

February 22, 2002

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**DOCKETED  
USNRC**

**ATOMIC SAFETY AND LICENSING BOARD**

**2002 FEB 25 PM 3: 27**

**Before Administrative Judges:  
Thomas S. Moore, Chairman  
Charles N. Kelber  
Peter S. Lam**

**OFFICE OF THE SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF**

_____ )	
In the Matter of )	
DUKE COGEMA STONE & WEBSTER )	Docket No. 0-70-03098-ML
(Savannah River Mixed Oxide Fuel )	ASLBP No. 01-790-01-ML
Fabrication Facility) )	
_____ )	

**GEORGIANS AGAINST NUCLEAR ENERGY  
AND BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE  
MOTION TO POSTPONE DISCOVERY**

Georgians Against Nuclear Energy ("GANE") and Blue Ridge Environmental Defense League ("BREDL") hereby request the Atomic Safety and Licensing Board ("ASLB") to postpone further discovery in this proceeding, pending submission by Duke Cogema Stone & Webster ("DCS") of revisions to the Construction Authorization Request ("CAR") and the Environmental Report for the proposed Mixed Oxide Fuel Fabrication Facility ("MOX Facility"). This request is based on new information submitted by DCS at a February 13, 2002, meeting with the NRC, at which DCS announced several major changes to the MOX production process. DCS stated its

expectation that due to changes in the federal program, the schedule for completion of the safety and environmental reviews would be delayed by approximately 11 months.

GANE and BREDL believe that under the circumstances, it would constitute a gross waste of the parties' time and resources to proceed with discovery under the schedule imposed by the ASLB's February 12, 2002, Memorandum and Order.<sup>1</sup>

## **Factual Background**

### **Changes to plutonium disposition program**

On January 23, 2002, the DOE announced a change in the United States' plans for disposal of surplus plutonium. The DOE has dropped a previous plan to immobilize 17 tons of surplus plutonium, and now plans to convert 34 tons of surplus plutonium, including impure plutonium previously scheduled for immobilization to MOX fuel. The 34 tons includes 6.4 tons of plutonium that was previously considered to be unsuitable for processing to MOX because it contains high levels of impurities.

### **Changes to DCS's MOX production and waste processing steps**

On February 13, 2002, the NRC Staff held an open meeting with DCS at NRC headquarters in Rockville. DCS circulated viewgraphs which are attached as Exhibit 1. At the meeting, DCS announced its plans to add a new step to the MOX production process, for removing impurities from the 6.4 tons of contaminated plutonium, known as

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<sup>1</sup> Separately, GANE has provided notice to the Commission of this new information, and asked the Commission to consider the information as further support for GANE's pending request that the Commission stay this proceeding while it considers GANE's Petition for Interlocutory Review of the ASLB's December 20, 2001, decision refusing to dismiss the construction authorization proceeding. *See Georgians Against Nuclear Energy's Notice of Information Relevant to Stay Motion (February 22, 2002).*

“Alternate Feedstock.”<sup>2</sup> DCS will construct new equipment to remove chlorides from the Alternate Feedstock. *See* Viewgraphs at 10-12.

At the meeting, DCS also announced that the DOE has changed its plans for disposal of the high-alpha and uranium waste that would be generated by the MOX Facility. *See* Viewgraph at 14. Instead of storing the waste as a liquid in tanks at the Savannah River Site, the DOE plans to build a new facility to convert it to a solid. *Id.* at 17. Although DOE has yet to design the proposed waste facility or conduct its EIS, which will likely contain such details, DCS anticipates that high-alpha waste will be disposed of in the Waste Isolation Pilot Project (“WIPP”) Facility in New Mexico, and stripped uranium waste will be disposed of as low level waste. *Id.* DCS officials stated at the meeting that DCS would design and build storage tanks for interim storage of the liquid waste pending its transfer to a DOE Facility. DCS representatives stated that they do not yet know the specifics of DOE’s plans for designing and constructing a facility for conversion of the waste from a liquid to a solid form.

At the February 13 meeting, DCS also announced that one of the members of the DCS consortium, Duke Engineering & Services (“Duke E&S”), is being sold to Framatome ANP, a French corporation. *See* Viewgraphs at 24. At the same time, Duke E&S’s ownership interest in the MOX Facility is being transferred to Duke Energy, Duke E&S’s original parent corporation, in order to avoid the Atomic Energy Act’s prohibition against majority foreign ownership of nuclear facilities, 42 U.S.C. § 2133(d). DCS plans

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<sup>2</sup> The February 13 meeting was opened to the public under the NRC’s open meeting policy. Members of the public were allowed to ask questions at the end of the meeting. No transcript was made of the meeting.

to revise the CAR to reflect these changes. It will not be possible to determine whether Framatome's involvement in the MOX Facility project violates the Atomic Energy Act, until the CAR is revised and the NRC Staff and parties have had a chance to review it.

