

Environmental Impact Statement on the Construction and Operation of a Proposed Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina

Appendices F through L

Final Report

**U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Washington, DC 20555-0001**



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**APPENDIX F:
AIR QUALITY IMPACT ASSESSMENT**

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F.1 Introduction

Air quality impacts are generally assessed by determining the concentrations of pollutants in the air caused by the major sources associated with an action. For an action proposed for the future, the assessment is based on projected pollutant concentrations determined by computer modeling. This projection involves three steps. First, the emissions of the sources are calculated. Most frequently, this calculation requires knowing the activity level of the source and applying an appropriate set of emission factors that specify the quantity of air pollutants emitted per unit of activity.

In the second step, the pollutant concentrations in the air associated with these emissions are determined for various locations (receptors) by using an air quality model. The model uses information on the emissions along with meteorological conditions, source and receptor elevations, and source characteristics to estimate concentrations. Meteorological conditions included in these calculations are ambient temperature, wind speed and direction, mixing heights, and atmospheric stability. Source characteristics include location, temperature, diameter, exit velocity, and height for stacks; size and orientation for area sources; and initial horizontal and vertical dispersions for volume sources.

Finally, the modeled concentrations are compared with standard measures of impact, typically ambient air quality standards set by regulatory agencies, such as the National Ambient Air Quality Standards (NAAQS) or state standards and Prevention of Significant Deterioration (PSD) increments. The standards and increments depend on the averaging time, with periods of 1, 3, 8, and 24 hours, and annual being specified in the NAAQS. The air quality model uses hourly emissions and meteorological data and can be executed to produce concentrations for periods corresponding to the selected impact measures.

For the Mixed Oxide Fuel Fabrication Facility (proposed MOX facility), the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB), air emissions from construction activities and operations were estimated on the basis of standard references and site-specific data or were taken from previous work on the facilities. Ambient concentrations were then computed with a model recommended by the U.S. Environmental Protection Agency (EPA). Five years of meteorological data taken at locations near the Savannah River Site (SRS) were used in the modeling. Pollutant concentrations at the SRS boundary and at off-site receptor locations were modeled. Section F.2 discusses estimating emissions associated with the facility; Section F.3 discusses the air quality model, its data input, and modeling assumptions.

F.2 Emission Estimates

This section discusses the methods used to calculate emissions projected to be associated with construction and operation of the facility.

F.2.1 Construction Emissions

Construction fugitive dust, emissions from the concrete batch plant, and exhaust emissions from construction equipment were modeled for the construction phase. Emissions from fuel storage, refueling construction equipment, and worker and delivery vehicles were not modeled. Because of the low volatility of diesel fuel, emissions from storing diesel fuel and refueling construction equipment would be negligible. Emissions from worker and delivery vehicles would be dispersed along roadways around the site and would have lesser impacts than emissions from the limited construction area.

The activity levels, associated emission factors, and other data used to calculate emissions for the construction sources are shown in Table F.1. Construction of the proposed MOX facility is expected to disturb about 39 ha (96 acres), of which 28 ha (69 acres) would be located on the proposed MOX facility site itself, be contiguous to the site, or be used for fill on the PDCF site during proposed MOX facility construction (DCS 2002a). The remaining 11 ha (27 acres) would be used for ancillary activities, such as road work and utility corridors. Construction of the concrete batch plant would disturb an additional 4.0 ha (10 acres). Only limited portions of most of these areas would be disturbed at any time, and the disturbance of a given section would last only a short time. It was assumed that 50% of the contiguous 28-ha (69-acre) area would be disturbed at any one time and that heavy earth-moving activities would occur over a 6-month period. For the ancillary areas, emissions were estimated assuming that construction would last 6 months and that only about 10% of the area would be disturbed at any time. Modeling was carried out for the entire disturbed area. It was further assumed that 30% of the construction fugitive emissions would be particulate matter with a diameter less than or equal to 10 μm (PM_{10}) (EPA 1988) and that 15% would be $\text{PM}_{2.5}$ (Kinsey and Cowherd 1992). Disturbed areas would be watered to control dust emissions, reducing emissions by 50% (EPA 2002).

Construction of the concrete batch plant would disturb 4.0 ha (10 acres) (DCS 2002a). The entire disturbed area was assumed to be part of the contiguous site, and emissions calculation and modeling used the same assumptions as were used for the proposed MOX facility construction fugitive emissions.

Construction of the PDCF was assumed to disturb about 14 ha (35 acres) (DCS 2002b). The contiguous site area was assumed to account for about two-thirds of the total and dispersed ancillary activities the remainder. Emissions calculation and modeling used the same assumptions as were used for modeling MOX facility construction fugitive emissions.

Construction of the WSB was assumed to disturb about 2 ha (5 acres) (DCS 2002a). The entire disturbed area was assumed to be part of the contiguous site. Emissions calculations

Table F.1. Emission factors, activity levels, and emissions for facility construction

Source	Pollutant ^a	Emission factor	Annual activity						
			MOX	PDCF	WSB	Batch plant			
Construction fugitives ^b	PM	0.6 tons/acre/mo ^c	Site: 69 acres; 5 months Ancillary: 35 acres; 6 months	Site: 23 acres; 12 months Ancillary: 12 acres; 6 months	5 acres; 5 months	10 acres; 5 months			
	PM ₁₀	- ^d							
	PM _{2.5}	-							
Batch plant ^e	PM	0.2 lb/yard ^{3f}	NA ^g	NA	NA	62,500 yd ³ /yr ^h			
	PM ₁₀	0.058 ^f	NA	NA	NA				
	PM _{2.5}	NA	NA	NA	NA				
Equipment exhaust ⁱ	CO	14.67 kg/10 ³ liters ^j	1,250,000 liters diesel fuel/yr ^k	495,000 liters diesel fuel/yr ^l	114,000 liters/diesel fuel/yr ^m	0 ⁿ			
	VOCs	3.76 kg/10 ³ liters ^j							
	NO _x	38.75 kg/10 ³ liters ^j							
	SO _x	3.74 kg/10 ³ liters ^j							
	PM	3.20 kg/10 ³ liters ^j							
	PM ₁₀	3.20 kg/10 ³ liters							
	PM _{2.5}	3.20 kg/10 ³ liters							
Source	Pollutant ^a	Annual emissions (kg/yr)				Hourly emissions (g/h) ^o			
		MOX	PDCF	WSB	Batch plant	MOX	PDCF	WSB	Batch plant
Construction fugitives ^b	PM	103,000	79,900	6,800	13,600	49,400	38,400	3,270	6,540
	PM ₁₀	30,800	24,000	2,040	4,080	14,800	11,500	981	1,960
	PM _{2.5}	15,400	12,000	1,020	2,040	7,410	5,760	491	981
Batch plant ^e	PM	NA	NA	— ^l	5,670	NA	NA	NA	2,730
	PM ₁₀	NA	NA	— ^l	1,640	NA	NA	NA	790
	PM _{2.5}	NA	NA	— ^l	850	NA	NA	NA	409
Equipment exhaust ⁱ	CO	18,300	7,260	1,670	— ^p	8,810	3,490	801	— ^p
	VOCs	4,690	1,960	427	— ^p	2,260	894	205	— ^p
	NO _x	48,400	19,200	4,400	— ^p	23,300	9,220	2,120	— ^p
	SO _x	4,670	1,850	424	— ^p	2,240	889	204	— ^p
	PM	4,000	1,580	363	— ^p	1,920	761	175	— ^p
	PM ₁₀	4,000	1,580	363	— ^p	1,920	761	175	— ^p
	PM _{2.5}	4,000	1,580	363	— ^p	1,920	761	175	— ^p

^aPM = particulate matter with a diameter equal to or less than about 30 µm; PM₁₀ = particulate matter with a diameter equal to or less than 10 µm; PM_{2.5} = particulate matter with a diameter less than 2.5 µm; CO = carbon monoxide; VOC = volatile organic compound; NO_x = nitrogen oxides; SO_x = sulfur oxides.

^bPM₁₀ taken as 30% of PM (EPA 1988); PM_{2.5} taken as 15% of PM (Kinsey and Cowherd 1992).

^cSource: EPA (2002, Section 13.2.3) and a 50% reduction in emissions due to watering used to control dust.

Footnotes continue on next page.

Table F.1. Continued

^d - indicates emissions calculated as percentage of PM.

^ePM_{2.5} taken as 15% of PM (EPA 2002, Category 3, Table B.2-2, Appendix B-2).

^fSource: EPA (2002, Section 11.12).

^gNA = not applicable.

^hSource: DCS (2002a); includes concrete for both the proposed MOX facility and the WSB.

ⁱAll emissions assumed to be PM_{2.5}.

^jSource: EPA (1985, Table II-7.1).

^kSource: DCS (2002b, Table 5.5).

^lSource: DOE (1999, Table 5.5).

^mSource: DCS (2002b, Table G-4).

ⁿFuel use for construction of batch plant included in fuel use for the proposed MOX facility.

^oHourly emissions based on annual rates assuming construction activities occur 8 hours per day, five days per week, 52 weeks per year.

^pEmissions included in emissions from the proposed MOX facility.

and modeling used the same assumptions as were used for proposed MOX facility construction fugitive emissions.

The concrete batch plant is expected to produce 47,800 m³ (62,500 yd³) of concrete annually (DCS 2002a). This amount would be sufficient for both proposed MOX facility and WSB construction. The emission factors used in the modeling represent the total particulate matter process emissions from concrete batching. PM_{2.5} was taken as 15% of the particulate matter, on the basis of the cumulative weight-percent distribution for Category 3 in EPA (2002, Table B.2-2).

Information on the mix of construction equipment types that would be used at the site was not available. It was assumed that all construction equipment would be diesel powered. The factors presented in Table F.1 are averages over the different types of equipment listed in EPA (1985, Table II-7.1). Factors for off-highway trucks and the miscellaneous category were excluded from the averages. Particulate emissions from diesel engines are expected to have small diameters, so it was assumed that all particulate emissions would be in the PM_{2.5} category.

Hourly emission rates for all three sources were calculated from annual rates on the basis of a construction schedule of 8 hours per day, 5 days per week, and 52 weeks per year. This assumption leads to higher hourly emissions and thus is more conservative than assuming a longer work day or a longer work week.

F.2.2 Emissions during Operation

Emissions from the facility processes and from operation of the emergency and standby generators were modeled for the operation phase of the facilities. As for the construction phase, emissions from worker and delivery vehicles were not included.

Table F.2 summarizes the activity levels and emissions from standby and emergency diesel-powered generators at the proposed MOX facility and WSB. There would be six engines at the proposed MOX facility expected to operate a total of 804 h/yr. Each engine would use about 522 L (138 gal) of diesel fuel per hour or 418,477 L/yr (110,550 gal/yr) for all six engines (DCS 2004a; DCS 2004b). Vendor-supplied emission factors were available for criteria pollutants. The calculation of air toxic emissions used standard emission factors from EPA (2002) and assumed a heating value of 137,000 Btu/gal for diesel fuel.

Detailed information on emergency generator use at the PDCF was unavailable. Total fuel use during operation is expected to be 37,998 L (10,038 gal/yr) (DOE 1999, Table E-7). Table G-59 in DOE (1999) gives the annual emissions of criteria pollutants from the PDCF. Annual toxic emissions from PDCF generators were estimated using standard emission factors from EPA (2002) and assuming heating value of 137,000 Btu/gal for diesel fuel. Annual operating hours were not available. Hourly emissions were calculated assuming 86 hours/yr of operation, the same as the annual operating hours for the standby generators in the MOX facility (DCS 2004b). This procedure may overestimate the PDCF emissions, because the annual PDCF fuel use includes diesel, fuel oil, and gasoline, not just fuel for the emergency generators.

The WSB is expected to have one emergency generator that will operate about 250 h/yr. Engine-specific emission factors were available for criteria pollutants (DCS 2002a). Air toxic emissions from proposed MOX facility emergency generators were scaled by the ratio of proposed MOX facility and WSB annual hours of operation to estimate WSB emergency generator emissions.

Table F.3 summarizes process emissions. The aqueous polishing process at the proposed MOX facility would emit nitrogen dioxide. The chlorine would come from chloride in the plutonium feedstock (DCS 2002b). Hourly emissions were based on 8,760 h/yr of continuous operation.

The PDCF would have no process emissions (DOE 1999, Table G-59). The WSB would emit particulates when the cement silo is operated and when cement is withdrawn into the weigh hopper and mixed during the waste cementation process. Hourly emissions are based on the assumption that silo operations, including cement delivery, would occur 12 times per year and would be completed in less than one hour. The WSB would process about 25 batches of waste per year. Each batch would require operating each of two hoppers for 1 hour and each of two mixers for 12 hours (DCS 2002a). Depending on the final process design, evaporation of acidic waste in the WSB could emit up to 9,175 kg/yr (20,230 lb/yr) of nitrogen dioxide. An amount of acetone would also be emitted.

Table F.2. Emission factors, activity levels, and emissions for emergency generators

Facility	Pollutant	Emission factor (lb/10 ⁶ Btu) ^{b,c}	Activity	Emissions ^a (kg)	
				Annual	Hourly
MOX	CO	6.43	6 engines; 804 engine-hours/yr	2,350	17.5
	VOC	2.88		1,050	7.85
	NO _x	67.0		24,500	183
	SO _x	3.9		1,420	10.6
	PM	0.63		230	1.72
	PM ₁₀	0.52 ^d		189	1.41
	PM _{2.5}	0.49 ^e		177	1.32
	Benzene	0.000776		5.33	0.0400
	Toluene	0.000281		1.93	0.0144
	Xylenes	0.000193		1.33	0.00990
	Propylene	0.00279		19.1	0.143
	Formaldehyde	0.0000789		0.543	0.00405
	Acetaldehyde	0.0000252		0.173	0.00129
	Acrolein	0.00000788		0.0542	0.000404
	Naphthalene ^f	0.00013		0.894	0.00667
Total PAHs ^g	<0.000212	1.46	0.01		
PDCF	CO		10,038 gal/yr fuel; 86 engine-hours/yr	520 ^h	6.05
	VOC			58 ^h	0.674
	NO _x			2,000 ^h	23.3
	SO _x			34 ^h	0.395
	PM			50 ^h	0.581
	PM ₁₀			41 ^d	0.478
	PM _{2.5}			39 ^e	0.448
	Benzene	0.000776		0.485	0.00563
	Toluene	0.000281		0.175	0.00204
	Xylenes	0.000193		0.121	0.00140
	Propylene	0.00279		1.74	0.0203
	Formaldehyde	0.0000789		0.049	0.000573
	Acetaldehyde	0.0000252		0.016	0.000183
	Acrolein	0.00000788		0.005	0.0000572
	Naphthalene ^f	0.00013		0.081	0.000944
Total PAHs ^g	<0.000212	0.132	0.00154		
WSB ⁱ	CO	24.92	1 engine; 250 engine-hours/yr	575	2.30
	VOC	5.07		50.0	0.20
	NO _x	1.62		2,830	11.3
	SO _x	0.44		184	0.735
	PM	4.24		481	1.93
	PM ₁₀	4.07 ^d		462	1.85
	PM _{2.5}	3.81 ^e		433	1.73
	Benzene			1.66	0.0066
	Toluene			0.601	0.0024
	Xylenes			0.413	0.0017

Table F.2. Continued

Facility	Pollutant	Emission factor (lb/10 ⁶ Btu) ^{b,c}	Activity	Emissions ^a (kg)	
				Annual	Hourly
	Propylene			5.97	0.024
	Formaldehyde			0.169	0.00068
	Acetaldehyde			0.054	0.00022
	Acrolein			0.017	0.00007
	Naphthalene ^g			0.278	0.0011
	Total PAHs ^h			0.454	0.0018

^aIf needed, a heating value of 137,000 Btu/gal was used for diesel fuel to calculate emissions.

