

~~Proprietary, Statutory and Security Related Information~~
~~Withhold from Public Disclosure Under 10 CFR 2.390~~



DCS-NRC-000433
17 October 2016

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Docket Number 070-03098
CB&I AREVA MOX Services
Mixed Oxide Fuel Fabrication Facility
Response to NRC Request for Additional Information Regarding Revision of the
Material Control and Accounting (MC&A) Plan

CB&I AREVA MOX Services, LLC (MOX Services) is submitting to the U.S. Nuclear Regulatory Commission (NRC) our responses (Enclosure 1) to the NRC's Request for Additional Information (RAI). Also enclosed is the revised Material Control and Accounting (MC&A) Plan that incorporates changes consistent with the RAI responses. The revised MC&A Plan also includes some minor editorial changes.

Enclosure (2), the revised MC&A Plan, should be withheld from public disclosure pursuant to 10 CFR 2.390 for security concerns.

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) Response to NRC Request for Additional Information Related to the April 21, 2016
Revision of the Material Control and Accounting (MC&A) Plan
- (2) Material Control and Accounting (MC&A) Plan (Security Related Information)
- (3) Affidavit Pursuant to 10 CFR 2.390(b)

cc: (w/ encl.)

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Enclosure 1

Response to NRC Request for Additional Information
Related to the April 21, 2016 Revision of the Material
Control and Accounting Plan

**Request for Additional Information
MOX Fuel Fabrication Facility
Fundamental Nuclear Material Control Plan, Revision April 2016
Docket No. 70-3098**

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70.22(b) states that the application must contain a full description of the applicant's program for control and accounting of special nuclear material (SNM) or enrichment equipment that will be in the applicant's possession under the license to show compliance with the requirements of 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material," as applicable. Regulations in Subpart B, "General Reporting and Recordkeeping Requirements," and Subpart E, "Formula Quantities of Strategic Special Nuclear Material," of 10 CFR Part 74 contain the material control and accounting (MC&A) requirements for the MOX Fuel Fabrication Facility (MFFF).

Please respond to the following request for additional information (RAI) with respect to your revised Fundamental Nuclear Material Control Plan (FNMCP), dated April 2016:

General Comments

1. The official guidance document regarding FNMCPs for licensees subject to 10 CFR Part 74, Subpart E, is NUREG-1280, "Standard Format and Content Acceptance Criteria for the Material Control and Accounting (MC&A) Reform Amendment," Revision 1. References to Revision 2 of NUREG-1280 should not be made, as it is currently a draft document.

MOX Services Response

MOX Services proactively updated the MOX MC&A Plan to follow the format of the draft guidance document NUREG-1280 Revision 2. Since the reference only affects the format, a reference to draft NUREG-1280 Revision 2 is not necessary and the MC&A Plan is updated to reference NUREG-1280 or NUREG-1280 Rev 1, as appropriate.

MC&A Plan Revision

All references to draft NUREG-1280 Revision 2 have been deleted and replaced with either NUREG-1280 or NUREG-1280 Rev 1.

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2. Section 74.3 does not currently exist in the regulations and should not be referenced.

MOX Services Response

The reference to 74.3 is not required and has been deleted.

MC&A Plan Revision

All references to 10 CFR 74.3 have been removed.

10 CFR 74.13– Material status reports

10 CFR 74.13(a) requires each licensee possessing SNM in a quantity totaling one gram or more of contained uranium-235, uranium-233, or plutonium to complete and submit, in computer-readable format Material Balance Reports concerning SNM that the licensee has received, produced, possessed, transferred, consumed, disposed, or lost. The Physical Inventory Listing Report must be submitted with each Material Balance Report.

3. Provide a description of the MC&A activities that are performed or the measures in place that ensure compliance with this reporting requirement.

MOX Services Response

Information pertaining to the completion and submission of the Physical Inventory Listing Report has been clarified.

MC&A Plan Revision

The description has been clarified in Section 2.8, "NRC/NMMSS Reporting".

