

NUCLEAR REGULATORY COMMISSION

10 CFR PART 2

RIN 3150-AH31

Licensing Proceeding for a High-Level Radioactive
Waste Geologic Repository; Licensing Support Network,
Submissions to the Electronic Docket

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission is amending its Rules of Practice applicable to the use of the Licensing Support Network (LSN) and the electronic hearing docket in the licensing proceeding on the disposal of high-level radioactive waste at a geologic repository. The amendments establish the basic requirements and standards for the submission of adjudicatory materials to the electronic hearing docket by parties to the high-level radioactive waste licensing proceeding. The amendments also address the issue of reducing the unnecessary loading of duplicate documents on individual participant LSN document collection servers (web sites); the continuing obligation of LSN participants to update their documentary material after the initial certification; the Secretary of the Commission's determination that the DOE license application is electronically accessible; and the provisions on material that may be excluded from the LSN.

EFFECTIVE DATE: [insert date thirty days after publication in the Federal Register].

FOR FURTHER INFORMATION CONTACT: Francis X. Cameron, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, telephone (301) 415-1642, e-mail FXC@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The Commission's regulations in 10 CFR Part 2, Subpart J, provide for, among other things, the use of an electronic information management system to provide documents related to the high-level radioactive waste (HLW) repository licensing proceeding. Originally promulgated on April 14, 1989 (54 FR 14944), the information management system required by Subpart J is to have the following functions:

(1) The Licensing Support Network (LSN) provides full text search and retrieval access to the relevant documents of all parties and potential parties to the HLW repository licensing proceeding beginning in the time period before the U.S. Department of Energy (DOE) license application for the repository is submitted;

(2) The NRC Electronic Information Exchange (EIE) provides for electronic submission of filings by the parties, as well as the orders and decisions of the Atomic Safety and Licensing Board Panel (ASLBP), during the proceeding; and

(3) The Electronic Hearing Docket (EHD) provides for the development and access to an electronic version of the HLW licensing proceeding docket.

The creation of the LSN (originally called the "Licensing Support System") was stimulated by the requirements of section 114(d) of the Nuclear Waste Policy Act of 1982 (NWPA). This provision sets as a goal Commission issuance of a final decision approving or disapproving issuance of the construction authorization for a geologic repository for HLW within three years of the docketing of the DOE license application. The Commission anticipated that

the HLW proceeding would involve substantial numbers and volumes of documents created by well-informed parties on numerous and complex issues. The Commission believed that the LSN could facilitate the timely review of DOE's application by providing for electronic access to relevant documents via the LSN before the application is submitted, rather than the traditional, and potentially time-consuming, discovery process associated with the physical production of documents after an application is submitted. In addition, the Commission believed that early access to these documents in an electronically searchable form would allow for a thorough and comprehensive technical review of the license application by all parties and potential parties to the HLW licensing proceeding, resulting in better focused contentions in the proceeding.

The current requirements in 10 CFR 2.1003(a) require the DOE to make its documentary material available in electronic form no later than six months in advance of DOE's submission of its application to the NRC. The NRC must make its documentary material available in electronic form no later than thirty days after the DOE certification of compliance. All other participants must make their documents available in electronic form no later than ninety days after the DOE certification of compliance. Originally, the LSN was conceived as a large, centralized information management system administered by what was then called the Licensing Support System Administrator (now the LSN Administrator). To take advantage of the advances in technology that occurred since the promulgation of the original rule, the Commission revised the rule to use the Internet to link geographically dispersed sites rather than rely on a complex and expensive centralized system (63 FR 71729; December 30, 1998).

As noted, one of the objectives of the regulations in 10 CFR Part 2, Subpart J is to provide for electronic submission of filings by the parties, as well as the orders and decisions of the ASLBP, during the proceeding. The purpose of this function is to reduce the time that it takes to serve filings by substituting electronic transmission for the physical mailing of filings

that is typically used in NRC licensing proceedings. Shortening the amount of time for certain activities during the hearing process will support the NRC's efforts to meet the schedule in the NWPA. 10 CFR 2.1013(c)(1) requires that all filings in the HLW adjudicatory proceeding be **“transmitted electronically”** (emphasis added) by the submitter to the Presiding Officer, the parties, and the Secretary of the Commission. The Commission believes that the majority of these filings will consist of simple documents that can be readily transmitted by EIE. However, after further considering the nature of some of the documents that may be submitted by the parties during the proceeding, the Commission believes that it is necessary to specify requirements for submitting large and/or complex documents. This need was the reason the Commission initiated the proposed rulemaking that is the subject of this final rule. The proposed rule was published in the Federal Register on November 26, 2003 (68 FR 66372).

The proposed amendments addressed a number of aspects of the current rules:

- The requirements and standards for a party's submissions to the electronic docket for the HLW repository licensing proceeding;
- Those provisions that could result in the loading of duplicate documents on individual participant LSN document collection servers;
- The provisions related to the Secretary of the Commission's determination that the DOE license application is electronically accessible; .
- Those provisions related to the continuing obligation of LSN participants to update their documentary material; and
- Those provisions on material that may be excluded from the LSN.

II. Public Comments

The Commission received nine comments on the proposed rule from the following entities:

- (1) U.S. Department of Energy (DOE).
- (2) State of Nevada.
- (3) Nuclear Energy Institute (NEI).
- (4) Nevada Nuclear Waste Task Force, Incorporated.
- (5) Nye County, Nevada.
- (6) Lincoln County and the City of Caliente, Nevada.
- (7) White Pine County, Nevada.
- (8) Eureka County, Nevada.
- (9) Progress Energy.

These comments addressed the following categories of issues:

1. Rule or Guidance

Two commenters (DOE, NEI) recommended that the technical standards in proposed section 2.1013(c)(1) be incorporated into a guidance document rather than in the NRC regulations. These commenters noted that the proposed standards in section 2.1013(c)(1) were useful clarifications, but it was not necessary to formalize them in a rulemaking. The rationale for this recommendation was that technical capabilities can change significantly over the period of time that the HLW licensing proceeding will take place and that any needed changes to reflect new technical capabilities could more efficiently be implemented by revising guidance rather than by initiating a new rulemaking. In addition, NEI was concerned about the need for stability in the LSN regulatory framework as the date for submission of the DOE license application draws closer. NEI also recommended that, if the NRC decides to proceed with the rulemaking, it be done as expeditiously as possible. NEI also requested that the NRC provide some assurance to LSN participants on the stability of the LSN regulatory framework in the interim period while a rule was being finalized. Finally, NEI urged the Commission to issue

the final revision to NRC Regulatory Guide 3.69 on the Topical Guidelines that were issued for public comment in June, 2002, See "Draft Regulatory Guide DG-3022 (Proposed Revision 1 of Regulatory Guide 3.69)." Another commenter, Progress Energy, expressed the same concerns as NEI.

Response

The Commission has tried to balance the need for flexibility, informality, and responsiveness, i.e., using guidance for the technical standards, with the need to ensure that the fundamental compliance requirements for LSN participants are clear, i.e., using a rule. Accordingly, the Commission has expressed what it believes to be the most important technical standards in Section 2.1013(c)(1) of the final rule, while including the majority of the detailed technical specifications in a guidance document, "Guidance for the Submission of Electronic Docket Materials Under 10 CFR Part 2, Subpart J", U.S. Nuclear Regulatory Commission, (Guidance Document). The Guidance Document is available on the NRC web site, www.nrc.gov.

The Guidance document can also be found in the Commission's Agencywide Documents Access and Management System (ADAMS) at Accession Number ML041560341. The Guidance Document contains essential information in regard to the proper implementation of the requirements of this rule.

In terms of providing an assurance of a stable regulatory framework, the Commission is not imposing any new requirements that would significantly alter the current regulatory framework. Furthermore, the Commission does not anticipate adding any additional requirements beyond those in this final rule before the repository license application is submitted. As explained by the NRC staff at the December 2003 meeting of the LSN Advisory Review Panel, the only revision to the scope of documents covered by the Topical Guidelines in

Regulatory Guide 3.69, was a proposed new exclusion for “congressional correspondence.” Therefore, the Commission does not believe that the existing regulatory framework will in any way be “destabilized.” The final revision of the Topical Guidelines will be completed immediately after this rule is finalized.

2. Technical standards

DOE had several comments on the technical standards for the submission of electronic filings to the adjudicatory proceeding.

A. Complex Documents

Section 2.1013(c)(1)(iii) of the proposed rule would have required that those portions of “complex documents” that are amenable to being transmitted electronically as a filing in the HLW adjudicatory proceeding be transmitted electronically, while those parts of complex documents that were not amenable to electronic transmission be submitted on optical media. DOE, in its comment letter, questioned the advantage of electronically transmitting only some portions of a complex document. If a complex document is not amenable to submittal in its entirety via electronic transmission through the EIE, the advantage of submitting only portions of it is unclear because those portions may not be useful by themselves. DOE recommended that the entire document be submitted on optical storage media, with a transmittal letter submitted via the EIE providing notification of the submittal of that document.

