

U.S. Department of Energy Office of Civilian Radioactive Waste Management

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Licensing Support System (LSS) Functional Requirements and Design Concepts Report

Requirements

March 31, 1987



MANAGEMENT SUMMARY

This report presents the functional and operational user requirements for the Licensing Support System (LSS). Arthur Young conducted this requirements analysis for the Office of Civilian Radioactive Waste Management (OCRWM), Office of Geologic Repositories (OGR). The requirements study was conducted in four steps: review of pertinent documentation; interviews with Department of Energy program personnel and contractors, State governments, Indian Tribes, and Nuclear Regulatory Commission personnel; synthesis of requirements; and compilation of the draft and final reports.

The requirements set forth in this document provide the groundwork on which the subsequent logical design was developed.

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I. INTRODUCTION

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I. INTRODUCTION

The purpose of this Introduction is to present an overview of the user requirements study for the Licensing Support System (LSS).

To facilitate presentation, this chapter has been divided into the following sections:

- Project Objectives This section recounts the goals and purpose of developing a comprehensive set of requirements for the LSS;
- Analytical Approach The methodologies used to surface, categorize, analyze and prioritize the requirements are described; and
- Summary of Pequirements and Issues Based on our review of individual requirements and associated issues, the Arthur Young Project Team has developed a composite of the functional and operational requirements. An introduction to the LSS functional and operational requirements is presented, as well as an introduction to the issues raised during the requirements definition process. The resolution of these issues, which were derived during an LSS Task Group meeting to review the draft report, is presented in detail in Appendix A.

A. PROJECT OBJECTIVES

The primary goal of the Office of Geologic Repositories (CGR) within OCRWM for LSS is to design and implement a full-text, on-line search and retrieval system of records for repository licensing. The NRC is proposing, through a negotiated rule-making, that anything withheld from the LSS or that which is not in the system cannot be used for licensing. Thus, a comprehensive system of records with high recall and precision rates (90%) is highly desirable. The LSS will support the discovery and review of information relevant to the

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Licensing of a high-level radioactive nuclear waste repository. System requirements have only been researched for licensing activities for repository construction, (currently anticipated to occur in 1995). Support of the development of the Shipping Cask Program and later phases of the repository program have not been studied. However, the LSS is being designed as an extensible system. As such, the requirements to support these other activities may either be provided by the initial LSS or could readily be added at a future date without seriously affecting the functions of the system.

In September of 1986, the Office of Civilian Radioactive Waste Management (OCRWM) tasked Arthur Young to conduct a requirements analysis and develop a logical design for the Licensing Support System (LSS). This User Requirements Analysis represents the first product of that assignment.

B. ANALYTICAL APPROACH

Requirements analysis is the process of extracting functional and operational system requirements through reviews of applicable documentation, and surveys of potential users and providers of LSS information. The requirements presented in this report are based on detailed analysis of information gathered during the data collection phase of the project. The appendices at the back of this report identify the specific interviews and documents used as the baseline data for this requirements development process. Any conflicting requirements or other issues that were identified in the analytical process, along with their resolution, are presented in Appendix A.

This section presents an overview of the steps conducted in the compilation of functional and operational requirements. In conducting this study we have followed Arthur Young's Information Engineering Methodolcgy (IEM).

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Task 1 - Review Relevant Documentation - Program documentation collected during the earlier Arthur Young LSS data modeling project was reviewed for background and preliminary requirements by the project team. A list of documents reviewed appears in Appendix B.

Task 2 - Conduct Headquarters Interviews - Detailed interviews were conducted with OCRWM headquarters personnel to surface Headquarters perspectives on LSS requirements. A list of interviewees appears in Appendix C.

Task 3 - Conduct Project Office Interviews - Detailed interviews were conducted with representatives of the SALT, BWIP and NNWSI project offices to surface requirements. In total, 108 project office interviews were conducted. A list of all interviewees appears in Appendix C.

Task 4 - Conduct States and Indian Tribes Interviews - Interviews with the affected States and Indian Tribes also were conducted. A list of interviewees appears in Appendix C.

Task 5 - Summarize Interviews - A summary of each interview was prepared in a common format. These summaries served as the basis for identification of requirements. They also served as part of an audit trail from the requirements presented in this report to their source.

Task 6 - Analyze Requirements - Requirements surfaced during both the document review and interview process were analyzed to determine their relevance to the LSS. These requirements were then categorized. Common requirements were combined, and conflicting requirements highlighted. These requirements were then compiled into this requirements report.

LSS Task Force Review - Draft requirements were presented to the LSS Task Force for review. Comments received from this group have been incorporated.

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2. SUMMARY OF REQUIREMENTS AND ISSUES

This section summarizes the major requirements and issues categories associated with the LSS. The intent is to suggest a framework for the detailed requirements presented in Chapter II, LSS Functional and Operational Requirements, and to introduce the major types of issues considered and their resolutions presented in Appendix A.

1. LSS Requirements Categories

Requirements for the LSS are presented in two primary categories:

- Functional These requirements stipulate the individual processes and information of the LSS. These functional processes must be supported regardless of the physical operating environment and performance criteria that must be met; and
- Operational These requirements stipulate the behavioral characteristics of the LSS such as performance, response time, and security.

2. LSS Requirements - Related Issues Categories

Early issue identification is an important component of any system development effort. Early issue identification and resolution in the case of the LSS was especially critical, given the number and diversity of program participants who were expected to interact with the system in the future. Issues related to scope, definition, feasibility, and design were identified during the requirements analysis task. These issues are presented in Appendix A, along with the recommended resolution determined by the LSS Task Force, which met the week of December 15, 1986. Resolutions to the issues were developed in an effort to resolve conflicting requirements and to improve the specificity with which the logical design was developed.

II. LSS FUNCTIONAL AND OPERATIONAL REQUIREMENTS

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II. LSS FUNCTIONAL AND OPERATIONAL REQUIREMENTS

This chapter presents the detailed requirements for the LSS. These requirements constitute the baseline for the development of the logical design for the LSS.

Requirements have been segregated into two broad categories as follows:

- Functional Within this group are presented those requirements which stipulate the individual functions or major processes of the LSS. Functional requirements represent those processes that the system must execute, regardless of the physical operating environment and performance criteria that must be met; and
- Operational Requirements within this category specify the behavioral characteristics of the LSS. While in many respects still embryonic, their consideration suggests hounds for the eventual physical design and development of the LSS. As the functional requirements evolve, their operational components will surface.

Throughout the discussion of the functional and operational requirements, the following terms are defined as follows:

 <u>Document</u> - Any coherent, primarily textual, and formal collection of program information that is licensingrelated. An individual instance of a document can be identified if all information in that document can be referred to collectively by a single title.

A document may contain either technical or administrative information. Even though a document is primarily textual, it may also include non-textual information, such as graphs, charts, or pictures.

- <u>Information</u> Consists of data, facts, and records created or required by an organization to achieve its goals and objectives.
- <u>Capture</u> to represent or preserve information that is licensing-related and subject to discovery in LSS.
- <u>Record</u> Any physical item that provides information or furnishes evidence pertaining to the repository program including but not limited to documents, physical samples, magnetic tapes or similar items, photographs, strip charts or similar items, maps, and drawings.

A presentation of the requirements for the LSS follows. Requirements in both the functional and operational categories have been further divided into subcategories. An explanation of each subcategory accompanies its presentation.

FUNCTIONAL REQUIREMENTS

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FUNCTIONAL REQUIREMENTS

A. INPUT

These requirements describe the categories of information the LSS must capture. In addition, information specifically excluded from LSS is described. In general, LSS must capture all licensing related information, regardless of the logical or physical media upon which it resides, unless it is specifically excluded as stated below.

LSS must capture all licensing-related information that may occur in documents, technical data, raw data, maps, charts, physical samples, computer software, personnel files, and other sources. Whether the information is to be captured as a bit mapped image and ASCII code or in LSS satellite files is identified in parenthesis after the requirements.

A.1 Capture Licensing-Related Program Information

Records are considered to be completed and ready for submittal to the LSS under several circumstances. A record shall be submitted to the LSS as soon as it is received by a lead organization or its supporting organizations from someone outside (e.g. OGR receives a record from the governor of an affected state, a member of the public, or an interest group). A record that originates within a lead organization or its supporting organizations shall be submitted when:

 the record is formally distributed internally (this includes memoranda sent only to "File") or outside the office which prepared it, as a finished product or as a draft for review;

- the record is quoted or cited to support arguments or conclusions presented in another submitted record (The person citing the record is then responsible for submitting the record. This includes published material that has been cited.); or
- the record is a physical sample or other record that cannot be reproduced and the planned work activity using the record is ended.

