

Licensing Support Network Advisory Review Panel Meeting

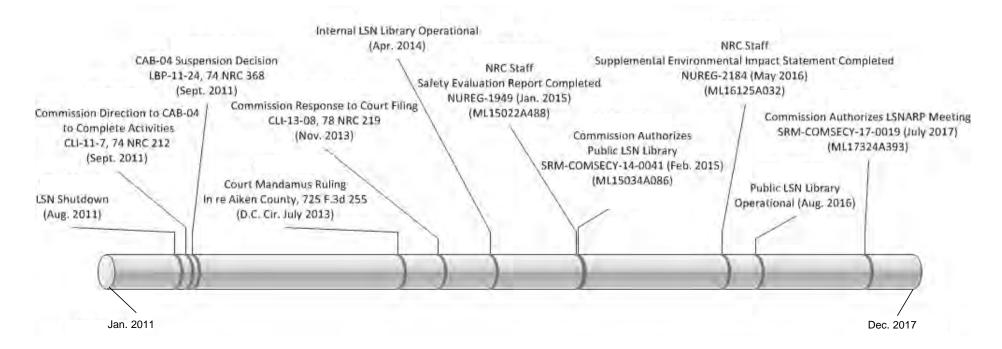
February 27 - 28, 2018



Status of Yucca Mountain Adjudicatory Process

Paul Bollwerk, Administrative Judge
Atomic Safety and Licensing Board Panel

Timeline





Questions?



History of the LSN and the ADAMS LSN Library

Margie Janney
Acting LSN Administrator

Purpose of the LSN

- NWPA requires NRC to evaluate DOE's application for a geologic repository
- NRC's licensing process
 - Technical review
 - Licensing adjudication
- LSN to make discovery material electronically available for initial construction authorization and "receive and possess" proceedings



LSN Development

- LSN Rule issued (1998)
- 10 C.F.R. Part 2, Subpart J provides specific rules governing a HLW discovery system
- LSNARP was created
- NRC submitted business case analysis (2000)
- LSN operational (2001-2011)



Functionality of Original LSN

- Requirements documented in Licensing Support Network Functional Requirements (ML003722859)
- LSN Guidelines (ML061380788)



LSN Comprised...

- 19 servers
- LAN environment
- Offsite data center
- www.lsnnet.gov
- Participant-operated web sites
 - Headers and documents
- LSN created index and pointed to the documents



Shutting Down the LSN

- HLW proceeding suspended Sept 2011
- CAB-04 issued April 2011 order
 - Participants to submit document collections to SECY
 - SECY to make documents publicly available in ADAMS
- NRC required to be compliant with NARA records requirements.



History of Public ADAMS LSN Library

- To help the NRC staff complete its HLW Safety Evaluation Report, the Commission directed entry of LSN documents into nonpublic ADAMS (11/2013, ML13322A744)
- Commission directed LSN document collections be made publicly available in ADAMS (01/2014. ML14024A429)
- Commission placed responsibility for LSN document activities with SECY and ASLBP (02/2015, ML15034A088)
- The project to make LSN document collections publicly available in ADAMS began in December 2015 (ML15335A395)
- In August 2016, the LSN Library became publicly available (ML16210A436)



Anomalies with ADAMS LSN Library

- LSN Library was verified using LSN Administrator's final list of LSN Accession Numbers and corresponding Participant Accession Numbers as provided to SECY (ML11209C291).
- Issues were found with 130 of the 3,692,306 LSN Library documents.
- Resolution of anomalies documented in the LSN Library Anomaly Resolution document (ML17087A500).



From LSN to LSN Library

- Since 2011, the NRC has acted to:
 - Preserve LSN documents from all parties.
 - Resolve anomalies in documents and indexes submitted by the parties.
 - Make LSN records available and searchable for the NRC staff and public in a new "LSN Library" database.





Questions?



Introduction of LSN Reconstitution/Replacement Options Paper

Margie Janney
Acting LSN Administrator

Underlying Assumptions

- Options will require modifications to or exemptions from parts of 10 C.F.R.
 Part 2, Subpart J
- ASLBP LSNA appointed to oversee design, implementation, and operation
- Hardware and software components that constituted the NRC portion of original LSN no longer available or supported
- Original LSN Guidelines to be updated by the LSNA, with the LSNARP, to provide technical guidance on the operation
- Reconstituted or replacement LSN needs to remain in operation through any judicial appellate proceedings following the receive and possess licensing proceeding
- Participant's 2011 bibliographic information still associated with each header and document
- Original LSN accession number can be used to find headers and documents in the public ADAMS LSN Library



Document Sizing Responses

- Inyo County = ~ 50 documents, no header only entries
- NEI = 100 to 500 documents, no header only entries
- State of Nevada = 1,000+ documents
- DOE = 1,000+ documents, 9% header only
 - Additional license application work and new contentions will influence the amount of new material
- NRC = 1,000 to 2,000 new documents, 1% header only
 - Significant uncertainties as to resumption of adjudication may impact estimate
- Nye County = 200 to 300 documents, 5% header only entries



General Objective of the Paper

- Outlines possible IT system options for the replacement of the original LSN
- Each option discussion includes
 - IT system implementation cost estimate
 - IT system implementation time estimate
 - IT system implementation risks and challenges
 - IT system implementation pros/cons
- Cost and time estimates were based on available information and intended to provide a comparison between options



High Level Overview

- Option 1 Traditional Discovery
 - Existing public ADAMS LSN library used to access previously submitted documentary material
 - New material exchanged amongst the parties
- Option 2 Use of Existing Public ADAMS LSN Library
 - Uses the already developed existing public ADAMS LSN library
 - Intake/modification processes would be developed using the EIE or a semi-automated process for new material
- Option 3 Move to the Cloud
 - Previously submitted material moved from the existing public ADAMS LSN library to a cloud-based system
 - Intake/modification process moved to a cloud-based system for new material
- Option 4 Rebuild the Original LSN



High Level Overview, cont'd.

- Appendix A provides a list of original LSN functional requirements that
 - Couldn't be met by one or more of the options
 - Would need to be modified
 - Appendix A does not include original LSN functional requirements that
 - Are not IT system related
 - Are currently provided by other systems
 - Have been overtaken by events
- Appendix B describes the risk factors that were considered for each option
- Appendix C lists proposed new functional requirements
- Appendix D is an options summary table





Questions?



E-Filing and the Electronic Hearing Docket

Assistant for Rulemakings and Adjudications
FACA Committee Management Officer
Office of the Secretary

Office of the Secretary (SECY)

- The Commission mandated electronic filing in 10 CFR 2.1013.
- 10 CFR 2.1013(a)(2) mandates that SECY manage the High Level Waste (HLW) docket.
- To facilitate electronic filing of HLW documents, the Electronic Information Exchange (EIE) and Electronic Hearing Docket (EHD) systems were developed and implemented.
- These systems are currently used for submission of adjudicatory documents.