Response

The final rule maintains the approach of the proposed rule to the submission of complex documents. In terms of the usefulness of submitting portions of the document by electronic transmittal, the Commission believes that this would serve several useful purposes. First, it provides early notification that a complex document is coming in and consequently allows other parties to plan their review and possible response. Second, there often will be substantial

benefit in receiving the text portion of a complex document via electronic transmission, notwithstanding the delay in receiving the additional attachments. Various Atomic Safety and Licensing Boards have been issuing orders for several years that use this practice. This has allowed the parties and the Boards to review the text portion, which contains the arguments of the parties, while awaiting the rest of the pleading. However, for purposes of the service requirements in section 2.1013(c) or the computation of time requirements in section 2.1017, the filing of a complex document or a large document is not complete until all portions of the document have been submitted.

B. Image Resolution

Section 2.1013(c)(1)(iv) of the proposed rule would have required that all electronic submissions to the EHD have 300 dots per inch (dpi) minimum resolution for bi-tonal, color, and grayscale. DOE noted the inconsistency between these EHD requirements and the requirements in section 2.1011(b)(2)(iv) for documents placed on individual LSN participant web sites. The LSN participant web site documents are required to have 300 dpi for bi-tonal but 150 dpi minimum resolution for grayscale and color. DOE recommended that the final rule on the EHD be consistent with the LSN participant web site requirements to avoid having to convert the color and grayscale parts of existing documents from 150 dpi to 300 dpi. According to DOE, this would not be “an efficient use of resources.” The Commission interprets this latter phrase to mean that the conversion would be not only costly, but unnecessary because 150 dpi color and gray scale would be fully readable. DOE also noted that the Guidance Document states that there is flexibility with respect to the minimum resolution as long as the integrity and quality of the document result in readable copies. The DOE suggests that this flexibility should be added to the rule if the technical requirements are to be retained in the rule.

Response

Records submitted to the NRC as part of the Electronic Hearing Docket are Federal “official agency records.” The National Archives and Records Administration (NARA) issued a standard that records scanned after December 23, 2002, must meet the minimum standard of 300 dpi for bi-tonal, color, and grayscale documents. The NRC adopted this standard on January 1, 2004, the effective date for the NRC final rule on the electronic maintenance and submission of information to the NRC (68 FR 58792; October 10, 2003). The NRC has considered the DOE’s concern with regard to the “efficient use of resources.” In response, the NRC has modified language in the rule to: (1) require submitters to use the 300 dpi standard for documents created after the January 1, 2004 effective date of the electronic maintenance rule, except in limited circumstances in which (a) submitters may need to use an image scanned before January 1, 2004, in a document created after January 1, 2004 or (b) the scanning process for a large, one-page image may not successfully complete at the 300 dpi standard resolution; and (2) require that documents created or scanned before January 1, 2004, (or for those documents in 1(a) or (b) above), meet the standards for documents placed on LSN participant web sites in section 2.1011(b)(2)(iv) which is 150 dpi for color and grayscale documents and 300 dpi for bi-tonal documents. The Commission is also assuming that this document image resolution requirement for LSN participant web sites would meet the criterion of “readability.”

C. Image Format

Section 2.1013(c)(1)(v) of the proposed rule would have required electronic submissions to be generated in Adobe Acrobat Portable Document Format (PDF). DOE noted that this PDF requirement was inconsistent with the requirement for LSN participant web sites in section 2.1011(b)(2)(iv) that allows Tagged Image File Format (TIFF). DOE suggests that files on LSN

participant web sites that are submitted to the adjudicatory proceeding be allowed to be submitted in the TIFF format. Converting images in the LSN that are usable in TIFF format to PDF format for the EHD would again, according to DOE, “not be an efficient use of resources.”

Response

The electronic documentary material submitted to the EHD will be entered as official agency records in ADAMS. The PDF became the NRC standard for official agency records on January 1, 2004, the effective date for the NRC final rule on the electronic maintenance and submission of information to the NRC (68 FR 58792; October 10, 2003). The NRC has adopted PDF as the NRC standard for this official agency records system based on the following:

- PDF represents a “generic” format that behaves consistently across multiple hardware and operating systems;
- When files are distributed in PDF, the information is “locked down” for the general user, who can access the content through the use of PDF viewer software;
- The PDF standard, though it is proprietary to Adobe, has been published, is freely available, and the capability to create PDF documents has been integrated into many other software applications;
- PDF documents can be generated from any application that can generate Postscript printer files; thus anything that can be printed can be represented in PDF;
- PDF supports file generation options for text-oriented files produced on a word processing or publishing system;
- PDF supports file generation options for scanned image-oriented files; and

- PDF supports file generation options for scanned text-oriented files capable of full text search.

In contrast, adherence to the PDF standards for NRC official agency records is not required for purposes of individual LSN participant web sites and therefore, TIFF is acceptable under section 2.1011(b)(2)(iv). The Commission also believes that TIFFs can readily be converted to PDF using features inherent in PDF-authoring software. In those rare circumstances where technical reasons would prevent the successful conversion to PDF, DOE or any other LSN participant, can submit the image in TIFF and include a detailed statement of the technical reasons that prevent conversion to PDF, in a transmittal letter to accompany the filing.

D. Hyperlinks

Section 2.1013(c)(1)(vi) of the proposed rule requires that documents be free of hyperlinks to other documents or web sites other than within a single PDF file. DOE notes that some documents may have embedded hyperlinks that are difficult to remove. The DOE suggests that the requirement be revised to state that use of the document in the EHD should not depend on hyperlinks to other documents or web sites. The Commission understands this comment to suggest that there should be no restriction in the rule on documents containing hyperlinks, but that the use of the document in the hearing may not depend on those hyperlinks.

Response

The Commission has considered the DOE comments and has revised the final rule to allow hyperlinks to be contained in documents submitted to the EHD. The Commission believes that it will be difficult and costly to remove these hyperlinks. Instead of prohibiting a document from being submitted with hyperlinks, section 2.1013(c)(1)(vi) of the final rule would

prohibit reliance on the hyperlinks for purposes of providing additional evidentiary material or completing a submittal. This would require the submitter to review all documents submitted to the EHD for hyperlinks to the Internet or other documents. Any necessary material would need to be included in the filing or as an attachment to the filing.

However, the Commission is also concerned that hyperlinks in a filing that do not function, or that link a user to an external website that has changed or perhaps contains some type of offensive material, could create a negative perception of the integrity of the EHD database. Therefore, the final rule requires each electronic submission to contain a disclaimer that notifies the reader that the hyperlinks in the filing may not operate or may link the reader to material that is not intended to be necessary, or in some cases, even related, to the use of the filing in the proceeding. This disclaimer must either be in the transmittal memorandum required for filings over 50 MB or in the body of the pleading for filings under 50 MB. The single exception to the use of hyperlinks in a filing is when the hyperlink connects to another part of the same PDF file. The use of hyperlinks in this context is permissible. This also has implications for the minimum size of a file that is submitted to the EHD. The Commission encourages submitters to combine small files that are components of a larger document into one file to facilitate efficient distribution and use of the documentary material. For example, if a document consists of 15 separate 2 MB files, those 15 files should be combined to result in one 30 MB file. This will allow submitters to use hyperlinks in a larger file, i.e., a single electronic file up to 50 MB.

E. Definitions

DOE noted that the definition of complex documents in section 2.1001 of the proposed rule could be viewed as inconsistent with the definition in the Supplementary Information for the proposed rule. Proposed section 2.1001 states that a complex document has substantial

portions that are neither textual nor image. However, the Supplementary Information (68 FR 66374) states that complex documents can also include a textual or graphic file that cannot be segmented into 50 megabyte (MB) files. The DOE suggests that the description in the Supplementary Information be used as the definition in section 2.1001 of the rule.

Response

The Commission agrees and has revised the definition accordingly.

3. Docketing

Section 2.1012(a) provides that the DOE license application cannot be docketed unless the Secretary of the Commission determines that the license application can be effectively accessed through ADAMS. DOE is concerned that this establishes a requirement on DOE that is beyond its control. Entering documents into ADAMS is strictly a NRC function and ADAMS is under the sole control of the NRC. Any accessibility problems resulting from entering the license application into ADAMS would be the responsibility of the NRC. DOE notes that, in preparing its electronic license application, the DOE is responsible for meeting the NRC requirements, as well as addressing any guidance that has been issued by the NRC, and transmitting the license application to the proper address and in the proper format(s) specified by the NRC for these actions. If the DOE meets clearly defined specifications for such transmittals, the NRC should be able to make the document available through ADAMS.