Excluded Records

The following materials shall not be submitted to the LSS:

- Non-record material, as defined in DOE Order 1324.2, "Records Disposition," 5-28-80;
- Financial records, unless they are related to health, safety, or environmental impacts of the repository;
- Personnel records, as defined in DOE Order 1324.2, unless submittal is required by a Quality Assurance program;
- Attorney work packages;
- Records protected by attorney-client privilege;
- Internal organizational memoranda not related to the repository;
- Items lacking informational or evidentiary value, for example, electronic mail, telephone messages, handwritten notes*, individuals' schedules or calendars, etc. (If any such items are considered to contain informational or evidentiary value, the

originator shall reformat them as official government memoranda and they shall be entered into the LSS. Also, if any individual considers that any material covered under this section must be retained in any file, that individual must ensure that such material is entered into the LSS.);

- *NOTE: Handwritten laboratory books, core logs and other handwritten notes of informational or evidentiary value must be captured by LSS as either reformatted documents or as nontextual records.
- Draft versions of internal correspondence and drafts and marked-up copies of documents that are not formally distributed outside the office that prepared them. (If any of the notations placed on a marked-up copy of a document are considered to contain informational or evidentiary value, the originator of the notations shall reformat them as an official memorandum and they shall be entered into the LSS. If any individual considers that a draft record must be retained in any file, that individual must ensure that the author enters it into the LSS.).

A.2 Capture All Revisions of Documents

LSS must capture each issued revision of a licensingrelated document. (Bit map and ASCII)

A.3 Capture Al_owable Personal Information

LSS must capture the allowable personal information for DOE personnel, contractor personnel, and consultants.

This information only addresses training, education and experience related to specific jobs. (Bit Map and ASCII)

A.4 Capture Formal Correspondence

LSS must capture all program-related formal correspondence generated by DOE, direct-funded contractors, states, tribes, regulatory agencies and other parties to the repository licensing process. (Bit Map and ASCII)

A.5 Capture Responses to Inquiries from Interested Parties

LSS must capture all DOE responses to inquiries from the states, tribes, Congress and the public. (Bit Map and ASCII)

A.6 Capture DOE-Developed Computer Software

LSS must capture all computer software developed through DOE-funding and used in licensing-related analysis. This capture must include each version, program listings, and pedigree data for the software. (Satellite file)

A.7 Capture Non-DOE Developed Computer Software

LSS must capture non-DOE developed computer software used for licensing-related analysis in accordance with the Rights and Technical Data clause specified in the applicable procurement contracts. (Satellite file)

A.8 Capture Photographs

LSS must capture photographs (exclusive of those contained in documents) used to support licensing decisions. In addition, LSS must also capture where the photograph was taken, the date it was taken, a description of what it contains, and the responsible custodian. (Satellite file)

A.9 Capture Physical Samples

LSS must capture physical samples used to support licensing decisions. This includes core samples, soil samples, and water samples. In addition, LSS must also capture where the sample was taken (perhaps a bore hole number), the date it was taken, descriptive data about the sample, and the responsible custodian. (Satellite file)

A.10 Capture Maps

LSS must capture maps used to support licensing decisions. In addition, LSS must also capture the area covered, the date of the map, the type of map (topographic, geological, etc.), a description, and the responsible custodian for the most current version. (Satellite file)

A.11 Capture Technical Measurement Charts

LSS must capture technical measurement charts (e.g. strip charts) used to support licensing decisions. In addition, LSS must also capture the location of the measurement, the time period of the measurements, a description of the measurements, and the responsible custodian for the chart. (Satellite file)

A.12 Capture Design and Construction Drawings

LSS must capture design and construction drawings used for design and construction of the repository. In addition, LSS must also capture drawing number, the date of the drawings, type of drawing, and responsible custodian. (Satellite file)

A.13 Capture Technical Data

LSS must capture supporting sets of technical data values used to support licensing decisions. This includes both analyzed data and raw data. In addition, LSS must also capture the pedigree of the data, the hardware the data was generated on, the software used (if any), the source of the data, and responsible custodian. (Satellite file)

A.14 Capture Quality Assurance (QA) Records

LSS must capture all QA level 1, 2 and 3 licensingrelating documents and non-textual records. This group includes all QA records associated with scientific testing, repository design, and repository construction. (Bit map and ASCII for documents, satellite file for nontextual records)

A.15 Capture Regulations, Guidelines, and Standards

LSS must capture all federal, state and local laws and regulations, plus any NRC guidelines or engineering standards that govern licensing or engineering practices for the program. (Bit Map and ASCII)

A.16 Capture Procurement Documents

LSS must capture all official procurement documents created and used by DOE, contractors, and consultants for the program. (Bit map and ASCII of official contract records)

A.17 Capture Plan, Schedule and Budget Reports

LSS must capture the plan, schedule and budget reports created and used by DOE, contractors and consultants to manage the repository program. (Bit map and ASCII)

B. QUERY

These requirements specify the types of user queries the LSS must support to retrieve licensing information. LSS needs to provide simple queries on selected attributes and combinations of these attributes.

B.1 Query Information Across the Program

LSS must provide queries to information across all locations. For example, one must be able to query the LSS by other parameters (e.g. subject or date) without regard to the location of the information of interest.

B.2 Query Information by Structured Key Words or Phrases

LSS must provide queries to information by structured key words or phrases.

B.3 Query Information by Work Breakdown Structure

LSS must allow queries to information by Work Breakdown Structure (WBS) number under which that information was generated.

B.4 Query Information by Author

LSS must provide queries to information by the author of the information. The author may be a contractor,

consultant, DOE, or some other participant in the program.

B.5 Query Information by Abstract of Record

LSS must provide queries to information by the abstract of the record.

B.6 Query Information by Date

LSS must provide queries to information by the key date of the record.

B.7 Query Information by Applicable Site

LSS must provide queries to information by the applicable site to which the information is related.

B.8 Query Information by Accession Number

LSS must provide queries to information by an LSSassigned unique key. This key must provide a direct, unambiguous path to the information, and be in the form of an accession number.

B.9 Query Information by Title

LSS must provide queries to documents by document title.

B.10 Query Information by Record Type

LSS must provide queries to information by record type.

B.11 Query Documents by Report Number

LSS must provide queries to documents by the internal or external document number.

B.12 Query Documents by Full Text

LSS must provide the capability to query on the full text of LSS records.

B.13 Query Information by Addressee

LSS must provide queries to records by the primary addressee(s).

B.14 Query Information by Quality Assurance Level

LSS must provide queries to records by the Quality Assurance Level.

B.15 Query Information by Revision Number

LSS must provide queries to records by the Revision Number of the record.

B.16 Query Information by Source Organization

LSS must provide queries to records by the Source Organization of the record.

B.17 Query Information by Access Restriction

LSS must provide queries to records by Access Restriction Level. Only the System Administrator will be granted access to this type of query.

C. SEARCH AND RETRIEVAL

The requirements in this section relate to the searching and retrieving capabilities required in LSS. The searching requirements relate to LSS' ability to explore the system information in order to locate requested information. The retrieval requirements relate to the LSS' ability to recover requested information from storage.

C.1 Search Capabilities

This category of requirements relates to the searching capabilities in LSS; for example, the use of consistent key words or phrases, searching strategies, and formulation of query statements.

C.1.1 <u>Employ Common Control Set of Key Words and</u> Phrases

Key words and phrases can be defined as words or phrases by which the LSS will search and identify information. The terms identified for search and retrieval must be defined in a program key word and phrase thesaurus so that they are used consistently by all system users. LSS must allow the key words and phrases list to be updated over time. All information indexed by key words or phrases must be located.

C.1.2 Connect Terms or Phrases in Search Queries

LSS must have the ability to connect and signify a relationship between terms or phrases used in system queries. The ability is necessary in order to give more specificity to system queries, and thus, retrieve with greater accuracy the desired records.

