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

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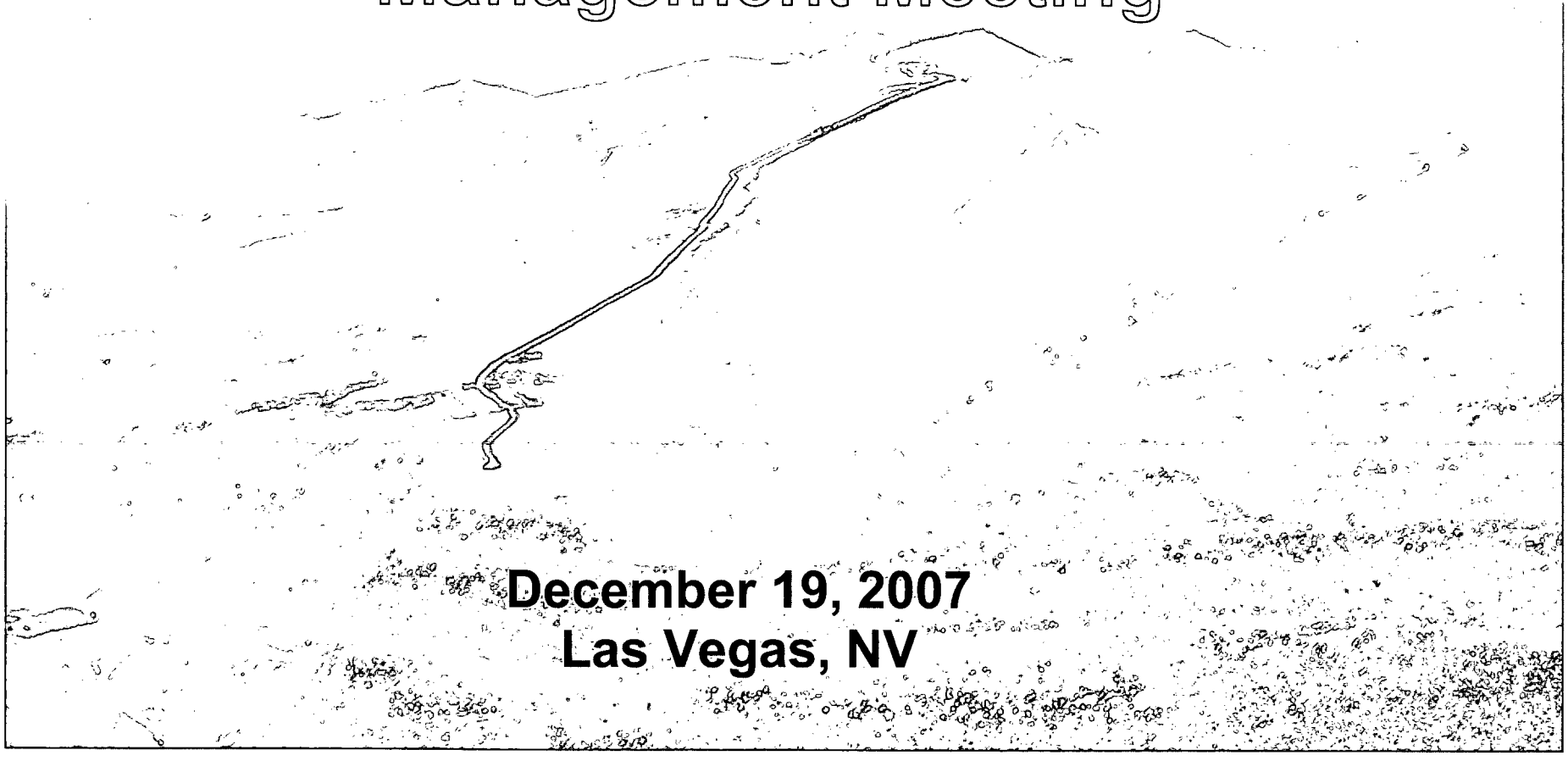
DOE/NRC Quarterly Management Meeting



December 19, 2007
Las Vegas, NV

Enclosure 4

Yucca Mountain Repository Design

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by:
Paul Harrington
Director, Office of the Chief Engineer
Office of Civilian Radioactive Waste Management
U.S. Department of Energy

December 19, 2007
Las Vegas, Nevada

Overview

- The design detail developed for the License Application is 100% of what is required by regulation to support the safety analysis
- The design detail required for construction of the facilities contains additional details that do not affect the safety analysis and are therefore not a part of the License Application
  - Provide examples of design details required to demonstrate the preclosure safety analysis
  - Provide examples of design details required to construct the facilities
  - Confirm that the level of design details is consistent with the regulation and with previous discussions with NRC

Design Percent Complete

- In the discussion of 35 to 40 percent design complete at LA, 100 percent represents the engineering effort needed to design the entire set of repository facilities to completion, including details necessary to support equipment procurement and facility construction
  - Engineering costs of approximately $489M
- The design at LA will be 100 percent of the engineering effort needed to meet the regulatory requirements for the LA and to support the preclosure safety analysis
  - Engineering costs of approximately $173M, or 35 percent of the $489M total

Level of Design Information License Application

- At the time of submittal, the LA will contain a sufficient level of design information to:
  - Meet the requirements of 10 CFR Part 63.21, *Content of License Application*
  - Satisfy the regulatory guidance of NUREG-1804, *Yucca Mountain Review Plan,* including the associated HLWRS *Interim Staff Guidance* documents
- The LA will contain a sufficient level of design information needed to demonstrate that:
  - The requirements for preclosure safety analysis (10 CFR Part 63.112), performance assessment (10 CFR Part 63.114), and multiple barriers (10 CFR Part 63.115) have been met
  - There is reasonable assurance the performance objectives for GROA through closure (10 CFR Part 63.111) will be met
  - There is reasonable expectation the performance objectives for the geologic repository after closure (10 CFR Part 63.113) will be met
- As the regulatory authority, the NRC will, based on its independent review, make a determination whether these objectives have been met before a construction authorization can be granted

Level of Design Detail in Accordance with Staff Guidance ISG-2

- ....the LA and PCSA will contain two levels of information:
  - (1) General information on the design of facilities, structures, systems, and components (SSCs), equipment, and process activities, to support the PCSA
    - ✓ Description of the facilities and their functions
    - ✓ Description of SSCs within the facilities
    - ✓ Design bases and design criteria for important to safety (ITS) SSCs
    - ✓ Basic operations, controls, and monitoring
    - ✓ Key dimensions and materials of construction
    - ✓ Relationships and interdependencies of SSCs, as needed
    - ✓ Application of codes and standards, including exceptions

