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To: LSS Advisory Review Panel Members

From: Fielden Dickerson for the Technical Working Group

Date: July 21, 1995

Subject: Phase 2 LSS Functional Requirements

Following the discussion of the draft Phase 2 LSS requirements at the July 6-7, 1995 Panel meeting the Chairman directed that the Phase 2 requirements be modified to reflect the Panel's comments. The attachment is the update of the previous draft with the modifications marked by redline and line out. This new draft has been reviewed by the Technical Working Group and the TWG is recommending that the Panel approve these Phase 2 LSS requirements.

John Hoyle asked that I distribute this draft to the Panel members for review and comment. He is asking that you send any comments to him by August 1, 1995 with a copy to me. My fax number is (202) 488-2308 and phone number is (202) 488-2308.

FD:jah

cc: Distribution:
LSS Advisory Review Panel Members

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3.0 PRIMARY LSS FUNCTIONAL REQUIREMENTS

The primary LSS functional requirements are those directly associated with the purpose of the system: document capture, storage, search and retrieval, electronic message transfer, and official record material functions. Secondary functions, which include system administration and security functions, are described in Sections 4 and 5.

3.1 Document Capture [LSS1-004,LSS1-012,LSS1-013, LSS1-014]

The document capture functions allow the LSSA to import electronic data and capture paper documents to make them part of the documentary or official record file material within the LSS.

LSS2-001 Scan Paper to Image. The LSS shall provide the capability to scan paper documents to create an electronic bit-mapped image, including 8-1/2 x 11 inch single and double-sided pages, and single-sided pages up to E sized. [LSS1-006]

Comment: The image formats supported by the LSS are defined in Section 6.2.4 of this document.

LSS2-001-1 Partial Document Scanning. The LSS shall provide the capability to scan single pages and portions of documents to allow page-level insertion of pages failing quality check without re-scanning the entire document.

LSS2-002 Import Electronic Document. The LSS shall provide the capability to import electronic documents which comply with LSS import format and media requirements into the system. Imported documents will be available for quality check as described in LSS2-008. [LSS1-004]

Comment: LSS import format and media requirements are specified in Section 6.2.5 of this document.

LSS2-002-1 Import Image. The LSS shall provide the capability to import electronic images which comply with LSS import format and media requirements into the system. [LSS1-004]

Comment: LSS import format and media requirements are specified in Section 6.2.5 of this document.

LSS2-002-2 Import Text. The LSS shall provide the capability to import electronic text which complies with LSS import format and media requirements into the system. [LSS1-004]

Comment: LSS import format and media requirements are specified in Section 6.2.5 of this document.

LSS2-002-3 Import Electronic Message. The LSS shall provide the capability to import the text of an LSS electronic message into the system. [LSS1-004]

Comment: LSS electronic messages, which include electronic filings of various types, will need to become part of the documentary material and to be searchable like other LSS documents. This requirement assures that the electronic text of the messages can be "captured" as documentary material without printing, scanning and reconverting the material to text. It is not anticipated that this electronic message will be converted to image, since it is fully and accurately represented in electronic text form.

LSS2-002-4 Import Header. The LSS shall provide the capability to import electronic bibliographic headers which comply with LSS import format and media requirements into the system. [LSS1-004]

Comment: LSS import format and media requirements are specified in Section 6.2.5 of this document.

LSS2-003 Create Electronic Header. The LSS shall provide the capability to create an electronic LSS header. [LSS1-012, LSS1-021]

LSS2-003-1 Enter Header Data. The LSS shall provide the capability to create an LSS header. [LSS1-012]

LSS2-003-2 Authority Table Checking. The LSS shall use authority table lists of valid fields to validate data entered by the user into LSS header fields and as a mechanism to allow the user to select valid values for entering data into LSS header fields. [LSS1-021]

LSS2-004 Convert Image to Text. The LSS shall provide the capability to convert a bit-mapped image which is compliant with LSS data format requirements to computer readable text. The LSS shall achieve text conversion accuracies that are achievable with the best commercial products available at the time of the LSS system design. [LSS1-005]

Comment: The text conversion acuracies may be achieved using combinations of technologies comparable to the best available

commerically. LSS data format requirements are specified in Section 6.2 of this document.

LSS2-005 Prepare Text for Search. The LSS shall provide the capability to automatically prepare text and header data for full text search. [LSS1-011]

Comment: This does not refer to the correction of text errors. This is the process that the software uses to prepare corrected text for the search engine. For most full text search applications, which rely on inverted indices for full text search, this requirement refers to building and updating the full text index. It is stated generically so as not to presume the method of search.

LSS2-006 Check for Duplicate Documents. The LSS shall provide the capability to automatically identify apparent duplicate documents in the system or in the document capture pipeline. [LSS1-023]

Comment: The method of duplicate checking might compare LSS header fields (or a subset thereof), full text, or a combination. The requirement refers to "apparent duplicate documents" because it does not assume that the system can guarantee that a document is a duplicate. Rather, the system must provide a tool for identifying likely duplicates. The goal of duplicate checking is to reduce the possibility of duplicate documents in the system and to minimize the cost of processing documents. This requirement does not imply the automatic deletion of apparent duplicates.

LSS2-007 Mark Document as Superseded. The LSS shall provide the capability to mark a document as superseded by another document and identify the successor document. [LSS1-009]

Comment: A document may be superseded by a corrected version of the document. This function allows a document in the LSS to be marked in the document header as having been superseded. This "marking" is used by the Identify document as superseded function during retrieval.

LSS2-008 Assure Document Capture Quality. The LSS shall provide the capability to check the quality of a document during the capture process, and to correct errors in the document. [LSS1-06, LSS1-012, LSS1-013, LSS1-021, LSS1-022]

Comment: The capture process ends when the document is available for retrieval by general LSS users. This function and associated subfunctions must be allowed to operate on a separate station from

other capture functions so that a separate person can perform the quality checking steps.

LSS2-008-1 Pre-Store Quality Check - Header. The LSS shall provide the capability during the capture process to visually check the completeness and accuracy of the LSS header and to automatically check header fields for valid entries as defined in LSS header authority tables, whether the header was imported or created within the LSS. The LSS shall allow this function to be performed at a separate station from the non-quality check capture functions. [LSS1-012, LSS1-021]

LSS2-008-2 Pre-Store Quality Check - Image. The LSS shall provide the capability to visually check images for clarity, completeness and skew, whether the images are imported or created within the LSS. The LSS shall allow this function to be performed at a separate station from the non-quality check capture functions. [LSS1-006, LSS1-021]

LSS2-008-3 Pre-Store Quality Check - Text. The LSS shall provide the capability to visually check document text for accuracy by comparing it with the document image, whether the text was imported or created within the LSS. The LSS shall allow this function to be performed at a separate station from the non-quality check capture functions. [LSS1-013, LSS1-021]

LSS2-008-4 Text Spell Check. The LSS shall provide the capability to create and maintain multiple custom dictionaries and to electronically check the spelling of document text against a standard and custom dictionary and to correct misspellings during the capture process. The LSS shall allow this function to be performed at a separate station from the non-quality check capture functions. [LSS1-013, LSS1-021]

Comment: Spelling errors will be corrected in the text but not in the image as the image is the exact representation of the document.

LSS2-008-5 Rejected Document List. The LSS shall provide the capability to generate a list of documents which have failed any pre-store quality check identifying the reason or reasons for failure. [LSS1-021]

Comment: This function will be used to inform submitters of documents that documents must be resubmitted.

LSS2-008-6 Correct Header Errors (Pre-Store). The LSS shall provide the capability to edit header fields which are not protected, during the capture process, whether the header was imported or created within the LSS. [LSS1-012]

Comment: Some header fields may be protected from update through

the Protect Header Field function (Section 5).

LSS2-008-7 Replace Image Pages. The LSS shall provide the capability to replace, insert and delete individual image pages during the capture process, whether the original or replacement images were imported or created within the LSS. [LSS1-006]

LSS2-008-8 Interactive Text Correction. The LSS shall provide the capability to correct errors in document text during the capture process, whether the text was imported or created within the LSS. [LSS1-021, LSS1-022]

3.2 Document Storage

LSS2-009 Store Document (Link Text, Image, Header). The LSS shall provide the capability to store documentary material, whether imported, captured or created within the LSS, linking the document components (header, text and/or image) for subsequent retrieval. [LSS1-012, LSS1-013, LSS1-014]

Comment: The various forms of documentary material are defined in Section 6.

