3 PROJECT MANAGEMENT PLAN FOR SELECTED ALTERNATIVE

This plan is based on the business sponsor's recommendation: Alternative 3 - use of portal software to implement a unified access with file services being provided by participant resources. It anticipates utilizing an outsourcing approach as presented in the sensitivity analyses.

3.1 Project Schedule

The project schedule is maintained using Microsoft Project. A copy of the schedule is included in Appendix F, Project Schedule.

The preliminary LSN implementation schedule represented by the Gantt chart (Appendix F) does not appear to be materially affected by the alternative selected.

Lack of schedule differentiation between the three alternatives arises from the fact that the differences between alternatives arise in only one of the three major system components, i.e. the storage component, which nonetheless will take comparatively little additional time to implement. The more time-intensive aspects of overall LSN implementation, specifically document conversion and site integration, are, essentially, identical across alternatives. The other activities common to all three alternatives, specifically, the development and implementation of the compliance and presentation components, have potentially more impact on the schedule and staffing than the development and implementation of the storage component.

3.2 Spending Plan

Independent government cost estimates for the development and implementation of the LSN were developed. These estimates are based on a projected spending plan that likely will vary from the actual plan once a contract vehicle is put in place for the design and implementation. The tables presenting the estimated spending plan during the system development of the LSN are included in Appendix G, Spending Plan.

With the exception of hardware and COTS software, maintenance and other estimated costs are averaged and distributed over 12 months, although such estimated costs may occur in a single month (as necessary) or quarter. The normal course of computer system development, deployment, and ongoing maintenance (including necessary repairs and enhancements) yield variability and uncertainty to the costs projected in this spending plan.

3.3 Staffing Plan

ASLBP is prepared to manage the development of the Licensing Support Network in conjunction with ongoing support from the OCIO. Two of four anticipated positions in ASLBP have been filled.

ASLBP has filled the position of the LSN Administrator, who serves as the LSN business project manager responsible for (1) coordinating and implementing LSN development by identifying and assisting in the resolution of technical and policy issues relating to the system, including

analysis and evaluation of hardware and software system designs; and (2) overseeing LSN operations, including compliance with operational policies and procedures.

ASLBP has filled the position of Sr. Computer Systems Analyst who serves as the lead system engineer and administrator.

ASLBP has posted a position that it expects to fill in May 2000 for a Sr. Program Analyst who will be dedicated to the development of information management policies and procedures, the overall audit program design and management, and internal training.

ASLBP anticipates posting a position that it expects to fill in October 2000 for a Computer Systems Analyst/Programmer to act as a database specialist for the portal and audit systems and to maintain and operate the compliance audit system.

The SRM for SECY-99-114 directs that the OCIO will retain 1 FTE in FY 2000 through FY 2002 to provide continuing technical support to the ASLBP management team.

All four federal staff assigned to the LSN are anticipated for the duration of the effort through at least the completion of the construction authorization process sometime in FY 2006.

Contractor support will be utilized for technical design and engineering. Additionally, we anticipate that contractor support will be used for ongoing maintenance and operations of the hardware configuration and associated infrastructure. The cost of contractor support is reflected in the FTE charts, the spending plan, and the line items in the budget detail and anticipates two long-term contractor staff after the July 2001 implementation.

NRC staffing for the LSN is included in the tables below that cover staffing resources for all participants, not just the LSN development project. The table, which presents estimates for the participants' efforts to establish and implement a website, anticipates that none of the smaller parties will pool their resources. Indications are, however, that Nye, Lincoln, and White Pine are already in agreement to do so and other smaller participants are expected to do so.

