Digital Data Management System (DDMS)

Tactical Integration Plan (TIP)

Prepared for

Nuclear Regulatory Commission

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Prepared by

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1.	Initial Document	12/05/2003	Rick Schutz
1.1	Updates to complete sections of the document	1/6/2003	Rick Schutz
2.0	Update to plan based on Production System work during Task 3	2/6/2004	Rick Schutz

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1 DEPLOYMENT OVERVIEW

This section provides an overview of the efforts necessary to deploy the Digital Data Management System (DDMS). To aid the deployment of the DDMS, the following points of contact have been identified:

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1.1.1 Description of the Deployed System

The U.S. Nuclear Regulatory Commission (NRC) has a requirement for establishing and operating a courtroom with digital information retrieval, utilization, and display capabilities in conjunction with anticipated licensing proceedings for a high-level radioactive waste repository at Yucca Mountain, Nevada. These capabilities also are expected to be available for use in other licensing proceedings conducted by the Atomic Safety and Licensing Board Panel (ASLBP) in the NRC's Rockville, Maryland facility. Additionally, it is envisioned that portable and remote capabilities would be used to support local hearings conducted across the United States.

The DDMS will support the creation and use of an integrated, comprehensive digital record for the HLW repository licensing proceeding. Using information that is pre-filed electronically by hearing participants in the agency's ADAMS-based Electronic Hearing Docket (EHD), DDMS will record, store, and display the text and image of documents and other digital data presented in the hearing and permit access and retrieval of the entire documentary and video record of the proceeding in an electronic format. The system will allow counsel for the parties to bring prepared materials to the evidentiary hearing electronically and have it integrated and accessible concurrently with the record being presented in the hearing room. The record will be continually accessible by the presiding officer and the parties in the litigation. The DDMS will support hearing activities and information management during the pre-hearing, hearing, and post-hearing phases. DDMS is a new system automating a process currently, for the most part, implemented manually.

1.1.2   System Development Methodology

The DDMS is being developed in two parts. A Proof Of Concept (POC) system was created and completed in August 2003 with a subset of the full Production System functional and technical requirements covering document management, hearing management, exhibit and transcript handling, video/audio presentation and real-time transcription. The POC served to prove the technical feasibility of the DDMS approach, including the architecture, security, interoperability, and basic functions of the full production system. The POC utilized the existing Rockville Hearing Room audio and video system as inputs to the DDMS. The key users of DDMS include judicial staff, NRC staff, and possibly party attorneys, with full access to the appropriate functions within the DDMS.

With the POC system complete, PEC has applied well defined configuration management tools and procedures to capture and maintain the baseline POC system while moving ahead to develop the Production System. PEC is developing a full-scale Production System to implement for the HLW hearings. The Production System will be functionally similar to the POC, with enhanced functionality and additional performance and redundancy features. The major enhancements added to the POC to implement the Production System are primarily operational capabilities in the performance and availability areas.

1.1.3   Deployment Plan

The POC DDMS currently resides in NRC's Consolidated Test Facility (CTF). Currently, under Task 2 of the contract, the audio/visual system in the NRC Rockville Hearing Room is in the process of being redesigned and the room will be outfitted with upgraded components. This is projected to be completed by March 2004. Concurrent with Task 2, Task 3 work is in progress to define and implement enhancements to the POC system to produce the final Production System in the NRC Rockville Hearing Room environment and integrate the system with the upgraded audio/visual components to form an fully integrated system. This is currently scheduled to be completed by September 2004.

This document addresses the tactical planning for the Production DDMS that will become an official NRC Production System by October 2004. Part of the DDMS platform will be located in the NRC Data Center on the 5th floor of Two White Flint North. The remaining DDMS components for this system will be located in the ASLBP Control room on the 3rd floor of Two White Flint North.

1.2   Reference Documents

Workforce Investment Act of 1998, Rehabilitation Action Amendments of 1998, Section 508, Implementation

System Development and Life-Cycle Management Methodology (SDLCM), Handbook, Version 2.2, December 1999 (the official SDLCM process in place at the time of contract award).

Nuclear Regulatory Commission Hearing Room Digital Data Management System Study, Aspen Systems (Redacted), July 26, 2001.

Digital Data Management System Statement of Work originally dated March 15, 2002 and amended on April 12, 2002.

PEC's Digital Data Management System (DDMS) Updated Technical Proposal dated June 18, 2002.

PEC's *Digital Data Management System Project Action Plan (PAP)* dated November 2002.

PEC's *Digital Data Management System Project Definition and Analysis Document (PDAD)* dated November 2002.

PEC's *Digital Data Management Production System Design Document* dated October 2003.

For planning purposes, PEC has made the following assumptions related to the system deployment.

- Initial integration and development of the Production system will be performed at PEC facilities. At the conclusion of internal testing, an evaluation, the Production system will be deployed at the NRC in Rockville, Maryland. PEC will then perform initial testing and support NRC in their evaluation testing.

- The DDMS will capture information from EHD and distribute information to ADAMS via an interface with the Data Processing Center (DPC). The effectiveness of the DDMS is dependent on the availability of the interfaces with these systems.

1.3   Responsibilities

- PEC will install, integrate and perform preliminary testing of the Production DDMS at NRC. PEC will integrate the AV Hearing Room subsystem produced in Task 2 with the delivered Production DDMS prior to making the system available for NRC testing.

- PEC will provide approved test plans and the necessary training and training materials to NRC and IV&V personnel required to perform system acceptance testing.
- NRC will provide the personnel on the test team to perform system acceptance testing. Following the completion of testing, NRC will provide PEC a list and description of problems found that require fixes in order for acceptance testing to successfully complete. Following the conclusion of acceptance testing NRC will provide a summary of acceptance testing findings.
- PEC will prepare and deliver to NRC a Comprehensive Software and System Test Results Report based on NRC's feedback contained in their test findings report.
- PEC will support ASLBP, as appropriate, in any NRC testing and document preparation required to achieve NRC acceptance of the DDMS system as a production system.

1.4   Schedule for Development of Deployment Plan Components.

For the Production System project schedule information, please refer to Appendix A of the *Digital Data Management Project Action Plan (PAP)* dated October 2003.

2   Rollout Plan

2.1 Overall Approach

Since the completion of the POC system at PEC in July 2003, an on-site version of the system has been resident in NRC's CTF in Rockville. The deployment plans for the Production System call for the installation of equipment at multiple locations in Two White Flint North (TWFN)—the CTF, ASLBP's Control Room and NRC's OWFN 5th floor Data Center. The following paragraphs describe the details of this plan.

2.2 Rollout Elements and Sequence

2.2.1   Initial installation in CTF and ASLBP Control Room

Initially, the servers required to test the interfaces with the HLW-EHD and ADAMS systems will be installed in the CTF. The remainder of the servers will be installed in ASLBP's Control Room immediately adjacent to the Hearing Room. This configuration will utilize the dedicated LAN segment currently installed connecting the CTF to the Hearing Room.

2.2.2   Initial installation of DDMS Servers into Data Center following the completion of Interface Testing in the CTF

Following the successful completion of external system interface testing, all Production Servers except those supporting the video capture function will be moved to the 5th floor Data Center in TWFN. This configuration will utilize the dedicated 1Gbps Ethernet connection /CAT6 cabling installed by NRC between the ASLBP Control Room and the 5th floor Data Center in TWFN. At that point, the DDMS will operate as a standalone system that supports all DDMS requirements except those requiring remote connection via NRC-wide networking infrastructure.

2.2.3   Final configuration of DDMS servers on NRC Network

Once DDMS has passed security testing and has been approved for connection to the NRC network (through NRC's trusted router and DDMS' own firewall), remote user access to DDMS and DDMS access to legal research sites will be tested.

2.3 Rollout Schedule

- Initial installation in CTF and ASLBP Control Room
- Begins May 14, 2004; Ends May 28, 2004
- Initial installation of DDMS Servers into Data Center following the completion of Interface Testing in the CTF
- Begins May 31, 2004; Ends June 7, 2004
- Final configuration of DDMS servers on NRC Network
- Begins July 21, 2004; Ends July 29, 2004

2.4 Physical, Function and Documentation Audits

The PEC Solution team includes a project manager, technical leads, analysts, system architects, and members from each of the sub-contracting companies. The technical leads and sub-contractor members all report to the PEC Project Manager. The PEC Project Manager has overall responsibility for the project and will provide the guidance and direction to the entire staff. A more detailed list of responsibilities is provided below:

- The lead requirements analyst is responsible for evaluating and validating the DDMS system requirements, as identified in the SOW, the technical proposal, and through a series of interviews with select NRC staff.
- The lead system architect will design and oversee the development of the overall system architecture, including all security and infrastructure requirements.
- The lead system integrator will design the database components and, while working closely with the subcontractors and the system architect, ensure the overall interoperability of the DDMS.
- The lead audio/video designer will design and develop the audio and video components of the DDMS to include the streaming video and portal interface.
- The lead Quality Assurance inspector will review all deliverables to insure quality of the product and assure that the deliverable is in compliance with NRC's SDLCM requirements.

No additional subcontracting is anticipated to augment the team as reflected in the PEC proposal.

2.5 Quality Assurance

The purpose of a quality assurance plan is to document the actions, measures, controls, reviews, etc., that the project will include assuring the highest quality product. Controls and reviews help to correct problems or deficiencies at the earliest possible phase of the development process. Quality Assurance actions, under the initiation of the quality assurance team leader are taken throughout the development process. The key elements of a Quality Assurance Plan include:
- Documentation and project management standards
- Tools, techniques, methods used to improve quality, i.e., user reviews, code walk-throughs, formal code inspections, prototyping, user satisfaction surveys
- Metrics--defined methods for measuring the quality of a product and tracking changes in quality over time. Possible metrics are: defect measures, change activity, error seeding, problem measures and reliability and availability
- Problem reporting and correction procedures (usually included in configuration management plan)

In order to address these elements for the DDMS project, PEC will utilize the following QA methods:
- Follow the NRC SDLC Methodology and standards
- Include regular requirements and design review meetings among NRC and PEC staff, both informal and formal
- Facilitate NRC auditing of any QA process conducted by PEC

- Ensure all requirements identified during the evaluation and validation phase are measurable, and identify the test methods used to verify the requirements during the testing phase
- Create test cases and evaluation criteria for use during the test phase
- Turn over the DDMS Production System for test and evaluation to NRC staff

For the DDMS project, PEC will follow our corporate standard QA process. Software Quality Assurance involves reviewing and auditing documents and software products and activities to verify that they comply with applicable procedures and standards and providing the Project Manager and other appropriate managers the results of the reviews and audits.

The quality assurance group, lead by the quality assurance team leader, works with the software project during its early stages to establish plans, standards, and procedures that will add value to the software project and developed documents, as well as satisfy the constraints of the project and the organization's policies. By participating in establishing the plans, standards, and procedures, the quality assurance group helps ensure they fit project needs, and verifies they will be usable for performing reviews and audits throughout the software life cycle. The quality assurance group reviews project activities and audits work products throughout the life cycle and provides management visibility into whether the project is adhering to its established plans, standards, and procedures.

Compliance issues are first addressed within the project and resolved there, if possible. If an issue cannot be resolved within the project, the quality assurance group escalates the issue to an appropriate level of management for resolution.

2.6 Documentation Preparation and Turnover

Since the completion of POC testing in August 2003, the delivered POC DDMS has been kept under configuration management control in order to preserve the baseline system. This is necessary in order to ensure the state of the POC system is well defined at all times so that the development of the Production System enhancements start from a confirmed known state. The baseline software's configuration management process includes reviews, approval and tracking of all changes made to the baseline system to create the Production System. Enforcing this controlled environment will enable PEC and NRC to manage proposed changes resulting from POC system assessments so that they can be systematically evaluated for impact on the final Production System design. It will also enable PEC to roll back the system to specific previous system configuration builds should that prove necessary. PEC has set up a change control board that will review and approve all changes to the baseline system. Specific plans for implementing configuration management are discussed in Section 2.4.2 of the *Digital Data Management System (DDMS) Project Action Plan.*

2.7 User Equipment and Software Validation

PEC will purchase from the GSA schedule, on NRC's behalf, all components required for the implementation of the DDMS Production System. NRC's CO will issue a letter of

authorization to order these components on behalf of the NRC. No components will be purchased before NRC authorization is issued following the successful completion of the appropriate design reviews. PEC will develop and maintain, as part of our configuration management efforts described above, a complete inventory of NRC components purchased during the Production DDMS implementation.

2.8 Operational Security Plan

The overall security of the DDMS Production System and the controls that will be put in place are described in the DDMS Production System Security Plan dated December 10, 2003. The major security concern addressed in the design is the systems ability to protect sensitive information such as protective order documents and Judges' notes. This has been addressed through the enforcement of access controls both at the Windows2000 network security level and the Plumtree-based application level. In addition, the system incorporates the use of a DDMS firewall with VPN capabilities to protect the communication of information to remote users. Finally, internal communications with hearing room users as well as NRC users outside the hearing room but on the NRC LAN is protected through the use of SSL encrypted sessions.

2.9 Facility Plan

The DDMS will be physically present in two locations—the ASLBP hearing room and the NRC Data Center in Two White Flint North. The management of the Data Center is under the control of the OCIO. The ASLBP will manage the control room and hearing room facilities. Both facilities will restrict access to only those personnel approved for such access.

2.10   Training Plan

As specified in the *DDMS Project Action Plan*, October 2003, PEC will develop and deliver a Training Plan that specifies how ASLBP will be train authorized users of the DDMS.

2.11   User Guides

As specified in the *DDMS Project Action Plan*, October 2003, PEC will develop and deliver User Guides that describe the user interface to the DDMS and how users should interact with the system.

2.12   Cutover

Since DDMS is not replacing a currently operational system, there will be no official cutover required. However, DDMS will be implemented, tested and certified for classification of an official NRC production system.

2.13   On-Site Acceptance Testing

For the Production system, an evaluation test will be conducted on-site at NRC as described in the *DDMS Project Action Plan*, October 2003. For the Production System, this will occur over a 2 week period at the beginning of August 2004.

2.14   Coordination with Other Interfacing and Impacted Systems

The DDMS system will interface with other systems and components in the NRC infrastructure as defined in the latest version of: the *DDMS Interface Control Document (ICD)*--currently Version 2.09 dated February 2004.

2.15   Performance and Customer Satisfaction Measurement and Validation

The definition of performance and customer satisfaction metrics to be used in measuring the success of the DDMS in these areas will be created during the development of the *DDMS Test Plan* in June 2004.

2.16   Updating NRC Infrastructure Documentation

Since DDMS will operate on its own dedicated LAN segment isolated from the NRC by a VPN firewall router, the OCIO Engineering Change Control Board categorized the operation of the DDMS as essentially a "standalone" system with limited impact on NRC's infrastructure. Therefore, this project will not be required to provide updates to NRC Infrastructure documentation. This project will identify, define and document data elements that pass between DDMS and the HLW-EHD and ADAMS systems in a DDMS Data Dictionary. The DDMS Production System Design Document projects the additional bandwidth that will be generated by the DDMS on the NRC LAN.