The DOE recommends that section 2.1012(a) be revised to read: "The Director may determine that the tendered application is not acceptable for docketing under this subpart if the application is not accompanied by an updated certification pursuant to section 2.1009(b) or if the application is not submitted on optical storage media in a format consistent with NRC regulations and guidance."

Response

The Commission agrees with this suggestion and has revised the final rule accordingly. However, in addition to the above two criteria, the Commission has also added a third criterion on non-compliance with any other requirements in Subpart J.

4. The continuing need to supplement individual LSN participant web sites

Proposed section 2.1003(e) would have required an LSN participant to supplement its LSN web site with any documentary material created after the time of initial certification. NEI was concerned that this requirement could continue indefinitely. It is NEI's opinion that the requirement to supplement ends when discovery, in the form of document production, is completed.

Response

The Commission agrees and has revised section 2.1003(e) to specify that the requirement to supplement ends when discovery is complete. The Commission anticipates that discovery will be complete by the time set for the second Pre-Hearing Conference at which issues for hearing will be finalized and schedules for prefiled testimony and hearing will be set. See Appendix D to 10 CFR Part 2. However, it should be emphasized that the Board could extend discovery beyond this time period. Moreover, although there is no obligation on an LSN participant to add new documents to its site after discovery closes, an LSN participant does have an obligation to maintain its existing LSN collection intact and available for the balance of the construction authorization proceeding. Parties will have a continuing need to search LSN participant databases during the evidentiary hearing and throughout the NRC appellate process.

5. The scope of the Congressional exclusion

Nye County, Nevada expressed the view that the exclusion for congressional correspondence in proposed section 2.1005(i) seems overly broad. The commenter believes

that it is entirely conceivable that somewhere in correspondence with a member of Congress or with congressional staff, DOE, or any other party, may have made relevant and admissible statements about some technical issues affecting the licensibility of Yucca Mountain. To exclude all such correspondence categorically is unwarranted. According to Nye County, a better approach would be to limit the exclusion to correspondence involving such matters as budget, and program management.

Response

The Commission appreciates the thoughtful comments of Nye County on this matter. However, the Commission continues to believe that this type of material will not have a significant bearing on repository licensing issues. Much of this material either relates to budgetary issues and schedules or is merely a summary of information in an agency primary document. It would normally not be the source of material that a party would rely on for its case in the hearing or a source of material that would be contrary to such reliance information. However, most, if not all, of the material directed to Federal entities of concern to Nye County, would still be available as part of the normal Federal recordkeeping requirements. If a particular item of Congressional correspondence does become relevant to a contention admitted in the HLW proceeding, it can be made available at that time. The Commission does not anticipate that any disputes over this clearly and narrowly defined exclusion will be brought before the Pre-license Application Presiding Officer (PAPO).

6. The trigger for participant certification

Three commenters, the Agency for Nuclear Projects in the State of Nevada's Governor's Office, the Nevada Nuclear Waste Task Force, and Eureka County's Yucca Mountain Information Office, all raised concerns on the timing of LSN participant certification in relation to DOE's certification. The current requirements in 10 CFR 2.1003(a) require the DOE to make its

documentary material available in electronic form no later than six months in advance of DOE's submission of its license application to the NRC. The NRC must make its documentary material available in electronic form no later than thirty days after the DOE certification of compliance. All other participants must make their documents available in electronic form no later than ninety days after the DOE certification of compliance. However, these commenters noted that although DOE may have all of its documentary material available on its LSN document server by the time required for certification, it is possible that the DOE collection would not yet have been indexed and audited by the LSN Administrator. Therefore, the entire DOE collection would not yet be "available" to the public. The commenters recommended that the Commission add an additional certification by the LSN Administrator that the DOE collection had been indexed and audited. This LSN Administrator certification would then become the tolling event for the certification by all other LSN participants, rather than the DOE certification.

Response

At the outset, the Commission notes that an amendment such as that recommended by the commenters is outside the scope of this rulemaking. This issue was not raised in the proposed rule and was not intended to be part of this rulemaking effort. However, the Commission also recognizes the importance of this concern. The NRC is pursuing an approach with DOE to ensure that the DOE collection has been indexed and audited by the LSN Administrator in approximately the same time frame as the DOE certification. This should ensure that an indexed and baselined DOE collection will be available to other LSN participants well in advance of the point at which the NRC docket an acceptable DOE license application.

7. Transportation issues

Lincoln County and the City of Caliente, in their comments on the proposed rule, urged the Commission to clarify the extent to which Yucca Mountain repository system transportation

related information will be considered during licensing and, therefore, be required for inclusion within the LSN. The County and the City believe that the Yucca Mountain licensing proceeding should encompass all aspects of the Yucca Mountain repository transportation system.

Response

The Commission recognizes that issues related to the transportation of High Level Waste (HLW) and Spent Nuclear Fuel (SNF) to the Yucca Mountain site in Nevada are of concern to members of the public. These issues are complicated by the multi-agency coordination that is required between DOE, the Department of Transportation (DOT), and the NRC. As a preliminary matter, it is important to distinguish the role of the NRC in matters related to transportation. The only role of the NRC in the licensing proceeding for Yucca Mountain with respect to transportation issues is to review the DOE Environmental Impact Statement (EIS), for adoption to the extent practicable.

The Nuclear Waste Policy Act of 1982, 42 U.S.C. §§ 10101, et. seq., as amended (NWPA), provides the primary framework for issues related to the proposed Yucca Mountain repository, including transportation issues. Section 114(f) of the NWPA requires DOE to prepare an EIS, part of which may include an evaluation of transportation impacts. Additionally, § 114(f) mandates that the NRC, to the extent practicable, adopt the DOE EIS, including those parts of the EIS related to transportation. Such adoption shall be deemed to satisfy the responsibilities of the NRC under NEPA and “no further consideration shall be required.” See NWPA § 114(f)(4). The Topical Guidelines in Regulatory Guide 3.69 specifically address those aspects of transportation that are included under documentary material for purposes of the LSN.

III. The Final Rule

Submissions to the Electronic Docket for the Hearing

As noted, one of the objectives of the regulations in 10 CFR Part 2, Subpart J is to provide for electronic submission of filings by the parties, as well as the orders and decisions of the Atomic Safety and Licensing Board, during the proceeding. The purpose of this function is to reduce the time that it takes to serve filings by substituting electronic transmission for the physical mailing of filings that is typically used in NRC licensing proceedings. Shortening the amount of time for certain activities during the hearing process will support the NRC's efforts to meet the schedule in the NWPA. 10 CFR 2.1013(c)(1) requires that all filings in the HLW licensing proceeding be **transmitted electronically** (emphasis added) by the submitter to the Presiding Officer, the parties, and the Secretary of the Commission. The Commission believes that the majority of these filings will consist of simple documents that can be readily transmitted by EIE. However, after further considering the nature of some of the documents that may be submitted by the parties during the proceeding, the Commission believes that it is necessary to specify requirements for submitting large and/or complex documents.

Large documents consist of electronic files that, because of their size, create challenges for both the NRC staff, potential parties and the public when transmitting, viewing, or downloading the document (e.g., significant delays in transmission, uploading, or downloading times). The Commission anticipates that the potential license application and some filings in the HLW repository adjudicatory proceeding will be of a size that will create transmission, viewing, or downloading challenges. In electronic format, some of these files could be up to several hundreds of megabytes (MB) in size. Examples of potential large documents are:

- DOE Site Characterization Plan
- DOE License Application and supporting materials
- DOE Environmental Impact Statement

- Some adjudicatory documents (e.g., motions, responses, transcripts, exhibits, and orders)

Additionally, any or all of these types of documents could contain embedded photographs, charts, tables, and other graphics.

Complex documents consist (entirely or in part) of electronic files having substantial portions that are neither textual nor image in nature, and graphic or other Binary Large Objects that exceed 50 MB and cannot be logically divided. For example, these types of specialized documents may include:

- Executable files, which can be opened (run) to execute a programmed series of instructions on a computer or network;
- Runtime executable software, which generally is operational upon demand without being installed on a computer or network;
- Viewer or printer executable software that causes images to be displayed on the computer monitor or pages to print on an attached printer;
- Files from a dynamic link library (.dll), which are a collection of small, bundled executable programs that each provide one or more distinctive functions used by application programs and operating systems and are available when needed by applications or operating systems;
- Large data sets associated with an executable; and
- Actual software code for analytical programs that a party may intend to introduce into the proceeding.

As part of complex document submittals, the NRC anticipates receiving files that--

- (1) Due to their file size, may preclude easy transmission, retrieval, and use; or

(2) May require specialized software and/or hardware for faithful display and subsequent use; and

(3) May not be suitable for inclusion in a “generic” file format such as the Adobe® Acrobat Portable Document Format (PDF).

