

June 12, 2008

Mr. David Stinson, President  
Shaw AREVA MOX Services  
P.O. Box 7097  
Aiken, SC 29804-7087

SUBJECT: REVISION 2 OF CONSTRUCTION AUTHORIZATION NO. CAMOX-001 FOR THE  
MIXED OXIDE FUEL FABRICATION FACILITY

Dear Mr. Stinson:

The U.S. Nuclear Regulatory Commission (NRC) is amending the Construction Authorization (CA) for the Mixed Oxide Fuel Fabrication Facility (CAMOX-001) to incorporate an administrative change to provide flexibility in the identification of the currently approved Quality Assurance (QA) Plan (Section 3A of the CAMOX). In the performance of our inspection activities, we refer to the CA as one of the documents on which we base our findings. When the CA was issued, it referred to a specific revision of the QA Plan. However, the QA plan has since been revised and we expect that additional revisions will be made in the future. In order to provide assurance that we are referring to the currently approved revision of the QA plan in our inspection reports, the CA has been amended. The revised language has been marked in gray.

If you have any questions regarding this letter, please call Mr. David Tiktinsky of my staff at (301) 492-3229.

In accordance with NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agency-Wide Documents Access and

D. Stinson

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Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Joseph G. Giitter, Deputy Director  
Special Projects and Technical  
Support Directorate  
Division of Fuel Cycle, Safety  
and Safeguards, NMSS

Docket No.: 70-3098

Enclosure: "Mixed Oxide Fuel Fabrication Facility  
Construction Authorization," Revision 2

cc: G. Smith, NNSA  
J. Olencz, NNSA  
S. Jenkins, SC Dept. Of HEC  
D. Silverman, Esq., MOX Services  
D. Gwyn, MOX Services  
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Support Directorate  
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DATE	2/ 7 /08	2/ 7 /08	4/24/08	6/ 04 /08	5/13/08	6/12/08

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**Shaw AREVA MOX Services, LLC**

**DOCKET NO. 70-3098**

**MIXED OXIDE FUEL FABRICATION FACILITY**

**CONSTRUCTION AUTHORIZATION**

Construction Authorization No. CAMOX-001, Revision 2

1. The United States Nuclear Regulatory Commission (the Commission) having found that:
  - A. The Construction Authorization Request (CAR), as revised, submitted by Shaw AREVA MOX Services, LLC (MOX Services) [formerly known as Duke Cogema Stone and Webster, LLC (DCS)] complies with the requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission, there is reasonable assurance that the activities authorized by this construction authorization will be conducted in compliance with those rules and regulations, as more fully documented in the Final Safety Evaluation Report (FSER) in the CAR;
  - B. In accordance with 10 CFR 70.23(b), on the basis of information described in the CAR, as revised, and the additional statements and commitments heretofore made by MOX Services in docketed correspondence listed in Attachment A, the design bases of the principal structures, systems, and components (PSSCs) for the proposed Mixed Oxide Fuel Fabrication Facility (MFFF) [sometimes referred to, hereafter, as "the facility"], and the quality assurance program, provide reasonable assurance of protection against natural phenomena and the consequences of potential accidents;
  - C. Findings necessary to authorize possession and use of licensed material at the facility are deferred pending submission and evaluation of an application requesting such a license;
  - D. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs, and considering available alternatives, the issuance of a construction authorization is in accordance with 10 CFR 70.23(a)(7), 10 CFR Part 51, and the requirements of Sections 102(2)(A) and (C) of the National Environmental Policy Act; and
  - E. The issuance of this construction authorization will not be inimical to the common defense and security, and will not constitute an unreasonable risk to the health and safety of the public.
2. Pursuant to 10 CFR Part 70, the Commission hereby issues a construction authorization to MOX Services for a plutonium processing and fuel fabrication plant as described in

Enclosure

the revised CAR filed by MOX Services. The plant, known as the MFFF, will be located on the U.S. Department of Energy's (DOE's) Savannah River Site, near Aiken, South Carolina.