LSS2-009-1 Store Document Header. The LSS shall provide the capability to store an LSS header for subsequent retrieval. [LSS1-012]

LSS2-009-2 Store Document Text. The LSS shall provide the capability to store document text for subsequent retrieval. [LSS1-013]

LSS2-009-3 Store Document Image. The LSS shall provide the capability to store document images for subsequent retrieval. [LSS1-06, LSS1-014]

LSS2-009-4 Link Document Components. The LSS shall provide the capability to logically link the header, text and image of a document, where available, for subsequent retrieval, whether these document components are stored at the same time or at different times. [LSS1-006, LSS1-012, LSS1-013, LSS1-014]

Comment: The system must allow the storage of a complete header/text/image document all at once, as well as the initial storage of a header, with later storage of the text and/or image. The linkage allows subsequent retrieval of one or more document components (header, text, image) from a list of documents satisfying a query.

LSS2-009-5 Preclude Orphan Image/Text. The LSS shall prevent the storage (for retrieval) of document images or text which are not associated with an LSS header. [LSS1-012, LSS1-013, LSS1-014]

Comments: Documentary material in the LSS must have a header to assure retrievability and data base integrity. "Storage (for retrieval)" means storage in the documentary data base for purposes of retrieval. Temporary storage of text or image during the capture process, outside of the retrieval data base is not prohibited by this requirement.

LSS2-010 Define Information Package. The LSS shall provide the capability to define an information package which includes a listing of all documents in the package. [LSS-004]

3.3 Document Search and Retrieval [LSS1-008, LSS1-011, LSS1-012, LSS1-013]

LSS2-011 Query for Document. The LSS shall provide the capability to query the system for a list of all documents which meet the query criteria and sort the displayed list on the ~~value of the~~basis of selected displayed fields, or the basis of relevancy to the query. [LSS1-012, LSS1-008]

LSS2-011-1 Query Header. The LSS shall provide the capability to query the system by specifying the ~~values~~content of one or more header fields to obtain a list of all documents which satisfy the query. [LSS1-012, LSS1-008]

LSS2-011-2 Query Text. The LSS shall provide the capability to query the system by specifying one or more character strings in the full text of the document to obtain a list of all documents which satisfy the query. [LSS1-013]

LSS2-011-3 Text Query Parameters. The LSS shall provide the capability to specify single and multiple character wild cards, to utilize proximity searching , and root searching as part of a full text query and to combine multiple query statements using boolean expressions (e.g., AND, OR, NOT). [LSS1-013]

Comment: Only very fundamental full text options which are available through a wide variety of commercial products have been specified here, in order not to preclude the use of most Commercial Off The Shelf (COTS) products.

LSS2-011-4 Query Header and Text. The LSS shall provide the capability to query the system by specifying a combination of header field values and the text query parameters from LSS2-011-3 in the full text of the document to obtain a list of all documents which satisfy the query. [LSS1-012, LSS1-013]

LSS2-011-5 Save/Reuse Query. The LSS shall provide the capability to save, retrieve, edit and/or re-execute a previously constructed query, and to perform a query against the results set of the previous query during a

single session. [LSS1-012, LSS1-013]

LSS2-011-6 Provide Query Status. The LSS shall provide the user an indication of the query status during a full text query and allow the user to terminate queries in process without terminating the session or losing previous result sets. [LSS1-012, LSS1-013]

Comment: It is always possible to construct a query which is so broad that it results in an unmanageable results list. Users should be able to determine that an ongoing query is too broad and terminate the query in process. Typically, status would be provided by a running total or list of documents found which satisfy the query. Typically, a user would terminate a query if the running total becomes large, and enter a more specific query to reduce the results list size.

LSS2-011-7 Query Assistance. The LSS shall provide interactive capabilities to assist the user in retrieving documents when the field values that uniquely define the documents are not known to the user. [LSS1-020]

Comment. Examples might include synonym processing, thesaurus, natural language queries, or other search aids. Because a variety of approaches are used in the commercial market, no one approach is specified.

LSS2-011-8 Save Query Result Set. The LSS shall provide the capability to save, retrieve, and search on a previous query result within a session.

LSS2-012 Display Document. The LSS shall provide the capability to display a document. [LSS1-012, LSS1-013, LSS1-014, LSS1-016]

LSS2-012-1 Display Header. The LSS shall provide the capability to display the LSS header of a document. [LSS1-012]

LSS2-012-2 Display Text. The LSS shall provide the capability to display one or more pages of the text of a document. [LSS1-013]

LSS2-012-3 Locate Search Terms in Document. The LSS shall provide the capability to locate the terms in the document which satisfy a full text query and to move the term indicator from one term to the next or previous term without displaying intermediate text. [LSS1-013]

Comment: This function is performed as the user is viewing the document. It is typically implemented by highlighting the search terms in the document and providing a "go to next term" function which places a cursor at the line or word of the search term.

LSS2-012-4 Display Image. The LSS shall provide the capability to display the images of a document, page by page, including full page views of the images of 8-1/2 by 11 inch pages up to E size pages. [LSS1-014, LSS1-016]

Comment: The image formats supported by the LSS are defined in Section 6.2.4 of this document.

LSS2-012-5 Image Viewing . The LSS shall provide image viewing capabilities for image enlargement, reduction, scrolling and rotation. [LSS1-014, LSS1-016]

LSS2-012-6 Display Image and Text. The LSS shall provide the capability to concurrently display a page image of a document and its associated text. [LSS1-013, LSS1-029]

LSS2-012-7 Viewing Options. The LSS shall allow the user to view the following combinations: 1) header; 2) image; 3) text; 4) header and text; 5) header and image; and, 6) text and image. [LSS1-012, LSS1-013]

Comment: This requirement is primarily to support dial-in users who may wish to limit the retrieval of images over lower-bandwidth communications lines. It means simply that the user must be able to look at text and headers without looking at images.

LSS2-012-8 Identify Document as Superseded. The LSS shall provide the capability to identify a document which has been marked as a superseded version. [LSS1-009]

Comment: The Mark document as superseded requirement allows documents to be marked as superseded, meaning that a subsequent version of the document has been put into the LSS. The Identify Document as Superseded function enables users performing document retrieval to see that a document has been marked.

LSS2-013 Print Document. The LSS shall provide the capability to print a document at a local printer. [LSS1-012, LSS1-013, LSS1-014]

LSS2-013-1 Print Header. The LSS shall provide the capability to print a document header at a local printer. [LSS1-012]

LSS2-013-2 Print Text. The LSS shall provide ~~the~~a user selectable capability to print from one page to all of the text of a document, and any selected ranges of pages, at a local printer. [LSS1-013]

LSS2-013-3 Print Standard Image. The LSS shall provide ~~the~~a user selectable

capability to print from one to all images, and any selected ranges of images, of 8-1/2 by 11 inch (or smaller) pages of a document, at a local printer, on 8-1/2 by 11 inch paper. [LSS1-014]

LSS2-013-4 Print Oversized Image. The LSS shall provide the capability to print an oversized page image, up to E sized, on a single sheet of paper at 100% of the size of the original image. [LSS1-014]

LSS2-013-5 Print Results List. The LSS shall provide the capability to print some or all of the summary lines of a results list.

LSS2-013-6 Print Screen. The LSS shall provide the capability of printing the screen display.

LSS2-014 Request Paper Copy. The LSS shall provide the capability to submit an electronic request for a paper copy of the header, images or text of a document or of an entire results set, including oversized and color images. [LSS1-017]

Comment: This function is primarily for dial-in users.

LSS2-015 Process Paper Copy Request. The LSS shall provide the capability to receive and read an electronic request for a paper copy of a document and print the requested copy. [LSS1-017]

Comment: This is not anticipated to be a highly automated function. Automatic address label generation for example is not expected. The LSSA will need to be able to receive requests, and print out the requested document. The rest of this function may be procedurally implemented.

3.4 Electronic Message Transfer [LSS1-003]

LSS2-016 Create Electronic Message. The LSS shall provide the capability to create an electronic message. [LSS1-003]

Comment. The format of LSS electronic messages is described in Section 6.

LSS20016-01 The LSS shall provide the capability for an authorized user to delete an electronic message.

LSS2-017 Store Electronic Message. The LSS shall provide the capability to store an electronic message including messages which have been created or edited but not sent, sent messages, and received messages. [LSS1-003]

LSS2-018 Edit Electronic Message. The LSS shall provide the capability to edit an electronic message which has been previously stored, prior to sending. [LSS1-003]

LSS2-019 Electronic Message Import/Export. The LSS shall provide the capability to import ASCII text into an electronic message during editing, and export ASCII text from an electronic message. [LSS1-003]

Comments: This requirement allows users to use most commercial word processors for text generation and to transfer text to and from the LSS electronic message environment. Translation of specific vendor formats (non-ASCII) is not specified since these formats change over time.