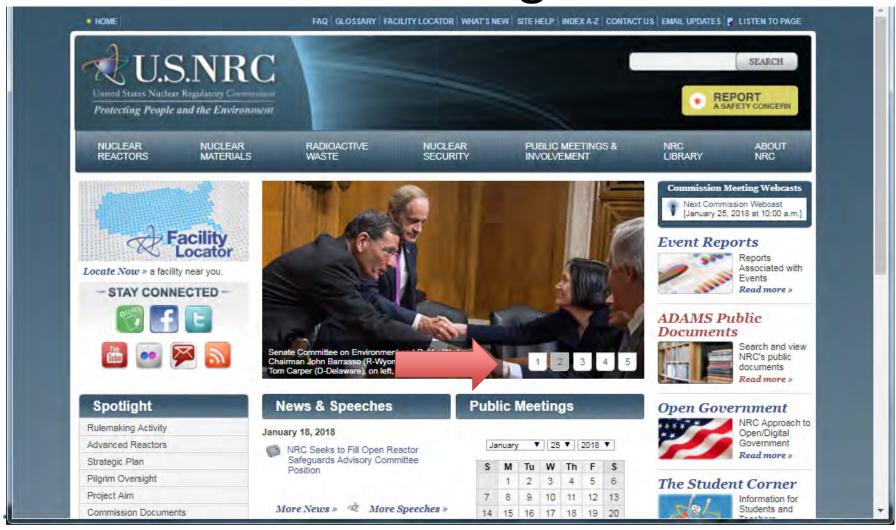
E-Filing and the Electronic Hearing Docket

Documents are filed using the NRC's Electronic
 Information Exchange (EIE) at

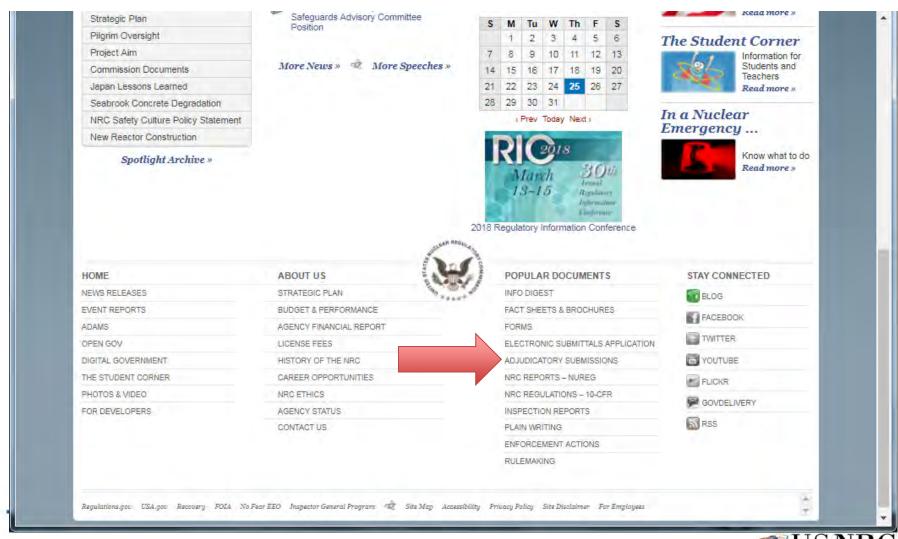
https://eie.nrc.gov/eie/adj/termsOfService.eie



www.nrc.gov



www.nrc.gov



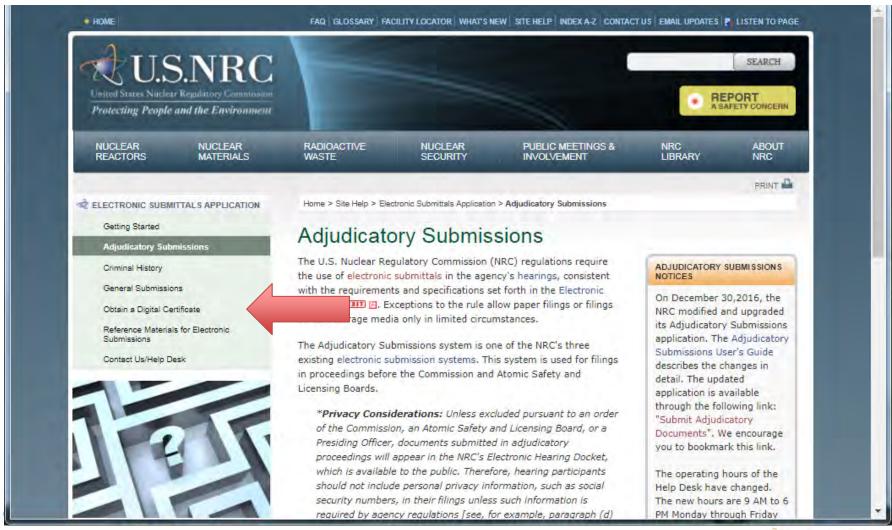
E-Filing and the Electronic Hearing Docket

A digital certificate is needed to access the application.

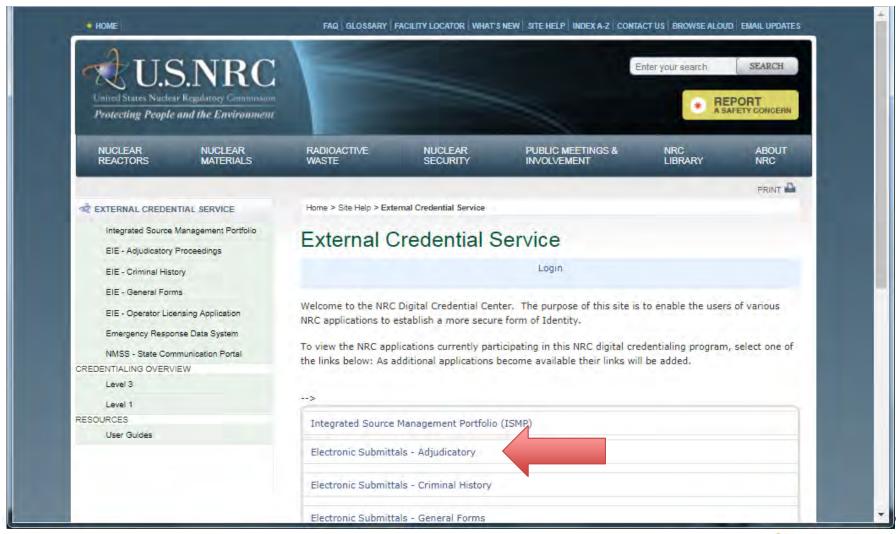
 One can be obtained at https://pki.nrc.gov/ecs/, then click on Electronic Submittals - Adjudicatory



Adjudicatory Submissions – Obtain a Digital Certificate

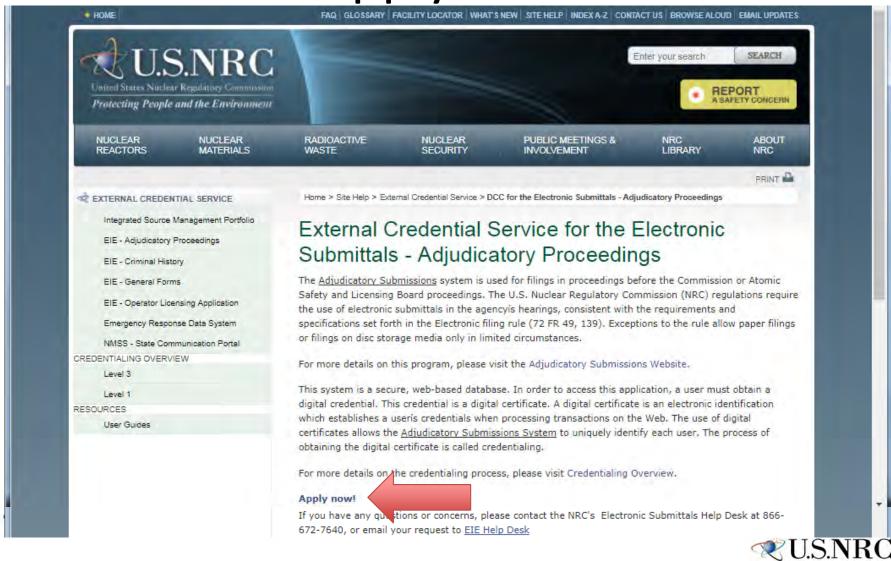


External Credential Service





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WARNING

WARNING: By accessing and using this U.S. Government computer system, you are consenting to system monitoring for network administration and security purposes. Anyone who attempts to gain unauthorized access to, or exceed authorized access to, this computer system in violation of 18 United States Code, Section 1030, may be referred to the FBI and the CIA for investigation and prosecution.