#### **Changes to schedule for submissions and NRC review**

At the February 13 meeting, DCS presented a viewgraph which showed that as a result of these changes, the schedule for completion of the CAR and the Environmental Report has slipped until October of 2002. *See* Viewgraphs at 5. As a result, DCS also anticipates that the schedule for issuance of the Final EIS and the Final SER will slip by 11 months, from September 30, 2002 to August 31, 2003.

The following table makes a comparison between the "baseline" schedule that was established by the NRC Staff in May of 2001 and forms the basis for the current litigation schedule<sup>3</sup>, and DCS's proposed new schedule as presented in the viewgraphs. The NRC Staff's oral comments on DCS's new schedule are also included, because they indicate that DCS's schedule for completion of the environmental review is optimistic.

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<sup>3</sup> *See* GANE's Petition for Interlocutory Review at 4.

<b>Milestone</b>	<b>Current Schedule</b>	<b>DCS's New Schedule</b>	<b>NRC Staff comment</b>
CAR submitted	Feb. 2001		
CAR supp. submitted		Oct. 31, 2002	
Env. Rept. submitted	Dec. 2000		
Env. Report supp. submitted		Oct. 31, 2002	
Staff issues draft EIS	Feb. 28, 2002	Feb. 28, 2002 and Oct. 31, 2002 (supp.)	DEIS will address all issues in a single document; date not established
Staff issues draft SER	April 30, 2002	April 30, 2002 and October 31, 2002 (supp.)	
Staff issues final EIS	Sept. 30, 2002	August 31, 2003	Staff predicts December 2003 if CAR and ER supplements are filed by August <sup>4</sup>
Staff issues final SER	Sept. 30, 2002	Aug. 31, 2003	
Record of Decision / Construction Authorization	Oct. 31, 2002	Sept. 30, 2003	

## ARGUMENT

DCS's viewgraphs and the discussion in the February 13 meeting showed that the two key milestones that are prerequisites for a hearing to go forward – completion of the Staff's safety review and the issuance of the FEIS – will be delayed by at least 11 months, if not more.<sup>5</sup> There is no reason to burden the parties with the obligations of

<sup>4</sup> Comment by NRC Staff member Jennifer Davis, who is responsible for oversight of EIS preparation.

<sup>5</sup> Another factor that may further delay this proceeding consists of DOE's need to take additional actions, including supplementation of DOE's Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Impact Statement (1996) and the Surplus Plutonium Disposition Final Environmental Impact Statement (1999) to reflect

making and answering discovery when the entire schedule is certain to be delayed for such an extended period.

The current schedule for discovery, established by the Atomic Safety and Licensing Board (“ASLB”) in a February 12, 2002, Memorandum and Order, provides for over ten months of discovery on the CAR and ER, starting in January 2002, and concluding November 15, 2002. It is now clear that this schedule could be postponed by at least 11 months, and still provide the parties with ample time for discovery. A stay would preserve the status quo and conserve the resources of the parties while they wait for a more complete license application and Environmental Report.

Moreover, a delay is warranted because the issues raised by GANE’s and BREDL’s admitted contentions may be affected by the supplementation of the CAR and/or the Environmental Report. For instance, GANE’s Contentions 1 and 2 raise issues about the adequacy of the facility design to provide for adequate compliance with Material Control and Accounting and physical security requirements. These concerns may also apply to any new processing system designed by DCS. It would be wasteful of the parties’ resources to require them to litigate the issue twice with respect to two

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(a) the abandonment of immobilization as the preferred alternative for surplus plutonium disposition, (b) the determination that impure plutonium stocks are amenable to MOX processing, (c) the processes required to render impure plutonium stocks suitable for MOX, and (d) the ramifications of DOE’s decision to solidify liquid waste from the MOX fabrication process. Moreover, DOE must identify or design a facility for solidification of liquid waste, prepare an EIS for the facility, schedule construction, and coordinate the dates of operation of the solidification facility with the dates of operation of the MOX Facility. Finally, the changes to the MOX program underscore the need for a Memorandum of Understanding between the DOE and NRC that would coordinate DOE and NRC responsibilities for waste disposal. These actions may require more time, in addition to the 11 months predicted by DCS.

different parts of the same plant. Similarly, it would be wasteful of time and resources to go forward with the litigation of GANE Contention 3 (seismic) when DCS plans to submit additional elements of the plant design that must meet seismic qualifications. Likewise, litigation of GANE Contention 6 (Inadequate Safety Analysis) should await DCS's submittal of a supplemental safety analysis for the new processes it intends to employ.