3   Operations and Maintenance

As previously indicated in Section 1, the DDMS will be developed in two parts using a Rapid Application Development (RAD) approach. The POC system was successfully developed to meet 48 of the 148 total Production System functional and technical requirements. The creation and evaluation of the POC system served to validate the technical feasibility of the DDMS approach by providing a large number of the architecture, security, interoperability, and basic functions of the full Production System.

Since the completion of the POC system in August 2003, PEC began to develop the full-scale Production System that will include the remaining 100 requirements. The resulting Production System will be used first for a set of mock hearings and ultimately for the HLW hearings. The Production System will be functionally equivalent to the POC System, but with some enhanced functionality and additional performance and redundancy features that meet the full set of functional and technical requirements for the DDMS. The following subsections describe in more detail the requirements for each phase of the DDMS development.

3.1   Operations and Maintenance (O&M) Overview

All major functions of the full Production DDMS were included in the POC. The POC, however did not address any performance or redundancy requirements. The Production System requirements originate from two main sources: the Statement Of Work for the DDMS project and interviews with ASLBP staff. The remaining approximately 100 Production requirements are organized into multiple categories. The categories are:

- **Requirement Type**: This segregates the requirement into one of the following classes:
    - Functional—A set of related activities
    - Technical—Data and database related
    - Security—Related to confidentiality, integrity, accessibility
    - Performance—Quantifiable and measurable output
    - Legal/Regulatory--required by law
    - Physical—Describes hardware/software attribute

- **Major Functional Category**: This identifies the major DDMS functions supported by each requirement. The categories are:

    - Hearing Management—Hearing management processes such as transcript production, exhibit management, scheduling, calendaring, and witness list management that support both pre-hearing and hearing room requirements
    - Multimedia Management—Audio-video processing and management functions
    - Document Management—Those requirements related specifically to document handling including but not limited to security controls for all information objects.

- o Administration—Requirements for administration of system and courtroom duties
- o Data Management--System and database management duties

- **Qualification**: This category identifies the method required to test a system against the baseline requirement. The qualification categories are:
  - o Analysis—Technical or mathematical validation of a requirement.
  - o Test—Verifying the requirement by measuring, recording, and evaluating qualitative and quantitative data obtained during controlled test conditions using real and/or simulated data.

In the requirements and design stages of the project, the baseline requirement were examined, expanded where appropriate, and described in more detail using business rules. Business rules generally describe and highlight the requirement's procedural, operating parameters, and design features as they are identified during the interview process. The list of remaining 100 Production System requirements are contained in the full list attached in Appendix A. The POC requirements are marked with an "X" in the POC Requirements column to distinguish them from the overall 148 Production System requirements.

3.2   Software Maintenance Structure and Responsibilities

The fully functional DDMS system will incorporate all of the 48 requirements of the POC, along with the remaining 100 requirements. The key focus of the DDMS Production System will be enhancement to support the performance and availability requirements. Again, the full list of the DDMS Production System requirements are attached in Appendix A.

3.2.1   Pre-Deployment Responsibilities

The PEC DDMS Project Team will perform all software maintenance prior to and during evaluation testing until the time of system acceptance. The continuing maintenance and support requirements for the full Production System will extend for 40 work days from the initial "Mock" Hearings that begin in mid August 2004.

3.2.2   Post Deployment Reporting Procedures

ASLBP will assume responsibility for the DDMS once the "Mock" Hearing support is completed. ASLBP will define the desired reports needed to track the status and health of DDMS. Once a maintenance task is awarded for the DDMS, the maintenance contractor will be responsible for extracting and reporting on the DDMS performance in conjunction with the ASLBP defined needs.

3.2.3   Responsible Organization

Once the Pre-Deployment support is completed, ASLBP will assume responsibility for the DDMS. Current plans call for NRC to award a future task that includes maintenance of the DDMS once the system is put into production.

3.3   Hardware Maintenance Structure and Responsibilities

3.3.1   Hardware Maintenance Responsibility

Once the Pre-Deployment hardware and maintenance support is completed, ASLBP will assume this responsibility for the DDMS. Current plans call for NRC to award a future task that includes maintenance of the DDMS once the system is put into production. At that point, the maintenance contractor will be responsible for keeping the system operating successfully according to the terms of the contract with ASLBP.
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3.3.2   Hardware Maintenance Procedures

All electronic components contained in the DDMS are commercial off the shelf components based on very recent technology. These components do not require any maintenance.

3.3.3   Hardware Property Control Policies and Procedures

As the DDMS components and subsystems are delivered to NRC, ASLBP personnel will inventory the components and will apply the appropriate tags to all items exceeding $500 in value. At that time, they will establish an official inventory list of all components that comprise DDMS. This list will be used to track the status of the system. Any upgrades or changes made to these components will be reflected via updates to the official inventory list.

3.4   Post Deployment Training Plan

For the DDMS, a Training Plan will be produced that defines the types of training required. This will include a plan to "train the trainer" which allows ASLBP personnel to offer on-going training to new system users after the system has been deployed. This Training Plan will be produced as indicated in the *DDMS Project Action Plan*, October 2003.

3.4.1   Training Requirements

ASLBP's training requirements for DDMS will be described in the Training Plan that will be produced as indicated in the *DDMS Project Action Plan*, October 2003.

3.4.2   Courses

DDMS courses to be provided as part of the overall training program will be described in the Training Plan that will be produced as indicated in the *DDMS Project Action Plan*, October 2003.

3.4.3   Training Plan Author

PEC will produce the DDMS Training Plan.

3.4.4 Training Certification Requirements

Not applicable.

3.5 O&M Procedure Development and Validation

The Operations and Maintenance procedures will be developed during the system testing period at NRC. The validation of these procedures will be validated during the "Mock" Hearing support period. The schedule for these activities are detailed in the *DDMS Project Action Plan (PAP)*, October 2003.

3.6 Logistics

Not applicable.

3.6.1 Hardware Maintenance Agreements

Current plans call for NRC to award a future task that includes maintenance of the DDMS once the system is put into production. At that point, the maintenance contractor will be responsible for keeping the system operating successfully working closely with the ASLBP team. This will include any necessary hardware maintenance coverage as well as labor. All delivered Production DDMS servers will includes 3 year manufacturer on-site maintenance coverage.

3.6.2 Software Licenses

Licenses applicable to PEC services are maintained by PEC. The maintenance of COTS software licenses purchased for Government use will be indicated as part of the inventoried components of DDMS as constructed by ASLBP.

3.7 Backup, Recovery, and Disaster Procedures

The Production DDMS is being designed to support automated backups of the system. The procedures to recover the system due to failures will be described in the DDMS Operations Guide to be developed as detailed in the *DDMS Project Action Plan (PAP)*, October 2003. Disaster recovery plans will be described in the *DDMS Contingency Plan* to be delivered at the time system testing begins.

3.7.1 Backup Frequency

Current plans call for nightly incremental backups and weekly full backups of changing data (data base and other metadata elements as opposed to existing documents). This plan will be revisited and described in the *DDMS Contingency Plan* to be delivered at the time system testing begins.

3.7.2 Off-Site Storage

In general, NRC currently saved critical information at the Federal Records Center in Suitland, Maryland. The final decision on off-site storage location will be made and described in the *DDMS Contingency Plan* to be delivered at the time system testing begins.

3.7.3 Security Incident Reporting and Response

To be determined.

3.8 Operations Management

Current plans call for NRC to award a future task that includes maintenance of the DDMS once the system is put into production. At that point, the maintenance contractor will be responsible for keeping the system operating successfully. ASLBP will retain final responsibility over the maintenance of DDMS.

3.9 Measurement Reporting

The definition of performance and customer satisfaction metrics to be used in measuring the success of the DDMS in these areas will be created during the development of the *DDMS Test Plan* in June 2004. Based on the final set of metrics, yet to be determined, ASLBP will develop reports on the effectiveness of the DDMS and communicate the results, as appropriate.

3.10 Post-Deployment Configuration Management of Hardware and Software

Once the DDMS is put into production, the maintenance contractor will be responsible for keeping the system operating successfully. This will include monitoring, documenting and tracking changes made to the system. The maintenance vendor will closely coordinate with ASLBP review and receive advance approval for any changes made to the accepted system. ASLBP will then update the official inventory, as appropriate.

4   DATA REQUIREMENTS

4.1   Entity List and Definitions

At this stage of the DDMS project (Task 3 Design), the required entity list and definitions are evolving. Appendix C contains a current list of the required DDMS data elements (from ADAMS, to EHD, to DDMS).

4.2   System Context Diagram

The context level diagram provides a basic picture of the DDMS environment. The DDMS will interface with EHD (via the High Level Waste or HLW-EHD server) and ADAMS. The DDMS will store and manipulate pre-filed documents related to the hearing, create and manage multi-media files generated during the hearing, and send selected data elements from the hearing files to ADAMS (via the Document Processing Center or DPC) daily to update the official hearing docket in EHD. Figure 4.1 shows the high level context diagram.
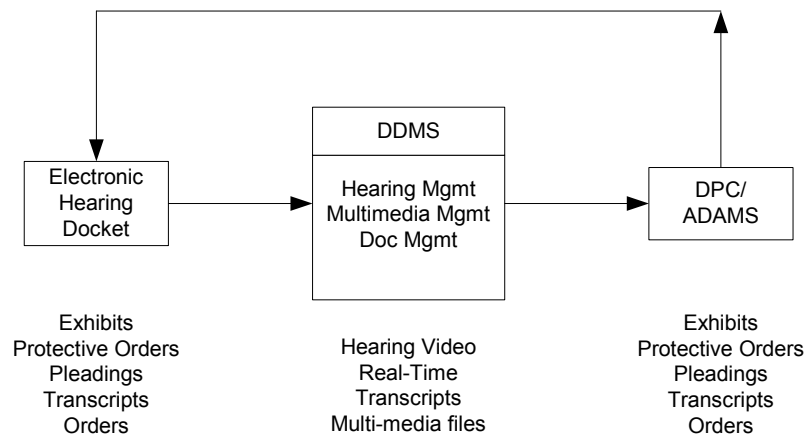
Note: External data stores not under DDMS control are not shown

Figure 4.1: Context Level Diagram

5   ASSESSMENT OF CURRENT SYSTEM

The DDMS is a new system, and is not replacing or superseding an existing current system.

The current NRC Hearing process is a manual, paper-intensive environment. The DDMS will provide a fully electronic hearing management process, providing court users the means to electronically search and access documents, exhibits and transcripts in fulfillment of 10 C.F.R. Part 2, Subpart J (a). In addition, the DDMS will offer enhanced capabilities to capture, manage and synchronize audio and video recordings with hearing transcripts.

6 ANALYSIS OF ALTERNATIVES

Section 3 of the *NRC Hearing Room DDMS Study*, prepared by Aspen Systems Corporation, dated March 27, 2001, identifies four alternative approaches for the DDMS.

6.1 Alternatives Considered

The DDMS alternatives considered were:
- Status Quo – using existing capabilities with an enhanced EHD to conduct agency adjudications.
- Distributed Database – provide for required system functions via distributed server environment.
- Centralized Database – provide for required system functions using a single server configuration, access via high-speed connections to other hearing locations.
- Centralized Database with Distributed Documents – centralized data management functions within a single server, with several document servers for a distributed document management environment.

6.2 Advantages and Disadvantages of Feasible Alternatives

Reference the *NRC Hearing Room DDMS Study* from Aspen Systems for a full description of each alternative's advantages and disadvantages.

6.3 Selection of the Most Advantageous Alternative

The selected alternative recommended in the *NRC Hearing Room DDMS Study* is a centralized database, with web portal capabilities, and separate document servers distributed to Las Vegas and Rockville. In implementing this architecture, the Office of the Chief Information Officer (OCIO) requested a "Pilot" system approach. Through the use of a performance-based contract awarded after a successful acquisition process, the NRC has chosen an optimal "Pilot" system implementation of the selected architecture using a Web Portal approach.

6.4 Design Alternatives

In defining a high level design that implements the architecture selected by NRC and defined in the Aspen Study, PEC considered several approaches:

- Client/Server
- Basic Web Architecture using Browser/Server Approach
- Portal-based Web Architecture

Based on supportability and Industry trend, the viability of a client/server approach was viewed as low. The use of a fat client would introduce maintenance and configuration management complications resulting in increased staffing workloads and potentially higher costs in order to support future expandability and scalability.

A classic web based solution offers a mainstream approach that reduces maintenance and configuration management costs while also providing a much more open solution with a growing list of products based on the Industry trend of delivering web-based solutions. The classic web-based solution supports the DDMS' need to provide an easy to use and well-understood browser-based user interface. However, the DDMS hearing management environment requires a specific segmentation of functionality across groups of users involved in the hearing process. The implementation of such a concept is what Portal-based Web Architectures are designed to efficiently handle. Therefore, PEC has selected a design approach based on the use of a Web Portal philosophy and product set.

7 SYSTEM OPERATIONS CONCEPT (SOC)

7.1 System Description

This section describes, at a high level, the DDMS' operational and functional capabilities.

