UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 29, 2007

Mr. David Stinson
MOX Services President and Project Manager
Shaw AREVA MOX Services
Savannah River Site
P.O. Box 7097
Aiken, South Carolina 29804-7097

SUBJECT: MIXED OXIDE FUEL FABRICATION FACILITY- NRC INSPECTION REPORT NO. 07003098/2006001

Dear Mr. Stinson:

This refers to the inspection conducted from October 16 through December 31, 2006, concerning the Mixed Oxide Fuel Fabrication Facility (MFFF) construction site. The enclosed inspection report documents the inspection results, which were discussed on January 11, 2007, with Mr. D. Leach and other members of your staff.

The inspection examined activities conducted under your construction authorization as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your authorization. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.390 of NRC's "Rules of Practice," this document may be accessed through the NRC's public electronic reading room, Agency-Wide Document Access and Management System (ADAMS) on the Internet at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Deborah A. Seymour, Chief
Construction Projects Branch 1
Division of Construction Projects

Docket No. 70-3098
Construction Authorization No. CAMOX-001

Enclosure: NRC Inspection Report 70-3098/2006-001

cc w/encl: (See next page)

cc w/encl:
Mr. Garrett Smith, NNSA/HQ
NA-261/Forrestal
1000 Independence Ave., SW
Washington, DC 20585

A.J. Eggenberger, Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Ave., NW
Suite 700
Washington, DC 20004

Mr. Joseph Olencz, NNSA/HQ
1000 Independence Ave., SW
Washington, DC 20585

Mr. Henry J. Porter, Assistant Director
Division of Radioactive Waste Management
Bureau of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

Ms. Glenn Carroll
Georgians Against Nuclear Energy
P.O. Box 8574
Atlanta, GA 30306

D. Silverman
Morgan, Lewis, & Bockius
1111 Penn. Ave., NW
Washington, DC 20004

Lou Zeller
Blue Ridge Environmental Defense League
P.O. Box 88
Glendale Springs, NC 28629

Diane Curran
Harmon, Curran, Spielburg & Eisenberg, LLP
1726 M St., NW
Suite 600
Washington, DC 20036

cc w/encl:
Mr. Garrett Smith, NNSA/HQ
NA-261/Forrestal
1000 Independence Ave., SW
Washington, DC 20585

A.J. Eggenberger, Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Ave., NW
Suite 700
Washington, DC 20004

Mr. Joseph Olencz, NNSA/HQ
1000 Independence Ave., SW
Washington, DC 20585

Mr. Henry J. Porter, Assistant Director
Division of Radioactive Waste Management
Bureau of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

Ms. Glenn Carroll
Georgians Against Nuclear Energy
P.O. Box 8574
Atlanta, GA 30306

D. Silverman
Morgan, Lewis, & Bockius
1111 Penn. Ave., NW
Washington, DC 20004

Lou Zeller
Blue Ridge Environmental Defense League
P.O. Box 88
Glendale Springs, NC 28629

Diane Curran
Harmon, Curran, Spielburg & Eisenberg, LLP
1726 M St., NW
Suite 600
Washington, DC 20036

Distribution w/encl: (See next page)

■ PUBLICLY AVAILABLE □ NON-PUBLICLY AVAILABLE □ SENSITIVE ■ NON-SENSITIVE

ADAMS: ■ Yes ACCESSION NUMBER: **ML070310241**

OFFICE	RII:DCP	RIIDCI	RII:DRS	RII:DCP			
SIGNATURE	RPC for perTelecon	RPC	WBG for	WBG			
NAME	MShannon	RCarrion	JLanahan	WGloresen			
DATE	1/29/07	1/29/07	1/29/07	1/29/07			
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\FileNet\ML070310241.wpd

Memo to Mr. David Stinson from Deborah A. Seymour dated January 29, 2007

SUBJECT: MIXED OXIDE FUEL FABRICATION FACILITY - NRC INSPECTION REPORT NO. 07003098/2006001

Distribution w/encl:
S. Magruder, NMSS
D. Tiktinsky, NMSS
D. Diaz-Toro, NMSS
C. Gibbs, NMSS
D. Ayres, RII
M. Lesser, RII
D. Seymour, RII
M. Shannon, RII
W. Gloersen, RII
PUBLIC