Litigation of GANE Contentions 5 and 8 and BREDL Contention 9A should also be postponed, because the appropriate size of the controlled area may be affected by the nature of the processes that are undertaken at the facility. Moreover, these contentions combine safety and environmental issues, and therefore it is appropriate to schedule litigation in a way that assures completion of both the safety and environmental reviews before the litigation goes forward.

GANE Contention 9 and BREDL Contention 1E relate to the adequacy of DCS's process of waste disposal, to which DCS now plans to make dramatic changes. It would be fruitless to conduct discovery or litigation on these contentions.

#### **IV. CONCLUSION AND REQUEST FOR IMMEDIATE RELIEF**

GANE and BREDL respectfully request that the ASLB take immediate action to suspend discovery in this proceeding, because otherwise they must comply with major discovery deadlines within the next few weeks: identification of witnesses (March 6) and service of the first round of interrogatories (March 15). GANE and BREDL request that the ASLB provide immediate relief from these time-consuming and expensive obligations.

In considering this request for immediate relief, the ASLB should reject the implicit suggestion made in a February 14, 2002, letter to the ASLB from the NRC Staff, that it is premature to make litigation schedule changes because the Staff has not yet established new dates for the Draft and Final EIS's. *See* letter from John T. Hull to Thomas S. Moore, et al.<sup>6</sup> The Staff's letter is both incomplete and misleading. The Staff fails to mention that at the February 13 meeting, DCS predicted a date of August 31, 2002, for the Final EIS, and was told by the Staff that August 31 probably was not realistic. Jennifer Davis, an NRC Staff member with responsibility for preparation of the EIS, stated that it was more likely that the FEIS would not be issued until December of 2003. Thus, there is no question that the FEIS will be delayed by at least 11 months – the only issue is whether it will be delayed for a longer period.<sup>7</sup>

Accordingly, the ASLB should postpone discovery in this proceeding pending DCS's supplementation or revision of the CAR and the Environmental Report.

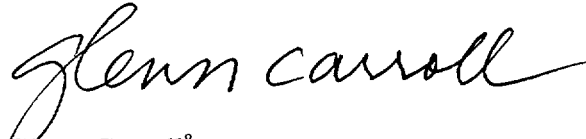
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<sup>6</sup> GANE and BREDL note that they did not receive the Staff's letter until yesterday, because it was served on them only by first-class mail, and not by e-mail as required by the ASLB's July 17, 2001 Order.

<sup>7</sup> The Staff letter's representation regarding the timing of the Safety Evaluation Report is similarly incomplete and misleading. The letter states that the "Staff still plans to issue its draft Safety Evaluation report on the CAR by April 30, 2002," but fails to mention that this Draft SER will only be partial. The Staff cannot finish the draft SER until after DCS supplements the CAR in October of 2002. *See* Viewgraphs at 5. The Staff's letter also neglects to mention that DCS predicts that issuance of the Final SER will be delayed 11 months, from September 30, 2002 until August 31, 2003. *Id.*



Respectfully submitted,



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<sup>8</sup> This pleading was prepared with substantial assistance from GANE's legal adviser, Diane Curran.

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CERTIFICATE OF SERVICE  
by Georgians Against Nuclear Energy  
(Docket # 70-3098, ASLBP # 01-790-01-ML)

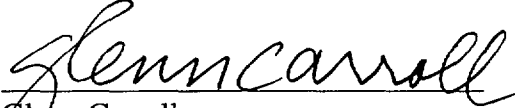
I hereby certify that copies of GANE's and BREDL's Motion to Postpone Discovery  
were sent to the following list via e-mail with paper copies served by  
FedEX overnight service.