7.1.1 Top-Level View

Figure 7-1 presents a top-level view of the proposed DDMS, noting both the internal (hearing room), and external users and interfaces.
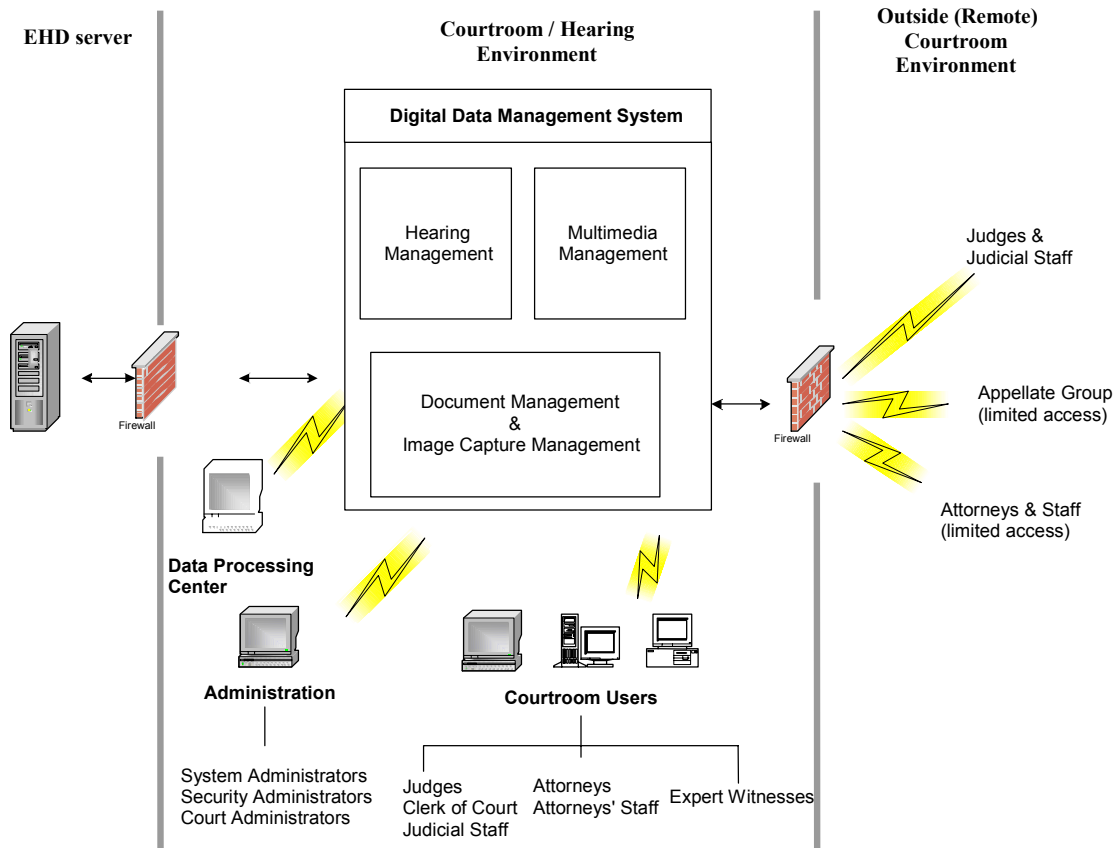
Figure 7-1: The DDMS high-level functional overview

7.1.2 Functional and Operational Capabilities

The Problem

The DDMS addresses the *current hearing and adjudication process*, for which the requisite information is not timely, integrated, or easily disseminated to parties, interested others, or the general public. Prior to the hearings, voluminous documentation is submitted, little of which is in electronic format. Assembling and organizing this mass of documentation into a manageable resource poses a challenge to parties and hearing support staff. The HLW hearings must adhere to the processes and procedures described in 10 C.F.R Subpart J that dictate the capabilities to receive and manage all information required during the course of the hearing in mandated electronic formats.

The Solution

To address these difficulties, during the course of the HLW hearing and adjudication process the DDMS will manage the electronic hearing record, including the Electronic Hearing Docket (EHD), audio and video recordings of the proceedings, exhibits and presentations maintained in electronic format, and real-time transcription as a low-impact adjunct to the traditional process, without disruption or undue burden. The system will allow technologically based artifacts to be integrated with traditional forms of evidence and case management that currently compose the record of the proceedings. The DDMS will allow judges and court administration personnel to easily and rapidly access the docket and control the presentation and flow of information during the hearing process.

The DDMS will allow judges and ASLBP administrative personnel to control the proceedings by disseminating and managing the contents of the official record from EHD in a manner specifically tailored to meet the needs of a hearing room environment. Judges and/or the Clerk will manage the flow of evidence by selecting the documents, witnesses, exhibits, and other items that are presented and the sequence in which they are introduced, including control of audio and video inputs, and suppression of any source of input. This evidence flow and input control will be implemented via a carefully defined, refined and tested user interface that provides the most often utilized elements in a manner that specifically caters to rapid access with minimal effort. Rulings during the hearing will be supported by electronic access to the contemporaneous record, e.g., review of testimony, exhibits, and other hearing artifacts, as well as retrieval of pre-filed submissions from the bench.

The integrated record also supports the parties by availing them of a single, comprehensive source of all relevant evidentiary material from the official record. The system further benefits the parties by providing a robust search and retrieval capability that will offer any combination of full text and bibliographic data search capabilities. By including native support for presentations, simulations, audio, video, and graphical evidence, the hearing's technological environment will be conducive to the most informative and sophisticated media appropriate to the category of evidence. Integrated support for such distance-mediating technologies as video teleconferencing will avail parties and witnesses participating at a distance with the same visibility to the materials and occurrences in the hearing room as though they were present.

7.1.3 System Characteristics

The DDMS will provide the following NRC required system characteristics:

NRC REQUIRED	THE DDMS CHARACTERISTIC
Simplicity – The judge presiding over the HLW hearing must run the hearing while adjudicating legal and procedural issues.	Employ easy-to-use technologies such as: • Touch-sensitive flat panel screens. • Simple graphical interfaces. • A user interface metaphor that organizes and prioritizes what judges and other DDMS users see.
Reliability – The HLW hearing involves potentially millions of pages of documents, images, videos, and sound clips.	Build upon proven technologies such as: • Industry-standard database management systems. • Document management systems built to handle millions of objects. • Built-in redundancy at key points.
Speed – Participants in the HLW hearing will potentially litigate up to 300 issues simultaneously or between three and five issues daily. Court proceedings cannot wait while the DDMS delivers documents.	Ensure quick systems response through use of: • High speed communications lines. • Server computers running multiple fast processors coupled with ample memory. • Work distribution ("load balancing") systems at key points in the DDMS.

7.1.4 Reference Architecture

The Production System is being designed and developed in Task 3. It will be fielded at NRC Headquarters in Rockville, Maryland. Figure 7-2 details the proposed DDMS Production System architecture infrastructure.
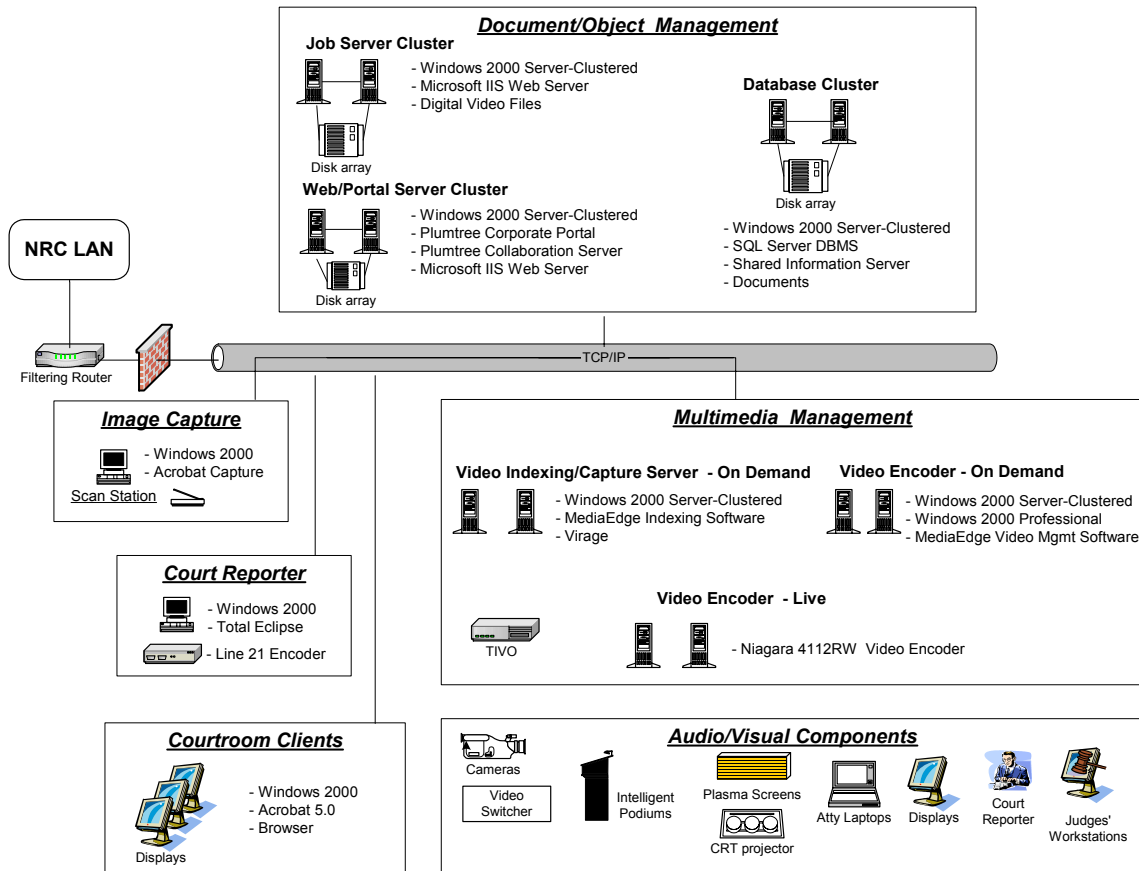
Figure 7-2: The DDMS Architecture for the Production System

7.1.5   System Interfaces

The DDMS will interface with the following external (outside the closed DDMS operating environment) systems / organizations:

- HLW-EHD – the interface will provide for daily updating of DDMS records, by loading EHD records.

- Document Processing Center – the interface will provide for the DDMS to, on a daily basis, upload the day's hearing records, documents, exhibits, and other court-related material to the DPC for further processing and quality control checking prior to being entered into ADAMS.

- Subscription access to legal research databases via controlled access to specifically named Internet sites

7.2   System Environment

The planned DDMS system environment comprises the major software applications described below.

The Plumtree Software Corporation's Corporate Portal Server software provides the functionality needed to support the user interface and hearing management organization needs of the DDMS.

The Plumtree Software Corporation's Collaboration Server allows DDMS users to collaborate on projects—setting schedules, sharing documents, and exchanging ideas. It also supports the document management and multi-media management requirements.

7.2.1 Organizational Environment

The ASLBP is the business sponsor of the DDMS. The DDMS will be defined, designed, developed, system and acceptance tested, and maintained by both the NRC and the contractor development staff, as detailed in the *DDMS Project Action Plan (PAP)*, October 2003.

7.2.2 Operational Environment

The DDMS POC operational environment is comprised of the following major functional areas:
   1. Multimedia Management
   2. Hearing and Document Object Management

The following subsections will address each of these functional areas in terms of system architecture.

7.2.2.1 Multimedia Management

The DDMS will have the hearing's live video feed fed into a video switcher. The switcher will be sound activated to provide automatic camera switching to capture the current speaker. In the event that a court clerk needs to manually switch camera views, override ability will be provided to allow for manual camera switching. The system will also be configured so that the audio can be either automatically or manually switched with a manual override/muting capability. The switched video feed will become the official court record and provide synchronization of the official hearing transcript as well as all evidence to the switched video feed.

The output of the switched video feed is fed into the indexing and encoding subsystem. The switched video feed from the video switcher is fed into the video indexing subsystem where it is synchronized with the text transcript feed from the court reporter position. Following indexing, the DDMS encoding feature converts the composite video feeds to digital video for storage in the video server and storage subsystems.

The digital video is stored in the video server and storage subsystem. The video server and storage subsystem also contains a transcoding system and streaming media server(s) to allow for low-resolution viewing of video to both internal (hearing room) users and, as permitted, external users (non-public remote users) via the computer desktop.

7.2.2.2 Hearing Management and Document Object Management

The DDMS Hearing Management subsystem administers, at a high level, the information associated with the hearing itself. This includes calendaring, scheduling, report

generators, authoring tools, and other functions related to hearing management. Other functions are capturing dispositional information, along with managing and linking lists and other information about witnesses, depositions, exhibits, and issues. Finally, the hearing management software will securely manage protective orders in such a way as to prevent tampering and unauthorized disclosure.

The DDMS Document/Object Management functionality will be implemented using the Plumtree Collaboration Server, in conjunction with the Corporate Portal products. These products, in turn, use Microsoft SQL Server to manage the documents and objects within the DDMS. Through the DDMS portal – which provides the primary user interface – users will locate any document within the DDMS according to their access permissions. In the same vein, the DDMS will store authorized changes to documents. The Document/Object Management subsystem also maintains (as a series of project files) the record of each day's proceeding. This record includes the objects (exhibits) references, the official transcript, the video file, and any other documents pertaining to the hearing.

The DDMS Web/Portal Server (running Plumtree software and supporting the Document/Object Management subsystem) will host the interfaces between the DDMS and the rest of the NRC. These include an interface with the Office of the Secretary (for the Electronic Hearing Docket or EHD) and ADAMS (via the DPC). The former will allow the DDMS to receive on-going, pre-filed materials submitted to ADAMS via the NRC's Electronic Information Exchange (EIE) server. The latter will function as the route for updating the EHD. This DDMS server will also provide the interface to external information providers such as Lexis/Nexis and Westlaw. Through this interface, internal DDMS users will be allowed to only access these pre-defined services in a secure environment. These latter functions while characterized as Document/Object Management also support Hearing Management environment

7.2.3   User Environment

Appendix B contains a table detailing DDMS users, and an initial projection of their access privilege rights.

In addition to this Appendix's defined user groups, the DDMS will provide an administration user environment for the following administration roles and activities:

- System administrator:
  1. Install or remove software;
  2. Monitor, manage and tune system performance and usage;
  3. Review audit records;
  4. Terminate an individual's system session;
  5. Perform modifications, additions, and deletions to the system databases, files, and tables;
  6. Perform system and database recovery activities;
  7. Perform database queries; and
  8. Reorganize database structure and schema.

- System Security Administrator:

1. Create, delete, and modify security audit parameters and data;
2. Create, modify, or delete individual accounts and access privileges;
3. Audit database / file initialization and deletion;
4. Assign or revoke individual identifiers and passwords
5. Establish user roles and groups, and
6. Maintain security software residing on servers.

- The DDMS Court Administrator:
  1. Assign user ids and/or user groups to specific documents and exhibits;
  2. Maintain witness lists;
  3. Maintaining the hearing video, audio, and transcript files;
  4. Initiate the daily update process to the Document Processing Center/ADAMS; and
  5. Initiate the daily downloads from HLW-EHD.

The DDMS will be accessible to the visually impaired and otherwise disabled individuals. The proposed user interface will be Section 508 compliant.

7.2.4 Development Environment

For the DDMS Development Environment, PEC will continue to use the environment constructed in Task 1. This consists of 5 mid-level PCs used as servers in the development environment and the software suite of products previously mentioned. Once the Production System equipment is configured, testing will be performed on the Production System configuration. The PEC Development Environment established during Task 1 will remain at PEC.

7.2.5 Project Management

Please reference the *Digital Data Management System Project Action Plan (PAP)*, Section 2.2, October 2003 for a description of PEC's project management plan.

7.3 System Operations

This section addresses the DDMS operational environment, to include requirements, interfaces, and contracted personnel.

7.3.1 Operational Description

Appendix A contains a listing of all DDMS functional (operational) requirements.

