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SUBJECT: TERMINATION OF CONSTRUCTION AUTHORIZATION
CAMOX-001 FOR THE MIXED OXIDE FUEL FABRICATION
FACILITY

1.0 BACKGROUND

In 1999, Congress passed the Strom Thurmond National Defense Authorization Act, providing the Nuclear Regulatory Commission (NRC) with the regulatory and licensing authority over the United States (U.S.) Department of Energy, National Nuclear Safety Administration (DOE/NNSA) proposed Mixed Oxide Fuel Fabrication Facility (MFFF), a plutonium processing and fuel fabrication plant. Under NRC regulations governing the licensing of such facilities, the NRC approval process for the MFFF was conducted in two steps, consisting of:

- 1) Construction Authorization; and
- 2) License to Possess and Use Special Nuclear Material.

The first stage consisted of the review and evaluation of the Construction Authorization Request (CAR) submitted by MOX Services on October 31, 2002 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML023170102). The application included a description and safety assessment of the proposed facility, detailing the design bases of the principal structures, systems, and components of the plant, including provisions for protection against natural phenomena and the consequences of potential accidents, in order to address the requirements for approval in accordance with 10 CFR 70.23(b). On March 30, 2005, the NRC issued a Construction Authorization (CA) (ADAMS Accession Number ML050660392). The NRC staff's technical basis for issuing the CA is set forth in NUREG-1821, "Final Safety Evaluation Report on the Construction Authorization Request for the Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina" dated March 2005 (CA SER) (ADAMS Accession Number ML050960447). The staff's environmental review related to the issuance of the CA is set forth in NUREG-1767, "Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina - Final Report", dated January 2005 (ADAMS Accession Number ML06000243). An order issued on November 13, 2014, extended the expiration date to the current date of March 2025 (ADAMS Accession Number ML14225A705).

In the second stage, the staff reviewed the License Application (LA) from MOX Services to possess and use special nuclear material (SNM) and issued the "Final Safety Evaluation Report for the License Application to Possess and Use Radioactive Material at the Mixed Oxide Fuel Fabrication Facility in Aiken, SC" in December 2010 (ADAMS Accession Number ML103430615) (LA SER). The LA SER concluded that the applicant's descriptions, specifications, commitments, and analyses provide an adequate basis for safety and safeguards of facility operations and that operation of the facility does not pose an undue risk to worker and public health and safety. Because 10 CFR 70.23(a)(8) states that approval of a license for a plutonium processing and fuel fabrication plant requires that construction has been completed in accordance with the application, issuance of a license was deferred until that determination was

made. To date, the NRC has not issued a possession and use license for special nuclear material.

Construction of the MFFF commenced in 2007 and remained ongoing until October 2018, when MOX Services received a Notice of Termination from the DOE/NNSA of the contract between DOE/NNSA and MOX Services to design, build, and operate the MFFF. The Notice of Termination, dated October 10, 2018, terminated the contract between DOE/NNSA and MOX Services to design, build and operate the MFFF effective immediately (ADAMS Accession Number ML19023A548).

2.0 PROPOSED ACTION

By letter dated November 1, 2018 (ADAMS Accession Number ML18305A356), MOX Services requested termination of the CA for the MFFF due to the cessation of NRC regulated activities following receipt of the Notice of Termination from DOE/NNSA. MOX Services notified the NRC that, as of October 12, 2018, MOX Services ceased NRC regulated construction activities on the MFFF following receipt of a Notice of Termination from the DOE/NNSA of the contract to design, build and operate the MFFF. Because construction of the MFFF had not been completed, the NRC has not issued an operating license for the MFFF and no nuclear fuel or special nuclear material has been brought onto the MFFF construction site.

3.0 DISCUSSION

Applicable Regulatory Requirements

Termination of Part 70 licenses and decommissioning of sites and separate buildings is subject to 10 CFR 70.38(c) which states: "Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of special nuclear material until the Commission notifies the licensee in writing that the license is terminated." Additionally, 10 CFR 70.38(d) states "...each licensee shall provide notification to the NRC in writing and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity, so that the building or outdoor area is suitable for release in accordance with NRC requirements, or submit within 12 months of notification a decommissioning plan, if required by paragraph (g)(1) of this section. . ." 10 CFR 70.38(g)(1) requires submission of a decommissioning plan if required by license condition or if the procedures and activities necessary to carry out decommissioning have not been approved by the NRC and could increase potential health and safety impacts to workers or to the public.