LSS2-020 Address Electronic Message. The LSS shall provide the capability to address an electronic message to one or more authorized LSS users by creating an address list of individual user and/or user group names. The LSS shall provide a list of valid address names for the user to select from in order to address an electronic message. [LSS1-003]

LSS2-021 Send Electronic Message. The LSS shall provide the capability to electronically transmit an electronic message to users in the address list. [LSS1-003]

LSS2-022 Display Electronic Message. The LSS shall provide the capability to receive and display an electronic message which was sent to the user's electronic message address. [LSS1-003]

LSS2-023 Acknowledge Message Delivery. The LSS shall provide electronic acknowledgement of message delivery which identifies the recipients electronic message name/address, and the date and time of delivery. [LSS1-024]

Comment: Message delivery means that the message is available for the recipient to read.

LSS2-024 Report Message Delivery Failure. The LSS shall provide a notice to the sender of an electronic message indicating when the system has failed to deliver the message, which identifies the intended recipient's electronic message name/address, and the date and time that the message was sent or the failure detected. [LSS1-003]

LSS2-025 Print Electronic Message. The LSS shall provide the capability to print an electronic message, including messages which have been created or edited but not sent, sent messages, and received messages. [LSS1-003]

3.5 Official Record Material

The following requirements pertain to the "Official Record File" which is discussed in 10 CFR 2.1013(a)(2). This is effectively an electronic docket containing the official record of the proceedings. The official record file will be maintained by the NRC Secretary's organization (SECY); the LSS will contain a copy of the official record file. The phrase "official record material" (not "file") is used in this document in order to avoid the implication of a design. It is likely that the official record material will be cataloged and stored and viewed just like documentary material, but with special header flags to indicate that it is either candidate or approved official record material.

LSS2-026 Designate Official Record Material. The LSS shall provide the capability to designate material in the LSS as being Official Records Material.~~and shall provide a mechanism for authorized users to augment the bibliographic information of those documents with additional fielded information which may be needed to characterize, identify, or track those materials.~~The material in this strikeout is captured in LSS2-072. [LSS1-004]

Comment: As interpreted, this requirement does not mean that the official record material must be located in a physical file, but must be logically identified as being in the official record. This requirement assumes that information designated as official record material can be represented in the same text and image formats as documentary material. ~~and, that the basic header format for documentary material may have to be augmented with additional and unique fields needed to manage documents which are part of the official record. Augmentation may be accomplished by updating fields in a header record, by linking to other relational files, or via any other mechanism that accomplishes the required characterizations, identification, or tracking.~~

LSS2-027 Retrieve Official Record Material. The LSS shall provide the capability to retrieve, view and print official record material in the same manner as documentary material. [LSS1-004]

LSS2-028 Import Transcripts. The LSS shall provide the capability to import transcripts which are compliant with LSS import and media format requirements directly into the LSS, via a capture station, for inclusion in the official record material.~~There shall be a capability to create transcript header records with fielded information unique to deposition and hearing transcripts and link those headers with associated text.~~ [LSS1-026]

Comment: LSS import format and media requirements are specified in Section 6 of this document.

~~LSS2-028+~~ ~~The LSS shall provide mechanisms to identify and track evidentiary materials in the documentary database which may be used multiple times as exhibits in depositions and which are introduced as hearing exhibits. Software shall provide the capability to easily view the images of documents, which have been referenced as exhibits, while in a deposition or hearing transcript text file. Software shall provide a mechanism to easily identify, while viewing header records, which deposition or hearing transcripts have referenced the document being viewed.~~ This material has been moved to Section 6 and is given in the comment for LSS2-050.

4.0 SYSTEM ADMINISTRATION REQUIREMENTS

4.1 System Administration

LSS2-029 Start Up System. The LSS shall provide the capability to initialize the software and hardware necessary to operate the LSS. [LSS1-018]

LSS2-030 Shut Down System. The LSS shall provide the capability for the orderly shut down of the software and hardware components of the LSS. [LSS1-018]

Comment. This function would be used, for example, for preventative maintenance.

LSS2-031 Backup Data. The LSS shall provide the capability to create incremental and full backup copies of all data on the system. [LSS1-018]

Comment: Removable media is specified to enable off-site storage for purposes of disaster recovery. Incremental backups mean partial data base backups based on a time span, usually daily. Full backups mean backups of the entire data base.

LSS2-032 Restore Data. The LSS shall provide the capability to restore data created by the backup function to the operational system, including partial and full data recovery. [LSS1-018]

LSS2-033 Monitor System Status. The LSS shall provide authorized users the capability to monitor the status of system hardware, ~~and~~ software, and communication components and to ~~monitor and~~ interrupt, restrict or disable system capabilities in order to optimize use of system resources. [LSS1-018]

LSS2-033-01 The LSS shall provide a capability for an authorized user to monitor user session acitivity levels and to identify and cancel queries or other system activities.

LSS2-034 Data Base Administration Tools. The LSS shall provide authorized users the capability to assess the availability, integrity and performance of the data bases associated with the LSS, including those pertaining to the storage of document headers, text and image data and adjust data base performance parameters or to restrict or disable database features in order to optimize system performance. [LSS1-018]

LSS2-034+a Store Non-Document-Related Items. The LSS shall provide the capability to store non-document-related items, files, or tables that are related to system administration and database administration activities.

[LSS1-018]

Comment: This requirement is likely to be met by providing the Administrator access to the operating system.

LSS2-034+b Retrieve Non-Document-Related Items. The LSS shall provide the capability to search and retrieve non-document-related items, files, or tables that are related to system administration and database administration activities. [LSS1-018]

LSS-034+c Delete Non-Document-Related Items. The LSS shall provide the capability to delete non-document-related items, files, and tables that may have been collected during the course of database and system administration activities. [LSS1-018]

LSS2-035 Administer Address Book. The LSS shall provide the capability to add, delete and edit addresses used for sending electronic messages, including the user names and user group names. [LSS1-003]

LSS2-035+ System Logins. The LSS shall have the capability to account for user activity. [LSS1-018]

4.2 End-User System Access

LSS2-036 Log-On LSS. The LSS shall provide the capability to initiate a user session and gain access to the LSS system by providing an authorized user account name and associated authorized password. The LSS shall not allow access to system functions without the initial entry of an authorized account name and associated authorized password. [LSS1-019]

LSS2-037 Log-Off LSS. The LSS shall provide the capability to terminate a working session on the LSS, leaving the station in a state where a new system logon is required to gain access to LSS functions. [LSS1-019]

LSS2-038 Change Personal Password. The LSS shall provide a non-public user the capability to change the user's authorized password provided that the user has logged onto the system with an authorized password. [LSS1-019]

Comment: This requirement means that non-public LSS users can change their password, but that users accessing the system through a public reading room will not be allowed to change the password of the account they are using.

5.0 SECURITY AND DATA INTEGRITY REQUIREMENTS

5.1 System Security Administration

LSS2-039 Create/Modify User Account The LSS shall provide the capability to create new user accounts, modify user accounts, and delete user accounts, including the establishment of the account names and initialization of the account password. [LSS1-019]

LSS2-040 Set Functional Access Authorizations. The LSS shall provide the capability to establish and modify user access authorizations to system functions. At a minimum, the LSS shall provide discreet function-to-user access controls sufficient to enforce the allocations shown in Table 9-2 [LSS1-019]

Comment: Not all LSS users can have access to all LSS functions. The referenced table defines categories of users and identifies the functions needed by each category.

LSS2-041 Set Data Access Authorizations. The LSS shall provide the capability to establish and deny read, write and delete privileges for each of the following types of information on a per-user account basis:

- Documentary material
- Official record material (approved)
- Official record material (candidate)
- Header data
- Text data
- Password
- Image data

[LSS1-019]

LSS2-042 Set Header Field Protection. The LSS shall provide the capability to designate specified fields in the LSS header as protected from or available for update. [LSS1-019]

Comment: This function would allow the LSSA to prevent update of specific fields in the LSS header. This restriction would apply to all headers stored in the system as well as headers which have been imported and are being processed by the capture functions. It is anticipated that certain fields, such as the unique identifier of the document (e.g. accession number) will be considered unalterable. Submitted documents which have these fields in error would be rejected rather than corrected within the LSS.