^bSource (unless otherwise specified): Criteria pollutants: DCS (2002a); Air toxics: EPA (2002, Section 3.4-5).

^cUnits: Criteria pollutants = lb/(engine-hour). Air toxics = lb/10⁶ Btu.

^dBased on a ratio of PM₁₀/PM factor in Table 3.4-2, EPA (2002).

^ePM_{2.5} taken as 90/96 of PM₁₀ (Category 1, Table B.2-2, Appendix B-2, EPA [2002]).

^fIncluded in total PAHs.

^gPAHs = polycyclic aromatic hydrocarbons.

^hSource: DOE (1999, Table G-59).

ⁱAnnual emissions of air toxics at the WSB were calculated from those at the proposed MOX facility based on the ratio of annual operating hours (= 250/804).

Storage of diesel fuel for use in emergency and standby generators would emit volatile organic compounds (VOCs) at each facility. Emission estimates from DCS (2004b) were used to estimate emissions from the other two facilities. Proposed MOX facility fuel storage emissions were scaled by the ratio of proposed MOX facility and PDCF annual fuel uses to estimate PDCF fuel storage emissions, and were scaled by the ratio of proposed MOX facility and WSB annual hours of operation to estimate WSB emissions.

F.3 Air Quality Modeling

This section presents information on the air quality model and modeling assumptions, meteorological data, source data, receptors, and terrain data used to estimate the air quality impacts of the facility.

Table F.3. Process emissions during operations

Facility	Operation	Pollutant	Emissions	
			Annual (kg/yr)	Hourly (g/h)
MOX ^a	Aqueous polishing	NO ₂	4,480	511
	Chlorine in Pu	Chlorine	15	1.7
	Diesel fuel storage	VOC	1.03	0.12
PDCF	Diesel fuel storage	VOC	0.094	0.011
WSB ^b	Silo operations	PM	5.55	463
		PM ₁₀	2.78	231
		PM _{2.5}	0.833	69.4
	Cementation	PM	0.450	5.14
		PM ₁₀	0.225	2.57
		PM _{2.5}	0.068	70.2
	Acidic waste evaporation	Acetone	2.93	9.75
		NO ₂	<9800	<30,600
	Diesel fuel storage	VOC	0.11	0.013

^aSource: DCS (2004b, Table 5-7).

^bSources: DCS (2002a-c, 2004a,b).

F.3.1 Air Quality Model

Version 3 of the Industrial Source Complex Short-Term (ISCST3) model (EPA 1995) was used to estimate potential impacts of facility construction and operation on ambient air quality. ISCST3 has numerous options that can be set to make the calculations conform to the actual situation being modeled. The following options were used for the facility model runs: (1) the regulatory default options, (2) building downwash, and (3) rural dispersion.

In its guideline on air quality modeling, the EPA (1999) specifies ISCST3 as the “guideline” model for a wide variety of regulatory applications. The modeling guideline also specifies a set of “regulatory options,” specific settings for some of the options included in the model. The model was always run using the regulatory options.

In addition, as specified in the guideline, effective building widths were included in the operation runs to account for building-induced downwash of pollutants released from the facility stack. These effective widths were calculated from the physical widths and heights by using EPA’s Building Profile Input Program (BPIP) (EPA 1993). The physical dimensions for the proposed MOX facility and nearby buildings were taken from DCS (2002a). No information was available in the dimensions of the PDCF. Dimensions for the WSB were taken from DCS (2002a).

The way air pollutants disperse differs between predominantly urban and predominantly rural areas. The SRS and the surrounding area are generally rural rather than urban in character, so the model was run in the rural mode.

F.3.2 Meteorological Data

The ISCST3 code uses hourly surface data (wind speed, wind direction, ambient temperature, and atmospheric stability) and twice-daily mixing-heights. Modeling for the facility used 5 years of surface data collected at Columbia, South Carolina, for the period from 1990 through 1994. Mixing height data came from Athens, Georgia, for the period from 1990 through August 1994. The Athens site was moved to Atlanta, Georgia, in September 1994.

F.3.3 Source Data

The characteristics used to model the sources are listed in Table F.4. Volume source dimensions were converted into the initial dispersion values in Table F.4 on the basis of the suggestions in EPA (1995).

F.3.3.1 Construction

Construction fugitive emissions were modeled as square area sources centered on the associated facility site and oriented with its sides parallel to the site's side. It was assumed that 50% of the area would be disturbed at any time.

Thirty-nine ha (96 acres) of the 43 ha (106 acres) disturbed during construction of the proposed MOX facility would be the site itself, contiguous areas, fill area on the PDCF site, and work on roads and utilities (DCS 2002a). This 39-ha (96-acre) area was modeled to estimate the impact of construction fugitives. One-half of this area corresponds to a square 441 m (1,450 ft) on a side. The remaining 4.0 ha (10 acres) of the disturbed area would be the site of the batch plant (whose construction fugitives were modeled as a square at the appropriate location).

The total area disturbed during PDCF construction is expected to be 36 ha (90 acres) (DOE 1996, Section 4). About two-thirds of this total, the same fraction as used for the proposed MOX facility, was modeled. One-half of this area corresponds to a square about 344 m (1,140 ft) on a side.

The modeled area for WSB construction was taken as one-half of the entire area of the site, 2.0 ha (5.0 acres), corresponding to a square about 101 m (330 ft) on a side.

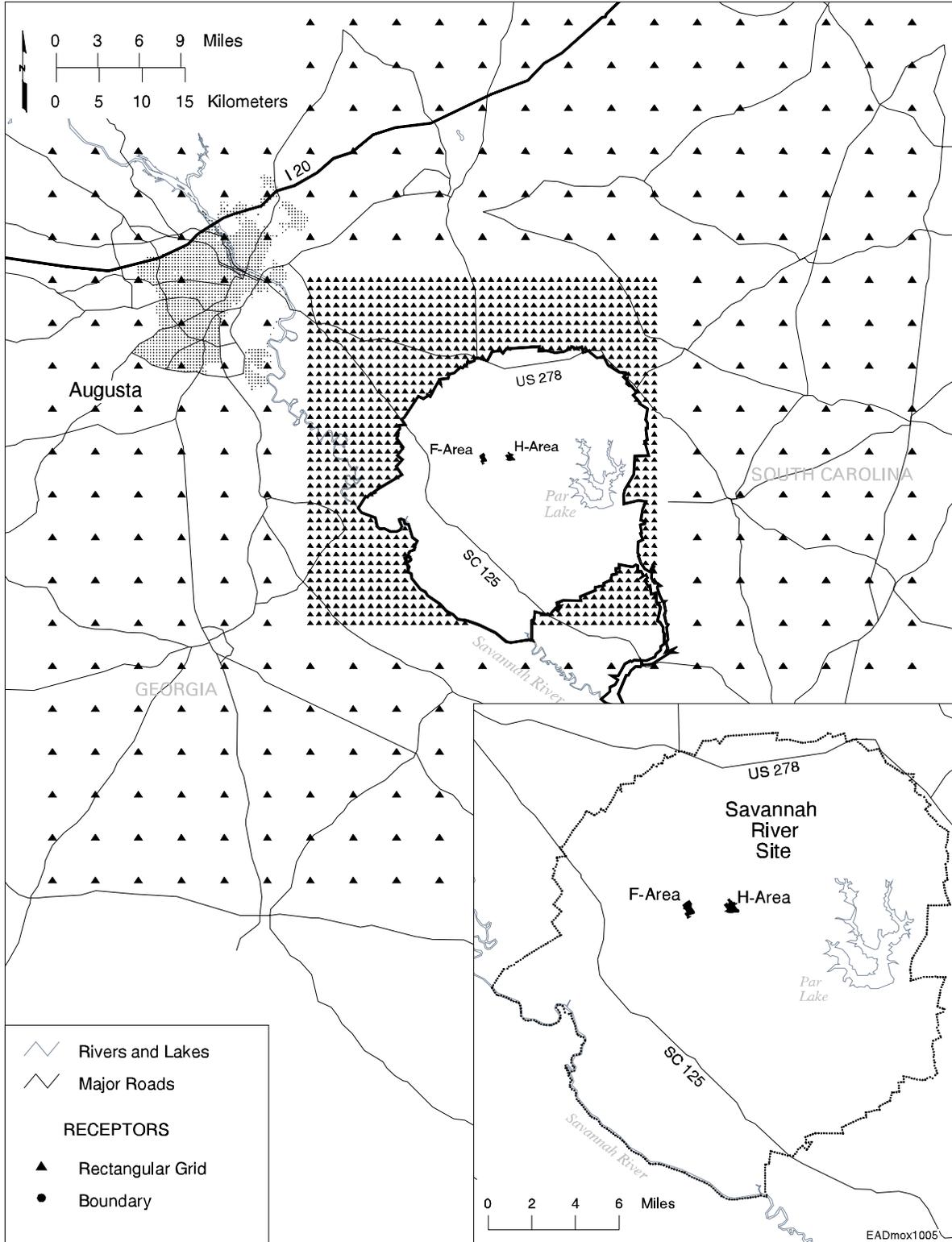


Figure F.1. Receptor locations used in air quality modeling.

Table F.4. Characteristics of modeled sources

Source	Source characteristics									
	Modeled type	Release height (m)	Length (m)	Initial dispersion ^a (m)			Release characteristics			Diameter (m)
				Horizontal	Vertical	Temperature (K)	Velocity (m/s)			
Construction fugitives-proposed MOX facility	Area	1	441	NA ^b	NA	NA	NA	NA	NA	NA
Construction fugitives-PDCF	Area	344	344	NA	NA	NA	NA	NA	NA	NA
Construction fugitives-WSB	Area	101	101	NA	NA	NA	NA	NA	NA	NA
Construction fugitives-batch plant	Area	142	NA	NA	NA	NA	NA	NA	NA	NA
Concrete batch plant	Volume	4.6	NA	7.5	2.1	NA	NA	NA	NA	NA
Construction equipment exhaust-proposed MOX facility	Volume	3.1	NA	87	1.4	NA	NA	NA	NA	NA
Construction equipment exhaust-PDCF	Volume	3.1	NA	80	1.4	NA	NA	NA	NA	NA
Construction equipment exhaust-WSB	Volume	3.1	NA	23	1.4	NA	NA	NA	NA	NA
Proposed MOX facility stack ^c	Point	36.6	NA	NA	NA	290.3	16.7	2.59		
WSB silo stack	Point	15.2	NA	NA	NA	290.3	0.031	0.457		
WSB mixer/hopper stack	Point	12.2	NA	NA	NA	290.3	0.031	0.203		
WSB main stack	Point	24.4	NA	NA	NA	290.3	3.0	1.52		
Emergency generators	Point	14.3	NA	NA	NA	1180	98.5	0.204		

^aVolume source dimensions were converted into the initial dispersion values using the suggestions in EPA (1995).

^bNA = not applicable.

^cSource: DCS (2001).

During operations, the concrete batch plant was modeled as a volume source. In ISCST3, volume sources are square in the horizontal plane. Batching activities were assumed to take place in a square about 32 m (110 ft) on a side, corresponding to an area of about 0.10 ha (0.26 acre). The plant structure was assumed to be about 9.1 m (30 ft) high. A release height of 4.6 m (15 ft) was taken as representative of all batching activities.

Emissions from construction equipment exhaust would be released over the same area as the construction fugitive emissions and were modeled as volume sources located at the center of the facility sites. An exhaust release height of 3.1 m (10 ft) was assumed for the construction equipment.

For short-term averages, all construction sources were assumed to operate 8 hours per day — from 8:00 a.m. to 12 p.m. and from 1 p.m. to 5 p.m. Emissions were assumed to be zero during other hours. Annual averages were calculated by assuming a construction schedule of 260 days per year as discussed in Section F.2.1.

F.3.3.2 Operation

Facility stacks were modeled as points (see Table F.4). There would be a single stack on the proposed MOX facility and two on the WSB. One WSB stack would exhaust the silo, another would exhaust hoppers and mixers, and the main stack would provide general building exhaust.

Emissions from the standby and emergency generators were modeled as points using representative release characteristics.

Different approaches were used to estimate short-term impacts for periods of 24 hours and less and annual impacts. The proposed MOX facility process was assumed to operate continuously, and the same rate was used for estimating both short-term and annual impacts. The WSB would operate in a batch mode, as discussed above. For short-term impacts, emissions were assumed to occur during a 12-hour period from 6 a.m. to 6 p.m. at actual rates. Annual impacts were estimated on the basis of 12 hours per day of operations at rates consistent with the expected annual emissions. The emergency and standby generators would operate intermittently for testing and for unscheduled emergencies. Short-term impacts were assessed by assuming that the generators for all three facilities would operate 24 hours per day to simulate an extended emergency. Annual impacts were assessed by assuming 8,760 hours per year of operation at rates consistent with the expected annual emissions.

F.3.4 Receptor Data

Two types of receptors were used in the analysis: boundary receptors and off-site receptors. The receptor network is shown in Figure F.1. The boundary receptors were located every 200 m (660 ft) along the SRS boundary. No boundary receptors were placed along the narrow section of the SRS extending south and southwest along Lower Three Runs Creek to the Savannah River. The off-site receptors consisted of two Cartesian grids oriented along the

north-south direction and extending 50 km (31 mi) in each direction from the facility site. From the SRS boundary out to 20 km (12 mi), the grid spacing was 1.0 km (0.62 mi). Farther out, the grid spacing was 5.0 km (3.1 mi).

F.3.5 Terrain Data

Terrain effects were included in all the modeling runs. Terrain data for sources and receptors were taken from electronic data available from the U.S. Geological Survey (2001) 1:24,000 scale (7.5-minute series) digital elevation model. The grade level for the proposed MOX facility was taken as 83 m (270 ft) above mean sea level (DCS 2002b).

F.4 References for Appendix F

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**APPENDIX G:
ADDITIONAL IMPACTS OF THE NO-ACTION ALTERNATIVE**

APPENDIX G:

ADDITIONAL IMPACTS OF THE NO-ACTION ALTERNATIVE

Appendix G includes impacts of the no-action alternative that are not addressed in Chapter 4.¹ Technical areas included in the appendix are geology, seismology, and soils; noise; ecology; land use; cultural and paleontological resources; infrastructure; socioeconomics; and esthetics. Other potential impacts are addressed in Chapter 4.