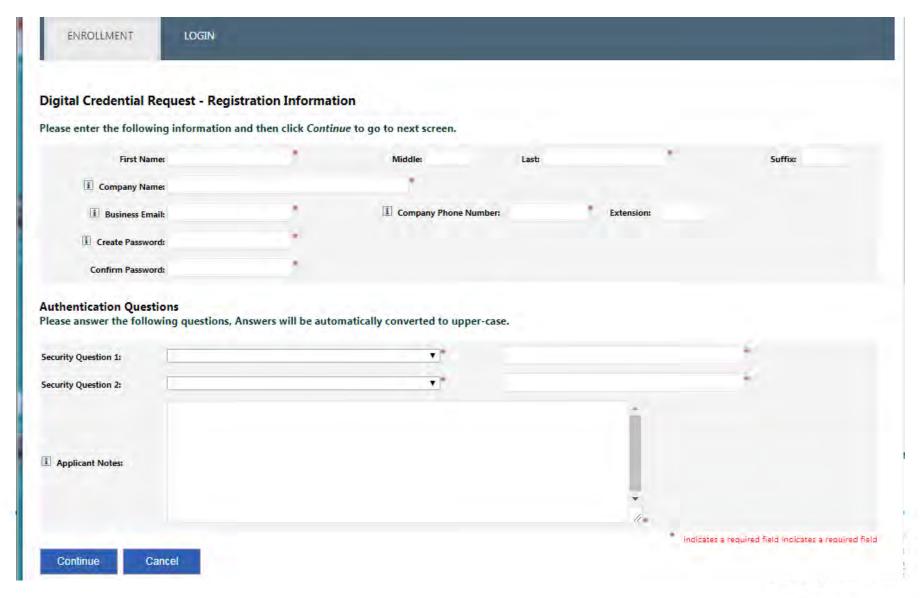
Authorized uses of this computer system by public users are limited to enrollment for a credential by those with a legitimate need to conduct business with the U.S. Nuclear Regulatory Commission, and maintenance of the user's own information and credential. This computer system requires that you provide personal information to the U.S. Nuclear Regulatory Commission. Any personal information submitted will be protected under the provisions of the Privacy Act of 1974.