Level of Design Detail in Accordance with Staff Guidance ISG-2

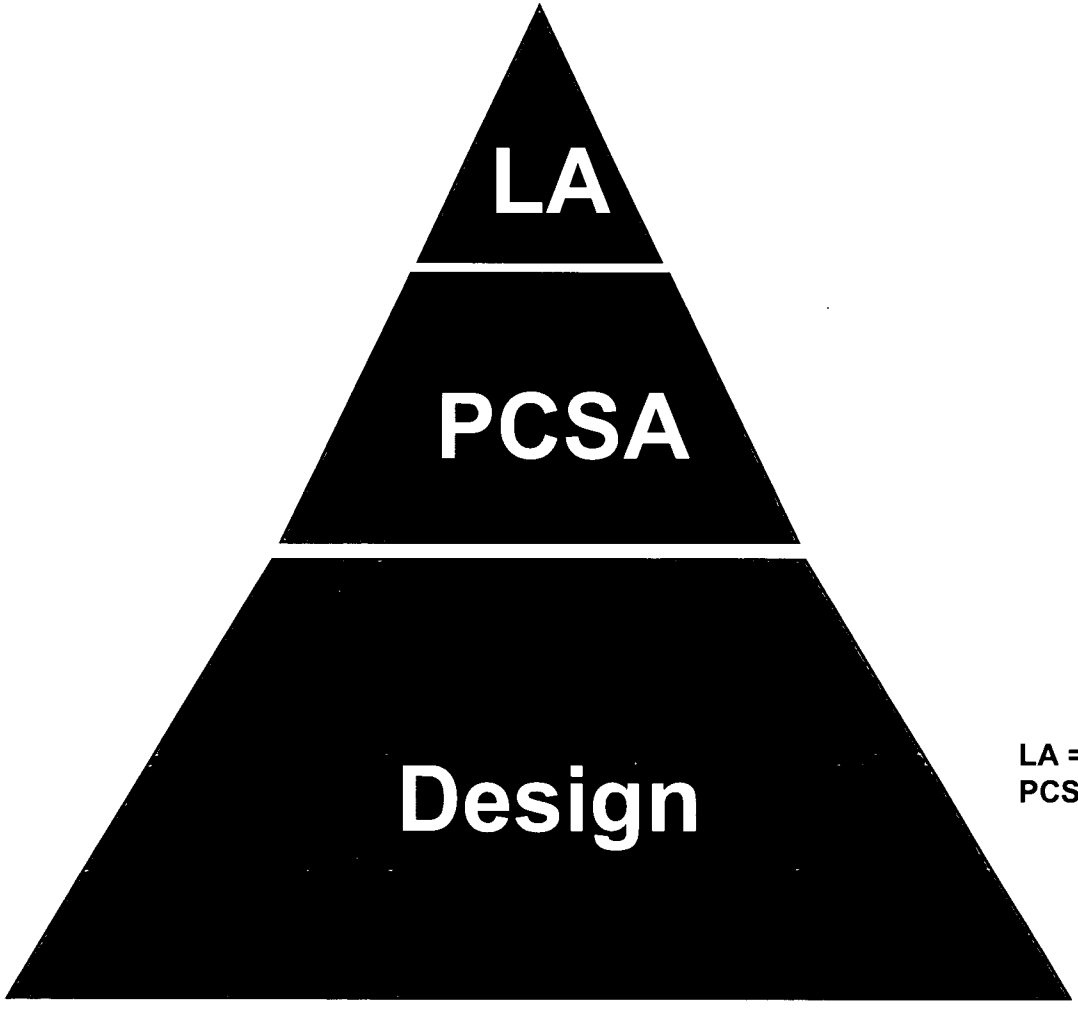
(Continued)

- (2) Specific information about ITS SSCs that demonstrate the ability of the ITS SSCs to perform their intended safety function(s). SSCs that are designated as ITS will need greater specificity in the design and operations than SSCs that are not ITS

  Additional types of specific information could include the following:

  - ✓ Structural design features, material specifications, and engineering analyses
  - ✓ Schematics of component configurations
  - ✓ Control logics for critical functions related to SSC reliability
  - ✓ Major operational features related to the controls and the human interactions associated with the SSC
  - ✓ Unique operating environments that may adversely affect SSC performance