G.1 Geology, Seismology, and Soils

In general, continued storage of surplus plutonium at current storage locations would have no impact on geology or seismology at the sites. If new construction was required to upgrade storage facilities at any of the sites, there could be localized, small effects on soils, such as compaction and erosion, as a result of construction activities.

G.2 Noise

The ongoing operations at the storage sites would result in no appreciable change from current levels of traffic noise and on-site operational noise. Nontraffic noise sources are far enough from off-site areas that the noise of operations would not be expected to cause annoyance to the public. However, some noise sources could be close enough to on-site noise-sensitive areas to result in impacts, such as the disturbance of wildlife.

G.3 Ecology

No construction or demolition of buildings is planned under the continued storage option. If any modifications were required to ensure safe storage, they would not result in appreciable change to current conditions. Therefore, continued storage would have negligible impacts on ecological resources. At Pantex, any upgrading of existing storage facilities would occur in an area that is currently disturbed, so small impacts to biota would occur. Also, no impacts to threatened and endangered species would be expected (DOE 1996, pg. 4-207). Regardless, the impacts of new construction would be addressed under a separate environmental review conducted by the U.S. Department of Energy (DOE).

¹ Terms used to categorize impacts are defined in Section 2.4.

G.4 Land Use

No new land use is planned in association with continued storage of surplus plutonium, except possibly at the Pantex site. If upgrading of the storage facility at Pantex was required, it would take place on previously disturbed land and would have minimal impacts on existing land use plans.

G.5 Cultural and Paleontological Resources

No impacts on cultural or paleontological resources are expected from the continued storage of surplus plutonium.

G.6 Infrastructure

Detailed data on infrastructure for the current storage sites are presented in the Storage and Disposition Programmatic Environmental Impact Statement (S&D PEIS) (DOE 1996, Section 4.2). The infrastructure of the sites would be capable of supporting all anticipated missions and functions associated with continued storage.

G.7 Socioeconomics

As stated in the S&D PEIS (DOE 1996), under continued storage, the existing storage facilities at the sites would remain operational. No new employment or in-migration of workers would be required.

G.8 Aesthetics

Continued storage would not result in any adverse impacts to visual resources at the storage sites.

G.9 Reference for Appendix G

DOE (U.S. Department of Energy) 1996. *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement*. DOE/EIS-0229. Office of Fissile Materials Disposition, Washington, DC. Dec.

**APPENDIX H:
ADDITIONAL IMPACTS OF THE PROPOSED ACTION**

APPENDIX H:

ADDITIONAL IMPACTS OF THE PROPOSED ACTION

Appendix H discusses impacts¹ of constructing and operating the proposed Mixed Oxide (MOX) Fuel Fabrication facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB) that are not addressed in Chapter 4. Technical areas included in the appendix are geology, seismology, and soils; noise; ecology; land use; cultural and paleontological resources; infrastructure; and socioeconomics. Other impacts of construction related to human health risk, air quality, hydrology, waste management, deactivation and decommissioning, environmental justice, and cost benefit analysis are discussed in Chapter 4.

H.1 Geology, Seismology, and Soils

H.1.1 Construction

Construction activities for the proposed action would have no effects on geology or seismology at the Savannah River Site (SRS). For example, no deep well injection of wastewater would occur that could modify seismic activity.

The proposed facilities would be constructed entirely within F-Area on the SRS. F-Area occupies about 160 ha (395 acres) of land within the 80,292-ha (198,400-acre) SRS. Activities such as clearing, excavating, compacting, and grading during construction would physically disturb a total of about 41.9 ha (103.5 acres) of land (DCS 2002). Of this disturbed area, 10.6 ha (26 acres) would be permanently altered by construction of buildings, roads, and paved parking lots. Construction of the facilities would, therefore, disturb about 26% of the land in F-Area (about 0.05% of the land area available at the SRS). This impact would be small and temporary; remediation following construction would return about 60% of the disturbed land to its original condition. The 10.6 ha (26 acres) of land permanently altered by construction would represent about 7% of the land available in F-Area (0.01% of the land area at the SRS). Because the soils that would be affected by construction activities are not unique within the SRS and the disturbed and permanently altered areas would represent a small percentage of the land area available, physical impacts on soil would be small.

In addition to physical disturbance, soils could be chemically impacted during construction of the facility. For example, contaminated material from the construction site could be mobilized by runoff water or transported by wind, and accidental releases of contaminated material could adversely affect soils. However, because good engineering practices would be used during construction, sediment detention basins would be constructed, and any accidental spills would

¹ Terms used to categorize impacts are defined in Section 2.4.

be promptly cleaned up as required by the DCS's Spill Prevention Control and Countermeasures Plan, chemical impacts on soils would be small.

H.1.2 Operations

Normal operation of the proposed facilities would have no impact on geology or seismology at the SRS (e.g., there are no planned deep well injections of effluents that could modify seismic activity), but normal operation could have localized, minor effects on soil.

The 10.6 ha (26 acres) of land covered by buildings, roads, and parking lots (DCS 2002) would remain physically altered. This land area would represent about 7% of the land area available in F-Area (0.01% of the land area at the SRS). Because the soils that would be altered are not unique within the SRS and the areas represent only a small percentage of the land available, overall physical impacts of normal operations on soil would be localized and small.

In addition to the physical alteration of soil, soils in the vicinity of the facility could be chemically impacted during normal operations. For example, contaminated material from the site might be mobilized by runoff water or transported by wind. However, with the use of good engineering practices during normal operations, chemical impacts on soils would be small.

H.2 Noise

H.2.1 Construction

Equipment and vehicle operation would be the primary sources of noise during construction. Soil movement, land clearing, and excavation activities typically generate noise levels in the 85- to 90-dBA range at a distance of 15 m (50 ft) from the source (EPA 1974). Noise levels decrease 6 dB for each doubling of the distance from a point source (MPCA 2001). The boundary closest to the proposed MOX facility site is about 8.7 km (5.4 mi) away. Thus, construction of the proposed MOX facility would cause noise levels of about 30 to 35 dBA at the closest boundary location. A second construction site for the PDCF and WSB would add at most 3 dBA.

This noise estimate is likely to be an upper bound because it does not account for additional attenuation due to noise absorption in the air and the effects of terrain and vegetation. The 33- to 38-dBA level is below the U.S. Environmental Protection Agency (EPA) guideline of 55 dBA for protection of the public and is less than the levels found along roadways around the SRS by more than 17 dBA (Section 3.4.4). If two sound levels differ by 10 dBA or more, adding the lower level contributes very little to the upper level. Thus potential noise impacts from construction activities should be small at all off-site locations.

H.2.2 Operations

Noise sources during operation of the three facilities would include outdoor air conditioning systems, transformers, fans, pumps, and vents for emergency and standby diesel generators. Noise levels from interior sources are expected to be damped to imperceptible levels outside the proposed MOX facility buildings (DCS 2002). Employee vehicles, delivery trucks, and material-handling equipment would also produce noise.

No measurements of noise associated with facility systems were available. As an example, however, sound-level measurements taken during operation of a chemical weapons incinerator in Toole, Utah, were less than 73 dBA within 30 m (100 ft) of the facility's abatement equipment (Andersen 2000). Noise levels decrease 6 dB for each doubling of the distance from a point source (MPCA 2001). The closest boundary is about 8.7 km (5.4 mi) from the proposed MOX facility. On the basis of the 73-dBA value for the Utah facility, operation of the proposed MOX facility might result in noise levels of about 25 dBA at the closest boundary location. Operations at the PDCF and WSB would add at most 4 dBA, giving a maximum noise impact of about 29 dBA. This estimate is likely to be an upper bound, because it does not account for additional attenuation from absorption in the air and effects of terrain and vegetation. The 29-dBA level is below the EPA guideline of 55 dBA for protection of the public and is more than 20 dBA less than the noise levels occurring along roadways around the SRS (Section 3.4.4). As mentioned above, if two sound levels differ by 10 dBA or more, adding the lower level contributes very little to the upper level. Thus, potential noise impacts from operation of the facility should be small at all off-site locations.

H.3 Ecology

H.3.1 Construction

H.3.1.1 Terrestrial

H.3.1.1.1 Vegetation

Impacts of facility construction to terrestrial resources would primarily result from the clearing and grading of the land for new facilities and infrastructure. A total land area of up to 50.0 ha (123.4 acres) would be affected by construction. About 26.2 ha (64.7 acres) would be cleared and graded within the areas designated for the proposed facilities (see Figure H.1). These site preparation activities would disturb 6.8 ha (16.9 acres) of pine forest, 1.4 ha (3.5 acres) of mixed pine forest, 0.3 ha (0.8 acres) of mixed deciduous forest, 2.6 ha (6.3 acres) of upland deciduous forest, 1.6 ha (4.0 acres) of grassland habitat, 1.1 ha (2.8 acres) of old field, 2.8 ha (6.9 acres) of spoils, and 9.5 ha (23.5 acres) of "facility" lands. An additional 3.6 ha (8.9 acres) would be graded around portions of the facility boundary. This grading would disturb mostly woodland vegetation. About 11.9 ha (29.5 acres) of the area within the facility site boundaries

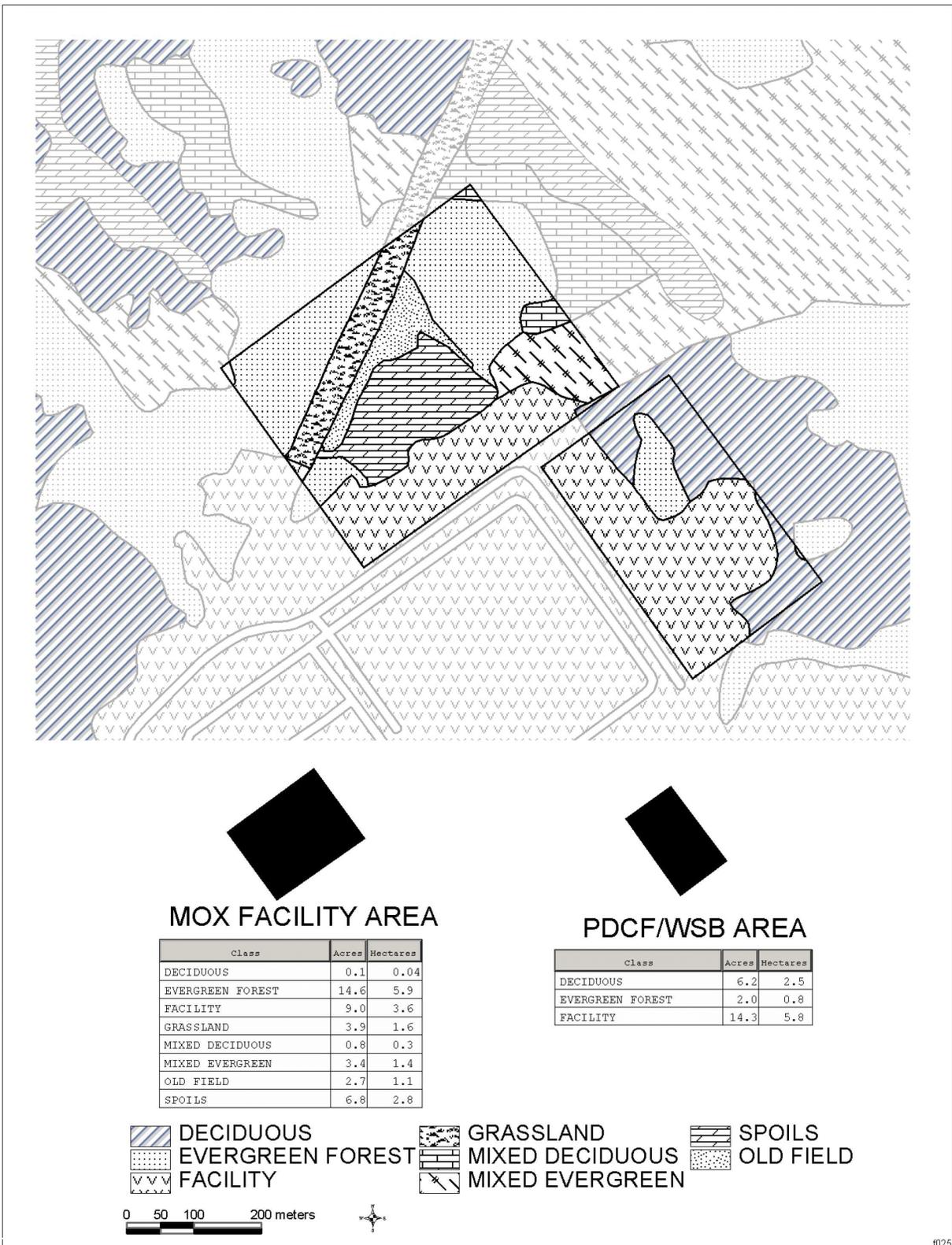


Figure H.1. Areas affected by facility construction activities.

would be developed with buildings, other facilities, and paving. The remainder of the areas would be landscaped (e.g., with grass) (DCS 2002). Thus, after construction, the proposed MOX and PDCF/WSB facility areas would be considered as part of the industrial/transportation land cover type, as described by DOE (2000b).

The maximum of 14.7 ha (36.4 acres) of woodlands cleared for the proposed facilities would be a comparatively small percentage of the 1,762 ha (4,350 acres) of timber harvested each year at the SRS. Furthermore, this annual timber harvest is only about 1% of the standing volume of commercial forest land at the SRS (DOE 2000b).

New, widened, and realigned roadways would be required for the facilities. Most of the roadways would be located within previously cleared road rights-of-way. However, about 2.0 ha (5.0 acres) of new roads would be located in two areas of evergreen forest. The existing storm-water outfall and drainageways would need to be relocated. New storm-water basins would likely be constructed southeast of the proposed MOX facility. The storm-water basin would be located within the area cleared and graded for the proposed MOX and PDCF/WSB facilities. The existing 0.2-ha (0.6-acre) F-Area storm-water basin would be graded and resized to create the new 0.6-ha (1.5-acre) MOX facility storm-water basin. Drainage from this storm-water basin would flow toward an unnamed tributary of Upper Three Runs Creek (see Figure 3.3). This storm-water basin would not be located within a designated wetland area. About 0.6 ha (1.5 acres) would be disturbed for the waste pipeline to the WSB. The pipeline would be located within the industrial/transportation land cover type. A portion of the 115-kV electric transmission line would need to be relocated. This relocation may occur within the area disturbed for the proposed MOX facility. Otherwise, an additional 4.5 ha (11.0 acres) may need to be disturbed for the relocation. The area for this relocation has not been specified, but it would probably be within upland wooded areas. Similarly, 4.0 ha (10 acres) could be disturbed for the batch plant and less than 3.8 ha (9.5 acres) for miscellaneous utilities along the perimeter road.

