

# Licensing Support Network Baselined Design Requirements Release 1.0

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## A. LSN SYSTEM DEFINITION

**LSN DR A-1** (formerly LSN 1.01) - The term Licensing Support Network (LSN) is defined in 10 C.F.R. Part 2, Subpart J (LSN Rule), as the combined system that makes discovery documentary material available electronically to parties, potential parties, and interested governmental participants to the proceeding for a license to receive and possess high-level radioactive waste at a geologic repository operations area pursuant to 10 C.F.R. Part 60 beginning in the pre-license application phase. The LSN includes hardware, software, communications, data management processes, documentation, security, and backup and recovery services. Accessibility to the documentary material is by methods including searching, retrieving, and delivery of the bibliographic headers, text, and images of that material as detailed in the LSN Rule. Additionally, in conjunction with the LSN, the NRC must provide an electronic docket and establish requirements for the submission and service of pleadings, orders, and decisions by electronic information exchange.

The specific method of providing access to discovery documentary material is not mandated by the LSN Rule in order to accommodate ongoing and future technology advances [63 Fed. Reg. 71735, SUPPLEMENTARY INFORMATION]. For the purposes of developing these requirements, the technology to be adopted for development and implementation of the LSN is based on the facility popularly known as the "World Wide Web" (www or web) on the Internet. More specifically, this can be defined as dissemination of information with HTTP (HyperText Transport Protocol) servers to HTTP clients.

## B. GENERAL CHARACTERISTICS OF CENTRAL LSN SITE SYSTEM

**LSN DR B-1** - The LSN shall be configured with hardware sufficient to store and serve all information (e.g., sufficient disk space, RAM (Random Access Memory), processing power, network interface, etc.) at estimated usage levels, and to be easily upgradable, should estimates fail to adequately characterize usage. Concurrent usage is estimated at 150 users during peak periods.

**LSN DR B-1.1** - The system shall be capable of limiting access to only priority users in the event that spikes in usage occur.

**LSN DR B-2** (formerly LSN 1.02) - LSN components shall be integrated using modular design techniques and well-documented interfaces which allow individual components of the system to be replaced without significantly impacting other components.

**LSN DR B-3** - The system shall be configured with software, licensed at sufficient levels, to store and serve all documentary and associated materials (e.g., networking-capable operating system,

web server software, HTML authoring and site maintenance software, database server, etc.) at anticipated usage levels.

**LSN DR B-4** - The system shall be designed to maintain the security of the collection and the system itself including the ability to deny unauthorized access or update privileges, detect and defeat compromise attempts, and defend against denial of service attempts.

**LSN DR B-5** - The system shall be designed to maintain the integrity of the collection and provide for timely recovery in the event of a hardware or software failure with complete restoration of the central LSN site within three working days, or earlier if so specified within the parameters of the NRC's disaster recovery plan.

**LSN DR B-6** (formerly LSN 1.03) - The LSN shall adhere to established Federal Government, international, and/or industry hardware and software standards appropriate to meet the intent of the LSN Rule.

**LSN DR B-6.1** (formerly LSN 2.03.01) - The standard for network access shall be HTTP/1.1 [<http://www.faqs.org/rfcs/rfc2068.html>] over TCP (Transmission Control Protocol, [<http://www.faqs.org/rfcs/rfc793.html>]) over IP (Internet Protocol, [<http://www.faqs.org/rfcs/rfc791.html>]).

**LSN DR B-6.2** (formerly LSN 2.03.02) - The standard for associating server names with IP addresses shall be the DNS (Domain Name System), [<http://www.faqs.org/rfcs/rfc1034.html>] and [<http://www.faqs.org/rfcs/rfc1035.html>].

**LSN DR B-6.3** (formerly LSN 2.03.03) - The standard for web page construction shall be HTML version 4.01 [<http://www.w3.org/TR/REC-html40/>].

**LSN DR B-6.4** (formerly LSN 2.03.04) - The standard for electronic mail (e-mail) exchange between e-mail servers shall be SMTP (Simple Mail Transport Protocol, [<http://www.faqs.org/rfcs/rfc821.html>])).

**LSN DR B-6.5** (formerly LSN 2.03.05) - The standard for the format of an electronic mail message shall be per [<http://www.faqs.org/rfcs/rfc822.html>] optionally extended by MIME (Multipurpose Internet Mail Extensions) per [<http://www.faqs.org/rfcs/rfc2045.html>] to accommodate multimedia e-mail.

**LSN DR B-7** (formerly LSN 1.04) - The LSN shall provide an interface to the NRC electronic information exchange capability. This function shall allow users to identify and receive electronic documents (e.g., motions, filings, orders, decisions, etc.).

**LSN DR B-7.1** (formerly LSN 1.05) - The NRC shall provide an electronic information exchange function that provides for an electronic acknowledgment that a motions practice document has been transmitted to a requester. The acknowledgment shall include, as a

minimum, the name and electronic address of the recipient and the date the document was delivered.

**LSN DR B-8** (formerly LSN 1.06) - The LSN shall be capable of electronically storing and retrieving bibliographic headers in the system.

**LSN DR B-8.1** (formerly LSN 2.06.01) - Bibliographic headers will contain all fields as described in Table A.

**LSN DR B-8.2** (formerly LSN 2.06.02) - Bibliographic headers will be stored in a manner that they can be retrieved through reference to any field as designated in Table A.

**LSN DR B-8.3** (formerly LSN 2.06.03) - Bibliographic headers will be stored in a manner that the contents of their fields can be searched for specific data.

