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U.S. Nuclear Regulatory Commission  
Washington, DC 20555

DCS-NRC-000393  
11 May 2015


Subject: Docket Number 70-03098  
CB&I AREVA MOX Services  
Mixed Oxide Fuel Fabrication Facility  
Submission of Amendment Number: MPQAP-2015-0003 of the MOX Project  
Quality Assurance Plan

CB&I AREVA MOX Services, LLC (MOX Services) hereby submits to the U.S. Nuclear Regulatory Commission (NRC) Amendment Number: MPQAP-2015-0003 of the MOX Project Quality Assurance Plan (MPQAP) (Enclosure 1) for review and approval. MPQAP-2015-0003 was developed to revise QL-1 definitions for Items Relied on for Safety (IROFS). The revised definitions were informed by completed evaluations that identified QL-1LR IROFS as well as project implementation of the QL-1LR QA program. The updated definitions add clarity and transparency to the evaluation process while continuing to satisfy the criteria of 10 CFR 50 Appendix B. Additional justification is provided in Enclosure (2). Enclosure (2) contains security related information and should be withheld from public disclosure in accordance with 10CFR2.390.

NRC review and approval of Amendment Number: MPQAP-2015-0003 is requested by August 30, 2015 as the change impacts ongoing construction activities.

If you have any questions, please feel free to contact me at (803) 442-6485 or Dealis Gwyn, Licensing and Nuclear Safety Manager at (803) 819-2780.

Sincerely,



David Del Vecchio  
President and Project Manager

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Enclosures:

- (1) Amendment Number: MPQAP-2015-0003 of the MOX Project Quality Assurance Plan
- (2) Justification for Amendment Number: MPQAP-2015-0003

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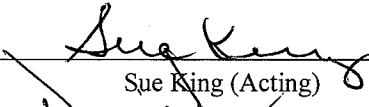
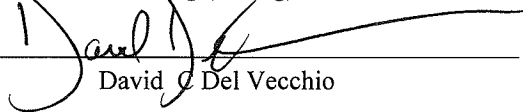
**Enclosure (1)**

**Amendment Number: MPQAP-2015-0003  
of the  
MOX Project Quality Assurance Plan**

# MOX Project Quality Assurance Plan (MPQAP)

## AMENDMENT

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Amendment No.: <b>MPQAP-2015-0003</b>	NRC Approval Required
Approvals	
VP Project Assurance: <u></u> Date: <u>11 May 15</u> Sue King (Acting)	
MOX Services President: <u></u> Date: <u>11 May 15</u> David C. Del Vecchio	

Current Wording: Section 2.2.2.G	Revised Wording: Section 2.2.2.G
<p>G. Quality Level 1 (QL-1)</p> <p>Quality Level 1 (QL-1) SSCs are IROFS credited in the Integrated Safety Analysis with a required function to prevent or mitigate design basis events such that high-consequence events are made highly unlikely; intermediate-consequence events are made unlikely; or to prevent criticality. For example, the failure of a QL- 1 item could cause:</p> <ul style="list-style-type: none"><li>i. Loss of a primary confinement feature leading to release of material resulting in exceeding 10CFR70.61 performance requirements;</li><li>ii. Failure to satisfy the double contingency principle for the prevention of a criticality accident; or</li><li>iii. Loss of other safety function required to meet 10CFR70.61 performance requirements.</li></ul> <p>QL-1LR SSCs are a subset of QL-1 IROFS where the relative importance to safety has been determined by evaluation to be low. Refer to the MPQAP applicability table in Attachment B for the MPQAP sections that apply to QL-1LR items.</p>	<p>G. Quality Level 1 (QL-1)</p> <p>Items Relied on for Safety (IROFS) are defined in 10CFR70.4 as structures, systems, equipment, components, and activities of personnel that are relied on to prevent potential accidents at a facility that could exceed the performance requirements of 10CFR70.61 or to mitigate their potential consequences. 10CFR70.61 includes performance requirements related to worker dose, individual located outside controlled area dose, soluble uranium intake, chemical exposures from licensed material or hazardous chemicals produced from licensed material, environmental consequences, and criticality events. MOX Services has defined groups of IROFS based on relative safety significance such that the most important IROFS receive the highest level of QA controls. The definitions are provided below.</p> <ul style="list-style-type: none"><li>i. QL-1 (SC) IROFS are those IROFS that provide significant protection to the individual located outside the controlled area (e.g., public). IROFS in this category meet one or more of the following criteria<ul style="list-style-type: none"><li>a. BMF outer confinement boundary</li></ul></li></ul>