Other possible adverse construction effects to vegetation could include the localized deposition of dust and other particulate matter from the operation of vehicles and machinery. This deposition could inhibit photosynthesis and, if chronic, could kill affected plants. In addition, soil compaction caused by heavy machinery could destroy the ground flora and indirectly damage roots of trees (by reducing soil aeration and altering soil structure). These potential impacts would be localized in the areas immediately outside the facility site boundary.

H.3.1.1.2 Wildlife

The primary construction impacts on terrestrial wildlife would result from the temporary to permanent loss and alteration of up to 50.0 ha (123.4 acres) of habitat for the facilities and associated infrastructure. Clearing and grading prior to actual construction would have localized adverse effects on animal populations on the SRS. Less mobile animals (e.g., some reptiles, amphibians, and small mammals) within the project area could be destroyed during land-clearing operations. Before construction activities (including clearing) began, the site would be surveyed for nests of migratory birds to ensure that such species would not be

affected (DCS 2002). Larger and more mobile wildlife in the area would be disturbed by these activities and move to other available habitats.

Construction noise and human activity would cause additional impacts to wildlife. On the basis of noise level information provided in Section H.2, construction noise levels at about 122 m (400 ft) could still be as high as 80 dBA. This level of noise could startle or frighten birds and small mammals (DOE 2000a). Although noise levels would be relatively low beyond this distance, the occurrence of human activity could also displace some wildlife. Some wildlife might be driven from the area permanently, while others might become accustomed to these disturbances and return to the area. Generally, these disturbances would be short-term and localized (DOE 2000a). Increased traffic could also increase the number of animals killed while crossing roads.

Following construction, all but about 11.9 ha (29.5 acres) cleared and graded for the proposed facilities would be landscaped (e.g., grass with scattered bushes and small trees). This landscaping would provide habitat for some wildlife species (Mayer and Wike 1997). Clearing of 2.0 ha (5.0 acres) of evergreen forest for roadways would eliminate a minimal amount of wildlife habitat at the SRS. Overall, the adverse impacts of construction are expected to be limited to the immediate project vicinity and should not affect the viability of any wildlife populations at the SRS.

H.3.1.2 Aquatic

Construction of the facilities would eliminate a small storm-water basin located near the southern boundary of the proposed MOX facility. This basin is shallow with little vegetation and mostly bare shoreline, thus providing minimal value to wildlife. Its loss would not jeopardize any species at the SRS. Additionally, this loss would be compensated for by construction of the new storm-water basins. The new basins would potentially be a more viable aquatic habitat than the existing storm-water basin. No direct impacts to streams (such as rerouting or channelization) would result from facility construction. Water required for construction would be drawn from existing groundwater wells in F-Area (Section 4.3.3.2.1). Indirect aquatic impacts could occur if unprotected soils eroded into the unnamed tributary of Upper Three Runs Creek that is located adjacent to the construction site. Such erosion could increase stream sedimentation and turbidity, possibly degrading water quality and adversely affecting aquatic organisms. However, use of standard erosion-control techniques as required by the South Carolina Department of Health and Environmental Control (SCDHEC) would be implemented to minimize erosion and subsequent potential increases in turbidity to the unnamed tributary of Upper Three Runs (see Section 4.3.3.1.1).

H.3.1.3 Wetlands

Direct impacts (such as dredging or filling) to wetlands from facility construction would be small. Indirect impacts could occur if unprotected soils eroded into wetlands adjacent to the construction site and adversely affected hydrological and ecological conditions there. However,

erosion control techniques would be implemented to prevent construction-related runoff of soils (see Section 4.3.3.1.1). Careful attention to sediment and erosion control during site preparation and construction would protect wetland resources near the facility site (Wike and Nelson 2000). The impacts of construction on wetlands would be small.

H.3.1.4 Protected Species

Construction activities are not expected to have direct impacts on any of the federally listed species on the SRS because they have not been reported to occur in the areas to be disturbed by construction. Indirect impacts could occur to listed wildlife species from disturbance (e.g., noise and human presence). Also, clearing would eliminate habitat that could provide support to some of the species. In particular, the pine trees that would be removed could provide forage habitat for the red-cockaded woodpecker. However, the pines to be removed are a negligible portion of those present throughout the SRS. Also, the facility site is not located within either the red-cockaded woodpecker management area or the supplemental management area.

Transmission line rights-of-way provide suitable habitat for the smooth coneflower. Therefore, the right-of-way for the proposed MOX facility was surveyed, and no smooth coneflowers were observed. The U.S. Fish and Wildlife Service has concurred that the proposed action will not affect any resources under their jurisdiction (Duncan 2001).

Implementation of standard erosion-control practices would prevent potential impacts (see Section 4.3.3.1.1) to protected fish species (i.e., shortnose sturgeon) or wildlife species that utilize or forage in aquatic habitats (e.g., wood stork and American alligator) in potential suitable habitat in surface waters receiving runoff from the facility sites.

H.3.2 Operations

Within the facilities' boundaries and in most associated infrastructure areas, vegetation would be limited to landscaped lawns. A more diverse vegetation community (e.g., grassland/forb/scrub-shrub land cover) would be maintained within the transmission line right-of-way.

Noise would probably be the most notable impact of routine operation of the facilities on wildlife and would be localized to within a radius of about 61 m (200 ft) of the facility. Scrubbers and filters would be used on the facilities, so no impacts to wildlife would be expected from airborne releases of contaminants (DCS 2002). The presence of the facilities would increase the potential of bird collisions with structures (Klem 1990). However, this source of bird mortality would not cause impacts at the population level.

No liquid process effluents would be directly released by operation of the PDCF and the proposed MOX facility. Liquid effluents would be treated at the WSB. There would be no impacts to aquatic or wetland biota from these effluents. Storm water would be collected and routed through the existing SRS NPDES-permitted outfall or new outfalls, and sanitary

wastewater would be treated in the sitewide treatment system (DCS 2002). Thus, adverse impacts to aquatic or wetland biota would be small. Detention ponds and associated drainage ditches would provide habitat that could support a number of wildlife species (Mayer and Wike 1997).

No adverse impacts to protected species would be expected from facility operations because of the suitable habitats and minimal facility releases to the environment. Habitat suitable for the smooth coneflower would develop within the rerouted segment of the transmission line right-of-way, but the potential for a population of that plant to develop in this area is remote.

H.4 Land Use

H.4.1 Construction

Up to 50 ha (123.4 acres) of F-Area would be disturbed during construction of the facilities. Land use of the entire F-Area at the SRS, including the areas of proposed construction for the facilities, is classified as developed/industrial. Thus, the proposed use of the project area is consistent with this classification and with the SRS Long Range Comprehensive Plan (DOE 2000b). No adverse effect to land use would result from construction of the facilities.

H.4.2 Operations

The proposed facilities are industrial, and their operation would be consistent with the classification of the F-Area land use as developed/industrial. Therefore, there would be no adverse effect to land use as a result of routine operation of the facilities.

H.5 Cultural and Paleontological Resources

H.5.1 Construction

H.5.1.1 Archaeological Resources

Construction of the proposed facilities would directly affect two prehistoric archaeological sites that are eligible for listing on the *National Register of Historic Places* (NRHP) (Sites 38AK546/547 and 38AK757). Data recovery plans detailing the proposed mitigation for the adverse impacts to Sites 38AK546/547 and 38AK757 have been prepared and accepted by the South Carolina State Historic Preservation Office (SCSHPO) (Gould 2001; Marcil 2001). Site 38AK546/547 was excavated according to the data recovery plan to mitigate the adverse effects to that site from construction of the proposed MOX facility. Data recovery for Site

38AK546/547 was completed April 19, 2002. Site 38AK757 was excavated according to its data recovery plan to mitigate the adverse effect to that site from construction of the PDCF. Data recovery for Site 38AK757 was completed September 15, 2002. Monitoring of fill removal on the sites during construction is also expected to occur as part of the planned mitigation (Gould 2002). Concurrence of the SCSHPO that these investigations have met the obligations set forth in the data recovery plans was provided in November 2002 (Long 2002).

Five additional eligible sites are located in the vicinity of the construction area (Sites 38AK106, 38AK155, 38AK563, 38AK564, and 38AK581), but no direct impacts to these sites are expected as a result of facility construction. Mitigation measures might be needed to avoid the possibility of indirect effects to these sites. Such measures could include conducting awareness training for workers so they would not inadvertently disturb the sites and possibly imposing restrictions regarding where heavy machinery is allowed. Mitigation might also include periodic monitoring to check for possible erosion caused by surface runoff during construction or evidence of other impacts resulting from an increase in F-Area activities (e.g., unauthorized pedestrian or vehicular activity at the archaeological sites). The potential exists for erosion to occur along the current drainage at the outfall east-northeast of the proposed facilities that may affect eligible sites (38AK106, 38AK563, and 38AK564). Minor erosion potential at another small drainage may affect Site 38AK581. Although direct impacts are not expected to Site 38AK155, the site is located very near an area previously identified as grading area for the proposed MOX facility. Depending on the final footprint of the grading and fill area for the proposed MOX facility, Site 38AK155 may require monitoring to ensure avoidance of the site to prevent any direct or indirect impacts from construction activities. An updated contour map of the proposed grading area was not available at the time this EIS was being prepared. A memorandum of agreement with the SCSHPO stipulating avoidance of the site and how it is to be implemented could be required. Specific mitigation measures would be determined in consultation with the SCSHPO.

H.5.1.2 Historic Structures

No structures are located in the facility project area; therefore, no impacts to historic structures would occur during the construction of the facilities.

H.5.1.3 Traditional Cultural Properties

No traditional cultural properties have been identified near the proposed facilities. Consultation with appropriate Native American groups has been initiated to request information on any concerns regarding the potential for the MOX facility to affect traditional cultural properties. Copies of the consultation letters are presented in Appendix B.

H.5.1.4 Paleontological Resources

No fossil-bearing strata are known to exist within the F-Area; therefore, no impacts to paleontological resources are expected during construction.

H.5.2 Operations

Archaeological resources are unlikely to be affected by routine operation of the facilities. Ground disturbance and outdoor activities outside of the original construction footprint are not part of routine operations.

Traditional cultural properties and paleontological resources are not known to be present in F-Area, and, thus, none would be affected during routine facility operations.

H.6 Infrastructure

H.6.1 Construction

Construction activities are not expected to adversely impact current SRS infrastructure. The maximum water and electrical power demands during construction of the facilities were estimated by DOE in the Surplus Plutonium Disposition Environmental Impact Statement (SPD EIS) (DOE 1999) and by DCS (DCS 2002). Electrical power needed during construction of the facilities is estimated to be 17,700 MWh/yr. This power represents only about 3.7% of the current electrical power available (482,700 MWh/yr) at the SRS (DOE 1999). Maximum water requirements are not projected to exceed 139 million L/yr (37 million gal/yr), or about 3.3% of the A-Area loop excess capacity.

No new off-site roads would be constructed or improved to bring construction materials or workers to the SRS from local communities. An additional 4.8 to 6.4 km (3 to 4 mi) of roadways would be necessary to support facility construction activities within the F-Area.

The existing SRS road network plus the additional roads in F-Area needed for construction site access can readily accommodate the additional traffic expected during construction of the facilities. Some workers are expected to carpool during construction. During peak construction and assuming all three facilities are constructed simultaneously, the increase in the number of average daily one-way traffic on the roads leading to F-Area is expected to be about 30%.

The total diesel fuel required for a 5-year construction period is estimated to be about 7,624,000 L (1,960,000 gal). On-site storage of this volume of fuel is not anticipated because the majority of diesel fuel would be used in construction equipment that would likely be refueled each day by tanker trucks.

The surplus plutonium disposition program at the SRS would require a coordinated upgrading of the infrastructure to support the proposed MOX facility, the PDCF, and the WSB (DCS 2002). A storm-water retention pond and a sedimentation basin will be developed to handle runoff from all three of these facilities that are planned to be constructed in the same general vicinity within the F-Area.

H.6.2 Operations

The SRS infrastructure would not be adversely affected by operations of the proposed facilities. Infrastructure for the facilities would be modified and upgraded before and during construction to accommodate operational needs. Electrical power required during operation of the proposed facilities is estimated to be 186,000 MWh/yr, or about 36.4% of the available electrical capacity in the F-Area (DCS 2002).

Service and process water usage in the F-Area is currently about 374 million L/yr (98.8 million gal/yr) (DCS 2002). The available capacity is 4.2 billion L/yr (1.1 billion gal/yr), and the annual water demand for facility operations would be about 76 million L/yr (20.1 million gal/yr). Water needs for the proposed facilities would represent about 2% of the excess A-Area loop capacity.

Fuel oil would be used to test the diesel generators that would provide emergency power for operations in the event of a failure of the electrical supply system. An estimated 430,100 L/yr (179,000 gal/yr) of diesel fuel would be needed for generator testing (DCS 2002; DOE 1999).

The traffic from 510 permanent workers traveling to and from the facility might cause some impacts during peak travel periods. Local roads providing access to the SRS and on-site roadways experience traffic congestion during peak commuter periods. If individuals elect to participate in carpools, the impact on traffic flow and volume would tend to be reduced.

H.7 Socioeconomics

H.7.1 Construction

This section discusses the potential socioeconomic consequences from constructing the proposed MOX facility, PDCF, and WSB at the SRS. The socioeconomic analysis includes the effects on employment, income, and regional growth in a 15-county regional economic area (REA) and on population, housing, and community resources in a 4-county region of influence (ROI). Impacts on traffic are provided for the road network in the vicinity of the SRS in Aiken County. Impacts from construction are summarized in Table H.1.

In addition to the impacts shown in the table, minor impacts would also occur to agriculture in the REA and commercial fishing downstream of the SRS as demand for the products of these

Table H.1. Effects of construction on socioeconomics^a

Impact category	Impacts
Employment (number of jobs in REA) ^b	
Direct	1,010
Indirect	810
Total	1,820
Income (millions of 2003 \$)	
Direct	51.0
Indirect	40.9
Total	91.9
Population (number of new ROI residents)	350
Housing (number of ROI units required)	130
Public Finances (% impact on fiscal balance)	
Cities in ROI ^c	<1
Counties in ROI ^d	<1
Schools in ROI ^e	<1
Public service employment (number of new employees in ROI)	
Police officers	1
Firefighters	0
General	2
Physicians	1
Teachers	1
Number of new staffed hospital beds in the ROI	1
Traffic (impact on current levels of service in Aiken County)	None

^aImpacts are shown for the peak year of construction (2005).

^bEmployment data based on DCS (2002) and NNSA (2002).

^cIncludes impacts that would occur in the South Carolina cities of Aiken, Jackson, New Ellenton, North Augusta, Wagener, Barnwell, Blackville, Williston and the Georgia cities of Grovetown, Harlem, Augusta, Blythe, and Hephzibah.