**LSN DR B-9** (formerly LSN 1.07) - The LSN shall be capable of storing electronic indexes for use in searching and retrieving document texts made available by the participants.

**LSN DR B-10** (formerly LSN 1.08) - The LSN shall allow identification of text through queries of the occurrence of text content through all document texts. Specific query options include the ability to search for the occurrence of a phrase in the full text of documents, perform proximity searching (i.e., search for phrases near each other or near the beginning or end of the document), perform wild card searching, perform root searching, perform frequency searching, and to arbitrarily combine any search strategy through the use of Boolean operators.

**LSN DR B-11** (formerly LSN 1.09) - The LSN shall be capable of storing electronic indexes for use in searching and retrieving digital images of each page of graphic-oriented documentary material made available by the participants.

**LSN DR B-12** (formerly LSN 1.10) - The system shall allow users to easily view (by clicking) and print (by selecting "file/print" from the menu) documents of the following acceptable formats: ASCII, native word processing (Word and WordPerfect versions as requested by participants), PDF Normal, and HTML.

**LSN DR B-13** (formerly LSN 1.11) - The LSN shall provide tools to assist users in identifying documentary material consistent with the technology.

**LSN DR B-13.1** - Documentation shall be prepared and published on the central LSN site describing how to use the features of the website, specifically the search and retrieval functions.

**LSN DR B-13.2** - The system must provide finding aids to users to include online help on use of the site, usage guidelines, and contact information for further assistance.

**LSN DR B-13.3** - The LSN shall be capable of displaying bibliographic header information from the hit list resulting from a search.

**LSN DR B-13.4** - The system shall default searches based on relevancy ranking. The system shall state that relevancy ranking is machine-generated.

**LSN DR B-14** (formerly LSN 1.12) - The LSN shall provide a user interface compatible with current browser technologies including access using both graphical and text-only browsers to documentary collections.

**LSN DR B-14.1** (formerly LSN 2.13.02) - The system must be designed to be accessible to Internet users with web browsers currently supporting HTML version 4.0 or higher (i.e., not just Netscape or Internet Explorer). The system shall deliver a consistent organization and style (including but not limited to colors, fonts, spacing) throughout the central LSN site independent of the browser used to access the LSN.

**LSN DR B-15** (formerly LSN 1.13) - The LSN shall support non-interactive access to the central LSN site by web "crawlers."

**LSN DR B-15.1** (formerly LSN 2.13.01) - Web pages must be authored in compliance with the Web Content Accessibility Guidelines for access by individuals with disabilities [<http://www.w3.org/TR/WAI-WEBCONTENT/>].

**LSN DR B-16** (formerly LSN 1.14) - The LSN shall be designed to allow the LSN Administrator to coordinate the availability and the integrity of the information available via the LSN.

**LSN DR B-16.1** (formerly LSN 1.15) - The system shall provide the LSN Administrator with access to participant collections necessary and sufficient to allow the LSN Administrator to independently verify the integrity of data available via the LSN.

**LSN DR B-16.2** (formerly LSN 2.15.01) - The system shall have the capability of non-interactively "crawling" participant LSN websites, and fetching a subset or the entire website for analysis.

**LSN DR B-16.3** - The system shall be able to access an electronic log of all retrievals of documentary material from each participant's LSN website. This log will contain the IP address or DNS host name of the recipient's computer and the date and time of delivery. The log shall be in either the web standard "Common Log Format" or "Combined Log Format."

**LSN DR B-16.4** (formerly LSN 2.14.01) - A monitoring/audit station shall be established to allow the LSNA to obtain, store, and report information on the availability and integrity of LSN information.

**LSN DR B-16.5** (formerly LSN 2.14.04) - The monitoring/audit station shall have the capability of tracking changes on participant LSN websites, monitoring participant LSN website responsiveness and other performance characteristics, and reporting this information to the LSNA.

**LSN DR B-16.6** - The LSN shall provide a means for the LSNA to post announcements and notices on the central LSN site.

**LSN DR B-17** - The LSN shall not use “persistent cookies” (i.e., ongoing capture of data that tracks a user’s pattern of use and preferences) without the approval of the Chairman of the NRC.

### **C. LSN ADMINISTRATOR (LSNA)-RELATED REQUIREMENTS**

**LSN DR C-1** (formerly LSN 2.14.01) - The LSNA shall obtain, store, and report information on the availability and integrity of LSN information.

**LSN DR C-1.1** - The LSNA shall identify any problems experienced by participants regarding LSN availability, including the availability of individual participant’s data, and provide a recommendation to resolve any such problems to the participant(s) and the Pre-License Application Presiding Officer relative to the resolution of any disputes regarding LSN availability, including disputes on the availability of an individual participant’s data.

**LSN DR C-1.2** - The LSNA shall post announcements on the central LSN site about the overall LSN program, items of interest (hours of availability, scheduled outages, etc.), and procedures for a user to acquire authenticated image copies from a participant.

**LSN DR C-1.3** - The LSNA shall identify any problems regarding the integrity of documentary material certified in accordance with the LSN Rule by the participants to be in the LSN, and provide a recommendation to resolve any such problems to the participant(s) and the Pre-License Application Presiding Officer relative to the resolution of any disputes regarding the integrity of documentary material.

**LSN DR C-1.4** - The LSNA shall post notices that contain listings of changes, if any, to each participant’s collection, identified by LSN accession number, with a description of what the change was and why it was necessary.

**LSN DR C-2** - The LSNA shall review all participant LSN website designs to ensure that they meet the design standards.