Exit

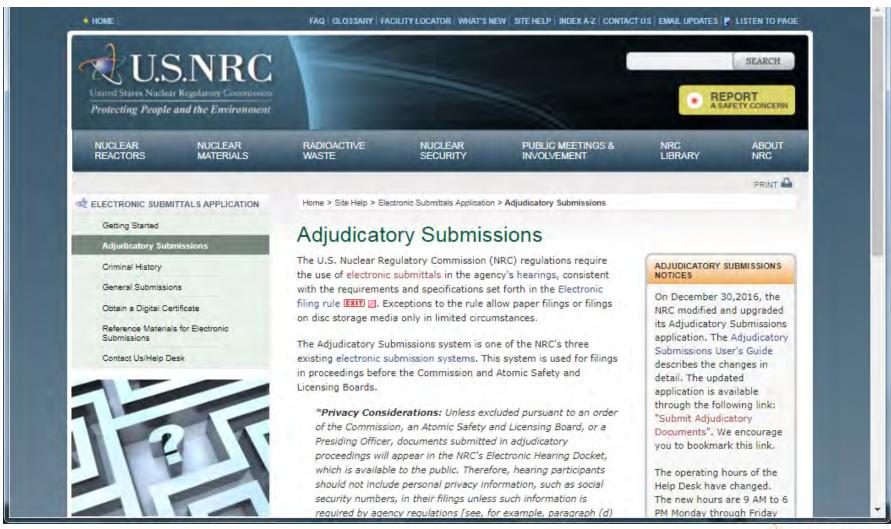




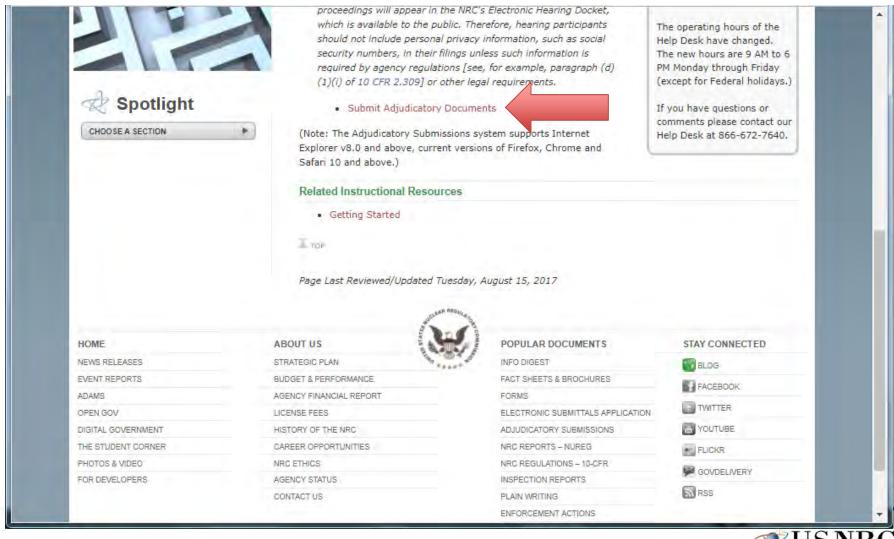
Digital Credential Request



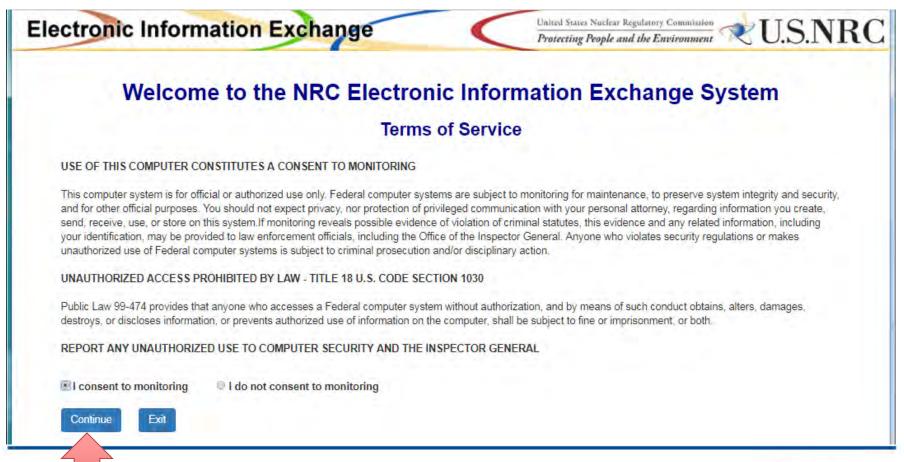
Adjudicatory Submissions



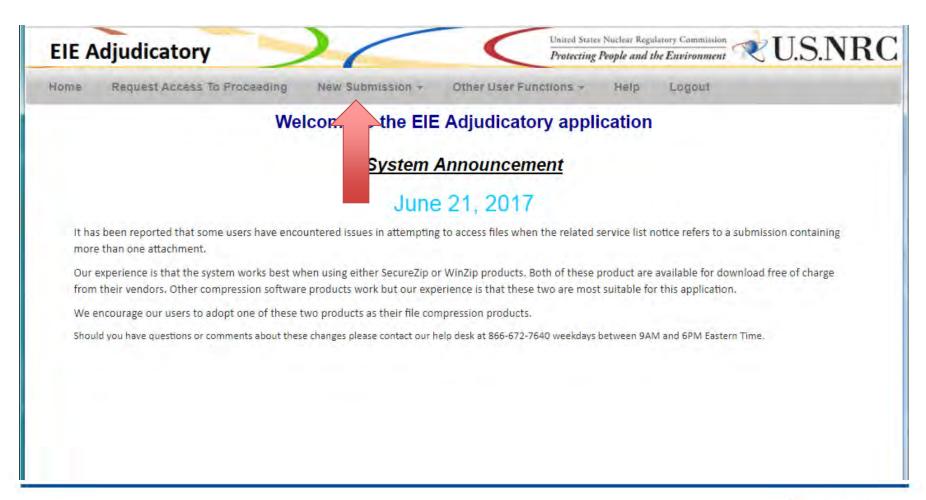
Adjudicatory Submissions



Electronic Information Exchange



EIE Adjudicatory Main Page



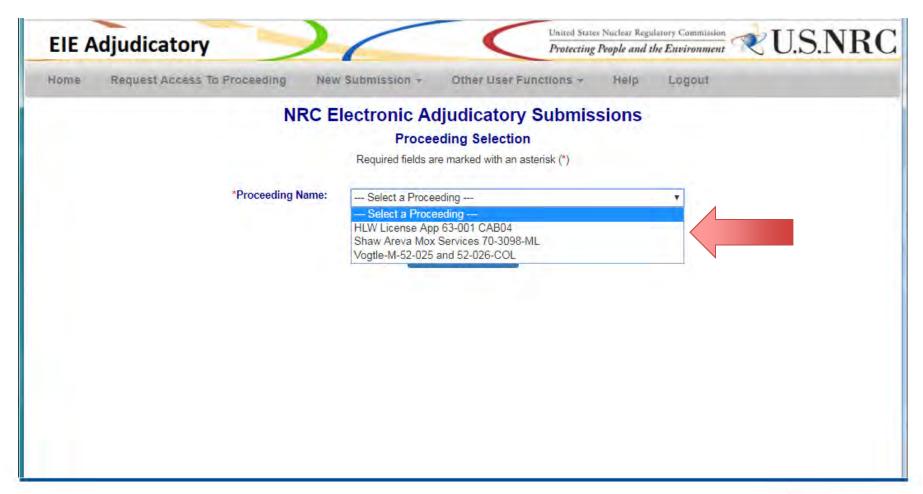
Public Submission

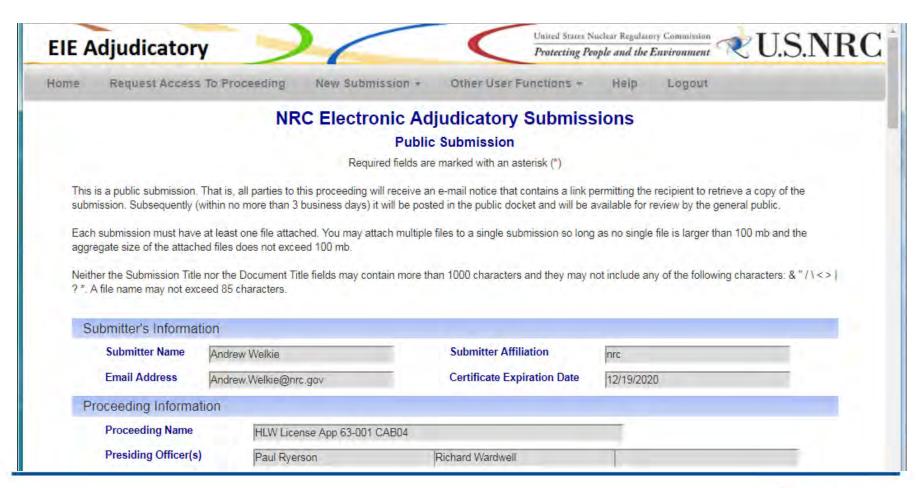


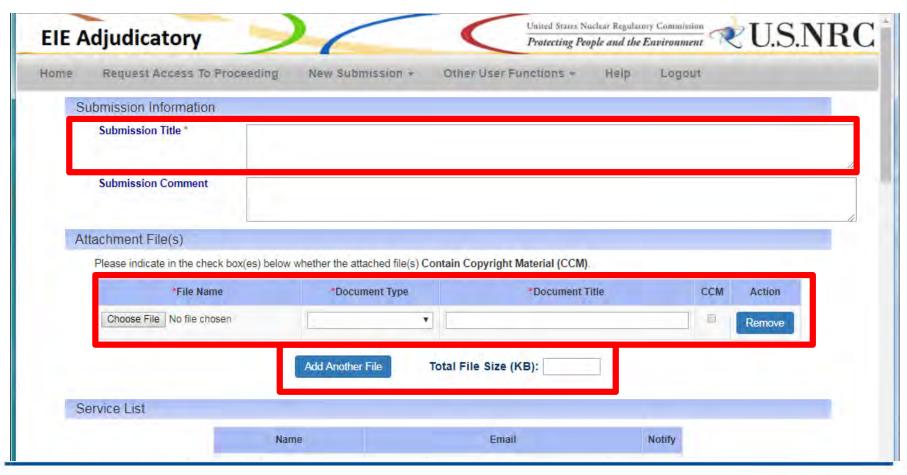
Proceeding Selection

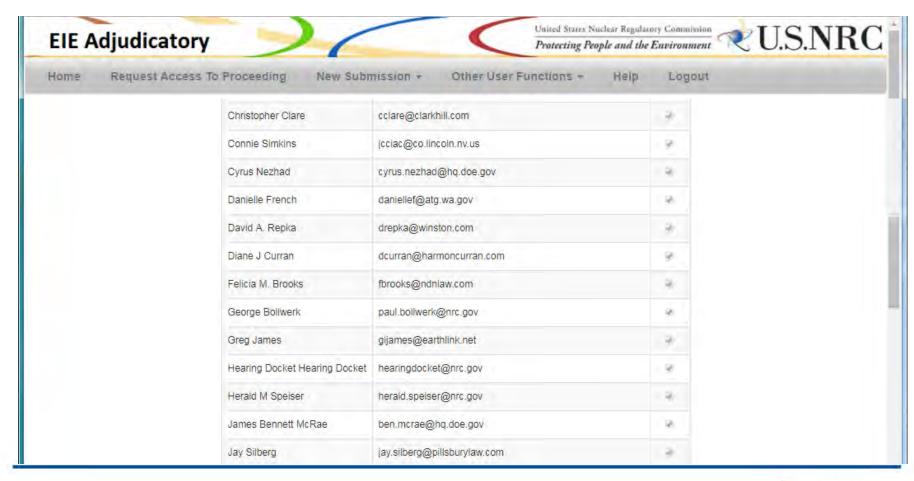


Proceeding Selection, cont'd.



