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U.S. Nuclear Regulatory Commission
Washington, DC 20555

DCS-NRC-000409
02 December 2015

Subject: Docket Number 070-03098
CB&I AREVA MOX Services
Mixed Oxide Fuel Fabrication Facility
Response to Request for Additional Information Regarding Revision of the Fundamental Nuclear Material Control Plan, dated January 19, 2015

Reference: NRC-DCS-000744, letter from NRC to CB&I AREVA MOX Services, dated November 23, 2015, Request for Additional Information Related to Revision of the Fundamental Nuclear Material Control Plan, dated January 19, 2015 for the Mixed Oxide Fuel Fabrication Facility

CB&I AREVA MOX Services, LLC (MOX Services) hereby submits to the U.S. Nuclear Regulatory Commission (NRC) responses to a request for additional information (Enclosure 1) related to the January 19, 2015 revision of the Fundamental Nuclear Material Control Plan (Reference). Enclosure (2) contains the revised FNMCP and 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
January 19, 2015 Revision of the Fundamental Nuclear Material Control Plan
- (2) Fundamental Nuclear Material Control Plan (SUNSI)

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Enclosure 1

Response to NRC Request for Additional Information Related to the January 19, 2015 Revision of the Fundamental Nuclear Material Control Plan

Response to NRC Request for Additional Information Related to the January 19, 2015 Revision of the Fundamental Nuclear Material Control Plan

RAI MCA-1

Section G.4 of the FNMCP contains a high level summary discussion of the MC&A program. The following should be included in the general discussion.

Revise Section G.4, “Summary Description of the MFFF MC&A Program”, to include additional discussion of each of the five performance objectives stated in 10 CFR 74.51(a) that were previously included in affirmation statements in the currently approved version of the FNMCP.

The regulatory requirements in 10 CFR 74.51(b) stipulates that the licensee’s MC&A program must include the system capabilities to meet the general performance objectives of 10 CFR 74.51(a).

MOX Services Response

In addition to these five objectives being addressed throughout the FNMCP in the applicable sections, they are now reiterated in Section G.4.2.

FNMCP Revision

Section G.4.2, *MFFF MC&A System*, has been added, which includes a listing of the five objectives, how those objectives will be achieved, and how the system of checks and balances will be established.

RAI MCA-2

Section G.4 of the FNMCP contains a high level summary discussion of the MC&A program. The following should be included in the general discussion.

Revise Section G.4, “Summary Description of the MFFF MC&A Program” to include an additional program description that discusses compliance with the requirement of 10 CFR 74.11 with respect to reports of loss or theft or attempted theft or unauthorized production of special nuclear material.

The regulatory requirements in 10 CFR 74.11 require reports of loss or theft or attempted theft or unauthorized production of special nuclear material.

MOX Services Response

In addition to this requirement being addressed throughout the FNMCP in the applicable sections, they are now reiterated in Section G.4.4.

FNMCP Revision

Section G.4.4, *Reports of Loss or Theft or Attempted Theft or Unauthorized Production of Special Nuclear Material*, states that when the discovery of Loss, Theft, or missing Special Nuclear Material occurs it will be reported within 1 hour of discovery to the NRC Operations Center per 10 CFR § 74.11.

RAI MCA-3

Revise Section 4.1.1, “MC&A Organization” to clarify the statement that the individuals responsible for each MC&A function will have sufficient authority to “perform the function in the prescribed manner” by providing the specifics on the functions responsibilities and authorities of MC&A personnel.

The regulatory requirements in 10 CFR 74.59(b) stipulates, in part, that the licensee shall establish and maintain a management structure that includes clear overall responsibility for planning, coordinating, and administering material control and accounting functions.

MOX Services Response

This statement was added after removal of the affirmation statement. As Section 4.1.1 already provides the specifics on the functions, responsibilities, and authorities of MC&A personnel, this statement is not needed.

FNMCP Revision

“The individuals responsible for each MC&A function will have sufficient authority to perform the function in the prescribed manner.” has been removed.

RAI MCA-4

Section 4.1.2 of the FNMCP contains a list of policies and procedures that are to be developed and documented in order to direct MC&A activities in a consistent and effective manner. This also includes the development and review of procedures. The applicant should either add the following procedures to this section or show that the items listed below are contained in the current list of policies and procedures in this section.

- a. *Section 4.1.2, “Policies and Procedures”, and Section 4.6, “Accounting”. A procedure on the material status reports (DOE/NRC Form 742) in accordance with the Nuclear Materials Management and Safeguards System (NMMSS).*
- b. *Section 4.1.2, “Policies and Procedures”, and Section 4.7, “Shipments and Receipts”: A procedure on the nuclear material transaction reports (DOE/NRC Form 741) in accordance with the NMMSS.*
- c. *Section 4.1.2, “Policies and Procedures”, and Section 4.9.1, “MC&A Procedures”: A procedure on the human errors program.*
- d. *Section 4.1.2, “Policies and Procedures”, and Section 4.10.1, “Assessment Program”. A procedure on the independent assessment program.*
- e. *Section 4.1.2, “Policies and Procedures”, and Section 4.11, “SSNM Custodianship”. A procedure on the material custodianship program.*

The regulation 10 CFR 74.59(b)(2) stipulates that the licensee shall provide for the adequate review, approval, and use of those MC&A procedures that are identified in the approved FNMCP as being critical to the effectiveness of the described system.

MOX Services Response

As it was not obvious that these topics were covered in the procedures already listed in the FNMCP, they will now be covered in their own procedures.

FNMCP Revision

Four procedures have been added to Section 4.1.2, as DOE forms 741 and 742 will be covered in the same procedure. References to these new procedures have been included in the applicable sections.

RAI MCA-5

Revise Section 4.3.2.1.3, “Determination of Total Element by Thermal Ionization Mass Spectrometry (TIMS)”, and Section 4.3.2.1.5, “Isotopic Analysis by TIMS” to clarify a) the use of the TIMS instrument and b) the measurement methods for analyzing the element and fissile isotope content of all SSNM received, produced, and transferred between areas of custodial responsibility, on inventory, or shipped, discarded, or otherwise removed from inventory.

Section 10 CFR 74.59(d) stipulates, in part, that the licensee establish and maintain a system of measurements sufficient to substantiate the plutonium element and uranium element and isotope content of all strategic special nuclear material (SSNM).

MOX Services Response

The method described in Sections 4.3.2.1.3 and 4.3.2.1.5 is accurate; it is the title of Section 4.3.2.1.3 that is incorrect and causing confusion.

FNMCP Revision

The title of Section 4.3.2.1.3 has been changed to “Thermal Ionization Mass Spectrometry (TIMS)”.

RAI MCA-6

Revise Section 4.7.1, “Receiving Procedure”, to provide a statement to ensure that the received materials are not placed into process until completion of receipt measurements.

Title 10 CFR 74.59(h)(1) stipulates, in part, that the licensee shall establish procedures for shipping and receiving SSNM that provide for accurate identification and measurement of the quantities shipped and received.

MOX Services Response

Section 4.7.1 states that “After completion of receipt measurements, the items are placed in the permanent PuO₂ Vault storage locations.” These are the locations from which materials are placed into the process. Wording has been added for clarification.

FNMCP Revision

Section 4.7.1 now states, “Received materials will not be placed into the process until receipt measurements have been completed and accepted into the accountability system and all significant shipper/receiver differences have been investigated and resolved.”

~~SUNSI – Security Related Information~~
~~Withhold from Public Disclosure per 10 CFR 2.390~~

Enclosure 2

Fundamental Nuclear Material Control Plan