**LSN DR C-2.1** - The LSNA shall have the authority to allow variances from the design standards to accommodate changes in technology or problems identified during initial operability testing of the individual participant LSN websites or the central LSN site.

**LSN DR C-2.2** - The LSNA may develop and issue guidance for LSN participants on how best to incorporate the LSN standards in their system.

**D. GENERAL CAPABILITIES OF PARTICIPANT LSN SITE SYSTEMS**

**LSN DR D-1** (formerly LSN 1.20) - Each LSN participant must obtain the computer system necessary to comply with the requirements for electronic document production and service.

**LSN DR D-1.1** (formerly LSN 2.20.01) - The participant's system must provide the function of HTTP service. HTTP service may be provided by a dedicated computer, a virtual server (dedicated computer hosting multiple websites), or be provided by a commercial web hosting service (that can comply with requirements).

**LSN DR D-1.2** (formerly LSN 2.20.02) - The participant's system must be configured with hardware sufficient to store and serve all documentary and associated materials (e.g., sufficient disk storage, RAM (Random Access Memory), processing power, network interface, etc.) at estimated usage levels and to be easily upgradable should estimates fail to adequately characterize usage.

**LSN DR D-1.3** (formerly LSN 2.20.03) - The participant's system must be configured with software, licensed at sufficient levels, to store and serve all documentary and associated materials (e.g., networking-capable operating system, web server software, HTML authoring and site maintenance software, database server, etc.) at anticipated usage levels.

**LSN DR D-1.4** (formerly LSN 2.20.04) - The participant's system must be designed to maintain the integrity of the participant's discovery collection documentary material and provide for timely recovery in the event of hardware or software failure with complete restoration of the participant LSN website within three working days, or earlier if so specified within the parameters of the participant's disaster recovery plan.

**LSN DR D-1.5** (formerly LSN 2.14.02) - The participant's system shall allow monitoring of various parameters by a monitoring station established by the LSNA to track changes on the participant LSN website, website responsiveness, and other performance characteristics. Specific access shall include SNMP monitoring of network utilization and ICMP access for determination of certain performance characteristics as well as access to the normal web distribution facility.

**LSN DR D-1.6** (formerly LSN 2.14.03) - The participant's system shall allow access to their logs of electronic transactions in raw and summary formats to enable tracking of site usage by the LSNA.

**LSN DR D-1.7** (formerly LSN 2.20.05) - The participant's system must be designed to maintain the security of the participant's discovery collection documentary material and the system itself including the ability to deny unauthorized access or update privileges, detect and defeat compromise attempts, and defend against denial of service attempts.

**LSN DR D-1.8** (formerly LSN 2.20.06) - The participant's system must be connected to the Internet with the capability of being accessed by any Internet user. The participant's system will allow Internet users the ability to retrieve documentary material from the participant's LSN website without utilizing a proxy from the LSN server. This connection shall be sufficient to provide reasonable responsiveness during periods of normal usage.

**LSN DR D-1.9** (formerly LSN 2.20.07) - Participants shall make textual (or, where non-text, image) versions of their discovery collection documents available on an Internet-accessible server which is able to be canvassed by web indexing software (i.e., a "robot," "spider," "crawler") and the participant's system must make both data files and log files accessible to this software.

**LSN DR D-1.10** (formerly LSN 2.20.08) - Non-LSN-related information may be maintained on the same participant website as LSN-related material, but must be kept logically separate. All LSN materials on a participant's site must be maintained together within a single hypertext sub-tree. The entire LSN-related sub-tree must be able to be navigated under a single URL (Uniform Resource Locator) reference. If a participant LSN website contains site navigation links on its LSN-related pages (e.g., a "home" button, or the result of a search), these links must point exclusively within the LSN-related sub-tree and not to another part of the website or off-site.

**LSN DR D-2** (formerly LSN 1.29) - Each LSN participant must design and implement their web facility to ensure acceptable access and responsiveness consistent with performance specifications.

**LSN DR D-2.1** (formerly LSN 22) - Sites must be provisioned to be able to satisfy not less than 500 web page requests per minute.

**LSN DR D-2.2** (formerly LSN 2.29.02) - Sites must be provisioned to be able to deliver a web page or image page on average in not more than five seconds to a web browser located on the same LAN segment.

**LSN DR D-2.3** (formerly LSN 2.29.03) - Communications between the server and the Internet must be provisioned to be able to deliver interactive response.

**LSN DR D-3** - To facilitate data exchange, the participant's system shall adhere to established hardware and software standards appropriate to meet the intent of the LSN Rule.

**LSN DR D-3.1** - The standard for network access shall be HTTP/1.1 [<http://www.faqs.org/rfcs/rfc2068.html>] over TCP (Transmission Control Protocol, [<http://www.faqs.org/rfcs/rfc793.html>]) over IP (Internet Protocol, [<http://www.faqs.org/rfcs/rfc791.html>]).

**LSN DR D-3.2** - The standard for associating server names with IP addresses shall be the DNS (Domain Name System), [<http://www.faqs.org/rfcs/rfc1034.html>] and [<http://www.faqs.org/rfcs/rfc1035.html>].

**LSN DR D-3.3** - The standard for web page construction shall be HTML version 4.01 [<http://www.w3.org/TR/REC-html40/>].

**LSN DR D-3.4** - The standard for electronic mail (e-mail) exchange between e-mail servers shall be SMTP (Simple Mail Transport Protocol, [<http://www.faqs.org/rfcs/rfc821.html>]).