7.3.2 Significant Operational Requirements

The Production System will be subject to performance and availability requirements not addressed by the POC. The final operational Production DDMS system will be available to users during the scheduled hours of availability, which are: 21 hours a day from 6:00 a.m. through 3:00 a.m. of the following day (Eastern time), seven days a week, 365 days a year. The operational system will be available 99% of the scheduled time during any calendar month. In addition, in no event may the operational system be unavailable for more than four access hours of any scheduled availability day, excluding the 3 hours available for daily maintenance activities, as such an event would force the NRC to forfeit the entire hearing day, according to the Rules governing these proceedings.

Interfaces with EHLW-HD and DPC will be available subject to the EHD and DPC service level agreements. To ensure timeliness of information, the HLW-EHD interface will be available six days per week (to exclude scheduled periods when ADAMS is undergoing maintenance). The DDMS will canvass the EHD collection for updates not less than once every 24 hours (during periods of scheduled EHD availability). EHD will be available 18 hours a day, seven days a week 365 days per year, except for scheduled maintenance. Scheduled maintenance is performed daily between 11:00 p.m. and 5:00 a.m. Eastern Standard Time or Eastern Daylight-Savings Time with the exception of Friday. On Friday, scheduled maintenance will be performed between 6:00 p.m. and 11:00 p.m.

7.3.3 Operational Interfaces

PEC will deliver a simple graphical interface construct that organizes and prioritizes what judges and other users see when they operate the DDMS in the hearing room. By simplifying the choices at any one point in time, screen real estate will be minimized, allowing display icons to be enlarged to facilitate the use of touch screen inputs. PEC will tailor interfaces to support both touch screen and non-touch screen environments depending on the type of user being supported (e.g. judges within the hearing room versus remote users outside the hearing room).

7.3.4 Operational Scenarios

The Production System operational scenarios include all baseline functionality used within the hearing room, for all key user groups. The Production System will utilize the new audio and video subsystem installed in Task 2 as inputs to the DDMS. The key users, including judicial staff, NRC staff, and party attorneys, will have full access to the required functions within DDMS.

The Production System will be capable of operating from multiple hearing locations simultaneously. System performance of the Production System is critical to ensure rapid access to DDMS documents and video transcripts. Users may also remotely access the Production System, requiring secure connections and adequate bandwidth to handle multi-media files.

7.3.5 Personnel Requirements

Once delivered, the DDMS Production System will require a team of people to maintain the system and continue to work with the ASLBP and OCIO staff to coordinate with others involved in the overall HLW hearing process across NRC systems and infrastructure. The extent of this team is to be determined during deployment planning. occurring concurrently with the conduct of the "Mock" hearing.

7.3.5.1 Contractor Staff

The *DDMS Projection Action Plan (PAP)* defines the contractor staff positions and responsibilities.

7.3.5.2 NRC Personnel

The *DDMS Projection Action Plan (PAP)* defines the DDMS NRC positions and responsibilities.

8   ACRONYMS AND ABBREVIATIONS

ACL	Access Control List
ADAMS	Agency-wide Documents Access Management System
ASCII	American Standard Code for Information Interchange
ASLBP	Atomic Safety and Licensing Board Panel
ASP	Active Server Pages
A/V	Audio/Visual
CD	Compact Disk
C.F.R.	Code of Federal Regulations
COM	Communications
COTS	Commercial Off-The-Shelf
CRT	Cathode Ray Tube
DBMS	Database Management System
DDMS	Digital Data Management System
DMZ	Demilitarized Zone
DNS	Domain Name Server
DoS	Denial-of-Service Attack
DPC	Document Processing Center
DVD	Digital Video Disk
EHD	Electronic Hearing Docket
EIE	Electronic Information Exchange
FIPS	Federal Information Processing Standard
FODA	Facilitated Operational Design Assessment
FTP	File Transfer Protocol
GB	Gigabyte
GHz	Gigahertz
GOTS	Government Off-The-Shelf
GSA	General Services Administration
HLW	High Level Waste
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
HTTPS	Hyper Text Transfer Protocol Secure
ICD	Interface Control Document
ICMP	Internet Control Message Protocol
IIS	Internet Information Server
IP	Internet Protocol
ISP	Internet Service Provider
Kbps	Kilobits per second
KVM	Keyboard, Video, Mouse switch

LAN	Local Area Network
LDD	Logical Data Document
Line 21	Video track where closed-captioning text is placed
MPEG	Moving Picture Expert Group
MTA	Mail Transfer Agents
MUA	Mail User Agents
NAT	Network Address Translation
NIST	National Institute of Standards and Technology
NOC	Network Operations Center
NRC	Nuclear Regulatory Commission
NSA	National Security Agency
OCIO	Office of the Chief Information Officer
ODBC	Open Database Connectivity
O&M	Operations and Maintenance
OS	Operating System
OSI	Open System Interconnection
PAP	Project Action Plan
PDAD	Project Definition and Analysis Document
PDF	Portable Document Format
PDD	Physical Design Document
PMR	Program Management Review
POC	Proof of Concept
RAID	Redundant Array of Independent Disks
RAM	Random Access Memory
SCSI	Small Computer System Interface
SDLCM	System Development and Life-Cycle Management
SECY	Office of the Secretary
SMTP	Simple Mail Transport Protocol
SNMP	Simple Network Management Protocol
SOC	System Operations Concept
SOW	Statement of Work
SQL	Structured Query Language
SRS	System Requirements Specification
TBD	To Be Determined
TBR	To Be Revised
TCP/IP	Transmission Control Protocol/Internet Protocol
TIFF	Tag Image File Format
TS	Touch Screen
URL	Uniform Resource Locator
USB	Universal Serial Bus
UPS	Uninterruptible Power Supply

VCR   Video Cassette Recorder
VGA   Video Graphics Array
VLAN   Virtual Local Area Network
VPN   Virtual Private Network
WAN   Wide Area Network
WMV   Windows Media Video
WWW   World Wide Web or the Web
XML   Extensible Markup Language

9 REFERENCES

9.1 Statutes and Regulations

•Workforce Investment Act of 1998, Rehabilitation Action Amendments of 1998, Section 508, Implementation.

•10 C.F.R. Part 2, Subpart J, Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository.

•Computer Security Act of 1987.

9.2 Technical Documents / Plans / Standards

•System Development and Life-Cycle Management Methodology (SDLCM), Handbook, Version 2.2, December 1999.

•Nuclear Regulatory Commission Hearing Room Digital Data Management System Study (Redacted)", Aspen Systems, July 26, 2001.

•Digital Data Management System Statement of Work originally dated March 15, 2002 and amended on April 12, 2002.

•PEC's Digital Data Management System (DDMS) Updated Technical Proposal dated June 18, 2002.

•PEC's Digital Data Management System Project Action Plan dated October 2002.

•NRC Personnel Security Program Handbook 12.3, Revised November 17 1999.

•NRC Toolkit List, October 2002

Technical Reference Model, Draft, September 9, 2002, U.S. Nuclear Regulatory Commission, Office of the Chief Information Officer.

Appendix A – DDMS Detailed Production Requirements

The following addresses the requirements' numbering. The original requirements were numbered through 148. Requirements 149 - 153 address the DDMS security, and are incorporated into the Production System. Requirements 154 - 162 expanded the original 148 requirements, but were eventually incorporated into the original requirements, and therefore are no longer needed. Requirements 163 – 173 are new requirements.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 29	The DDMS shall accommodate input information needed to support the presiding officer in administering the pre-hearing conferences and evidentiary hearings, including such items as:	The DDMS shall be capable of receiving, recording, and storing information needed to support the presiding officer in administering the pre-hearing conferences and evidentiary hearings, including such items as:	Note for Requirement 29 D: LSN reference is to be kept (note when appropriate). 29H - this refers to the physical evidence input into the system, with bibliographic header / metadata. 29J - Contentions are a subset of Issues (Every Issue can have multiple Contentions). April 2003 update for 29 J - Contentions are a document type of 'Legal-Pleading' and 'Legal-Intervention Petition, Responses, and Contentions.' 03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.)

Sub-Requirement

29	A	Motions
29	B	Briefs
29	C	Petitions
29	D	Electronic Records (e.g., LSN, EHD)
29	E	Testimony
29	F	Witness Lists
29	G	Exhibits
29	H	References to models, video, and other information
29	I	Responses
29	J	Contentions

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 30	The DDMS shall accommodate output information needed to support the presiding officer in administering the pre-hearing conferences and evidentiary hearings, including such items as:	The DDMS shall be capable of displaying information needed to support the presiding officer in administering the pre-hearing conferences (non hearing room) and evidentiary hearings, including such items as:	30 A ("Computer generated reports") - refers to DDMS reporting tool (Crystal Reports) - ad-hoc reporting capabilities; 30B ("Acknowledgements") - WAIVED (3/20/03).

Sub-Requirement

30 A	Computer generated reports	
30 B	Acknowledgments	
30 C	Issuances	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 115	The DDMS record forwarded to SECY shall be retrievable from remote locations including:	The DDMS database record(s) forwarded to SECY shall be retrievable from remote locations including:	The requirement is in reference to SECY, and to sub-requirements of Litigant Offices and Sites with Web access (web accessible). Current DDMS (POC) fulfills this requirement: DDMS POC is web accessible.

Sub-Requirement

115 A	Litigant Offices	
115 B	Sites with Web access	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 116	The DDMS shall accommodate input information needed to support the transmission of all record information to SECY, including such items as:	The DDMS shall be capable of receiving, recording, and storing information needed to support the transmission of the DDMS database record information to SECY, including such items as:	Current DDMS POC design addresses the transmission of DDMS database record information (minus the video and DDMS specific datafiles).

Sub-Requirement

116 A	Record	
116 B	Index	
116 C	Proceeding Information	

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 134	The DDMS shall provide a basic entry level manual as a training and reference tool.	The DDMS shall provide a basic entry level manual as a training and reference tool.	An SOW Task 3 objective. The DDMS online Help will address the requirement's training and reference tool objectives (3/20/2003 meeting decision).

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 146	The DDMS shall restrict all users, except the System Administrator, from deleting information stored in the DDMS.	The DDMS shall restrict all users, except the System Administrator, from deleting information stored in the DDMS.	Reference Security Access Table

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 166		DDMS shall provide the capability to indicate system performance and isolate failures.	NEW REQUIREMENT. 3/20/2003 meeting Action Item: PEC to check SOW to verify whether or not this is a requirement originally intended for the DDMS design. April 2003 status: PEC checked SOW / RFP: there is NO reference within these documents for the proposed DDMS to isolate system failures and monitor performance. PEC development staff will provide an estimated cost for implementing this within DDMS.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 167		DDMS shall provide for authorized users the ability to certify the official transcript.	NEW REQUIREMENT. NOTE: certification of the official transcript occurs outside of DDMS. 3/20/2003 meeting decision to WAIVE this requirement.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 99	The DDMS shall support retrieval of the DDMS record from:	The DDMS shall support retrieval of the DDMS database record(s) from:	This is defined by terminal locations. Each location should be specifically identified in the DDMS deployment / rollout plan. Once NRC has provided all the DDMS hardware, this requirement can be verified (3/20/2003 meeting decision; this requirement applies to Rockville, MD location). Production Design Document addresses (verification by analysis).

Sub-Requirement

99	A	Judge's bench
99	B	Litigant desk locations
99	C	Clerk of Court
99	D	Court Reporter
99	E	Judge's chambers
99	F	Judge's conference room(s)
99	G	Litigant support conference rooms at the hearing

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 122	The DDMS shall utilize an open architecture that will accommodate integration with legacy systems (ADAMS).	The DDMS shall utilize an open architecture that will accommodate integration with legacy systems (ADAMS).	A folder structure (of daily information) will be available to ADAM, for DPC staff input. Reference the DDMS POC ICD.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 123	The DDMS shall support the migration to newer information and A/V technologies.	The DDMS shall support the migration to newer information and A/V technologies.	03/20/2003 meeting: intent of requirement for ensuring DDMS, in the future, is capable of being upgraded with the most current technologies, both hardware and software. Applies to DDMS maintenance contract provisions. Verification via analysis.

January 31, 2004

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 124	The DDMS shall use product components that are based on industry accepted standards. This shall include but not be limited to hardware interfaces, Application Programming Interface (API), Relational Database technology, Communications Protocol, and Operating Systems technology.	The DDMS shall use industry accepted standard components.	This shall include but is not be limited to hardware interfaces, Application Programming Interface (API), Relational Database technology, Communications Protocol, and Operating Systems technology. (DRAFT Technical Reference Model/ ECCB approvals]

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 125	The DDMS shall support the hearing room environments for Rockville, a remote location in the Las Vegas area, as well as other sites in remote locations.	The DDMS shall support the hearing room environments for Rockville, a remote location in the Las Vegas area, as well as other sites in remote locations.	03/20/2003 meeting: this requirement addresses a remote site DDMS configuration. NRC envisions a DDMS setup at a remote site to include PCs or laptops with a digital line, with A/V equipment available, to include cameras and video recording and audio capabilities, possible scanning and overhead projection capabilities. (DDMS to demonstrate the 'functional capability to handle' remote sites including ability to accept previously recorded video in the system for post synchronization with the transcript.) This requirement can be addressed at a later design phase. NOTE: the DDMS setup at PEC can serve as an example of a remote location configuration setup and operations. Production Design Document addresses (verification by analysis).

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 126	The DDMS shall use tailored user interfaces that are consistent with industry standards for information presentation.	The DDMS shall use tailored user interfaces consistent with industry standards for information presentation.	As per NRC Technical Reference Model (Draft/ECCB approvals), Microsoft Windows standards as specified in The Windows Interface Guidelines for Software Design. Production system will be in compliance to ADA 508. POC will demonstrate some (limited) 508 ADA compliance.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 132	The DDMS shall use touch sensitive or equivalent data entry devices to assist in the control and manipulation of the DDMS systems by the Judge and Clerk of Court.	The DDMS shall support touch sensitive or equivalent data entry devices.	Reserved for Judges (and possibly the Judicial Staff) and Clerk of the Court. Judge Bollwerk commented that parties/attorneys would also have touch screens, along with the intelligent podium. (NOTE: providing touch screens to parties / attorneys will be a cost impact to NRC.) 03/20/2003 meeting - NRC to determine number of touch screens for the production system.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 133	The DDMS shall use accepted industry icons to represent the format of the information being reviewed, i.e., audio, video, image, Word, etc.	The DDMS shall use accepted industry icons to represent the format of the information being reviewed.	As per NRC Technical Reference Model (Draft), Microsoft Windows standards as specified in The Windows Interface Guidelines for Software Design. Reference W3 Consortium standards. Production system will be in compliance to ADA 508. POC will demonstrate some (limited) 508 ADA compliance.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 135	The DDMS shall integrate with the existing NRC enterprise infrastructure.	The DDMS shall integrate with the existing NRC enterprise infrastructure.	Refer to the DDMS ICD. NRC needs to clarify all potential interfaces, if different from DDMS POC. Reference NRC Technical Reference Model (Draft).

