

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 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 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