LSS2-043 Edit Documents. The LSS shall provide the capability to edit previously

stored documents. [LSS1-021]

Comment: Previously stored means that the document is stored in the LSS and is available for retrieval.

LSS2-043-1 Edit Header Fields (Post-Store). The LSS shall provide the capability to edit header fields of previously stored documents provided that the fields are not protected. [LSS1-021]

Comment: Some header fields may be protected from update through the Protect Header Field function.

LSS2-043-2 Replace Image Pages - Post-Store. The LSS shall provide the capability to replace individual images and insert individual missing images in documents which have been previously stored. [LSS1-006]

LSS2-043-3 Interactive Text Correction - Post-Store. The LSS shall provide the capability to correct errors in document text which has been previously stored. [LSS1-021]

LSS2-043-4 Document Deletion. The LSS shall provide the capability to logically delete documents (header, text and/or image) such that they will not be available to LSS users. This function shall require confirmation prior to execution. The LSS shall prevent the deletion of a header before the associated text or image have been deleted. [LSS1-018]

Comment: This function will be available only to the system administration personnel for purposes of maintaining data base integrity and accuracy. Deletion means that the document is no longer available for retrieval and viewing using normal system functions. This requirement does not preclude the use of Write Once Read Many (WORM) media.

LSS2-043-5 Undelete. The LSS shall provide the capability to make a list of documents that have been logically deleted; to restore a document that has been logically deleted and to make it available to users.

5.2 System Security Enforcement

LSS2-044 Enforce Functional Access Authorizations. The LSS shall prohibit user access to functions which the user has not been authorized to use through the "Set functional access authorizations" function. [LSS1-019]

LSS2-045 Enforce Data Access Authorizations. The LSS shall prohibit user access to data which the user has not been authorized to access through the "Set data access authorizations" function. [LSS1-019]

LSS2-046 Enforce Header Field Protections. The LSS shall prohibit the editing of header fields designated as protected by the Protect Header Field function, except for headers which are being created for the first time within the LSS. [LSS1-018, LSS1-019]

6.0 LSS DATA REQUIREMENTS

In order to provide the functions described in Sections 3, 4 and 5, the LSS must support certain key data elements. These elements are described in Section 6.1. Specific data element formats are defined in Section 6.2.

6.1 Key Data Elements

6.1.1 Documentary Material

LSS2-047 Documentary Material. The LSS shall be capable of receiving, processing and storing documentary material of the types described in Table 6-1. [LSS1-007, LSS1-012, LSS1-013, LSS1-014, LSS1-028]

6.1.2 Electronic Messages

LSS2-048 Electronic Messages. LSS electronic messages shall be free text format. [LSS1-003]

Comment: The free text format requirement is meant to clarify that the electronic messages, which might include such types as orders, decisions, motions, issuances, and miscellaneous filings, do not require unique message formats by message type. The format is free text.

6.1.3 Authority Tables

LSS2-049 Authority Tables. The LSS shall have an editable table or tables of valid field values for the LSS Header and any other header information in the system beyond that specified in this document. [LSS1-019]

6.2 Data Formats

6.2.1 Header Fields for Documentary Material

LSS2-050 Documentary Header Fields. The LSS header shall, at a minimum, include the fields and formats defined in Table 6-2. [LSS1-012, LSS1-027]

Comment: The LSS header must allow users to identify and track evidentiary materials in the documentary database which may be used multiple times as exhibits in depositions and which are introduced as hearing exhibits. Users must be able to view the images of documents, which have been referenced as exhibits, while in a deposition or hearing transcript text file. Users must be able to identify, while viewing header records, which deposition or hearing transcripts have referenced the document being viewed.

Table 6-1. Documentary Material Data Elements

Requirement Identifier	Data Name	Description	Req. Ref.
LSS2-047-1	Document (Type A)	Documents represented as text, image, LSS header	LSS1-012 LSS1-013 LSS1-014
LSS2-047-2	Document (Type B)	Documents for which text is not provided. These documents will be converted to text using LSS functions unless they are graphic-oriented documents.	LSS1-012 LSS1-014
LSS2-047-3	Document (Type C)	Graphic-oriented documents stored only as image, LSS header. These are documents which are not suitable for conversion to text due to their graphic nature or the lack of data having significant retrieval value (such as columns of numbers).*	LSS1-012 LSS1-014
LSS2-047-4	Document (Type D)	Non-image/text material represented only as LSS header, with item location described.	LSS1-007 LSS1-012
LSS2-047-5	Document (Type E)	LSS header for privileged, confidential or safeguards information. Points to physical location of these documents outside of the LSS. In the case of privileged information, the data is located in a protective order file, which is not part of the LSS.	LSS1-012 LSS1-028

*As defined in 10 CFR 2, graphic oriented material includes: "raw data, computer runs, computer programs and codes, field notes, laboratory notes, maps, diagrams and photographs which have been printed, scripted, hand written or otherwise displayed in any hard copy form. They may include: Calibration procedures, logs, guidelines, data and discrepancies; Gauge, meter and computer settings; Probe locations; Logging intervals and rates; Data logs in whatever form captured; Text data sheets; Equations and sampling rates; Sensor data and procedures; Data Descriptions; Field and laboratory notebooks; Analog computer, meter or other device print-outs; Digital computer print-outs; Photographs; Graphs, plots, strip charts, sketches; Descriptive material related to the information above."

Table 6-2. Minimum Header Fields for LSS Documentary Material
(Legend follows table.)

LSS Field	Mandatory or Req'd by Participant	Mandatory or Req'd by LSSA	Multivalued (max # of entries)	Max Field Length	Authority Table	Required Format
LSS Accession Number	N	M ✓	N	13	N	Must be a unique number 3 digit alpha code w/ submitting organization, 7 numerics and check digit
Participant Accession Number	M ✓	N	Y (50)	25	N	Alpha numeric, no required format
Title	M ✓	N	N	1000	N	N
Author Name	M ✓	Y	Y (200)	50	Y	Last Name, First Initial, Middle Initial
Author Organization	M ✓	N	Y (200)	65	Y	
Document Date	M ✓	N	N	8	N	YYYYMMDD
Document Number	R	N	Y (5)	30	N	N
Version	R	N	Y (5)	50	N	N
Access Control Information	R	N	Y (10)	3	Y	N

LSS Field	Mandatory or Req'd by Participant	Mandatory or Req'd by LSSA	Multivalued (max # of entries)	Max Field Length	Authority Table	Required Format
Related Records Number	R	Y	Y (500)	25	Y	Alpha numeric
Related Record Code	R	Y	Y (500)	7	Y	N
Special Class	R	N	Y (10)	50	Y	N
Abstract (Field under consideration to be deleted)	N	N	N	5000	N	N
Package Identifier	R	Y	Y (500)	50	N	N
Document Type (Includes package types)	M ✓	N	Y (3)	40	Y	N
Identifiers	N	N	Y (100)	80	N	N
Comments	N	N	N	1000	N	N
Media	R	N	Y (5)	7	Y	N
QA Record	M ✓	N	N	1	Y	N
Traceability Number	R	R	Y (10)	50	N	N
Traceability Code	R	R	Y (10)	5	Y	N
Keywords	N	N	N	5000	N	Y Separate terms and phrases by punctuation
Number of Images	N	M ✓	N	6	N	N

LSS Field	Mandatory or Req'd by Participant	Mandatory or Req'd by LSSA	Multivalued (max # of entries)	Max Field Length	Authority Table	Required Format
Physical Location Reference Information	R	R	N	1000	N	N
Addressee Name	R	N	Y (500)	50	Y	Last Name, FI MI
Addressee Organization	R	N	Y (500)	65	Y	
LSS Record Housekeeping Info: Date Received at LSS ✓ Date Available in LSS ✓ Date/Time Loaded into LSS Date/Time of Last Modification LSS Indexer ID ✓ Station ID ✓ QC ID ✓ Subject and Abstract Cataloger ID Cataloging QC ID Processing Stage Status Verification ID ✓ Change Tracking Log Electronic Signature Verification Electronic Image Location Searchable Text Reference Info	N	Y	TBD	TBD	TBD	TBD
LSS Audit Info ✓	N	R	TBD	TBD	TBD	TBD

See Legend, next page.

Table 6-2 Legend:

Symbols: Y = Yes; N = No; R = Required; M = Mandatory; TBD = To Be Determined

Table definitions:

Data submitted by participant: This field will be submitted by the participant (Mandatory = must be provided for each unit [record]; Required = must be provided if applicable; Optional = provided at discretion of participant.)