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 136	The DDMS shall make optimal use of existing communications infrastructure including but not limited to the LANs, WAN and telecommunications.	The DDMS shall make optimal use of existing communications infrastructure including but not limited to the LANs, WAN and telecommunications.	03/20/2003 meeting decision: requirement to be WAIVED.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 137	The DDMS shall use existing client desktop computers, enhancing the technology to meet requirements not currently supported.	The DDMS shall use existing client desktop computers, enhancing the technology to meet requirements not currently supported.	03/20/2003 meeting: the intent of the requirement was to ensure the development contractor would be responsible for providing any enhancements that are not part of the NRC standard desktop configurations. Any proposed enhancements to the standard NRC desktop configuration are to be noted (production design documentation).
Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 138	The DDMS shall use, as far as possible, server technology that is consistent with NRC procurement standards for similar technology including but not limited to hardware vendor, machine type, and operating systems.	The DDMS shall use server technology that is consistent with NRC procurement standards for similar technology including but not limited to hardware vendor, machine type, and operating systems.	03/20/2003 meeting decision: requirement to be WAIVED; server technology addressed already in the contract negotiations (for example, the use of Dell computers).
Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 140	The DDMS shall be capable of supporting multiple concurrent hearings conducted at multiple locations and in multiple time zones.	The DDMS shall be capable of supporting multiple concurrent hearings conducted at multiple locations and in multiple time zones.	DDMS production will support both Rockville and Las Vegas concurrently, for HLW hearings. This implementation will fulfill this requirement.
Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 141	The DDMS shall support intercommunications with the EHD in Rockville, Maryland to obtain EHD updates and to transfer hearing record updates to the SECY organization. This interface shall be available 5 days per week, for a minimum of 1 hour each day.	The DDMS shall be capable of interfacing to designated HLW subsystems. This interface shall be capable of being available 7 days per week, for a minimum of 1 hour each day.	3/20/2003 meeting: recommended rewording of the requirement to current clarified requirement wording. It is conceivable (per Judge Farrar) to hold hearings on weekends. Therefore, access to EHD should be 7 days a week. Push capability shall be used for the interfaces to EHD.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 45	The DDMS shall accommodate input information needed to support evidence and argument presentation at pre-hearing conferences and hearings, including such items as:	The DDMS shall be capable of receiving, recording, and storing evidence and argument presentation at pre-hearing conferences and hearings, including such items as:	03/20/2003 meeting: this requirement is envisioned as a Clerk of the Court function.45 A - 'paper' refers to input via a scanner. 45 B - input would be the running of a PowerPoint presentation off of a laptop computer. 45 D - recording of a presentation projected while running a model simulation off of a laptop computer. 45 G - refers to pre-filed testimony. 45 H - refers to recording of a video conference presentation. 45 K - refers to recording of a projector (or VCR) presentation. 3/26/03 meeting: pre-hearing conferences and 'regular' hearing conferences are the same (users will know the difference based on the date). 4/9/03 meeting; pre-file applies to exhibits and testimony only.

Sub-Requirement

45	A	Documents (images, text, paper, etc.)
45	B	Video Clips
45	C	Laptops/computer inputs
45	D	Computer Models
45	E	Physical Evidence
45	F	Oral presentation/report/testimony
45	G	Depositions
45	H	Video Conference
45	I	CD/DVD
45	J	Reference to Pre-filed court information
45	K	Projectors

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 46	The DDMS shall accommodate output information needed to support evidence and argument presentation at pre-hearing conferences and hearings, including such items as:	The DDMS shall be capable of displaying information needed to support evidence and argument presentation at pre-hearing conferences and hearings, including such items as:	03/20/2003 meeting: 46 C "Reports" - the NRC-supplied (Michelle Mendelson) Exhibit Status report matrix can serve as a report type. 3/26/03 meeting: pre-hearing conferences and 'regular' hearing conferences are the same (users will know the difference based on the date).

Sub-Requirement

46 A	Screens or display units
46 B	Printers
46 C	Reports
46 D	Hearing record
46 E	Remote hearing site - video conference

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 47	The DDMS shall support the capability to update information previously stored in the record.	The DDMS shall support the capability to read, update, and delete information stored in the courtroom record.	Restricted to authorized users per DDMS Users' Privileges Table. This requirement is both for standard data mgmt, and for hearing mgmt of the record. This may include the 'revision' or striking of the record of a document previously entered. For POC this requirement does not apply to video. NOTE: deletion of information stored in the courtroom record is restricted to the System Administrator role(s).

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 49	The DDMS shall support the deletion of electronic information or references to exhibits from the record.	Same as 1.47	The DDMS shall support the deletion of electronic information or references to exhibits from the record.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 50	The DDMS shall support modifying existing portions of the record as directed by the judge(s).	Same as 1.47	Same as 1.47

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 59	The DDMS shall provide access to the record from the judges' chambers.	The DDMS shall provide access to the record from the judges' chambers.	This requirement is similar to Production Requirement 99: The DDMS shall support retrieval of the DDMS record from: c) Judge's chambers.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 62	The DDMS shall support the creation of customized or ad hoc reports to assist the judges in reviewing the record captured during the hearing.	The DDMS shall support the creation of customized or ad hoc reports to assist the judges in reviewing the record captured during the hearing.	03/20/2003 meeting: the proposed DDMS Production system's reporting tool (Crystal Reports) will fulfill this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 88	The DDMS shall provide a capability to correlate types of multimedia information, to facilitate an easy retrieval process.	The DDMS shall provide a capability to match types of multimedia information (image, text, video), to provide a retrieval process that does not require entering of IT type search parameters	03/20/2003 meeting: current DDMS POC design for the use of touch screens can fulfill this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 90	The DDMS shall accommodate input information needed to assist with the creation of the hearing record, including such items as:	The DDMS shall be capable of receiving, recording, and storing information needed to assist with the creation of the hearing record, including such items as:	Requirements 90 A - E impacts the DDMS production system organizational file folder: the production system's file folder structure will have to account for each of these input and storage area types. Verification by analysis (interface / design documentation).

Sub-Requirement

90	A	Evidence electronic and physical)
90	B	Decision
90	C	Pre-filed Testimony
90	D	Pleadings
90	E	Transcription

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 91	The DDMS shall accommodate output information needed to assist with the creation of the hearing record, including such items as:	The DDMS shall be capable of displaying information needed to assist with the creation of the hearing record, including such items as:	91 A - refers to the DDMS ASCII files. 91 D - links to electronic image of the physical evidence, with header information providing location. 91 E - output to CD / DVD: 03/20/2003 meeting: the intent is to be able to burn information onto CDs / DVDs (DDMS to provide CD / DVD burners).

Sub-Requirement

91 A	Metadata	
91 B	Electronic Information	
91 C	Links or references	
91 D	Physical Evidence	
91 E	CD/DVD	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 92	The DDMS shall support searching of the DDMS record using one or more metadata fields.	The DDMS shall support searching of the DDMS database record(s) using one or more metadata fields.	An example of fulfilling this requirement would be the generated output based on the metadata fields of all exhibits associated to a particular witness.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 93	The DDMS shall support the searching of the DDMS record using a full-text index.	The DDMS shall support the searching of the DDMS database record(s) using a full-text index.	Currently met in POC Requirement 24: DDMS shall support the capability for a full-text search.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 94	The DDMS shall support the searching of the DDMS record using a combination of metadata and full-text searches.	The DDMS shall support the searching of the DDMS database record(s) using a combination of metadata and full-text searches.	An example of fulfilling this requirement would be a) searching for and retrieving of a document that is a transcript, and within this transcript, conducing a keyword search, or b) searching on a combination of metadata and full text simultaneously (e.g. find all exhibits with status of rejected that contain the phrase 'helium').

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 95	The DDMS shall support the retrieval of the DDMS record from an internet based user using a web browser.	The DDMS shall support the retrieval of the DDMS database record(s) from an internet based user using a web browser.	Web connection and interface, such as a search of DDMS information being conducted from a litigant's office via the proposed web browser.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 96	The DDMS shall support the display of metadata or a profile for each entity stored in the DDMS record.	The DDMS shall support the display of metadata or a profile for each entity stored in the DDMS database record(s).	Current DDMS POC design supports and fulfills this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 97	The DDMS shall support the display of each type of electronic information stored in the record, including documents, video files, images, etc.	The DDMS shall support the display of all stored information.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 98	The DDMS shall support the production of a result list for information matching the specified search criteria.	The DDMS shall support the production of a result list for information matching the specified search criteria.	The requirement's intent is, upon executing a query, to provide a list ('result list') identifying those objects ('search criteria') requested and used within the search.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 100	The DDMS shall support local and remote access to DDMS data for a scheduled 21 hours per day, 7 days per week.	The DDMS shall support local and remote access to DDMS data for a scheduled 21 hours per day, 7 days per week.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 102	The DDMS shall accommodate output information needed to assist with interactive search and retrieval of record information, including such items as:	The DDMS shall support the searching on and retrieval of DDMS database record(s) information.	03/26/2003 meeting: agreed to rewriting of requirement to indicate search and retrieval of data. 102 A - 102 D - WAIVED.

Sub-Requirement

102 A	Results from Judges	
102 B	Results from Parties	
102 C	Results from Court Reporter	
102 D	Removable media	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 104	The DDMS shall support a real-time transcription of pre-hearing conferences and hearings.	The DDMS shall support a real-time transcription of pre-hearing conferences and hearings.	03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.)

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 107	The DDMS shall support the indexing of the transcribed record with metadata and a full-text index.	The DDMS shall support the indexing of the transcribed record with metadata and a full-text index.	Currently met in POC Requirement 24: DDMS shall support the capability for a full-text search of each pre-filed document. 4/9/03 meeting: pre-file applies to exhibits and testimony only.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 118	The DDMS shall provide capacity to store 10% of the high-end estimates for HLW repository document storage in the LSN:	The DDMS shall provide capacity to store 10% of the high-end estimates for HLW repository document storage in the LSN:	03/26/2003: the high-end estimates are noted in 118 A: 15,766,000 pages.

Sub-Requirement

118 A	The LSN is estimated to store a total of 15,766,000 pages by 2004, the expected time frame for the HLW repository proceeding.
118 B	At 50 KB/page, this results in approximately 79 GB to store electronic images in the DDMS at its inception.
118 C	Full text of the images (at 5 KB/page) requires an additional 8 GB of storage.
118 D	Metadata storage is estimated to require an additional 4 GB of storage based on an average of 10 pages/document and 2.5 KB of metadata information/document.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 121	The DDMS shall display a result list within 10 seconds of the search request to find the information, for 90% of all requests.	The DDMS shall, within the electronic hearing room environment, display a result list within 10 seconds of the search request to find the information, for 90% of all requests.	Same as Production Requirement 120: The DDMS shall provide a capability, within the electronic hearing room environment, to display evidence on each monitor or display in the hearing room, within 10 seconds of the request to display the document, for 90% of all requests.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 129	The DDMS shall provide pre-defined search methods; tailored for the DDMS user to mitigate the need to enter many keystrokes when searching for information.	The DDMS shall provide pre-defined search methods.	This functionality is covered in POC Requirement 19: The DDMS shall support the searching for electronic and non-electronic information using the metadata and/or full-text index information as authorized. The 3/27/2003 POC demo confirmed this capability to NRC.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 130	The DDMS shall support the casual, infrequent user that needs to search and retrieve information from the DDMS.	The DDMS shall support the casual, infrequent user that needs to search and retrieve information from the DDMS.	Current DDMS POC design for the use of touch screens will address the needs of the "casual, infrequent user."

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 131	The DDMS shall support the technically proficient user that needs to use advanced tools to find and manipulate information in the DDMS.	The DDMS shall support the technically proficient user that needs to use advanced tools to find and manipulate information in the DDMS.	The current DDMS POC design for full-text and advanced searches will fulfill the needs of a "technically proficient user."

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 139	The DDMS shall be scheduled to be available to support conducting the HLW repository hearing 21 hours per day, 7 days per week.	The DDMS shall be scheduled to be available to support conducting the HLW repository hearing 21 hours per day, 7 days per week.	Exact operating hours are defined with the SOW. Production Design Document addresses (verification by analysis).

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 142	The DDMS shall be available 7 days per week, a minimum of 1 hour each day, to support ongoing or required maintenance activities.	The DDMS shall be available 7 days per week, at a minimum of 1 hour each day, to support ongoing or required maintenance activities.	This is the requirement for 'maintenance' and backups, presumably.

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Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 143	The Mean Time to Repair (MTTR) the DDMS shall be no more than 1 hour, during the 7 day/week operating time frame.	The Mean Time to Repair (MTTR) the DDMS shall be no more than 1 hour, during the 7 day/week operating time frame.	Due to the requirement's short timeframe, PEC envisions on-site maintenance, to include staffing and replacement parts. PEC is to provide 'suggested' written provisions and guidelines to be included in the maintenance contract to fulfill this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 144	The DDMS shall support the creation of various levels of user privileges to access or manage information in the DDMS.	The DDMS shall support the creation of various levels of user privileges to access or manage information in the DDMS.	Current DDMS POC design, through Users' Privileges matrix, addresses this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 145	The DDMS shall provide a capability to restrict some users from accessing specific information stored in the DDMS, e.g., a Protective Order File.	The DDMS shall provide a capability to restrict some users from accessing specific information stored in the DDMS, e.g., a Protective Order File.	Current DDMS POC design, through Users' Privileges matrix, addresses this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 147	The DDMS shall allow only authorized users, like the Court Clerk, to update or modify information stored in the DDMS system.	The DDMS shall allow only authorized users, like the Court Clerk, to update or modify information stored in the DDMS system.	Current DDMS POC establishes user roles' privileges and authorized functions.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 163		The DDMS shall ensure the timestamp is accurate to current date and time.	NEW REQUIREMENT; current design will have system software synching all servers.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 168	NEW REQUIREMENT	DDMS shall provide electronic note taking capability.	Provide the capability to create private electronic notes as the hearing progresses, time stamped or otherwise linked to the transcript. Notes will be private and secure for each user. Notes can be taken at any time during a hearing, and can be related to testimonies, exhibits, evidence, or presentations. DEFERRED