Examples of files that could be part of a complex document are:

- Maps
- Databases
- Simulations
- Audio files
- Video files
- Executable programs

There are several potential problems presented by the electronic transmission of these large or complex documents, including the “time out” problems when submitting very large documents via the Internet, difficulty of use in the hearing room, and Federal records management considerations. These potential problems are evaluated in more detail in the regulatory analysis for this final rule.

In response to these potential problems, the Commission is revising the framework for the submission of filings during the HLW licensing proceeding. This revised framework is based on segmenting large documents using manageable file size units to reduce the potential for interruption or delay in transmission, uploading, or downloading. For example, large documents could be segmented into pieces, which correspond to the organization (chapters or sections) of the document, in order to address the transfer and retrieval performance problems discussed above. The author of the document would be in the best position to break up

document files into usable segments without adversely impacting the organization or content of the document.

The electronic submission of filings in the HLW repository proceeding must be made via the Internet using the NRC EIE, when practicable. The EIE is an electronic transfer mechanism being established by the NRC for electronic transmission of documents to the agency via the Internet. EIE provides for the transmission of documents in a verifiable and certifiable mode that includes digital signatures.

The final amendments revise section 2.1001 to establish three categories of electronic filings for purposes of the HLW repository proceeding and would revise section 2.1013(c)(1) to specify the submission requirements for these three categories of electronic filings.

“Simple documents” are textual or graphic oriented material that are less than 50 megabytes (MB) in size. These documents are transmitted electronically via EIE as contemplated by the current 10 CFR 2.1011. Test results have demonstrated that 50 MB is a reasonable size for downloading files across wide area networks or from the Internet via phone lines.

“Large documents” are those that have textual or graphic oriented material larger than 50 MB in size. Under revised section 2.1013(c)(1)(ii), these documents must be submitted via the EIE in multiple transmissions of 50 MB or less each. The large document submission may also be supplemented with a courtesy copy on optical storage media to provide NRC staff, parties, and interested governmental participants in the HLW repository proceeding with a useful reference copy of the document. For purposes of the NRC staff review of the DOE license application, as opposed to an electronic submission to the adjudicatory docket, the requirements for DOE’s submission of the license application are already specified in 10 CFR

63.22 of the Commission's regulations. 10 CFR 63.22(a) specifies that the application, any amendments to the application, and an accompanying environmental impact statement and any supplements, must be signed by the Secretary of Energy or the Secretary's representative and must be filed with the Director in triplicate on paper and optical storage media. In addition, 10 CFR 63.22(b) requires that 30 additional copies of the license application be submitted on paper and optical storage media.

"Complex documents" are any combination of the following:

- Textual or graphic-oriented electronic files
- Electronic files that cannot be segmented into 50 MB files
- Other electronic objects, such as computer programs, simulations, video, audio, data files, and files with special printing requirements.

Under final section 2.1013(c)(1)(iii), those portions of complex documents that can be electronically submitted through the EIE, again in 50 MB or less segments, will be transmitted electronically. Those portions that are not amenable to electronic transmission will be delivered on optical storage media. The optical storage media must include the complete document, i.e., include the portions of the document that have been delivered via the EIE.

In addition to these revisions, section 2.1013 (c)(1) is amended to require the following:

- Electronic submissions of files created after January 1, 2004 must have 300 dots per inch (dpi) as the minimum resolution for bi-tonal, color, and grayscale, except in limited circumstances in which (a) submitters may need to use an image scanned before January 1, 2004, in a document created after January 1, 2004, or (b) the scanning process for a large, one-page image may not successfully complete at the 300 dpi standard resolution.

- Electronic submissions of files created before January 1, 2004, or electronic submissions created after January 1, 2004, which cannot meet the 300 dpi standard for color and grayscale, must meet the standard for documents placed on LSN participant web sites (10 CFR Part 2.1011(b)(2)(iv)) which is 150 dpi for color and grayscale documents and 300 dpi for bi-tonal documents.
- Electronic submissions must be in the appropriate PDF output format. These formats and their use are:
 - PDF - Formatted Text and Graphics -- use for textual documents converted from native applications
 - PDF - Searchable Image (Exact) -- use for textual documents converted from scanned documents
 - PDF - Image Only -- use for graphic-, image-, and forms-oriented documents

Tagged Image File Format (TIFF) images and the results of spreadsheet applications will need to be converted to PDF, except in those rare instances, examples of which are described in the Guidance Document, where PDF conversion is not practicable. Spreadsheets may be submitted using Microsoft® Excel, Corel® Quattro Pro, or Lotus® 123.

- Electronic submissions to the hearing docket cannot rely on the use of any hyperlinks to other electronic files or websites to generate additional documentary material. Any such documentary material must be submitted either as an attachment to the filing or as a separate filing. If a submittal contains hyperlinks, then it must include a disclaimer to the effect that the hyperlinks may be inoperable or are not essential to the use of the filing.

- Electronic submissions to the EHD may rely on the use of hyperlinks within the same PDF file.
- Electronic submissions must be free of any security restrictions imposed by the author (proposed section 2.1013(c)(1)(vii)).

Additional information on the submission of these filings will be provided in the Guidance Document, discussed earlier. The Guidance Document is available on the NRC web site (www.nrc.gov). The NRC expects parties, interested governmental participants, and potential parties to use the detailed instructions in the Guidance Document to ensure that their electronic filings are effectively submitted. Areas covered by the Guidance Document address the need for and format of the transmittal letter for electronic filings, file naming conventions, copyrighted information, and instructions on sensitive or classified information.

Docketing

The final revisions clarify the responsibility of the Secretary of the Commission, under section 2.1012(a), to determine whether the DOE license application for a HLW repository is in an electronic media form and format that is acceptable for docketing. Under section 2.1012(a), the DOE license application cannot be docketed unless the Secretary of the Commission determines that the DOE license application has been submitted on optical storage media in a format consistent with NRC regulations and guidance.

Documentary Material

Section 2.1003 of the current LSN rule requires a party, a potential party, or an interested governmental participant (hereinafter “participant”) to make its documentary material available in electronic form. The definition of “documentary material” includes material prepared by an individual participant, for example, all reports or studies prepared by, or on behalf of, a participant. It also includes other material in the possession of the participant on

which the participant intends to rely and/or cite in support of its position in the HLW repository proceeding or that doesn't support its position. This provision can be read to obligate a party who possesses a document prepared by another participant to make that document available on its LSN document collection server even though it is already available on the LSN document collection server of the party who had prepared the document. For example, under this interpretation a document prepared by DOE would not only need to be available through the centralized LSN web site from the DOE LSN document collection server, but also from the LSN document collection server of other participants. Without compromising the objective of ensuring that all documentary material is available on the LSN, the Commission believes that it would be beneficial to eliminate or at least significantly reduce the loading of duplicate documents. Reducing duplication will not only alleviate burdens on the participants, but will also make search and retrieval of the LSN collection more efficient. Therefore, the final amendment to section 2.1003(a)(1) allows an LSN participant to avoid loading a document created by another LSN participant if that document has already been made available by the LSN participant who created the document or on whose behalf the document was created.

If, in the process of eliminating duplicate documents, an LSN participant identifies a document which the creator of that document has not included on its LSN document collection server, as a practical matter, the participant who identified the document should include it on its LSN document collection server, as well as notifying the creator of the document that it is taking that action. Moreover, in such circumstances, it is not apparent what purpose would be served by raising the issue before the PAPO unless the documentary material has some readily apparent significance as a Class 2 document (as delineated in the discussion below) or a significant number of "missing" documents were identified with regard to a particular LSN

participant, so as to raise the issue of a concerted, deliberate effort not to comply with the regulations.

The Commission is also amending section 2.1003 by adding a new paragraph (e) to this section. Section 2.1003(e) requires LSN participants to supplement the documentary material provided under section 2.1003(a) in its initial certification with documentary material produced after that event. While much of an LSN participant's documentary material will be made available early, it is reasonable to expect that additional material will be created after the initial compliance period specified in section 2.1003(a). In addition, the ongoing performance confirmation program required of DOE by section 63.131 of the Commission's regulations will generate additional documentary material after the license application is docketed. The Commission has revised section 2.1003(e) to specify that the requirement to supplement ends when discovery is completed. The schedule in Appendix D to 10 CFR Part 2 anticipates the close of discovery to occur near the time of the second pre-hearing conference held to finalize issues for hearing and schedules for prefiled testimony and hearing. However, during the proceeding, the Atomic Safety and Licensing Board can always direct that additional discovery or discovery supplementation must take place. Moreover, it should be added that while there is no obligation on an LSN participant to add new documents to its site after discovery closes, an LSN participant does have an obligation to maintain its existing LSN collection intact and available for the rest of the proceeding. Parties will have a continuing need to search LSN participant databases during the evidentiary hearing and throughout the NRC appellate process.

