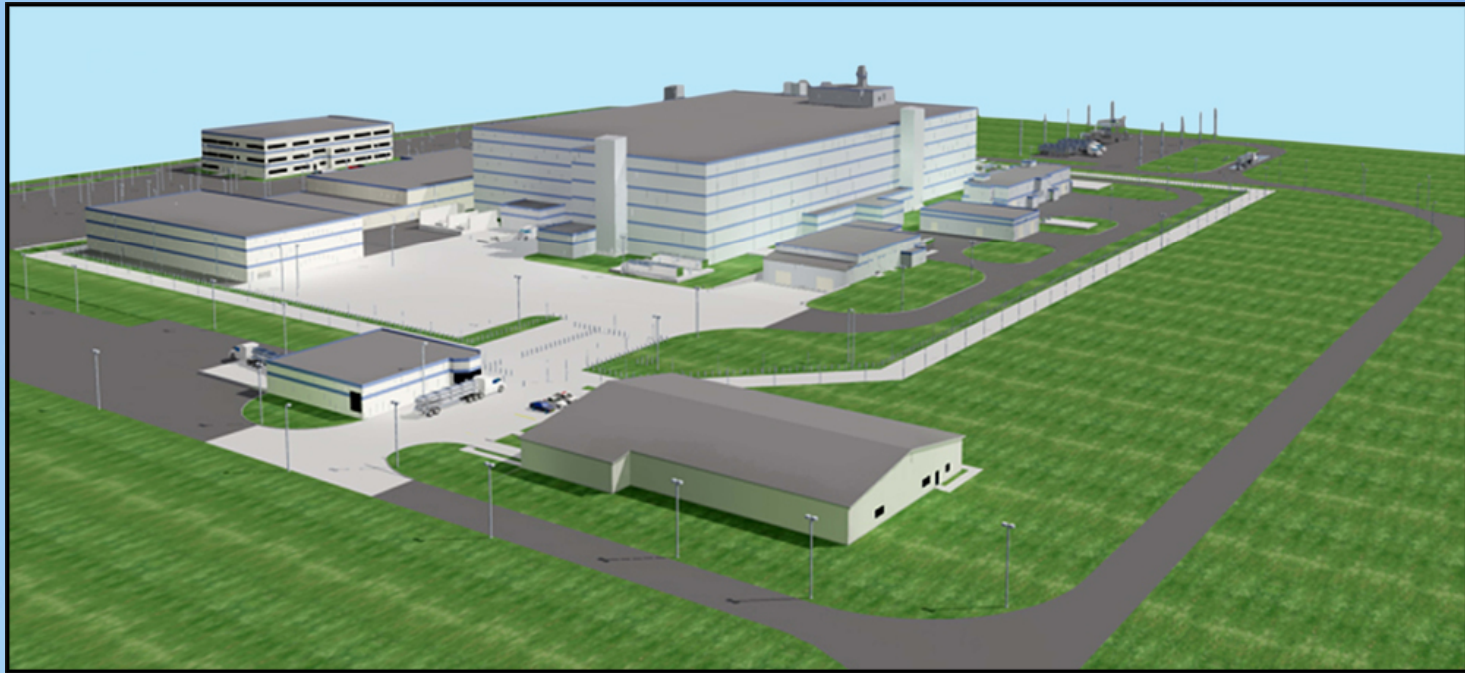


Quality Assurance/Quality Control



George Shell
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Agenda

- **Approach to developing MPQAP Revision 9**
- **MPQAP examples**

MPQAP Revision 9

- **Purpose**
 - **Address startup testing and operations**

MPQAP Revision 9

- **Approach**
 - **Identify necessary changes using NUREG-0800 as guidance**
 - **Additional improvement**
 - **Include management measures from LA Chapter 15**
 - **Complement QA requirements; include a common document**
 - **Maintained consistency with LA Chapter 15**
 - **Revise LA Chapter 15 to reference MPQAP for management measures**

Example Sections

- **Introduction**
- **Organization**
- **Training & Qualification**
- **Configuration Management**
- **Instructions, Procedures, and Drawings**
- **Maintenance**

MOX Project Quality Assurance Program (MPQAP)

INTRODUCTION

This MOX Project Quality Assurance Plan (MPQAP) establishes the quality assurance requirements **and management measures** to control quality-affecting activities related to the design, construction, and operation of Fuel Fabrication Facilities licensed under Title 10 Code of Federal Regulations (CFR) Part 70 (10CFR70). 10CFR70 requires a QA Program meeting the requirements of Title 10 CFR Part 50 (10CFR50), Appendix B, *Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants*.