LA and PCSA Supported by Detailed Design and Analyses

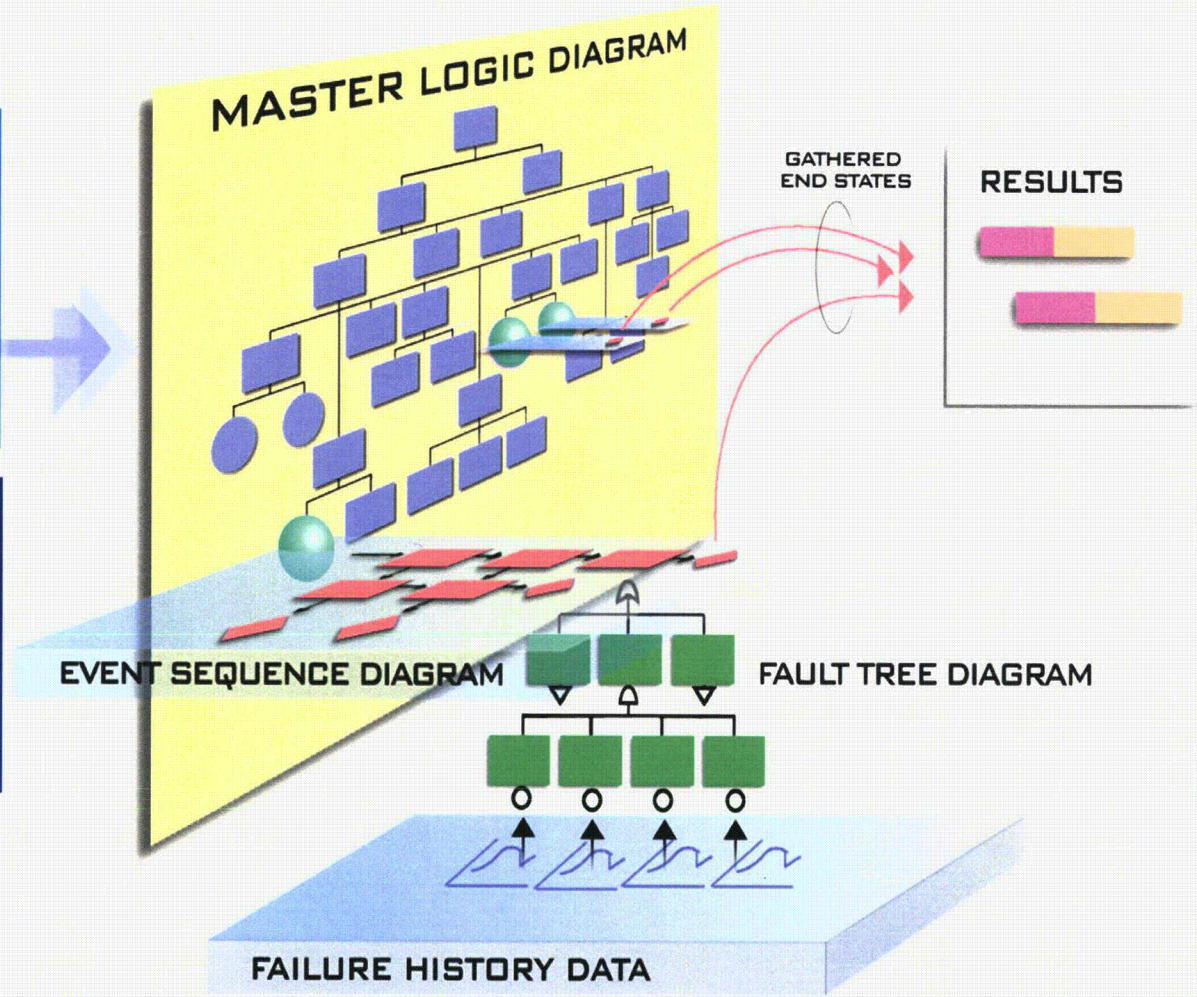


LA = License Application
PCSA = Preclosure Safety Analysis

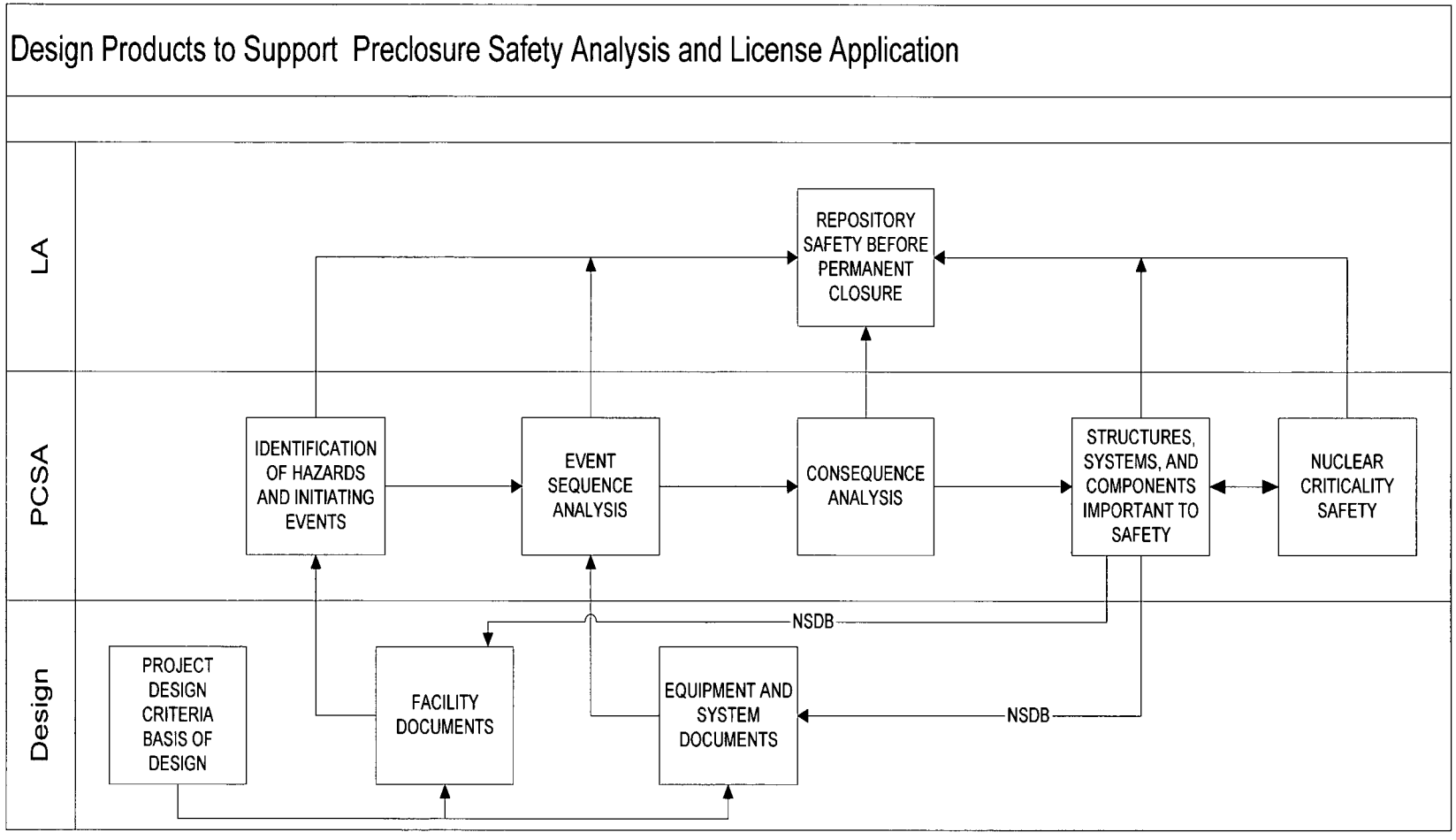
Design for PCSA

LA Design Detail for SSC's, and Concept of Operations

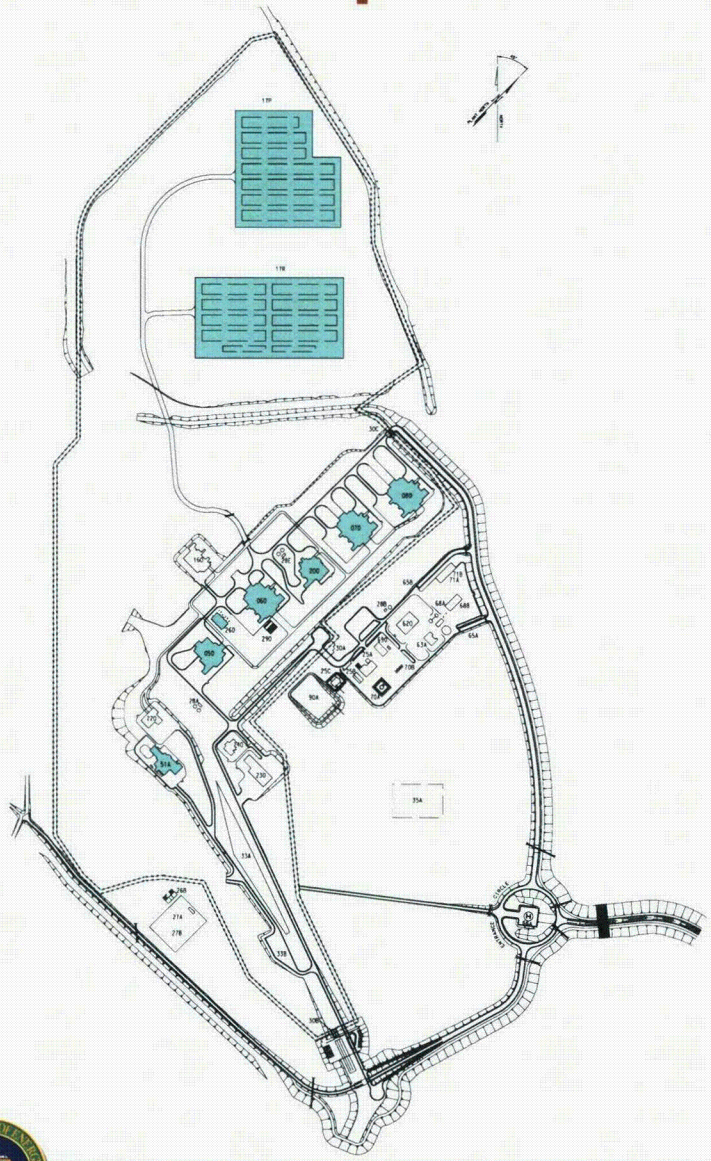
Hazard and Operability Study & External Initiating Event Screening



Design for Preclosure Safety Analysis (PCSA)



Important to Safety Facilities



51A - Initial Handling Facility (IHF)

050 - Wet Handling Facility (WHF)

26D - Emergency Diesel Generator Facility (EDGF)

060 - Canister Receipt and Closure Facility 1 (CRCF 1)

200 - Receipt Facility (RF)

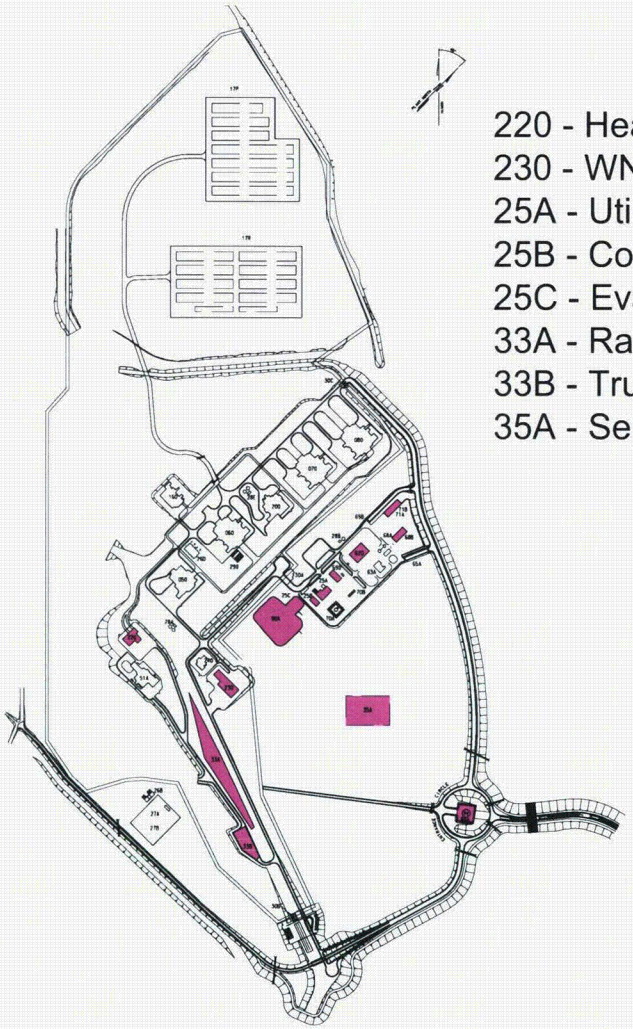
070 - Canister Receipt and Closure Facility 2 (CRCF 2)

080 - Canister Receipt and Closure Facility 3 (CRCF 3)

17P - Aging Pad

17R - Aging Pad

Examples of Facilities NOT Important to Safety



220 - Heavy Equipment Maintenance
230 - WNNRF
25A - Utilities Facility
25B - Cooling Tower
25C - Evaporation Pond
33A - Rail Car Buffer Area
33B - Truck Buffer Area
35A - Septic Tank and Leach Field
620 - Administration Facility
66A - Helicopter Pad
68A - Warehouse/Central Receiving
68B - Materials/Storage Yard
690 - Vehicle maintenance and Motor Pool
71A - Craft Shops
90A - Storm Water Retention Pond