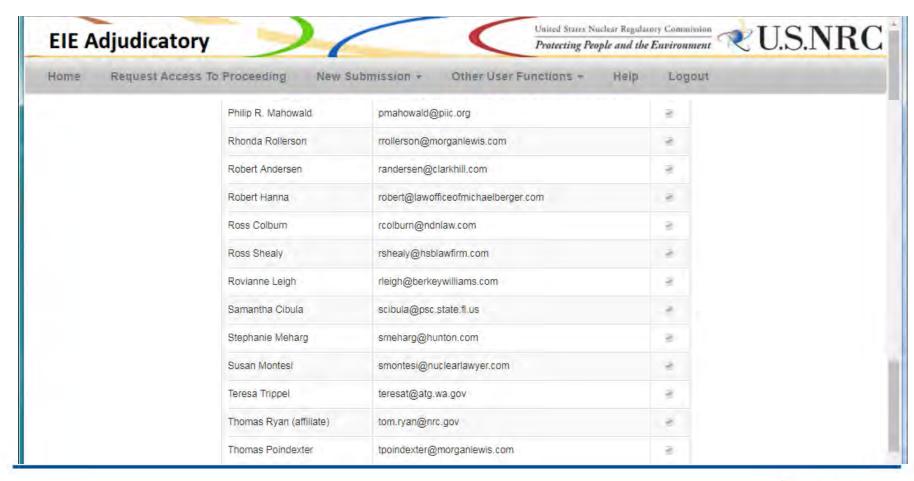


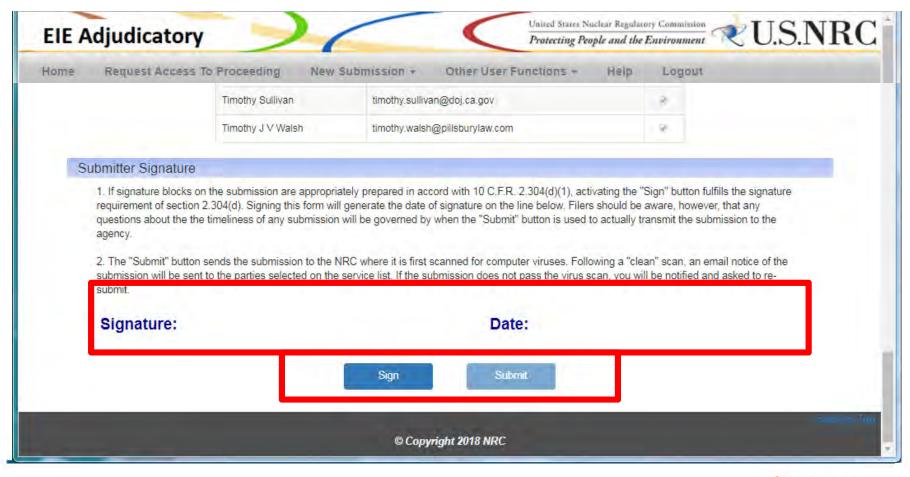












E-Filing and the Electronic Hearing Docket

- Adjudicatory documents are housed in the Electronic Hearing Docket (EHD)
 - The EHD can be accessed at http://adams.nrc.gov/ehd/
 - The EHD can also be accessed from the main www.nrc.gov webpage under NRC Library, then Electronic Hearing Docket, then about 2/3 of the way down the page, Access the Electronic Hearing Docket
- Documentary materials are housed in the Licensing Support Network (LSN)



www.nrc.gov

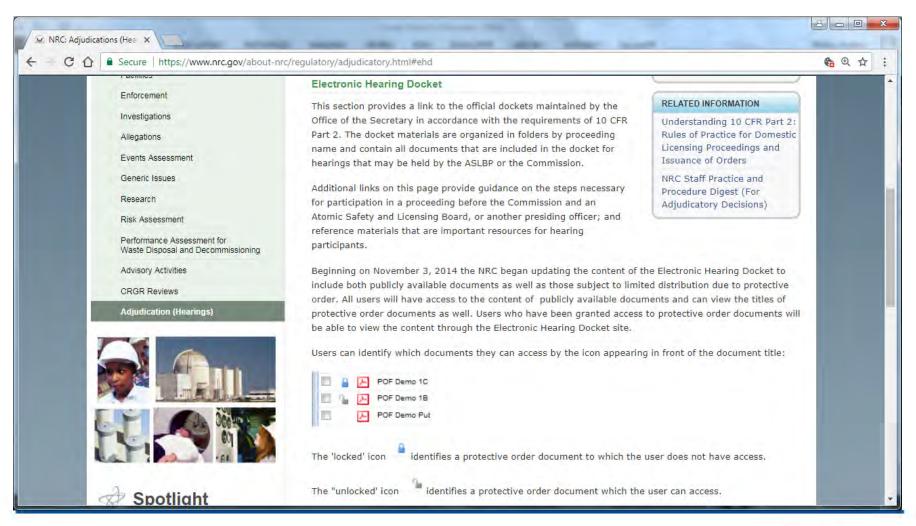


Access the Electronic Hearing Docket

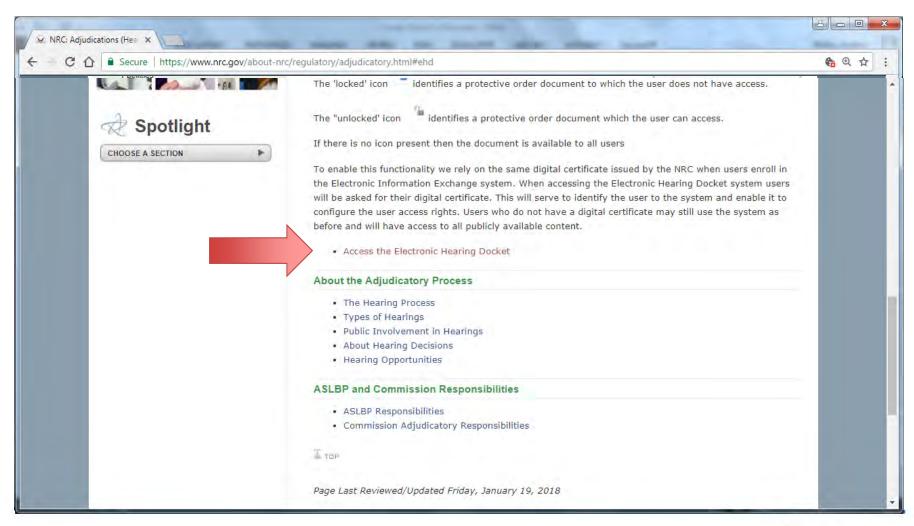




Access the Electronic Hearing Docket

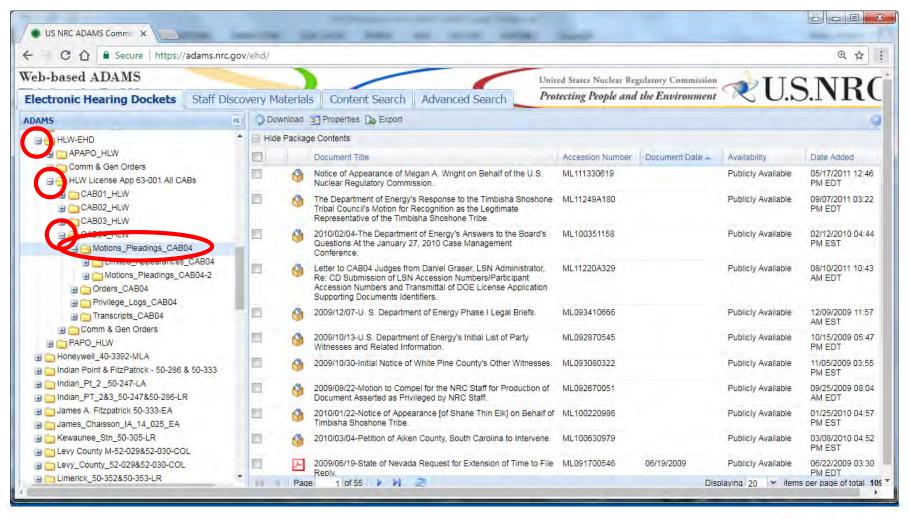


Access the Electronic Hearing Docket





Electronic Hearing Docket





EIE/EHD Usage Guidance

- The Adjudicatory Submissions User's Guide
- describes the process for obtaining a digital
- certificate and using EIE and EHD

(see https://www.nrc.gov/site-help/e-submittals/adjudicatory-eie-submission-user-guide



 The operating hours of the E-Filing Help Desk are 9AM to 6PM (Eastern) Monday through Friday (except for Federal holidays). The Help Desk can be reached at 866-672-7640.





Questions?

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Exhibit Submission Gap

Andy Welkie

IT Specialist

Atomic Safety and Licensing Board Panel

Exhibit Submission - Background

- Exhibits are documents or objects offered as evidence to support written or oral testimony
- 10 C.F.R. § 2.1001 Definitions.
 - LSN is "... the combined system that makes documentary material available electronically to parties..."
 - Electronic docket is "... the NRC information system that receives, distributes, stores, and retrieves the Commission's adjudicatory docket materials." (i.e. EIE and EHD)
- 10 C.F.R. § 2.1013 Use of the electronic docket during the proceeding.
 - (b) "Absent good cause, all exhibits tendered during the hearing must have been made available to the parties in electronic form before the commencement of that portion of the hearing in which the exhibit will be offered."
- 10 C.F.R. § 2.304 Pre-filed written testimony and exhibits.
 - (g)"... the written testimony of each individual witness or witness panel and each individual exhibit shall be submitted as an individual electronic file."