Finally, the Commission is providing further information and a clarification on the responsibilities of LSN participants in regard to the three classes of documentary material in section 2.1001. These three classes are:

1. Any information on which a party, potential party, or interested governmental participant intends to rely and/or cite in support of its position in the HLW repository proceeding;
 2. Any information that is known to, and in the possession of, or developed by the party that is relevant to, but does not support, that information noted in item 1 or that party's position;
- and
3. All reports and studies prepared by or on behalf of a potential party, interested governmental participant, or party, including all related "circulated drafts" relevant to the application and the issues set forth in the Topical Guidelines, regardless of whether they will be relied upon or cited by a party.

The first two classes of documentary material are tied to a "reliance" criterion. Reliance is fundamentally related to a position that a party in the HLW repository proceeding will take in regard to compliance with the Commission regulations on the issuance of a construction authorization for the repository. These compliance issues take the form of "contentions" of law or fact that a party has successfully had admitted for litigation in the HLW repository proceeding under the rules of practice in 10 CFR Part 2. The third class of material, "reports and studies prepared for or on behalf of the potential party" has meaning independent of any contentions that might be offered. The material in this class must be available on the LSN regardless of whether it has any relation to a contention offered at the hearing. It is also a likely source of the material that a party would use to develop its contentions. "Reports" and "studies" will also include the basic documents relevant to licensing such as the DOE EIS, the NRC Yucca Mountain Review Plan, as well as other reports or studies prepared by a LSN participant or its contractor.

To fall within the definition of "documentary material", reports or studies must have a nexus to both the **license application** (emphasis added) and the Topical Guidelines contained

in NRC Regulatory Guide 3.69. This dual requirement is designed to ensure that LSN participants do not have to identify, and include as documentary material, reports or studies that have no bearing on the DOE license application for a geologic repository at the Yucca Mountain site, such as reports or studies on other potential repository sites or on issues outside of the NRC licensing criteria. In addition, § 63.21 of the Commission's regulations requires that the DOE Environmental Impact Statement (EIS) must accompany the license application. Therefore, reports and studies relevant to issues addressed by the DOE EIS must also be made available as Class 3 documentary material. This is also consistent with the coverage of the Topical Guidelines.

To assist participants in identifying documentary material that may be relevant to the license application in the time period before it is submitted, the Commission is recommending that LSN participants use the NRC Yucca Mountain Review Plan (NUREG-1804, Rev. 2, July, 2003) as a guide. The Yucca Mountain Review Plan provides guidance to the NRC staff on evaluating the DOE license application. As such, it anticipates the form and substance of the DOE license application and can be used as a reliable guide for identifying documentary material.

The Commission also notes that the history of the LSN and its predecessor, the Licensing Support System, makes it apparent it was the Commission's expectation that the LSN, among other things, would provide potential participants with the opportunity to frame focused and meaningful contentions and to avoid the delay potentially associated with document discovery, by requiring parties and potential parties to the proceeding to make all their Subpart J-defined documentary material available through the LSN prior to the submission of the DOE application. These objectives are still operational. Nonetheless, the Commission is clarifying that, because the full scope of coverage of the reliance concept will only become

apparent after proffered contentions are admitted by the Presiding Officer in the proceeding, an LSN participant would not be expected to identify specifically documents that fall within either Class 1 or Class 2 documentary material in the pre-license application phase.

In this regard, the Commission still expects all participants to make a good faith effort to have made available all of the documentary material that may eventually be designated as Class 1 and Class 2 documentary material by the date specified for initial compliance in section 2.1003(a) of the Commission's regulations. Thereafter, in conjunction with its license application submission, DOE would be required to supplement its Class 1 and Class 2 documents to the degree the application makes it apparent the scope of the DOE documentary material in those classes had changed, a process that might well be repeated by all parties following the admission of contentions. Finally, as part of the regular post-contention admission discovery process under section 2.1018, a party could be required to identify the specific documents that comprise its Class 1 and Class 2 documentary material. As a consequence, while it is not possible to say there are no special circumstances that would necessitate a ruling by the PAPO on the availability of a particular document in the pre-license application stage based on its Class 1 or Class 2 status, disputes over Class 1 and Class 2 documentary material generally would be of a type that would be more appropriately raised before the Presiding Officer designated during the time following the admission of contentions when the NRC staff is working to complete the Safety Evaluation Report in its entirety.

Exclusions

The Commission has reviewed its procedural rules for the HLW repository licensing proceeding, including the LSN requirements, to assess whether they appropriately reflect the evolution of the relevant technology, law, and policy since the rules were originally promulgated in 1987, being mindful of a recent report by the House Committee on Appropriations

(Committee), issued July 2003, expressing concern on the extent of documentation that DOE may be required to provide as part of the LSN. The Committee encouraged the Commission to review its regulatory requirements regarding the LSN to ensure that they do not require the duplication of information otherwise easily obtainable, focus on information that is truly relevant to the substantive decisions that will have to be made, and establish a time frame in accord with the traditional conduct of an adjudicatory proceeding.¹ Based on our review, the Commission has determined that the LSN rule could be further revised to address the Committee's concerns, while still maintaining the overall purpose and functionality of the LSN.

The Commission is revising section 2.1005 of the rule to specify an additional category of documents, "congressional correspondence," that may be excluded from the LSN. Section 2.1005 of the Commission's regulations establishes several categories of documents that do not have to be entered into the LSN, either under the documentary material requirements of section 2.1003, or under the derivative discovery provisions of section 2.1019. These include materials that are either widely available or do not have any significant relevance to the issues that might be litigated in the HLW licensing proceeding. The Commission is adding "correspondence between a party, potential party, or interested governmental participant and the Congress of the United States" to these exclusions. This reflects the Commission's current judgment that this type of material will not have a significant bearing on repository licensing issues. Much of this material either relates to budgetary issues and schedules or is merely a summary of an entity's primary document. It would normally not be the source of material that a party would rely on for its case in the hearing or as a source of material that would be contrary to such reliance information. However, the correspondence generated by Federal entities will still be available as part of the normal Federal recordkeeping requirements. If a particular item

¹H.R. Rep. No. 108, 108th Cong. 1st Sess. (2003).

of Congressional correspondence does become relevant to a contention admitted in the HLW proceeding, it can be made available at that time. The Commission does not anticipate that any disputes over this clearly and narrowly defined exclusion would be brought before the PAPO.

Plain Language

The Presidential memorandum dated June 1, 1998, entitled, “Plain Language in Government Writing,” directed that the Government’s writing be in plain language. This memorandum was published June 10, 1998 (63 FR 31883). In light of this directive, editorial changes have been made in these proposed revisions to improve the organization and readability of the existing language of the paragraphs being revised. These types of changes are not discussed further in this document. The NRC requested comment on the proposed rule specifically with respect to the clarity of the language used. The Commission did not receive any comments on this aspect of the proposed rule.

Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Pub. L. 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or otherwise impractical. This final rule would establish requirements and standards for the submission of filings to the electronic docket for the HLW licensing proceeding. Although the specific standards in the final rule are unique to the Commission’s HLW repository proceeding, they are based on industry-wide standards such as Portable Document Format (PDF).

Environmental Impact: Categorical Exclusion

The NRC has determined that this final regulation is the type of action described in categorical exclusion 10 CFR 51.22(c)(1). Therefore, neither an environmental impact statement nor an environmental assessment has been prepared.

Paperwork Reduction Act Statement

This final rule does not contain information collection requirements and, therefore, is not subject to the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.).

Regulatory Analysis

The Commission did not receive any specific comments on the regulatory analysis for the proposed rule. The regulatory analysis for the final rule has not been changed.

The following regulatory analysis identifies several alternatives to the rule set forth in the final rule. Subpart J of 10 CFR Part 2 establishes an electronic environment for the adjudicatory proceeding for consideration of a potential license application by the U.S. Department of Energy (DOE) for a proposed HLW repository at Yucca Mountain, Nevada. The NRC expects to begin receiving and processing a significant volume of electronic documents associated with the adjudicatory proceeding in the near future. Some of these filings will consist of large or complex documents. Examples of material in these large electronic files include maps, charts, video presentations, computer modeling or simulation programs with their associated databases, and narrative reports with extensive embedded graphic objects. Consistent with 10 CFR Part 2, Subpart J :

- The NRC has established the Licensing Support Network (LSN) so that all parties, potential parties, and participants in the proceeding will be able to make their documentary material electronically available to meet document discovery requirements.