Level of design detail provided in LA is sufficient for PCSA to assess hazards and locations for onsite dose assessments due to normal operations and to event sequences. Information includes: facility locations on site plan, operations, key dimensions, material storage and quantities

Structural Design Detail Examples

Design of ITS SSCs for the License Application and in support of the Preclosure Safety Analysis	• Structural analyses for IHF, WHF, CRCF 1, RF, EDGF, and Aging Facility • Concrete basemat, wall and slab thicknesses and required reinforcing steel • Structural steel member sizes and locations • Structural fragility analyses for IHF, WHF, CRCF and RF • General arrangement drawings for IHF, WHF, CRCF 1, RF, EDGF, and Aging Facility
Design of non-ITS SSCs for the License Application	❑ Structural analysis for LLWF ❑ Layouts of balance of plant facilities ❑ General arrangement drawing for LLWF

Structural Design Detail Examples

(Continued)

Design Details required for Construction of the Repository but not required to support the Preclosure Safety Analysis	➢ Reinforcing steel detail drawings ➢ Penetration and embed details ➢ Additional reinforcing steel for penetrations and openings ➢ Structural steel connection details ➢ Specifications for concrete, aggregate, reinforcing steel, embeds, penetrations, and structural steel ➢ Specifications for design/build of balance of plant facilities