In the November 1, 2018 letter, MOX Services notified the NRC that a) all regulated activities have been terminated; and b) decommissioning of the facility to reduce residual radioactivity to NRC requirements is not needed since a license to possess special nuclear material was never granted for the MFFF and no radioactive material is present at the site. The MOX CA does not require submission of a decommissioning plan because the CA is not a specific license to possess and use special nuclear material under Part 70. Further, because no radioactive material has been brought onsite, no decommissioning activities are needed to remediate residual radioactivity. Therefore, MOX is not required to submit a decommissioning plan under 10 CFR 70.38(g)(1) or to begin decommissioning activities under 10 CFR 70.38(d).

MOX Services Principal Activities at the MFFF

As stated in Section 1.0 of its License Application, Chapter 1, “General Information,” MOX Services had been contracted by the DOE/NNSA to design, build, and operate the MFFF at the Savannah River Site, near Aiken, South Carolina. The purpose of the MFFF was to convert surplus nuclear weapons-grade plutonium into safe, stable MOX fuel for civilian nuclear power generation. The MFFF is owned by the DOE/NNSA. The facility had been under construction since 2007 and was partially completed. The construction that had commenced included the MFFF structure and a portion of the equipment that would have been needed to operate the facility. However, since facility construction was not completed and NRC regulated construction activities have now ceased, the facility was never operated and did not possess any special nuclear material.

Decommissioning Funding and Waste Management Activities

As stated in the CA SER, the issue of MOX’s financial qualifications was relevant in considering the application for a license to possess and use special nuclear material (see 10 CFR 70.23(a)(5)). A finding regarding the adequacy of the MOX’s financial qualifications was not considered in deciding whether to approve the CAR because a CAR is not an application for a license to possess and use special nuclear material. Similarly, the financial assurance for decommissioning requirements, found in 10 CFR 70.22(a)(9), 10 CFR 70.25(b)(2), and 10 CFR 70.25(f)(4–5), were not considered applicable in deciding whether to approve the CAR. Therefore, the CA SER did not consider whether MOX Services was in compliance with the decommissioning funding requirements in 10 CFR 70.25.

Decommissioning funding was addressed in MOX’s LA at section 16.1. MOX Services stated that DOE/NNSA will assume responsibility for decommissioning because the contract between DOE and MOX Services includes a requirement that, following completion of its mission for disposition of excess plutonium, the facility will be deactivated and returned to DOE

As documented in the LA SER, pursuant to 10 CFR § 70.17(a) and 10 CFR § 40.14(a), MOX Services requested an exemption from the requirements of 10 CFR § 70.38(d)–(k) and 10 CFR § 40.42, “Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas,” relating to the responsibility for decommissioning. Based on the agreement for DOE/NNSA to assume responsibility for decommissioning, the staff found that the requested exemption was authorized by law and will not endanger life, property, or the common defense and security and is in the public interest. The LA SER also concluded that since DOE/NNSA will assume responsibility for decommissioning, the method of financial assurance for decommissioning was in accordance with 10 CFR 70.25(f)(5) and 10 CFR § 40.36(e)(5).

This exemption was to be included in any license to possess and use radioactive material that may have been granted to the applicant after completion of other regulatory requirements in 10 CFR Part 70.

Because the MFFF had not been issued a Part 70 license there is no nuclear fuel or special nuclear material on the MFFF construction site that could have resulted in radiological contamination or waste management activities. For these reasons, the NRC staff determined there is no need for a site radiation survey to be conducted under 10 CFR Parts 30, 40, or 70. With no radiological contamination associated with the CA, the MFFF site can be released for unrestricted use pursuant to 10 CFR 20.1402, immediately after termination of the CA.

Based on the discussion above, the staff finds that since DOE/NNSA had accepted responsibility for decommissioning funding and no nuclear fuel or special nuclear material had been brought onto the site which would require decontamination, no additional actions regarding decommissioning funding or waste management are required by MOX Services.

Material Control and Accounting

The NRC staff determined that there are no material control and accounting issues or concerns that need to be addressed at the site. Since construction of the MFFF has not been completed and a license to possess special nuclear material was not granted, there was no nuclear fuel or special nuclear material on the MFFF requiring control or accounting under NRC regulations at the construction site.

Information Security and Protection of Classified Matter

MOX Services was in possession of classified and safeguards information that was either provided to them by the NRC, DOE/NNSA, or was developed to support the physical protection program for the facility. Security clearances for select personnel and for the facility were granted by DOE/NNSA.

