level Waste Documentary Collection on the LSN**

The NRC staff discussed the status of efforts to place the NRC document collection on the LSN. The staff is evaluating NRC and contractor documents to determine what documents must be placed on the LSN. The staff is also screening documents for Sensitive Homeland Security Information in response to the terrorist attacks of September 11, 2001. Based on Commission guidance, it is expected that a majority of the NRC's existing collection will be publicly available.

DOE asked about the NRC process for redacting documents including the provision for releasing "sanitized" versions of sensitive documents. DOE also questioned how the NRC plans to handle legacy information that pre-dates ADAMS. The NRC stated that it may place redacted documents in the LSN or claim privilege on such documents and provide a bibliographic header only. The NRC stated that it has done a backfit to place legacy documents into ADAMS and plans to place documents on the LSN server, as required.

A representative of the State of Nevada stated that the LSN is an unfunded mandate and expressed the view NRC should consider funding resources to support all named parties in the proceeding.

#### **8) Evaluation of the Current DOE Document Conversion System: A Study of Retrievability**

DOE's contractor UNLV Information Science Research Institute (ISRI) presented results of recent studies on document retrievability for information purposes. The studies include recommendations that ISRI is proposing to DOE on LSN document processing technology. UNLV expressed the view that retrievability is a better performance metric than character accuracy. UNLV conducted retrievability tests to determine the performance variance between manual and automatic zoned documents. UNLV reported that automatic zoning followed by the MANICURE software product would

produce retrievability equivalent to manual zoning. UNLV stated that the tests show that ranking of query results is statistically equivalent for automatically zoned and manually zoned text. UNLV also stated that retrievability is equivalent for automatic zoned text and 99.8% accurate text.

The NRC asked questions related to the AUTONOMY search engine, use and availability of MANICURE, and response time for large documents. The NRC questioned the extent to which the test population of documents represented the larger body of DOE documents. UNLV stated that it believed the test sample represented a cross section of its documents. The NRC questioned the impact of the skill of the user in formulating a search report. UNLV acknowledged that retrieval success has some dependence on the skill of the user. The NRC noted that the query element is flexible and accommodating a range of characters up to a few paragraphs in length. The NRC stated that the 99.5% character accuracy is a goal for optical character recognition (OCR) and not a requirement, that the UNLV study is significant, and that the results appear favorable for retrieving OCRd text through the LSN.

#### **9) Status of NRC Licensing Support Network Test Server**

The NRC staff discussed its current schedule for updating the LSN portal. The staff updated the LSN with version 2.0 software in April 2002 and expects to complete acceptance testing in late July 2002. The staff also expects to conduct server acceptance testing and flush test documents during August-September 2002.

#### **10) Meeting Summary**

DOE stated that this was the first technical exchange to examine the issues related to electronic submissions. They stated that this meeting was important in raising the level of awareness of the technology and applications needed for electronic submission of documents. DOE acknowledged the contributions of the University of Nevada Las Vegas in its technical work on these matters.

The NRC stated that a lot of good work from DOE, BSC, UNLV, and NRC went into the preparation for this meeting and concluded that NRC's goals for sharing information and providing guidance were met. The NRC stated that the level of understanding has increased and that additional meetings will be necessary to focus on identified issues and challenges. The staff informed meeting participants and members of the public that a meeting summary would be provided to persons on the NRC service list and posted on the NRC Internet web site.

A representative of the Nevada Nuclear Waste Task Force stated that the public has been separated from the ability to participate, both technically and financially. A representative from the State of Nevada stated that it was a good technical exchange and encouraged continued involvement of the State as discussions continue. A representative of Clark County expressed appreciation for the NRC's efforts to get their system up to speed. A representative of the Las Vegas Paiute Tribe stated that communication between the NRC and DOE was improving and that the meeting was very informative.

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