Mechanical Handling Design Detail Examples

Design of ITS SSCs for the License Application and in support of the Preclosure Safety Analysis	• Level 2 and 3 block flow diagrams for IHF, WHF, CRCF 1, RF, and Aging Facility • Mechanical equipment envelope drawings and mechanical handling design reports for cask crane, cask trolley, canister transfer machine, waste package trolley, site transporter, and transport and emplacement vehicle • Mechanical equipment envelope drawings for grapples, lifting yokes, and cask access platforms • Process and instrumentation diagrams for ITS equipment depicting ITS boundaries and ITS control features • Structural fragility analysis for cranes

Mechanical Handling Design Detail Examples

(Continued)

Design of non-ITS SSCs for the License Application	❑ Mechanical equipment envelope drawings for non-ITS maintenance cranes, equipment storage racks, DPC cutting equipment, TAD closure equipment, and mobile platforms ❑ Design of the waste package closure system (INL) ❑ Process and instrumentation diagrams for DPC cutting and TAD closure

Mechanical Handling Design Detail Examples

(Continued)

Design Details required for Construction of the Repository but not required to support the Preclosure Safety Analysis	➢ Procurement specifications for mechanical handling equipment ➢ Design and procurement of mechanical handling equipment

HVAC Design Detail Examples

Design of ITS SSCs for the License Application and in support of the Preclosure Safety Analysis	• Ventilation flow diagrams and ventilation and instrumentation diagrams for ITS confinement systems for WHF, CRCF 1, and RF • Ventilation flow diagrams and ventilation and instrumentation diagrams for ITS electrical and battery rooms • Ventilation flow diagrams and ventilation and instrumentation diagrams for EDGF • Structural fragility analysis for fans

HVAC Design Detail Examples

(Continued)

Design of non-ITS SSCs for the License Application	❑ Ventilation flow diagrams and ventilation and instrumentation diagrams for non-ITS confinement systems for IHF, WHF, CRCF 1, RF, and LLWF ❑ Ventilation flow diagrams and ventilation and instrumentation diagrams for non-ITS, non-confinement systems for IHF, WHF, CRCF 1, RF, LLWF and EDGF

HVAC Design Detail Examples

(Continued)

Design Details required for Construction of the Repository but not required to support the Preclosure Safety Analysis	➢ Duct routing drawings ➢ Duct fabrication drawings ➢ Duct hanger drawings ➢ Duct design and installation details ➢ Procurement specifications for air handling units, fans, HEPA filters, ductwork, duct supports and duct accessories

Electrical and I&C Detail Examples

Design of ITS SSCs for the License Application and in support of the Preclosure Safety Analysis	• Single line diagrams for ITS electrical power distribution in WHF, CRCF 1, RF, and EDGF • Logic diagrams for ITS equipment and systems • Structural fragility analysis for load centers
Design of non-ITS SSCs for the License Application	❑ Switchyard layout ❑ Main single line diagram for non-ITS electrical power distribution for the GROA ❑ Single line diagrams for non-ITS electrical power distribution for IHF, WHF, CRCF 1, RF, LLWF and EDGF ❑ Functional block diagrams ❑ Digital control and management information system (DCMIS) architectural drawing

Electrical and I&C Detail Examples

(Continued)

Design Details required for Construction of the Repository but not required to support the Preclosure Safety Analysis	➢ Conduit and raceway (cable tray) layout drawings ➢ Electrical transient analyses (ETAP) ➢ Raceway supports ➢ Cable routing ➢ Connection and schematic diagrams ➢ Logic diagrams for non-ITS equipment and systems ➢ DCMIS ➢ Communications systems ➢ Radiation/radiological monitoring system ➢ Environmental/meteorological monitoring system ➢ Procurement specifications for equipment, instrumentation, cable, conduit, cable tray, raceway supports, and electrical accessories

Process Design Detail Examples

Design of ITS SSCs for the License Application and in support of the Preclosure Safety Analysis	None – no process systems are designated as ITS
Design of non-ITS SSCs for the License Application	❑ Process and instrumentation diagrams for service gas, compressed air, hot and chilled water, confinement area drains, low-level waste collection and fuel pool cooling and cleanup systems

Process Design Detail Examples

(Continued)

Design Details required for Construction of the Repository but not required to support the Pre-closure Safety Analysis	➢ Piping isometrics ➢ Piping fabrication drawings (spool sheets) ➢ Pipe supports ➢ Specifications for pumps, tanks, valves, piping, filters, demineralizers, pipe hangers and piping accessories

Summary

- The design detail developed for the License Application is 100% of what is required to support the safety analysis
- The design detail required for construction of the facilities contains additional details that do not affect the safety analysis and are therefore not a part of the License Application

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

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Quality Assurance Management Assessment (QAMA) Summary

Presented to:
NRC/DOE Quarterly Management Meeting

Presented by:
Christopher A. Kouts
Acting Principal Deputy Director,
Office of Civilian Radioactive Waste Management

December 19, 2007
Las Vegas, NV

Background

- The Quality Assurance Management Assessment (QAMA) was commissioned by the Director of the Office of Civilian Radioactive Waste Management (OCRWM)
- The assessment was conducted in May - September 2007
- It included document reviews, interviews, activity observations
- Over 5,000 staff hours of effort were expended

Team Composition

Former:

- Regional Administrator for the Nuclear Regulatory Commission (NRC) Region III Office in Chicago
- Deputy Director – Office of Nuclear Reactor Regulation, and Deputy Regional Administrator for the NRC Region II Office in Atlanta
- President and Chief Executive Officer (CEO) of British Nuclear Fuels Limited, and served on the Board of Directors for Public Service Electric and Gas Company
- President and CEO of Duke Engineering & Services Hanford, Inc.
- President of the joint venture contracted to manage and direct the construction aspects of the restart of Pickering Units 1-4
- General Public Utilities Nuclear Corporation Vice President & Director - Technical Functions

Scope

- Technical adequacy and timeliness of the repository license application (LA)
- Corrective Action Program (CAP) and Self-Assessment effectiveness
- Effectiveness and compliance in the area of training, qualifications and proficiency
- Management issues affecting quality

Significant Improvements/Successes

- "...OCRWM will very likely submit a comprehensive and technically adequate License Application by the summer of 2008."
- "...the Team saw evidence of significant improvements and tangible successes in correcting historical quality-related problems."
- "...in the context of many years of issues and criticisms regarding QA effectiveness, the OCRWM Office of Quality Assurance (OQA) has taken aggressive and effective steps to improve overall QA performance."
- "The numerous efforts to improve the Corrective Action Program (CAP) have yielded clear improvement; while more progress is needed, the Team concludes that the CAP is a maturing program and that it is today achieving its intended effect of identifying, tracking, and correcting conditions adverse to quality."
- "...BSC LLC and SNL [training] programs were comprehensive and well administered."