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	70-3098
Construction Authorization No.:	CAMOX-001
Report No.:	70-3098/2006-001
Certificate Holder:	Shaw AREVA MOX Services
Location:	Savannah River Site Aiken, South Carolina
Inspection Dates:	October 16 - December 31, 2006
Inspectors:	Melvin C. Shannon, Senior Resident Inspector Division of Construction Projects Joseph J. Lenahan, Senior Reactor Inspector Division of Reactor Safety Robert P. Carrion, Reactor Inspector Division of Construction Inspection (DCI)
Accompanying Personnel:	Mark S. Lesser, Chief, Construction Inspection Branch 1, DCI
Approved:	Deborah A. Seymour, Chief Construction Projects Branch 1 Division of Construction Projects

Enclosure

EXECUTIVE SUMMARY

Shaw AREVA MOX Services
Mixed Oxide Fuel Fabrication Facility
NRC Inspection Report No. 70-3098/2006-001

This routine inspection included activities conducted by the Senior Resident Inspector and regional inspectors during normal shifts and involved observation and evaluation of the certificate holder's programs for quality assurance and geotechnical/foundation activities. The inspection identified the following aspects of the certificate holder's programs as outlined below:

Site Preservation Activities

- Site preservation activities related to engineered backfill were conducted in accordance with the construction authorization conditions and the certificate holder's Quality Assurance (QA) program; procedures were established in accordance with the certificate holder's program; procedures were followed; and the certificate holder's records retention program properly maintained QA records. No findings of significance were identified. (Section 2)

Geotechnical/Foundation Activities

- The certificate holder had established adequate plans, instructions, and implementing procedures for geotechnical/foundation work activities. Planned quality control (QC) inspections were adequate with regard to scope, frequency, and inspector qualifications. No findings of significance were identified. (Section 3)

- Discrepancies were noted between the details shown on the construction drawings and the written description of the engineered fill in the Construction Authorization Request (CAR), Final Safety Evaluation Report (FSER), and the Integrated Safety Analysis (ISA) Summary submittal. The inspectors discussed this discrepancy with project personnel who indicated that they would review the project requirements and revise the CAR and ISA Summary as necessary to reflect as-built conditions. This issue was identified as an inspector followup item, pending further review of certificate holder's Fast Lagrangian Analysis of Continua engineering analysis. No findings of significance were identified. (Section 3)

- Soil testing laboratory equipment was in good condition and in current calibration. Copies of American Society for Testing and Materials test procedures were available in the labs. The technicians were knowledgeable, qualified, and experienced in the performance of the planned soils testing. No findings of significance were identified. (Section 3)

- QA Audit Report WSRC-06-VE26, Placement of Engineered Fill for MFFF Facility, was adequate. No findings of significance were identified. (Section 3)

Attachment:
Persons Contacted
Inspection Procedures
List of Items Opened, Closed, and Discussed
List of Acronyms Used
List of Documents Reviewed

REPORT DETAILS

1. Summary of Facility Status

The certificate holder's oversight of the preparations and implementation of site preservation activities (including placement of engineered backfill, proof rolling, test placement and compaction) continued throughout this reporting cycle. The site preservation activities were performed by a Department of Energy (DOE) contractor.

2. Site Preservation Activities (Inspection Procedure (IP) 88130)

a. Scope and Observations

The inspectors reviewed numerous site preservation activities to ensure that they were accomplished in accordance with the construction authorization such that: the certification holder's activities were conducted in accordance with the approved Quality Assurance (QA) program and the Mixed Oxide (MOX) Project Quality Assurance Plan; QA program policies and procedures were established and implemented for items and services important to safety; the certification holder's system for preparing and maintaining records was functioning properly; and the NRC maintained a current knowledge of the status of construction activities.

The inspectors reviewed the construction authorization related to engineered backfill of the fuel fabrication building, the shipping and receiving building, and the aqueous polishing building. The inspectors verified that certification holder's procedures (Construction Specification 02310, Excavation, Backfilling, and Compaction for Structures, Document No. DCS01-WRT-DS-SPE-B-09304-0; BMF Foundation Earthwork Plan, Document No, C-ESR-F-0000; and WTA Task No. 35, MFFF Construction Support: Structural and Infrastructure) were appropriate for meeting the construction authorization for engineered backfill.