C.1.3 Provide for Searches by Varying Methods

Because LSS must support users with a wide range of technical program knowledge and understanding of query techniques, LSS must provide options for conducting full text and key word/phrase searches from which the user may choose. These are:

- Query by a set of hierarchical menus which assist the user in searching for the desired information.
- Query by full screen prompts that allow the user to supply values for fields by which the search should be performed.
- Query by direct use of a structured relational query language where the user may formulate ad hoc queries using the syntax of that language.

C.1.4 Provide for Retention of Search Criteria

LSS must provide the capability for saving, in temporary files at each LSS retrieval workstation terminal, the search criteria (i.e. complex queries or strings) used in accessing and retrieving LSS records.

C.1.5 Provide for Full Text Search within a Record that is on Screen

LSS must provide the capability for conducting a full text search within a document or any single record that is displayed on the LSS retrieval workstation screen.

C.1.6 Provide Search and Retrieval Help Facilities to Assist Users

LSS must provide search and retrieval help facilities which may include reference manuals and/or on-line utilities (tutorials) as optional aids to users who may not be technically proficient in using the LSS.

C.2 Retrieval Capability

This category of requirements relates to the retrieval capabilities in LSS.

C.2.1 Provide Retrieval Capabilities

LSS must be capable of producing on-line the bit mapped image and ASCII text of retrieved information.

C.2.2 Locate Hardcopy and Micrographic of Official Record Copy of a Record

LSS must be capable of identifying the location of the hardcopy and micrographic of the official record copy of records, because there is no court precedent of accepting electronic copies of information as evidence. Therefore, it may

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be necessary to locate the official record copy of a record in hardcopy or micrographic format. (In the case of physical samples, access to the record will be provided, but the record will not be turned over to the user.)

C.2.3 Locate Court-Acceptable Records

LSS must locate the official record copy of LSS program records, whether they are physical samples, non-texual items or text documents.

C.2.4 Provide Count of Retrieved Items

The total number of information items which meet a user-specified search criteria allows the user to be aware of the extent of information found which relates to the search criteria. This number provides an indication of whether the search criteria may need to be broadened or limited. The number should be zero if no match is found.

C.2.5 <u>Provide Summary Descriptions of Retrieved</u> Information

LSS must retrieve summary descriptions of information. The LSS should allow users to review summaries of documents which meet search criteria prior to the actual retrieval of the found item. For documents, this summary could be an abstract, if an abstract is available, or the document title or similar short subject description if an abstract is not available.

D. TRACKING

The requirements in this section relate to the collection and disposition of information types, including the issues and commitment requirements in LSS.

D.1 Issues Tracking

The purpose the LSS Issues Tracking function is to record, maintain, and provide access to information relating to "program level" issues. The LSS Issues Tracking function does not preclude project offices from maintaining their own systems for issues.

D.1.1 Record and Provide Access to Issues

LSS must record and provide issues which relate to NRC, DOE, other federal, state and local rules and regulations.

D.1.2 <u>Record and Provide Access to the Resolution of</u> <u>Issues</u>

LSS must record and describe the resolution of issues. Each resolution must be related to the relevant issue record.

D.1.3 <u>Monitor and Provide Access to the Status of</u> <u>Issues</u>

LSS must record milestones and events related to the handling of an issue and provide the status at any time. For example, LSS must indicate whether or not each issue has been resolved.

D.1.4 Record and Provide Access to Work Plans

LSS should record the action plans for issue resolution and responsibilities for attaining resolution of each issue.

D.1.5 <u>Record and Provide Access to References to</u> Information Related to the <u>Issue</u>

LSS should maintain references to the source documents which initiated or identified the issue, regulations which impact the issue, and information related to the resolution of the issue.

D.2 Commitment Tracking

This section relates to commitment tracking in LSS. Because LSS will focus on project-level commitments, the LSS Commitment Tracking function does not preclude project offices from maintaining their own commitment tracking systems.

D.2.1 Record and Provide Access to Commitments

LSS must record and provide commitments to federal agencies, regulatory agencies, states, tribes, and legal parties identified in the Nuclear Waste Policy Act.

D.2.2 <u>Record and Provide Access to Resolution of</u> Commitment

LSS must record and describe the meeting of commitments. Each resolution must be related to the relevant commitment record.

D.2.3 <u>Monitor and Provide Access to the Status of</u> <u>Commitments</u>

LSS must record milestone and events related to the handling of a commitment and provide status at any time. For example, LSS must indicate whether or not the commitment has been met, and who is responsible for meeting the commitment.

E. REGULATIONS ACCESS

LSS Regulations Access function is intended as a tool for several purposes: to provide the full text of the latest version of major program documents in one contiguous file, to help define requirements and terms used in regulatory documents, and to track how OGR is responding to requirements placed on the program by those regulatory documents.

Regulatory documents are defined here as ANY document that places a requirement on the program. A regulatory document may be a regulation, directive, public law, or other key document. The set of regulatory documents that must be maintained and updated in the Regulations Access function will be determined by the OGR licensing staff as an ongoing activity.

The purpose of LSS Regulations Access function is not to automatically provide information to the OGR licensing staff. However, this will be used by the licensing staff to build and update the database of regulatory documents and annotations as the licensing staff conducts its research.

E.1. Import Regulatory Documents from LSS Records

If a document in the LSS Records is identified as a regulatory document requiring tracking and annotation, RAS must provide the capability to assemble a contiguous copy of the latest revision of each page of the ASCII text of that document. Once the document is in the Regulations Access function, the licensing staff must be able to make updates to the text and create annotations within the new imported regulatory document.

E.2 Make Simple Regulatory Document Updates

If a simple change to a Regulations Access document needs to be made, the system should allow the licensing staff to enter the document and make the change manually.

This would be similar to making a simple change to a word processing document. Any original text that is replaced plus associated annotations must also be saved in a section of the document reserved for obsolete text.

E.3 <u>Replace Pages of Regulations Access Documents from LSS</u> Records

If a document in the LSS Records is identified to be an update to an existing Regulations Access document, in the system must be able to import the update document from the LSS Records and post the changes to the Regulations Access document. These updates may be either in the form of page replacements or complete insertions of replacement documents. This posting will not be completely automatic. The Regulations Access function must first import the update pages to a temporary file. Then, while the user has the Regulations Access document to be updated displayed on the screen, the system must allow the user to page through the document and paste in the changes from the temporary file.

When a block of text is replaced in a Regulations Access document, the original text that was replaced must be copied to a history file. Any annotations in the old text must also be copied and preserved in the history file.

If the text to be replaced in the Regulations Access document contains annotations, the system must flag these annotations to the user as the new pages are posted to the the Regulations Access document. The system must allow the user to reassign each annotation to the proper place within the new pages or drop an annotation if it no longer applies.

E.4 Move Regulatory Documents to History File

If the licensing staff determines that a particular Regulations Access document no longer is relevant to the licensing process, they may elect to move that document into a history file. All the annotations contained in the document must also be preserved in the history file.

E.5 Create New Annotations

The Regulations Access function must allow the licensing staff to create new annotations within the Regulations Access documents. While the user is displaying a Regulations Access document, he must be able to mark a

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section of text in the document and have the system create an annotation entry for that block of text. After the user has marked the text, the system must prompt him for the accession numbers, notes, issue numbers and commitment numbers required for the annotation. After the user has completed the annotation, the system must place a marker (somewhat like a footnote) in the text so that it may be easily spotted by future users.

E.6 Update Existing Annotations

The system must allow the licensing staff to update existing annotations within Regulations Access documents. While the user is displaying a Regulation Access document, he must be able to select an annotation and edit the data contained therein. After the user has selected the annotation, the system must allow him to review the annotation data and add, change, or delete entries.

E.7 Delete Existing Annotations

The system must allow the licensing staff to delete annotations within Regulations Access documents. While the user is displaying a Regulations Access document, he must be able to select an annotation for deletion. After the user has selected the annotation, the system must allow him to review the annotation data and provide the option to carry out the deletion or cancel the delete request.

E.8 Search for Amplifying Record

The Regulations Access function must allow the licensing staff to search any subsystem of the LSS for amplifying records while annotating a Regulations Access document.

While making the annotation, the licensing staff may not know the particular accession number, issue number, or commitment number he needs. Therefore, the system must allow the user access to the full query capabilities (i.e., bibliographic, key word, full text) of the LSS Records function, the Issues Tracking function, the Commitments Tracking function, or the Regulations Access function to search for these records.