Provided by LSS System or LSSA: This filed will be provided by LSS. (Mandatory = must be provided for each unit [record]; Required = must be provided if applicable)

Multi-valued: Multiple entries allowed in a field.

Controlled Authority List: List of accepted entries to be used by all participants, such as document types or specific forms of an organization name.

Text searchable: The ability to perform phrase or single-word searches of the field entries.

Comments/Issues: Any additional comments or outstanding issues.

6.2.2 Header Fields for Official Record Material

LSS2-051 Official Record Material Header Fields. The Official Record Material shall, at a minimum, be described using applicable LSS documentary material header fields (Table 6-2) plus the following descriptors:
- Docket number
- Record material type
- Status ("candidate" or "approved" official record material)

[LSS1-004]

Comment: This requirement is not intended to dictate the exact name of these descriptors, nor to mandate that they be physically distinct from the documentary material header fields. Docket number is necessary because the LSS may support multiple dockets. Record material types include (for example) transcripts, exhibits, and motions. Status is required because material may be entered into the system prior to formal approval as official record material.

6.2.3 Text Format

LSS2-052 Text Format. The text representation of material in the LSS shall be page delimited ASCII text. [LSS1-013]

6.2.4 Image Formats

LSS2-053 Image format. The electronic image of documentary material in the LSS shall use TIFF Group 4 format for bitonal images and JPEG format for color and grey scale images. These formats are part of the Aldus Tagged Image File Format (TIFF) version 6.0 representation. [LSS1-006, LSS1-014]

Comment: The Aldus Tagged Image File Format is an industry standard developed and put into the public domain by Aldus.

LSS2-054 Image types. The LSS shall capture, import, process and display bilevel (bitonal), ~~and~~ grey-level, and color images of documentary material. The grey-level representation shall allow up to 256 shades of grey. [LSS1-014]

LSS2-055 Image resolution. The electronic image representation of documentary material in the LSS shall be stored at the following minimum resolutions:

Bilevel (bitonal) images	300 DPI (1 bit representation)
Grey-level images	150 DPI (8 bit representation)
Color	150 DPI (24 bit representation)

[LSS1-006, LSS1-014]

LSS2-056 Image compression. Compression of electronic images shall use CCITT Group 4 compression for bilevel images, and JPEG for grey-scale images. The JPEG compression ratio shall be selected such that an image can be printed at the original size without any degradation detectable by the un-aided eye. [LSS1-014]

6.2.5 Import Formats

LSS2-057 Import Formats. The LSS shall be designed to accept data for import on MPC-2 compliant CD-R and through electronic transfer. The physical recording format on the CD-R medium shall adhere to industry standards, including:

ISO10149 - "Information Data Interchange on Read-Only 120 mm Optical Data Disk" (1989),

ISO 9960 - "Information Processing - Volume and File Structure of CD-ROM for Information Exchange" (1990),

ECMA 168 - "Volume and File Structure for Read-Only and Write Once Optical Disk Media for Information Exchange" (1992).

[LSS1-004]

Comment: The logical format of the data on the CD-R medium or electronic transfer package will be defined by DOE during the LSS design. Additional formats should be anticipated.

7.0 LSS PERFORMANCE AND CAPACITY REQUIREMENTS

LSS2-058 Storage and Retrieval Capacity. The LSS shall provide an expandable storage capacity capable of storing for retrieval document volumes identified in Appendix B. The storage media shall be capable of supporting access times specified in Table 7-1 for the volumes specified in Appendix B. [LSS1-003, LSS1-012, LSS1-013, LSS1-014, LSS1-015]

Comment:

This volume requirement is based on the following assumptions:

The anticipated maximum documentary material page count is approximately 30 million, of which:

28.4 million are letter size pages (captured as bilevel)
1.5 million are E-size pages (captured as bilevel)
0.1 million are E-size pages (captured as grey-scale)

Each letter size page is assumed to contain 2500 characters

Each Header Record consist of 2000 characters and one is created for every 13 pages (the presumed average document size) entered into the system.

It is not anticipated that the full storage capacity of the LSS will be procured at one time. However for the system to meet this requirement, the design must demonstrate that storage and access components sufficient to accommodate this capacity can be incrementally added without system redesign. Ability to satisfy this requirement should be demonstrated though some combination of engineering analysis, demonstrated expansion capability, and/or comparison with existing systems of like design.

LSS2-059 Backup Storage Capacity. The LSS shall provide the capability of storing and maintaining backups consistent with requirements LSS2-031 and LSS2-032. [LSS1-018]

LSS2-059+ Concurrent Users. The LSS shall support up to 150 concurrent users.

LSS2-060 Timing Strings. The LSS shall meet the average response times shown in Table 7-1. The performance shall be achieved with 15 concurrent

search and retrieval users active on the system. [LSS1-018]

Comment: Performance measurements shall measure the time from the "execute command" key stroke (following any required data entry), to the time that the requested data or system response first appears on the screen. Time required for the end user to place removable media into the system, if required, will not be counted in retrieval times.

The performance indicated will be achievable at the Main Facility and at the Supported Sites as indicated. These requirements apply only to components under the control of the LSSA. They do not apply to dial-in users or any sites not listed in Table 9-1.

Table 7-1. Response Time Requirements

Requirement Identifier	Function/ Event	Conditions	Response Time
LSS2-060-01	Retrieval of query results list	Simple combined header field and full text query, one word each. Database contains headers for at least 5 million pages of documents.	60 seconds
LSS2-060-02	Retrieval of header data for document identified in query results list.	Database contains headers for at least 5 million pages of documents.	10 seconds
LSS2-060-03	Retrieval of text data for document identified in query results list.	Database contains at least 5 million pages of documents.	First page: 10 seconds Each subsequent page: 3 second at the Main Facility, 6 seconds at the Supported Sites
LSS2-060-04	Retrieval of image data for document identified in query results list.	Database contains at least 5 million pages of documents.	First page: 30 seconds Each subsequent page: 6 seconds at the Main Facility 9 seconds at the Supported Sites
LSS2-060-05	Document bilevel scanning	8-1/2x11 inch paper. All prior data entry needed for document scanning complete prior to initiation, paper loaded on scanner.	30 pages per minute for single sided, 15 pages per minute for double sided (30 bilevel images created)

Requirement Identifier	Function/ Event	Conditions	Response Time
LSS2-060-06	New Document Access	Measured from the time a new document (header, text and image) has been captured and stored in the LSS until it is available for retrieval and viewing at the supported sites.	24 hours. Comment: This means that any method of dissemination from the capture site(s) to the retrieval sites must support access to newly entered documents within 24 hours, on an ongoing basis. Weekly or monthly updates to the reading rooms, for example, would not be acceptable.
LSS2-060-07	New Transcripts	Measured from the time that daily transcripts re imported into the LSS until the time they are available for viewing as text.	1 hour.
LSS2-060-08	Prepare Searchable Text	Time to perform Prepare Text for Search function. (See Section 3.1)	Less than 20 seconds, on average, to add a document consisting of 10 full text pages, to an existing text base of 5 million pages.
LSS2-060-09	Backup Data	Time to backup system data of any type. Incremental or full backup.	2 Gigabytes per hour
LSS2-060-10	Restore Data	Time to restore system data of any type.	1.5 Gigabytes per hour

8.0 LSS RELIABILITY, AVAILABILITY AND MAINTAINABILITY REQUIREMENTS

LSS users will access the system from the Eastern to the Pacific time zones during normal working hours, with some after hours usage. During the hearing phase there is expected to be an increase in after-hours usage, especially in electronic messaging and importing of official record materials.

One of the key benefits of the LSS is that it reduces the time allotted for transmission of materials:

> "Whenever a party, potential party, or interested governmental participant, has the right or is required to do some act within a prescribed period after the service of a notice or other document upon it, one day shall be added to the prescribed period. If the Licensing Support System is unavailable for more than four access hours of any day that would be counted in the computation of time, that day will not be counted in the computation of time." [§2.1017]

In order to avoid delays in the licensing process the LSS must be reliable and available for users who access it for message transmission and document discovery. Since reliability and availability necessarily require planned preventative maintenance and quick-response for unplanned maintenance, the LSS also must also be designed to be maintainable. The following requirements address these goals:

LSS2-061 Reconfigurable Capture Stations. The LSS shall provide reconfigurable hardware and software allocation for stations used in the capture process. Movement of functions from one station to another shall be achievable in 30 minutes or less. [LSS1-018]

Comment: This requirement means that capture functions can be moved from one station to another should a hardware failure occur on the first station. It is not required that all hardware be redundant in the system provided that the availability requirements are met.