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 7	The DDMS shall support the electronic marking of evidence/exhibits to be presented. The system shall be capable of marking evidence such as Identified, Received, Rejected, Withdrawn, etc.	The DDMS shall support the electronic marking of evidence/exhibits.	The system shall mark evidence as: Identified, Admitted, Rejected, Withdrawn, and Stricken. When an exhibit is initially submitted, it is marked as Identified. Admitted, Rejected, Withdrawn, and Stricken are all results of Judges directions.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 15	The DDMS shall retrieve pre-filed documents from information filed with SECY.	The DDMS shall retrieve pre-filed documents.	The new or updated version of pre-filed documents, and their associated metadata will be retrieved from EHD. 4/9/03 meeting: pre-file applies to exhibits and testimony only. 4/9/03 meeting: pre-file applies to exhibits and testimony only.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 16	The DDMS shall support capturing pre-filed documents from electronic and paper formats.	The DDMS shall support capturing documents electronically from paper formats, with the following minimum scanner requirements:	DDMS must be capable of supporting the input of scanned documents. The following sub-requirements apply only to the production system. For POC purposes only, NRC will provide a scanner.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 20	The DDMS shall support the retrieval and display or printing of all pre-filed electronic information.	The DDMS shall support the retrieval, display, and/or printing of all electronic information as authorized.	This requirement is limited to pre-filed electronic information, excluding video and audio. Screen shots can be accomplished within OS, via the Print Screen command.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 21	The DDMS shall support the selective retrieval and capture of electronic pleading(s) from the EHD.	The DDMS shall support the selective retrieval of electronic pleading(s) from the HLW EHD.	POC will address HLW specific electronic documents. The Production system will support multiple case dockets. "Selective" retrieval does not mean user-defined retrieval: this term means DDMS will automatically be selective in accessing and retrieving data from EHD, by pulling into DDMS only data that has been updated or added.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 22	The DDMS shall support the electronic document formats supported by the EHD.	The DDMS shall support the electronic document formats supported by the EHD.	This currently includes PDF and tiff. DDMS will be consistent with E-Rules. Note: E-Rules 2.1011,(2)(iii):"following acceptable formats: ASCII, native word processing (Word, WordPerfect), PDF Normal, or HTML." No spreadsheet formats specified.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
POC 24	The DDMS shall support the generation of a full-text index for each pre-filed document.	The DDMS shall support the capability for a full-text search of each pre-filed document.	Pre-filed documents in PDF format will contain hidden text. Pre-filed tiff documents will not include text. 4/9/03 meeting: pre-file applies to exhibits and testimony only.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
POC 25	The DDMS shall support the tracking and identification of multiple versions or revisions of pre-filed documents. The latest version of a pre-filed document shall be presented when a retrieval request is issued.	The DDMS shall support the tracking and identification of multiple versions or revisions of pre-filed documents.	Versions are not required within DDMS.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
POC 26	The DDMS shall support the retrieval and display of pre-filed documents, retaining the original presentation fidelity of the information.	The DDMS shall support the retrieval and display of pre-filed documents, with minimal loss of resolution.	This requirement primarily pertains to the scanning of documents / photos, and the storing of these scanned items (electronic files) into DDMS. Minimal loss of resolution based on mfr-provided specifications for display resolution. All original information should be retained, if possible, in any conversion process.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
Production 27	The DDMS shall support the printing of pre-filed documents to selectable page sizes specified by the user, including but not limited to 8 ½" x 11" and legal size paper.	The DDMS shall support the printing of pre-filed documents to selectable page sizes specified by the user, including but not limited to 8 ½" x 11" and legal size paper.	Printer page size capability is dependent on the types of printers NRC will have configured to the DDMS. It is envisioned the printer will be capable of supporting 11" x 17" (ledger paper).

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 39	The DDMS shall provide a capability to highlight or annotate, and then optionally capture and store, specific portions of displayed still images presented on monitor or workstations, in order to provide clarity or emphasis.	The DDMS shall provide a capability to highlight or annotate, and then optionally capture and store, specific portions of displayed still images presented on monitor or workstations.	An electronic 'white board' (part of the production's 'intelligent podium'), used in being able to retrieve, markup, and then store (save) the marked up 'still images.' Envisioned saving in a tiff format.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 48	The DDMS shall support the capability to insert or append information into the record, e.g., mark evidence as accepted, rejected, or withdrawn.	Same as 1.7	The DDMS shall support the capability to insert or append information into the record, e.g., mark evidence as accepted, rejected, or withdrawn. This marking will be stored in the DDMS database within the "Exhibit Status" field.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 51	The DDMS shall support the creation and capture of documents used to promulgate orders, directives, etc., to SECY and other parties.	The DDMS shall support the creation and capture of documents used to promulgate orders and directives to SECY.	This requirement is entirely outside of DDMS. It will be accomplished through EIE, via web interface, and using existing word processing packages. The Adobe application utilized within DDMS will support the standard functions of copying and pasting.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 52	Issuance documents shall be stored in their native formats.	Documents issued by ASLBP shall be stored in their native formats.	03/26/2003 meeting: agreed DDMS to provide the capability to select and retrieve DDMS record information (not video), and copy and paste this information into a word processing application. There will be NO storing, within DDMS itself, of issuance documents in their 'native' (MS Word, WordPerfect) format. 4/3/03 meeting: reconfirmed 'native format' would be pdf or tiff ("EIE-accepted / approved format").

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 53	The DDMS shall support scanning and conversion of paper documents, e.g., to capture required written signature pages.	Same as 1.16	The DDMS shall support scanning and conversion of paper documents, e.g., to capture required written signature pages.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 54	The DDMS shall support the physical marking of electronic documents with a user selectable/customizable electronic marker, e.g., an image stamp.	Same as 1.7	DDMS shall support the inclusion of a cover sheet containing bibliographic document status information describing the electronic document. Note: This will print as part of the document.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 55	The DDMS shall accommodate input information needed to support records management at pre-hearing conferences and hearings, including such items as:	The DDMS shall be capable of receiving, recording, and storing records management information at pre-hearing conferences and hearings, including such items as:	55 A - Record (4/3/03 meeting: the 'official record' from EHD), 55 B - Judges' instructions are in recorded during the hearings (realtime), 55 C - 4/3/03 meeting: motions and pleadings recorded during the hearings, or pre-filed (agreed to procedural rule that written motions must be prefiled). 03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.) 4/9/03 meeting: pre-file applies to exhibits and testimony only.

Sub-Requirement

55	A	Record
55	B	Judge Instructions
55	C	Requests from Litigants

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 56	The DDMS shall accommodate output information needed to support records management at pre-hearing conferences and hearings, including such items as:	The DDMS shall be capable of displaying information needed to support pre-hearing conferences and hearings, including such items as:	4/3/03 meeting: removed "records management" from the requirement. 56 A - Reports, applies to any predefined ('canned') reports, such as the Exhibit Status Report, 56 B - insertion of information, applies to new exhibits creating ('inserting') new metadata, 56 C - Update of information, applies to exhibits being updated with markings ('accepted' 'withdrawn,' strike outs. 56 D - Index, this is the metadata. 03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.)

Sub-Requirement

56 A	Reports
56 B	Insertion of information
56 C	Update of information
56 D	Index

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 60	The DDMS shall support integration with Open Document Management Architecture (ODMA) compliant products such as Word, Excel, Lotus, and WordPerfect. This integration is required to allow issuance documents to incorporate text information from the existing record without retyping the existing information.	The DDMS shall support integration with Open Document Management Architecture (ODMA) compliant products such as Word, Excel, and WordPerfect.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 63	The DDMS shall support the capture of any decision issued by a licensing board at or after each pre-hearing conference or hearing.	Same as 1.51	The DDMS shall support the capture of any decision issued by a licensing board at or after each pre-hearing conference or hearing.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 66	The DDMS shall support the capture of documents used to promulgate orders, directives, etc., to SECY and other parties.	The DDMS shall support the capture of documents.	4/3/03 meeting: strike out the wording of the requirement starting at "used to promulgate orders…"

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 67	Issuance documents shall be stored in their native format	Issuance documents shall be stored in their native format	Duplicate of Production Requirement 52.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 68	The DDMS shall support scanning and conversion of paper documents, e.g., to capture required written signature pages	The DDMS shall support scanning and conversion of paper documents, e.g., to capture required written signature pages.	POC Requirement 16 (Scanner) addresses this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 69	The DDMS shall accommodate input information needed to assist judges with the generation and storage of orders, directives, etc., promulgated by the presiding officer, including such items as:	POC Requirement 51 addresses this requirement: The DDMS shall support the creation and capture of documents used to promulgate orders and directives to SECY.	From POC Requirement 51 business rule: This requirement is entirely outside of DDMS. It will be accomplished through EIE, via web interface, and using existing word processing packages. The Adobe application utilized within DDMS will support the standard functions of copying and pasting.

Sub-Requirement

69 A	Decision

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 70	The DDMS shall accommodate output information needed to assist judges with the generation and storage of orders, directives, etc., promulgated by the presiding officer, including such items as:	The DDMS shall provide the capability to display information pertaining to the generation and storage of orders and directives, such as:	4/3/03 meeting: DDMS to display 70 A - Orders, and 70 B - Notices. Design Note: production design to identify these types of hearing documents.

Sub-Requirement

70 A	Orders
70 B	Notices

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 82	The DDMS shall include all pleadings, orders, transcripts of pre-hearing conferences and hearings, pre-filed testimony, and exhibits as a part of the record.	The DDMS shall include all pleadings, orders, transcripts of pre-hearing conferences and hearings, pre-filed testimony, and exhibits as a part of the record.	03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.)

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 83	The DDMS shall provide for the creation of an index (metadata) for each piece of information or each exhibit that is part of the record.	The DDMS shall manage the metadata for each document.	4/3/04 meeting: agreed to the clarified requirement wording.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 84	The DDMS shall store all electronic documents or multimedia files to be included in the record.	The DDMS shall store all electronic documents or multimedia files to be included in the DDMS database record(s).	4/3/03 meeting: agreed to the rewording of the original requirement as now shown in the clarified requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 86	The DDMS shall maintain an index that includes the unique LSN identifier for each entity (document, files, etc.) originally stored in the LSN.	The DDMS shall maintain an index that includes the unique LSN identifier for each entity (document, files, etc.) originally stored in the LSN.	The "LSN Accession Number" provided by EHD and used within DDMS, will be the field for storing of this information. This information will be maintained as part of the bibliographic data.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 89	The DDMS shall support the creation of an electronic document from a paper document accepted into evidence during the hearing; to be stored as a part of the record.	The DDMS shall support the creation of an electronic document from a paper document accepted into evidence during the hearing; to be stored as a part of the record of the proceeding.	POC Requirement #16 (scanner capabilities) addresses this requirement. 4/3/03 meeting: directed PEC to strike out "the record," and replace with " the record of the proceeding."

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 101	The DDMS shall accommodate input information needed to assist with interactive search and retrieval of record information, including such items as:	The DDMS shall support the capability to retrieve DDMS database information.	04/03/03 meeting: a) directed to reword the original requirement as now shown in the clarified requirement; b) WAIVE 101 A through 101 C.

Sub-Requirement

101 A	Request from Judges
101 B	Request from Parties
101 C	Request from Court Reporter

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 109	The DDMS shall accommodate output information needed to capture and retrieve transcribed testimony, including such items as:	The DDMS shall be capable of displaying information needed to capture and retrieve transcribed testimony, including such items as:	04/03/03 meeting: directed to reword original requirement to the new wording shown in the clarified requirement. Current POC design addresses both 109 A and 109 B. Note: for linking of transcripts and associated exhibits, DDMS provides an option to click on a specific exhibit and have the user taken directly to where in the transcript this exhibit is referenced. (Pre-filed testimony will be appended to the transcript in the 'clean' transcript version, with links 'jumping' from the beginning of the testimony to the end of the testimony, with no video or audio of the actual testimony.) 4/9/03 meeting: pre-file applies to exhibits and testimony only.

Sub-Requirement

109 A	Searchable Text
109 B	Linked transcripts and associated exhibits

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 113	The DDMS shall support the packaging and export of records to be stored on the ADAMS systems with SECY. The exported records shall include the electronic documents and related metadata required for indexing the records and referencing physical evidence.	The DDMS shall support the packaging and export of records to be stored on the ADAMS systems with SECY. The exported records shall include the electronic documents and related metadata required for indexing the records and referencing physical evidence.	04/03/03 meeting: after much discussion, agreed to leave wording of requirement as is. Understanding that the file to receive DDMS export will be used for storing, eventually, into ADAMS. Per Beth DeWoody, this is most likely an export to a folder. NOTE: PEC design documents (ICD) need to address the procedures for performing error checking and document validation, as to how DDMS will address and process those documents that fail the verification process. Production Design Document addresses (verification by analysis).

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 117	The DDMS shall accommodate output information needed to support the transmission of all record information to SECY, including such items as:	The DDMS shall export metadata and DDMS database record content (minus video and audio) to SECY via ADAMS.	04/03/03 meeting: a) agreed to reword original requirement to the wording shown in the clarified requirement; b) waiving of 117 A through 117 C (clarified requirement wording captures all the necessary information types to be exported). This requirement wording is accepted with the understanding the DDMS export will be to a file / folder, used by another HLW subsystem for eventual pulling into ADAMS.

Sub-Requirement

117	A	Metadata
117	B	Electronic Documents
117	C	Physical Evidence

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 128	The DDMS shall provide a capability to easily highlight subsections of the document or information being presented, for emphasis or focus.	The DDMS shall provide a capability to easily highlight subsections of the document or information being presented.	04/03/03 meeting: general agreement that the DDMS production system's 'intelligent podium' ("electronic whiteboard") will provide the requirement's capabilities (to include the ability to highlight and zoom on a portion of the displayed document). NOTE: this requirement is for the presenter only, through the use of the 'intelligent podium.'

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 172		DDMS shall provide the capability to link exhibits electronically to witnesses.	NEW REQUIREMENT. DDMS production system will provide the capability for linking witnesses to appropriate exhibits. Design approach is for parties to designate exhibits when submitting witnesses. In addition, within the hearing room, there is an option to associate a witness to an exhibit.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 1	The DDMS shall provide access to electronically available copies of the rules, policies, and procedures that govern the hearing.	The DDMS shall provide electronic access to copies of the rules, policies, and procedures.	Rules, policies, and procedures governing the hearing can be found at Westlaw and Lexis. Users will be restricted, through DDMS, to only these two online legal services.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 2	The DDMS shall provide a chronological listing of all FRNs, pleadings, and pre-filed information that support the hearing.	The DDMS shall provide a chronological listing of all Federal Register Notices, pleadings, and pre-filed information.	Listings shall be sortable by Docket Date. POC default will be docket date.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 3	The DDMS shall provide access to the EHD to support review of the current electronic docket.	The DDMS shall contain all documents in the electronic docket.	EHD can be accessed through the NRC website, access to which can be provided through DDMS. For testing and verification purposes, a comparison of what resides in EHD and what resides in DDMS must be performed. NOTE: In the event of a DDMS failure, the EHD will be accessible through an Internet link.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 4	The DDMS shall support the generation of an ordered list of witnesses (witness list) that are scheduled to support the hearing.	The DDMS shall support the creation, reading, updating, and deleting of an ordered list of witnesses (witness list).	A witness list shall be sortable at a minimum by Appearance Time/Date, Name, Contention/Issue, party represented, exhibits, and Judges. (In addition, when searching primarily by name, the system will be covered by the Privacy Act which adds system constraints.)