^dIncludes impacts that would occur in Aiken and Barnwell Counties in South Carolina and in Columbia and Richmond Counties in Georgia.

^eIncludes impacts that would occur in Aiken County, Barnwell County #19, #29, #45, Columbia County, and Richmond County school districts.

industries increases with the growth in REA payroll and salary expenditures resulting from the construction of the facilities.

The potential socioeconomic impacts from constructing the facilities would be relatively small. Construction activities would create direct employment of approximately 1,010 people in the peak construction year and an additional 810 indirect jobs in the REA (see Table H.1). Construction activities would increase the annual average employment growth rate by less than 0.1 of a percentage point over the duration of construction. Facility employment and associated wages and salaries would also produce about \$88 million of income in the peak year of construction.

In the peak year of construction, about 350 people would move to the ROI (in-migrate) (see Table H.1). However, in-migration would have only a marginal effect on population growth and would require only 2% of the vacant rental housing in the ROI during the peak year. No significant impact on public finances would occur as a result of in-migration, and five additional local public service employees would be required to maintain existing levels of service in the various local public service jurisdictions in the ROI. In addition, on-site employee commuting patterns would have no impact on levels of service in the local transportation network surrounding the site.

H.7.2 Operations

This section presents the potential socioeconomic consequences from operating the proposed facilities at the SRS. As for the construction evaluation, the socioeconomic analysis for operations covers the effects on employment, income, and regional growth in the 15-county REA and on population, housing, and community resources in the four-county ROI. Impacts on traffic are provided for the road network in the vicinity of the SRS in Aiken County. Impacts from operation are summarized in Table H.2.

In addition to the impacts shown in the table, insignificant impacts would also occur to agriculture in the REA and commercial fishing downstream of the SRS as demand for the products of these industries increases with the growth in REA payroll and salary expenditures resulting from the operation of the facilities.

The potential socioeconomic impacts from operating the facilities would be relatively small. Operational activities would create about 490 direct jobs annually and an additional 780 indirect jobs in the REA (see Table H.2). The facilities would produce \$64 million in direct and indirect income annually during operations.

About 180 people would move to the area at the beginning of facility operation (see Table H.2). However, in-migration would have only a marginal effect on population growth and would require less than 1% of the vacant owner-occupied housing in the area during facility operations. No significant impact on public finances would occur as a result of in-migration, and two new local public service employees would be required to maintain existing levels of service in the various local public service jurisdictions in the ROI. In addition, on-site employee

Table H.2. Effects of operations on socioeconomics^a

Impact factor	Impacts
Employment (number of jobs in REA) ^b	
Direct	490
Indirect	780
Total	1,270
Income (millions of 2003 \$)	
Direct	24.6
Indirect	39.6
Total	64.2
Population (number of new ROI residents)	180
Housing (number of ROI units required)	70
Public finances (% impact on fiscal balance)	
Cities in ROI ^c	<1
Counties in ROI ^d	<1
Schools in ROI ^e	<1
Public service employment (number of new employees in ROI)	
Police officers	0
Firefighters	0
General	1
Physicians	0
Teachers	1
Number of new staffed hospital beds in the ROI	0
Traffic (impact on current levels of service in Aiken County)	None

^aImpacts are shown for the first year of operations (2008).

^bEmployment data taken from DCS (2002).

^cIncludes impacts that would occur in the South Carolina cities of Aiken, Jackson, New Ellenton, North Augusta, Wagener, Barnwell, Blackville, Williston and the Georgia cities of Grovetown, Harlem, Augusta, Blythe and Hephzibah.

^dIncludes impacts that would occur in Aiken and Barnwell Counties in South Carolina, and in Columbia and Richmond Counties in Georgia.

^eIncludes impacts that would occur in Aiken County, Barnwell County #19, #29, #45, Columbia County, and Richmond County school districts.

commuting patterns would have no impact on levels of service in the local transportation network surrounding the site.

Any impacts that would occur with the transportation of MOX fuel, including impacts on property values, would be minimal. This conclusion is reached because it is likely that the current transportation of other hazardous materials and the risk of accidents involving those materials are already captured in housing values in the vicinity of transportation routes. An accident involving MOX fuel may only create significant additional impacts on the housing market if residents were prevented from quickly returning to their homes.

H.8 Aesthetics

H.8.1 Construction

During construction of the proposed facilities, large construction cranes and fugitive dust produced by earthmoving equipment may be visible to the general public from the nearest publicly accessible viewpoint, located on State Highway 125 and SRS Road 1, both more than 6.5 km (4 mi) away. Once the proposed facilities were constructed, however, the height, size, and appearance of the new structures would be similar to existing buildings adjacent to the F-Area site and would therefore maintain the industrial nature of F-Area and be consistent with the current VRM Class IV designation of the site. The newly constructed facilities themselves would not generally be visible from off-site, with visibility restricted by the undulating terrain and the forested nature of the landscape.

H.8.2 Operations

During operations, it is unlikely that any additional visual impacts would occur beyond those resulting from the presence of the facilities. Exhaust stacks located on or near the proposed facilities would not generally be visible to members of the public because of the undulating, forested nature of the landscape. While any emissions from these stacks, as well as other evidence of operations at each facility (such as area lighting), might be visible from the nearest viewing point, these aspects of facility operation would be some distance away and therefore would not affect the current VRM Class IV designation of the site.

H.9 Accident Impacts

H.9.1 Geology, Seismology, and Soils

Accidental releases of contaminated material might adversely affect soils. However, use of good engineering practices and implementation of appropriate cleanup procedures following the accident would result in small chemical impacts on soils.

H.9.2 Ecology

An operational accident at the facility could potentially impact biota in natural plant communities and streams near the facility. The degree to which impacts would occur would depend on the type of accident, kind and amount of contaminants released, and wind direction at the time of release. Natural areas likely to experience the greatest impact would be those located immediately north and northeast of the facility. Prompt action to clean up or otherwise mitigate contaminants released during an accident would reduce the likelihood of contaminant bioaccumulation and biomagnification in the food chain. No protected species are known to occur within these areas (see Section 3.5.4 and Appendix A).

H.9.3 Land Use

An operational accident at the facility would be unlikely to affect land use within the F-Area, the SRS, or the region. The entire F-Area would remain developed/industrial land use if an operational accident were to occur. Access to the area might be temporarily restricted during cleanup operations following an accident. Minor impacts to lands outside of the SRS might be anticipated in the event of a worst-case accident, but most impacts would remain within the SRS boundary. Future use of the central portion of the SRS, which includes the F-Area, is expected to be maintained by the federal government as industrial (DOE 2000b).

H.9.4 Cultural and Paleontological Resources

An operational accident at the facilities might affect significant archaeological resources in the vicinity of the project area by restricting access to sites that currently require regular monitoring. This impact would likely be temporary, depending on the duration of cleanup after the accident.

It is possible that important nuclear production facilities that have historic value related to events during the Cold War could be temporarily affected during an operational accident. It is also possible that traditional plant resources of concern to Native Americans could be affected during an operational accident. No other traditional cultural properties that could be affected have been identified to date but may be identified as a result of the ongoing consultation.

Paleontological resources are unlikely to be affected by an operational accident at the facilities.

H.9.5 Socioeconomics

An operational accident at the facilities could impact the workforce if the accident was severe enough to result in lost work time. The extent of impacts to the local economy would depend on employment income losses during closure of the facilities following an accident. An accident involving fresh MOX fuel during transport might create significant additional impacts on the housing market only if residents were evacuated and prevented from quickly returning to their homes.

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**APPENDIX I:
SCOPING SUMMARY REPORT**

DOCKET 70-3098

ENVIRONMENTAL IMPACT STATEMENT SCOPING PROCESS

SCOPING SUMMARY REPORT

**Mixed Oxide Fuel Fabrication Facility
Savannah River Site**

August 2001



U.S. Nuclear Regulatory Commission
Rockville, Maryland

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ABBREVIATIONS

ADAMS	Agency wide Document Access and Management System
CAR	Construction Authorization Request
DCS	Duke Cogema Stone & Webster
DOE	U.S. Department of Energy
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ER	Environmental Report
H&S	human health and safety
HEPA	high-energy particulate air
HLW	high-level (radioactive) waste
MINATOM	Ministry for Atomic Energy of the Russian Federation
MOX	mixed oxide
MOX FFF	Mixed Oxide Fuel Fabrication Facility
MT	metric tons
NEPA	National Environmental Policy Act
NAACP	National Association for the Advancement of Colored People
NMSS	Nuclear Material Safety and Safeguards (part of the Nuclear Regulatory Commission)
NRC	U.S. Nuclear Regulatory Commission
NOI	Notice of Intent
ROD	Record of Decision
SER	Safety Evaluation Report
SPD	surplus plutonium disposition
SRS	Savannah River Site
YMP	Yucca Mountain Project

1. INTRODUCTION

On March 7, 2001, the United States Nuclear Regulatory Commission (NRC) issued a notice of intent (NOI) in the *Federal Register* (66 FR 13794) to prepare an environmental impact statement (EIS). As indicated in the NOI, the proposed major federal action requiring the EIS is the construction and operation of a mixed oxide (MOX) fuel fabrication facility (MOX FFF) at the Savannah River Site (SRS) near Aiken, South Carolina. If authorized under the requirements of 10 CFR Part 70, Duke Cogema Stone & Webster (DCS), a contractor chosen by the United States Department of Energy (DOE), would build and operate the proposed MOX FFF. The EIS will examine the potential environmental impacts of manufacturing MOX fuel from surplus weapons-grade plutonium. The potential impacts associated with processing 36.4 tons (33 metric tons (MT)) of this surplus plutonium will be evaluated. The evaluation of these impacts will be based on the proposed maximum annual MOX FFF capacity of 3.5 MT.

Under the present technical review schedule, the EIS will be used to support a decision in 2002 by the NRC whether or not to authorize construction of the proposed MOX FFF. The current schedule is to publish the draft EIS in February 2002. Following a public comment period, the draft EIS would be revised, and a final EIS would be published in September 2002. No cooperating agencies have been identified during the scoping process. NRC, as the lead agency, will prepare the EIS with the assistance of Argonne National Laboratory.

In addition to the EIS for the MOX FFF, NRC will prepare two safety evaluation reports (SERs) on health and safety issues raised by the proposed action. The first SER will evaluate such issues raised by the construction authorization request submitted by DCS in February 2001. A second SER will evaluate health and safety issues raised by the DCS request for authority to operate the proposed MOX FFF, which DCS plans to submit in July of 2002. The SERs document our evaluation of the safety of DCS's applications and compliance with applicable regulations. As discussed later in Section 3, the EIS will analyze both construction and operation impacts.

In the NOI, NRC announced plans for two scoping meetings: one in North Augusta, South Carolina, on April 17, 2001, and another scoping meeting in Savannah, Georgia, on April 18, 2001. In a second *Federal Register* notice on April 11, 2001 (66 FR 18223), NRC announced that a third scoping meeting would be held in Charlotte, North Carolina, on May 8, 2001. Announcements of the meetings were also made on the World Wide Web at the NRC MOX FFF Information Home Page, (<http://www.nrc.gov/NRC/NMSS/MOX>), through an electronic newsletter, through radio advertisements, through press releases, and through direct mailing to individuals who had attended past meetings associated with MOX. Announcements of the meetings were also made in the following local newspapers:

- The Augusta Chronicle (Thursday, April 12, & Sunday, April 15)
- Aiken Standard (Thursday, April 12, & Sunday, April 15)
- North Augusta Star (Thursday, April 12, & Sunday, April 15)
- Savannah Morning News (Thursday, April 12, & Sunday, April 15)
- The State News, Columbia, SC (Sunday, May 6)
- The Charlotte Observer (Sunday, May 6)

The three scoping meetings were held as planned. At each meeting, the NRC staff distributed background materials on the MOX fuel program and NRC's plans for conducting licensing and environmental reviews for the MOX FFF. An open house held before each meeting provided attendees an opportunity to view informational materials and talk informally with NRC staff. During the meeting, the NRC staff presented an overview of NRC'S role in the MOX FFF licensing process and described NRC'S approach to meeting its obligations under the National Environmental Policy Act (NEPA). The presentations were followed by a question and answer period in which the NRC staff responded to questions from attendees. The majority of time at the meetings was devoted to allowing individuals to express their views on the scope of the EIS. Transcripts of the meetings can be viewed on the World Wide Web at the NRC MOX FFF Information Homepage (<http://www.nrc.gov/NRC/NMSS/MOX>).

A total of about 300 individuals attended the three scoping meetings, and about 80 of them asked questions or provided oral comments at the meetings. In addition, approximately 60 individuals or organizations submitted written comments to NRC by regular mail, fax transmittal, e-mail, or in person at the meetings. Some of the individuals who provided written comments also spoke at the meetings. Some individuals attended and offered comments at more than one meeting.

The public comments are discussed in Section 2 of this summary. All comments received through May 21, 2001, the date announced in the NOI for closing of the scoping period, were considered. Comments received after this date were considered to the extent possible in preparing this report. The comments have been categorized by subject under the following issue headings:

- NEPA Issues
- Policy Issues
- Alternatives
- Ecology, Air and Water
- Cultural Resources
- Cumulative Impacts
- Human Health Impacts
- MOX Fuel Processing
- Transportation Issues
- Waste Management
- Socioeconomics
- Security and Terrorism
- Environmental Justice
- Decommissioning vs. Deactivation
- SRS Infrastructure and Existing Conditions
- Reactor Use Issues
- Lead Test Assemblies

The scope of the EIS and summary of issues that will be addressed in the EIS are discussed in Section 3. Although issues raised during the scoping period will be considered in the preparation of the MOX FFF EIS, some of those issues will either be analyzed in less detail or will not be analyzed at all, depending on their relevance to the proposed action and the anticipated impacts. Issues that will be considered, but not analyzed in detail, are summarized in Section 4. The preliminary outline for the EIS is included as Attachment A.

2. SCOPING COMMENT SUMMARY

2.1 INTRODUCTION

Several commenters voiced their support for the MOX fuel option, stating that it was the best option for using excess plutonium. They cited the commercial MOX reactors in Europe along with an experimental MOX program in the United States as evidence that MOX technology is both safe and feasible. They also believed that converting the plutonium to MOX fuel would make it more difficult to recover the plutonium for future use in nuclear weapons than if it were disposed of by immobilization (i.e., conversion of surplus plutonium into plutonium oxide and then into a ceramic or glass form suitable for disposal in a geologic repository). These commenters also supported the SRS as the best location for the MOX FFF, citing experience, expertise, and existing infrastructure.

Although they were in favor of reducing quantities of weapons-grade plutonium, other commenters felt that the MOX program was not the best method for addressing non-proliferation. These commenters preferred immobilization or continued storage to the MOX alternative. These commenters believed that immobilization would offer the greatest deterrent to terrorism and felt that proceeding with the MOX project would lead to widespread reprocessing of spent nuclear fuel. Several commenters voiced their opposition to the project, but did not provide any basis or provide comments on the scope of the EIS.