- The NRC will direct all participants in the adjudicatory proceeding to use the agency's EIE capabilities to submit their filings electronically to the NRC when practicable.
- After processing, documents submitted in the HLW repository proceeding would be available in the Electronic Hearing Docket (EHD), which is accessible via the Internet; electronic objects that cannot be made directly accessible via the EHD web site, such as computer simulation models, will be described in the EHD and made available on optical storage media.

The assessment of existing and anticipated technology capabilities identified a number of potential issues that may make it difficult to meet the challenges of electronic submission of large documents as specified in 10 CFR Part 2, Subpart J. Those challenges are driven by the following fundamental issues:

- Technology limitations of current electronic document and records transmission and management systems.
- Maintaining document and object fidelity, integrity, and authenticity.
- Receiving source document formats in an acceptable resolution.
- Management of and access to non-textual information.
- Federal recordkeeping requirements.
- General usability of the electronic submittals.
- Potential limitations of information technology (hardware, software, or Internet service provider) used by the general public.

The Nature of the Documents

Documents may be large, complex, or a combination of both, as follows:

- Large documents consist of electronic files that, because of their size, create challenges for both the NRC and the public when transmitting, viewing, or downloading the document (e.g., significant delays in transmission, uploading, or downloading times). The NRC anticipates that the potential license application and some filings in the HLW repository adjudicatory proceeding will be of a size that will create transmission, viewing, or downloading challenges. In electronic format, some of these files could contain several hundred megabytes.

- Complex documents consist (entirely or in part) of electronic files having substantial portions that are neither textual nor image in nature, and graphic or other Binary Large Objects that exceed 50 MB and cannot be logically divided. For example, specialized exhibits may include computer software programs and their operating components, large data files, and actual software code for analytical programs that a party may intend to introduce into the proceeding.

Articulation of the Issues

Large and/or complex documents may pose challenges in any or all of the following general areas:

- Electronic Submission Process.

When submitted via the Internet, very large documents or files can cause “time-out” problems for computers at either end of the transfer, resulting in a failed or canceled transfer. Transmission times are dependent on the speed of the sender’s communication device and the technology used by the Internet service provider. Very large documents or files require lengthy transmission times during which the potential for error conditions or other service interruptions increases in direct proportion to the time the communication link must be maintained. The time-out problems could affect each party who receives the documents as part of the service of a filing. The actual transfer times for very large documents or files may approach 24 hours using

standard Internet File Transfer Protocol (FTP) routines. In terms of ensuring timeliness, this may not be a significant improvement over the use of an overnight courier to send the files on optical storage media (e.g., CD-ROM).

- Access to Large, Complex Documents in the Electronic Hearing Docket (EHD).

Keeping a large document together in one very large file may allow users to easily search for, retrieve, and analyze the document in its entirety, but may result in service interruption problems similar to those described above. This is particularly true if a user wants to download the image file of one of these large documents. Retrieval time will be unacceptably slow, or will result in a time-out problem with the user's Internet connection.

Users of the EHD may encounter comparable download delays because of the file size of large or complex documents and, depending on the nature of the file, the file may not be executable on a user's desktop personal computer because of configuration, memory, display, or other technical problems.

- Use of Large, Complex Documents in a Hearing Room.

Large documents may be pre-filed as potential exhibits in the docket; however, in a hearing room, it is possible that only portions of such documents, e.g., specified chapters, pages, or paragraphs will be offered. In a dynamic and fast-paced hearing room environment, it would not be desirable to delay the proceeding to wait for a large file to load; navigate to the desired chapters, pages, or paragraphs; and then extract the appropriate selection for use in the proceeding. Complex documents may also require specialized hardware and/or software to execute software program files and access their associated data.

- Official Record and Federal Records Management Considerations.

For both large and complex documents, the NRC must consider the need to generate an official record of the proceeding for use in potential appellate environments, see 10 CFR

2.1013(a), and for generating an Official Agency Record (OAR) version of the docketed materials for retirement to the National Archives and Records Administration (NARA). Each of these situations requires the ability to reassemble the record version of the documentary material (excluding software executables), independent of the media or software initially used to create it.

Coupled with the project objectives and technical requirements (discussed in the next section), these issues represent the framework for potential solutions. The NRC analysis distilled and assessed the objectives, technical requirements, and issues and developed four designs.

Technical Requirements

Given the anticipated size and complexity of individual documents, and the quantity of submittals, the need to transmit, manage, and retrieve electronic documents and objects challenges both the NRC's current processes and its information technology/information management (IT/IM) infrastructures, and the information technology (hardware, software, Internet service provider) in use by the general public. Examples of potential large documents are:

- The DOE Site Characterization Plan;
- The DOE License Application and supporting materials;
- The DOE Environmental Impact Statement;
- Adjudicatory documents (e.g., motions, responses, transcripts, exhibits, and orders).

Any or all of these types of documents may contain embedded photographs, charts, tables, and other graphics that contribute to the understanding of the narrative.

The NRC also anticipates receiving files that could be part of complex document submittals that:

(1) Due to their file size, may preclude easy transmission, retrieval, and use; or

(2) May require specialized software and/or hardware for faithful display and subsequent use; and

(3) May not be suitable for inclusion in a “generic” file format such as PDF. The PDF standard, though it is proprietary to Adobe®, has been published and is available for use by software vendors. Users can access the content of a PDF format file through the use of the Adobe Reader® viewer software.

Examples of files that could be part of complex documents include maps, databases, simulations, audio files, video files, and executable programs.

The analysis of the challenges of handling large documents in the NRC and public IT environments considered the following functional areas:

- **Transmit** activities entail sending a submittal from the submitter to the NRC, either via electronic format (through transmission or media) or as a physical object (e.g., video or audio).

- **Capture** relates to the receipt of electronic objects, with notifications provided according to an approved service list, preferably through e-mail. Upon receipt at the NRC, each submittal is staged for additional processing.

- **Index & Cross-Reference** are two distinct processes. Each submittal must be indexed based on prescribed profile templates. In addition, as part of the cataloging process, a submittal may be identified (or cross-referenced) as part of a package or compound document.

- **Store** manages the storage location of a submittal, i.e., within a folder or larger collection for electronic submittals, or the physical media location for submittals provided on

optical storage media (e.g., CD-ROM) containing text, data, and objects. This process involves applying security and audit controls, as well as the appropriate retention schedule.

- **Search & Retrieve** operations involve querying the bibliographic header and content, displaying the pertinent object(s), and, if desired, printing all or part of the displayed object(s).

- **Create & Revise** activities facilitate the creation or revision of new documents using content that has been extracted (copied and pasted) from original submittals.

- **Copy & Distribute** activities involve maintaining distribution (service) lists and providing the means to copy or download an individual document or a collection of documents.

These activities may also involve reproduction when the need arises to generate a hard copy of a submittal (e.g., "8.5"x"11" paper", drawings, etc.).

Finally, there was an assessment of the existing NRC document and records management systems environment as well as requirements for enhancements to support the large document business requirements.

Assessment and Alternatives

The NRC assessed a number of alternatives to the existing technology infrastructure, current and planned operating procedures for processing documents, and regulatory requirements to determine how the identified objectives, issues, and technical requirements can be addressed while ensuring that —

- Document fidelity and integrity is preserved (e.g. organization, accuracy, completeness);
- Documents are accessible to users via commonly used computer configurations;
- The information is available on reliable and controllable media; and
- Unique submittals with special software/hardware components can be handled.

The assessment also considered that the NRC should provide guidance to participants in the proceeding well in advance of when large, complex filings are reasonably anticipated. The guidance, as well as the underlying technology and procedures, would address matters such as processes, file sizes, file formats, document organization overviews to facilitate reconstruction of the complete filing, labeling formats, and alternative transfer media.

This section presents general concepts and four alternatives for handling large, complex electronic submittals in the HLW repository proceeding.

General Concept

The overall information infrastructure for receiving and managing HLW-related documents involves several existing agency information systems. Participants in the proceeding will primarily send submittals to the NRC in the preferred PDF format via EIE, which provides a Web-form (an entry form similar to that of an overnight express mail carrier shipping form) for the submitter to accurately identify what is being transmitted. Upon receipt, each submittal would be entered into the Agencywide Document and Management System (ADAMS). Once captured within ADAMS, the submittal would be available for internal use by agency staff, and the information would be made publicly available (as appropriate) via the EHD. Variations on this general process and issues associated with large, complex documents are described in the following sections.

Alternative 1

Description: Documents, images, and other submittal components are submitted through the EIE as a single file, and the EIE Web-form serves as the transmittal letter. The NRC captures large files as single units, without the need for any manual manipulation, such as breaking a submission into workable pieces. Based on the service list, an e-mail is sent to provide notification of receipt and a link from the EIE server to the file for immediate access by

parties and participants to the proceeding. In addition, the file is made available (as appropriate) to the EHD. Interested parties can search on the bibliographic header information, the content, or a combination of the two. Retrieval of a document is directly to the user's desktop.