**LSN DR D-3.5** - The standard for the format of an electronic mail message shall be per [<http://www.faqs.org/rfcs/rfc822.html>] optionally extended by MIME (Multipurpose Internet Mail Extensions) per [<http://www.faqs.org/rfcs/rfc2045.html>] to accommodate multimedia e-mail.

**LSN DR D-4** (formerly LSN 1.17) - Each LSN participant must establish its own procedures to make its own documentary material available.

**LSN DR D-4.1** (formerly LSN 2.17.01) - Procedures shall cover all aspects of the production and web publication process including (as applicable on a per-document basis) authorship, content guidelines, stylistic guidelines, distribution guidelines, maintenance and revision guidelines, format conversion, quality assurance, uploading to the web server, accessing documentary material, and removal from the web server.

**LSN DR D-5** (formerly LSN 1.18) - Each LSN participant must train its own staff on how to make its documentary material available.

**LSN DR D-5.1** (formerly LSN 2.18.01) - Staff shall be trained in document production, conversion, and web publication in compliance with acceptable procedures.

**LSN DR D-5.2** (formerly LSN 2.18.02) - Staff shall be trained in operation and maintenance of the web server system.

**LSN DR D-5.3** (formerly LSN 2.18.03) - Staff shall be trained in operation and maintenance of the participant LSN website.

**LSN DR D-5.4** (formerly LSN 2.18.04) - Staff shall be trained in performing the user assistance or help desk function, if applicable.

**LSN DR D-6** (formerly LSN 1.22) - DOE must provide electronic access to the central LSN site at DOE Headquarters and at all DOE Local Public Document Rooms (LPDRs) in the vicinity of the proposed site for a geologic repository, including Las Vegas, Reno, Carson City, Nye County, and Lincoln County.



**LSN DR D-6.1** - Access must be provided no later than six months in advance of submitting its license application to receive and possess high-level radioactive waste at a geologic repository operations area.

**LSN DR D-6.2** (formerly LSN 2.22.01) - Access to the central LSN site is to be provided to the public on computers equipped with a web browser.

**LSN DR D-6.3** (formerly LSN 2.22.02) - Access to the central LSN site is to be provided to visually impaired and otherwise disabled individuals as needed through appropriate hardware and software or by provision of user assistance.

**LSN DR D-7** - The NRC must provide electronic access to the central LSN site at the NRC Public Document Room no later than six months in advance of DOE's submitting its license application to receive and possess high-level radioactive waste at a geologic repository operations area.

**LSN DR D-7.1** - Access to the central LSN site is to be provided to the public on computers equipped with a web browser.

**LSN DR D-7.2** - Access to the central LSN site is to be provided to visually impaired and otherwise disabled individuals as needed through appropriate hardware and software or by provision of user assistance.

**LSN DR D-8** - Participants should provide items of interest about their LSN website (hours of availability, scheduled outages, etc.) to the LSNA to post on the central LSN site. These items may also be posted on the participant's LSN website.

## **E. DOCUMENT PRODUCTION AND SERVICE**

**LSN DR E-1** (formerly LSN 1.16) - Each LSN participant must designate an official who is responsible for the administration of making its documentary material available.

**LSN DR E-1.1** (formerly LSN 2.16.01) - Each designated official must provide contact information to the LSNA including a telephone number, e-mail address, and postal address.

**LSN DR E-1.2** (formerly LSN 1.19) - Each LSN participant must have the designated official certify to the Pre-License Application Presiding Officer, in accordance with §2.1009, that procedures have been implemented and that documentary material has been made electronically available, or as otherwise indicated in the LSN Rule.

**LSN DR E-2** (formerly LSN 1.23) - Each LSN participant must prepare and publish its documentary collections in a manner that allows access by Internet users who have access to the LSN search and retrieval capabilities.

**LSN DR E-2.1** (formerly LSN 2.23.01) - All participating entities must provision their web server with enough storage to accommodate all headers plus text and/or images of their entire collection of relevant documents as specified in the LSN Rule.

**LSN DR E-2.2** (formerly LSN 2.23.02) - All participating entities shall ensure access to their documentary collection through electronic means. Participant capabilities should be such that any Internet user using a web browser and the LSN search and retrieval capabilities, will be able to locate, identify, and retrieve documents of interest in relevant formats (header, text, and/or image).

**LSN DR E-2.3** (formerly LSN 2.23.03) - Each participant must provide documents in a format that allows their presentation through a web server, including a header plus text and/or image portion.

**LSN DR E-2.4** (formerly LSN 2.23.04) - All participating entities must provide the LSN with access to its full text or image files as required by the LSN Rule.

**LSN DR E-2.5** (formerly LSN 2.23.05) - Documents presented on a participant web server must be an accurate representation of the source document.

**LSN DR E-2.6** (formerly LSN 2.23.07) - All participating entities must provide the capability to retrieve and deliver documents identified through searching or browsing performed at the LSN portal site.

**LSN DR E-3** (formerly LSN 1.24) - Each LSN participant must ensure that each document on their system has a unique ID (Participant Accession Number).

**LSN DR E-3.1** (formerly LSN 2.24.01) - Each representation of a document (text and/or image) must be index-accessible through its Participant Accession Number. Participants shall programmatically link the bibliographic header with the text and/or image file it represents to provide for file delivery and display from participant machines using the central LSN site. The bibliographic header must contain fielded data identifying its associated object (text and/or image).

**LSN DR E-3.2** (formerly LSN 2.24.02) - It must be possible to retrieve a document by providing its Participant Accession Number.