DOE	■■■■	Esmerelda	■■■■
NV	■■■■	Eureka	■■■■
Nye	■■■■	Inyo	■■■■
NCAI	■■■■	Lander	■■■■
NEI	■■■■	Lincoln	■■■■
NNWTF	■■■■	Mineral	■■■■
Clark	■■■■	White Pine	■■■■
Churchill	■■■■		

Federal LSN FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04					FY05					FY06	
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

Contractor Provided LSN FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04		FY05		FY06	
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1-Q4	TOTAL	Q1-Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

Federal OCIO Resource FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04					FY05					FY06	
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

Federal NMSS Resource FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04					FY05					FY06		
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

Federal SECY Resource FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04					FY05					FY06		
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

Composite LSN Participants Resource FTE by Quarter / Fiscal Year / Project

FY00		FY01					FY02					FY03					FY04					FY05					FY06		
Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	Q1	GRAND TOTAL PROJECT FTE
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■■■■

3.4 Performance Goals and Metrics

The outcome measure of the proposed project is that it is expected to reduce the time required to review and issue a new facility license for Yucca Mountain by 62% compared to the previous most complex and politically charged reactor licensing proceeding. This outcome measure can be translated into a metric: if the system is 99% available during scheduled up-time, no more than 11 days are added to the three year licensing schedule.

The NRC FY 1998-1999 Operating Plan recognized the development of a web-based Licensing Support Network was a significant information technology initiative for the agency. The NMSS Operating Plan included Planned Accomplishment HLWRR 13, and the OCIO included Planned Accomplishment CIO S1. Together, these Planned Accomplishments (PA) addressed the rulemaking process to revise 10 CFR Part 2, Subpart J, and enable the use of web technology to establish an NRC website and develop it to support the licensing process. The Direction Setting Issue (DSI) associated with the development of the LSN was DSI #6: High-Level Waste and Spent Fuel; the SRM associated with the these initiatives was COMSECY-96-056.

For FY 2001 the performance goals and metrics are associated with establishing initial capability:

- Establish the LSN homepage
- Connect the LSN homepage with the DOE document collection
- Connect the LSN homepage with the NRC document collection
- Confirm ability to link the LSN homepage with NRC's external ADAMS hearing docket
- Confirm ability to transfer electronic documents to each potential party
- Establish the LSN audit capability

For FY 2002 the performance goals and metrics are:

- Connect the LSN homepage with the remaining parties.
- Activate Linkage between LSN homepage and NRC's external ADAMS docket for the high-level waste repository licensing proceeding
- Provide routine reports generated from the LSN audit capability
- Website availability to exceed 99% of scheduled uptime

For FY 2003 through FY 2006 the performance goals and metrics are:

- Monitor the integrity of participant collections and provide routine reports generated from the LSN audit capability
- Website availability to meet or exceed 99% of scheduled uptime
- Not more than 11 calendar days added to the three year licensing process due to system non-availability

3.5 Conformance with Standards and SDLCM

3.5.1 SDLCM

The LSN will follow the NRC's Software Development Life-Cycle Management (SDLCM) Methodology. However, it should be noted that it is the intention of the LSNA to implement the system with as little custom code development as possible. In that regard, sections of the SDLCM that are essentially applicable to software code development, testing, and acceptance will have little relevance or representation in project work products.

3.5.2 IT Architecture

There will be minimal changes to NRC's IT architecture. This project management plan anticipates housing this application at a non-NRC site. Interfaces to link to existing NRC capabilities, such as the external ADAMS collection, are not constrained by requiring co-location.

Portal software technologies anticipated in Alternative 3 typically consist of a dual processing architecture consisting of two Windows NT components: one installed with a web server to host the portal for users, the other a job server installed on a networked computer to process new information from data sources and applications.

Scalability is provided by the addition of web servers to support larger numbers of users, and additional job servers to support larger numbers of documents. Each instance of the server runs in process with other applications, typically using products like Microsoft™ Transaction Server to support high activity levels efficiently. If a single web server or a single job server fails, users experience no interruption in service.

System extensibility is based on the fact that the "crawlers" are typically developed as Distributed Component Object Model components that allow for use of third party products to access new types of content.

Portal software typically does not store any content itself except for text indexes and metadata properties it finds on target sites. Those repositories may be separately housed on large UNIX™ based hosts. Such software stores text indexes for the content directory and then utilizes a standard embedded text search engine such as Verity's TOPIC™ or Excalibur™. Structured data is handled in standard ODBC compliant relational database management systems such as Oracle™, which is where the portal servers store directory structures, links to network content, and their own metadata indexes in a portable XML format.

User access is accomplished from any Web browser, accessing web server Active Server Pages (ASP) hosted by a portal server.