Several commenters had specific questions or comments on the Environmental Report (ER) and Construction Authorization Request (CAR) prepared by DCS. These comments will be considered in NRC's review of the ER and in the preparation of the EIS and Safety Evaluation Report (SER).

The following summary groups the comments received during the scoping period, both at scoping meetings and through written submittals to the NRC, by technical area and issue.

2.2 SUMMARY of COMMENTS

2.2.1 NEPA Issues

Consideration of Reactor Use Impacts: A few people commented that NRC should limit the scope of the MOX FFF EIS to the environmental impacts of constructing, operating, and deactivating the MOX FFF. They believed that analyzing impacts of the reactors using the MOX fuel as part of the current MOX FFF EIS would create a "double jeopardy" for DCS in that the company would have to provide data twice: now for MOX FFF licensing and again during the license amendment process for the reactors in which the fuel was to be used. One commenter noted that in order to avoid being accused of segmentation (not looking at the full consequences of an action) the EIS must include reactor impacts in its analysis. Several commenters wanted a supplemental EIS to be prepared for the reactor sites if reactor impacts are not addressed in the MOX FFF EIS. Further discussion of reactor use impacts is provided in Section 2.2.16.

NEPA Coverage for Actions in a Foreign Country: A few commenters believed that the link between the U.S. and Russian programs is so strong that, under NEPA, the United States would be obligated to consider environmental impacts of MOX in Russia. One organization indicated that there was a precedent for conducting a NEPA analysis for a major federal action

having a significant impact in a foreign country. (No specific example was provided.) Another commenter stated that environmental impacts occurring outside the United States and within the borders of a sovereign nation are outside the scope of NEPA.

Supplemental EIS: Several commenters thought that DOE's Surplus Plutonium Disposition (SPD) EIS should be supplemented. They contended that the original EIS did not adequately address the need for the action and the alternatives and that DOE did not conduct an adequate life-cycle analysis of the all-MOX option and the all immobilization option. They maintained that if DOE does not prepare a supplemental EIS, NRC needs to evaluate the full range of alternatives related to the MOX program.

Proprietary Information: A few commenters wanted NRC to evaluate the harm to the public caused by withholding information labeled proprietary. They claimed that there was not enough technical information to adequately evaluate the CAR, especially with respect to health and safety. For example, a complete list of source terms was not available. They would also like to examine the types of information that can be categorized as proprietary.

Use of Existing DOE Documentation and Decisions: A few commenters wanted NRC to make full use of environmental documentation already prepared by DOE and avoid reevaluation of issues where DOE has already made a decision. This position includes adopting the DOE decision that the need for the MOX FFF has been established.

Additional Scoping Meetings: Several commenters asked for additional scoping meetings: at reactor sites, along transportation routes, and specifically at Columbia, South Carolina. In addition, several commenters asked that the scoping period be extended beyond the May 21 deadline.

Communicating Information to the Public: A number of people commented on NRC's efforts to communicate information to the public. There were complaints that ADAMS (Agency wide Document Access and Management System), the system that NRC uses for viewing documents, is not user friendly and that since it was implemented the local public reading rooms at nuclear power plants were eliminated. These commenters felt NRC should provide a computer at the NRC reading room and that the CAR and ER should be made available free of charge. One commenter asked for more informational meetings before the draft EIS is issued. Another commenter wanted NRC to indicate how it will handle distribution of MOX information to the public in the future. A request was made for NRC and DCS to define terms such as "highly unlikely" and "unlikely" and to involve the public in determining the appropriateness of these definitions.

2.2.2 Policy Issues

Price Anderson: The Price-Anderson Act limits the liability of organizations in the event of an incident involving nuclear materials. A commenter asked NRC to put a license condition on the MOX fuel project that MOX fuel cannot be covered by Price-Anderson. A commenter wanted the EIS to include a full disclosure of who is legally (and financially) responsible for MOX fuel accidents, including transportation impacts and reactor accidents.

NRC's Role as Lead Agency: A commenter stated that NRC was too closely tied to the nuclear power industry to impartially evaluate the plutonium fuel project. A commenter stated the belief that NRC receives funding from this regulated community and, at times, acts as an

advocate for nuclear power. A commenter asked that NRC support an independent review of DOE's plutonium work, as recommended by the National Research Council in March 1988.

NRC Experience and Precedent: Several commenters thought that NRC was not qualified to regulate and oversee weapons-grade plutonium. They contended that there is no precedent for NRC to analyze reactor impacts as part of a licensing action for a fuel fabrication facility.

Conflict of Interest: A few commenters expressed concern that NRC may not be sufficiently independent from DOE to review the DCS application. Another commenter asked if using Argonne National Laboratory (a DOE Laboratory) as the contractor preparing the NRC EIS represented a conflict of interest.

Agency Interactions: Some commenters thought that the interactions of NRC, DOE, SRS, and DCS should be considered, particularly in terms of their regulatory roles. One commenter thought the EIS should address the question of who owns the MOX fuel at each stage of the process. Commenters were particularly concerned because both DOE and NRC have regulatory roles related to waste disposal. A commenter wanted to know which agency would have jurisdiction over the waste at each stage of the MOX process. Another commenter stated that the commercial and military nuclear waste materials should remain separate.

Non-Proliferation: A comment was made that the United States should reevaluate its non-proliferation agreement with Russia. A commenter argued that MINATOM (Ministry for Atomic Energy of the Russian Federation) intends to take money from the United States and other western countries and build a plutonium fuel infrastructure and export plutonium fuel.

Another commenter thought that the EIS should consider the proliferation impacts of constructing a MOX FFF, which (according to the commenter) violates a long-standing U.S. policy of separating civilian use and military applications of nuclear technology. According to this commenter, MOX would encourage other countries to develop reprocessing, which would have serious non-proliferation consequences. The possible use of the polishing portion of the facility for missions other than purifying plutonium for MOX use was also a concern.

Savannah River Site (SRS) Cleanup Funds: Some commenters wanted the EIS to consider the impacts of recent cuts in cleanup and restoration funds to the SRS. One commenter viewed this as the transfer of funds from the SRS cleanup to plutonium production.

Changes in Project Direction: Some commenters wanted the EIS to consider the impacts that would result if the proposed pit disassembly facility was canceled in favor of using existing infrastructure at the SRS. Another commenter felt that this issue had been adequately explored in the DOE SPD EIS and that NRC should be limited to evaluating the cumulative impacts of this related action.

A commenter asked that the EIS consider the impacts of building a MOX facility and then indefinitely suspending or canceling its use if the Russian political situation changes. Another commenter wanted the EIS to determine the cost of the MOX project if the Russian program were canceled.

Some commenters wanted the EIS to assess the impacts on the MOX program caused by delaying immobilization, in particular the impacts of indefinitely storing the plutonium. Commenters were also concerned that delaying or canceling the immobilization project could lead to greater quantities of MOX fuel.

A commenter thought the EIS should consider the environmental impacts of new reprocessing missions at the SRS that could be triggered by the MOX project. A commenter noted that commercial reprocessing is proposed in legislation in Congress and that the current ban is being reviewed by the Bush administration.

International Implications/Treaties: A commenter pointed out that there were several international treaties that must be identified and analyzed for impacts of MOX commercialization in the United States, including the Nuclear Non-Proliferation Treaty of 1968, the Stockholm Declaration on the Human Environment, and the Law of the Sea Convention.

2.2.3 Alternatives

No-action - Continued Storage: Some commenters wanted NRC to fully develop and advance the No-action Alternative. They pointed out that the Bush administration has questioned the U.S. government's commitment to a dual track approach to plutonium disposition and that it is not clear that the MOX program will go forward in Russia. Furthermore, the immobilization program has been postponed. Given this situation, the MOX program could be subject to continued review, making status quo (continued storage) a likely No-action Alternative. Therefore, some commenters wanted the EIS to consider the implications of the SRS becoming a long-term storage facility for the nation's surplus plutonium if the MOX program did not proceed.

One commenter wondered if adopting the No-action Alternative would be a tacit (indirect) way of saying that the MOX process cannot be done safely. Some commenters wanted NRC to explore the effect the No-action Alternative would have on proliferation and acts of terrorism.

No-action - 100 Percent Immobilization: Several commenters wanted the EIS to consider the costs and programmatic requirements of a 100 percent immobilization alternative. They believed that this was a viable alternative if the MOX project was not licensed. A few commenters specifically thought the EIS should consider (1) cost savings from not pursuing the MOX program, (2) the short- and long-term storage and monitoring requirements of plutonium pits and oxides until immobilization is complete, and (3) decreased waste volumes as compared to the MOX process. Another commenter felt that considering a 100 percent immobilization alternative would be inappropriate since DOE has already set surplus plutonium disposition policy.

One commenter wanted the alternatives to include building an immobilization (vitrification) plant at the Nevada Test Site to minimize transportation distances and maximize distances to population centers.

Conversion of All Surplus Plutonium to MOX Fuel: A few commenters wanted the EIS to consider the impacts of an all-MOX alternative. Many commenters wanted the EIS to be very specific in the quantity of plutonium that would be converted to MOX fuel. These commenters believe that addressing the quantity generically or leaving it open ended could lead to widespread reprocessing of spent nuclear fuel. A commenter wanted the EIS to consider a range of plutonium quantities for processing, suggesting that the amount may ultimately be greater than the 50 metric tons specified by the SPD EIS.

Range of Alternatives: A few commenters wanted to restrict the scope of the NRC EIS to the Proposed Action, the No-action Alternative, siting alternatives within the F-Area, and a reasonable range of MOX FFF design alternatives. They also stated that the official statement

of proposed action and no-action should be broadened to include the issuance of a license to possess and use special nuclear material at the MOX Fuel Fabrication Facility. Other commenters wanted to make sure that the no-action alternatives were considered viable options. That is, the no-action alternatives should be defined so that the EIS could select a no-action alternative and not just do an analysis because it was required by law.

The Parallax Project: Some commenters stated that the No-action Alternative from NRC could mean 100 percent immobilization and immobilization has already been delayed. These commenters wanted the EIS to consider the possibility that DOE would export the surplus plutonium to Canada under the Parallax Project. [Note: The Parallax (parallel experiment) Project would be a joint agreement between Russia, Canada, and the United States to demonstrate the feasibility of burning MOX fuel in a heavy-water-moderated reactor, located at Chalk River, Ontario. The project would use MOX fuel made in the United States and Russia from surplus weapons-usable plutonium out of both countries' nuclear stockpiles.]

Aqueous vs. Dry Purification Process: Some commenters wanted NRC to evaluate both the wet and the dry plutonium purification processes. The analysis should include a cost/benefit analysis that weighs the effectiveness of the process against the costs, the effects the impurities have on the MOX fuel use, waste streams, quantities of waste, etc.

Contingency Issues: One commenter wanted to make sure that the impacts of unusable MOX fuel were assessed, noting that historically MOX production has exceeded use and that if the MOX fuel is stored too long, the plutonium converts to americium, which ruins the reactivity.

2.2.4 Ecology, Air, and Water

Surface Water Impacts: One commenter pointed out that the choice of F-Area for the MOX facilities would probably hasten whatever impacts there would be to Upper Three Runs Creek. The commenter wanted the impact analysis to consider the current conditions of the F-Area, pointing out that it was already contaminated.

Groundwater Quality: A number of commenters expressed concerns about potential contamination of groundwater by plutonium, especially since there are a number groundwater aquifers beneath the F-Area. The Floridian aquifer was specifically mentioned. The point was made that there is already existing groundwater contamination from radioactive releases (primarily tritium) from the SRS (communities downstream from the SRS in both South Carolina and Georgia have already been affected; tritium has been found in wells and surface water). Commenters pointed out that there is the potential that liquid radioactive waste generated by the MOX process, which would contain plutonium, would be stored in the same tanks that "caused" the tritium releases. One commenter pointed out that plutonium studies at the Nevada Test Site and at West Valley in New York have shown that plutonium has migrated much faster than predicted. A commenter wondered if the contaminated water would move between the soil and aquifers via the deep rock borings at the SRS.

Several commenters were concerned that any further contamination of the Savannah River could push the ecosystems "over the edge" and cause serious long-term consequences for human health and the economy that depends on resources from the river. They stated that existing water quality in the Savannah River, and Georgia in general, is compromised and that according to U.S. Environmental Protection Agency (EPA) data the Savannah River is already among the 10 most contaminated rivers in the country.

One commenter wanted the EIS to look at the effects of radioactive storm-water runoff on the ecology of the surrounding area. This commenter thought that storm-water runoff from retention ponds should be captured, not released to creeks.

HEPA vs. Sand Filters: Several people commented on the decision to use high-efficiency particulate air (HEPA) filters instead of sand filters for air filtration in the MOX facility. The point was made that the SRS prefers sand filters which are more efficient, safer and more reliable than HEPA filters. They wanted the EIS to consider the use of sand filters in its analysis.

Air Emissions: A commenter stated that the EIS should look at all air contaminants released by the MOX process, how contaminants will be removed and scrubbed from the air stream, and the probable path of contamination spread through the air. Other commenters noted that over the years, tritium had been released through the air pollution stacks and had fallen back to Earth as radioactive tritiated water, which contaminated the region's well water and agricultural products. One commenter questioned why the MOX FFF would be exempted from the National Emission Standards for Hazardous Air Pollutants as was suggested in the ER prepared by DCS. Another commenter stated that the EIS should consider air emissions from the emergency generators and volatile organic compounds from diesel storage tanks.

Tidal Wetlands: Some commenters were concerned about impacts to tidal wetlands along the Georgia coast, stating that they represent about one-third of the remaining tidal wetlands along the Atlantic shore of the United States. A commenter noted that in addition to ecological impacts, there is the potential for economic impacts to fisheries and other natural marine resources, as high as \$1 billion annually.

General Ecological Impacts: Several commenters felt the ecological impacts were very important and that the EIS should look at the ecological impacts of the proposed facility. One commenter suggested using an ecological system upstream from the site as a benchmark; other commenters stated the impacts to endangered species and habitat should be re-evaluated given the changes to MOX design from what was presented in the DOE SPD EIS, in particular the changes in the waste streams and incremental volumes of waste.

2.2.5 Cultural Resources

One commenter thought the EIS should discuss the impacts of having deadly radioactive wastes in proximity to ancient cultural archeological sites. Another commenter questioned how cultural resources could be managed without a programmatic memorandum.

2.2.6 Cumulative Impacts

Some commenters wanted cumulative impacts to consider all existing (baseline) contamination and future actions at the SRS. Another commenter suggested that this should include all the auxiliary facilities associated with the MOX project. Chemical as well as radiological impacts should be evaluated. One commenter noted that any radioactive contamination of natural resources could have a cumulative adverse effect on businesses that rely on natural resources. Another commenter noted that cumulative build up of contaminated sediments could directly impact human health. It was noted that the Savannah River is currently among the 10 most contaminated rivers in the country and that further contamination would "push the ecosystem over the edge." A commenter thought cumulative impacts would be the appropriate place to consider the impacts on existing SRS infrastructure if construction of the pit disassembly facility was canceled.