Exhibit Submission Gap

- High percentage of evidentiary material likely exists in the LSN with no automated mechanism to submit a document as an exhibit directly from the LSN to the Electronic Hearing Docket
- Re-entry of existing bibliographic information would be required resulting in higher labor effort and potential data entry errors
- Potentially significant participant labor effort to download documents from the LSN and submit through the Electronic Information Exchange



Process to File an LSN Document as an Exhibit (If the Proceeding had Continued in 2011)

- 1. Find the document(s) in the LSN
- Download the document(s) and either
 - Use the entire document
 - Extract parts of the document
- 3. Place an exhibit number on each document
- 4. Log in to the Electronic Information Exchange
- 5. Fill out information regarding the exhibit
- 6. Submit each exhibit (100 MB aggregate file size limit per submission)
- Receive a confirmation e-mail that the submission was successful
- 8. Add the exhibit(s) to an exhibit list and submit the exhibits list per Board instructions



Potential Gap Closure Process to File an LSN Document as an Exhibit (If the Proceeding were to Resume)

- 1. Find the document(s) in the reconstituted/replacement LSN system
- Add the document(s) to an exhibit cart by a to-be-determined selection method
- For each document listed in the cart
 - Specify full document or specific pages
 - Provide an exhibit number
- 4. Submit the exhibit cart (Each exhibit would have a system-generated cover sheet added that included party exhibit number, LSN accession number, title (from LSN header), etc.)
- 5. Receive a confirmation e-mail that the documents in the cart were submitted
- Download an exhibit list based on documents submitted from the exhibit cart



Limitations

- Only for publically available documents contained in a reconstituted/replacement LSN system
- Header-only documents would be filed separately (likely as a non-public exhibit or physical exhibit)
- Non-LSN documents would be filed separately (e.g. pre-filed testimony or other non-discovery material)



Options Applicability

- A possible capability for
 - Option 2 Use of Existing Public ADAMS LSN Library
 - Alternative One EIE System Modification
 - Alternative Two Semi-Manual Process
 - Option 3 Move to the Cloud
 - Alternative One NRC Maintained Cloud-Based System
 - Alternative Two (a) HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index
 - Option 4 Rebuild the Original LSN
- Unlikely for
 - Option 1 Traditional Discovery (unless decision made to enhance the public ADAMS LSN Library)
 - Option 3 Move to the Cloud
 - Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index





Questions?



Option 1 Traditional Discovery

Paul Bollwerk, Administrative Judge
Atomic Safety and Licensing Board Panel

Background

- For Restarted Adjudication, a Principal Concern Will Be Ensuring Suitable Participant Access to Both Existing and New Documentary Material
- To Address This Concern
 - Is an Entirely New LSN-like Electronic System
 Necessary for All Materials
 - or
 - Will Traditional Discovery Methods Be Sufficient for New Documentary Material?



Traditional Discovery Process (Background)

- 10 C.F.R. § 2.336 Details Document Discovery Procedures
- Requires Initial and Subsequent Periodic Document Disclosures
- Participants Must Provide a Copy or Description, by Category and Location, of Each Relevant Document
- Generally Implemented by Electronic Hearing Docket Filing of Document Lists, with Document Distribution Governed by Participant-established Protocols



Option Assumptions

 Hearing Participants Will Have a Small Volume of New Discovery Material

 NRC Will Continue to Maintain the Public LSN Library for Existing Documentary Material



General Description

 Public LSN Library Remains Source for Documentary Material Identified Prior to Adjudication's Suspension

 New Documentary Material Would Be Exchanged/Made Available to Adjudication Participants Via Traditional Discovery Methods



Cost and Time Estimate

 Option Does Not Involve Implementation of New Information Technology System, So No Significant Additional Implementation Time or Cost Is Required



Implementation Risk Factor Score

Option	Risk Score Range: (6 – 54)		
Option 1 - Traditional Discovery	Not Applicable		

Risk Factors: Acquisition, Technical Complexity, Technical Obsolescence, IT Policy, Technical Expertise, Standardization



Pros/Cons

Pros	Cons		
Immediate implementation	Members of the public may not have access to new documentary material		
No/low implementation costs	HLW hearing participants would be required to distribute new documentary material to multiple other HLW hearing participants		
	Any new documentary material would not be searchable electronically using a centralized search system New documentary material would lack a consistent/uniform numbering system		
	No ability to modify or delete existing headers/documents currently available electronically in the Public LSN Library		



Rank Summary

Option	Cost	Time	Risk	Pros/Cons	Total
Option 1 - Traditional Discovery	1	1	1	7	10
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative One - EIE System Modification	4	4	2	1	11
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative Two - Semi-Manual Process	3	3	2	2	10
Option 3 - Move to the Cloud / Alternative One - NRC Maintained Cloud-Based System	5	5	4	6	20
Option 3 - Move to the Cloud / Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index		6	7	4	22
Option 3 - Move to the Cloud / Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	2	5	4	13
Option 4 - Rebuild the Original LSN	7	7	6	3	23



Questions?



Option 2 Use of Existing Public ADAMS LSN Library

KG Golshan, Branch Chief
Office of the Chief Information Officer
Business Application Delivery Branch

Option Assumptions

- For Alternative One EIE System Modification
 - The total number of header/document actions will average more than 1000 per month for the duration of the HLW proceeding
- NRC will be the custodian of all discovery documents in the LSN for federal record keeping purposes



General Description

- Two Alternatives
 - Alternative One leverages the EIE System
 - Alternative Two Semi-Manual Process
- Both Alternatives
 - Use the existing Public ADAMS LSN Library
 - No substantive changes made to the Public ADAMS LSN Library
 - Modifications and deletions are reflected in system generated list made available on the Public ADAMS LSN Library home page.



Key Difference Between Alternatives

- Alternative One EIE System Modification
 - Additions, deletions and modifications are initiated by using the EIE system
- Alternative Two Semi-Manual Process
 - Additions, deletions and modifications are initiated by the submission of a CD/DVD



Cost and Time Estimate

- Alternative One EIE System Modification
 - Cost estimate

• Initial cost: \$900K - \$1,525K

Cost Rank: 4
Time Rank: 4

- Annual Recurring cost: \$800K \$1,500K
- Time estimate: Between 8 and 15 months
- Alternative Two Semi-Manual Process
 - Cost estimate

• Initial cost: \$600K - \$1,100K Cost Rank: 3 Time Rank: 3

Annual Recurring cost: \$800K - \$1,500K

– Time estimate: Between 7 and 12 months



Implementation Risk Factor Score

Option	Risk Score Range: (6 – 54)
Alternative One - EIE System Modification	15
Alternative Two - Semi-Manual Process	15

Risk factors Acquisition, Technical Complexity, Technical Obsolescence, IT Policy, Technical Expertise, Standardization



Common Pros/Cons

Pros	Cons
Relatively quick implementation	Additional costs associated with federal records responsibility for new headers/documents
Centralizes and a single repository	NRC will maintain the collections, but additional steps required for participants to make additions, deletions and/or to their collections
Leverages the current NRC investments	
Continues standardization of LSN accession numbering scheme	
Robust search engine built on IBM Watson	
Automated audit capabilities available for the entire collection	



Unique Pros/Cons

Alternative One - EIE System Modification

Pros	Cons		
Allows for quick processing of large volumes of documents	Aggregate size of all headers/documents in a submission cannot exceed 100 megabytes		

Alternative Two - Semi-Manual Process

Pros	Cons
No submission size restrictions	Partial manual process with potential processing delays for large volumes of headers/documents



Rank Summary

Option	Cost	Time	Risk	Pros/Cons	Total
Option 1 - Traditional Discovery	1	1	1	7	10
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative One - EIE System Modification	4	4	2	1	11
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative Two - Semi-Manual Process	3	3	2	2	10
Option 3 - Move to the Cloud / Alternative One - NRC Maintained Cloud-Based System	5	5	4	6	20
Option 3 - Move to the Cloud / Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index		6	7	4	22
Option 3 - Move to the Cloud / Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	2	5	4	13
Option 4 - Rebuild the Original LSN	7	7	6	3	23





Questions?