10 CFR 74.15– Nuclear material transaction reports

10 CFR 74.15 requires each licensee who transfers or receives SNM in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium to complete, in computer-readable format, a Nuclear Material Transaction Report. In addition, each licensee who adjusts the inventory in any manner, other than for transfers and receipts, shall submit a Nuclear Material Transaction Report, in computer-readable format, to coincide with the submission of the Material Balance report. Each licensee who transfers SNM shall submit a Nuclear Material Transaction Report no later than the close of business the next working day. Each licensee who receives SNM shall submit a Nuclear Material Transaction Report within ten days after the material is received.

4. Provide a description of the MC&A activities that are performed or the measures in place that ensure compliance with this reporting requirement.

MOX Services Response

Information pertaining to the completion and submission of the Nuclear Material Transaction Report has been clarified.

MC&A Plan Revision

The description has been clarified in Section 2.8, "NRC/NMMSS Reporting".

10 CFR 74.17– Special nuclear material physical inventory summary report

10 CFR 74.17(c) requires each licensee subject to the requirements of § 74.51 to submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC form 327 not later than 45 calendar days from the start of each physical inventory required by § 74.59(f).

5. Provide a description of the MC&A activities that are performed or the measures in place that ensure compliance with this reporting requirement.

MOX Services Response

The information pertaining to the completion and submission of the Special Nuclear Material Physical Inventory Summary Report has been clarified to support the SNM Physical Inventory Summary reporting requirement of § 74.17(c).

MC&A Plan Revision

The description has been clarified in Section 2.8, "NRC/NMMSS Reporting".

10 CFR 74.19– Recordkeeping

10 CFR 74.19(b) requires each licensee authorized to possess SNM in a quantity exceeding one effective kilogram at any one time to establish, maintain, and follow written MC&A procedures that are sufficient to enable the licensee to account for the SNM in its possession under license. These procedures shall be maintained until the Commission terminates the license that authorizes possession of the material and retain any superseded portion of the procedures for 3 years after the portion is superseded.

Furthermore, § 74.19(d) requires that the records may be the original or reproduced copy and may be stored in electronic media with the capability of producing legible, accurate and

complete records during the required retention period. The licensee shall maintain adequate safeguards against tampering with and loss of records.

6. Provide a description of the MC&A activities that are performed or the measures in place that ensure compliance with these recordkeeping requirements.

MOX Services Response

The information pertaining to the establishment, maintenance, and adherence to procedures written to account for SNM in possession under license has been clarified, as well as that pertaining to the maintenance of records generated under these procedures.

MC&A Plan Revision

The description has been clarified in Sections 18.1, "Description of Records System", and 18.2.2, "Storage/Access".

10 CFR 74.55 – Item Monitoring

10 CFR 74.55(b) requires the licensee to verify on a statistical sampling basis, the presence and integrity of strategic special nuclear material (SSNM), and specifies the required frequency of tests for Category IA and IB materials. MFFF describes in the FNMCP, Section 4.6.3, "Item Monitoring Conditions for Specific Storage Areas," the item monitoring activities for Category IA and IB materials.

7. Specify the frequency for verifying the PLC data as referenced throughout Section 4.6.3 in the following statement "...PLC data will be verified periodically."

MOX Services Response

"Periodically" has been specified as "every 30 days".

MC&A Plan Revision

The statement has been changed throughout Section 4.6.3, "Item Monitoring Conditions for Specific Storage Areas" to "...PLC data will be verified every 30 days."

10 CFR 74.59(d) – Measurements

10 CFR 74.59(d) requires the licensee to establish, utilize, and maintain a system of measurements to ensure that all quantities of SNM/SSNM in the accounting records are

based on reliable measurements. In the introductory text of Section 7, "Measurements," MFFF states the following: "Heterogeneous scrap that cannot be accurately measured in its as-received form, provided such scrap is measured after dissolution within 18 months of receipt, shall include measurement..." Furthermore, MFFF states in the FNMCP, Section 12.5, "Recovery of Offsite Scrap," that offsite scrap is not received."

8. Clarify the description of activities regarding receipt of offsite scrap.

MOX Services Response

Offsite scrap will not be received.