2.2.7 Human Health Impacts

Safety Record: Several people expressed concern that DCS did not have an environmental and safety compliance record specific to DCS; there were only individual records for Duke, Cogema, and Stone & Webster. Commenters thought that it was inappropriate for DCS to use the safety data from the Westinghouse contract site. They pointed out that DCS has not established a safety culture; probability assessments and reliance on the fact that nothing bad has happened yet do not prove acceptability. Commenters wanted the EIS to evaluate Cogema's safety record in Canada and France.

Risk Determination: A commenter wanted the degree of uncertainty associated with the risk calculations used in models to be included, especially when data used to support the models were not based on weapons grade plutonium. Another commenter wanted the health-based standards to be based on EPA's 1 in 1 million accepted deaths rather than the 1 in 10,000 allowed by NRC.

Radiation Hazards: A commenter stated that in addition to looking at cancer fatalities, the EIS should address noncancer effects resulting from ionizing radiation exposures, such as immune deficiencies and genetic defects. A commenter thought that accident impacts should consider radiation exposure impacts to all individuals (including children, the unborn, the sick, and the elderly), not only the "standard man."

A commenter wanted the EIS to assess the dose to workers that would result from the MOX process. The analysis should include every worker involved: those at the MOX facility, workers at nuclear laundries, workers at reactor sites, workers at waste disposal sites, etc. A few commenters wanted to know what measures would be taken to protect MOX construction workers from the existing contamination at the MOX site.

Chemical Hazards: A commenter wanted the EIS to include the health effects of chemical exposure both during normal conditions and accident scenarios. The EIS should consider the fact that there will be a radioactive component to the chemical exposure.

Emergency Preparedness: Several commenters were concerned that DCS had not prepared an emergency management plan for the MOX facility. According to commenters, DCS claimed that a plan was not needed because its models showed that the public radiation dose during a major accident would be within regulatory limits. These commenters wanted the EIS to address the implications of running the MOX program with and without an emergency management plan.

A few commenters wanted the EIS to address the SRS Emergency Management Plan. One commenter expressed concern about impacts to the public from a rupture of a high-level waste tank containing MOX waste.

One commenter wanted to be assured that the SRS would communicate safety related information to the public in a timely manner. According to this commenter, there had been a situation where SRS had failed to warn the public about a tritium release that came downstream from the site.

Some commenters thought that the EIS should evaluate the impacts (costs) of having to upgrade the emergency response equipment and train emergency responders in the communities surrounding the SRS and the reactors and along transportation routes. One

commenter made the point that many of the emergency responders are volunteers. Some commenters wanted the EIS to identify the capabilities of local, regional, and national medical facilities to manage acute and long-term casualties resulting from an accidental release. It was noted that medical facilities along transport routes are seldom adequately equipped to treat radiation victims.

A few commenters thought that using computer models to predict possible releases was inadequate and wanted the EIS to include the costs of purchasing and maintaining monitoring equipment on-site and off-site out to 40 miles. This would include monitoring of air, ground, water, vegetation, and livestock. The instrumentation should cover all forms of radiation, including alpha. A commenter stated that it was in the public's interest to know the measured amount of radiation as opposed to a calculated amount.

One commenter stated that an iodized prophylaxis, which could be used to prevent thyroid damage (including cancer), had been approved by the NRC. This commenter wants sufficient quantities to be in place in the event of an accidental release from the MOX FFF. (Note: An iodized prophylaxis is a non-radioactive form of iodine that is administered before exposure to saturate the thyroid and prevent the later uptake of any airborne radioactive iodine that might be dispersed in a nuclear accident. Any additional iodine that is later inhaled or ingested is eliminated by the kidneys.)

Accidents Related to the MOX Process: A commenter wanted the EIS to discuss the worst-case scenario for an accident related to plutonium processing and the safety factors that would be used to protect the public. All the consequences, not just the probability-weighted risks from accidents, need to be considered. Doses to populations as well as to individuals should be provided. Another commenter thought that the EIS should analyze the impacts caused by a criticality accident due to dust accumulation in the air ducts. There was a comment that the accident analyses should include a plutonium fire, given that plutonium is highly flammable in several of its states. A few commenters wanted the EIS to consider the impacts of accidents involving ruptures or explosions of the tanks used to store liquid radioactive waste. One commenter stated that power outages to the tanks could eventually lead to conditions that could cause the tanks to explode.

Other Accident Issues: Some commenters felt that accident analyses in DOE's EIS were inadequate and that detailed accident analyses should be done for the MOX FFF EIS.

Commenters expressed concern that the design basis earthquake assumed by DCS was not as severe as the one normally assumed by DOE for the SRS; this could also be true for the high winds or tornado design basis. A commenter felt that corners were being cut by using less stringent parameters.

A commenter wanted the EIS accident analyses to include scenarios like plane crashes, insider sabotage, missile attacks, truck bombings, the facility dropping into a sinkhole (there are soft zones near the MOX FFF location), and events happening in other nearby areas that could cripple the facility. One commenter wanted the EIS to provide details on the most probable accident.

One commenter thought that human error should be considered in accident analysis, noting that hazards in nuclear power plants are a combination of human and technical errors and that human failings cannot be completely eliminated by using engineering controls.

2.2.8 MOX Fuel Processing

Concerns were raised about the safety of the proposed design for the MOX FFF, in particular the sintering (baking) process that converts the MOX fuel pellets to a ceramic form. Commenters felt that the design for furnace confinement did not adequately protect the public from a plutonium release. A commenter stated that heating the plutonium in an inert atmosphere that contains some hydrogen could result in a hydrogen burn or an explosion if certain controls were violated. Commenters pointed out that similar work at the SRS is carried out in glove boxes, which provides additional containment in case of an accidental release.

A commenter wanted NRC (and the DOE) to conduct a thorough review of all MOX fuel specifications and quality control procedures. This commenter stated that failure to do so would compromise nuclear safety. In addition, the specifications and procedures must be provided to the public.

2.2.9 Transportation Issues

General Transportation Issues: A commenter wanted to know what security measures will be taken to protect the public during MOX fuel transport. In addition, the commenter also wanted the EIS to look at the impacts of transporting the surplus plutonium and the uranium hexafluoride gas to the SRS and of transporting the spent fuel to the storage facility. One commenter asked if the current transportation casks would work for the MOX spent fuel rods.

Some commenters wanted to know how the transport of nuclear materials related to the MOX project would affect traffic and emergency vehicles and if certain highways (specifically Highway 73) would be closed during transport.

A commenter asked what corporate entity would be responsible for the transport of MOX fuel through North and South Carolina and if they would be exempt from liability insurance for transport as they are exempt from liability in operations under Price-Anderson.

A few commenters believed it was not appropriate for NRC to rely on the DOE transportation analyses.

One state agency wanted NRC to consider their comments on the DOE Surplus Plutonium Disposition Final EIS (DOE/EIS-0283) when conducting the MOX FFF EIS analysis and safety review, particularly with respect to transportation and emergency preparedness.

Risks from Transportation Accidents: Some commenters thought that the EIS should evaluate the impacts of transportation accidents on communities in the transportation corridors. Impacts from both truck and rail accidents should be included. In addition to human health impacts, the effects on homes, schools, churches, etc. need to be considered.

One commenter wanted to make sure the transportation risk analysis was put in the proper perspective; for example, the exposure to the public in the event of an accident would be equivalent to that of a dental x-ray. Transportation risks should be compared to those of an exploding gas truck (again, for perspective). DOE's transportation statistics should be compared to those from the Department of Transportation.

2.2.10 Waste Management

Wastes Associated with the MOX FFF: Several commenters expressed concerns about high activity alpha liquid radioactive wastes resulting from the aqueous process that is proposed for removing gallium and other unwanted material from the weapons-grade plutonium. Commenters wanted the EIS to look at the types of wastes produced by this process (solid, liquid, and gaseous), waste storage, treatment, and ultimate disposal; they also wanted details included on the radiological and chemical character of the waste.

There were concerns that not enough waste tanks exist at the SRS to store the large quantities (estimates were as high as 81,000 gallons annually) of liquid radioactive waste that would be generated. One commenter suggested that the existing liquid waste (35 million gallons) be vitrified. Another asked if there would be liquid waste storage tanks dedicated to the MOX FFF.

High-Level Waste: A few commenters raised concerns over waste material supposedly leaking from high-level waste (HLW) storage tanks at the SRS. One commenter noted that 95 percent of the HLW generation from 2000 to 2070 would be from the SRS and wanted the EIS to determine what percentage will be from the plutonium processing facilities.

Low-Level Waste: One commenter stated that NRC must consider the fact that North Carolina will soon be excluded from using the Barnwell site for low-level waste disposal.

Wastes Associated with Converting DUF_6 to DUO_2 : A commenter requested that the EIS consider wastes associated with converting depleted uranium hexafluoride to depleted uranium dioxide.

Spent Fuel Storage: Several commenters were concerned that a final waste site for spent fuel rods has not been determined and that reactor sites currently have spent fuel rods with no place to go. The EIS should address the impacts from the storage of spent MOX fuel at the reactor sites.

Secondary Wastes: A commenter wanted the EIS to include the chemical and radiological character, quantities, treatment methods, and destination of waste produced by the treatment of the original waste (secondary waste). The details should be comparable to those used for primary waste.

2.2.11 Socioeconomics

Economic Effects of Radioactive Contamination on Natural Resources: Some commenters wanted the EIS to assess the economic damage that would result from any radioactive contamination of natural resources. They maintained that the contamination would have a lasting, possibly cumulative, adverse effect on businesses that would not be solved by "cleanup" alone. A commenter pointed out that the economy of the Savannah region was very dependent on natural resources. According to this commenter, about one out of five jobs is related directly or indirectly to natural resources: commercial and recreational fishing, tourism, and seafood processing. About \$1 billion in business is associated with these industries; even a reduction of 1 percent would be \$10 million.

Cost/Benefit Analysis: Some commenters thought that a full cost/benefit analysis of the MOX program should be conducted, including use of MOX as a fuel. The analysis should extend beyond the usual “region of influence” to include national and international impacts as well. The analysis should also be looked at from the perspective of the taxpayer. A national-scale study of costs of the MOX program should be prepared as a report to the General Accounting Office.

Several commenters wanted the EIS to consider the cost of using MOX fuel in a reactor. They stated that Cogema in France recently admitted that the reactor fuel made with separated plutonium was three to four times more expensive than the conventional fuel made with low-enriched uranium. They also pointed out that the cost of using blended highly enriched uranium is lower, as would be the cost for mined uranium, and even uranium processed from the sea.

Costs of the MOX Program: A commenter noted that over the past four years, the estimated cost of the MOX program has doubled. The concern was that in a risk/benefit culture the environment is often compromised to keep expenses down. This commenter did not want the environment to “take the hit” for higher costs.

Electricity Rates: A commenter wanted the EIS to assess costs associated with the MOX program. There were concerns that project cost overruns would be passed on to consumers in the form of rate increases, as has happened, according to the commenter, in the past with the Vogtle nuclear power station.

Government Subsidy of Nuclear Power: A commenter was concerned about the impacts that “yet another” subsidy (funding) of nuclear power would have on the whole energy economy. Would the utilities be paid twice for the same kilowatt hour, once by taxpayers and again by ratepayers? That is, the taxpayers would be paying to produce the MOX fuel, and ratepayers would still be charged the same for electricity from fuel paid for by them (taxpayers). This commenter thought that the plutonium fuel subsidy would give an unfair advantage to nuclear energy suppliers in contrast to the nationwide effort to create a level playing field for energy producers. Also, the subsidy would put other sustainable energy technologies (solar and fuel cells) at a disadvantage. A comment was made that the MOX program no longer had a non-proliferation mission; it was really a subsidy to build a fuel infrastructure in this country using non-proliferation funds.

Land value: Some commenters wanted the EIS to consider the economic impacts on landholders along transportation routes. This would include transportation during all phases: delivery of the surplus plutonium to the SRS; transport of the MOX fuel to the reactors; and transport of the spent fuel to the repository.

2.2.12 Security and Terrorism

Many commenters were concerned about the increased threat of terrorism that would result from the transport of weapons-grade plutonium. A comment was made that the MOX program causes unnecessary transportation of nuclear material, thereby increasing the risk of accident or interception by terrorists. Commenters suggested that both the Proposed Action and the No-action Alternatives should look at the environmental and human impacts resulting from an act of terrorism, including the detonation of a nuclear weapon. One commenter suggested that the EIS should evaluate both foreign and domestic terrorism. Another felt that NRC regulations governing security were inadequate.

Some people thought that immobilization was the best technology for making weapons-grade plutonium less attractive to terrorists. Their arguments included the following: (1) immobilized plutonium would still be highly radioactive, thus making it more theft proof; (2) MOX fuel is very vulnerable to theft since it is not highly radioactive; the plutonium can be separated chemically and is still weapons grade; and (3) plutonium processing cannot properly account for all the plutonium that passes through the fuel cycle; incremental amounts can be systematically removed and used to make terrorist weapons. Other commenters felt that converting the surplus plutonium to MOX fuel was the more effective means of making it unavailable to terrorists.

2.2.13 Environmental Justice

General Comment: One commenter indicated that the National Association for the Advancement of Colored People (NAACP) would be monitoring the environmental justice part of the MOX project carefully. Another commenter pointed out that most African American workers in the area are a captive workforce since few companies are willing to move near the SRS; the same is true for poor whites. Some commenters suggested that the environmental justice analysis in the EIS evaluate the decision making to locate the proposed MOX FFF in the South.

Communicating Information: Concern was expressed that information related to the MOX project was not reaching the African American community. It was suggested that information be conveyed directly via their churches or the NAACP rather than expecting people to search the *Federal Register* for information.

Applicable Geographic Area: One commenter stated that it was not clear how environmental justice would be used in the decision making process. Some commenters thought that the geographic area considered for environmental justice should include communities both downwind and downstream of the MOX FFF. It should also include communities along transportation routes and near reactors. One commenter questioned why NRC had changed the region of analysis from a 4-mile radius to 50-mile radius from the MOX facility. Another commenter encouraged NRC to apply the guidance of the NMSS Policy and Procedures Letter 1-50, Rev 2, "Environmental Justice in NEPA Documents," to its MOX FFF EIS. According to this commenter, the document recommends that a 4-mile radius be used for evaluating Environmental Justice when a facility is in a rural area; evaluations beyond this distance are not warranted.

Subsistence Fishing: A few commenters stated the EIS should consider the effects of radioactive contamination on subsistence fishing. A commenter stated that people of modest income often depend on fishing local rivers for a greater proportion of their nutrition. This could lead to a situation where impacts to surface water could result in a greater than average risk to those modest income individuals.

