

MIXED OXIDE FUEL FABRICATION FACILITY: SUMMARY OF NRC DRAFT SAFETY EVALUATION REPORT

AUGUST 27 , 2002
NORTH AUGUSTA, SC



INTRODUCTIONS

Francis “Chip” Cameron
Moderator

AGENDA

- P Overview of NRC Review and Conclusions in Draft Safety Evaluation Report
- P NRC Review Plans and Schedule
- P Status of Public Hearings
- P Status of Environmental Impact Statement

AGENDA

P Discussion of NRC Review and Conclusions by Technical Area

- < Safety Assessment/Radiological Consequence Analysis
- < Chemical and Process Safety
- < Electrical/Instrumentation and Control Systems
- < Confinement and Ventilation Systems
- < Quality Assurance
- < Fire Protection
- < Mechanical Systems
- < Nuclear Criticality Safety

P Closing Remarks

SUMMARY OF DRAFT SAFETY EVALUATION REPORT

Andrew Persinko
NRC Project Manager

A BRIEF HISTORY

P Reduce the threat of nuclear weapon proliferation

P Agreement with Russia

< 34 metric tons plutonium

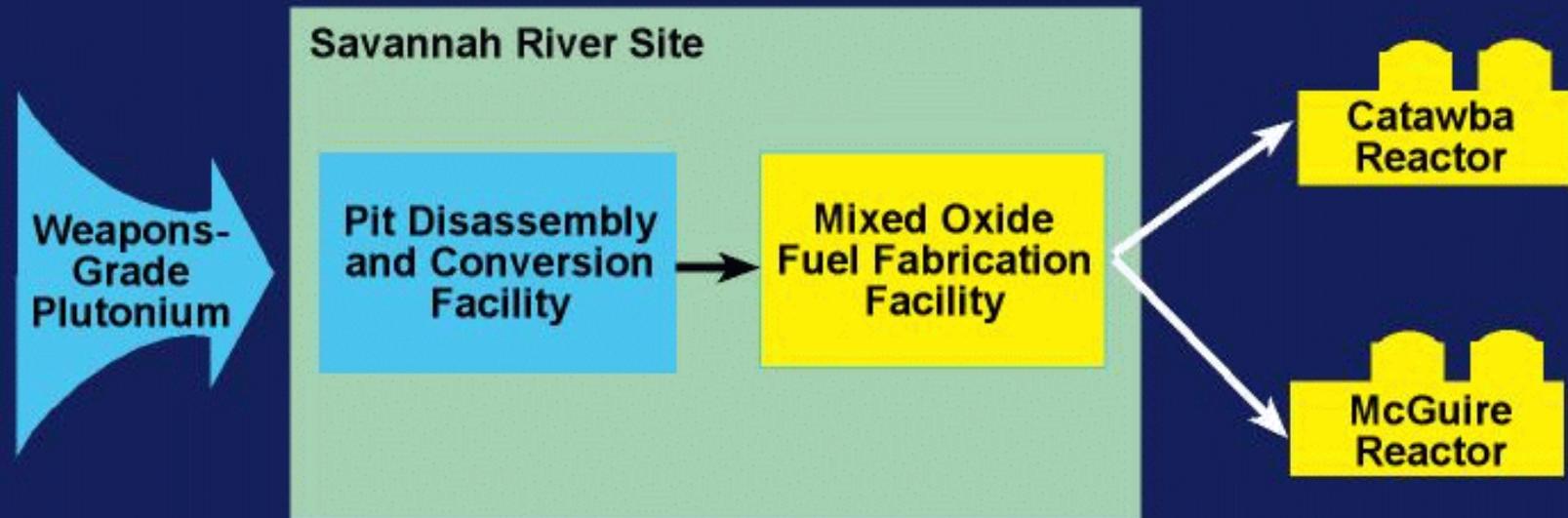
P Department of Energy Program

< Convert the plutonium to MOX fuel

< Contract with Duke Cogema Stone & Webster (DCS)
(the applicant) to build and operate MOX fuel plant

< Build the plant at the Savannah River Site

NRC Role in Regulating Mixed Oxide Fuel



Yellow = NRC regulated

Blue = DOE regulated

NRC LICENSING PROCESS

Overview

- P Must meet NRC regulations
- P Protect public, workers and environment against radiological hazards
- P Safety analysis (10 CFR Part 70)
- P Environmental analysis (10CFR Part 51)
- P Hearings (10 CFR Part 2)

NRC LICENSING PROCESS

P Before DCS can start construction, the NRC must grant a:

< Construction approval

P Before DCS can operate the facility, the NRC must grant a:

< License to possess and use special nuclear material.