MC&A Plan Revision

The description of receiving offsite scrap in Section 7, "Measurements", has been removed.

In the FNMCP, Section 7.2, "Measurement Systems," MFFF describes the measurement systems utilized for MC&A purposes. Furthermore, Table G in Annex A of the FNMCP provides information regarding these measurement systems.

9. Provide descriptions of all of the measurement systems used for MC&A purposes.

MOX Services Response

Tables 7-2 and G have been updated to include all measurement systems, along with descriptions of the measurement systems.

MC&A Plan Revision

An updated Table G, "MFFF MC&A Typical Measurement Uncertainties and Sensitivities" has been moved from Annex A into Section 7, "Measurements" as Table 7-2, along with system descriptions. An update has also been provided for the MFFF MC&A Measurement table, now Table 7-1.

In the FNMCP, Section 7.5, "Scrap Control," MFFF states that "the regulatory requirements to control and measure scrap materials do not apply to the MFFF." However, Section 12, "Scrap Control," describes the program for compliance with scrap requirements in § 74.59(h)(2).

10. Clarify the descriptions regarding the scrap control program.

MOX Services Response

Offsite scrap will not be received.

MC&A Plan Revision

The description of receiving offsite scrap has been removed from Section 7, "Measurements".

10 CFR 74.59(e) – Measurement Control

10 CFR 74.59(e) requires the licensee to ensure that the quality of SSNM measurement systems and material processing practices is continually controlled to a level of effectiveness sufficient to satisfy the capabilities required for detection, response, and accounting.

11. Provide descriptions of the engineering analyses and evaluations associated with the measurements systems to be used for MC&A purposes, as required by § 74.59(e)(1).

MOX Services Response

The information pertaining to the engineering analyses and evaluations associated with the measurements systems to be used for MC&A proposes has been clarified.

MC&A Plan Revision

The tank calibration and mixing study description has been clarified in Section 8.6.2, "Engineering Analysis".

12. Provide descriptions of the process and engineering tests associated with existing procedures for mixing and sampling SSNM, as required by § 74.59(e)(2).

MOX Services Response

The information pertaining to the process and engineering tests associated with existing procedures for mixing and sampling SSNM has been clarified.

MC&A Plan Revision

The requested description has been added to Section 8.2, "Calibrations".

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13. Provide a description of the program for monitoring cumulative shipper-receiver differences, as required by § 74.59(e)(7).

MOX Services Response

The information pertaining to the cumulative shipper-receiver differences has been clarified.

MC&A Plan Revision

The description has been clarified in Section 8.5.1, "Measurement Control Data Analysis".

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14. Clarify the description in the FNMCP, Section 9.3, "Bias Corrections," to comply with the requirements of § 74.59(e)(6)(i).

MOX Services Response

The information pertaining to the Bias Corrections has been clarified.

MC&A Plan Revision

Additional clarification has been included in Section 9.3, "Bias Corrections".

10 CFR 74.59(f) – Physical inventory

10 CFR 74.59(f) requires the licensee to maintain inventory control and perform inventories at specific time periods to confirm that a loss, theft, or diversion of SNM/SSNM has not occurred. In the FNMCP, Section 10.4, "Facility Preparation," consists solely of the following statement: "The preparation of the facility for physical inventory is described as follows:"

15. Clarify the description in Section 10.4 regarding the activities that are performed in preparing the facility for physical inventory.

MOX Services Response

Information pertaining to the activities performed at MOX prior to a physical inventory has been clarified.

MC&A Plan Revision

The description has been clarified in Section 10.4, "Facility Preparation".

In the FNMCP, Section 10.6.6, "Historical ID Variance," MFFF states that "an example of an historical ID variance calculation can be found in Annex A.

16. Clarify whether an example of this calculation will be provided in Annex A of the FNMCP.

MOX Services Response

An example of an historical ID variance calculation has been included in Annex A.

MC&A Plan Revision

An example has been included in Annex A, Enclosure M Section M.4., "Historical ID Variance Calculation (Example Calculation Only)".