The audit capability for the recommended Alternative 3 relies on the underlying indexes, directory structures and accessor (crawler) capabilities from the portal component to feed characterizing data into a set of analytical software tools that compile findings and present them to audit and compliance database administrators for compilation and reporting. These analytical and report tools will be resident on a separate audit server.

3.5.3 Infrastructure

The implementation plan anticipates establishing the infrastructure needed to support this application. This includes servers, other hardware, operating system and applications software, telecommunications capabilities, and facilities allocated to supporting this application. In

general, the portal component configuration is comprised of the following components that have been included in the cost analysis:

Data retrieval element -- This element will consist of one or more programs that will routinely "rove" participant sites, fetching participant data (documents, statistics, etc.) and storing this data pending processing. The exact nature of the data retrieval element will depend on the details of the alternative selected for the storage component, but it is analogous to a "web spider." A web spider, when presented with a starting URL, will traverse all hyperlinks within the body of documents "under" the URL. Through this methodology, it is possible to retrieve and replicate the entire static structure of a web site for further processing.

Data storage -- This element is responsible for storing both data to be processed and the results of that processing. Both file system storage and database storage will be accommodated. The database will be a network-capable SQL relational database that will provide structured data to both front ends, i.e., the compliance and presentation components.

Data processing -- This element will process the data retrieved, store the results of the processing, and generate the required reports.

Data presentation and reporting tool -- This element consists of several programs that process report outputs into formats appropriate for the delivery mechanisms described above, and assist a user in specification of on-demand reports.

System assuredness with further sub-elements -- This element provides a level of assuredness that the systems the LSN is housed on are functioning as required. There are several main sub-elements:

Security mechanisms -- Security sub-elements include a firewall or firewall software, secure remote administration software, and intrusion detection software.

Network monitoring and management -- This sub-element monitors hardware and software and reports outages or sub-optimal operation. It also gathers low-level statistics on network operation for trend and throughput analysis.

Physical plant and reliability mechanisms -- This sub-element provides appropriate environmental and power conditioning and implements disaster recovery mechanisms, e.g., a backup/restore capability.

3.5.3.1 Hardware and software required

At this writing, the final design has not been completed, so product specifications and costs are presented for illustrative purposes only. If final design considerations change the cost or infrastructure impact, those changes will be coordinated per MD 2.2. We are presenting a typical configuration upon which our CPIC analysis has been based. Where appropriate, examples of products are provided, but these are not intended to represent a comprehensive list

of alternatives or preferred selections. Since there is a competitive market for these products, the following configurations have been used to develop ballpark pricing estimates, but this should not be construed as an attempt to preselect a vendor or product.

WEB/PORTAL SERVER 2 ■■■■■■■■■■■■, Dual-CPU 550 MHz Pentium III, 512MB Ram, 9 GB Ultra-2/LVD SCSI Hard Drive (10,000 RPM), CD-ROM Drive

JOB SERVER 3 ■■■■■■■■■■■■■■■■■■■■■■■, Dual-CPU 550 MHz Pentium III, 512MB Ram, 9 GB Ultra-2/LVD SCSI Hard Drive (10,000 RPM), CD-ROM Drive

AUDIT SERVER ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■, Single-CPU Pentium III, 550 MHz, 512 Ram, 9GB SCSI3 Disk, re-writeable SCSI CD-ROM

RDBMS SERVER ■■■■■■■■■■■■, 4CPU, 4GB RAM,and 54 GB Hard Drive including 4x9.1-Gbyte 10K RPM RAID disks

FULL-TEXT SERVER ■■■■■■■■■■■■■■, 4CPU, 4GB RAM,and 54 GB Hard Drive including 4x9.1-Gbyte 10K RPM RAID disks

BACKUP/RECOVERY HARDWARE ■■■■■■■■■, high-speed ■■■■■■■■■v ■ drive rack-mount 5 MB/second with up to 280 GB of capacity

COM DEVICES TO CONNECT BOTH TO NETWORK 12 port 100baseT switch, ■■■■■■■■■■ router Note: All computer systems have incorporated 100baseT NICs

AUXILIARY DEVICES(Scanners, printers, CD writer, etc.)

