



# Mixed Oxide Xchange

## CHANGES TO THE DOE SURPLUS PLUTONIUM DISPOSITION PROGRAM

On January 23, 2002, the Department of Energy (DOE) issued a press release announcing its decision to dispose of 34 metric tons of surplus weapons grade plutonium by turning the material into mixed oxide (MOX) fuel. DOE decided not to follow its planned hybrid approach, under which some of the more highly contaminated surplus weapons grade plutonium would have been immobilized. The surplus plutonium disposition program is managed by the DOE's National Nuclear Security Administration. This decision followed "an exhaustive Administration review of non-proliferation programs, including alternative technologies to dispose of surplus plutonium to meet the non-proliferation goals agreed to by the United States and Russia."

The effect of this program change on the Duke COGEMA Stone & Webster (DCS) Construction Authorization Request and Environmental Report for the MOX facility was the subject of a meeting between DCS and NRC staff at NRC Headquarters on February 13, 2002.

The major program changes that DCS described during the February 13, 2002 meeting are:

- (1) about 6.4 metric tons of surplus weapons grade plutonium that would have gone to the Plutonium Immobilization Plant will now be added to the 25.6 metric tons that was already allocated to the MOX facility;
  - (2) another 2 metric tons will be sent to the MOX facility from future allocations;
  - (3) new waste processing alternatives will be used for wastes from both the MOX facility and the DOE's Pit Disassembly and Conversion Facility.
- DCS efforts are underway to change the MOX facility design and alter some processes in order to accommodate the DOE program changes.

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The design changes to the MOX facility include modifying the plutonium decanning area to accommodate different can configurations, adding electrolyzers and ball mills and adding systems to the Aqueous Polishing area that can remove chlorides and other salts from the dissolved plutonium. The size of the MOX Fuel Fabrication Facility (MFFF) would also be increased to accommodate the new equipment required to process the additional plutonium.

## NRC's Mixed Oxide Fuel Infoweb

The NRC's redesigned Web site can be found at [www.nrc.gov](http://www.nrc.gov). Given the events of September 11, the Mixed Oxide Fuel Infoweb is undergoing an evaluation for information which could be helpful to adversaries and is currently unavailable. As information is deemed non-sensitive, it will be posted to the site. 🌸



DOE is planning to design, build, and operate a new waste processing facility in F-area, but this facility would not be a part of the MOX facility site. The planned waste facility would handle high alpha activity waste and stripped uranium streams from the MOX facility and other wastes from the Pit Disassembly and Conversion Facility. The volumes of low-level liquid wastes and high alpha activity wastes would increase by about 10 percent. Instead of being transferred to the high level waste tanks, wastes would be solidified by the Savannah River Site. DCS believes that this approach is responsive to NRC staff and public concerns about adding more wastes to the Savannah River Site high level waste management system.

In light of the DOE program changes and DCS facility design modifications, the NRC has delayed issuing the draft Environmental Impact Statement (EIS) which was scheduled for late February 2002. Issuance of this draft EIS for public comment is now scheduled for February 2003. Release of the first draft Safety Evaluation Report for the MOX facility construction authorization is still scheduled for April 2002. Some future dates of interest are:

- July 2002.....DCS to submit Supplemental Environmental Report to NRC
- October 2002.....DCS to submit Supplemental Construction Authorization Request to NRC
- February 2003.....NRC to issue draft EIS for public comment
- April 2003.....NRC to issue draft Safety Evaluation Report, Revision 1

### Meeting Summaries

Summaries of recent meetings with NRC staff regarding the MOX Fuel Fabrication Facility are listed below.

**September 19-20, 2001** - NRC and DCS met in Aiken, South Carolina, to discuss geological, seismological and geotechnical engineering information for the MFFF.

**October 4, 2001** - NRC staff and staff from the Center for Nuclear Waste Regulatory Analyses (CNWRA) met with representatives of DCS, Duke Energy Corporation, Framatome ANP, DOE and Oak Ridge National Laboratory to discuss scope, cost, and schedule for confirmatory NRC research activities associated with MOX fuel use in the Catawba and McGuire Nuclear Stations

**October 11, 2001** - NRC and DCS met to discuss DCS responses to NRC’s June 21, 200, request for additional information associated with the construction authorization request for the MFFF.

**October 16-18, 2001** - NRC conducted an in-office review of DCS’ supporting documents and information associated with the Construction Authorization Request (CAR) for MOX in the areas of heavy loads/material handling, safety analysis, fire protection, instrumentation and control (I&C), and quality assurance.

**November 16, 2001** - NRC staff presented the status of the Construction Authorization Request review to the Reactor Fuels Subcommittee of the Advisory Committee on Reactor Safeguards.



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(Summaries - continued from page 3)

**November 27-29, 2001** - NRC conducted an in-office review of DCS' supporting documents and information associated with the CAR for MOX in the areas of safety analysis, I&C, and chemical safety.

**January 15, 2002** - NRC staff and staff from CNWRA conducted an in-office review of seismic calculations. The meeting was held at Stone & Webster offices in Englewood, Colorado.

**January 22-25, 2002** - NRC conducted an in-office review of supporting documents and information for the CAR for MOX in the areas of fire protection and structural design

**February 4, 5 and 22 2002** - NRC reviewed outstanding questions, associated with the CAR, with DCS via phone.


**February 13, 2002** - NRC staff met with DCS to discuss what impacts the DOE-announced changes to the Surplus Plutonium Disposition Program have on the MFFF. The purchase of Duke Engineering and Services by Framatome was also discussed.



## Upcoming Meetings

**March, 27, 2002** - NRC staff meeting with DCS to discuss nuclear criticality safety and the status of review items.

**April 10, 2002** - ACRS Subcommittee Meeting

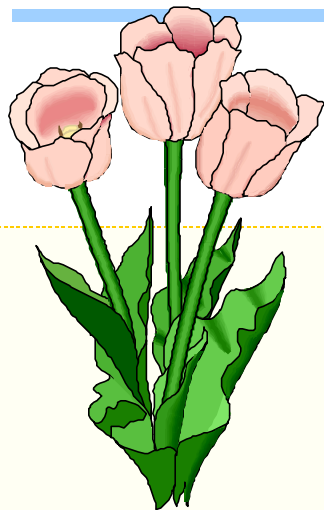


## May we recommend...

### Alphabet Soup

(commonly used acronyms in this newsletter)

ACRS	Advisory Committee on Reactor Safeguards
CAR	Construction Authorization Request
CNWRA	Center for Nuclear Waste Regulatory Analysis
DCS	Duke Cogema Stone & Webster
DOE	U.S. Department of Energy
I&E	Instrumentation and Control
MFFF	Mixed Oxide Fuel Fabrication Facility
MOX	Mixed Oxide
NRC	U. S. Nuclear Regulatory Commission



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