Positives: This alternative would satisfy the electronic transmission requirements of 10 CFR Part 2, Subpart J. This alternative primarily benefits and is less restrictive to the submitter. That is, the submitter dictates the form and format of the content, and the submittal comes in as a single optimized PDF format file.

Negatives: Submittal file size could be very large (potentially several hundred MB), particularly if graphics are widely used. The transmission may be problematic because of service interruptions or time-outs attributable to the very long transfer times required for large files. File sizes could also make this alternative unfeasible for subsequent users of a file, primarily because of download delays and time-outs. In addition, although any executables contained in the submittal could be stored in the EHD, they could not be indexed for search and retrieval or accessed online. The executable file would need to be downloaded and run locally.

Alternative 2

Description: The only object transmitted through the EIE is the transmittal letter for the large, complex document, which notifies the NRC of an impending package submittal. All other electronic files pertaining to the submittal are sent on optical storage media (e.g., CD-ROM), which is delivered to the NRC via an overnight express mail carrier. Based on the service list, the NRC sends an e-mail containing links from the EIE server to the transmittal letter for immediate access by parties and participants to the proceeding. All text-based components (e.g., narrative with embedded graphics) are rendered as optimized PDF format files. The NRC extracts each file from the optical storage media (e.g., CD-ROM) and makes the files available

(as appropriate) to the EHD as either individual objects or a compound document, depending on the document organization. The NRC also links a bibliographic header to the appropriate optical storage media (e.g., CD-ROM) for files or objects that are not candidates for extraction (because of some technical constraint). Interested parties can search the EHD on the bibliographic header, the content, or a combination of the two. Retrieval of a document or specified component(s) is directly to the user's desktop. Additionally, the NRC provides copies (upon request and for a fee) of the optical storage media (e.g., CD-ROM) for public access.

Positives: The NRC provides guidance to the submitter to facilitate processing and use within the agency. This alternative also avoids potential problems associated with submitting large files via the EIE.

Negatives: This alternative does not meet the electronic service requirements of 10 CFR Part 2, Subpart J. There may also be a delay in parties and participants receiving documents. As compared with Alternative 1, additional processing will be required to extract, profile, and store files in a timely manner. In addition, use of this alternative could adversely affect document fidelity and integrity (e.g. organization, accuracy, or completeness) which could affect the efficient conduct of an adjudication, as well as for agency recordkeeping and eventual turnover to NARA.

Alternative 3

Description: Documents, images, and other components (including the transmittal letter and enhanced Web-form) are transmitted through the EIE as multiple segmented files ("chunks") of a single submittal. All text-based components (e.g., narrative with embedded graphics) are rendered as optimized PDF format files. Based on the service list, the NRC sends an e-mail containing links from the EIE server to the transmittal letter and the various segmented files for immediate access by parties and participants to the proceeding. Upon

receipt and subsequent processing, the NRC makes the segmented files available (as appropriate) to the EHD as a “package” or “compound document.” Interested parties can search on the bibliographic headers, or content, or a combination of both. Retrieval of selected components is direct to the user’s computer.

Positives: This alternative satisfies electronic transmission requirements of 10 CFR Part 2 and allows submission via the EIE. It also allows the NRC to provide guidance to have precisely defined segments and bibliographic header information associated with each segment. The segmentation facilitates later use and access.

Negatives: This alternative requires the EIE to facilitate the transfer, segregate component content from bibliographic header information and the transmittal letter, and make that information available to the EHD. A possible fatal flaw is that some file types may not be able to be segmented into manageable sizes (e.g., graphic-oriented materials showing subsurface geology in color or computer modeling information and/or software), and some materials may not be accessible via the EHD.

Alternative 4

Description: All text-based components (e.g. narrative with embedded graphics) are rendered as optimized PDF files and transmitted in manageable segments. All non-text components that are not suitable for an optimized PDF file are submitted on optical storage media (e.g., CD-ROM). When necessary, due to the nature of the submittal, a submittal letter identifies all electronic files that comprise the submission, clearly indicating which components are submitted via EIE, and which are submitted on optical storage media (e.g., CD-ROM). The submittal letter, enhanced Web-forms, and all segmented text files are sent through the EIE. The optical storage media (e.g., CD-ROM) containing the complete submission (i.e., text-based segments submitted via EIE and any files submitted only on optical storage media) are

delivered to the NRC and other parties via an overnight mail carrier or other overnight delivery service. The NRC links a bibliographic header to the optical storage media (e.g., CD-ROM) component of the submission.

Based on the service list, the NRC sends an e-mail containing links from the EIE server to the transmittal letter and the various components submitted through the EIE for immediate access by parties and participants to the proceeding. The NRC indexes the text-based components sent via EIE and makes them available to the EHD as a “package” or “compound document.” Additionally, the NRC provides copies (upon request and for a fee) of the optical storage media (e.g., CD-ROM) for the public. Interested parties can search on the bibliographic header information, content, or a combination of both. Retrieval of text-based components is directly to the user’s computer, and non-text components are retrievable from the optical storage media (e.g., CD-ROM).

Positives: This alternative combines the best features and advantages of Alternatives 2 and 3, including text-based component submission through the EIE and non-text component submissions via optical storage media (e.g., CD-ROM). This alternative provides several means to optimize a submission and allows the NRC to process the submission appropriately; provide access to end-users (i.e., adjudicatory proceeding participants and the general public); and prepare for the eventual transfer to NARA.

Negatives: Processing will need to be closely coordinated to maintain the integrity of the various submittal components (segmented files stored in ADAMS with the bibliographic header records that point to optical storage media, such as a CD-ROM).

Documentary material submitted on optical storage media and sent by overnight mail (or other expedited delivery services) would not meet the electronic transmission requirements of

10 CFR Part 2, Subpart J. There may be a delay in parties and participants receiving document components contained only on the optical storage media (e.g., CD-ROM).

Planned Actions

Alternative 4 is the recommended approach for the NRC to meet the identified objectives. The NRC believes that this alternative provides the best means for transferring the wide variety of file types and sizes received from parties and participants in the proceeding, as well as the most practical means for delivering electronic information to parties and participants in the HLW repository adjudicatory proceeding, the presiding officer, and the Office of the Secretary (SECY), under the requirements of 10 CFR Part 2, Subpart J.

Toward that end, the agency will take the following steps:

- Develop guidance for use in generating HLW proceeding submissions that specifies the size, file characteristics, and method (either EIE or optical storage media) for different submittal types (i.e. simple, large, or complex). This guidance will also provide direction concerning the information the agency requires to ensure proper identification of each segment.
- Implement enhancements to the agency's existing IT/IM systems (such as an improved EIE capability) in anticipation of storage, search, and retrieval needs, as they pertain to Alternative 4.
- Implement enhancements to the agency's current document processing work flows in anticipation of the receipt, indexing, and distribution of information, as they pertain to Alternative 4.
- Develop a rule change to implement the recommended alternative. The final rule reflects this approach.

Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act (5 U.S.C. 605(b)), the Commission has evaluated the impact of the final rule on small entities. The NRC has established standards for determining who qualifies as small entities (10 CFR 2.810). The Commission certifies that this final rule, if adopted, would not have a significant economic effect on a substantial number of small entities. The amendments would modify the NRC's rules of practice and procedure in regard to the HLW repository licensing proceeding. Parties to the HLW repository licensing proceeding will be required to submit their filings during the proceeding according to the standards in the proposed rule. Some of the participants affected by the final rule, for example, DOE, NRC, the State of Nevada, would not fall within the definition of "small entity" under the NRC's size standards. Other parties and potential parties may qualify as "small entities" under these size standards. However, the required standards will overall make it easier for those parties who are small entities to participate in the HLW repository licensing proceeding.

Backfit Analysis

The NRC has determined that a backfit analysis is not required for this final rule because these amendments would not include any provisions that require backfits as defined in 10 CFR Chapter I.

List of Subjects in 10 CFR Part 2

Administrative practice and procedure, Antitrust, Byproduct material, Classified information, Environmental protection, Nuclear materials, Nuclear power plants and reactors, Penalties, Sex discrimination, Source material, Special nuclear material, Waste treatment and disposal.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553; the Nuclear Regulatory Commission is adopting the following amendments to 10 CFR Part 2.