The inspectors reviewed the applicable sections of the certification holder's QA program and verified that backfill activities were conducted in accordance with the program. Specifically, the inspectors verified that the procedures had been established, reviewed, and approved in accordance with the QA program, including the implementing procedure, Excavation, Backfilling, and Compaction for Structures, and program procedures PP9-21, Engineering Change Requests, and PP9-3, Design Control.

The inspectors reviewed a significant number of related soil test reports placed in the certification holder's records system to ensure that the system adequately maintained the required QA records. The inspectors routinely held discussions with various MOX Services individuals and attended various MOX Services status meetings in order to maintain current knowledge of construction activities.

b. Conclusions

Site preservation activities related to engineered backfill were conducted in accordance with the certification conditions and the certification holder's QA program; procedures were established in accordance with the certification holder's program; procedures were followed; and the certification holder's records retention program properly maintained QA records. No findings of significance were identified.

3. Geotechnical/Foundation Activities (IP 88131)

a. Scope and Observations

An inspection of geotechnical/foundation activities was conducted to verify that the technical and QA requirements detailed or referenced in the licensing basis had been adequately defined in the construction specifications, drawings, and related procedures. The adequacy of programmatic controls was evaluated through a review and assessment of the QA program implementation. Ongoing work and quality control (QC) were assessed through direct observation and independent evaluation of engineered backfill placement and testing.

This inspection was conducted to ensure that work activities were accomplished in accordance with the design specifications, applicable standards, and procedures; and that records accurately reflected work accomplishments consistent with those requirements. The inspection also served to assess the effectiveness of the corrective action program as it related to the identification and resolution of problems in the geotechnical area.

The inspectors reviewed the Mixed Oxide Fuel Fabrication Facility (MFFF) Construction Authorization Request (CAR), Final Safety Evaluation Report (FSER), and the MFFF QA Plan to ensure that: geotechnical activities associated with engineered backfill were adequately addressed in construction specifications and work procedures; management controls were adequate; QA plans, instructions, and procedures for geotechnical backfill activities were established; activities were accomplished in accordance with design specifications, drawings, and procedures; the certificate holder maintained appropriate records that reflected work accomplishments; and work inadequacies were identified and documented, and appropriate corrective actions were initiated.

The certificate holder had cleared the site and completed excavation down to the planned final excavation grade prior to this inspection. Prior to start of site preparation activities, the site of the MFFF had been covered with excavated fill material from another DOE project. Height of the fill varied from 10 feet to 20 feet. The fill was removed and the MFFF foundation was excavated to the planned subgrade elevation following the site excavation plan. The depth of the excavation varied from 13 feet to 23 feet. It was not necessary to install a dewatering system for control of groundwater during excavation activities. No unusual or changed conditions were encountered during excavation. Excavation slopes were stabilized with an emulsified asphalt mixture. Activities in progress during this inspection included delivery and stockpiling of the gravel fill material used as the engineered fill, proof-rolling, placement and compaction of backfill material,

and testing of compacted backfill. Engineered fill, varying in thickness from 2.5 feet to 7.5 feet, was placed on the subgrade. The method for placement of the engineered fill, including lift thickness, compactive effort (type of equipment and number of passes), and moisture control were established using a test fill. A reinforced concrete mat foundation approximately 6.5 feet thick will be placed on the engineered fill.

(1) Drawings, Procedures, and Specifications

The inspectors reviewed MFFF QA construction specifications related to geotechnical activities to ascertain whether the specified technical requirements conformed to the commitments contained in the CAR, were compatible with the QA program, and prescribed adequate methods to meet the construction specifications. The specifications for the following areas were reviewed: foundation verification, placement of engineered backfill, QC inspection, QC testing, soil compaction, and soil testing.

The inspectors reviewed drawings and procedures for the control of the excavation and the engineered fill, QA and QC activities, and the proposed settlement monitoring program. The inspectors reviewed Construction Specification Section 02310, Excavation, Backfilling, and Compaction for Structures, and verified that the procedures prescribed adequate construction methods for the control of excavation and subgrade preparation; foundation verification (proof rolling); placement of the engineered backfill, including moisture control; and quality control inspection and testing.