NRC LICENSING PROCESS

Construction Approval

- P Design bases of the principal structures, systems, and components
- P Quality assurance program
- P “...reasonable assurance of protection against natural phenomena and the consequences of potential accidents...”

NRC LICENSING PROCESS

Design Basis

P “...information which identifies the specific functions to be performed by a structure, system or component of a facility, and the specific values or ranges of values chosen for controlling parameters as reference bounds for design...” (10 CFR 50.2)

P Examples

< Pressure vessel

- Applied loads design basis / shape not design basis

< Building structure

- Applied loads design basis / location of beams and columns not design basis

NRC REVIEW PROCESS

General

- P Formed multi-disciplinary team of scientists and engineers
- P Reviewed DCS documents and information
- P Asked questions and evaluated DCS answers
- P Held technical meetings open to the public
- P Compared DCS information with regulatory documents and industry standards
- P Used information from other NRC safety reports

NRC REVIEW PROCESS

General

- P Verified DCS information by performing independent calculations
- P Increased knowledge of plutonium safety and handling
- P Conducted system walkdowns of similar MOX facilities
- P Discussed technical issues with foreign regulators of MOX facilities

NRC DRAFT SAFETY EVALUATION REPORT

P Evaluates Construction Authorization Request and supporting information

< Based on initial DOE program

P Presents NRC staff's preliminary conclusions / snapshot in time

P Conclusions may change

MOX WEBSITE

P Access through NRC website:

< <http://www.nrc.gov>

< Click on “Nuclear Materials”

< Click on quick link to “Mixed Oxide (MOX) Fuel
Fabrication Facility”

SUMMARY OF OPEN ITEMS

P Nuclear criticality safety

P Fire protection

P Chemical safety

P Radiological consequences

P Confinement and ventilation systems

P Mechanical systems

SUMMARY OF CLOSED ITEMS

P Overall safety strategies

P Natural phenomena design bases

< Earthquake, wind, tornado, snow

P Electrical/instrumentation and control design basis

P Quality assurance program

SCHEDULE

- P Issued draft SER for construction 4/30/02
- P Received supplemental Environmental Report 7/11/02
- P Receive revised Construction Authorization Request 10/02

SCHEDULE

Continued

P Issue draft EIS for public comment 2/03

P Issue revised draft SER 4/03

P Issue final EIS 8/03

P Issue final SER and construction licensing decision 9/03

STATUS OF PUBLIC HEARINGS

John Hull
NRC Office of the General Counsel

STATUS OF NRC ENVIRONMENTAL REVIEW

David Brown
Health Physicist

NRC Environmental Review

Introduction

- P Schedule of NRC's Environmental Review
- P Examples of DOE Program Changes that Affect the Environmental Review
- P Upcoming Public Information Meetings

NRC Environmental Review

Schedule for Environmental Review

- P** February 13, 2002 - DCS informed NRC of DOE Surplus Plutonium Disposition Program changes.
- P** February 27, 2002 - scheduled date for NRC to issue the Draft Environmental Impact Statement (DEIS)
- P** April 24, 2002 - NRC announced a delay in issuing the DEIS and asked for Public Comments on the DOE program changes.

NRC Environmental Review

Schedule for Environmental Review

- P July 11, 2002 - DCS submitted a revised Environmental Report.
- P August 12, 2002 - NRC accepted the DCS Environmental Report for review.
- P September 17-19, 2002 - Public Informational Meetings are scheduled for N. Augusta, Savannah and Charlotte.
- P February 2003 - NRC to issue Draft Environmental Impact Statement

NRC Environmental Review

Schedule for Environmental Review

- P April 2003 - Public Comment period ends
- P August 2003 - NRC to issue Final Environmental Impact Statement

NRC Environmental Review

Examples of Changes in DCS Environmental Report

- P A new Waste Solidification Building
- P Transportation-related impacts now include “generic Midwestern” reactors.
- P New impacts from processing alternate plutonium oxide feedstock

NRC Environmental Review

Public Information Meetings

7:00 pm - 10:00 pm

< September 17, 2002

N. Augusta Community Center

< September 18, 2002

Coastal Georgia Center

305 Fahm Street

Savannah, Georgia

< September 19, 2002

Charlotte-Mecklenburg Government Center

600 E. Fourth Street

Charlotte, North Carolina

TECHNICAL DISCUSSIONS

Lead Technical Specialists

- P Chemical Safety - Alex Murray
- P Criticality Safety - Muffet Chatterton/Harry Felsher
- P Confinement and Ventilation Systems -Tim Johnson
- P Electrical/Instrumentation and Control -Fred Burrows
- P Fire Protection - Sharon Steele
- P Mechanical Systems - Bill Gleaves
- P Quality Assurance - Wil Smith
- P Safety Analysis - Rex Wescott/Dave Brown