LSS2-060-01 The LSS shall provide performance monitoring software needed to verify compliance with response times shown in Table 7-1.

LSS2-062 Maintainability. All LSS workstations, servers, storage devices, on-site communications, power and environmental control equipment shall be serviceable on-site within four hours of parts availability for component-level failures. [LSS1-018]

Comment: This document does not address the contractual mechanisms or requirements on service contractors such as parts availability and service personnel response time. This requirement pertains to the system design, and means that no components should be used in the

system which cannot be serviced on-site during a four hour period once parts and service personnel are available. The intent of this requirement is that, given a normal service contract, any component level failures of the LSS can be readily repaired on-site. "Component-level failures" mean failures that require the replacement of one or a few components of hardware, as opposed to the catastrophic failure of all components (due to fire, for example.)

LSS2-063 Equipment Access. All stationary hardware shall have a minimum of three feet of free access space for all equipment access panels, or more space if required to open the panels completely. [LSS1-018]

Comment: Stationary hardware refers to large processors, storage devices, air conditioning units, etc. which are not normally moved or cannot be easily moved by one person to provide access. Desktop PC's, monitors and equipment of similar size are not considered stationary hardware.

LSS2-064 Availability. The functions of the LSS, other than those which require hardware outside of the LSS (e.g. dial-in access) shall meet minimum specified availability requirements using the following definitions:

Availability: Refers to availability of all sites listed in Table 9-1.

Normal Enterprise Hours: The time span which includes 8 a.m. to 5 p.m. Eastern time, and 8 a.m. to 5 p.m. Pacific time, in other words, 8 a.m. - 8 p.m. Eastern time, 5 a.m. - 5 p.m. Pacific time, seven days a week.

Normal Site Hours: The time span which includes 8 a.m. to 5 p.m. at a given site, seven days a week.

Extended hours: Normal hours plus three hours prior and three hours after normal hours. Extended Enterprise Hours include 5 a.m. to 11 p.m. Eastern time, and 2 a.m. to 8 p.m. Pacific time. Extended Site Hours include 5 a.m. to 8 p.m. at a given site, seven days a week.

Sustained operations: continuous operations for days specified. For example, sustained operations five days a week would imply continual operation five days a week, 52 weeks a year. For acceptance test purposes, sustained operations would imply continual operations throughout the specified availability test period.

Comment: This document does not address the actual operational hours of the LSS which will be determined by the LSSA and the operations contracts let for the system. It pertains only to the capability of the

system, as designed and implemented, to support these minimum availability requirements. Presumably, these system availability requirements will be demonstrated during system acceptance over a defined period of time. The actual system availability during operations is a function of operational hours set by the LSSA, the performance of the operating contractors, as well as the system design and implementation.

Planned maintenance/backup time. A time period during which nightly backups and planned maintenance can be performed.

[LSS1-018, LSS1-025]

LSS2-064-01 Electronic Message Availability. The Electronic Message Transfer functions shall be capable of sustained operation at 90% availability during Extended Enterprise Hours. [LSS1-018]

Comment: This requirement accommodates a six hour planned maintenance/backup time to assure long term system availability and data protection, while supporting extended hours of user access. Electronic Message Transfer is expected to be heavily used during extended hours during the hearing phase.

LSS2-064-02 Capture/Storage Availability. The Document capture and storage functions shall be capable of sustained operation at 90% availability during Extended Site Hours. [LSS1-018]

LSS2-064-03 Search/Retrieval Availability. The Document Search and Retrieval functions shall be capable of sustained operation at 90% availability during Extended Site Hours. [LSS1-018]

9.0 LSS FACILITIES, EQUIPMENT AND COMMUNICATIONS

9.1 LSS Sites and Their Respective Functions

LSS2-065 LSS Locations. The LSS functions shall be available at multiple locations in accordance with Tables 9-1 and 9-2. [LSS1-010]

Comment: Table 9-1 maps LSS user types to LSS locations. Table 9-2 shows which LSS functions are allocated to each user type. Note that some individuals will be assigned the functions of multiple user types.

Figure 9-1 shows the location of the LSS facilities.

9.2 LSS Retrieval Equipment

LSS2-066 Retrieval Equipment. The LSS shall allow the addition of equipment to accommodate increased numbers of query and retrieval users up to the maximums shown in Table 9-3. [LSS1-018]

9.3 Communications

The communications connectivity between the LSS sites is not specified in this document. It is assumed that communications lines between the main facility and the sites listed in Table 9-1 will be sized to meet the functional and performance requirements of the LSS. All communications equipment and lines necessary to meet the functional and performance requirements of this specification are considered part of the LSS system. Communication lines used by dial-in users are not considered part of the LSS system.