License Application

- The QAMA Team was generally confident that OCRWM will submit a comprehensive and technically adequate LA by the summer of 2008
  - OCRWM management and NRC should develop a communication protocol that provides suitable public involvement and at the same time permits healthy interaction between applicant and regulator
  - Similar attention needs to be applied to relationships among OCRWM and other regulators and stakeholders
- The role of NRC licensee carries with it numerous organizational requirements, capabilities and behaviors that are unfamiliar to the Department

Corrective Action and Self-Assessment Programs

- The CAP is achieving its intended effect of identifying, tracking, and correcting conditions adverse to quality. Additional refinements are recommended.
- Line management has not effectively utilized the self-assessment process or met some of the previous commitments to improve self-assessment performance. The Team found no evidence that the organization has made any significant progress in addressing this long-standing problem.

Training, Qualifications and Proficiency

- The Team found that Bechtel SAIC LLC and Sandia National Laboratories training programs were comprehensive and well administered
- OCRWM has self-identified that they have challenges in their overall training and qualification programs as compared to the commercial nuclear industry
- Training program documents need to meet the requirements of 10 CFR 63 or NUREG-1804 for maintaining proficiency

Management Issues Affecting Quality

- The Director has provided strong leadership with sharp focus on Nuclear Quality
  - Appoint a single individual as the senior nuclear manager of Nevada operations
  - Place high priority on making any needed changes in the direct reporting positions to the Director, such that they are in place prior to expiration of the Director's current term
  - Act now to solidify and institutionalize the changes the Director has put in place. Assign high priority to implementation of Strategic Objective 2 – Organizational Development
- OQA has taken effective steps to improve overall QA performance but is directly involved in line management
- Significant improvements/successes in correcting historical quality-related problems have not been communicated well

Corrective Action Plans

- Self-assessment: corrective actions underway included benchmarking with industry and improved guidelines
- QA/Line Management Roles: a workshop was conducted on November 14, 2007 to reinforce line ownership for performance
- An implementation plan has been developed for Strategic Objective 2 with sustaining sponsors identified for key improvement initiatives
- Organization structure is under development to strengthen the continuity of leadership after January 2009

Corrective Action Plans

- Resolution of problems identified in the QAMA report will be through the CAP
- Principal Deputy Director was assigned the responsibility of ensuring that corrective actions to address the issues identified in the QAMA report are effectively implemented
- OQA will provide independent assessments of the effectiveness of those corrective actions

Summary

"In summary, it is the QAMA Team's overall conclusion that YMP QA management is effective and that the YMP organization is developing a technically sound and compliant LA. The organization has a long history of problems related to QA effectiveness, and continued improvement in many areas is warranted. The QAMA Team developed numerous recommendations, as delineated in this report, and the Team strongly encourages YMP management to act on those recommendations."

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

www.ocrwm.doe.gov

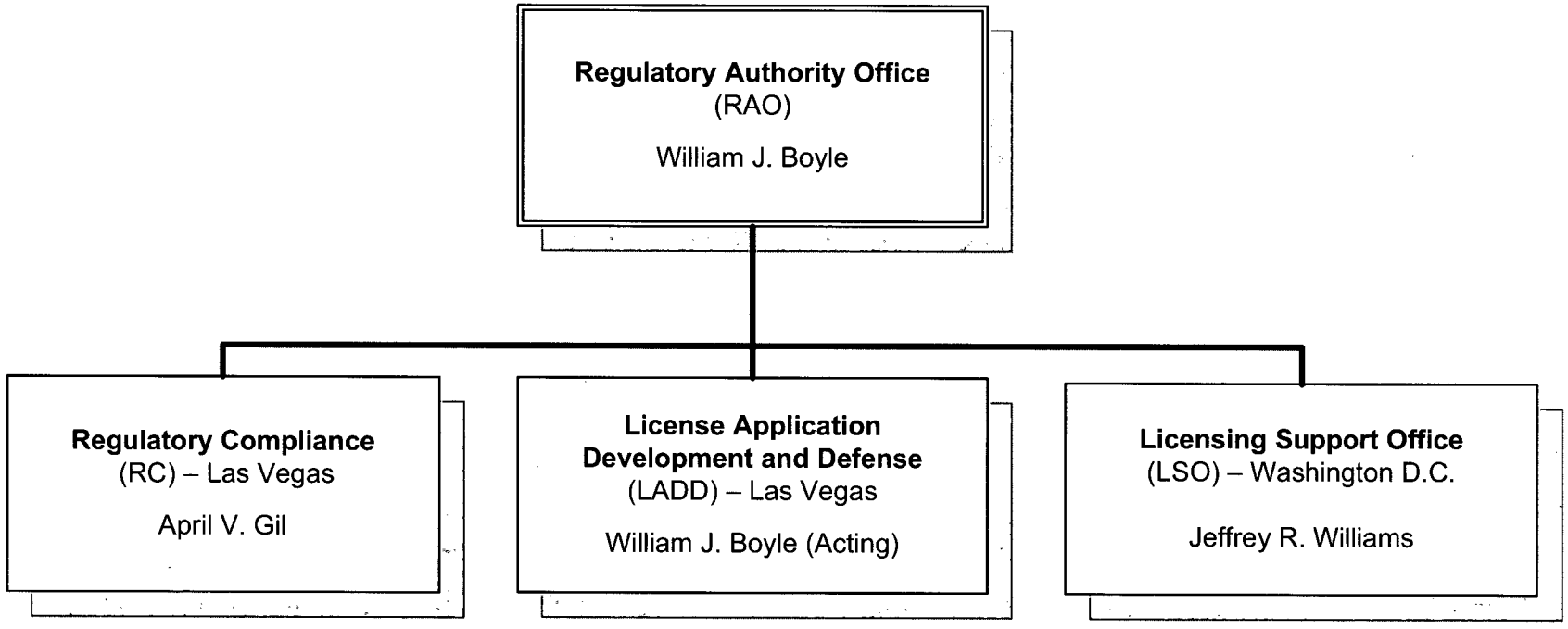
Office of Regulatory Authority Organization

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by:
William J. Boyle
Director, Regulatory Authority Office
Office of Civilian Radioactive Waste Management
U.S. Department of Energy