If the user has found the amplifying record in one of the other LSS subsystems, Regulations Access must allow the user to easily post the accession number, issue number, or commitment number found to the proper spot in the annotation. This will prevent requiring the user to manually record and rekey this identifier in the annotation.

E.9 Search and Retrieve Regulatory Documents

The licensing staff must be able to search the Regulations Access function for particular Regulation Access documents. This search may be performed on bibliographic attributes, key words, or the full text of the document. The search capabilities and methods used should be the same as those used for the larger LSS Records function.

E.10 Search Within a Regulatory Document

The system must allow the licensing staff to review, scroll through, and search for key words within a Regulations Access document. Once the user is displaying the document, he may move backwards and forwards through the text, search for particular terms within the document, or search for occurrences of the search terms (they are highlighted) that were used to find the Regulations Access document.

E.11 Output Copies of a Regulatory Document

The licensing staff must be able to receive printed and magnetic copies of Regulations Access documents. The option to output all or parts of the Regulations Access document must be provided. These capabilities should be the same as those used for the larger LSS Records function.

E.12 View Annotations Within a Regulatory Document

The system must allow the licensing staff to view annotations within Regulations Access documents. While the user is displaying a Regulations Access document, he must be able to select an annotation and view the records pointed to by that annotation.

Immediately after the annotation is selected for viewing, the system should display a screen of entries contained in that annotation. The user may then review the entries and choose which records to display. When the user selects one of the records, the system must access that record from the appropriate LSS subsystem and display it on the screen.

Once the record is displayed, the user must be able to move backwards and forwards through the text of the retrieved record, or search for particular terms within the record. When the user is finished reviewing the record, the system must be able to return him to the screen of annotation entries so that he may select another record or individual note to review.

Additionally, the system, must allow the user to review any individual notes entered in this annotation. The user will only be allowed to review individual staff notes if he has the proper access level.

E.13 Protect Individual Notes

The system must protect individual notes contained in the annotations from review by individuals other than the individual making the note. Only those individuals on the licensing staff with the proper access level should have access to the individual notes.

F. DOCUMENT TRANSFER

F.1 Provide for Capture, Transfer, and Distribution of Hearing Documents

LSS must provide for the capture, transfer, and distribution of hearing-related documents to and from authorized parties of the licensing hearing. This capability is to include the capture and transfer of legal licensing motions.
OPERATIONAL REQUIREMENTS

OPERATIONAL REQUIREMENTS

A. DOCUMENT CONTROL/INFORMATION INTEGRITY

This section addresses how LSS must control and verify the information it captures. In addition, LSS must provide certified procedures for input, cataloging, and safe storage for all information under its control.

A.1 Verify Integrity of Information at Capture Time

LSS must verify that the documents and technical data submitted for entry into LSS have been authorized and certified for entry. LSS must prevent, to the extent practical, inaccurate entry of search attributes and incomplete or inaccurate capture of information, document text, or technical data values.

A.2 Minimize Duplication of Records

LSS must minimize the probability of capturing and storing the same record in more than one location in the LSS database. Each set of technical data values should be uniquely represented in LSS.

A.3 <u>Take Reasonable Steps to Ensure that Electronically</u> <u>Stored Documents are True Representations of the</u> <u>Original</u>

LSS must take reasonable steps to ensure that documents stored electronically are true representations of the record copy. Users of LSS must have confidence that electronic or other representations of record documents are accurately captured and accurately depicted when retrieved.

A.4 <u>Maintain a Valid Relationship Between Header Information</u> and Electronically Stored Documents

LSS must allow authorized personnel to modify and update the abstract, keywords and other neader elements. After records have been originally entered in LSS, changes may only be made to the header/keyword/abstract data and not to the LSS record copy or any representation of that copy (i.e. bit image or ASCII text).

B. ACCESS CONTROL

This section addresses LSS requirements to protect potentially sensitive information from free access by all program participants, prevent accidental or malicious destruction of program information, and detect and prevent "unreasonable" queries that may overburden LSS.

B.1 Track System Usage

LSS must track and record how LSS is being utilized. It must track what types of queries are being made against the database by keywords and phrases used for searching, and what records and information are being accessed and retrieved by specific classes of users.

B.2 Provide Selected Access to the Public at Large

As dictated by the March 21, 1986 DOE memorandum, all portions of the LSS, except for the Issues and Commitment Tracking and portions of the Regulations Access functions, would be accessible by all entities, subject only to the rules established for access to privileged information, as soon as the data is loaded into LSS. Access terminals will be provided for the public at large in DOE Public Document Rooms. Periodic

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reports from the Issues Tracking portion of LSS will be made available to the public at large.

B.3 Provide Access Based on User

LSS must strictly control the group of users who have the privilege to add LSS information (i.e. write access).

B.4 <u>Prevent Accidental or Malicious Destruction of LSS</u> Information

LSS must prevent users from accidentally or maliciously destroying LSS information. Once a record has been captured and validated by LSS, the record should not be allowed to be deleted or changed. Bibliographic or indexing information may be updated by the Data Base Administrator and authorized users.

B.5 Control "Unreasonable" Queries to LSS Information

LSS must control queries that would take an inordinate amount of time to satisfy, produce an unreasonably large amount of output, or limit system accessibility of other system users.

B.6 Prevent Access to Protected Documents

Records in LSS may either be protected or available to the general public. All users of LSS have access to the abstract (to be confirmed with DOE General Counsel), keyword, and all other header elements of all records. Viewing the image representation (i.e. bit image or ASCII text) of the record itself may be protected under sensitivity requirements. Those records which are protected must not be available to the general public. Examples of documents which may be protected include pre-decisional documents, information exempt from Freedom of Information Act (FOIA) requirements, and proprietary information.

C. AF.CHIVE

This section addresses the safe, long-term storage of all LSS program information, its protection, and auditability through standardized procedures.

C.1 Archive Hardcopy or Micrographics

LSS must archive in LSS or satellite files licensingrelated documents generated by DOE project offices, DOE headquarters, contractors or consultants. LSS must also provide the capability to archive documents generated outside of the program, but still pertinent to the licensing process. (Satellite file)

C.2 Archive Physical Samples and Non-Textual Items

LSS must archive all licensing-related non-textual information, such as core samples, water samples, maps, charts, etc.. LSS must provide the capability to archive this material regardless of whether it was produced by DOE, contractors, or consultants. (Satellite file)

C.3 <u>Provide Safe, Retrievable Archives for the Life of the</u> Program

LSS must archive existing and future program information, both textual and non-textual, throughout the life of the program. All information archived must be readily retrievable throughout the life of the program.

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C.4 Archive Records Must Meet NQA-1 Standards

Records archived in LSS as full text and/or in satellite files must meet the quality assurance standards specified in ANSI/ANME NQA-1, 1983 "Quality Assurance Program Requirements for Nuclear Facilities."

C.5 Archive Indexing

The existance and location of all archived material must be recorded and accessable via the on-line portion of the LSS.

D. MEDIA

The requirements in this section relate to the types of media which the LSS must accept as input, utilize as storage, and use as output. This discussion will be divided into requirements for input, storage and output/display.

D.1 Input

This category of requirements outlines the types of media which LSS must accept as input and the methods by which LSS must capture input.

D.1.1 Accept Input of Records On Electronic Media

LSS must accept input of records on electronic media. The system must accept records input on magnetic tape, DASD, and other forms of electronic media. The system shall also be extensible to accept future developments in the electronic media area. The types of records to be entered in LSS were discussed in Section A of the Functional Requirements.

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D.1.2 Capture Input Records by Defined Methods

LSS must be able to receive input records by the following methods: transfer from a word processor, from an external computer, from magnetic tape, and from disk.

D.1.3 <u>Capture Hardcopy and Convert</u> to Electronic Records by Defined Methods

LSS must be able to convert hardcopy to bit image and to ASCII code, by one or more of the following methods: optical character recognition, manual key entry, digital image scan.

D.2 Storage

D.2.1 Store The Bit Mapped Image and ASCII Code of a Document

LSS must provide full text bit mapped image and ASCII code for documents.

D.2.2 <u>Store Archive Copy of Data in a Legally-</u> Acceptable Form

The archived copy of data should be in a form which is acceptable in a court of law.

D.2.3 Preserve Color Quality

LSS must be able to preserve the color qualities of the record copy. (Satellite file or archive copies only.)

D.3 Output & Display

This category of requirements outlines the types of media which LSS must use as output and the features required of those output media.