The inspectors reviewed the test procedures and the results of the compaction testing performed prior to the start of the engineered backfill of the MFFF facility. Testing documented that a minimum of three passes by the compaction equipment was required over engineered fill material having a water content of approximately 5%. Subsequently, the inspectors verified on numerous occasions that the compactors were making three passes and the tests reports noted water contents within the design limits. The implementing procedure for installation of the engineered backfill material reflected the methods, equipment, materials, and conditions of the test fill program.

The inspectors compared the excavation and foundation construction details shown on the plans with design details discussed and shown in the MFFF Site Geotechnical Report, DCS01-WRS-DS-NTE-G-00005-0, Rev. E. No discrepancies were noted between the geotechnical report and the drawings. However, the inspectors noted a discrepancy between the details shown on the drawings and the written description of the engineered fill in the CAR, the Integrated Safety Analysis (ISA) Summary submittal, and the Final Safety Evaluation Report (NUREG-1821).

Discussions pertaining to foundation preparation in the CAR, MFFF ISA Summary submittal, and in Section 11.1.1.3.2.3 of the FSER stated that ten feet of natural soils beneath the MOX Processing Building (BMP) floor and five feet of the natural soils beneath the Aqueous Polishing Building (BAP) and Shipping and Receiving Building (BSR) basement floors were to be excavated and replaced with engineered select structural fill. Review of Drawing No. DCS01-XGP-DS-PLG-G-00328, MOX Fuel Fabrication Facility Civil BMF Structure Excavation and Backfill Plan and Sections, Revision (Rev.) 4, indicated that depth of the engineered fill was 7.5 feet under the MOX

Processing Building (BMP), and 2.5 feet under the Aqueous Polishing Building (BAP) and Shipping and Receiving Building (BSR).

The inspectors reviewed the certificate holder's design documents related to the change in depth of engineered backfill. These included DCS01-WRS-DS-NTE-G-00005-0, MOX Fuel Fabrication Facility Site Geotechnical Report, dated June 30, 2005, and DCS01-WRS-DS-CAL-G-00017-D, Estimates of Static Settlement of MFFF Structure Using FLAC Model, dated January 15, 2005 (FLAC stands for Fast Lagrangian Analysis of Continua). These reports documented that the BMP would have approximately 8 feet of engineered backfill and the MOX BSR and MOX BAP would both have approximately 3 feet of engineered backfill. The inspectors noted that these documents clearly document the amount of engineered backfill actually installed at the site.

The certificate holder's analyses noted that the change in the amount of engineered backfill "was not expected to have any significant impact on the estimated settlements and pressures of the MOX Facility from the FLAC analysis." The inspectors noted that the certificate holder was also in the process of revising the ISA Summary (revision dated November 17, 2006). The discrepancy between the details shown on the drawings and the written description of the engineered fill in the CAR, ISA Summary submittal, and the FSER will be tracked as Inspector Followup Item (IFI) 70-3098/2006-001-01, Review the Certificate Holder's FLAC Analysis and Resolve the Written Description of the Engineered Backfill Discrepancy Between Construction Drawings and the CAR, ISA Summary and FSER.

The inspectors also identified that inconsistent acceptance criteria were specified for proof rolling of the foundation subgrade prior to placement of the engineered backfill in Specification Section 02310 and Drawing number DCS01-XGP-DS-PLG-G-00328. Engineering change request (ECR) number ECR-000-175, Proof Rolling Requirements, was subsequently issued to clarify proof rolling acceptance criteria.

The inspectors also reviewed Construction Specification Section 02211, Settlement Monitoring Program. This specification specifies the requirements for installation of settlement markers, the settlement monitoring program, and frequency of monitoring. The inspectors verified that the existing control reference benchmarks to be used in the settlement monitoring program were located at a sufficient distance from the MFFF site such that they would not be disturbed or influenced by construction activities. The inspectors discussed the need to clarify the accuracy of the survey methods to be used when performing settlement surveys with site civil engineering personnel.

In addition, the inspectors reviewed the certificate holder's Engineering Change Requests for design changes. Because of concerns raised by the inspectors regarding timeliness of some items in the ECR program, the certificate holder had begun the process of enhancing the program by the end of the inspection period.

(2) Observation of Work

The inspectors observed work in progress on the material supporting Seismic Category 1 (SC-I) structures to ascertain whether geotechnical/foundation activities, including foundation verification and backfilling operations, were controlled and accomplished in accordance with the project requirements.