Chapter 3 of the CAR stated that the applicant was handling classified matter in accordance with applicable DOE requirements and that it would submit its standard practice procedures plan for the protection of classified matter along with its application for a license to possess and use licensed material. The staff concluded in its CA SER (NUREG-1821) that it was acceptable for the applicant to handle classified matter based on a memorandum of understanding between the U.S. Nuclear Regulatory Commission and DOE dated October 9, 1996. The Memorandum of Understanding related to protection of classified information dated October 9, 1996 (ADAMS Accession Number ML102510391), defines security responsibilities and functions that DOE and NRC would perform at industrial facilities at which both agencies have security interests. Under that MOU, the NRC and DOE agreed that the agency with the more significant security interest, as mutually determined on a case by case basis, would serve as the Cognizant Security Agency (CSA) for both agencies at a facility that does not actually possess licensed nuclear material. The responsibilities of the CSA include issuance of facility clearances and access authorizations.

The LA stated in Chapter 3 that, prior to issuance of the Part 70 license to possess and use byproduct material, source material, and special nuclear material, MOX Services would control classified matter in accordance with applicable DOE requirements. The application also stated that, upon receipt of the license, MOX Services would control classified matter in accordance with NRC requirements in the Classified Matter Protection Plan for the MFFF described in the application. Because MOX Services has not received a Part 70 license to possess and use special nuclear material, DOE has, to date, served as the CSA.

MOX Services stated that as per the DOE/NNSA termination agreement, all classified and safeguards information has been transferred to the DOE/NNSA and is under control of DOE/NNSA. The classified material under NNSA/DOE control will be protected in accordance with applicable DOE standards. Since NNSA/DOE has been the CSA for this facility, there are no changes with respect to protection of classified information. This level of protection of classified information continues to be acceptable to the NRC.

Environmental Considerations

MOX Services seeks to terminate the CA for which construction was never completed and nuclear material was never procured or brought on site. Terminating a license is a licensing action that would ordinarily require an environmental assessment under 10 CFR 51.21, unless a categorical exclusion (CATX) in 10 CFR 51.22(c) applies and no special circumstances under 10 CFR 51.22(b) exist. Actions listed in 10 CFR 51.22(c) were previously found by the Commission to be part of a category of actions that “does not individually or cumulatively have a significant effect on the human environment.” To obtain license termination, licensees holding Part 70 licenses must take any decommissioning activities necessary to demonstrate that any residual radioactivity at the site satisfy the criteria for decommissioning in 10 CFR Part 20, Subpart E.

The CATX identified in 10 CFR 51.22(c)(20) includes:

Decommissioning of sites where licensed operations have been limited to the use of –

- (i) Small quantities of short-lived radioactive materials;
- (ii) Radioactive materials in sealed sources, provided there is no evidence of leakage of radioactive material from these sealed sources; or
- (iii) Radioactive materials in such a manner that a decommissioning plan is not required by 10 CFR 30.36(g)(1), 40.42(g)(1), or 70.38(g)(1), and the NRC has determined that the facility meets the radiological criteria for unrestricted use in 10 CFR 20.1402 without further remediation or analysis.

This CATX captures decommissioning activities at sites where contamination from radioactive material is determined to be nominal. In the case of the MFFF, MOX Services never received a possession and use license. Therefore, no associated radiological contamination exists because construction was not completed and nuclear material was never procured or brought on site. As a result, a decommissioning plan for this site is not required by 10 CFR 30.36(g)(1), 40.42(g)(1), or 70.38(g)(1), and the site meets the radiological criteria for unrestricted use in 10 CFR 20.1402 without further remediation or analysis. Further, no special circumstances under 10 CFR 51.22(b) apply. Therefore, application of the CATX to the termination of the CA is appropriate. Consequently, in accordance with 10 CFR 51.22(c)(20), an environmental assessment is not required for the termination of the CA.

4.0 CONCLUSION

As discussed above, the NRC staff has determined that MOX Services termination request for CAMOX-001 meets the categorical exclusion criteria set forth in 10 CFR 51.22(c)(20).

The NRC staff has determined that no decommissioning actions are required to terminate the CA and that no radiological contamination exists at the site because no nuclear material was procured or brought on site. Additionally, the NRC staff has determined that DOE has been, and will continue to be, responsible for protecting all classified and safeguards information. The NRC staff concludes that terminating the CA does not represent a risk to public health and safety and the environment and that a sufficient basis exists to terminate the CA since no radioactive material was present at the facility. Therefore, the NRC staff grants the termination of CAMOX-001 as requested by MOX Services.