D.3.1 Provide Retrieval of LSS Documents or Images

LSS must allow the users to retrieve documents or sections of documents, as specified by the user, in full text on screen (ASCII or bitimage) or in hard copy.

D.3.2 Provide Graphics Capabilities

LSS must have the ability to display a bit mapped image of record copy graphics which are part of the document, taking into account the size of the graphic and the technology used to digitize the image. This includes scanning and bit image storage of documents larger than the standard 8 1/2" x 11" page. This system shall allow users to output such bit mapped image graphics to a screen display or a printer; however, the display of oversized pages is the same as that required for 8 1/2" x 11" pages. No special software will be required for the manipulation and display of such graphics.

D.3.3 <u>Provide Legally-Acceptable Archive Records to</u> Authorized Users

Only authorized users of the LSS may request and obtain legally acceptable copies of archived records.

D.3.4 Provide for the Transmission of ASCII Code

LSS must provide the capability for transmitting the ASCII code of a record to a floppy disk, magnetic tape or hardcopy output.

D.3.5 <u>Provide for Highlighting Search String on Screen</u> Display of Retrieved Documents

LSS must provide for highlighting the search string in the screen display of the ASCII representation of records retrieved while conducting a full text search.

E. BACKUP AND RECOVERY

The requirements in this section relate to providing operational backup and recovery systems for the LSS. The backup and recovery systems provide safeguards against the accidental damage or corruption of data.

E.1 Provide Backup Procedures

LSS must provide operational backup systems in accordance with NQA-1, DOE, FIPS and NARA standards. These systems shall include standard industry accepted backup procedures.

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E.2 Provide Backup Procedures for On-Line Storage Media

LSS must provide operational backup procedures to inhibit the loss of the on-line storage media.

E.3 Provide Recovery Procedures

LSS must provide operational recovery systems in accordance with DOE and FIPS standards. These systems shall recover within a twenty-four hour period, as defined by the LSS Task Group. The identified twentyfour hour period is a start-off point for further study.

F. SYSTEM PERFORMANCE STANDARDS

The requirements in this category relate to system performance standards. These requirements encompass information capture timeframes, response times, simultaneous user access, and capacity.

F.1 Enter Information in LSS Within One Working Day of Submission

Once a new record has been submitted for entry to LSS, it must be entered into the system and on-line within one working day.

F.2 Meet Specified Information Retrieval Time

LSS must meet the specified time for information retrieval. LSS System Performance Requirements are summarized in Exhibit 1.

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F.3 Prioritize Requests

The LSS Database Administrator has the ability to change the prioritization of requests based on the urgency in which a response is needed.

F.4 Provide the Ability to Respond to a System Failure

LSS must provide the ability to respond to a system failure within 24 hours. The system must be able to recover and restore critical system functions within this timeframe.

F.5 Support Simultaneous Multi-User Access

LSS must support simultaneous multi-user access. Exhibit 2 specifies the number of LSS retrieval workstations.

F.6 System Operational by 1991

LSS must be available to users no later than 1991.

F.7 Use Off-The-Shelf Technology

LSS must rely primarily on off-the-shelf technology when implementing the system. This applies to all components of the system with the exception of the integration of components (both software and hardware) and the generation of application software.

SYSTEM PERFORMANCE REQUIREMENTS (1)

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EXHIBIT 2

NUMBER OF LSS RETRIEVAL WORKSTATIONS

CONTROLLER OF RETRIEVAL WORKSTATION	RETREVAL WORKSTATION CAPAEILITIES	NUMBER OF TERMINALS	NUMBER OF PRINTERS
DOEHEADOLAR ERS	4	5	4
	с	10	•0
SAP	4	ŝ	ð
	¢	න	20
EWP	4	35	10
	c	70	15
NNISI	÷	60	5
	c	හ	20
NUCLEAR REGULATORY	۸.	4	1
COMMISSION	с	න	5
TEXAS DELEGATION- US CONGRESS.	3	1	1
NEVADA DELEGATION- U.S. CONGRESS	c	1	1
WASHINGTON DELEGATION - U.S. CONGRESS	с	1	1
STATE OF TEXAS	с	20	1
STATEOFNEVADA	с	20	1
STATE OF WASHINGTON	С	හ	1
UMATELA NOVAN TRBE	С	5	2
YAKIWA INOXAN TRUBE	с	5	2
NEZPERCENDIANTREE	С	5	2
HEADQUARTERS READ, ROOM	D	1	1
SRPREADING ROOM	D	1	1
SWIP READING ROOM	Э	1	1
NNASIREACINGROOM	D	1	1
TEXAS LEGISLATURE	С	4	4
NEVADALEGISLATURE	C	4	4
WASHINGTONLEGISLATURE	С	4	4
NAC READING ROCM (BWP)	D	1	1
NFC READING ROOM (NNVSI)	Э	1	1
NRC READING ROOM (SRP)	D	1	1
NAC READING POOM (HC)	2	1	:

LEGEND FOR RETRIEVAL WORKSTATION CAPABILITIES

- A = READ/WRITE ACCESS, HIGH RESOLUTION MONITOR, LASER PRINTER,
- B = READ.WRITE ACCESS, HIGH RESOLUTION MONITOR, DOT MATRIX PRINTER,
- C = READ ONLY ACCESS, HICH RESOLUTION MONITOR LASER PRINTER (IN SOME CASES WILL NOLUDE HIGH-SPEED PRINTING CAPABILITES)
- D = READ ONLY ACCESS, HIGH RESOLUTION MONITOR, DOT MATRIX PRINTER

APPENDICES

APPENDIX A ISSUES IDENTIFICATION AND RESOLUTION

A. ISSUES IDENTIFICATION AND RESOLUTION

This Appendix presents those LSS requirements-related issues raised during the analysis of user requirements and the resolutions to these issues determined by the LSS Task Group.

The issues have been grouped into the following categories:

Scope - This category presents issues which affect the bounds of the system. Conflicting and ambiguous requirements were surfaced which clouded the definition of how information was to be processed within the LSS. The resolution of these issues directly impacted the functionality of the LSS. Coupled with resolution of issues presented in the second issues category, the resolution of these issues provided better definition of the process-side of the system.

Definition - Issues within this category highlight the need for additional clarification of a number of requirements presented in Chapter II.

Feasibility - A number of pure requirements or requirements reflecting preferred implementation of LSS functions gave rise to concern as to their feasibility or desirability in the final LSS design. They were elevated to consideration in the requirements process to ensure early and serious discussion. A number of these issues were targets for further analysis during the Conceptual Alternatives phase. During this period their cost and schedule impacts were assessed.

Design - This final category offers those requirements which provide an early physical or operational direction for the LSS. The requirements which gave rise to these issues were mentioned frequently and strongly during the interviewing process. Their incorporation in the eventual LSS design constrained the eventual design options.

The individual issues presented below resulted from the analysis of requirements. They by no means represented the universe of issues which the LSS conceptual design would eventually raise. However, early resolution of these issues provided definition for the design and potentially reduced the final cost of LSS development by settling contentious issues early. A final benefit which accrued from their resolution was the early education of expectations related to the LSS.

A detailed presentation of these issues and their resolutions follows.

1. SCOPE

a. Functional

Is issue tracking within the scope of LSS?

Resolution: Issue tracking is part of LSS. This is a headquarters level tracking function. The project offices may have separate tracking systems for their use.

Is commitment tracking within the scope of LSS?

Resolution: Commitment tracking is part of LSS. This is a headquarters level tracking function. The project offices may have separate tracking systems for their use. Does LSS need to track audit findings and DOE's response to the audit findings?

Resolution: This is provided through LSS storage of program records. No separate audit tracking functionality is required.

b. Interface

Interface requirements for supporting systems have not been defined. These systems fall into two categories:

- a. Systems that house and manipulate data that are potentially discoverable;
- b. Systems that generate data which LSS must capture.
- Resolution: Data generated or used for the repository program must be housed in LSS, either full text or in satellite file. Procedures for collecting this data will be required to be written and implemented at the project office level.

2. DEFINITIONAL

a. Functional

How are revisions identified for documents? Is there a common document revision release procedure for the entire program? Resolution: There is no common release procedure. Each project office has procedures to identify and submit document revisions to LSS (part of document control).

What constitutes an audit trail?

Resolution: Not a function of the LSS.