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**Mixed Oxide Fuel Fabrication Facility (MFFF)**

**NRC Staff Briefing on  
Surplus Plutonium Disposition Program Changes**

Duke Cogema Stone & Webster  
13 February 2002

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# Agenda

- Introduction
  - Executive Summary: program changes and schedule impact
  - Changes to SPD Program
    - Processing of “alternate feedstock” (material previously slated for immobilization)
    - Waste solidification
    - Changes to ER and CAR
    - Licensing program and schedule
  - Status of outstanding CAR items
-



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# Introduction

- Program changes
  - Process some materials previously slated for immobilization
  - Solidification of waste in lieu of processing through SRS waste tanks
- Changes to facility necessitates delay in completion of design, but licensing basis not significantly impacted
  - Design addition to facility to insert new AP process step
  - Remainder of facility largely unaffected
  - Minimal environmental and safety impacts anticipated



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# Executive Summary

## Program Changes and Schedule Impact

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- Processing of some materials previously slated for immobilization
  - Total resulting quantities
    - 25.6 MT PuO<sub>2</sub> through Pit Disassembly and Conversion Facility
    - ~6.4 MT PuO<sub>2</sub> originally slated for immobilization
    - ~2 MT PuO<sub>2</sub> future allocation
    - Total 34 MT Pu (consistent with Russian agreement)
  - Material originally slated for immobilization includes impurities that require additional processing
- Waste processing of high- $\alpha$  and uranium waste streams
  - Processing & solidification at SRS facility off the MFFF site
  - In lieu of processing through SRS HLW waste tanks
  - Responsive to concerns about adding to SRS HLW waste tank volumes
- Overall net reduction in environmental impact of MFFF and connected/related activities





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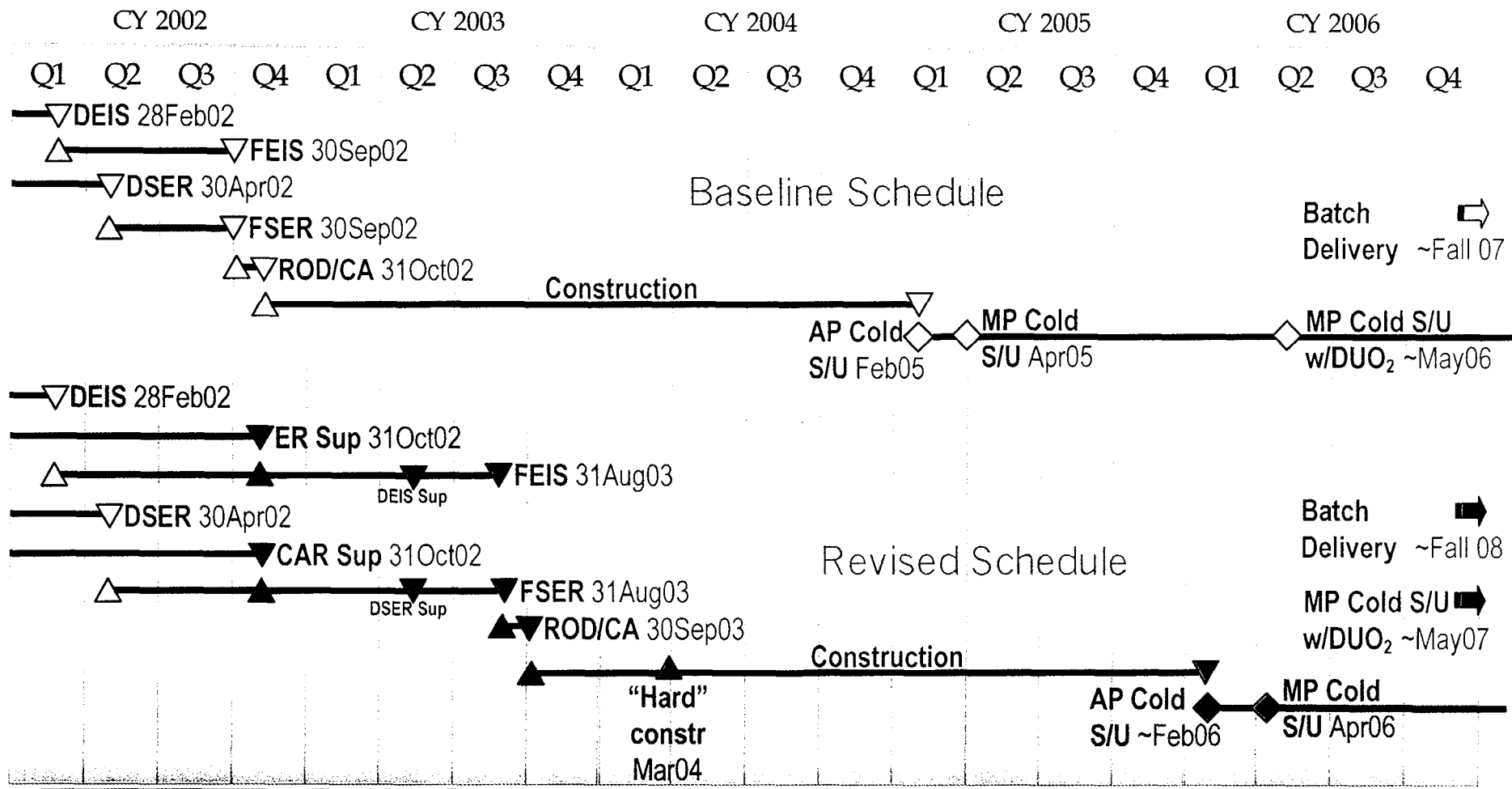
## Executive Summary (continued) Program Changes