Option 3 Move to the Cloud

KG Golshan, Branch Chief
Office of the Chief Information Officer
Business Application Delivery Branch

Option Assumptions

- NRC will decommission Public ADAMS LSN Library
 - Current copies of public LSN records will remain in possession of NRC for Federal records keeping purposes
- Any cloud-based solution provider must follow the guidelines set by Federal Risk and Authorization Management Program and shall be (FEDRamp) certified.



General Description

Two Alternatives

- Alternative One NRC-Maintained Cloud-Based System
- Alternative Two HLW Participant-Maintained Cloud-Based System
 - a) NRC-Provided Search Portal
 - b) NRC-Maintained Web Page of Participant Links

Both Alternatives

- Move the headers/documents from the Public ADAMS
 LSN Library to cloud-based storage
- Indexing, searching, and retrieval systems are cloudbased



Key Differences Between Alternatives

- Alternative One NRC-Maintained Cloud-Based System
 - NRC manages cloud-based repository
 - The processes for additions, modifications, and deletions described in Option 2 (Use of the Existing LSN Library)
 - Alternative Two HLW Participant-Maintained Cloud-Based Storage or System
 - a) NRC-Provided Search Portal
 - Participants manage their own cloud-based repository/collection
 - NRC manages a centralized search engine (similar to original LSN)
 - Participants manage process for additions, modifications, and deletions
 - b) NRC-Maintained Web Page of Participant Links
 - Participants manage their own cloud-based repository
 - No centralized search engine
 - Participants manage process for additions, modifications, and deletions



Cost and Time Estimate

- Alternative One NRC-Maintained Cloud-Based System
 - Cost estimate (System Development)

Cost Rank: 5
Time Rank: 5

- Initial cost: \$1,200K \$1,950K
- Annual Recurring cost: \$1,100K \$1,750K
- Time estimate: Between 22 and 38 months



Cost and Time Estimate, cont'd

- Alternative Two HLW Participant-Maintained Cloud-Based System
 - a) NRC-Provided Search Portal
 - System Development (NRC Search Portal)

■ Initial cost: \$1,200K - \$2,000K

Annual Recurring cost: \$600K - \$1,100K

■ Time estimate: Between 24 an 42 months

NRC Staff Collection (as a Participant)

■ Initial cost: \$350K - \$600K

Annual Recurring cost: \$525K - \$900K

■ Time estimate: Between 16 and 28 months

Non-NRC Staff HLW Participant Collections

Initial cost: Undetermined

Annual Recurring cost: Undetermined

Time estimate: Undetermined

Time estimates are undetermined as each participant may have different IT policies in place for the procurement and implementation of an IT solution

Cost Rank: 5

Time Rank: 6



Cost and Time Estimate, cont'd

- Alternative Two HLW Participant-Maintained Cloud-Based System
 - b) NRC-Maintained Web Page of Participant Links
 - System Development (NRC Link Page)

■ Initial cost: \$400K - \$675K

Annual Recurring cost: \$250K - \$425K

■ Time estimate: Between 4 and 7 months

NRC Staff Collection (as a Participant)

■ Initial cost: \$350K - \$600K

Annual Recurring cost: \$525K - \$900K

■ Time estimate: Between 16 and 28 months

Non-NRC Staff HLW Participant Collections

• Initial cost: Undetermined

Annual Recurring cost: Undetermined

Time estimate: Undetermined

Time estimates are undetermined as each participant may have different IT policies in place for the procurement and implementation of an IT solution

Cost Rank: 2

Time Rank: 2



Implementation Risk Factor Score

Option	Risk Score (Range: 6 – 54)
Alternative One - NRC-Maintained Cloud-Based System	23
Alternative Two (a) - HLW Participant-Maintained Cloud- Based System with NRC-Provided Search Portal	29
Alternative Two (b) - HLW Participant-Maintained Cloud- Based System with NRC-Maintained Web Page of Participant Links	29

Risk factors Acquisition, Technical Complexity, Technical Obsolescence, IT Policy, Technical Expertise, Standardization



Common Pros/Cons

Pros	Cons
Leverages current efficiency scalability cloud	Close coordination with all parties may be time
Takes advantage of existing Internet search and other cloud resources	consuming.
Allows for prompt processing of large volumes of documents	



Unique Pros/Cons

• Alternative One - NRC-Maintained Cloud-Based System

Pros	Cons
Continues standardization of LSN accession numbering scheme	Complexity of implementation
Locates documentary material in a single repository	Cost of developing centralized cloud-based search portal
Automated audit capabilities available for the entire collection	Additional costs associated with federal records responsibility for new headers/documents
	Rudimentary search capability, depending on the cloud offering
	Document header information may not be viewable
	Parties are required to keep their collections up- to-date in the cloud



Unique Pros/Cons, cont'd

Alternative Two (a) - HLW Participant-Maintained
 Cloud-Based System with NRC-Provided Search Portal

Pros	Cons
Mimics original LSN concept and intent as decentralized, including cost shared by parties	Complexity and uncertainty of implementation
Continues standardization of LSN accession numbering scheme	Rudimentary search capability
No NRC records responsibility for new headers/documents	Document header information may not be viewable
Possibly a simpler process for a participant to make additions, modifications, or deletions to its collection	No automated audit capabilities for the entire collection



Unique Pros/Cons, cont'd

 Alternative Two (b) - HLW Participant-Maintained Cloud-Based System with NRC-Maintained Web Page of Participant Links

Pros	Cons
Simplified approach to maintenance of header/document collections	No consolidated search capability
No NRC records responsibility for new headers/documents	Document header information may not be viewable
Simpler process for a participant to make additions, modifications, or deletions to its collection	No standardization of LSN accession numbering scheme
	No automated audit capabilities for the entire collection



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Option 4 - Rebuild the Original LSN	7	7	6	3	23





Questions?



Option 4 Rebuild the Original LSN

Margie Janney
Acting LSN Administrator

Assumptions

- Basis for development is Project Definition and Analysis Document for the LSN
- Participant web sites will be crawled by the LSN
- NRC will decommission ADAMS LSN Library
 - Copies of those records will remain in possession of NRC for Federal records management purposes

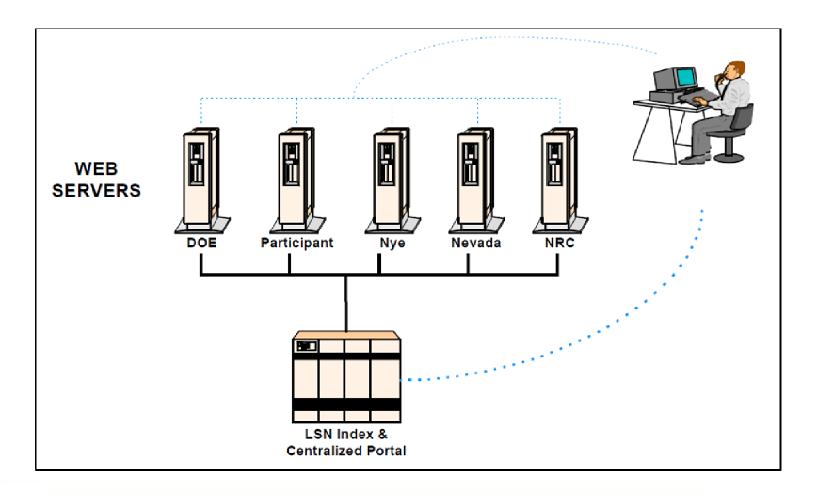


General Description

- Distributed system like Google
- 3 major functions:
 - Auditing
 - Indexing
 - Searching & retrieving
- 5 major subsystems
 - Fetch participant documents and headers
 - Audit participant sites
 - Search LSN content
 - Administer LSN
 - Access LSN web site



General Depiction





Search and Retrieval

- NRC provides search interface
- Searches NRC-maintained index of participants' headers documents
- Search interface redirects user to the participant's collection to present the document for viewing.