What is the definition of formal correspondence? Does formal correspondence include internal correspondence?

Resolution: Correspondence is defined in the LSS Record Collection and Storage Specifications. Internal correspondence is included in this definition.

What information should be captured to provide the proper pedigree for the software used for licensing-related analysis?

Resolution: This is the function of Document Control and Quality Assurance, not LSS.

How are versions of software identified for LSS? Is there to be a common software release procedure for the entire program?

Resolution: This is a function of Quality Assurance, not LSS.

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For non-permanent Quality Assurance (QA) records, are there thresholds for how long the QA record must be retained? Will there actually be nonpermanent QA records stored in the LSS?

Resolution: All records must be kept for the life of the program as defined in OGR QIP 17.0. There are no non-permanent LSS records.

What constitutes an official contract document?

- Resolution: This is a function of Procurement and Contracting, not ISS.
- Are enclosures currently recognized as separate documents or merely sections of the leading document?
- Resolution: An explanation is in the LSS Document Collection and Storage Specifications. In most cases it will be decided on a document-by-document basis, depending on the nature of the enclosure.
- What level of detail is needed about the Systems Engineering Management Plan (SEMP)? How is the relationship between the SEMP and the related information expressed?
- Resolution: No detail required; no relationship in LSS.
- What level of detail is needed about the Regulatory Compliance Plan (RCP)? How is the relationship

between the RCP and the related information expressed?

Resolution: No detailed required; no relationship in LSS.

What level of detail is needed about the Environmental Impact Statement (EIS)? How is the relationship between the EIS and related information expressed?

Resolution: No detailed required; no relationship in LSS.

What level of detail is needed about the Safety Analysis Report (SAR)? How is the relationship between the SAR and related information expressed?

Resolution: No detailed required; no relationship in LSS.

What level of detail is needed about the Site Characterization Plan (SCP)? How is the relationship between the SCP and related information expressed?

Resolution: No detailed required; no relationship in LSS.

What level of detail is needed about regulations, guidelines, and standards? How is the relationship between the information and the applicable regulation, guideline or standard expressed? Resolution: No detailed required; no relationship in LSS except those expressed in fulltext of the documents.

How is the relationship between the Issues Hierarchy and related information expressed? Are there issues not included in the Issues Hierarchy that may need to be queried as well?

Resolution: No relationship in LSS, except those noted specifically in Issues Tracking.

What level of detail is needed about the document hierarchy? How is the relationship between documents and the document hierarchy expressed?

Resolution: No detailed required; no relationship in LSS.

Do queries to raw data by issue include issues not found in the Issues Hierarchy? How is the relationship between the Issues Hierarchy and the raw data expressed?

Resolution: No relationship exists in LSS except those noted in Jssues Tracking.

What level of detail is needed about the design hierarchy? How is the relationship between the related design information and the design hierarchy expressed?

Resolution: No detailed required; no relationship in LSS.

What level of detail is needed about the design requirements? How is the relationship between design requirements and the actual design products expressed?

Resolution: No detail required; no relationship in LSS.

Are commitments defined consistently at Headquarters and the project offices? How will different definitions of "commitments" impact the LSS commitment tracking function?

Resolution: Commitment tracking in the LSS will be defined by Headquarters. Project offices may have separate commitment tracking systems, but they are not a function of the LSS.

b. Operational

LSS is required to capture full text of records by transfer from various sources (word processing systems, electronic mail systems, interfaces with other automated systems, etc.). Is there a predefined set of the systems (specific word processing systems, electronic mail systems, etc.)? Or must LSS provide the capabilities to accept data from any conceivable system?

Resolution: A requirement is placed on LSS to capture ASCII code and bit mapped images of 300 dots per inch (dpi).

Are there defined allowable error rates for full text capture of a document?

Resolution: LSS must utilize the most feasible and available standardized technology to minimize error rakes.

Is the use of microfilm storage a definite requirement?

Resolution: Microfilm storage is not a requirement. All records must be in a medium acceptable in a court of law.

Is the use of optical disk storage a definite requirement?

Resolution: Optical disk storage is not a requirement.

For what functions must LSS supply graphics capabilities?

Resolution: LSS must have the capability of displaying a bit mapped image.

When is a QA record defined to have been completed? What constitutes a complete QA record?

Resolution: Not a function of LSS.

What is the time limit for turning in a record? When is a record complete? What is the definition of a record?

Resolution: Defined in the LSS Record Collection and Storage Specifications. How do we quantify the importance of a request? Does a priority ranking of requests exist?

Resolution: LSS database administrator has the authority to change request orders.

Have the maximum recall and precision rates been quantified?

Resolution: A goal for the LSS has been set at 90% recall, 90% precision.

How many simultaneous users will LSS be required to support?

Resolution: See Exhibit 2, chart of Number of LSS Workstations.

3. FEASIBILITY

a. Functional

Will the eighteen NQA-1 criteria provide a reliable search key for querying program information?

Resolution: No searching will be performed on the eighteen NQA-1 criteria. Issue is deleted.

Will the WBS numbers provide a reliable search key for querying program informatica? The WBS undergoes frequent changes.

Resolution: WBS number will be a searchable key and will be reliable to the degree possible:

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Will it be possible to have all parties use the target terms in a consistent manner? If consistency cannot be maintained within one project office, will it be possible to maintain consistency across all system users?

- Resolution: Consistency will be achieved for all project offices and Headquarters.
- Does all information need to be retrieved in full text format? Is this feasible? If not, what information will and will not be in full text?
 - Resolution: Information kept in satellite files will not be full-text. Documents, not in satellite files, will have a bit mapped image and ASCII text.

b. Operational

- Will it be impractical for contractors to submit data in electronic formats. Will contractors be willing to submit data in this format?
 - Resolution: DOE personnel and the prime contractors at each site will be required to have formal submittal mechanisms. Other contractors, consultants, agencies or governments will be judged on a case-by-case method.
- Is it feasible to require full text storage for every document?

Resolution: With the possible exception of scme contractual documents, all documents will have at least a bit mapped image and possibly ASCII text.

4. DESIGN

a. Functional

None

b. Operational

It has been stated that LSS will incorporate any existing hardware and software into the final system configuration. Is this a requirement?

Resolution: It is desirable to incorporate existing hardware, but not required.

It has been stated that the design of LSS shall be distributed. Hardware will be distributed between headquarters and the project offices. Should LSS be distributed?

Resolution: To be determined during costing of alternatives.

It has been stated that LSS should employ a relational data base for data storage and retrieval. Must the LSS use a relational data base?

Resolution: No, a relational database does not have to be used.

It has been stated that LSS must have the capabilities to communicate with and download information to a personal computer or micro-computer system. Is this a requirement?

Resolution: Yes, communication with a personal computer or microcomputer is a requirement.

It has been stated that LSS must provide standard error checking techniques. Is this a requirement?

Resolution: Yes, LSS must employ standard error checking techniques.

It has been stated that LSS cannot require major modifications to physical sites during implementation. Is this a constraint?

Resolution: LSS implementation must take into consideration existing site characteristics and minimize modifications that will adversely impact the physical site.

APPENDIX B DOCUMENT INDEX

AFPENDIX B - DOCUMENT INDEX

Documents Received from DOE Headquarters

Scope of OGR Licensing Support System

Licensing Information System Requirements Study

LSS - Support and System Record Storage and Retrieval Procedures

LSS - Commitment Tracking Subsystem

LSS - Issue Tracking Subsystem

LSS - Record Collection and Storage Specifications LSS Record Collection Procedures

LSS - Hierarchy of Descriptors

Information Services Directory

Licensing Information System Cost Estimate

Review of OCRWM Documents

LSS - Discussion, Charter, Statement, Overview

Project Office Information Management System

Request for Review and Comment on LSS Procedures

Department of Energy Organizational Chart

Application of Full Text Storage and Retrieval System

LSS - Current and Planned Work

LIS Cost Estimates

Supplemental Quality Assurance Requirmements; Computer Software Position Description; Licensing Administrator (GS-11)

Program Management System Manual

Nuclear Waste Folicy Act (Section 112) Environmental Assessment Volume 3 (for Nevada)

Program Management System Implementation Plan

Waste Management Systems Requirements and Definitions (SRD)

Final Environmental Impact Statement; Waste Isolation Pilot Plant (Volume 1)

Technical Information Management System; Operating Stragegy

Public Comment on Draft Mission Plan

Record of Responses to Public Comment on Draft Mission Statement (Volume 2)

Mission Plan for OCRWM

Radioactive Waste Management System; Project Decision Schedule

Nuclear Waste Policy Act (Section 112) Volume 2 Environmental Assessment (for Nevada)

Nuclear Waste Policy Act (Section 112) Volume 1 Environmental Assessment (for Nevada)

Logic Diagram for Site Investigations.