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 5	The DDMS shall support the management of the witness list and support changes to the witness list.	Same as 1.4	The DDMS shall support the management of the witness list and support changes to the witness list. NOTE: reference the DDMS Users' Privileges Table to verify which DDMS user group / role has the authorization to perform updates / changes to the witness list.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 8	The DDMS shall support sealing portions of the record, temporarily stored on the DDMS.	The DDMS shall support sealing or unsealing of any portion, or entire sections, of the official record.	Judges can order the sealing of any or all of a section of the hearing through a Protective Order. Sealing restricts access to only those authorized by the Protective Order. At a minimum, the seal should indicate time, date and Boards. The bibliographic header will contain a status field indicating the hearing video is "Closed", and will be restricted to authorized users.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 9	The DDMS shall support independent or private retrieving and viewing of hearing or record information by the judges.	The DDMS shall support retrieving and viewing of hearing or record information.	Retrieving and viewing record information is determined by user access ID and assigned security access group.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 10	The DDMS shall support the management of multiple hearings, in one or more locations. This management shall include a capability to uniquely identify and correlate information captured and presented at each hearing.	The DDMS shall support the management of multiple hearings. This management shall include a capability to uniquely identify and correlate information captured and presented at each hearing.	04/03/03 meeting: directed to strike out "in one or more locations." This requirement is really two requirements: 1) "support" multiple hearings in one or more locations, and 2) uniquely identify "captured" information at each hearing. Per 3/12/03 Technical Working Group, DDMS production system design shall correlate information by issues (with each issue having multiple contentions) to specific boards, witnesses can appear across multiple boards, witnesses are to be linked to exhibits, boards can have multiple locations, and exhibits can be associated with contentions/issues.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 11	The DDMS shall support the aggregation of information across multiple hearings, allowing search and retrieval across all hearing information with a single request.	The DDMS shall support the aggregation of information across multiple hearings, allowing search and retrieval across all hearing information with a single request.	Current DDMS POC design allows for 1) key word searching and advanced text searching; 2) a user to search across multiple boards.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 12	The DDMS shall support electronic notifications or instructions to participating hearing personnel, e.g., judges and court reporter.	The DDMS shall support electronic notifications or instructions to participating hearing personnel, e.g., judges and court reporter.	Design envisions providing a 'chat' message board for authorized users.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 13	The DDMS shall accommodate input information needed to support the presiding officer in administering the hearing, including such items as:	The DDMS shall be capable of receiving, recording, and storing information needed to support the presiding officer in administering the hearing, including such items as:	4/09/03 meeting: a) 13 H - Precedents; contained within a Motion, or access via Lexis / Westlaw, b) 13 I - Schedule; part of a case management module, a generated list of witnesses scheduled for hearings, for example. TBD: PEC to address scheduling function: the process for defining hearing schedules of boards, witnesses, exhibits.

Sub-Requirement

13	A	Rules
13	B	Procedures
13	C	Policies
13	D	Pleadings
13	E	Evidence
13	F	Parties
13	G	Witness List
13	H	Precedents
13	I	Schedule
13	J	Transcripts

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 14	The DDMS shall accommodate output information needed to support the presiding officer in administering the hearing, including such items as:	The DDMS shall be capable of displaying information needed to support the presiding officer in administering the hearing, including such items as:	04/09/03 meeting: 14 F - Selected portions of the transcripts (display of transcript; 14 G - Public announcements: copying from NRC.Gov website public announcements, and displaying these announcements within DDMS. TBD: PEC to address scheduling function: the process for defining hearing schedules of boards, witnesses, exhibits.

Sub-Requirement

14 A	(Reserved)
14 B	Instructions
14 C	Schedules
14 D	Computer generated reports
14 E	Process flows
14 F	Selected portions of transcripts
14 G	Public announcements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 17	The DDMS shall support storing references to non-electronic exhibits as descriptive profile information.	The DDMS shall support storing references to non-electronic exhibits as descriptive profile information.	As a minimum, the descriptive profile shall match the EHD bibliographic header fields. This will also include item location and other controlling fields.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 19	The DDMS shall support the searching of pre-filed electronic and non-electronic information using the metadata or full-text index information.	The DDMS shall support the searching for electronic and non-electronic information using the metadata and/or full-text index information as authorized.	The non-electronic information searches will be accomplished via bibliographic headers. Media type, text or other structured data may be searched. Access rights on bibliographic header information will be enforced.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 23	The DDMS shall support the indexing of pre-filed documents with metadata (descriptive information), including descriptive information used in the EHD such as docket number, accession number, etc.	The DDMS shall support the indexing of pre-filed documents with metadata, including descriptive information.	This should include at a minimum the following fields: docket number, accession number, exhibit number, LSN number, issues, and keyword. Clarify: Author, Name, Board.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 28	The DDMS shall support the retention of the access control privileges originally assigned by the EHD for using the pre-filed documents by NRC personnel.	The DDMS shall support the retention of the access control privileges originally assigned by the EHD.	This will be addressed using the taxonomy (folder structure) as defined by DDMS ICD.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 31	The DDMS shall provide direct access to external databases and subscription services for the purpose of providing research support to the ASLBP:	The DDMS shall provide access to external research databases and subscription services.	Access via Internet.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 32	The DDMS shall provide web access to research tools to support litigant research.	The DDMS shall provide web access to research tools to support litigant research.	POC Requirement 31 addresses this requirement: The DDMS shall provide access to external research databases and subscription services. NOTE: production design will have the proposed firewall restrict DDMS users to only the legal research websites, and NRC.gov. Action Item: PEC to ensure the web address restriction is covered in the Production Design Document. Production Design Document addresses (verification by analysis).

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 33	The DDMS shall allow research participants to use the native search and retrieval capabilities to request information from the identified repositories.	The DDMS shall utilize the native search and retrieval capabilities for the identified repositories in 1.31.	The DDMS will provide a link to the online services. Each participant is responsible for subscription to these services.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 34	The DDMS shall support the retention of the access control privileges originally assigned by the EHD for using documents by authorized personnel.	The DDMS shall support the retention of the access control privileges originally assigned by the EHD.	POC Requirement #28 addresses this production requirement: The DDMS shall support the retention of the access control privileges originally assigned by the EHD. 4/9/03 meeting: Action Item for NRC / PEC to discuss manual override process for changes to the Access Control List (ACL) for protective orders.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 57	The DDMS shall support the integration of evidentiary, transcription, and research information to assist the judges in making a decision. This includes synchronizing transcripts with video proceedings and links to electronic documents.	The DDMS shall support the integration of evidentiary, transcription, and research information, which includes synchronizing transcripts with video proceedings and links to electronic documents.	Centralized time stamps will come from the database. This is the high-level requirement to synchronize transcript record in all media types.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 58	The DDMS shall support advanced search methods to assist judges in finding evidentiary information.	The DDMS shall support advanced search methods in finding evidentiary information.	Advanced Search methods may include, but are not limited to, natural language searches, literal searches, and text searches. Advanced methods = natural language search, concept search, Boolean, searches, and literal search.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 64	The DDMS shall accommodate input information needed to assist judges with developing and documenting decisions, including such items as:	The DDMS shall be capable of receiving, recording, and storing information to assist judges with developing and documenting decisions, including such items as:	04/17/03 meeting: by "developing and documenting decisions," 64 A (Other Proceeding Information) refers to accessing nrc.gov, and 64 B (Research) refers to the ability, through DDMS, to access Westlaw.

Sub-Requirement

64 A	Other Proceeding Information	
64 B	Research	

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 65	The DDMS shall accommodate output information needed to assist judges with developing and documenting decisions, including such items as:	The DDMS shall be capable of displaying information needed to assist judges with developing and documenting decisions, including such items as:	Issuances to be derived from Westlaw / Lexis.

Sub-Requirement

65 A	Issuances	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 79	The DDMS shall accommodate input information needed to assist with the capturing of all information presented and discussed during a hearing, including such items as:	The DDMS shall be capable of receiving, recording, and storing all information presented and discussed during a hearing, including such items as:	4/9/03 meeting: 79 C - Administrative Management information - part of the case management functionality, for example, scheduling.. 79 F - Video; the playing of a presenter's video will be 'captured' (recorded) within DDMS.

Sub-Requirement

79 A	Evidence
79 B	Decision
79 C	Administrative Management information
79 D	Pleadings
79 E	Transcription
79 F	Video

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 80	The DDMS shall accommodate output information needed to assist with the capturing of all information presented and discussed during a hearing, including such items as:	The DDMS shall be capable of displaying information needed to assist with the capturing of all information presented and discussed during a hearing, including such items as:	4/9/03 meeting: 80 C - DVD/CD records: to include VCR tape output. The DDMS production's electronic podium to handle the displaying of these items.

Sub-Requirement

80 A	Metadata
80 B	Electronic Information
80 C	DVD/CD records

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 85	The DDMS shall maintain a reference to physical items that need to be included in the record.	The DDMS shall maintain a reference to physical items that need to be included in the record.	POC Requirement #17 addresses this requirement: The DDMS shall support storing references to non-electronic exhibits as descriptive profile information.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 87	The DDMS shall provide a capability to seal a portion of the record.	The DDMS shall provide a capability to seal a portion of the record.	POC Requirement #8 addresses this requirement: The DDMS shall support sealing or unsealing of any portion, or entire sections, of the official record.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 105	The DDMS shall support the active linking of transcribed information with electronic information referenced by the transcript.	The DDMS shall support the linking of transcribed information with introduction of exhibits.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 106	The DDMS shall support the capture and storage of transcribed textual information.	The DDMS shall support the capture and storage of transcribed textual information.	While the hearing is in progress, the system will capture real-time video synchronized to the court reporter-generated transcript.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 110	The DDMS shall support the identification of DDMS records that need to be filed as a part of the official record with SECY.	The DDMS shall support the identification of DDMS database records that need to be filed as a part of the official record with SECY.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 111	The DDMS shall identify DDMS hearing records to be filed with SECY on a daily basis.	The DDMS shall identify DDMS hearing records to be filed with SECY daily.	Information will be made available for upload to DPC.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 112	The DDMS shall identify those DDMS records required to be filed with SECY at the end of the hearing, including any records of related hearings.	The DDMS shall identify those DDMS database records required to be filed with SECY at the end of the hearing, including any records of related hearings.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 127	The DDMS shall provide an interface that allows the professional user (e.g., judge, attorneys) to easily search, retrieve and display information. A seamless interface shall be provided to allow the professional user to focus on the hearing and not the DDMS system, i.e.. do not detract from the operations of the hearing.	The DDMS shall provide an interface that allows the user to search, retrieve and display information.	As per NRC Technical Reference Model (Draft), Microsoft Windows standards as specified in The Windows Interface Guidelines for Software Design. Windows standard for GUI information.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 170	NEW REQUIREMENT	DDMS shall support the ability for selected users to collaborate within a group.	Provide the capability to send and receive instant message type communications between selected users, based on security access table. DEFERRED

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 171		DDMS shall provide the capability to queue and present exhibits based on day or date range.	NEW REQUIREMENT. Current POC's "Today's Exhibits" displays a queue of the exhibits to be presented for today's court date. Production design to add an option for the user to specify a date range. This feature is for the parties, not court personnel, to enter and queue up their exhibits.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 173		The DDMS shall provide the following scheduling capabilities: 1) Schedule sessions, for the duration of the hearing, by one witness, one exhibit, one issue (with related contentions), one contention, one party, one board, one judge, or any combination; 2) Display and print schedule by session, by day, by week, by month, by year; 3) Display, by sessions, the categories of witnesses, exhibits, boards, issues, contentions, parties, judges, and locations.	NEW REQUIREMENT

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 6	The DDMS shall support the control of evidence presentation during the hearing. This shall include the capability to control the display and presentation of information to specific monitor(s), microphones or any input or output source.	The DDMS shall support the control of evidence presentation during the hearing. This shall include the capability to control the display and presentation of information to specific monitor(s), microphones or any input or output source.	Related to Task 2, Exhibit 1 hardware. For this task (Task 1), DDMS to show via design documentation the capability to fulfill this requirement (Production Design Document addresses (verification by analysis, not demonstration).

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 18	The DDMS shall support capturing multimedia electronic information in their original format.	The DDMS shall support capturing multimedia electronic information.	Multimedia information shall include video, audio, digital images, and electronic documents. Current policy requires all electronic document submissions to be in PDF format only. ADAMS can only accept PDF and Tiff formats.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 35	The DDMS shall support the display of all evidence in electronic form on display monitors or workstations distributed inside and outside of the hearing room.	The DDMS shall support the display of all evidence in electronic form on display monitors or workstations distributed inside and outside of the hearing room.	This requirement is related to the Production Requirement # 99 addresses this requirement's intent: The DDMS shall support retrieval of the DDMS record from: Judge's bench, Judge's chambers, Judge's conference room(s), etc. NRC to define all terminal locations for the primary DDMS users. Task 3 will demonstrate. Current task (Task 1) to address this requirement (capabilities) in design documentation. Production Design Document addresses (verification by analysis, not by demonstration). It is envisioned displaying hearing proceedings on monitors outside of the hearing room.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 36	The DDMS shall support the display presentation of litigator case information from:	The DDMS shall support the presentation of litigator case information from:	Courtroom camera feed will record all events in the courtroom, including litigator presentations. DDMS will not have any specific video-conferencing capabilities.

January 31, 2004

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 37	The DDMS shall support the presentation of physical evidence or exhibits to monitors or workstations inside and outside the hearing room. A variable zoom capability shall be provided to selectively view specific details of the information being examined.	The DDMS shall support the electronic presentation of physical evidence or exhibits to monitors or workstations.	4/9/03 meeting: the DDMS production's Elmo / electronic podium to address this requirement. 37 A - zoom capabilities are from 8.33% up to 1600%.

Sub-Requirement

37 A   DDMS shall support variable zoom capabilities for viewing displayed information and/or images.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 38	The DDMS shall support the presentation of hearing information to remote locations via video conference.	The DDMS shall support the presentation of hearing information to remote locations (outside of the hearing room) via video conference.	It is envisioned the conducting of hearings in Washington (Rockville, MD), with the video-conferencing of this hearing (live) to a designated Las Vegas, NV location. The test scenario for fulfilling this requirement would be to have testimony at a remote site as input ('feed') to the Rockville, MD hearing room. (Remote location 's audio will automatically trigger the teleconference video feed.)

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 40	The DDMS shall provide a capability to support the Americans with Disabilities Act requirements as applicable. This shall include a capability to provide enhancements for the hearing impaired and closed caption or real-time reporting for the deaf.	The DDMS shall provide a capability to support the Americans with Disabilities Act requirements (as applicable).	04/17/03: current DDMS design fulfills ADA requirements. Action Item: NRC (Pat Smith) to arrange for DDMS staff to interview NRC personnel responsible for certifying information systems as being ADA compliant. Most recent input from Pat in 4/24/03 meeting: many aspects of the full 508 standard as they pertain to the DDMS usage in the HR do not apply. PEC should just submit the vendor statement (Plumtree) that the product is 508 compliant.