WORKSTATION/CONSOLE FOR PORTAL ADMINISTRATOR ■■■■■■■■■■, Intel Pentium III 600MHz, 9GB disk, 256 RAM – Includes maintenance agreement for onsite service

WORKSTATION/CONSOLE FOR AUDIT SYSTEM ADMINISTRATOR ■■■■■■■■■■■■■■■■, Intel Pentium III, 600MHz, 9GB disk, 256 RAM – Includes maintenance agreement for onsite service

OPERATING SYSTEMS SOFTWARE AND OTHER SERVICES ■■■■■■■■■■■ (Web, Job, and Audit Servers, Portal and Audit Administrators), ■■■■■■■■■■■■ (Full-Text and RDBMS Servers)

UNDERLYING DATABASE SOFTWARE SQL compliant such as ■■■■■■■■■■

PORTAL APPLICATION PACKAGE Unlimited user licences

TOOLKITS FOR WEB PAGE MODIFICATION per computer at which a developer would sit.

SOFTWARE PACKAGES FOR ANALYSIS Data mining –■■■■■■■■■■■■■■■■■
SOFTWARE PACKAGES FOR REPORTING ■■■■■■■■■■■ (one copy for admin)

UTILITY AND GENERAL-PURPOSE OFFICE SOFTWARE Word processing, spreadsheet, e-mail, anti-virus, etc.

3.5.4 Data

Data for the system resides on computer systems to be provided by the participants. It is comprised of structured data bibliographic headers, searchable full text, and images for those documents that are not text searchable. Portal software typically does not store any content itself except for text indexes and metadata properties it finds on target sites, and those repositories may be separately housed on large ▬▬▬▬▬▬▬▬▬▬ based hosts. Index data stored on the LSN will be routinely backed up on devices included in the proposed architecture.

Audit data, primarily metadata information stored in a structured data environment, also resides on LSN controlled servers and will be routinely backed up on devices included in the proposed architecture.

Docketed items are stored and backed up on resources provided by ADAMS. EIE submissions are incorporated into the document indexing operations of the SECY.

3.5.5 Network

There are no changes anticipated because the system is being proposed as an externally located system.

3.6 Shared Benefits and Costs with Other Federal Agencies, State, Local Governments and Others

As noted in the above discussions, the LSN has significant benefit and cost sharing elements with the parties to the licensing process.

3.7 Acquisition Approach

Equipment needed for the LSN is anticipated to include a server device to act as a host machine for the LSN webpage and a server device to act as the audit data capture and analysis resource. Each of these server devices will require additional storage capabilities that may vary based on the ultimate solution. In two of the three design alternatives, server devices will require a robust backup and recovery capability to ensure uninterrupted access to the participants, especially during the hearing phase of the licensing proceeding. Each of these server devices will require equipment to support connection with the NRC LAN/WAN infrastructure should outsourcing not be pursued. Software for the LSN solution may include software development tools, web authoring tools, a universal interface module, search engine and indexing software, and utilities and additional enabling features such as help software. Software for the audit data capture and analysis resource may include various Internet and database auditing software and development tools, a database package, a report generator package, and various other utilities and analytical tools. CD-ROM authoring hardware and software may be required for mass dissemination of training tools for the technical staff of the parties and potential parties. Customization is expected especially in the development of a universal search, retrieval, and results display interface module.

The general acquisition approach will be to develop a recommended hardware and software solution during conceptual design, acquire a turnkey solution of hardware and software, and perform development and integration using Rapid Applications Development (RAD) techniques. ASLBP anticipates pursuing an experienced web system development contractor through GSA's Advantage!™ Multiple Award Schedule (MAS) for Schedule 70. The LSN Administrator has explored the flexibility allowed under that contract to ensure that hardware and software can be provided in addition to the labor services included in the schedule. This contract allows teaming among schedule holders as well as standard prime/subcontractor relationships to allow non-schedule hardware, software, and service providers. Additionally, this contract allows -- with appropriate justifications -- ordering agencies to designate specific products. Additional specialized consulting services for policy and procedure development may also be acquired through other GSA blanket contract vehicles available through the NRC Division of Contracts.

