

SAFEGUARDS EVALUATION REPORT
OFFICE OF NUCLEAR SECURITY AND INCIDENT RESPONSE

Mixed Oxide Fuel Fabrication Facility
Docket Number 70-3098
Certificate Number CAMOX-001

Physical Protection

The purpose of the review was to determine that the applicant has committed to having a physical protection system that provides high assurance that activities involving Special Nuclear Material (SNM) are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

Shaw AREVA MOX Services, LLC (MOX Services) submitted a revised Physical Protection Plan (PPP) (DCS01-APP-DS-PRG-S-31002-04, QL-4), a Training and Qualification Plan (T&QP) (DCS01-APP-SS-PRG-S-31003-1), and a Safeguards Contingency Response Plan (SCRP) (DCS01-APP-SS-PRG-S-31001-1) as part of its application to possess and use radioactive material at the Mixed Oxide Fuel Fabrication Facility (MFFF) on January 29, 2015, as supplemented. The PPP and SCRPs contain classified information. The T&QP contains Unclassified Controlled Nuclear Information (UCNI).

Regulatory Requirements

The regulatory requirements for the MFFF are:

- Title 10 of the *Code of Federal Regulations* (10 CFR) Section 73.1, Purpose and scope
- 10 CFR 73.20, General performance objectives and requirements
- 10 CFR 73.45, Performance capabilities for fixed site physical protection systems
- 10 CFR 73.46, Fixed site physical protection systems, subsystems, components, and procedures
- 10 CFR 73.70, Records
- 10 CFR 73.71, Reporting of Safeguards events
- 10 CFR Part 73, Appendix B - General Criteria for Security Personnel
- 10 CFR Part 73, Appendix C - Nuclear Power Plant Safeguards Contingency Plans
- 10 CFR Part 73, Appendix H - Weapons Qualification Criteria

Enclosure

Regulatory Guidance

The regulatory guidance used by the staff in the review of the physical security related submittals was:

- NUREG 1718, Standard Review Plan for the Review of an Application for a Mixed Oxide (MOX) Fuel Fabrication Facility.
- NUREG/CR-6667, Standard Review Plan for Safeguards Contingency Response Plans for Category I Fuel Facilities.
- NUREG/CR-6668, Standard Review Plan for Training and Qualification Plans for Security Personnel at Category I Fuel Facilities.

Staff Review and Analysis

MOX Services submitted a PPP, T&QP, and a SCRPP as part of its application to possess and use radioactive material at the MFFF. The PPP and SCRPP contain classified information. The T&QP contains UCNl.

In the plans stated above the applicant requested the use of alternate methods for numerous areas at the MFFF. The plans reference a MFFF Final Design Vulnerability Assessment Study dated April 15, 2008, (MOX, 2008), and Penetration Delay Analysis of the MFFF Barriers Report generated by Sandia National Laboratories, undated, MOX. Both reports were used to justify the use of alternate security methods as authorized in 10 CFR 73.46(a). The results of the review and analysis of the alternate methods are classified SECRET-RD and are not publicly available. The NRC staff reviewed both documents submitted by the applicant.

For information purposes, MOX Services was provided with the Category I Interim Compensatory Measures and Design Basis Threat Orders to assist in the design of the Physical Protection System. The Orders were incorporated into the PPP, SCRPP, and T&QP that were submitted as part of the license application process. The Orders will be formally issued in the future. The licensee will then be required to review the applicable plans to ensure that the Orders are incorporated as required and are adequately addressed. Since the Orders have not been officially issued, the NRC staff cannot assess the degree to which the Order requirements have been incorporated into the security plans. The licensee will then be required to resubmit the applicable plans to the NRC for a review to ensure that the Orders are incorporated, as required, and are adequately addressed.

Evaluation Findings

The NRC staff's review of the PPP, for the protection of Strategic Special Nuclear Materials (SSNM) contains information that has been marked by the Applicant as "SECRET-RD" pursuant to 10 CFR 2.390. The NRC staff reviewed the applicant's PPP for fixed site physical protection of SSNM. The methods, alternate methods, and procedures outlined in the PPP satisfy the applicable performance objectives, systems capabilities, and reporting requirements specified in 10 CFR Part 73. The PPP for the facility is acceptable and provides reasonable assurance that the requirements for the physical protection of SSNM will be met.

The NRC staff's review of the applicant's SCRCP contains information that has been marked by the applicant as "SECRET-RD" pursuant to 10 CFR 2.390. The methods, alternate methods, and procedures outlined in the SCRCP satisfy the applicable performance objectives, systems capabilities, and reporting requirements specified in 10 CFR Part 73. The SCRCP for the facility is acceptable and provides reasonable assurance that the requirements for the physical protection of SSNM will be met.

The NRC staff's review of the applicant's T&QP contains information that has been marked by the applicant as "UCNI" pursuant to 10 CFR Part 1017. The methods, alternate methods, and procedures outlined in the T&QP satisfy the applicable performance objectives, systems capabilities, and reporting requirements specified in 10 CFR Part 73. The T&QP for the facility is acceptable and provides reasonable assurance that the requirements for the physical protection of SSNM will be met.

REFERENCES

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 73, Physical Protection of Plants and Materials.

U.S. Nuclear Regulatory Commission, NUREG-1718, "Standard Review Plan for the Review of an Application for a Mixed Oxide (MOX) Fuel Fabrication Facility," Washington, DC, Aug. 2000.

U.S. Nuclear Regulatory Commission, NUREG/CR-6667, Standard review plan for safeguards contingency response plans for Category I fuel facilities, Washington, D.C, May 2000.

U.S. Nuclear Regulatory Commission, NUREG/CR-6668, Standard review plan for training and qualification plans for security personnel at Category I fuel facilities, Washington, D.C., May 2000.

Interim Compensatory Measure Order number EA 02-CAT I, Washington, DC, August 21, 2002. (Document is CONFIDENTIAL-NSI).

Interim Compensatory Measure Order number EA 03-087, Design Basis Threat, Washington, DC, April 29, 2003, (Document is CONFIDENTIAL-NSI).

MFFF Final Design Vulnerability Assessment Study (FDVAS), Aiken, SC April 15, 2008 (Document is SECRET).

Penetration Delay Analysis of the MFFF Barriers Report, Sandia National Laboratories, Albuquerque, NM, undated, (Document is CONFIDENTIAL-NSI).

Physical Protection Plan (PPP), Aiken, SC, 2015 (Document is SECRET-RD).

Training and Qualification Plan (T&QP), Aiken, SC, 2015, (Document is UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION).

Safeguards Contingency Response Plan (SCRCP), Aiken, SC, 2015, (Document is SECRET-RD).