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MFFF Project Status

7 September 2005



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Overview

Present the current planning basis for:

- Design completion
- Procurement activities
- LA / ISA Summary activities



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Design Completion

- Preliminary Design completed
- Detailed Design in progress, includes:
 - Pipe routing
 - Software design
 - Instrument detail
 - Setpoint analysis
 - Cable routing
 - Process unit detail design



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Procurement Activities

- Issue initial equipment Basic Order Agreement (BOA) request for proposal (RFP) in the near future
- Issue initial long lead AP welded equipment RFP in the near future
- Issue initial long lead MP process unit equipment RFP and award first order (covering design work only) early in 2006
- Issue initial design/build process unit RFP and award the first order (covering design work only) during the 2nd quarter of 2006
- Continue work with sintering furnace process unit vendor related to resolution of NSE open issues and award order (for design work only)



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Procurement Activities

- Examples of equipment BOA's:
 - junction boxes, glove ports, filters, window panels, electrical cable
- Examples of long lead AP welded equipment:
 - slab tanks, annular tanks, conventional tanks
- Examples of long lead MP process unit equipment:
 - grinder for PRE/PRF units, tester line press, pellet press, pellet diameter measuring device
- Examples of design/build process units:
 - assembly mounting process unit, rod scanning process unit



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LA / ISA Summary Activities

- Completed initial drafts of the LA / ISA Summary based on initial issue (Revision 0) design documents, NSE's, and NCSE's during second quarter 2005
- Completed updating safety analysis calculations (material at risk inputs and consequence analyses) during second quarter 2005
- Currently updating Process Hazard Analyses (PRHA) (updates expected complete 4th quarter of 2005)
- NSE's and NCSE's will be updated to incorporate PRHA results (updates expected complete 1st quarter of 2006)
- LA / ISA Summary drafts will be updated to reflect completed NSE's, NCSE's and design documents (NRC submittal expected 3rd quarter of 2006)



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Summary

- Detailed Design activities are in progress
- Procurement activities include issuing RFP's for Basic Order Agreements, long lead equipment, and process unit design/build beginning in the near future and continuing through 2006
- LA / ISA Summary activities include updating the PRHA's during 2005 and submittal of the LA / ISA Summary during the 3rd quarter of 2006



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License Application / ISA Summary

7 September 2005



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Discussion Purpose

- Describe the proposed content and level of detail for the License Application (LA) and Integrated Safety Analysis (ISA) Summary
- Obtain NRC feedback on the proposed approach



DCS Approach

- Build on information previously submitted in the Construction Authorization Request (CAR)
- Update the information to reflect MFFF design and safety bases evolution
- Keys to success are:
 - Appropriately separating the CAR content between the two required documents (LA and ISA Summary)
 - Reflecting evolution of PSSC's to IROFS
 - Adding the required safety information
 - Appropriately addressing NUREG 1718 guidance



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Separating The CAR Content

- In general commitments and programmatic information will be in the LA
- In general detailed and/or quantitative information will be in the ISA Summary
- In general information contained in one document will not be duplicated in the other
- Content of several CAR chapters are in the LA (e.g., 2, 3, 4, 12, 13, 14, 15) and other chapters are divided
- Chapter 11 content is in the ISA Summary but high level system descriptions are also provided in the LA



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LA Table of Contents

- 1.0 General Information
- 2.0 Financial Qualifications
- 3.0 Protection of Classified Matter¹
- 4.0 Organization and Administration²
- 5.0 Safety Program and ISA Commitments
- 6.0 Nuclear Criticality Safety
- 7.0 Fire Protection
- 8.0 Chemical Safety
- 9.0 Radiation Safety
- 10.0 Environmental Protection
- 11.0 Plant Systems
- 12.0 Human Factors Engineering
- 13.0 Safeguards and Security¹
- 14.0 Emergency Management
- 15.0 Management Measures³

Notes:

- 1 – Content will be provided by separately submitted plans
- 2 – Considering a separate submittal to be referenced by the LA and MPQAP
- 3 – Some subsections are addressed by reference to MPQAP (e.g., Audits and Assessments, Records Management)



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ISA Summary Table of Contents

- 1.0 Overview
- 2.0 Site Description¹
- 3.0 Facility Description²
- 4.0 Process and System Descriptions³
- 5.0 General ISA Method, ISA Team, and Accident Sequences⁴

Notes:

- 1 – Similar to content of CAR 1.3
- 2 – Similar to content of CAR 11.1 and 11.12 plus IROFS
- 3 – Similar to content of CAR 11.2 and 11.11 with system information from 6, 7, 9, and 10 plus IROFS
- 4 – Contains content from CAR 5, 6, 7, and 8



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Example of Separating the CAR Content - CAR Chapter 7 – Fire Protection

CAR Content	LA Content	ISAS Content
7.1 – Organization & Conduct of Operations	Chapter 7 describes	
7.2 – Features and Systems	Chapter 7 describes (summary level)	Chapter 4 describes (detailed)
7.3 – Manual Fire Fighting Capability	Chapter 7 describes	
7.4 – Fire Hazard Analysis		Chapter 5 describes
7.5 – Design Bases		Chapter 4 describes



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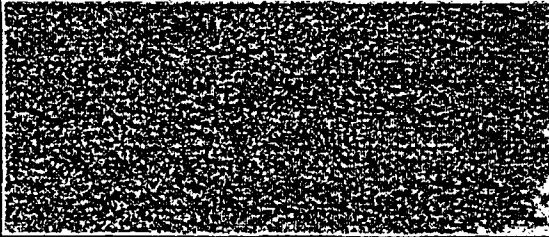
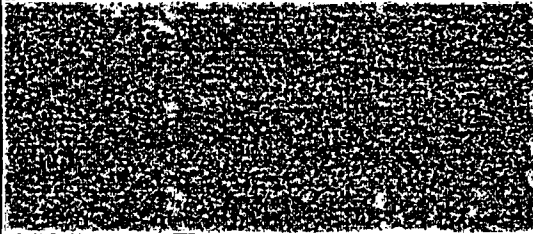
Example of Separating the CAR Content - CAR Chapter 8 – Chemical Safety