December 19, 2007
Las Vegas, NV

OCRWM Regulatory Authority Office



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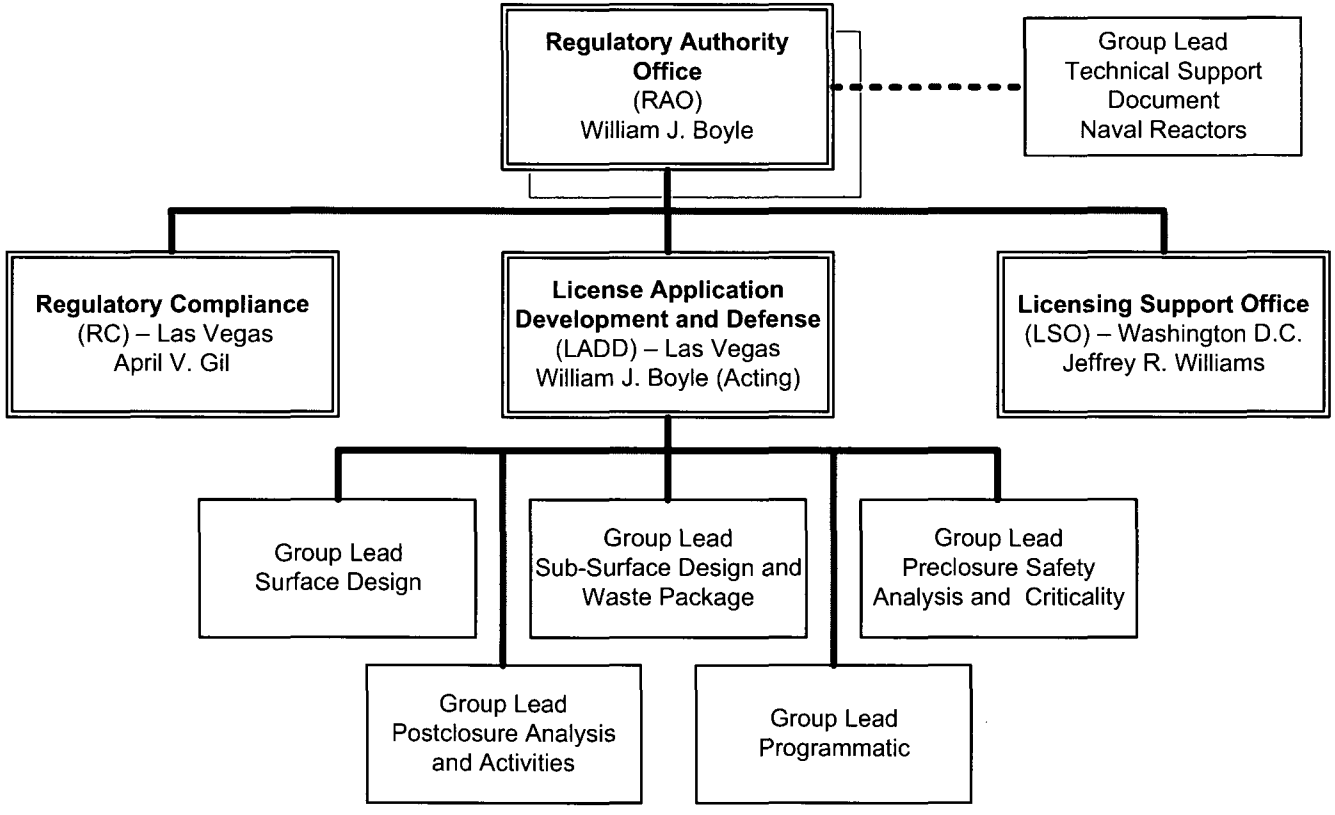
Proposed NRC/DOE Interactions

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by:
Jeffrey R. Williams
Supervisor, Licensing Support Office
Office of Civilian Radioactive Waste Management
U.S. Department of Energy

December 19, 2007
Las Vegas, NV

Organizational Points of Contact



Proposed NRC/DOE Interactions Prior to LA Submittal (June 2008)

- Tephra redistribution – January 2008, Las Vegas, NV
- Licensing Process II - February 2008, Rockville, MD
- Preclosure Safety Analysis and Design – March 2008, Las Vegas, NV
- Infiltration – February/March 2008, Las Vegas, NV
- Near Field Chemistry and Propagation of Uncertainty – February/March 2008, Las Vegas, NV
- Quarterly Management Meeting – March 2008, Rockville, MD
- TSPA Models and Implementation for LA – March/April 2008, Las Vegas, NV
- LA Content and Structure – 30 Days Following the LA Submittal, Rockville, MD

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

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Status of NRC On-Site Representative (OR) Open Items

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by:
April V. Gil
Supervisor, Regulatory Authority Office
Office of Civilian Radioactive Waste Management
U.S. Department of Energy

December 19, 2007
Las Vegas, NV

Status of NRC Open Items

#	Open Item	Description From NRC OR's Report	Responsible DOE Manager	Status and Schedule for Resolution
1	AOI-OCRWM-OQA-05-20-02	"Revise procedure AP-3.13Q to reflect 10CFR63.21 requirements related to completeness of information necessary for LA review." [Note: issue with BSC citation of "draft" design documents.]	Paul Harrington	This Open Item was closed in ORs Quarterly Report 07-03. Reporting period ending 9/30/07. **CLOSED**
2	AOI-OCRWM-OQA-05-20-01	"Procedural controls for "preliminary" classification of Engineering calculations will be revised to clearly define the designation of completed calculations suitable to support the requisite safety analysis." [Note: issue with BSC citation of "preliminary" design documents]	Paul Harrington	This Open Item was closed in ORs Quarterly Report 07-03. Reporting period ending 9/30/07. **CLOSED**
3	OR-OI-07-01	"Failure to take prompt corrective actions related to documenting Conditions Adverse to Quality in the CAP system and initiating a Root Cause Analysis in response to QA Program inadequacies identified in Level A CR 10141." [Note: issue is related to delay in entering CR's based on NEI assessment of QA program.]	Larry Newman	This Closure Package was delivered to the ORs on 8/5/2007 The NRC informed the DOE/BSC that this item will be closed in the next ORs quarterly report.
4	OR-OI-06-10	"BSC had not implemented effective requirements management system for the Quality Management Directive sections that were reviewed during an audit, indicating inadequate corrective actions for previous conditions identified in CRs – signifying emerging adverse trends." [Note: Issue pertains to Requirements Management Audit]	Paul Harrington	This issue is being addressed by CR 10285, "NRC Open Item OR-OI-06-10 regarding Requirements Management," and CR 10381, "Inadequate corrective actions to prevent recurrence for conditions related to requirements management." Closure Package will be delivered to the ORs by 12/31/2007.