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- b. Final filters – includes ducting and associated inline components between final filters and unit vent
- c. Active HDE fans and associated components that ensure HDE filtered release
- d. HDE active components power supplies (e.g., diesel generator)
- e. Required diesel generator support systems (e.g., diesel generator fuel oil system)
- f. IROFS whose failure could significantly impair capabilities of final filters
- ii. QL-1LR IROFS are those IROFS that provide minor protection to the individual located outside the controlled area (e.g., public). IROFS in this category are those IROFS that provide public protection that do not meet the definition of QL-1 (SC) IROFS.
- iii. QL-1SS IROFS are those IROFS that are credited to meet the performance requirements that are not associated with the individual outside the controlled area (e.g., public). Included in QL-1SS are IROFS associated with limiting criticality events, protecting worker protection, and limiting environmental consequences.

Refer to the MPQAP applicability table in Attachment B for the MPQAP sections that apply to QL-1LR items.

NOTE: Until the MPQAP is revised to define distinct controls for QL-1SS IROFS, all IROFS that do not meet the definition of QL-1 (SC) are treated as QL-1LR in terms of application of QA controls.

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### Current Wording: Attachment B - Introduction, Scope and Section 3.0

#### 1.0 Introduction

MOX Services has developed a process for determining the importance to safety of IROFS. While all IROFS are important to safety, the relative importance varies from low to high. The IROFS Ranking Process identifies the IROFS relative importance to safety (high or low). This augmented program describes the application of QA controls to IROFS whose relative importance to safety is low. This is consistent with 10CFR50 Appendix B, Criterion II, QA Program and NQA-1 1994/1995a, Basic Requirement 2, QA Program, which require that QA controls be applied to IROFS to an extent consistent with their importance to safety. The controls identified in this augmented program are considered to be the minimum acceptable QA controls. Additional QA controls may be applied when determined to be required by MOX Services.

#### 2.0 Scope

The augmented QA program is applicable to IROFS whose importance to safety is determined to be low based on a documented evaluation.

#### 3.0 IROFS Importance to Safety Ranking Process (IROFS Ranking Process)

The purpose of this process is to define the relative importance of IROFS to the overall safety criteria for the application of graded QA controls. IROFS ranking shall consider

### Revised Wording: Attachment B - Introduction, Scope and Section 3.0

#### 1.0 Introduction

MOX Services has defined IROFS groups based on their relative importance to safety (see Section 2.2.2 G). While all IROFS are important to safety, these definitions recognize the varying degrees of importance. This augmented program describes the application of QA controls to IROFS defined as QL-1LR. In the future, MOX Services may define separate distinctive controls to be applied to QL-1SS IROFS. Until that time, the augmented QA program for QL-1LR IROFS described in this attachment are also applicable to QL-1SS IROFS. The application of QA controls commensurate with safety significance is consistent with 10CFR50 Appendix B, Criterion II, QA Program and NQA-1 1994/1995a, Basic Requirement 2, QA Program, which require that QA controls be applied to IROFS to an extent consistent with their importance to safety. The controls identified in this augmented program are considered to be the minimum acceptable QA controls. Additional QA controls may be applied when determined to be required by MOX Services.

#### 2.0 Scope

The augmented QA program is applicable to IROFS that meet the definitions of QL-1LR and QL-1SS as described in 2.2.2 G.

#### 3.0 **DELETED**

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the likelihood of failure and the consequence of that failure. IROFS whose importance to safety is high will be maintained as QL-1 IROFS with all required QA controls as defined in the MPQAP. Those whose importance to safety is low will be identified as QL-1LR and QA controls will be applied commensurate with the IROFS relative importance to safety.

IROFS ranking evaluations are performed by Nuclear Safety. The evaluation is documented, reviewed, approved and maintained as a QA record. Design changes subsequent to the evaluation are reviewed by nuclear safety to determine the impact on the importance to safety evaluation results.

The IROFS Ranking Process criterion is based on consideration of the relative likelihood and consequences of IROFS failure.

The likelihood criteria are:

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

The consequence criteria are:

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

An overall importance to safety ranking for an

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IROFS is assigned based on consideration of the likelihood and consequence criteria described above for each IROFS safety function.

This process is an acceptable method for determining relative importance to safety in the context of 10CFR50 Appendix B and is consistent with NQA-1.

**Justification:**

Clarified definitions of QL-1 and QL-1LR. Revised to describe a new classification category QL-1SS for IROFS associated with limiting criticality events, protecting worker protection, and limiting environmental consequences. Submittal letter DCS-NRC-000393 contains the detailed justification for this change.



**Enclosure (2)**

**Justification for Amendment Number: MPQAP-2015-0003**

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