**LSN DR E-3.3** (formerly LSN 2.24.03) - It must be possible to retrieve each individual document which is part of a compound document (package) by providing each individual Participant Accession Number.

**LSN DR E-4** (formerly LSN 1.25) - Each LSN participant must follow data format standards to facilitate electronic exchange and transfer.

**LSN DR E-4.1** (formerly LSN 2.25.02) - Textual material shall be formatted to comply with the ISO/IEC 8859-1 character set and be in one of the following acceptable formats: ASCII, native word processing (Word and WordPerfect versions as requested by participants), PDF Normal, or HTML. As a goal, textual documents should be accurately represented with an overall error rate of no more than 0.5% based on character accuracy and a per page error rate of no more than 1.5%. Documents converted through means other than OCR should have an error rate of less than 0.05%.

**LSN DR E-4.2** (formerly LSN 2) - Image file format shall be TIFF CCITT G4 for bi-tonal images or PNG (Portable Network Graphics) per [<http://www.w3.org/TR/REC-png-multi.html>] format for grey-scale or color images, or PDF (Portable Document Format). TIFF, PDF, or PNG images will be stored at 300 dpi (dots per inch) or greater, grey scale images at 150 dpi or greater with eight bits of tonal depth, and color images at 150 dpi or greater with 24 bits of color depth. Images shall be stored as single image-per-page to facilitate retrieval of no more than a single page. Alternatively, images may be stored in a page-per-document format if software is incorporated in the web server that allows single-page representation and delivery.

**LSN DR E-5** (formerly LSN 1.26) - Each LSN participant must provide a bibliographic header with each document and with other material submitted (e.g., videotape or photograph). This includes submissions for which no text or image is available (e.g., rock sample) and for privileged, confidential, safeguards, and other types of limited access documentary material as specifically identified.

**LSN DR E-5.1** (formerly LSN 2.25.01) - Bibliographic header data shall be available in an HTTP accessible, ODBC (Open Database Connectivity) and SQL (Structured Query Language)-compliant (ANSI IX3.135-1992/ISO 9075-1992) database management system (DBMS). Alternatively, the structured data containing the bibliographic header may be made available in a standard database readable (e.g., XML (Extensible Markup Language <http://www.w3.org/xml/>), comma delimited, or comma separated value (.csv)) file.

**LSN DR E-5.2** - Bibliographic headers shall contain all fields as described in Table A, as applicable to participants (i.e., all fields except the LSN Accession Number which is generated by the LSN).

**LSN DR E-5.3** (formerly LSN 2.26.01) - Headers for limited access documentary material will be as those for full access documentary material.

**LSN DR E-5.4** (formerly LSN 2.26.02) - Headers for limited access documentary material shall be logically organized on the participant LSN website in a list, index, or table of contents separate from documentary material that is publically accessible, with user instructions for reviewing the limited access material.

**LSN DR E-6** - Participants may correct or revise documentary already made available on their LSN websites.

**LSN DR E-6.1** - Changes to documentary material previously provided are permitted if (1) a corrected or updated version is noted as superseding a previously provided version; and (2) the previous version is not removed.

**LSN DR E-6.2** - The participant must notify the LSNA of the change, identified by LSN Accession Number, with a description of what the change was and why it was necessary, so it can be posted on the central LSN site. Notification may also be posted on the participant's LSN website.

**LSN DR E-7** (formerly LSN 1.27) - NRC, DOE, and each other potential party, interested governmental participant or party shall provide a statement that indicates where an authenticated image copy of the document can be obtained for those where an image is not required to be made available online.

**LSN DR E-7.1** (formerly LSN 2.27.01) - Documents for which the electronic image is not available on the participant LSN website may be made available by means of authenticated image copy distribution. The website shall contain the document's header record and its text representation.

**LSN DR E-7.2** (formerly LSN 2.27.03 and LSN 2.27.04) - Requests and delivery for an authenticated image copy will be via procedures and processes established and operated by the participants.

**LSN DR E-7.3** (formerly LSN 2.27.02) - Each participant's procedures and processes for a user to acquire images shall be submitted to the LSNA for posting on the LSN home page.

**LSN DR E-8** (formerly LSN 1.21) - All documentary material not provided to other participants in electronic form (i.e., not included in the LSN) must be identified in an electronic notice. Any item requested from that list must be provided to the requestor within five business days.

**LSN DR E-8.1** (formerly LSN 2.21.01) - Notice of availability may be achieved by publication on the relevant participant LSN website.

## **F. TIMELINESS**

**LSN DR F-1** (formerly LSN 1.28) - DOE must make its documentary material available no later than six months before submitting its license application. The NRC must make their documentary material available 30 days after the DOE initial certification of compliance in accordance with §2.1009. All other participants must make their documentary material available 90 days after the DOE initial certification of compliance.

**LSN DR F-1.1** (formerly LSN 2.28.01) - The computer system providing document production and service must be designed, specified, acquired, integrated and installed sufficiently in advance of the specified date to meet the availability criteria. Customary funding and procurement lead times must be considered when scheduling these actions.

**LSN DR F-1.2** (formerly LSN 2.28.02) - Document conversion and participant LSN website page authoring and document collection population must be begun sufficiently in advance of the specified date to meet the availability criteria. Collection size and resource availability must be considered when scheduling these actions.

**LSN DR F-1.3** (formerly LSN 2.28.03) - Each participating entity must ensure their site availability and integrate it into the overall LSN sufficiently in advance of the specified date to meet the availability criteria. The availability of other participant staff must be considered when scheduling these actions.