QA Program Basis

Applicable requirements from Parts I and II of ASME NQA-1-1994, *Quality Assurance Requirements for Nuclear Facility Applications*, as revised by NQA-1a-1995 Addenda; Regulatory Guide 1.28 (Rev.3), *Quality Assurance Program Requirements (Design and Construction)*; **and Regulatory Guide 1.33 (Rev.2), Quality Assurance Program Requirements (Operation)**, were used in conjunction with 10CFR50, Appendix B to develop the quality assurance requirements for the MOX Services QA Program. This MOX Project Quality Assurance Plan describes MOX Services' overall commitments to 10CFR50 Appendix B and ASME NQA-1.

MOX Project Quality Assurance Program (MPQAP)

QA Program Basis

This revision of this document provides the quality assurance requirements needed for Base Contract, Option 1, and Option 2 quality-affecting activities for the MOX Services scope of work. Throughout this document the contract phases (Base Contract, Option 1, and Option 2) are referred to as the Design, Construction, and Operations phases (respectively).

MOX Project Quality Assurance Program (MPQAP)

ORGANIZATION

GENERAL

As the project progresses toward the completion of construction and the beginning of the operations phase, the focus of the organizational structure will shift from design and construction to operation. As the construction of systems is completed, the systems will undergo acceptance testing as necessary, followed by turnover from the construction organization to the operations organization. The turnover will include the physical systems and corresponding design information and records. Following turnover, the operations start-up organization will be responsible for system maintenance and configuration management. The design basis for the facility is maintained throughout the life-cycle under the configuration management system.



MOX Project Quality Assurance Program (MPQAP)



QUALITY ASSURANCE PROGRAM

GENERAL

The MOX Services QA Program described in this section and associated QA procedures implement the committed requirements of Criterion 2 Quality Assurance Program of 10CFR50, Appendix B; Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-4 and Appendix 2A-1 [1] of NQA-1-1994 Part I as revised by NQA-1a-1995 addenda; Regulatory Guide 1.28 (Rev.3); and Regulatory Guide 1.33 (Rev.2).

Part I basic and supplemental requirements and Part II (as clarified in Attachment I) of ASME NQA-1-1994, *Quality Assurance Requirements for Nuclear Facility Applications*, as revised by NQA-1a-1995 Addenda; Regulatory Guide 1.28 (Rev.3), *Quality Assurance Program Requirements (Design and Construction)*; and Regulatory Guide 1.33 (Rev.2), *Quality Assurance Program Requirements (Operations)*, were used to provide detailed implementing guidance for 10CFR50, Appendix B quality assurance requirements for the MOX Services QA Program.

During the transition from Option 1, Construction activities to Option 2, Startup and Operations, implementation of the Operational QA requirements will be enforced after each System Area Turnover. Also, Operating Limits Manual (OLM) shall be in place and functioning prior to the introduction of Special Nuclear Material into the Process Systems.

MOX SAFETY FUELS THE FUTURE

MOX Project Quality Assurance Program (MPQAP)

Management Measures

Management measures are contained within this MQAP as part of the overall QA **program**.

Management measures are assigned based on the following types of IROFS classifications and the risk reduction level attributed to that particular IROFS:

Passive Engineered Controls (PEC) – A device that uses only fixed physical design features to maintain safe process conditions without any required human action

Active Engineered Controls (AEC) – A physical device that uses active sensors, electrical components, or moving parts to maintain safe process conditions without any required human action

Enhanced Administrative Controls (EAC) – A procedurally required or prohibited human action, combined with a physical device that alerts the operator that the action is needed to maintain safe process conditions, or otherwise adds substantial assurance of the required human performance (i.e., augmented administrative control)

Administrative Controls (AC) – A procedural human action that is prohibited or required to maintain safe process conditions (i.e., a simple administrative control).

MOX Project Quality Assurance Program (MPQAP)

OPERATIONS

The following requirements are applicable to Operations in addition to the requirements above.

2.3.2 Training and Qualification

- A. Training and qualification of plant personnel is essential to the safe and successful design, construction, testing, and operation of the MFFF. The MPQAP provides training and qualification requirements during the design, construction, and operations phase.