The excavation and subgrade preparations were completed before the inspectors arrived on site. The inspectors reviewed the proof rolling testing that had been performed prior to the start of the engineered backfill activities. The inspectors also observed the preparation of subgrade areas that had been further excavated because they had failed the proof rolling testing. The inspectors observed the engineered backfill of these areas and the compaction and testing in these areas. The inspectors noted that all of the subgrade areas were free of organic or soft material and that the finished subgrades were at the specified elevations. The inspectors also noted that excavated materials were not used for fill material and that repaired sections of subgrade were adequately compacted and that test records confirmed that all subgrades were adequately compacted.

The inspectors reviewed receipt records of engineered backfill to ensure that the material was traceable to the approved material supplier. The material used for the engineered backfill was crushed rock obtained from an offsite quarry. The engineered backfill had been delivered and stockpiled at the site. Prior to delivery, the material had been tested at least daily to assure that it complied with specification requirements. The number of tests was based on the quantity to be delivered. The inspectors reviewed the results of these tests, which included gradation, specific gravity, Los Angeles abrasion, and Proctor testing. Samples were also taken from the stockpile and tested independently in the onsite laboratory under the project QA program.

The inspectors observed the installation of various lifts, noting that the engineered backfill material was placed where required. The inspectors noted that survey activities were performed using global positioning satellite (GPS) measuring equipment and that the bulldozers and graders used laser leveling equipment to ensure that proper lift/grade levels were obtained. The inspectors monitored in-place density testing and subsequently verified that the density testing was performed at the required locations, at the required frequency, using calibrated instrumentation to ensure that the backfill material met specification requirements. The test technicians properly performed radioactive source leak checks. The inspectors verified the qualifications of the test personnel.

The inspectors verified that experienced engineering oversight was provided by both the subcontractor (performing the backfilling activities) and MOX Services to monitor geotechnical/foundation construction activities, including an experienced geotechnical engineer to approve final foundation subgrade materials, monitor and review QC inspection and test results, and identify changed field conditions; to disposition nonconformance reports; and to prepare engineering field change requests for approval. The inspectors also reviewed engineering field changes performed by MOX Services.

During the engineered backfill activities of the MFFF, the inspectors conducted numerous informal personnel interviews. The interviews included QA and QC personnel, MOX engineering personnel, field testing personnel, laboratory testing personnel, compactor operators, and sub-contractor management to determine how well they knew the requirements of their work activity; to identify perceived management support; and to ascertain whether a sufficient number of qualified QA and QC personnel were at the construction site performing their assigned duties through the established organizational structure. QA personnel were observed at the work site on numerous occasions and that the contractor had 100% QC observation in place for compaction of the engineered backfill.

The inspectors reviewed a significant number of soil test records, various engineering change requests, receipt inspection of engineered backfill material, non-conformances, personnel qualification records, and QA audits and assessments from the MOX Services Document Control Center to ensure that the records were adequately maintained and were appropriately reviewed and approved. The records were found to be legible, complete, properly reviewed and approved by QC and engineering personnel. The inspectors reviewed records for compaction and density testing for various lifts during the engineered backfilling process. The inspectors noted that engineering and QA personnel had to authorize the start of the next lift. The final subgrade was approved prior to installation of the mud mat. The final elevation of the mud mat was determined and recorded using GPS equipment.

During installation of the engineered backfill and construction of the mud mat, the inspectors noted constant QA and/or QC presence at the construction site. In many instances, QC inspectors monitored individual building levels, ensuring the proper numbers of passes by the compactors, proper height of engineered backfill, and adequacy of proof rolling of the foundation subsurface. QA and QC personnel monitored the compaction testing and verified the adequacy of the testing program. The inspectors observed the QA and QC inspectors performing these tasks on multiple occasions. The inspectors also reviewed American Society of Mechanical Engineers (ASME) NQA-1-1994, Quality Assurance Program Requirements for Nuclear Facilities, related to use of hold points, procurement of engineered backfill and concrete materials, and engineering responsibilities.

No items of significance were identified during the observation of work activities.

(3) Testing Laboratory

The inspectors toured the onsite soils testing laboratory and the central civil testing laboratory, examined test equipment, and interviewed laboratory technicians who performed the testing to verify that: test results were evaluated at an appropriate level and the evaluations included trend analyses; testing standards conformed to the procedures specified in the American Society for Testing and Materials (ASTM); testing apparatuses were calibrated at the required frequency and the calibration was traceable to a nationally recognized standard and was performed in accordance with approved procedures; and lab personnel were qualified and/or certified to perform their assigned work.

The inspectors observed density and water content testing and noted that the testing was performed in accordance with site procedures. Test samples were appropriately identified. The inspectors also reviewed the test records and noted that they appropriately documented the results of the laboratory testing, actual field conditions, testing frequency requirements; and met the qualitative acceptance criteria identified in the test procedures; and verified data calculations. The inspectors also verified the qualifications of the laboratory personnel.

No items of significance were identified in the testing laboratory or with its personnel.

(4) Quality Control

The inspectors reviewed the certificate holder's QA audit program and QA assessment program for assessing the adequacy of SC-I work control functions, in the area of geotechnical/foundation activities, and for ensuring that examination, inspection, and test personnel associated with performing tests and inspections of these activities were qualified and/or certified to perform their assigned work.

The inspectors reviewed the certificate holder's assessment program implementing procedure PP 3-11, Assessments; Activity Assessment Report FY07-A-QA-002, Engineering Change Request; and Quality Assurance Audit Report WSR-06-VE26, Placement of Engineered Fill for MFFF Facility. The audit assessed the capability of the contractor to place and compact the engineered fill. The inspectors were provided an audit schedule showing proposed audits through September 2007. Discussions with QA personnel indicated that verifications had been performed to ensure that the required tests and inspections were performed by qualified individuals. The inspectors verified that qualification records were in place to show that all test personnel were qualified/certified to perform their assigned duties.

No items of significance were identified in the area of quality control.

b. Conclusions

The certificate holder had established adequate plans, instructions, and implementing procedures for geotechnical/foundation work activities. Planned QC inspections were adequate with regard to scope, frequency, and inspector qualifications.

Discrepancies were noted between the details shown on the construction drawings and the written description of the engineered fill in the CAR, FSER, and the ISA Summary submittal. The inspectors discussed this discrepancy with project personnel who indicated that they would review the project requirements and revise the CAR and ISA Summary as necessary to reflect as-built conditions. This issue is identified as an inspector followup item, pending review of FLAC engineering analysis.

The inspectors determined that the laboratory equipment was in good condition and in current calibration. Copies of ASTM test procedures were available in the labs. The technicians were knowledgeable, qualified, and experienced in the performance of the planned soils testing.

QA Audit Report WSRC-06-VE26, Placement of Engineered Fill for MFFF Facility was adequate.

Based on the observations performed and documents reviewed, the inspectors concluded that technical requirements related to engineered backfill operations were adequately addressed in the certificate holder and/or contractor construction specifications, drawings, and work procedures. Furthermore, QA plans, instructions, and procedures had been established for engineered backfill operations. The inspectors performed numerous observations and concluded that engineered backfill activities were accomplished in accordance with design specifications, drawings, and procedures. The inspectors retrieved numerous test records and concluded that the certificate holder's document control process was functioning properly. The observations and review of documents did not indicate any generic problems, management control inadequacies, or other significant weaknesses.

4. Exit Interview

The inspection scope and results were presented to members of the certificate holder's management at various meetings throughout the inspection period and were summarized on January 11, 2007. Although proprietary documents and processes may have been reviewed during this inspection, the proprietary nature of these documents or processes were deleted from this report. No dissenting comments were received from the certificate holder.

ATTACHMENT

1. PARTIAL LIST OF PERSONS CONTACTED

Certificate Holder Personnel

J. Adair, Civil - Mechanical Engineering Manager
P. Bishop, Construction Supervisor
D. Gwyn, Regulatory Affairs Manager
R. Justice, Quality Assurance Engineer
J. King, Construction Supervisor
D. Leach, Deputy Director, MFFF Project
J. Vaughn, Civil Engineer

Department of Energy

S. Glenn, National Nuclear Security Administration (NNSA)

2. INSPECTION PROCEDURES (IPs) USED

IP 88130	Resident Inspection Program for On-Site Construction Activities at the Mixed Oxide Fuel Fabrication Facility
IP 88131	Geotechnical/Foundation Activities

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item	Status	Description
70-3098/2006-01-001	Opened	IFI - Review the Certificate Holder's FLAC Analysis and Resolve the Written Description of the Engineered Backfill Discrepancy Between Construction Drawings and the CAR, ISA and FSER (Section 3)

4. LIST OF ACRONYMS USED

ASTM	American Society for Testing and Materials
BAP	Aqueous Polishing Building
BMF	MOX Fuel Fabrication Building
BMP	MOX Processing Building
BSR	Shipping and Receiving Building
CA	Construction Authorization
CAR	Construction Authorization Request
DOE	Department of Energy
ECR	Engineering Change Request
FLAC	Fast Lagrangian Analysis of Continua
FSER	Final Safety Evaluation Report

GPS	Global Positioning System
IP	Inspection Procedure
ISA	Integrated Safety Analysis
MFFF	MOX Fuel Fabrication Facility
MOX	Mixed Oxide
NNSA	National Nuclear Security Administration
QA	Quality Assurance
QC	Quality Control
Rev.	Revision
SC-I	Seismic Category 1

5. LIST OF DOCUMENTS REVIEWED

Specifications & Procedures

Construction Specification Section 02310, Excavation, Backfilling, and Compaction for Structures, Specification DCS01-WRT-DS-SPE-B-09304-0, dated October 4, 2005

Construction Specification Section 02211, Settlement Monitoring Program, Specification DCS01-XGA-DS-SPE-B-09300-0, dated April 5, 2006

Construction Specification General requirements for BMF Facility, Section 01410, Independent Testing Laboratory services, Specification DCS01-BMF-DS-SPE-B-09205-1

Engineering Change Request (ECR) number ECR-000-172, Revise Specification DCS01-WRT-DS-SPE-B-09304-0

ECR number ECR-000-175, Proofrolling Requirements

Drawings

Drawing number DCS01-WRS-DS-PLG-G-00305, MOX Fuel Fabrication Facility Rough Grading Package Site Plan and Locations of Geotechnical Investigations, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00266, MOX Fuel Fabrication Facility Overall Plot Plan, Rev. 1

Drawing number DCS01-XGP-DS-PLG-G-00299, MOX Fuel Fabrication Facility Rough Grading Package Overall Rough Grading and Drainage Plan, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00300, MOX Fuel Fabrication Facility Rough Grading Package Rough Grading and Drainage Plan, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00301, MOX Fuel Fabrication Facility Rough Grading Package Rough Grading and Drainage Plan, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00302, MOX Fuel Fabrication Facility Rough Grading Package Rough Grading and Drainage Plan, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00303, MOX Fuel Fabrication Facility Rough Grading Package Rough Grading and Drainage Plan, Rev. 0

Drawing number DCS01-XGP-DS-PLG-G-00307, MOX Fuel Fabrication Facility Rough Grading Packagel BMF Structure Excavation Access Plan, Rev. 2

Drawing number DCS01-XGP-DS-PLG-G-00328, MOX Fuel Fabrication Facility Civil BMF Structure Excavation and Backfill Plan and Sections, Rev. 4

Miscellaneous Documents

Basis of Design for Site/Geotechnical, DCS01-AAJ-DS-DOB-B-40102-E

Deficiency Action Request Initiation number DAR-07-001, Clarify Gradation Requirements for Engineered Fill

Mixed Oxide Fuel Fabrication Facility Construction Authorization Request, Docket No. 70-3098 (latest revision)

Mixed Oxide Fuel Fabrication Facility Integrated Safety Analysis Summary, Docket No. 70-3098

MOX Fuel Fabrication Facility Site Geotechnical Report, DCS01-WRS-DS-NTE-G-00005-0, Rev. E

Mud Mat Concrete Checklist

NUREG-1767, Volume 1, Environmental Impact Statement on the Construction and Operation of a Proposed Mixed Oxide Fuel Fabrication Facility at the Savanah River Site, South Carolina

NUREG-1767, Volume 2, Environmental Impact Statement on the Construction and Operation of a Proposed Mixed Oxide Fuel Fabrication Facility at the Savanah River Site, South Carolina

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, Docket No. 70-3098, March 2005

Plutonium Disposition Program, MFFF Project, BMF Foundation Earthwork Plan, Document No. C-ESR-F-00039, Rev. 0, dated November 2, 2006

Results of gradation tests performed on crushed rock to be used for engineered fill on September 27, 28, October 2 through 5, 10, and 16, 2006