- Summary of scope of proposed changes for MOX facility
  - Decanning changes to accommodate different can configurations
  - Additional electrolyzer and ball mill
  - Additions to aqueous polishing (AP) to remove chlorides and other salts
  - <10% change in overall building footprint to accommodate AP change
- Licensing impact
  - Supplement to Environmental Report
    - Description of additional equipment and environmental impact of “alternate feedstock” changes discussed above
    - Revised environmental impact of waste disposition
  - Supplement to Construction Authorization Request
    - Design bases and description of equipment associated with “alternate feedstock” changes discussed above



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# Executive Summary (continued) Preliminary Schedule Evaluation





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# Changes to Surplus Plutonium Disposition Program

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# “Alternate Feedstock” General Material Characteristics

- Material will be unclassified when received at MFFF
- Feed material will be PuO<sub>2</sub> provided in DOE-STD-3013 containers
- Pu isotopics in same range as material described in existing design (i.e., Pu-240 < 9%)
- Weapons grade Pu isotopics and uranium content well characterized prior to delivery and consistent with PDCF specs
- Precise impurity characterization may not be available



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## “Alternate Feedstock” Impurity Characteristics

- Current baseline impurities
  - Characterized by americium, gallium, uranium (“PDCF spec”)
- Alternate Feed Type 1: similar to current baseline PDCF feed
- Alternate Feed Type 2 : feed with salts, without chlorides
  - Main impurities : aluminum, calcium, chromium, copper, iron, tantalum, magnesium, silver, manganese, potassium, silicon
- Alternate Feed Type 3 : feed with salts and chlorides (~half of material)



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# **“Alternate Feedstock” Process and Equipment Modifications**

**Powder Pretreatment (MP)  
Purification (AP)**

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# Changes to MP Powder Pretreatment

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- Footprint not changed
  - Receiving/storage of 3013 containers unchanged
  - Powder pretreatment process (all powders)
    - Ball milling to reduce grain size (2 units)
    - Powder density measurement unit
    - Chemical characterization (quantify impurities)
    - Pretreatment buffer storage
      - Store reusable cans before and after milling, waiting for laboratory results
      - 2-week capacity with similar design to buffer storage between AP and MP
  - Addition of re-canning function (packaging analyzed PuO<sub>2</sub> in 3013 containers)
  - Additional laboratory equipment
    - Sampling glove box after ball milling step
    - Gloveboxes for sample dissolution and preparation
    - Gloveboxes for chlorine and fluorine analysis and specific preparation
    - 2 ion coupled plasma mass spectroscopy units and 1 ion coupled plasma atomic emission spectroscopy unit
-



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# Changes to AP Purification Process (continued)

- Type 1 and 2 Feedstock
  - Process and equipment: no change vs normal feedstock (PDCF feedstock)
  - Impact on the process design: limited
- Type 3 Feedstock - Salt & Chloride
- Process changes to remove chloride
  - For material specification purposes and to limit corrosion
  - Feedstock solution electrolyzed in two steps (dissolution after Cl removal)
  - Filter off-gas, then wash to convert Chlorine into NaCl
  - Process developed/implemented in La Hague UCD plant to treat scrap material with chloride content and extract Pu
- Additional equipment
  - Two dissolution lines (same type equipment as existing processes)
    - One feeding hopper and one electrolyzer each
    - Two filters each with appropriate slab tanks
  - Washing column with soda and chloride salts liquid waste storage tanks