Licensing Data Management System Presentation

Issue Management and Tracking System Process

Supplemental Quality Assurance Requirements; Supplement No. 4; Quality Assurance Records

Issues Hierarchy for a Mined Geologic Disposal System

SCATS Objectives

Summary of the NRC/DOE Meeting on the Level of Detail for Site Characterization Plans and Study Plans

Minutes of September 23, 1986 Meeting of Licensing Support System Document Input Process

Office of Civilian Radioactive Waste Management Mission Statement

Minutes of Task Group Meetings; Task Group Charter; Task Group

10 CFR 60 Structural Breakdown

NRC Issue Hierarchy (Proposed)

Review of Project Office's Information Management Systems

Proposal to Enhance OCRWM's Central Records Function Precoordination Draft

Implementation Guidance for Project Office Information Management Systems

OGR Licensing Support System

NNWSI - SAIC Briefing on Data Collection to DOE-HQ

Information and Data Needs Categorized by Technical Discipline

Documents Received from NRC

Report of October 2, 1986 meeting of DOE/NRC Licensing Support System Interagency Coordinating Committee

Meeting Minutes of NRC Meeting with HLW State/Tribal Representatives, 4/29-30/86, Las Vegas, Nevada

Distribution of the Report of the April 22, 1986 Meeting of the DOE/NRC LSS Interagency Coordinating Committee

Licensing Information Management System Pilot Project

Report of May 10, 1985 DOE/NRC Meeting on Licensing Information System for Geologic Repositories

Report of DOE/NRC Meeting on Licensing Data and Issue Tracking System

Meeting Report of September 20, 1984 titled "DOE and NRC Public Meetin on Issue and Information Management Systems

DOE/NRC Public Meeting on Information Systems; Summary of Meeting Minutes

DOE/NRC Public Meeting on Information Systems; Summary of Meeting Minutes

Information Management Systems Meeting, Columbus, Ohio

NRC Project Managers Handbook (NUREG/BR-0073)

NRC Presentation; Interagency Coordinating Committee Meeting

Documents Recieved from SALT Project

Requirements Document RMS Company Names Weekly Highlights Report 5/15 - 5/21 For ONWI SRP/TDB Data Element List Integrated Data Management System Systems Description Computer Modeling on the SALT Repository Project: A Brief Overview

System Requirements

Information System Description

Welcome to the SRP Integrated Data Management System

Transmittal of SEMP Implementation

Battelle Project Management Division - Project Management System

Comparative Analysis of Three Licensing Information Systems

Quality Assurance Administration Procedures Volume 1

Issues Hierarchy, Resolution Strategy, and Information Needs for Site Characterization and Env./Soc. Evaluation

Schematic of SALT Repository Project Documentation

SALT Repository Project Responsibility Assignment Matrix

SRP Waste Package Program Summary Briefing

ARS Document Code and Organization Thesaurus

Battelle Contract Data Management System Screens

System Requirement Documentfor the Deliverables Tracking System SALT Repository Project FY85 Technical Project Plan

Deaf Smith SCP/ESEP Information Sheet - Tectonic Evolution of Region

Deaf Smith SCP/ESEP Information Sheet - Potentiometric Surfaces Battelle SRPO Organization Chart

Environmental Field Data Analysis System Flow Chart

Environmental Field Sample Inventory Management Flowchart

DNWI - Subcontractor Data Management Interactions Environmental Field Data Analysis System

Systems Engineering Management Plan for the SALT Repository Project System Requirements Document for the SRP Field Data Analysis System (FDAS)

Indexing Manual for the Records and Information System

Catalog of Ongoing and Planned Work of the CRWM - SALT Repository Project in Columbus, Ohio

SRP/TDB/DM User's Guide

Systems Requirements Document for the Deliverables Tracking System Catalog/CDMS Input Sheet

Information Management Manual - CDMS

SALT Repository Project - Information System Description

Quality Assurancew Program Requirements for Núclear Facilities

SALT Repository Project Requirements Document

Systems Requirements Document for the SRP Issues Tracking System (ITS)

DCTRS Operational Instructions

CTRS Users Guide

Functional Design for the Comment and Response Tracking System

Operations Manual for the Comment Response Tracking Systems

Functional Design for the Document Comments Tracking Response System

Functional Design for Phase Two of the Document Comments Tracking Response System

Operations Manual for the Document Comments Tracking Response System

SRP/TDB Data Element List

Information on Nuclear Waste Isolation

SRP Information Systems Description

Systems Requirement Document for the SRP Technical Data Base (SRP/TDB)

Indexing Manual for the Records and Information System (RIS) RTP Data Base Indexing Instructions

User's Guide to the Document Comments Tracking Response System Automated Records Systems - Working Draft for User Guide

Sample Commitment Item

Information Management Manual - Controlling Outgoing Documents Information Management Manual - Controlling Incoming Documents

Information Management Manual - Control of BPMD Documents

Integrated Data Management System User Guides

Data Element Dictionary for Automated Records System

Standard Operating Procedures

Quality Assurance Plan

RTP Screens

SALT Repository Project Flow Diagram

SRPO Plan to Provide Information Support Services to NNWSI, BWIP, HQ, CHO
Documents Recieved from NNWSI Project

NNWSI Project Information Management System Concepts Evaluation Report (Draft)

NNWSI Project Information Management System Concepts Evaluation Report (Final)

Supporting Data & Calculations for the IMS Concepts Evaluation Report (Draft)

Draft Environmental Assessment for Hanford Site Washington

NNWSI Project Work Breakdown Dictionary (WBS)

Quality Assurance Record Management System - Database Operation Users Guide

NNWSI Froject Information Management System Concepts Evaluation Report(Draft-Executive Summary)

IMS System Specifications - Preliminary Data Flow Diagrams

IMS Presentation to DOE-HQ (Overheads) LSS Document Collection Process

IMS-Concepts Evaluation Report (Overheads)

IMS - Concepts Evaluation Report (Overheads)

Data Acquisition & Design Activities (Overheads)

NNWSI Project IMS (overheads) Presentatiuon to DOE/HQ Review Team

NNWSI Project Filing System (Draft)

NNWSI Project Filing System (Rev.O)

NNWSI Participant Information Mangement System Description (Draft) Section 2.1 only

IMS Concepts Evaluation Report for NNWSI Project Draft with Transmittal Letter from T. Tinsley

Capital Equipment Budget, FY 1988 Budget Submission

Information Management in the Licensing Process - M. Glora, Licensing Branch Manager

T & MSS QA Document Type List (Draft)

4-page diagrams-breakdown of issues, activities and comments Issue Breakdown

Figure 2.2 - Logic Diagram for Site Investigations

SCP LIMS Research References List Abstracts through 1985

News Clipping Tracking System Institutional Group

NNWSI-SOP-02-02 Assignment of Quality Assurance Levels to NNWSI Activities

NNWSI-SOP-17-01 NNWSI Records Management Procedures

A Proposed Approach for Data Transfer & Management by NNWSI David Zeuch - Sandia National Labs

4.0 Document Processing & Retrieval Effective Solutions Inc. (Draft)

Retention Requirements for LIMS Records-Letter Effective Solutions Inc. to Bruce Foster

Application of IBM stairs to Litigation-Letter From MacNubb to Bruce Foster

Licensing Information Management System (LIMS)-Letter From D. Gassman to M. Voegele

Site characterization Plan Administrative Record-Letter From M. Voegele to D. Vieth

Conference call regarding SCP Administrative Record Letter From L. Hoffman to M. Voegele et. al.

Environmental Assesment Administrative Record Update-Letter From D. Gassman to D. Veith et. al.