**LSN DR F-1.4** (formerly LSN 2.28.04) - Each participating entity must complete site and LSN integration testing acceptable to the LSNA sufficiently in advance of the specified date to meet the availability criteria.

**LSN DR F-1.5** (formerly LSN 1.19) - The responsible official shall make the initial certification to the Pre-License Application Presiding Officer in accordance with §2.1009.

**LSN DR F-1.6** (formerly LSN 1.19) - The responsible official for the DOE shall also update this certification at the time of submission of the license application.

**LSN DR F-1.7** - Documentary material created after the initial certification of compliance must be made available reasonably contemporaneous with its creation, so participants may have timely access to this material in order to prepare for the licensing proceedings.

## **G. DOCKET-RELATED REQUIREMENTS**

**LSN DR G-1** (formerly LSN 1.30) - The NRC must provide an electronic docket that receives, stores, distributes, and maintains docket material no later than at the time of the docketing of the DOE license application to receive and possess high-level radioactive waste at a geologic repository operations area pursuant to 10 C.F.R. Part 60.

**LSN DR G-1.1** (formerly LSN 1.33) - The NRC, in its management of the electronic docket, must provide the computer system necessary to comply with service requirements.

**LSN DR G-1.2** (formerly LSN 1.35) - The NRC must provide an electronic docket that contains a list of all exhibits, showing where in the transcript each was marked for identification and where it was received into evidence or rejected.

**LSN DR G-1.3** (formerly LSN 1.40) - The NRC must identify a means by which the unavailability of the electronic docket for more than four hours in any day is communicated to the Presiding Officer so that the day is not counted in the computation of time.

**LSN DR G-2** (formerly LSN 1.49) - DOE must submit the license application to the docket in electronic form using the same header, text, and image standards and formats as for evidentiary collection materials.

**LSN DR G-3** (formerly LSN 1.31) - The NRC must provide a Protective Order File.

**LSN DR G-4** (formerly LSN 1.32) - The NRC must deliver all pleadings, orders, and decisions per §2.1013(c) (e.g., electronically, using secured process).

**LSN DR G-5** (formerly LSN 1.34) - The NRC must maintain the docket.

**LSN DR G-5.1** (formerly LSN 1.36) - The NRC must enter hearing transcripts into the docket on a daily basis in order to provide next-day availability at the hearing.

**LSN DR G-6** (formerly LSN 1.37) - The NRC must establish a mechanism whereby all filings are able to be submitted/received electronically and to require a password security code for transmission of these documents.

**LSN DR G-7** (formerly LSN 1.38) - The NRC, in its management of the electronic docket, must provide a mechanism by which all Presiding Officer and Commission issuances and orders are transmitted electronically.

**LSN DR G-8** (formerly LSN 1.39) - The NRC must provide a mechanism by which the Presiding Officer and all counsel of all parties have access to the electronic docket (including Protective Order File) during the hearing.

**LSN DR G-9** (formerly LSN 1.41) - The NRC must provide a mechanism to receive electronically transmitted depositions (including questions, cross-questions, and answers) and enter them into the docket file.

**LSN DR G-10** (formerly LSN 1.42) - The NRC, in its management of the electronic docket, must identify a means by which only a part or parts of a deposition may be offered into evidence.

**LSN DR G-10.1** - The NRC must be able to deliver from the docket a single image from a multi-page document.

**LSN DR G-11** (formerly LSN 1.43) - Each LSN participant must demonstrate substantial and timely compliance with §2.1003 in order to be granted party status.

**LSN DR G-12** (formerly LSN 1.44) - Absent good cause, each LSN participant must ensure that any exhibit is available before the commencement of that portion of the hearing where it will be offered.

**LSN DR G-13** (formerly LSN 1.45) - For parties and interested governmental participants, service is completed when the sender receives electronic acknowledgment ("delivery receipt") that the electronic submission has been placed in the recipient's electronic mailbox.

**LSN DR G-13.1** (formerly LSN 2.45.01) - All participating entities shall ensure that they can receive and reply to Internet-standard electronic mail by arbitrary Internet users using Internet standard e-mail MUAs (Mail User Agents) and MTAs (Mail Transfer Agents).

**LSN DR G-13.2** (formerly LSN 2.45.02) - All participating entities shall maintain an electronic log of all deliveries of LSN documents to their EIE or Internet mail server. This log will contain the IP address or DNS host name of the recipient's computer and the date and time of delivery. The log shall be in either the web standard "Common Log Format" or "Combined Log Format."

**LSN DR G-13.3** (formerly LSN 2.45.03) - All participating entities shall maintain an electronic log of all motions practice-related electronic mail transactions. This log will contain the IP address or DNS host name of the recipient's computer, the sender and recipient's user names, and the date and time of exchange.

**LSN DR G-13.4** (formerly LSN 2.45.04) - All participating entities shall maintain a log of all non-electronic LSN-related deliveries. This log will contain recipient identification, date of delivery, and method of delivery.

**LSN DR G-13.5** (formerly LSN 1.46) - Each LSN participant may utilize an electronic acknowledgment ("delivery receipt") as proof of service.

**LSN DR G-14** (formerly LSN 1.47) - Deponents must submit an electronic index of all documentary material in his/her possession relevant to the subject matter of the deposition to all parties and interested government participants, identifying which were already made available electronically, ten days before the scheduled date of the deposition.