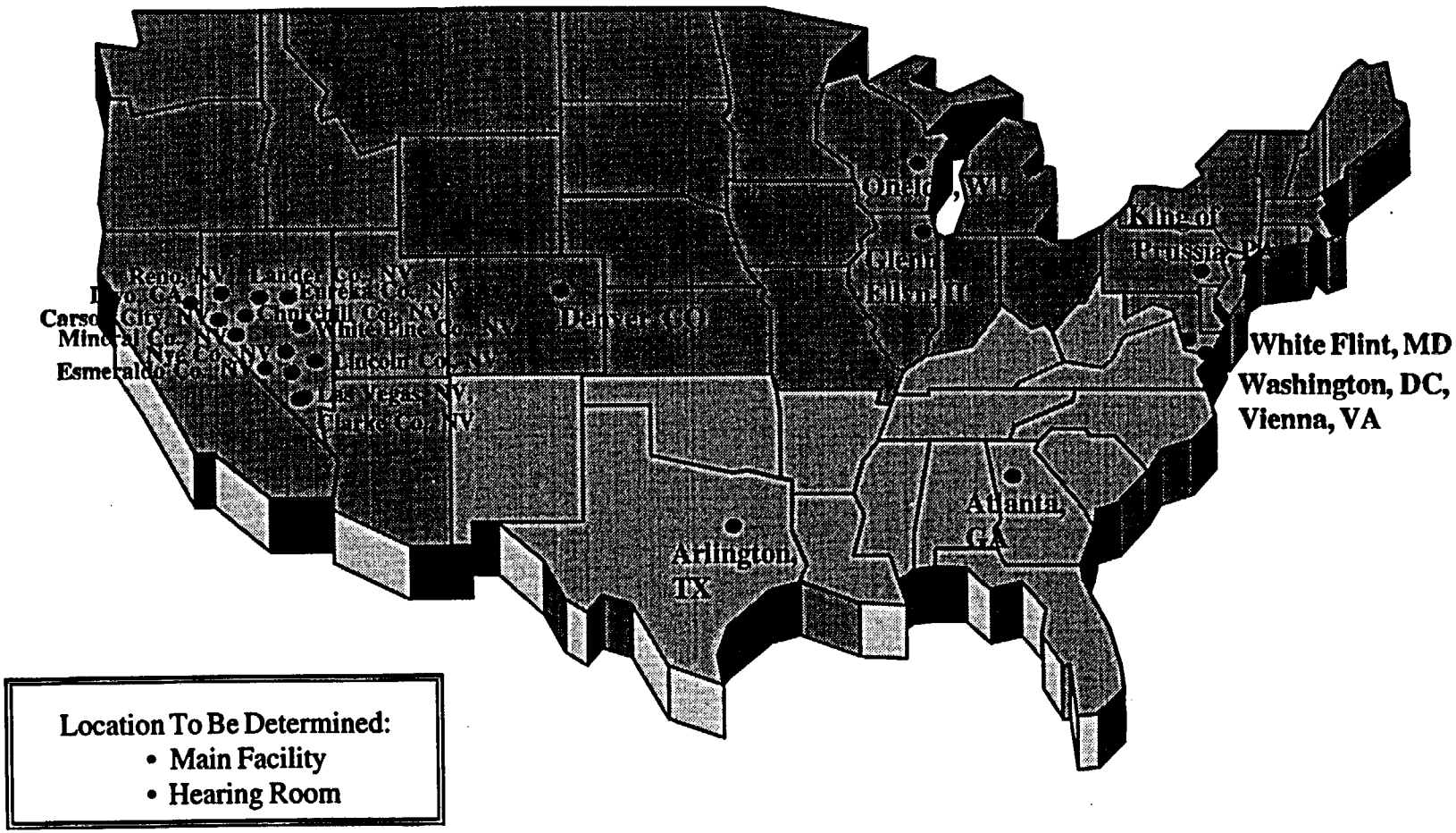

Figure 9-1 LSS Locations

TABLE 9-1

ALLOCATION OF USER TYPES TO ACCESS LOCATIONS

Access Locations	User Types: Public Document Room Users	LSS Participants	System Administrator/Staff	Capture Personnel	LSSA Quality Checking Authority
DOE Headquarters, Washington, D.C.	●	●			
DOE Project Office, Las Vegas, NV	●	●			
NRC Headquarters, White Flint, MD	●	●			
NRC Region 1 Office, King of Prussia, PA	●				
NRC Region 2 Office, Atlanta, GA	●				
NRC Region 3 Office, Glenn Ellyn, IL	●				
NRC Region 4 Office, Arlington, TX	●				
Las Vegas, NV	●	●			
Reno, NV	●	●			
Carson City, NV	●	●			
Churchill County, NV	●				
Clark County, NV	●	●			
Esmeraldo County, NV	●	●			
Eureka County, NV	●				
Inyo County, NV	●	●			
Lander County, NV	●				
Lincoln County, NV	●	●			
Mineral County, NV	●				
Nye County, NV	●	●			
White Pine County, NV	●				
National Cong. of American Indians, Oneida, WI		●			
Main Facility (Location TBD)			●	●	●
Hearing Room (Location TBD)		●		●	
Remote	●	●			
M&O Las Vegas		●			
M&O Virginia		●			

TABLE 9-2

ALLOCATION OF FUNCTIONS TO USER TYPES

Functions	User Types: Public Document Room Users	LSS Participants*	System Administrator/Staff	Capture Personnel	LSSA Quality Checking Authority	Dial-In User**	System
Scan Paper to Image				●			
Import Electronic Document				●			
Import Image				●			
Import Text				●			
Import Electronic Message				●			
Import Header				●			
Create Electronic Header				●			
Enter Header Data				●			
Edit Header Data				●			
Authority Table Checking				●			
Convert Image to Text				●			
Prepare Text for Search				●			
Check for Duplicate Documents				●	●		
Mark Document as Superseded			●				
Assure Document Capture Quality				●			
Pre-Store Quality Check - Header				●			
Pre-Store Quality Check - Image				●			
Pre-Store Quality Check - Text				●			
Text Spell Check				●			
Rejected Document List				●			
Correct Header Errors (Pre-Store)				●			
Replace Image Pages				●			
Interactive Text Correction				●			

* Includes parties and potential parties.

** Functions only available if user provides necessary retrieval hardware and communications. Electronic message functions will only be available to parties.

TABLE 9-2

ALLOCATION OF FUNCTIONS TO USER TYPES (Cont'd)

Functions	User Types: Public Document Room Users	LSS Participants*	System Administrator/Staff	Capture Personnel	LSSA Quality Checking Authority	Dial-In User**	System
Store Document (Link Text, Image, Header)				●			
Store Document Header				●			
Store Document Text				●			
Store Document Image				●			
Link Document Components				●			
Preclude Orphan Image/Text							●
Define Records Package				●			
Query for Document	●	●			●	●	
Query Header	●	●			●	●	
Query Text	●	●			●	●	
Text Query Parameters	●	●			●	●	
Query Header and Text	●	●			●	●	
Save/Reuse Query	●	●			●	●	
Provide Query Status							●
Query Tools	●	●			●	●	
Display Document	●	●			●	●	
Display Header	●	●			●	●	
Display Text	●	●			●	●	
Locate Search Terms in Document	●	●			●	●	
Display Image	●	●			●	●	
Image Viewing Tools	●	●			●	●	
Display Image and Text	●	●			●	●	
No Image Option	●	●			●	●	
Identify Document as Superseded	●	●			●	●	

* Includes parties and potential parties.

** Functions only available if user provides necessary retrieval hardware and communications. Electronic message functions will only be available to parties.

TABLE 9-2

ALLOCATION OF FUNCTIONS TO USER TYPES (Cont'd)

Functions	User Types: Public Document Room Users	LSS Participants*	System Administrator/Staff	Capture Personnel	LSSA Quality Checking Authority	Dial-In User**	System
Print Document	●	●			●	●	
Print Header	●	●			●	●	
Print Text	●	●			●	●	
Print Standard Image	●	●		●	●	●	
Print Oversized Image		●	●	●	●		
Request Paper Copy	●	●			●	●	
Process Paper Copy Request			●				
Create Electronic Message		●				●	
Store Electronic Message		●				●	
Edit Electronic Message		●				●	
Electronic Message Import/Export		●				●	
Address Electronic Message		●				●	
Send Electronic Message		●				●	
Display Electronic Message		●				●	
Acknowledge Message Delivery							●
Report Message Delivery Failure							●
Print Electronic Message		●				●	
Designate Official Record Material			●				
Retrieve Official Record Material	●	●			●	●	
Import Transcripts				●			
Start Up System			●				
Shut Down System			●				
Backup Data			●				
Restore Data			●				
Monitor System Status			●				

* Includes parties and potential parties.

** Functions only available if user provides necessary retrieval hardware and communications. Electronic message functions will only be available to parties.

TABLE 9-2

ALLOCATION OF FUNCTIONS TO USER TYPES (Concluded)

Functions	User Types: Public Document Room Users	LSS Participants*	System Administrator/Staff	Capture Personnel	LSSA Quality Checking Authority	Dial-In User**	System
Data Base Administration			●		●		
Administer Address Book			●				
Log-On LSS	●	●	●	●	●	●	
Log-Off LSS	●	●	●	●	●	●	
Change Personal Password		●	●	●	●	●	
Create/Modify User Account			●				
Set Functional Access Authorizations			●				
Set Data Access Authorizations			●				
Protect Header Field			●				
Correct Documents in Error					●		
Edit Header Fields (Post-Store).					●		
Replace Image Pages in Error - Post-Store					●		
Interactive Text Correction - Post-Store					●		
Document Deletion			●		●		
Enforce Functional Access Authorizations							●
Enforce Data Access Authorizations							●
Enforce Header Field Protections							●

* Includes parties and potential parties.

** Functions only available if user provides necessary retrieval hardware and communications. Electronic message functions will only be available to parties.

TABLE 9-3
ALLOCATION OF HARDWARE TO LOCATIONS

	LSS Parties					Public Reading Room				
Access Locations	Retrieval Station	Printer (Slow)	Printer (Fast)	Oversize Printer (Slow)	Oversize Printer (Fast)	Retrieval Station	Printer (Slow)	Printer (Fast)	Oversize Printer (Slow)	Oversize Printer (Fast)
DOE Headquarters, Washington, D.C.	3	1	1	1		3	2			
DOE Project Office, Las Vegas, NV	5	1	1	1		3	2			
NRC Headquarters, White Flint, MD	5	2	1	1		3	2			
NRC Region 1 Office, King of Prussia, PA						3	2			
NRC Region 2 Office, Atlanta, GA						3	2			
NRC Region 3 Office, Glenn Ellyn, IL						3	2			
NRC Region 4 Office, Arlington, TX						3	2			
Las Vegas, NV	3	1	1	1		3	2			
Reno, NV	3	1	1	1		3	2			
Carson City, NV	3	1	1	1		3	2			
Churchill County, NV						3	2			
Clark County, NV	3	1	1	1		3	2			
Esmeraldo County, NV	3	1	1	1		3	2			
Eureka County, NV						3	2			
Inyo County, NV	3	1	1	1		3	2			
Lander County, NV						3	2			
Lincoln County, NV	3	1	1	1		3	2			
Mineral County, NV						3	2			
Nye County, NV	3	1	1	1		3	2			
White Pine County, NV						3	2			
National Cong. of American Indians, Oneida, WI	3	1	1	1						
Main Facility (Location TBD)	5	5	2	2	2					
Hearing Room (Location TBD)	5	3	1		1					
M&O Las Vegas	5	2	1	1	1					
M&O Virginia	5	2	1	1						

10.0 SYSTEM ARCHITECTURE AND DESIGN

The following paragraphs describe additional desired characteristics of the LSS design. Evaluation of compliance may require subjective judgement or involve cost/benefit tradeoffs. However solutions with a high degree of compliance with these requirements would be considered technically superior to other potential LSS solutions.

LSS2-067 Modular Design. The LSS shall be designed using modular design techniques and well documented software interfaces. As a goal, it will allow new software components to be integrated into the system without seriously impacting other software components. In particular the LSS software for conversion of image to text will be replaceable without redesign of the other system components. [LSS1-001]

Comment: This system is going to exist for tens of years. The system will have to be modified as necessary to reflect changing technology and requirements over that time period.