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# Changes to AP Purification Process (continued)

- Changes to AP area
  - Footprint increase in the AP area
  - Reconfiguration of interior spaces and equipment
  - HVAC changes to accommodate room changes and new gloveboxes
- Changes to waste characteristics
  - Additional salts
  - Increase in raffinates volume (by a factor of ~1.5) resulting in increase of ~10% of overall volume of high- $\alpha$  liquid waste
  - Increase of ~10% in low-level liquid waste volume (rinsing)
  - Increase in silver content due to the impurity impact on the efficiency of the silver recovery unit



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# Licensing Impacts

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## Changes to Environmental Report

- Revise to address “Alternate Feedstock”
  - No immobilization
  - MFFF will receive ~6 MT feed material not matching original PDCF specification
  - MFFF expects to process 34 MT PuO<sub>2</sub>
- Revise to reflect changes in SRS waste processing
  - High- $\alpha$  waste and stripped uranium waste will be solidified by SRS instead of transfer to F-Area Tank Farm
  - New waste processing building (not on MOX site but within F-Area) for MOX and PDCF wastes
- Also revise to incorporate ER RAI responses and clarifications



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## Changes to ER: “Alternate Feedstock”

- Describe processing changes
  - Powder processing equipment to prepare the feedstock for chemical processing
  - Minor chemical processing changes to add chloride removal
  - Storage for resulting waste (mainly chlorides, other salts)
  - Building footprint increases <10% to accommodate additional equipment
- Effluents
  - Airborne effluents will contain trace amounts of chlorine, well below regulatory levels
  - Clean condensate and storm water effluents remain unchanged



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## Changes to ER “Alternate Feedstock” (continued)

- Continue to transfer waste to SRS for processing and disposition
  - Liquid waste volumes anticipated to increase ~10% overall
  - Solid waste volumes should not change
- Impacts of changes expected to be bounded by existing analyses for public and worker dose calculations for normal and accident analyses



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# Changes to ER Waste Processing

- Change to SRS waste processing strategy for high- $\alpha$  and uranium waste streams from MFFF
  - Processing and solidification at SRS facility off the MFFF site
  - Replaces SRS F-Area Outside Facility and use of HLW waste tanks
  - Responsive to concerns about adding to SRS HLW waste tank volumes
- Conceptual design underway (by DOE)
  - Receive waste from MFFF and PDCF
  - MFFF piping of waste streams largely unaffected (no substantive impact on CAR)
- MFFF and PDCF waste stream characteristics
  - MFFF raffinate and PDCF sources - TRU waste with proven disposition path
  - Stripped uranium more appropriately disposed as LLW



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# Changes to ER Waste Processing (continued)

- Environmental impacts
  - Construction of waste processing building
  - Normal and accident releases (airborne and liquid effluents)
  - Transportation impacts for waste
  - Disposal impacts



## ER Conclusion

Changes to ER from “alternate feedstock” and waste solidification result in insignificant:

- changes in the types and amounts of any effluents that may be released offsite
- increase in individual or cumulative occupational radiation exposure
- increase in the potential for or consequences from radiological accidents
- MFFF construction impact and minimal impact from construction of new waste processing building





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# Changes to CAR and Safety Assessment

- Revise to address “Alternate Feedstock”
  - Update facility, processes, system descriptions:
    - MOX Receiving and Decanning
    - AP Dissolution and other small changes
    - Facility layout
    - Waste stream(s)
  - Confirm safety analyses are bounding for new processes
- Only minor revision to overall description anticipated for waste changes
- Also revise to incorporate CAR RAI responses and clarifications



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## Changes to CAR and Safety Assessment (continued)

- Anticipated impacts on existing operations
  - CAR safety assessment made conservative bounding assumptions
  - Consequences of changes expected to be bounded by existing analyses
    - Existing events identified in the CAR expected to be representative of any new events identified as a result of new process
- New PSSCs (if any) will be identified



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# **Outstanding CAR Items**

## **Institutional Changes**



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## Status of Outstanding Clarifications

- Nuclear criticality safety
- HEPA filters
- TBP and HAN/Hydrazine
- Likelihood requirements



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# Corporate Change

- Unrelated to program changes
- Duke Engineering & Services (DE&S) being sold by Duke Energy to Framatome ANP
- DE&S ownership/interest in DCS transfer to Duke Energy along with key personnel
- DCS still applicant/licensee
- No changes in project staffing
- Details will be captured in revision to CAR