Status of NRC Open Items (Continued)

#	Open Item	Description from NRC OR's Report	Responsible DOE Manager	Status and Schedule for Resolution
5	OR-OI-06-09	"Based on OR review of the RCA for CR7395, it was determined that the RCA for CR7395 does not support the stated conclusions nor does it adequately address the extent of the condition and impact." [Note: Issue pertains Lead Lab Audit]	Larry Newman	This issue is being addressed by CR 9664, "Inadequate Root-Cause Analysis (RCA) for Condition Report (CR) 7395." Closure Package was delivered to the ORs on 9/21/2007
6	OR-OI-06-07	"Failure to process clarification related to the content and completeness of a CR record package in accordance with requirements of LP2.2Q, is identified as a deficiency. Clarification in response does not comply with the requirement." [Note: issue deals with retention of records from Correction Action Program.]	James Hollrith	This Open Item was closed in ORs Quarterly Report O7-02. Reporting Period Ending 6/30/07. **CLOSED**
7	OR-OI-06-03	"Based on Audit Observation of Software control (OQA-BSC-06-10), requesting a description of DOE's remediation processes related to the approximately 35 legacy codes." [Note: Issue pertains to remediation of legacy codes]	Russ Dyer	This Closure Package was delivered to the ORs on 10/05/2007. The NRC informed DOE/BSC that this item would be closed in the next ORs quarterly report.
8	OR-OI-06-04	"Based on Audit Observation of Software Control (OQA-BSC-06-10), requesting a basis and justification for the continued use of the output from software on the baseline that has not undergone IV&V remediation." [Notes: Issue pertains to Software IV & V remediation]	Russ Dyer	This issue is being addressed in CR 8461, "NRC OR Open Item 06-04 regarding retesting of legacy software codes embedded in DTNs. CR 8461: resolution for this CR has been planned, approved and is being implemented. Implementation is now being overseen. Closure Package will be delivered to the ORs by 05/21/2008.

Status of NRC Open Items (Continued)

#	Open Item	Description from NRC OR's Report	Responsible DOE Manager	Status and Schedule for Resolution
9	OR-OI-06-02	"Requirements Flow-Down and Procedure Adequacy and Audit Observation: Involved the inconsistent use of quality-affecting document designators that indicated inadequate corrective actions related to similar conditions documented in CR3448." [Note: Inconsistencies in the application of QA/QA;QA/NA and non-Q designators on Quality affecting documents]	James Hollrith	This Closure Package was delivered to the ORs on 9/18/2007. The NRC informed DOE/BSC that this item would be closed in the next ORs quarterly report.
10	OR-OI-05-01	"Inconsistencies in the root cause statements developed by the root cause analysis team, specifically the root cause related to traceability and transparency issues. Pending resolution of the apparent discrepancies in the root cause analysis for CR3235 identified in this Open Item." [Note: Transparency and Traceability]	Paul Harrington	This Open Item was closed in ORs Quarterly Report 07-03. Reporting period ending 9/30/07. **CLOSED**
11	OR-OI-02-10	"Pending appropriate evaluation and documentation of the design control attributes associated with requirements of 10CFR63.44 and 10CFR Part 21." [Note: 63.44 and 10 CFR Part 21 were not addressed in the readiness report]	Mark Williams	This Closure Package was delivered to the ORs on 10/03/2007. The NRC informed DOE/BSC that this item would be closed in the next ORs quarterly report.

AOI: Audit Observation Inquiry
OR-OI: NRC On-Site Representative's Open Item

Consolidated Action Items
From NRC/DOE Quarterly Management Meetings

Item No.	Action Item	Description	Status
1	MM 0402-C1	DOE will identify any to-be-verified (TBV) data in the LA that needs to be qualified (if any) at the time of LA submittal (Commitment).	Open. This item will remain open until LA submittal.
2	MM 0506-01	DOE and NRC to determine the dates for the list of proposed technical interactions discussed during previous Management Meetings.	Open. This item will remain open as a continuing action and progress will be reported at future management meetings.
3	MM 0509-01	DOE/NRC to hold technical exchange after the DOE report addressing the USGS alleged falsification of documents has been released by the Secretary.	Open. The referenced report including the root cause, extent of condition, and action plan was issued and was handed out during the March 27, 2007 MM. NRC has requested a technical exchange on revised Infiltration model and updated SNL data.
4	MM 0606-01	DOE and NRC to hold an interaction (management meeting or technical exchange - technical exchange preferred) on DOE's response to NRC's audit observation report (January 9, 2006) regarding the BSC's LLNL report.	Open. Pending completion of DOE's response to NRC's review comments on initial DOE response.
5	MM 0706-01	DOE and NRC to hold an interaction within a month after submittal of the LA to walk through the LA.	Open. An interaction on LA content and structure will be held in Rockville, MD, 30 days following the LA submittal.
6	MM 0709-01	DOE to provide to the NRC in a separate submittal at the time of LA mapping information on how all the Key Technical Issues (KTI) agreement items are addressed in the LA.	Open.

Note: The Quarterly Management Meeting action items are designated as "MM yymm-nn" where yy is the two digit year, mm is a two digit month and nn is a two digit action item number from that meeting.

U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Level of Design Detail in a License Application

NRC/DOE Quarterly Management Meeting
December 19, 2007

Jack R. Davis
Deputy Director
Division of High-Level Waste
Repository Safety

U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Discussion Objectives

- Summarize the regulatory requirements for expected level of design detail in the License Application (LA)
- Achieve alignment between the regulatory requirements and DOE's understanding of those requirements

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Protecting People and the Environment

Regulatory Framework

- Part 63 is risk-informed and performance-based; it does not prescribe a specific percentage of design detail completion to demonstrate compliance.

- For the geologic repository operations area (GROA), Part 63 requires DOE to:
  - describe the design of various components [63.21(c)(3)];
  - prepare a preclosure safety analysis (PCSA) [63.111(c)]

- Design detail in the LA must encompass all GROA facilities, even though construction may be in phases, because Part 63 requires one LA for the repository with two licensing decisions
  - 63.31 for construction authorization
  - 63.41 for a license to receive and possess nuclear material

U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Summary

- NRC will review GROA design and PCSA in the LA for compliance with Part 63 to determine whether the level of design detail and the PCSA are sufficient to begin the review and to support licensing decisions
  - If level of design detail is insufficient to begin the review, NRC will not docket the LA
  - If NRC dockets the LA, it may issue request for additional information during detailed technical review