Licensing Information Managment-Letter From M. Voegele to D. Gassman

Review and comments on findings of Review of PO IMS's - Letter From M. Voegele to Karen Hatch

Questionnaires filled out by SAIC 8 in total - McCann, Dawson Steinberg, Zimmerman, Dielmann, Brown, Melander

Documents Recieved from BWIP

SWIP IRM Document Management Plan-Document Control Plan(WSN)

Project Management Procedures - Document Control (WSN)

Project Management Procedures - BWIP Records Management (WSN)

Project Management Procedures- Document Control Plan(WSN)

BWIP Records Management Plan (WSN)

Data Element Names: Regular, Correspondence, Library, Core, Engineering Release

BPMC Subject Code Listing (in alphabetical order)

Records Retention Document Type List Ordered by Description

Rockwell Project Management Procedures Manual - BWIP Documents/Data Accessions List-Maintenance and Control

Rockwell Project Management Procedures Manual-BWIP Clearance of BWIP Document for External Distribution to Program Participants

Public Requests for Information (samples)

BWIP Data Management/Top Level Logical Views/Top Level Physical Views/Process Controls

EWIP Document Management Program

BWIP Information Resource Management

BWIP Records Management Plan

Presentation materials on VAX/DM Acquisition Implementation

LSS Records Collection and Storage Specification

Rockwell IRM Execution Plan Detail - Work Package Activities by Task

BWIP Management Guide - Records Management Program

BWIP Information Resource Management Plan

Rockwell/BWP System Engineering Management Plan

Requirements Specification for the Records/Document Management Systemss - User Requirements

Project Management Procedures Manual-SWIP Records Management System Acquisition Planning and Procurement Management Charter Memorandum on Ownership of Computer Codes Policies and Guidelines for the Operation and Use of the BWIP Integrated Database Weston Document - LSS Record Collection and Storage Specification (Draft) BWIP Organization Chart BWIP Technical Data Systems (BTDS) Business Management System Presentation Materials System Architecture-Presentation Overheads BWIP Data Communication System (An Introduction) Comparison of a "Large" NOMAD2 Database Application to the BTDS Electronic Bulletin Board Status BWIP Management Guide for Information Resource Management BWIP Information Resource Management (IRM) Presentation materials (short version) Report on May 10, 1985 Meeting and Overhead Exhibits (OCRWM) BWIP Hierarchy of Project Activities and Documentation (Large chart) Licensing Filing Index (6/11/86). Institutional Working File BWIP Quarterly Project Review Document (in blue spiral notebook) BWIP Quality Assurance Plan BWIP Engineering Management System (EMS) Presentation materials EWIP Management Guide-Records Management Program NMSS Division of Waste Management Docket Control Center Outline BWIP Overview of the Structure of the Project as the basis for a Licensing Data Base Major Systems-Central Computer Facility

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Division of Waste Management Technical File Plan Index

BWIP Division Procedure for Information Resource Management

Information Resource Requirements (Presentation materials)

Interoffice Memorandum on application of IBM's STAIRS to Litigation User and Storage Estimates for DOE Required Activities

BWIP Document Hierarchy Chart

BWIP Licensing Commitment Tracking System

Kaiser Document Control Procedures

Kaiser Records Management Procedures

Records Retention Document Type List Ordered by Code and Alphabetically

BRMC Subject Code List

Memorandum on Ownership of Computer Codes

BWIP Project Administraion Organization Chart

BWIP Project Organization Chart

Kaiser BWIP Organization Chart

Notification of Personnel Action

Communication Paths/Corporate Tracking Needs/Licensing Tracking Needs/Status of Existing Systems

APPENDIX C INTERVIEW INDEX

APPENDIX C - INTERVIEW INDEX

Interviews	Conduc	ted	at	DOE	Head	lquar	ters

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09/25/86	Stan Echols
09/25/86	John Klusick Gardner Shaw
09/25/86	Mark Frei
09/26/86	Dick August Rich Minning
09/26/86	Charles Head
09/26/86	Dave Brown Ed Wiot
09/29/86	Jim Knight Len Skoblar
09/29/86	Don Alexander
09/30/86	Roger Hilley
09/30/86	Roger Gale
10/01/86	Abel Lopez
10/01/86	Ed Kay

Interviews	Conducted at NNWSI Project (SAIC)
10/06/86	Bruce Foster
	LOU ROBERTSON
10/07/86	Bruce Foster
	Nadine Karas
	Karen Hatch
	Linda Nelson
10/08/86	Dwain Sternberg Nadine Karas
	May Cotter
10/08/86	Ed McCann
10/00/00	
10/08/86	Kathy Lewis
10/08/86	Mike Glora
10/08/86	Bruce Foster
	Tom Tinsley
10/09/86	Marylou Brown
10/09/86	
10/09/86	Sue Volek
	Bea Relliy
10/09/86	Craig Garvin
10/09/86	Cookie Alvarez
10/09/86	Don Vieth

Interviews Conducted at SALT Project (Battelle)

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10/20/86	Sarah Starr Bryan Lauzau
10/20/86	Jim Van Vliet Steve Goldberg Rob Oxenham Bryan Lauzau
10/20/86	Gordon Appel
10/22/86	Ruth Linebaugh
10/22/86	Tcm McSweeney Rob Oxenham
10/22/86	John Garvey Don Ballman Chuck Herrington Dan Hudgell
10/22/86	David Keller Robert Lowrey Technical Indexe
10/22/86	Tony Ladinó Dick McCutcheon Bill White
10/22/86	Jeff Neff
10/22/86	David Keller
10/22/86	Steve Richards
10/23/86	Larry Trover
10/23/86	Don Miller Terry Dunn Don Patterson

10/23/86 Janet Tischer Ruth Lineburgh

Interviews Conducted at BWIP (various locations)

10/27/86	Gene Higgins
10/27/86	Tom Gross
10/27/86	Emmett Richards
10/28/86	Jack Trent
10/28/86	Tom Gross
10/28/86	Bill Hinckleman Dana Farwick
10/28/86	John Lillie
10/28/85	Kanecht
10/28/86	Roger Pratt John Fox Tom Gates
10/29/86	Bill Dunklay
10/29/86	J.J. Lane
10/29/86	Gus Calapristi
10/29/86	Roy Pratt Greg Fones
10/29/86	Ted Gigham Ed Hirschberger Bob Lowery
10/30/86	Orville Trapp
10/30/86	William Manis
10/30/86	Fred Hoffinger
10/30/86	Fran Dooley
10/30/86	August Kugler Orville Trapp Malcolm Mooney Fran Dooley Bill Manis Fred Hoffinger Herb Horn
10/21/06	Suguet Rugler

10/31/86	Malcolm Mconey
10/31/86	Gerry Finn
11/03/86	Frank Larvas Ecb Morris Kurt Morgan Rick Hicks Don Spiers Roy Mink Paul McKee Dave Bacchus
11/04/86	Mary Furman
11/04/86	Pierre Saget
11/04/86	Emmett Richards
11/04/86	Tom Curran
11/04/86	John A. Theis
11/04/86	Roger Johnson
11/04/86	Don Carroll Karl Hadley John Graham Judy Cross
11/04/86	Jane Kirkendall
11/04/86	Lawrence R. Fitch
11/05/86	A. Dunning
11/05/86	Pat Boileau
11/05/85	Larry Cooran
11/05/86	William Price Al Newnam
11/05.'86	Ralph May
11/05/86	George Jackson
11/05/86	Tom Davies
11/05/86	Al Bell
11/05/86	Lee Davis
11/05/86	Jim Tritz
11/13/86	Jim Mecca

2/12/86 Bob Loux Carl Johnson Harry Swainston Mel Murphy nterviews Conducted at Nuclear Waste Office - Washing 2/15/86 William A. Erewer Phd. Ellen O. Caywood nterviews conducted at Nez Perce Indian Tribe 2/16/86 Renee Moffatt Vina Harrison nterviews conducted at Umatilla Indian Tribe 2/17/86 Larry Calkins Tom Glenn Don Hestin Bill Burke nterviews Conducted at Yakima Indian Tribe 2/18/86 Jack Wittman nterviews Conducted at Nuclear Waste Office - Texas 2/19/86 Steve Frishman Danny Smith Susan Zimmerman Interviews Conducted at NRC 12/22/86 Phil Altomare Avi Bender	iterviews con	nducted at Nuclear Waste Office - Nevada
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12/19/86 Steve Frishman Danny Smith Susan Zimmerman <u>Interviews Conducted at NRC</u> 12/22/86 Phil Altomare Avi Bender	Interviews Co	onducted at Nuclear Waste Office - Texas
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	12/22/86	Phil Altomare Avi Bender
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