PART 2 - RULES OF PRACTICE FOR DOMESTIC LICENSING PROCEEDINGS AND ISSUANCE OF ORDERS

1. The authority citation for Part 2 continues to read as follows:

Authority: Secs.161, 181, 68 Stat. 948, 953, as amended (42 U.S.C. 2201, 2231); sec. 191, as amended, Pub. L. 87-615, 76 Stat. 409 (42 U.S.C. 2241); sec. 201, 88 Stat.1242, as amended (42 U.S.C. 5841); 5 U.S.C. 552; sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

Section 2.101 also issued under secs. 53, 62, 63, 81, 103, 104, 105, 68 Stat. 930, 932, 933, 935, 936, 937, 938, as amended (42 U.S.C. 2073, 2092, 2093, 2111, 2133, 2134, 2135); sec. 114(f), Pub. L. 97-425, 96 Stat. 2213, as amended (42 U.S.C. 10143(O)); sec. 102, Pub. L. 91-190, 83 Stat. 853, as amended (42 U.S.C. 4332); sec. 301, 88 Stat. 1248 (42 U.S.C. 5871). Sections 2.102, 2.103, 2.104, 2.105, 2.321 also issued under secs. 102, 104, 105, 163, 183i, 189, 68 Stat. 936, 937, 938, 954, 955, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2233, 2239). Section 2.105 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.C. 2239). Sections 2.200-2.206 also issued under secs. 161 b, i, o, 182, 186, 234, 68 Stat. 948-951, 955, 83 Stat. 444, as amended (42 U.S.C. 2201 (b), (i), (o), 2236, 2282); sec. 206, 88 Stat 1246 (42 U.S.C. 5846). Section 2.205(j) also issued under Pub. L. 101-410, 104 Stat. 90, as amended by section 3100(s), Pub. L. 104-134, 110 Stat. 1321-373 (28 U.S.C. 2461 note). Subpart C also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239). Sections 2.600-2.606 also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853, as amended (42 U.S.C. 4332). Section 2.700a also

issued under 5 U.S.C. 554. Sections 2.343, 2.346, 2.754, 2.712 also issued under 5 U.S.C. 557. Section 2.764 also issued under secs. 135, 141, Pub. L. 97-425, 96 Stat. 2232, 2241 (42 U.S.C. 10155, 10161). Section 2.790 also issued under sec. 103, 68 Stat. 936, as amended (42 U.S.C. 2133) and 5 U.S.C. 552. Sections 2.800 and 2.808 also issued under 5 U.S.C. 553. Section 2.809 also issued under 5 U.S.C. 553, and sec. 29, Pub. L. 85-256, 71 Stat. 579, as amended (42 U.S.C. 2039). Subpart K also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239); sec. 134, Pub. L. 97-425, 96 Stat. 2230 (42 U.S.C. 10154). Subpart L also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239). Subpart M also issued under sec. 184 (42 U.S.C. 2234) and sec. 189, 68 Stat. 955 (42 U.S.C. 2239). Subpart N also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239). Appendix A also issued under sec. 6, Pub. L. 91-550, 84 Stat. 1473 (42 U.S.C. 2135).

2. In § 2.1001, definitions of “Complex documents,” “Large documents,” and “Simple documents” are added to read as follows:

§ 2.1001 Definitions

* * * * *

“Complex document” means a document that consists (entirely or in part) of electronic files having substantial portions that are neither textual nor image in nature, and graphic or other Binary Large Objects that exceed 50 megabytes and cannot logically be divided. For example, specialized submissions may include runtime executable software, viewer or printer executables, dynamic link library (.dll) files, large data sets associated with an executable, and actual software code for analytical programs that a party may intend to introduce into the proceeding.

* * * *

“Large document” means a document that consists of electronic files that are larger than 50 megabytes.

* * * * *

“Simple document” means a document that consists of electronic files that are 50 megabytes or less.

* * * * *

3. In § 2.1003, the introductory text of paragraph (a) and paragraph (a)(1) are revised, and paragraph (e) is added, to read as follows:

§ 2.1003 Availability of Material.

(a) Subject to the exclusions in § 2.1005 and paragraphs (b), (c), and (e) of this section, DOE shall make available, no later than six months in advance of submitting its license application for a geologic repository, the NRC shall make available no later than thirty days after the DOE certification of compliance under § 2.1009(b), and each other potential party, interested governmental participant or party shall make available no later than ninety days after the DOE certification of compliance under § 2.1009(b)--

(1) An electronic file including bibliographic header for all documentary material (including circulated drafts but excluding preliminary drafts) generated by, or at the direction of, or acquired by, a potential party, interested governmental participant or party; provided, however, that an electronic file need not be provided for acquired documentary material that has already been made available by the potential party, interested governmental participant or

party that originally created the documentary material. Concurrent with the production of the electronic files will be an authentication statement for posting on the LSN web site that indicates where an authenticated image copy of the documents can be obtained.

* * * * *

(e) Each potential party, interested governmental participant or party shall continue to supplement its documentary material made available to other participants via the LSN with any additional material created after the time of its initial certification in accordance with paragraph (a)(1) through (a)(4) of this section until the discovery period in the proceeding has concluded.

4. In § 2.1005, paragraph (i) is added to read as follows:

§ 2.1005 Exclusions.

* * * * *

(i) Correspondence between a potential party, interested governmental participant, or party and the Congress of the United States.

5. In § 2.1012, paragraph (a) is revised to read as follows:

§ 2.1012 Compliance.

(a) If the Department of Energy fails to make its initial certification at least six months prior to tendering the application, upon receipt of the tendered application, notwithstanding the provisions of §2.101(f)(3), the Director of the NRC's Office of Nuclear Material Safety and

Safeguards will not docket the application until at least six months have elapsed from the time of the certification. The Director may determine that the tendered application is not acceptable for docketing under this subpart if the application is not accompanied by an updated certification pursuant to § 2.1009(b), or if the Secretary of the Commission determines that the application is not submitted on optical storage media in a format consistent with NRC regulations and guidance, or for non-compliance with any other requirements identified in this Subpart.

* * * * *

6. In § 2.1013, paragraphs (a)(2) and (c)(1) are revised to read as follows:

§ 2.1013 Use of the electronic docket during the proceeding.

* * * * *

(a) * * *

(2) The Secretary of the Commission will establish an electronic docket to contain the official record materials of the high-level radioactive waste repository licensing proceeding in searchable full text, or, for material that is not suitable for entry in searchable full text, by header and image, as appropriate.

* * * * *

(c)(1) All filings in the adjudicatory proceeding on the application for a high-level radioactive waste geologic repository under part 60 or 63 of this chapter shall be transmitted by the submitter to the Presiding Officer, parties, and Secretary of the Commission, according to the following requirements—

(i) “Simple documents” must be transmitted electronically via EIE;

(ii) "Large documents" must be transmitted electronically in multiple transmissions of 50 megabytes or less each via EIE;

(iii) "Complex documents":

(A) those portions that can be electronically submitted through the EIE, in 50 MB or less segments, must be transmitted electronically, along with a transmittal letter; and

(B) those portions that are not capable of being transmitted electronically must be submitted on optical storage media which must also include those portions of the document that had been or will be transmitted electronically.

(iv) Electronic submissions must have the following resolution--

(A) Electronic submissions of files created after January 1, 2004 must have 300 dots per inch (dpi) as the minimum resolution for bi-tonal, color, and grayscale, except in limited circumstances where submitters may need to use an image scanned before January 1, 2004, in a document created after January 1, 2004, or the scanning process for a large, one-page image may not successfully complete at the 300 dpi standard resolution.

(B) Electronic submissions of files created before January 1, 2004, or electronic submissions created after January 1, 2004, which cannot meet the 300 dpi standard for color and grayscale, must meet the standard for documents placed on LSN participant web sites in Section 2.1011(b)(2)(iv) of this subpart, which is 150 dpi for color and grayscale documents and 300 dpi for bi-tonal documents.

(v) Electronic submissions must be generated in the appropriate PDF output format by using:

(A) PDF - Formatted Text and Graphics for textual documents converted from native applications;

(B) PDF - Searchable Image (Exact) for textual documents converted from scanned documents; and

(C) PDF - Image Only for graphic-, image-, and forms-oriented documents. In addition, Tagged Image File Format (TIFF) images and the results of spreadsheet applications must to be converted to PDF, except in those rare instances where PDF conversion is not practicable.

(vi) Electronic submissions must not rely on hyperlinks to other documents or web sites for completeness or access except for hyperlinks that link to material within the same PDF file. If the submittal contains hyperlinks to other documents or web sites, then it must include a disclaimer to the effect that the hyperlinks may be inoperable or are not essential to the use of the filing. Information contained in hyperlinks to a web site on the Internet or to another PDF file, that is necessary for the completeness of a filing, must be submitted in its entirety in the filing or as an attachment to the filing.

(vii) All electronic submissions must be free of author-imposed security restrictions.

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Dated at Rockville, Maryland, this 4th day of June, 2004.

For the Nuclear Regulatory Commission.

/RA/

Annette Vietti-Cook,
Secretary of the Commission.