Sub-Requirement

40 A   DDMS shall provide the capability to increase audio volume and closed captioning (real-time reporting).

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 41	The DDMS shall support the translation of languages to and from U.S. English for non-English speaking participants.	The DDMS shall support the translation of languages to and from U.S. English for non-English speaking participants.	04/17/03 meeting: Judge Bollwerk confirmed the fulfilling of this requirement (from non-English to English translation) is for an interpreter to provide the translation of the witness's words to English. DDMS will, both in real-time transcript and on video, capture this translation.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 42	The DDMS shall provide a capability to play back selected portions of the testimony presented. This shall include the audio, video, and any transcript created during the hearing.	The DDMS shall provide a capability to play back selected portions of the testimony.	Play back capabilities restricted to user ID and assigned group. Reference the Security Access table. Formats are identified in requirement # 18.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 43	The DDMS shall support the selective display of information from all input sources in the hearing room, including computers, projectors, cameras, etc.	The DDMS shall support the selective display of information from all input sources in the hearing room, including computers, projectors, cameras, etc.	04/17/03 meeting: DDMS control panel (control room) design will address all input sources to the hearing.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 44	The DDMS shall support the simultaneous display of information from multiple input sources in multiple windows or viewing partitions on monitors or workstations.	The DDMS shall support the simultaneous display of information from multiple input sources in multiple windows or viewing partitions on monitors or workstations.	04/17/2003 meeting: current POC design (multiple windows within the same screen display) meets this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 61	The DDMS shall support the indexing of the video records to assist in the review of video information.	The DDMS shall support the indexing of the video records.	04/17/2003 meeting: current POC design of a) indexing by witness and by exhibits, b) searching video by key frames, and c) synching the video to the transcript fulfills this requirement.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 71	The DDMS shall support the capture of a video and audio record of specific activities and information presented in the hearing.	The DDMS shall capture the video and audio of specific activities and information presented in the hearing.	04/17/2003 meeting: all hearing-related activities within the hearing room are captured via video and audio. Both control room and electronic podium will fulfill the need for capturing video and audio from direct input ('feed') sources.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 72	The DDMS shall automate the capture process using a voice-activated mechanism to trigger the recording process, subject to over-ride by the clerk or presiding officer.	The DDMS shall automate the electronic hearing capture process using a voice-activated mechanism to trigger the recording process, to include:	04/17/2003 meeting: A/V function of the DDMS design, fulfilled by control room capabilities.

Sub-Requirement

72 A   The capability for an authorized operator to over-ride the automatic electronic hearing capturing process.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 73	The DDMS shall capture the presentation of information at local and remote sites when video conferencing technology is used.	The DDMS shall capture the presentation of information at local and remote sites when video conferencing technology is used.	Same functionality and business rule specifications as Production Requirement 38.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 74	The DDMS shall support playback of selected portions or time slots of the proceeding recording.	The DDMS shall support playback of selected portions or time slots of the proceeding recording.	04/17/2003 meeting: requirement applies to within the hearing room itself. DDMS to demonstrate capability to record and playback selected portions of the hearing, and to capture the playing back of the selected portion of the hearing video. (Judge Bollwerk noted to be able to go back and replay an individual's testimony, and for DDMS to capture and record this moment of the replaying of the testimony video.)

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 75	The DDMS shall support video capture for the judges, litigants, and individuals at the witness box.	The DDMS shall support video capture for the judges, litigants, and individuals at the witness box.	Current POC configuration supports the electronic capturing of judges, litigants, and individuals at the "witness box" actions / words. Exhibit 1 software and actual cameras' locations will meet this requirement.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
Production 76	The DDMS shall support playback of proceeding recordings.	The DDMS shall support playback of proceeding recordings.	04/17/2003 meeting: similar to Production Requirement # 74, except applies to outside the hearing room.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
Production 77	The DDMS shall record evidence presented during the hearing that is displayed on projectors or other monitors in the hearing room.	The DDMS shall record evidence presented during the hearing that is displayed on projectors or other monitors in the hearing room.	4/17/03: DDMS to demonstrate the recording and storing, within the hearing room process, from a variety of "different inputs" (to include projectors or other monitor(s) input. Relates to electronic podium capabilities.
Req. No	**Original Requirement**	**Clarified Requirement**	**Business Rules**
Production 78	The DDMS shall provide a capability for the proceeding recording to be indexed and linked with relevant hearing transcripts.	The DDMS shall provide a capability for the proceeding recording to be indexed and linked with relevant hearing transcripts.	Current POC design links video to real time transcript.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 81	The DDMS shall support the real-time creation of a record of pre-hearing conferences and hearings.	The DDMS shall support the real-time creation of a record of pre-hearing conferences and hearings.	03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.) 04/17/2003 meeting: pre-hearing conferences will be Rockville, MD and / or Las Vegas, NV locations. DDMS design document to show the capability for supporting pre-hearing conferences at other (remote) sites. Production Design Document addresses (verification by analysis), explaining how DDMS will process pre-taped inputs, electronic files, and paper files.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 103	The DDMS shall support the generation of a time-sequenced audio and/or video record of pre-hearing conferences and hearings.	The DDMS shall support the generation of a time-sequenced audio and video record of pre-hearing conferences and hearings.	03/26/2003 meeting: pre-hearing conferences and 'regular' hearing conferences are the same. (Users will know the difference based on the date.) 04/17/2003 meeting: pre-hearing conferences will be Rockville, MD and / or Las Vegas, NV locations. DDMS design document to show the capability for supporting pre-hearing conferences at other (remote) sites. Production Design Document addresses (verification by analysis).

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 108	The DDMS shall accommodate input information needed to capture and retrieve transcribed testimony, including such items as:	The DDMS shall be capable of receiving, recording, and storing information needed to capture and retrieve transcribed testimony, including such items as:	POC design captures testimony on video (to include audio). 4/17/03 meeting: references to both electronic podium presentation (automatic switching of video to DDMS as direct feed input, and the ability for the court reporter to capture podium's processing of the audio tape input (what was being said on the audio tape) within the transcript.

Sub-Requirement

108 A	Audio Tape
108 B	Video Tape
108 C	Arguments

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 114	The DDMS shall support the generation of CD or DVD media with the exported data.	The DDMS shall support the generation of CD or DVD media with the exported data.	The production DDMS equipment to include a CD / DVD burner. 04/17/2003 meeting: DVD refers to data DVD (not video DVD).

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 119	The DDMS shall provide a capacity to store video and other forms of multimedia data, based on the following criteria:	The DDMS shall provide a capacity to store video data based on the following criteria:	04/17/2003 meeting: hearing video stored by morning and afternoon sessions. Changes to 119 B (online duration) and 19 D (see following note): Per Tony (3/6/03) - 19D - we had not planned to encode the video at MPEG-1. MPEG-1 is not being used that much any more. Also Real Networks and Microsoft Media have improved their codes such that you get much better video than MPEG-1 at lower data rates. Also, MPEG-1, which is 1.5Mbs is not always playable on desktop computers because of the high bandwidth that is being streamed and slower CPUs can have a hard time keeping up which results in jerky video.

Sub-Requirement

119 A	Hearing proceedings will be digitized and compressed for storage and distribution via video streaming technologies.	
119 B	Hearing video will be retained online for the course of the hearing, and stored on removable media (near-line) for future retrieval.	
119 C	Analog video clips or recordings presented as exhibits in the hearing will be digitized and compressed for storage in a digital format. This digitized information will be stored online in the DDMS database.	
119 D	Video recordings are estimated to be stored in a Microsoft Media format at 56, 150, and 500 Kbps. For the total of 150 days, the total estimated recording requirement is 1215 GB.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 120	The DDMS shall provide a capability to display evidence on each monitor or display in the hearing room, within 10 seconds of the request to display the document, for 90% of all requests.	The DDMS shall provide a capability, within the electronic hearing room environment, to display evidence on each monitor or display in the hearing room, within 10 seconds of the request to display the document, for 90% of all requests.	04/17/2003 meeting: capable of supporting up to 20 simultaneous users. NOTE: for remote locations, performance impacted by transmission speeds. PEC proposes a minimum of 3 characters when conducting wild card searches.

Req. No	Original Requirement	Clarified Requirement	Business Rules
POC 148	The DDMS shall support the display of more than one output simultaneously.	The DDMS shall support the display of more than one output simultaneously.	DDMS shall have the ability to display multiple screens and windows. Current portal based system satisfies this requirement.

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 165		DDMS shall support the capture of digital images of physical evidence.	NEW REQUIREMENT. Elmo capabilities to fulfill this requirement.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 169		DDMS shall provide the capability to selectively store portions of video evidence, and to be able to uniquely mark / indicate each stored portion.	NEW REQUIREMENT. 4/17/03 meeting: need for capturing (and managing) "separate chunk of video." The "relevant part" of the separated video will be handled as physical evidence (Legal-Exhibit document type), with metadata reference to specify part of the whole video presentation.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 149		The DDMS shall display a warning banner every time a user initially logs into the system.	NEW REQUIREMENT. 05/17/2003 meeting: Action Item for Beth DeWoody to reference appropriate NRC document (see 149 A) and provide to DDMS developers the exact wording of the warning banner. NOTE: NRC AIS Security Program Handbook 12.5, Part II specifies exact warning banner wording.

Sub-Requirement

149 A	The displayed warning banner shall adhere to the warning banner wording defined in NRC Automated Information Systems Security Program, Handbook 12.5, Part II, Administrative Controls.	

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 150		The DDMS shall require all individuals accessing the system to identify themselves, through the use of typed in passwords, before performing any actions.	NRC AIS Security Program Handbook 12.5, Part II specifies 150 A - 150 K.

Sub-Requirement

150 A	The DDMS shall provide a password authentication mechanism to authenticate each individual accessing the system.
150 B	The DDMS shall allow for accessing and maintaining the system's passwords only by an authorized user.
150 C	The DDMS shall store all passwords in a one-way encrypted form.
150 D	Each DDMS password shall be a minimum of 6 characters in length, and a combination of alphabetic and numeric characters, or special characters ($, #, @).
150 E	The DDMS shall not display the password on any device when entered by the user.
150 F	The DDMS shall provide the capability for every individual user to change their password.
150 G	The DDMS shall require the changing of each password every 90 days.
150 H	The DDMS shall ensure a user's old password to be different than the new password by at least (minimally) two characters.
150 I	The DDMS shall automatically terminate a user session and lock out (prevent from entering DDMS) the individual account, after 3 unsuccessful (prohibited) password logon attempts.
150 J	For every unsuccessful (prohibited) password logon attempt, the DDMS shall display an error message stating, at a minimum, the logon information is invalid.
150 K	The DDMS shall disable the individual password after a period of 90 days of inactivity (not successfully logging into the system with the password).

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 151		DDMS shall provide the following electronic auditing features:	NEW REQUIREMENT. The requirement will be covered both in the Production Design Document (verification by analysis), and upon fully fielding the production system, verification will be performed by demonstration.

Sub-Requirement

151 A	The DDMS shall provide an electronic audit trail file to automatically record all data entered, updated, or deleted in the system databases.
151 B	The DDMS shall ensure the audit files are accessible only to authorized users.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 152		The DDMS shall automatically record the following events and activities:	NRC AIS Security Program Handbook 12.5, Part II specifies 152 A - 152 J.

Sub-Requirement

152 A	All changes to the password file
152 B	User logons, both successful and unsuccessful
152 C	Unsuccessful or unauthorized attempts to access system resources
152 D	Unsuccessful or unauthorized attempts to perform functions denied by lack of assigned privilege.
152 E	Successful or allowed access to security-critical objects (operating system files, data noted as sensitive)
152 F	Changes to DDMS users' security privileges
152 G	Changes to DDMS users' profiles or groups
152 H	Changes to DDMS security configuration
152 I	Modification to DDMS databases
152 J	Changes to individual's password

DDMS Production Requirements

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 153		The DDMS audit record shall, at a minimum, record the following:	NRC AIS Security Program Handbook 12.5, Part II specifies 153 A - 153 E.

Sub-Requirement

153 A	Date and time of auditable event
153 B	User ID of the individual performing the auditable event.
153 C	Type of event
153 D	Type of resource (if applicable) accessed.
153 E	Activity that occurred within the auditable event.

Req. No	Original Requirement	Clarified Requirement	Business Rules
Production 164		DDMS shall provide for Appellate group access, with view only privileges.	NEW REQUIREMENT. No access to judges' notes.

January 31, 2004

Appendix B – User Roles and Access Privileges

Attribute	Parties	Clerk of Court	Judge	Law Clerks
View latest version of Pre-Filed documents and exhibits	X	X	X	X
Submit Exhibits, including physical evidence (within the hearing room)	X	X	X	
Perform Searches for Exhibits, pre-filed documents	X	X	X	X
Grant and revoke access privileges to hearing documents, exhibits, video, transcripts, and legal research services. (To include Protective Orders)		X	X	
Retrieve hearing documentation	X	X	X	X
Create and Store hearing documentation	X	X	X	X
Collaboration			X	
Create Store, and Retrieve Private Notes		X	X	X
Review Proceedings (video and transcript of hearing)	X	X	X	X
Marked Exhibits as Accepted, Rejected, Withdrawn, and Stricken		X	X	
Access to legal research using Lexis Westlaw,	X		X	X
View Sensitive, Copyright, Proprietary, Client/Attorney Privilege, or Privacy Act information (directed authorization)	X	X	X	X
Seal Records		X	X	
Witness List management			X	X
Start and Stop all or portions of DDMS		X	X	
Scheduling		X	X	X

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Appendix C – DDMS/EHD/ADAMS Data Elements

1.DDMS Item ID	22. Official Record
2. Proceeding Number	23. Physical File Location
3. RAS Number	24. Title
4. ASLBP Number	25. Attachment
5. LSN Number	26. Issues
6. Transcript Page Range	27. Witnesses
7. Transcript	28. Party Identifier
8. Exhibit (Party Exhibit Number)	29. Cross Reference
9. Official Exhibit Number	30. Panel (Judges) – (Hidden in EHD Only)
10. Exhibit Accepted Locator	31. TIFF Item ID – (Hidden in DDMS)
11. Exhibit Identified Locator	32. URL – (Hidden in DDMS)
12. Exhibit Rejected Locator	33. Document Type
13. Exhibit Stricken Locator	34. Date Docketed
14. Exhibit Withdrawn Locator	35. Date to be Released
15. Addressee Affiliation	36. Docket Number
16. Addressee Name	37. Document Date
17. Availability	38. ADAMS Accession Number
18. Case Reference Number	39. Author Affiliation
19. Document Sensitivity	40. Author Name
20. Document Status	41. Estimated Page Count
21. Package Number	42. License Number