LSS2-068 Government/Industry Standards. The LSS shall use established government and/or industry hardware and software standards where practical. [LSS1-002]

LSS2-069 User Interface. The LSS user interface shall employ graphical user interface techniques which are commonly used in modern commercial software. All user interface screens within major user functions, (such as capture, retrieval, and system administration) will provide consistent presentations of user selectable functions, system messages, menus, and data presentation. [LSS1-022]

LSS2-070 Move Hardware/Software. The LSS shall provide the capability to reconfigure software functions to similar hardware components within the system to provide flexibility in work flow and maximize system availability. [LSS1-018]

LSS2-071 Modifiable User Interface. The LSS shall be designed to allow rapid changes in user interface to accommodate user preferences discovered during system pre-operational testing and during system operation. [LSS-001, LSS-022]

LSS2-072 Modifiable Header Definition. The LSS shall be designed to allow the addition and augmentation of documentary and official record fields and the linking of header fields with external data bases. [LSS1-018]

Comment: The LSSA may need to augment header information with additional field information to characterize, identify, or track materials. The definition of these augmentation fields is not currently known.

LSS2-073 The LSS shall provide capabilities which support on-line documentation as part of an on-line help capability. [LSS1-018]

GLOSSARY

Bibliographic Header
Subset of the LSS header which is submitted by parties with their documentary material.

Bit-Mapped Image
Electronic representation of an image by individual pixels, or points of light, dark or color, arranged in row and column order.

Character String
One or more sequential alphanumeric characters or spaces.

CCITT
Comite Consultatif Internationale de Telegraphique et Telephonique.

Document
Any unit of documentary material. Document boundaries (the beginning and end of a document, when part of a larger body of material) are defined by the submitter.

Duplicate Document
A document which is duplicative with another document in the LSS in that the two documents were captured or copied from the same original document, and do not differ in terms of the document contents or marginalia. Note that the capture or import of a duplicate document may not result in identical electronic files due to slight differences in the scanning or text conversion process.

E Sized
34 by 44 inches

JPEG
Joint Photographic Experts Group

LSS Header
As used in this document, LSS header refers to the fields which profile the documentary material in the LSS as well as any fields used to profile the official record materials.

Official Record
Equivalent to the official docket. Referred to in the LSS rule of the "official record file."

Official Record Materials
Materials designated as part of the official docket of the license proceedings and placed in the LSS as such. They include all documents which are considered by the Presiding Officer and , if there is an appeal or request for discretionary review, by the Commission.

Page
A physical single-sided page of a document, or the image or text resulting from the capture of a physical page.

Proximity Search
A text search where an occurrence of one string must occur within a specified proximity to an occupance of another string.

Result List
A list of documents which satisfy a query. The documents are typically identified by one or more fields from the header, such as title, date and version number.

Root Search
A text search which looks for matches with the specified text string as well as matches with the root word of the text string.

Session
The period from the time a user logs onto the system to the time the user logs off the system.

Superseded Document
A document which no longer represents the latest official version of a document in that it has been formally supersede by a subsequent version, or rendered invalid due to the introduction of other documents into the data base.

TIFF
Tagged Image File Format

Wildcard Search
Text search in which a special character in the search criteria represents any single or multiple ASCII character. Usually, one special character is used to represent a single character wildcard, and a separate character is used to represent 1 to many letter wildcards.

PHASE 1 LSS REQUIREMENTS

LSS1-001	LSS components shall be integrated using modular design techniques and well-documented interfaces which allow new components to be integrated into the system without seriously impacting other components.
LSS1-002	The LSS shall adhere to established government and/or industry hardware and software standards to the extent feasible.
LSS1-003	The LSS shall provide an electronic information exchange function to facilitate communications between authorized users. This function shall allow users to transmit and receive electronic documents (e.g. motions, filings, orders, decisions, etc.). Each user shall have a corresponding electronic message center to receiver and store electronic correspondences.
LSS1-004	The LSS shall be capable of accepting electronically formatted documentary materials. Within the LSS there must be a concept of a records package and the records package grouping must be logically accessible.
LSS1-005	The LSS shall provide the capability to recognize characters from the digital image of a document and convert these characters into a standard text representation of the document. This optical character recognition function shall achieve character recognition accuracies that are achievable with the best commercial products available at the time of the LSS system design.
LSS1-006	The LSS shall have the capability to create a digital image of each page of a document.
LSS1-007	Documentary material not suitable for imaging and conversion to a standard text file shall be identified with a header that includes a reference to the storage location of the material. This reference shall be descriptive enough for users to identify the location of the material and how to access the material.

LSS1-008 The LSS shall include a function that allows document submitters to verify that document information entered into the LSS data base is identical to the document information submitted to the LSS Administrator.

LSS1-009 The LSS shall provide a function to allow all users to detect that subsequent revisions to a document exist.

LSS1-010 The LSS shall be accessible from the following locations as a minimum:

- DOE Headquarters, Washington DC
- DOE Project Office, Las Vegas NV
- NRC Headquarters, White Flint, MD
- NRC Region 1 Office, King of Prussia, PA
- NRC Region 2 Office, Atlanta, GA
- NRC Region 3 Office, Glenn Ellyn, IL
- NRC Region 4 Office, Arlington, TX
- Las Vegas, NV
- Reno, NV
- Carson City, NV
- Nye County, NV
- Lincoln County, NV
- Esmeraldo Count, NV
- Clarke County, NV
- White Pine County, NV
- Eureka County, NV
- Mineral County, NV
- Churchill County, NV
- Lander County, NV
- Inyo County, CA
- National Congress of American Indians, Oneida, WI

LSS1-011 The LSS shall provide one of two search and retrieval modes for public access depending upon whether a notice of hearing on the high-level waste license application has been issued:

Prior to Notice - Full-text search

of each field in the bibliographic headers and retrieval of the header and associated image.

After Notice is Issued - same as above plus full-text search of the standard text files.

Given concurrence of the LSS Advisory Review Panel, the latter search mode can be provided prior to the hearing notice.

LSS1-012 The LSS shall be capable of electronically storing and retrieving the bibliographic headers in the system.

LSS1-013 The LSS shall be capable of electronically storing and retrieving document text.

LSS1-014 The LSS shall be capable of electronically storing and retrieving the digital image associated with each page in a document.

LSS1-015 Potential parties, interested governmental parties, and parties who access the LSS from locations other than those listed in requirement [LSS1-010] and those specified by the Administrator shall be provided full text search capability through dial-up access at the requester's expense.

LSS1-016 Potential parties, interested governmental parties, and parties who access the LSS from locations other than those listed in requirement [LSS1-010] and those specified by the Administrator shall be provided access to images at the requester's expense.

LSS1-017 Potential parties, interested governmental parties, and parties who access the LSS from locations in addition to those listed in requirement [LSS1-010] shall be capable of electronically requesting a paper copy of a document at the time of search.

LSS1-018 The system shall provide the LSS Administrator with the necessary tools to ensure LSS availability and the integrity of the LSS data base.

LSS1-019 The system shall provide the LSS Administrator with the necessary tools to ensure the security of the LSS. The electronic information exchange function shall provide password protection for all documents transmitted electronically.

LSS1-020	The LSS shall provide tools to assist the user in retrieving documents when the unique identifiers for the documents are not known to the users. Examples might include synonym processing, thesaurus, natural language queries, or other search aids.
LSS1-021	The LSS must have capture functionality and the capability to validate material submitted in required electronic form.
LSS1-022	The LSS shall provide a user interface that is consistent with the acceptable user interfaces available at the time of the LSS design.
LSS1-023	The LSS shall have a function that assists the LSS Administrator in identifying duplicate documents.
LSS1-024	The electronic information exchange function shall provide for an electronic acknowledgement that mail has been delivered to the recipient's electronic message center. The acknowledgement shall include as a minimum, the name and address of the recipient and the date the electronic mail was delivered.
LSS1-025	System Definition - - The totality of hardware, software, communications, data processes and procedures dedicated to providing document intake, storage, searching, retrieving, and delivery to the users of the headers, text and images as detailed in the mission statements found in 10 CFR 2, Subpart J.
LSS1-026	The system shall be able to load transcripts from proceedings and transcripts from depositions.
LSS1-027	The LSS will include the capability to catalog records packages and link the bibliographic headers for the records package and the bibliographic headers for the components of the package.
LSS1-028	The LSS must accommodate a protective order file, the access to which is provided only under authorization by the presiding officer.
LSS1-029	The LSS must be able to provide a mechanism that will allow retrieval and display of pages of text with the associated images.