2.3.2 Organization and Management of Training

2.3.3 Analysis and Identification of Functional Areas Requiring Training or Qualification

2.3.4 Position Training Requirements

2.3.5 General Employee Training

2.3.6 Technical Training

2.3.7 Basis for and Objectives of Training

2.3.8 Organization of Instruction

2.3.9 Evaluation of Trainee Learning

2.3.10 Conduct of On-the-Job Training

2.3.11 Systematic Evaluation of Training Effectiveness

2.3.12 Personnel Qualification

2.3.13 Provisions for Continuing Assurance

MOX SAFETY FUELS THE FUTURE

MOX Project Quality Assurance Program (MPQAP)

REQUIREMENTS

During the construction phase of the project, changes to drawings and specifications issued for construction, procurement, or fabrication are systematically reviewed and verified, evaluated for impact, including impact to the ISA, and approved prior to implementation. Proper implementation is the responsibility of the line organizations with verification by the Quality Assurance Organization, through the Oversight Process (i.e. Audit, Assessment)

During Construction, the Vice President, Engineering has responsibility for configuration management through establishment of processes and procedures used during construction of the facility.

Configuration management includes those activities conducted under design control provisions for ensuring that design and construction documentation is prepared, reviewed, and approved in accordance with a systematic

MOX Project Quality Assurance Program (MPQAP)

OPERATIONS

The following requirements are applicable to Operations in addition to the requirements above.

3.3.1 Configuration Management

MOX Services implements configuration management (CM) processes to ensure design and operation within the design basis of IROFS by: identifying and controlling preparation and review of documentation associated with IROFS; controlling changes to IROFS; and maintaining the physical configuration of the facility consistent with the approved design.

MOX Project Quality Assurance Program (MPQAP)

INSTRUCTIONS, PROCEDURES, AND DRAWINGS

GENERAL

The MOX Services QA Program described in this section and associated QA procedures implement the committed requirements of Criterion 5 Instructions, Drawings, and Procedures of 10CFR50, Appendix B; and Basic Requirement 5 of NQA-1-1994 Part I as revised by NQA-1a-1995 addenda; Regulatory Guide 1.28 (Rev.3), *Quality Assurance Program Requirements (Design and Construction)*; and Regulatory Guide 1.33 (Rev.2), *Quality Assurance Program Requirements (Operations)*.

OPERATIONS

The following requirements are applicable to Operations in addition to the requirements above.

5.3.1 Plant Procedures (from LA 15.5)

This section describes the procedures used for control of overall facility operations, including IROFS.

MOX Safety Fuels the Future



MOX Project Quality Assurance Program (MPQAP)



INSTRUCTIONS, PROCEDURES, AND DRAWINGS

GENERAL

The MOX Services QA Program described in this section and associated QA procedures implement the committed requirements of Criterion 5 Instructions, Drawings, and Procedures of 10CFR50, Appendix B; and Basic Requirement 5 of NQA-1-1994 Part I as revised by NQA-1a-1995 addenda; Regulatory Guide 1.28 (Rev.3), *Quality Assurance Program Requirements (Design and Construction)*; and Regulatory Guide 1.33 (Rev.2), *Quality Assurance Program Requirements (Operations)*.

REQUIREMENTS

OPERATIONS

The following requirements are applicable to Operations in addition to the requirements above.

Operation Tests (from LA 15.3.1.4)

A test control program will be implemented that incorporates plant procedures for test control that delineates the criteria for determining when, why, and how tests are required along with other elements of the test control program. Compensatory measures will be applied in accordance with the limiting conditions for operation as provided in the Operating Limits Manual (OLM).

MOX SAFETY FUELS THE FUTURE

MOX Project Quality Assurance Program (MPQAP)

MAINTENANCE

GENERAL

The MOX Services QA Program described in this section and associated QA procedures implement the committed requirements of 10CFR50, Appendix B; NQA-1-1994 Subpart 2.18 as revised by NQA-1a-1995 addenda; and Regulatory Guide 1.33 (Rev.2).

The MOX Services QA Program procedures establish the necessary controls to assure. . . (Add additional words)

REQUIREMENTS

This section outlines the maintenance and functional testing programs to be implemented for the operations phase of the facility. Preventive maintenance activities, surveillance, and performance trending provide reasonable and continuing assurance that IROFS will be available and reliable to perform their safety functions in accordance with the integrated safety analysis (ISA).

MOX Safety Fuels the Future

Summary

- MPQAP Revision 9 will address startup testing and operations
- Management Measures will be included
 - Consistent with reviewed LA Chapter 15, Management Measures