CAR Content	LA Content	ISAS Content
8.1 – Process Description		Chapter 4 describes
8.2 – Potential Interactions		Chapter 5 describes
8.3 – Accident Sequences		Chapter 5 describes
8.4 – Accident Consequences		Chapter 5 describes
8.5 – Process Safety Information		Chapter 5 describes
8.6 – Process Safety Interfaces	Chapter 8 describes	



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Example of Separating the CAR Content - CAR Chapter 9 – Radiation Safety

CAR Content	LA Content	ISAS Content
9.1 – Design Features	Chapter 9 describes (summary level)	Chapter 4 describes (detailed)
9.2 – Radiation Protection Program	Chapter 9 describes	
9.3 – Design Basis		Chapter 4 describes



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Examples of Planned Plant Systems Information

- HVAC and Confinement Systems
 - Draft LA section is 6 pages
 - Draft ISAS section is 137 pages
 - By comparison, CAR section is 71 pages
- Electrical Systems
 - Draft LA section is 3 pages
 - Draft ISAS section is 64 pages
 - By comparison, CAR section is 22 pages
- Instrument and Controls Systems
 - Draft LA section is 2 pages
 - Draft ISAS section is 59 pages
 - By comparison, CAR section is 26 pages
- Fluid Systems
 - Draft LA section is 5 pages
 - Draft ISAS section is 162 pages
 - By comparison, CAR section is 154 pages



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Evolution of PSSC's to IROFS

The ISA Summary will provide the following information for IROFS:

- Description
- Safety function
- Applicable codes and standards (at system / facility level)
- Identification of safety parameters or safety limits controlled by the IROFS
- IROFS monitoring / failure detection



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Additional Safety Information

- The ISA Summary will provide the following ISA results:
 - Hazard assessment
 - Accident analysis
 - Bounding consequence assessment
 - Accident sequences and IROFS
 - Demonstration that event sequences are highly unlikely for required events



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Addressing NUREG 1718 (SRP) Guidance

- SRP is used as guidance for format and content of the LA and ISA Summary
- Crosswalk tool is used to track where the information listed in the SRP will reside (i.e., LA, ISA Summary, or other project documents such as the fire hazard analysis)



Summary

- CAR information is being separated between the LA and ISA Summary and duplication is avoided
- The majority of information will be provided in the ISA Summary
- The LA provides summary level descriptive and programmatic information and commitments



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Licensing Basis Configuration Management

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Overview

- Licensing basis (LB) definition
- LB configuration management (CM) objectives
- Methods of controlling LB CM



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LB Definition

- The MFFF LB consists of information submitted to NRC that forms the basis for regulatory authorization to construct the MFFF and subsequently approval to possess and use special nuclear material
- The LB currently consists of the Construction Authorization Request (CAR), Environmental Report, MOX Project Quality Assurance Plan, and Regulatory Commitments
- The LA, LA-related plans (e.g., Physical Security Plan), and ISA Summary will become part of the LB upon submittal



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LB CM Objectives

- Between Construction Authorization and LA / ISA Summary submittal the LB may change due to:
 - Design evolution
 - Preliminary Safety Analysis evolution into the ISA
 - PSSC evolution into IROFS
- Resulting information will be communicated to NRC via submittal of the LA and ISA Summary
- LB CM objectives:
 - Identify proposed impacts to the LB
 - Evaluate and approve changes
 - Maintain a database of LB changes since the CAR was submitted
 - Accurately reflect LB changes in the LA / ISA Summary



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Methods of Controlling LB CM

- Methods used to manage the LB:
 - Procedural controls:
 - PP8-2, *Regulatory Commitments*
 - PP8-6, *Licensing Basis Configuration Management*
 - Crosswalk tools:
 - CAR/SER to draft LA and ISA Summary crosswalks



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PP8-2, *Regulatory Commitments*

- Implements controls over Regulatory Commitments (RC):
 - Only the DCS President and the VP, Regulatory Affairs are authorized to make a RC
 - The same authorization is required to modify a RC
- Requires tracking RC's until required actions are completed
- Provides for inclusion of RC's in the LB
- RC's contained in the LB currently include conditions of the Construction Authorization (e.g., upper limit on k_{eff} , Emergency Control Room TEEL limits, and environmental mitigation measures)



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PP8-6, *Licensing Basis Configuration Management*

- Establishes control over changes to LB information
- Modeled on NEI 10 CFR 50.59 guidelines
- Requires document preparers to identify proposed LB impacts resulting from new or revised technical documents
- Impacts to LB information require approval by Regulatory Affairs
- Approved LB changes will be reflected in updates to the LA and ISA Summary drafts



Crosswalk Tools

- Regulatory Affairs uses database tools to track the evolution of LB information
- The databases provide crosswalks between the CAR/SER information and the content of the LA and ISA Summary drafts currently under development
- The crosswalks will be updated as changes to LB information are identified per PP8-6 and the draft LA and ISA Summary are updated and completed
- Differences between the CAR/SER information and draft LA and ISA Summary information are reviewed by the Licensing and Regulatory Compliance Manager



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Summary

- DCS maintains LB CM through implementation of procedural controls contained in PP8-2 and PP8-6
- DCS maintains an understanding of the evolution of the CAR LB information by using crosswalk tools that compare the CAR/SER information to the content of the draft LA and ISA Summary