- 3 This construction authorization is subject to all applicable requirements of the Act, and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the conditions specified or incorporated below:
  - A. Authorized activity: To construct a plutonium processing and mixed oxide fuel fabrication plant in accordance with the statements, representations, and conditions of: (1) the CAR dated October 30, 2002 (as revised in supplements dated December 12, 2002; February 18, 2003; April 1, 2003; April 8, 2003; July 28, 2003; June 10, 2004; January 27, 2005, and February 9, 2005); (2) the MOX Project Quality Assurance Plan, dated March 26, 2002 and supplements thereto; and (3) the Environmental Report, dated December 19, 2000 (as revised in supplements dated July 11, 2002; December 10, 2002; January 15, 2003; June 20, 2003; August 13, 2003; and June 10, 2004).
  - B. The facility shall be constructed and located at the site, as described in the CAR, on the DOE's Savannah River Site, near Aiken, South Carolina.
  - C. This construction authorization authorizes MOX Services to construct the facility in accordance with the design bases of the PSSCs described in the CAR, and environmental protection commitments set forth in MOX Services' Environmental Report and revisions thereto.
  - D. During construction of the facility, the inspection program set forth in 10 CFR 70.55 will apply to all of MOX Services' construction-related activities.
  - E. As more fully set forth in the FSER, the facility will be designed so that effective neutron multiplication factor ( $k_{\text{eff}}$ ) shall not exceed an upper subcritical limit of 0.9249 for normal and credible abnormal conditions covered by Area of Applicability (4), [AOA(4)]. MOX Services shall not increase the  $k_{\text{eff}}$  limits or change the AOA boundaries beyond those contained in FSER Chapter 6 without prior Commission review and approval.
  - F. As more fully set forth in the FSER, the facility will be designed so that a safety function of the Emergency Control Room (ECR) Air Conditioning System will maintain hazardous chemical concentrations in each ECR below CAR Table 8-5 TEEL-1 limits for the duration of credible hazardous chemical release events.
- 4 This construction authorization is subject to the limitation that a license authorizing operation of the facility will not be issued by the Commission until MOX Services has submitted, and the Commission has reviewed and approved, a request for a license to possess and use licensed material at the facility.

- 5 This construction authorization is effective as of its date of issuance, and shall expire 10 years from its date of issuance of the initial version of the construction authorization, provided, however, that the Director of the Office of Nuclear Material Safety and Safeguards may, in writing and for good cause, shown by MOX Services in writing, not less than 90 days before the date of expiration, extend this authorization.

For the Nuclear Regulatory Commission

**/RA/**

Joseph G. Giitter, Deputy Director  
Special Projects and Technical  
Support Directorate  
Division of Fuel Cycle, Safety  
and Safeguards, NMSS

Date of Issuance: June 12, 2008

## Attachment A

MOX Services shall conduct its operations in accordance with all commitments, representations, and statements made by MOX Services that are contained in the following submittals, and which are hereby incorporated by reference, except where superceded by conditions in this construction authorization.

DCS 2000. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission, RE "Choice of MFFF Process Glovebox Window Material," (DCS-NRC-000030), December 15, 2000.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "MOX Fuel Fabrication Facility CAR Supplemental Information—Site Geotechnical Report," (DCS01-WRS-DS-NTE-G-00005- A), April 24, 2001.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Responses to Request for Additional Information for Duke Cogema Stone & Webster (DCS) Mixed Oxide Fuel Fabrication Facility (MFFF) Environmental Report (ER)," July 12, 2001.

DCS 2001. Hastings, P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission, RE "MOX Fuel Fabrication Facility Site Geotechnical Report," (DCS01-WRS-DS-NTE-G-00005-C), August 10, 2001.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Response to Request for Additional Information - Construction Authorization Request," August 31, 2001.

DCS 2001. Hastings, P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Proprietary DCS Financial Information," August 31, 2001.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Response to Clarification Request — Responses to Request for Additional Information on the Duke Cogema Stone & Webster Oxide Fuel Fabrication Facility Environmental Report," October 22, 2001.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Responses to Request for Clarification of Additional Information for Duke Cogema Stone & Webster (DCS) Mixed Oxide (MOX) Fuel Fabrication Facility (FFF) Environmental Report (ER)," October 26, 2001.

DCS 2001. Hastings, P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Clarification of Responses to NRC Request for Additional Information," December 5, 2001.

DCS 2001. Hastings P., Duke Cogema Stone & Webster, letter to U.S. Nuclear Regulatory Commission RE "Changes to Mixed Oxide Fuel Fabrication Facility Environmental Report," December 11, 2001.