

MOX Project Quality Assurance Plan (MPQAP) Revision 11

MOX SAFETY FUELS THE FUTURE

Enclosure 3

Objective

- Demonstrate MPQAP changes are consistent with 10CFR50 Appendix B and do not adversely impact 10CFR70.61 performance requirements

Augmented QA Program

- A graded QA program applied to a broad scope of IROFS.
- For MOX Services, the scope is IROFS whose importance to safety has been determined to be low by nuclear safety evaluation

Quality Assurance

- 10CFR50 Appendix B criterion 2
 - QA requirements shall be applied to items commensurate with their importance to safety
- NQA-1 1994/1995a states, in Basic Requirement 2
 - The QA program shall provide control over activities affecting quality to an extent consistent with their importance

Management Measures

- 10CFR 70.62(d)
 - the safety program may be graded such that management measures applied are graded commensurate with the reduction of the risk attributable to the item

- 10CFR70.61 highly unlikely approach
 - Application of single failure criteria or double contingency (for nuclear criticality)
 - Application of industry codes and standards
 - Management measures, including surveillance of IROFS (i.e., failure detection, repair, or process shutdown capability)
 - Application of 10 CFR 50 Appendix B and NQA-1

[LA 5.2.5.2]

MPQAP Changes & ISA Methodology

ISA Methodology

- Application of single failure criteria or double contingency (for nuclear criticality)
- Application of industry codes and standards

MPQAP Change Impact

- No impact
- No impact

MPQAP Changes & ISA Methodology

ISA Methodology

- Application of 10 CFR 50 Appendix B and NQA-1
- Management measures, including surveillance of IROFS (i.e., failure detection, repair, or process shutdown capability)

MPQAP Change Impact

- Comply with commitment; applied commensurate with importance to safety
- No impact with exception of QA management measure; comply with commitment

MPQAP Change Comparison (QL-1LR)

Current

- No IROFS importance to safety ranking criteria
- Technical and quality evaluation of supplier capability for QL-1 suppliers

Proposed

- Added IROFS importance to safety ranking criteria
- Use of nationally recognized accreditation for QL-1LR supplier qualification
 - SSCs – accreditation specific to product and process to produce product
 - Laboratories – accreditation specific to analysis type and ISO 17025

MPQAP Change Comparison

Current

- Items procured from NQA-1 suppliers. Only items procured as QL-1 commercial grade are dedicated as basic components
- Acceptance inspections for QL-1 items performed by certified Quality Control inspectors

Proposed

- QL-1LR items procured from commercial suppliers. QL-1LR items dedicated as basic component after acceptance
- Acceptance inspections for QL-1LR items by peer inspection

MPQAP Change Comparison

Current

- Audits performed on quality activities and processes

Proposed

- Focus audits on IROFS whose importance to safety is high

MPQAP Changes IROFS Ranking Criteria

- IROFS ranking shall be a function of the likelihood of failure and the consequence of that failure

MPQAP Changes IROFS Ranking Criteria

- Likelihood criteria
 - frequency of the initiating event
 - reliability of the IROFS control group
 - surveillance of the IROFS
 - the safety margin from normal operations to the safety limit

MPQAP Changes IROFS Ranking Criteria

- Consequence criteria
 - monitoring versus controlling function of the IROFS
 - consequences associated with the IROFS control group failure
 - safety margin from the safety limit to the event consequences
 - additional protection features

MPQAP Changes Procurement

- SSCs - use of suppliers based on nationally/internationally recognized independent accreditation
 - Test/qualification report in conjunction with normal construction/preoperational/startup testing is sufficient to provide reasonable assurance item will perform its IROFS function
 - Accreditation evaluation of technical and quality capability of process controls sufficient to provide reasonable assurance items are representative of items tested
 - Current certification of accreditation, or equivalent
 - Supplemental controls established as needed
 - Items designated as basic component upon acceptance

MPQAP Changes Procurement

- Laboratory testing
 - Accreditation organization, domestic or foreign, that are subject to International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Agreement (MRA)
 - Current certificate of accreditation that covers the analysis scope
 - Foreign suppliers authorized for calibration services
 - Identification of laboratory equipment/standards use, as appropriate

MPQAP Changes Procurement

- Allows documentation in procurement specification
 - Safety function
 - Critical characteristics
 - Verification method
 - Acceptance criteria
 - Basis for selection
- Normal receipt inspection
 - Confirm/document completion of verification requirements
 - Designation of the item as basic component

MPQAP Changes Procurement

- Reference Facility
 - SSC Procurements – Used Accredited Suppliers
 - Laboratories – Used Accredited Suppliers
 - Safety Performance – Consistent with ISA Assumptions
- Accredited Laboratories
 - CMTR Review Results – High Confidence
 - French Laboratories Qualifications - Satisfactory

MPQAP Changes Inspections

- Use of qualified personnel other than quality control inspectors
 - Same training and qualification as Level II QA inspector in accordance with MPQAP 2.2.6.H
 - Will not be certified as Level II inspector

MPQAP Changes QA Records

- IROFS safety ranking evaluations maintained as lifetime records

Audits

- Items whose importance to safety is low
 - Primarily evaluated by assessment, surveillance or performance monitoring

Conclusion

- Augmented QA Program for QL-1LR IROFS
 - Complies with 10CFR50 Appendix B
 - Complies with ISA methodology in LA Chapter 5 for compliance with 10CFR70.61