10 CFR 74.59(f)(2)(i) – Tamper-safing

10 CFR 74.59(f) requires the licensee to establish and maintain a program for tamper-safing containers or vaults containing SSNM not in process that includes adequate controls to assure the validity of assigned SSNM values. In the FNMCP, Section 15, "Tamper-safing," MFFF states that "items stored in areas that do not provide storage equivalent to tamper-safing are tamper-safed."

17. Specify whether laboratory samples are included in the tamper-safing program.

MOX Services Response

Laboratory samples will contain less than 50 formula grams of SSNM and are not tamper-safed. Samples will be stored in locked storage areas within the MAA (as indicated in the PPP).

MC&A Plan Revision

This information has been added to Section 15, "Tamper-Safing".

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Enclosure 2

Material Control and Accounting Plan

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Enclosure 3

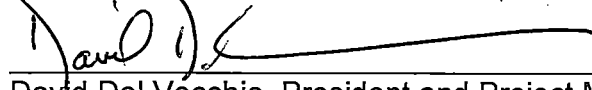
Affidavit Pursuant to 10 CFR 2.390(b)

AFFIDAVIT PURSUANT TO 10 CFR 2.390(b) (1)

1. I am the President and Project Manager of CB&I AREVA MOX Services, LLC (MOX Services), and as such have the responsibility for reviewing information sought to be withheld from public disclosure in connection with design and licensing of the Mixed Oxide Fuel Fabrication Facility (MFFF); and I am authorized on the part of MOX Services to apply for this withholding.
2. I am making this affidavit in conformance with the provisions of 10 CFR 2.390 of the regulations of the Nuclear Regulatory Commission (NRC) and in conjunction with MOX Services' application for withholding that accompanies this affidavit.
3. I have knowledge of the criteria used by MOX Services in designating certain information as proprietary and export controlled information (ECI).
4. Pursuant to the provisions of paragraph (b) (4) of 10 CFR 2.390, the following is furnished for consideration by the NRC in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned by MOX Services, its partners, and/or affiliates, and has been held in confidence by the same.
 - (ii) The information is of a type that would customarily be held in confidence by MOX Services, its partners, and/or affiliates. The information consists of design details and processing methods and mechanisms relative to a method of processing that provides a competitive advantage to MOX Services, its partners, and/or affiliates.
 - (iii) The information was transmitted to the NRC in confidence and, under the provisions of 10 CFR 2.390; it is to be received in confidence by the NRC.
 - (iv) The information sought to be protected is not available in public to the best of our knowledge and belief.
 - (v) The proprietary information sought to be withheld in this submittal is marked. This information describes MOX Services' design for the MFFF. This information enables MOX Services, its partners, and/or affiliates to support the license application for the MFFF.

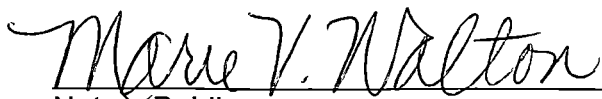
- (vi) The proprietary information sought to be withheld from public disclosure has substantial commercial value to MOX Services, its partners, and/or affiliates.
- (a) It allows MOX Services to reduce vendor and consultant expenses associated with supporting the licensing of fuel fabrication plants.
 - (b) MOX Services may sell the information to nuclear utilities, vendors, and consultants for the purpose of supporting the licensing of fuel fabrication plants.
 - (c) The subject information could only be duplicated by competitors at similar expense to that incurred by MOX Services, its partners, and/or affiliates.
5. Public disclosure of this information is likely to cause harm to MOX Services, its partners, and/or affiliates because it would allow competitors in the nuclear industry to benefit from the results of a significant development program without requiring commensurate expense or allowing MOX Services, its partners, and/or affiliates to recoup a portion of its expenditures or benefit from the sale of the information.

David Del Vecchio, being duly sworn, states that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth within are true and correct to the best of his knowledge.



David Del Vecchio, President and Project Manager

Subscribed and sworn to on this 18th day of October, 2016



Notary Public

My Commission Expires:

