

June 15, 2007

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

THRU: William Troskoski, Acting Chief  
MOX Branch  
Special Projects and Technical  
Support Directorate, FCSS

FROM: David Tiktinsky, Sr. Project Manager  
MOX Branch /RA/  
Special Projects and Technical  
Support Directorate, FCSS

SUBJECT: SUMMARY OF THE KICKOFF MEETING WITH SHAW AREVA MOX  
SERVICES ON THE CHEMICAL SAFETY REVIEW OF THE LICENSE  
APPLICATION AND INTEGRATED SAFETY ASSESSMENT  
SUMMARY FOR THE MIXED OXIDE FUEL FABRICATION FACILITY  
TO BE BUILT NEAR AIKEN, SC

On May 17, 2007, Nuclear Regulatory Commission (NRC) staff met with representatives from Shaw AREVA MOX Services (MOX Services) to kickoff the chemical safety review of the License Application (LA) and the Integrated Safety Assessment Summary (ISAS) for the Mixed Oxide Fuel Fabrication Facility (MFFF). The meeting was closed to the public due to discussions of Official Use Only Information. Please see the enclosed meeting summary for more details (Enclosure 1). The meeting attendance list is also enclosed (Enclosure 2). The meeting handouts can be found in Enclosures 3 - 4. These enclosures (OUO-SRI and/or OUO-Proprietary) are being withheld from public release. When Separated from Enclosures 3 - 4, handle this memorandum as non-sensitive.

.Enclosures:

1. Meeting Summary (unclassified)
2. List of Attendees (unclassified)
3. Meeting Handout (OUO-SRI)
4. Meeting Handout (crosswalk) (OUO-SRI)

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FROM: David Tiktinsky, Sr. Project Manager /RA/  
MOX Branch  
Special Projects and Technical  
Support Directorate, FCSS

SUBJECT: SUMMARY OF THE KICKOFF MEETING WITH SHAW AREVA MOX SERVICES ON  
THE CHEMICAL SAFETY REVIEW OF THE LICENSE APPLICATION AND  
INTEGRATED SAFETY ASSESSMENT SUMMARY FOR THE MIXED OXIDE FUEL  
FABRICATION FACILITY TO BE BUILT NEAR AIKEN, SC

On May 17, 2007, Nuclear Regulatory Commission (NRC) staff met with representatives from Shaw AREVA MOX Services (MOX Services) to kickoff the chemical safety review of the License Application (LA) and the Integrated Safety Assessment Summary (ISAS) for the Mixed Oxide Fuel Fabrication Facility (MFFF). The meeting was closed to the public due to discussions of Official Use Only Information. Please see the enclosed meeting summary for more details (Enclosure 1). The meeting attendance list is also enclosed (Enclosure 2). The meeting handouts can be found in Enclosures 3 - 4. These enclosures (OUO-SRI and/or OUO-Proprietary) are being withheld from public release. When Separated from Enclosures 3 - 4, handle this memorandum as non-sensitive.

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Enclosures:  
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DISTRIBUTION:

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DATE	6/13 /07	6/13/07	6/ 15 /07	

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SUMMARY OF MEETING WITH MOX SERVICES TO KICKOFF THE CHEMICAL SAFETY TECHNICAL REVIEW OF THE LICENSE APPLICATION (LA) AND INTERGRATED SAFETY ASSESMENT (ISAS) FOR THE MIXED OXIDE FUEL FABRICATION FACILITY(MFFF)

Date: May 17, 2007

Place: Rockville, MD

Attendees: See Enclosure 2

Purpose:

The purpose of this meeting was to kickoff the chemical safety review of the LA and ISAS for the MFFF.

Discussion:

This meeting was closed to the public due to discussions of Official Use Only (OUO) information. The meeting handouts were designated as OUO.

Shaw AREVA MOX Services (MOX Services) provided an overview of the Aqueous Polishing (AP) portion of the facility, a discussion of the red oil explosion event, and the testing modeling that have been performed.

The applicant provided an overview of the of the AP process for feedstock from the Pit Disassembly and Conversion Facility (PDCF) and the non-PDCF alternate feedstock. The contractual throughput for the facility is 3.5 MT Pu/year. The AP design is based on the AREVA La Hague facility in France. The AP process consists of dissolution, purification, solvent recovery, oxalic precipitation and oxidation conversion, and acid and oxalic mother liquid recovery.

There was a discussion of the red oil explosion events as contained in the ISAS. The strategies that are being used in the prevention of red oil are organic propagation prevention, heat transfer, and evaporative cooling. The HazOP methodology was also discussed. This methodology provides for a systematic and comprehensive means to identify potential initiators that lead to event scenarios/sequences with unacceptable consequences.

The applicant discussed the Nuclear Safety Evaluations that were performed and the supporting analyses. They also went over the implementation of the ISA methodology to demonstrate that events are "highly unlikely". The implementation of the methodology includes application of the single failure criteria, application of nuclear quality assurance, application of industry codes and standards, and management measures (e.g, surveillance of items relied on for safety (IROFS), failure detection, et.al.). Additional layers of protection are considered defense in depth.

There was a discussion of red oil events and the strategies that will be used in the design (i.e., prevention, evaporative cooling and heat transfer). The historical approach to red oil events was also discussed.

MOX Services presented a discussion of chemical safety data and modeling for red oil and hydroxylamine nitrate (HAN) potential events.

MOX Services provided a crosswalk of the principal structures, systems and components (PSSCs) to IROFS in the ISAS for explosion events related to chemical safety.

Future plans for the review including onsite reviews were discussed prior to ending the meeting.

No regulatory decisions were made at the meeting.

The meeting was then adjourned.

## May 17, 2007 Chemical Safety/Management Measures Review Kickoff Meeting Attendees

- David Tiktinsky NRC
- Kelli Markham NRC
- Bill Troskoski NRC
- Dan Tedder NRC
- Bill Gloersen NRC
- Deborah Seymour NRC
- Stu Magruder NRC
- Michael Norato NRC
- Diana Diaz-Toro NRC
- Wilkins Smith NRC
- Gary Hedrick MOX Services
- Sven Bader MOX Services
- Walt Elliott MOX Services
- Bill Hennessy MOX Services
- Dealis Gwyn MOX Services
- Gerald Serencz MOX Services
- Garrett Smith NNSA