4 RISK MANAGEMENT

Selecting Alternative 3 addresses some of the identified risks associated with completing the system on schedule insofar as it does not incorporate a large data storage component to cache copies of each participant's documents.

Selecting Alternative 3 addresses the concern that NRC's LSNA will become custodian of the parties' discovery materials, because under that alternative, parties still maintain and deliver to the requestor the documents located from the LSN homepage.

There is a moderate degree of risk associated with the project. Issues associated with the implementation of the LSN are:

- ADAMS performance and external interface improvements,
- acquisition vehicle selection and funds commitment, and
- interactions with constituent institutions.

The ADAMS system will be used to make the licensing docket file available to the public via a direct link from the LSN homepage. As currently implemented using CITRIX, participants may have difficulty gaining easy and timely access to the docket in ADAMS. Additionally, search response time on the ADAMS system is inadequate. If these are not successfully addressed by the time of LSN implementation, the alternative will be for the LSN to "crawl" the ADAMS docket file and rebuild the indexes, text and image files directly on the portal server to ensure rapid response and easy user access via their standard browsers.

NRC's Electronic Information Exchange (EIE) capability currently in development and being piloted by ASLBP will be used to support motions practice.

OCIO is addressing the problem of public access to its external collections. Should OCIO not be successful in simplifying access to ADAMS external collections, the LSNA is prepared to cache the object files found in the ADAMS-based docket files directly on the LSN server and utilize the web-based search and retrieval interface of the LSN to access the docket collection. Depending on the software selected for the portal site, we anticipate that this can be done at either no cost, or very little additional cost, to the LSN project since it is an "out-of-the-box" capability of one package being studied and a directory configuration setup component of another.

A second issue is the ability to move rapidly to commit funds that were recently made available during the FY 2000 mid-year review. We have not yet commenced the design phase of the project. Since March 1, 2000, the project was presented to the Information Technology Business Council, and received authorization to proceed with the development of a Capital Planning and Investment Control document. On a parallel path, ASLBP submitted a mid-year request identifying the need for additional funding for FY 2000 in order to commence the design phase, identify the target hardware and software that will be used for development, and commit those FY 2000 mid-year funds to the acquisition of that technology. Ensuring that a contract vehicle is in place so that funds may be committed is essential.

The LSNA has thoroughly considered utilizing NRC's CISSCO contract vehicle as the basic acquisition source for LSN design and implementation. Because the CISSCO contract vehicle expires in September 2001, it will be experiencing close-down and transition during June and July of 2001, exactly when the LSN will be on the critical path to delivery. Because of the business risk associated with contractor staff "bailing out" during contract closeout, the sponsor's management team believes that it is not in the best interests of this project to risk using the CISSCO contract. The LSNA is prepared to pursue either a single, multi-phased / multi-funded contract with a team comprised of participants on the above noted GSA contract, or a series of contracts, one each for design and implementation, hardware and software acquisition, and operations and maintenance.

A significant institutional interaction issue is the NRC's credibility relative to this project and the need to design and implement the system successfully by the August 2001 deadline established in Subpart J. Fifteen years have elapsed since the LSS initiative was conceived; eleven years have elapsed since the initial rulemaking; six years have elapsed since the original scheduled date for LSS going operational. There have been two modifications to the original 10 CFR Part 2, Subpart J, and the LSN must now be made to work by the NRC by late 2001. There is no room for schedule slippage.

The agency has demonstrated its commitment by providing FTE positions and mid-year funding resources.

5 OMB 300B, SECTION

Spending Plan by Quarter / Fiscal Year / Project						
FY00		**FY01**				
Q4	**TOTAL**	Q1	Q2	Q3	Q4	**TOTAL**
■■■■	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■

Spending Plan by Quarter / Fiscal Year / Project				
FY02				
Q1	Q2	Q3	Q4	**TOTAL**

Spending Plan by Quarter / Fiscal Year / Project				
FY02				
■■■■	■■■■	■■■■	■■■■	■■■■

Spending Plan by Quarter / Fiscal Year / Project						
FY03-FY05					FY06	
Q1	Q2	Q3	Q4	**ANNUAL TOTAL**	Q1	**TOTAL**
■■■■	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■