**LSN DR G-14.1** (formerly LSN 1.48) - Deponents must bring to the deposition a paper copy of all documents that are included in the electronic index that the deposing party or interested governmental participant requests that have not already been provided electronically.

**LSN DR G-14.2** - Parties may request that any or all documents on the index that have not already been provided electronically be made electronically available by the deponent.

**H. ELECTRONIC INFORMATION EXCHANGE (EIE)-RELATED REQUIREMENTS**

**LSN DR H-1** (formerly LSN 1.50) - During the pre-license application phase, each LSN participant must use the procedures specified in §2.1013(c) for service of all pleadings, orders, and decisions.

**LSN DR H-2** (formerly LSN 1.51) - During the licensing proceeding, each LSN participant must use the procedures specified in §2.1013(c) for service of all pleadings, orders, and decisions.

**LSN DR H-3** (formerly LSN 1.52) - Absent good cause, parties and interested government participants must submit all filings electronically using a secure transaction process for transmission of documents to the electronic docket.

**LSN DR H-4** (formerly LSN 1.53) - Parties and interested government participants must transmit depositions to NRC's Secretary (SECY) in electronic form for entry into the docket.



**TABLE A: RECOMMENDED PARTICIPANT BIBLIOGRAPHIC HEADER FIELD STRUCTURE**

- The following table contains a model bibliographic data field set as would be implemented in a classic Relational Database Management (RDBMS) system implementation. This is a shortened version of the original LSS bibliographic header structure as recommended in 1994.
- Participants who have unusual ways of treating data (such as putting multiple document or publication identification numbers into a single text field) should coordinate those approaches with the LSN Administrator.
- Some fields, such as “QA Record” and “Traceability Code and Number” are unique to DOE.

	Field Name	M = Mandatory R = Reqd if Avail. O = Optional	S = Single Value M = Multi-Valued	Field Length (Characters)	Comments
1	Access Control Information	R	M	65	<ul style="list-style-type: none"> <li>• Alphabetic</li> <li>• Max.# of entries is 10</li> <li>• Examples: Attorney Work Product, Attorney/Client, Business Proprietary, Copyright, Public</li> <li>• Because a document can be both Attorney Work Product and Attorney/Client, cannot restrict to single-value.</li> </ul>
2	Addressee Name	R	M	56	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 500</li> <li>• Standard format is: LAST NAME [space] FIRST INITIAL MIDDLE INITIAL (ex: GRASER DJ)</li> </ul>
3	Addressee Organization	R	M	90	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 500</li> </ul>

	Field Name	M = Mandatory R = Reqd if Avail. O = Optional	S = Single Value M = Multi-Valued	Field Length (Characters)	Comments
4	Author Name	R	M	56	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 200</li> <li>• Standard format is: LAST NAME [space] FIRST INITIAL MIDDLE INITIAL (ex: GRASER DJ)</li> <li>• Must have entry for Author Name or Author Organization or both</li> </ul>
5	Author Organization	R	M	90	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 200</li> <li>• Must have entry for Author Name or Author Organization or both</li> </ul>
6	Comments	O	S	1000	<ul style="list-style-type: none"> <li>• Alphanumeric</li> </ul>
7	Descriptors	O	S	5000	<ul style="list-style-type: none"> <li>• Alphanumeric</li> </ul>
8	Document Date	M	S	8	<ul style="list-style-type: none"> <li>• Numeric</li> <li>• Format is YYYYMMDD</li> </ul>
9	Document Number(s)	R	M	64	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 5</li> </ul>
10	Document Type	M	M	90	<ul style="list-style-type: none"> <li>• Alphabetic</li> <li>• Max. # of entries is 10</li> </ul>
11	Image URL	R	M	255	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• May be blank (no image is available)</li> <li>• No max. # of entries</li> </ul>
12	LSN Accession Number	M	S	10	<ul style="list-style-type: none"> <li>• Generated by the LSN</li> </ul>

	Field Name	M = Mandatory R = Reqd if Avail. O = Optional	S = Single Value M = Multi-Valued	Field Length (Characters)	Comments
13	Non-Digital Media Indicator	R	S	20	<ul style="list-style-type: none"> <li>• Alphabetic</li> <li>• Examples: Microfilm, Photograph, Radiograph, Videotape</li> </ul>
14	Number of Images	O	S	11	<ul style="list-style-type: none"> <li>• Numeric</li> </ul>
15	Package Identifier	R	M	50	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 500</li> </ul>
16	Participant Accession Number	M	S	25	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• No required format</li> </ul>
17	QA Record Indicator	R **	S	1	<ul style="list-style-type: none"> <li>• Default value is the DOE-assigned code value</li> </ul>
18	Related Record Code	R	M	7	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 500</li> </ul>
19	Related Record Number	R	M	25	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 500</li> </ul>
20	Text URL	R	S	255	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• May be blank (non-textual material)</li> </ul>
21	Title [Created Title]	M	S	1000	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• No required format</li> </ul>
22	Traceability Code and Number	R **	M	50	<ul style="list-style-type: none"> <li>• Default value is DOE assigned code value</li> <li>• Max. # of entries is 200</li> </ul>

	Field Name	M = Mandatory R = Reqd if Avail. O = Optional	S = Single Value M = Multi-Valued	Field Length (Characters)	Comments
23	Version	R	M	50	<ul style="list-style-type: none"> <li>• Alphanumeric</li> <li>• Max. # of entries is 5</li> <li>• Example: Draft Release 3.2</li> <li>• Suggested Values: Preliminary Draft Final Draft Concurrence Draft Ver. 1.3 Rel. 1.0 [software]</li> </ul>

\*\* Indicates required of DOE if applicable to document

Deleted from list by this iteration as a result of January discussions with participants : Physical Location Reference Information field

## HEADER FIELD DESCRIPTIONS

### **Access Control Information**

A code indicating that access to a document is restricted. Access is restricted if the document is privileged, proprietary, or copyrighted.