Cost and Time Estimates

- Rebuild the Original LSN
 - System Development
 - Initial cost: Between \$2,600K \$4,400K
 - Recurring cost: Between \$850K \$1,500K
 - Time estimate: Between 30 and 42 months
 - Each HLW Participant Collection (Including the NRC Staff)
 - Initial cost: Undetermined
 - Recurring cost: Undetermined
 - Time estimate: Undetermined



Implementation Risk Factor Score

Option	Risk Score Range: (6 – 54)
Option 4 - Rebuild the Original LSN	31

Risk Factors: Acquisition, Technical Complexity, Technical Obsolescence, IT Policy, Technical Expertise, Standardization



Implementation Risk Factor Score

Risk Factor	Impact on Option	Likelihood of Occurrence	Risk Scores (Impact x Likelihood)
Acquisition	High (3)	High (3)	9
Technical Complexity	Moderate (2)	Moderate (2)	4
Technical Obsolescence	Moderate (2)	Moderate (2)	4
IT Policy	High (3)	High (3)	9
Technical Expertise	Moderate (2)	Moderate (2)	4
Standardization	Low (1)	Low (1)	1
Total Score			31



Pros/Cons

Pros	Cons
Simpler process for a participant to make additions, modifications, or deletions to its collection	Extended implementation
Continues standardization of LSN accession numbering scheme	High cost
Robust search engine	Conflicts with Federal IT policy
Allows for prompt processing of large volumes of documents	



Rank Summary

Option	Cost	Time	Risk	Pros/Cons	Total
Option 1 - Traditional Discovery	1	1	1	7	10
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative One - EIE System Modification	4	4	2	1	11
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative Two - Semi-Manual Process	3	3	2	2	10
Option 3 - Move to the Cloud / Alternative One - NRC Maintained Cloud-Based System	5	5	4	6	20
Option 3 - Move to the Cloud / Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index		6	7	4	22
Option 3 - Move to the Cloud / Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	2	5	4	13
Option 4 - Rebuild the Original LSN	7	7	6	3	23





Questions?



Replacement/Reconstituted LSN Options Summary

Margie Janney
Acting LSN Administrator

Recap - High Level Overview

- Option 1 Traditional Discovery
 - Existing public ADAMS LSN library used to access previously submitted documentary material
 - New material exchanged among the parties using traditional discovery methods
- Option 2 Use of Existing Public ADAMS LSN Library
 - Uses the already developed existing public ADAMS LSN library
 - Intake/modification processes would be developed using the EIE or a semimanual process
- Option 3 Move to the Cloud
 - Previously submitted material moved from the existing public ADAMS LSN library to a cloud-based system
 - Intake/modification process moved to a cloud-based system for new material
- Option 4 Rebuild the Original LSN



Cost Estimate - Comparison

Option	Rank	•	System Development		NRC Staff (as a participant)		Non-NRC Staff Participant	
		Initial	Annual Recurring	Initial	Annual Recurring	Initial	Annual Recurring	
Option 1 - Traditional Discovery	1	N/A*	N/A	N/A	N/A	N/A	N/A	
Option 2 - Use of Existing Public ADAMS LSN Library Alternative One - EIE System Modification	4	\$900K - \$1,525K	\$800K - \$1,500K	N/A	N/A	N/A	N/A	
Option 2 - Use of Existing Public ADAMS LSN Library Alternative Two - Semi-Manual Process	3	\$600K - \$1,100K	\$800K - \$1,500K	N/A	N/A	N/A	N/A	
Option 3 - Move to the Cloud Alternative One - NRC Maintained Cloud-Based System	1 5	\$1,200K - \$1,950K	\$1,100K - \$1,750K	N/A	N/A	N/A	N/A	
Option 3 - Move to the Cloud Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index	5	\$1,200K - \$2,000K		\$350K - \$600K	\$525K - \$900K	Unknown	Unknown	
Option 3 - Move to the Cloud Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	\$400K - \$675K	11.	\$350K - \$600K	\$525K - \$900K	Unknown	Unknown	
Option 4 - Rebuild the Original LSN	7	\$2,600K - \$4,400K	\$850K - \$1,500K	Unknown	Unknown	Unknown	Unknown	

^{*}N/A indicates there are no applicable IT System development, implementation, or maintenance costs.

Time Estimate - Comparison

Option	Rank	System Development	NRC Staff (as a participant)	Non-NRC Staff Participant
Option 1 - Traditional Discovery	1	N/A	N/A	N/A
Option 2 - Use of Existing Public ADAMS LSN Library Alternative One - EIE System Modification	4	8 Months to 15 Months	N/A	N/A
Option 2 - Use of Existing Public ADAMS LSN Library Alternative Two - Semi-Manual Process	3	7 Months to 12 Months	N/A	N/A
Option 3 - Move to the Cloud Alternative One - NRC Maintained Cloud-Based System	5	22 Months to 38 Months	N/A	N/A
Option 3 - Move to the Cloud Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index	6	24 Months to 42 Months	16 Months to 28 Months	Undetermined
Option 3 - Move to the Cloud Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	4 Months to 7 Months	16 Months to 28 Months	Undetermined
Option 4 - Rebuild the Original LSN	7	30 Months to 52 Months	Undetermined	Undetermined

^{*}N/A indicates there is time required for IT System development, implementation, or maintenance.



Risk Score - Comparison

Option	Rank	Risk Score (Impact x Likelihood)
Option 1 - Traditional Discovery	1	Not Applicable
Option 2 - Use of Existing Public ADAMS LSN Library Alternative One - EIE System Modification	2	15
Option 2 - Use of Existing Public ADAMS LSN Library Alternative Two - Semi-Manual Process	2	15
Option 3 - Move to the Cloud Alternative One - NRC Maintained Cloud-Based System	4	23
Option 3 - Move to the Cloud Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index	7	37
Option 3 - Move to the Cloud Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	5	29
Option 4 - Rebuild the Original LSN	6	31



Pros/Cons - Comparison

Option	Rank	Pros/Cons*
Option 1 - Traditional Discovery	7	-3
Option 2 - Use of Existing Public ADAMS LSN Library Alternative One - EIE System Modification	1	4
Option 2 - Use of Existing Public ADAMS LSN Library Alternative Two - Semi-Manual Process	2	3
Option 3 - Move to the Cloud Alternative One - NRC Maintained Cloud-Based System	6	0
Option 3 - Move to the Cloud Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index	4	2
Option 3 - Move to the Cloud Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	4	2
Option 4 - Rebuild the Original LSN	3	1

^{*} Numeric score for system benefit determined by subtracting the number of Cons from the number of Pros.



Rank Summary

Option	Cost	Time	Risk	Pros/Cons	Total
Option 1 - Traditional Discovery	1	1	1	7	10
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative One - EIE System Modification	4	4	2	1	11
Option 2 - Use of Existing Public ADAMS LSN Library / Alternative Two - Semi-Manual Process	3	3	2	2	10
Option 3 - Move to the Cloud / Alternative One - NRC Maintained Cloud-Based System	5	5	4	6	20
Option 3 - Move to the Cloud / Alternative Two (a) - HLW Participant-Maintained Cloud-Based System with NRC Maintained Search Index		6	7	4	22
Option 3 - Move to the Cloud / Alternative Two (b) -HLW Participant-Maintained Cloud-Based System with Participant Maintained Search Index	2	2	5	4	13
Option 4 - Rebuild the Original LSN	7	7	6	3	23



Questions?