### **Addressee Name**

The names of all the persons to whom a document is addressed. Each entry in this field is linked to a corresponding entry in the Addressee Organization field.

### **Addressee Organization**

The affiliation of each receiver or the organization to whom the correspondence is addressed if there is no personal receiver. Each entry in this field is linked to a corresponding entry in the Addressee Name field.

### **Author Name**

The name of each person listed on the document as responsible for all or part of its creation. Only personal authors are entered in this field. Corporations as authors are captured in the Author Organization field. Each entry in this field is linked to a corresponding entry in the Author Organization field.

### **Author Organization**

The name of the organization (i.e., company, corporation or group) with which the author is affiliated at the time the document was created, or the name of the organization responsible for creating or originating the document when there is no personal author. If an author works for one organization and is representing another, both affiliations should be captured. Each entry in this field is linked to a corresponding entry in the Author Name field.

### **Comments**

Any information not covered in other fields which the submitter or indexer believes would be of help to identify or retrieve the document, or to further explain any field entry for the document. This field can be used for entries such as the language of the document (if it is not English) or the page numbers that are missing in an incomplete document. This field may contain information on where an image version of a document may be acquired. This field may contain a description of the contents of a document that cannot be imaged and converted to searchable text. This field may include summaries of documents that are privileged or physical "things" if that data is not elsewhere explicitly detailed in the textual document. Participants utilizing a special instruction sheet must make all these types of information accessible in a text version of the special instruction sheet, otherwise, such data is to be included in the Comments field, Physical Location Reference Information field, or comparable fielded data location.

### **Descriptors**

Words or phrases (identifiers, keywords) that the submitter provides with the document to represent the subject content of the document and to assist the user in retrieval. Keywords may be, but are not necessarily, contained in a controlled vocabulary.

**Document Date**

The date on which the document was completed, issued, effective or published. If the date is unknown, information in the document will be used to estimate a date.

**Document Number**

The identifying number(s) assigned to a document that distinguishes it from other documents (e.g., DOE Order No., Public Law number, report number). Document numbers appear (typed or handwritten) on the document itself and are considered to be control numbers. The Document Number is generally assigned by the issuing agency. Examples are report numbers or public law numbers such as SAND86-1023, PL95-16, or H101-364.

**Document Type**

The general format or physical presentation of the document. Examples include correspondence, report, or procedure.

**Image URL**

The Uniform Resource Locator reference to the image associated with the header.

**LSN Accession Number**

A unique identifier assigned to each document entering the system. The capture station at which the document enters the LSN is identified as part of this number.

**Non-Digital Media**

Flag indicator that documentary material is in non-digital form and neither text nor image are therefore available online.

**Number of Images**

The number of images of a document that was imaged from a hard-copy.

**Package Identifier**

An identifier assigned to all components of a group of documents submitted as a single entity. This field enables a package containing many documents which may or may not have relationships among them to be reassembled quickly and easily.

**Participant Accession Number**

A unique identification number assigned by the participant organization to each document submitted for entry into the LSN. This number assists the organization in locating documents it has submitted. This field should contain a specific alpha code identifying the participant organization (e.g., DOE, NRC, NEV) and any other alphanumeric scheme which the submitting organization might use in accessioning their own documents. The number used may be the accession number used in the submitting organization's records system.

**QA Record Indicator**

An indicator of whether the document is a quality assurance record. Quality assurance records are those whose contents have been determined to furnish evidence of the quality and completeness of data, items, and activities related to the safety of the repository program.

**Related Record Code**

The code that represents the type of relationship between the document being entered and a document to which it is related. Each code in the authority list will have a reciprocal code; for example, the reciprocal of a document (A) that is attached to another document (B) is document (B) has attachments (A). Examples of Related Record Codes include: REV (revises or is a later version of), COR (corrects) or SUPR (supersedes). Each entry in this field is linked to a corresponding entry in the Related Record Number field.

**Related Record Number**

This field contains the LSN Participant Accession Number(s) of a document that has a particular relationship to the document being entered. There are several types of relationships, such as: parent/child (a document and its attachments); original/subsequent (a document and a later version, comments, corrections, or errata); and whole/part (a book and its chapters, a journal and its articles); and an information package and the cataloging units it contains. The type of relationship is captured in the Related Record Code field. Each entry in this field will be linked to a corresponding entry in the Related Record Code field.

**Text URL**

The Uniform Resource Locator reference to the text associated with the header.

**Title**

An identifying sentence or phrase given to the document that appears on the document, i.e., the actual title. If the actual title is not present for a document, a title must be created.

**Traceability Code and Number**

An identifier that has been assigned to a document in order to link it to a specific activity. These identifiers will enable searchers to easily retrieve all documents associated with any given activity by providing a special linkage not available through other fields. Examples of traceability numbers include WBS numbers, Data Tracking Number, and configuration item identifiers. This number may include a code that indicates the type of traceability number. Examples of this code include: DTN (technical data link), DI (Document Identifier), and WBS (Work Breakdown Structure).

**Version**

The version, revision number, or status of a document that has or will have multiple iterations. It will correspond to information contained on the document (e.g., Revision 2, Version 1, Final, or Draft).