Civil Liberties: A commenter expressed a general concern about the effects that the use of MOX fuel would have on civil liberties in local, regional, national, and international communities. Infringements on the civilian population due to the security necessary to guard the plutonium was specifically mentioned.

2.2.14 Decommissioning vs. Deactivation

Some commenters thought that the EIS should analyze the impacts of MOX FFF decommissioning (not just deactivation) and any site remediation following decommissioning. Issues such as how the closure and removal will be funded need to be addressed. The terminal facility condition should be compared to its present condition. The NRC should have regulatory responsibility for the facility through the entire project life, including decommissioning. One commenter felt that consideration of decommissioning impacts at this time would be too remote and speculative, pointing out that since the CAR called for the MOX facility to be turned over to DOE at the conclusion of the contract and prior to decommissioning, decommissioning should not be within the scope of the MOX FFF EIS.

2.2.15 SRS Infrastructure and Existing Conditions

Infrastructure: Several people wanted the EIS to address MOX FFF impacts on existing infrastructure. Some commenters wanted the EIS to consider the impacts of processing weapons-grade plutonium at a 50-year-old site with reported cracks in the concrete. There were also commenters who thought the EIS should compare the impacts of the MOX FFF being a dedicated site (including waste storage tanks) to those associated with using existing SRS infrastructure.

Existing Conditions: One commenter thought that the description of existing conditions at the SRS should include the status of all nuclear materials on site, with a discussion of criticality issues.

2.2.16 Reactor Use Issues

General: A commenter noted that in order to avoid being accused of segmentation (not looking at the full consequences of an action) the EIS must include reactor impacts in its analysis. Other commenters wanted assurance that the MOX FFF EIS would be specific to the reactors actually designated to use the MOX fuel and would not ultimately be transferable to all United States reactors. They indicated that, if reactor impacts are not specifically addressed in this EIS, that EIS's should be performed for each reactor site prior to allowing use of MOX fuel.

Another commenter stated the prospect of analyzing reactor impacts as part of the current MOX FFF EIS would create a double jeopardy for DCS in that the company would have to provide data twice: now for MOX FFF licensing and then again during the license amendment process for the reactor.

Reactor Program Licensing and Implementation: A commenter wanted to know what the impacts would be if the Duke reactor license expired before the MOX fuel was used, if the reactors could not meet licensing requirements, or if Duke decided to shut its reactors down early because they were too expensive to run. A commenter wanted the EIS to consider the impacts that would result if the reactor portion of the MOX program was never implemented. Another commenter asked if the MOX FFF EIS would consider impacts of using MOX fuel and the revisions to the existing operating licenses at the Catawba and McGuire plants.

Plutonium Purification: A commenter asked that the EIS assess the impacts on the environment from imperfect gallium removal and the potential of the fuel's "falling apart in the reactor." This commenter noted that both the dry and the aqueous process for removing impurities from the weapons-grade plutonium have their faults. The aqueous process is environmentally destructive (it creates large quantities of high-level alpha liquid waste) and the dry process does not remove gallium as effectively. The tolerance level for gallium in the fuel should be determined.

Use of MOX Fuel in Reactors: Many commenters wanted the EIS to include a thorough investigation of the impacts of using weapons-grade plutonium in commercial reactors. Several commenters wanted the analyses to be specific to the reactor designs at the Catawba and McGuire plants. Commenters contended that weapons-grade plutonium has never been fabricated into fuel before and has never been used in a commercial reactor. They felt it was inadequate to use the MOX program experience in Europe as an analog in safety and performance analyses because the plutonium for MOX fuel in the European reactors comes from spent fuel from nuclear reactors, not weapons-grade plutonium. It was pointed out that the plutonium from dismantled weapons contains a different mix of isotopes than plutonium obtained from reprocessing spent fuel. It was also stated that the experience with low-enriched uranium fuel was not directly applicable because of the different mix of plutonium in that type of fuel and because of differences in performance of the two fuels. The commenters wanted NRC to evaluate the performance of the MOX fuel made specifically with weapons-grade plutonium at the concentrations proposed by DCS.

A few commenters stated that the DOE SPD EIS had already specifically evaluated the use of MOX fuel in the McGuire Nuclear Station and Catawba Nuclear Station reactors, which are the proposed mission reactors. They stated additional evaluations would be more appropriately made at the time of reactor operating license amendment application and that including reactor impacts in the MOX FFF EIS would delay the MOX FFF licensing process, increasing government costs with no commensurate benefit to public health and safety.

Thermal Pollution: Some commenters were concerned about the impacts of thermal pollution from reactors using MOX fuel. They stated that since the temperature in MOX fuel will be hotter, more ice and water will be needed for cooling and the temperature of water at Lake Norman will increase. One commenter maintained that this hotter water is changing the ecology, even down to the microscopic level of the food chain. This commenter stated that even now Lake Norman is warm enough for at least one alligator to survive.

Evacuation Issues: Many commenters were concerned about whether the population could be evacuated in time, should an accidental release occur. Traffic on the exits to Interstate 77 around Lake Norman was mentioned as being particularly bad; exit 28 was also mentioned. Another commenter felt that evacuation plans should go beyond the 10-mile radius that the NRC mentions in its publications.

Risks from Reactor Accidents: Several commenters stated that DOE's Surplus Plutonium Disposition EIS addressed generic reactor impacts rather than those specific to the Duke Power reactors that would be using the MOX fuel. They wanted reactor design-specific impacts to be addressed, rather than addressing the accident impacts generically.

Some commenters expressed concern that reactors used at Catawba and McGuire posed a greater likelihood for an accident than did other types of reactors currently in use in this country. Of particular concern were safety issues related to the use of ice condensers for cooling and

the so-called “eggshell” containment at Catawba and McGuire. The point was made that ice condenser reactors lack steel-reinforced containment domes. In addition, a commenter pointed out that there had been violations involving Duke Power’s failure to ensure that ice condenser inlet doors would be able to open if needed, and a forced outage could occur due to a blocked flow channel in portions of the ice condenser.

Comments were made that the Duke Power reactors were already suffering from embrittlement (a condition that causes materials to break without bending). There were concerns that the MOX fuel would cause a higher rate of embrittlement because it burns at such high temperatures. A more specific comment focused on analyzing accident consequences due to loss of power (including backup power) at the reactors.

One commenter pointed out that a severe accident at the Catawba reactors could result in a 25 percent increase in the latent cancer fatalities downwind of the reactor, resulting in anywhere from hundreds to thousands of additional cancer deaths. Another commenter wanted the EIS to consider the impacts of using plutonium fuel rather than uranium oxide fuel. A commenter stated that even DOE has admitted that the operation of nuclear power plants with plutonium fuel rather than uranium oxide fuel increases the deaths in certain accident scenarios. According to a commenter, one accident scenario had 8 percent more deaths from use of plutonium fuels rather than uranium fuel; another had 14 percent.

2.2.17 Lead Test Assemblies

Some commenters wanted NRC to fully provide and review all procedures for the fabrication of the lead test assemblies, including review of all the facilities involved, their records, quality control procedures, and the transport implications.

3. SCOPE OF THE EIS AND SUMMARY OF ISSUES TO BE ADDRESSED

The NEPA (Public Law 91-90, as amended), and the NRC’s implementing regulations for NEPA (10 CFR Part 51), specify in general terms what should be included in an EIS prepared by the NRC. Regulations established by the Council on Environmental Quality (40 CFR Parts 1500-1508), while not binding on the NRC, provide useful guidance.

Pursuant to 10 CFR § 51.71(a), in addition to public comments received during the scoping process, the contents of the draft EIS will depend in part on the December 2000 environmental report submitted by DCS. Pursuant to 10 CFR § 51.71(b), the draft EIS will consider major points of view and objections concerning the environmental impacts of the proposed action raised by other Federal, State, and local agencies, and by any affected groups of Native Americans. Pursuant to 10 CFR § 51.71(c), the draft EIS will list all Federal permits, licenses, approvals, and other entitlements which must be obtained in implementing the proposed action, and will describe the compliance status with these requirements. Any uncertainty as to the applicability of these requirements will be reflected in the draft EIS.

Pursuant to 10 CFR § 51.71(d), the draft EIS analysis will include a consideration of the economic, technical, and other benefits and costs of the proposed action, and alternatives to the proposed action. In the draft analysis, due consideration will be given to compliance with environmental quality standards and regulations that have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection, including any applicable zoning and land-use regulations and water pollution limitations or requirements

established or imposed pursuant to the Federal Water Pollution Control Act. The environmental impact of the proposed action will be considered in the draft analysis with respect to matters covered by such standards and requirements regardless of whether a certification or license from the appropriate authority has been obtained. Compliance with the environmental quality standards and requirements of the Federal Water Pollution Control Act (imposed by the United States Environmental Protection Agency or designated permitting states) is not a subject for and does not negate the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality, and to consider alternatives to the proposed action that are available for reducing adverse effects. While satisfaction of NRC standards and criteria pertaining to radiological effects will be necessary to meet the licensing requirements of the Atomic Energy Act, the draft analysis will, for the purposes of NEPA, consider the radiological effects of the proposed action and alternatives.

Pursuant to 10 CFR § 51.71(e), the draft EIS may include a preliminary recommendation by the NRC staff respecting the proposed action. Any such recommendation would be reached after considering the environmental effects of the proposed action and reasonable alternatives, and after weighing the costs and benefits of the proposed action.

The scoping process summarized in this report helped to determine the scope of the MOX FFF EIS and identified the significant issues to be analyzed in depth. For instance, in response to comments received during the scoping process, the EIS will evaluate the potential impacts of using sand filters instead of HEPA filters, and the potential impacts of using both wet and dry plutonium purification processes in manufacturing MOX fuel. Other options may be identified and analyzed. The EIS will also evaluate the degree to which impacts would vary depending on where within the SRS F-Area the proposed MOX FFF may be located. This will include consideration of surface water impacts as suggested by a commenter. Cumulative impacts of the proposed action will be addressed in detail.

The No-action Alternative, not licensing the MOX FFF, was also refined through the scoping process. In addition to the potential environmental impacts of the proposed action, the EIS will evaluate two no-action alternatives: (1) continued storage of all of the surplus weapons-grade plutonium at the present DOE sites in an unaltered form; and (2) immobilizing all of the surplus weapons-grade plutonium at the SRS site. Other alternatives may be identified and analyzed during the preparation of the draft EIS.

Issues to be analyzed in depth pertain to the construction, operation, deactivation and decommissioning of the MOX FFF, and transportation of fresh MOX fuel. Ordinarily, an NRC environmental impact statement also discusses in detail the need for the proposed action. Here, however, DOE has already addressed the need for the MOX FFF (see Section 2.2 of the DCS Environmental Report), and the EIS will reference the purpose and need analyses performed by DOE pursuant to NEPA. Impacts associated with transportation of materials to the SRS for the purpose of manufacturing MOX fuel, impacts of converting the depleted uranium, impacts of reactor use of MOX fuel, and the transportation and disposal of spent MOX fuel will be discussed. The EIS will recognize previous NEPA analyses performed by the DOE, including (1) the *Surplus Plutonium Disposition Final Environmental Impact Statement* (SPD EIS) (DOE/EIS-0283); (2) *Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE/EIS-0269); (3) *Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye*

County, Nevada (YMP EIS) (DOE/EIS-0250D); and (4) the Supplement to the Draft YMP EIS (DOE/EIS-0250D-S). Discussion of impacts associated with the two No-action Alternatives will be based largely on the SPD EIS.

Our goal in writing the EIS is to set forth the impact analyses in a manner which is readily understandable by the public. Decisions and the rationale for those decisions will be described in sufficient detail early in the EIS. Significant impacts will be discussed in greater detail in the body of the EIS. Topical areas whose impacts are less significant will be discussed in appendices to the EIS, with an explanation of why they were found to be less significant. This should allow readers of the body of the EIS to focus on issues that were important in reaching the conclusions of the EIS. The following topical areas and issues will be analyzed in the EIS:

- **Geology and Seismicity.** The EIS will describe the geologic and seismic characteristics of the proposed site. Evaluation of the potential for earthquakes, ground motion, soil stability concerns, surface rupturing, and any other major geologic or seismic considerations that would affect the suitability of the proposed site for the construction of the MOX FFF will be addressed primarily in the construction SER and summarized in the EIS. The EIS will not, however, evaluate the safety aspects associated with these site characteristics which will be addressed in the SER.
- **Hydrology.** The EIS will assess the potential impacts of the proposed project on surface water, storm-water runoff, and groundwater resources including the Floridian aquifer. The assessment will consider water resources, water quality, water use, flood plains, and the probable maximum flood (the largest flood that is likely to occur). The environmental mobility of the significant radionuclides, including plutonium, will be assessed. The EIS will not, however, evaluate the safety aspects associated with these site characteristics which will be addressed in the SER.
- **Air Quality.** Potential air quality impacts of the proposed project will be evaluated in the EIS. The evaluation will include potential impacts resulting from construction activities and operation (both with HEPA filters and sand filters) and will compare the anticipated air quality impacts, if any, with relevant standards.
- **Ecology.** The EIS will assess the potential environmental impacts of the proposed facility on ecological resources, including wetlands, plant and animal species, and threatened or endangered species and critical habitat that may occur in the area. As appropriate, the assessment will include potential effects on wildlife migration patterns; mitigation measures to address adverse impacts will be analyzed.
- **Land Use.** An analysis of impacts of accidents on existing land use along transportation corridors will be conducted. The EIS will also discuss the impacts of the MOX FFF on future land use on the SRS.
- **Cultural Resources.** The EIS will assess potential impacts of the proposed project on the historic and archaeological resources of the area. The EIS will also describe the programmatic framework of how cultural resources are evaluated at SRS and for the MOX FFF.

- **Transportation.** As discussed above, the transportation impacts of shipping MOX feedstock to SRS and shipping spent MOX fuel to a geologic repository will be discussed. The EIS will contain an analysis of potential impacts resulting from the transportation of fresh MOX fuel, and will assume (for purposes of ensuring that NEPA's objectives are met) that one or more commercial power reactors will later be authorized to use MOX fuel. Accordingly, the EIS will consider relevant aspects of both rail and truck transport of the fuel from the proposed MOX facility to the Catawba and McGuire reactors. The EIS will discuss the number, type, and frequency of shipments, as well as routing considerations and the quantities of MOX fuel being shipped. The impacts of transportation will be evaluated primarily in terms of radiological exposure risk to the population during normal transportation (including handling, transfer, and inspection) and under credible accident scenarios. The non-radiological impacts of transportation will also be identified and evaluated. The impacts on the usability or level of service of the roads, particularly near the SRS (such as Highway 73), will also be evaluated.
- **Infrastructure.** The EIS will address issues related to availability and adequacy of the infrastructure at the SRS such as waste treatment, and utility services to handle the needs of the proposed facility. The EIS will also consider impacts from any upgrades to these infrastructure.
- **Waste Management.** Waste management was identified as a significant issue by many commenters. The EIS will document the quantities, types, treatment, and disposal of the various potential waste streams. The EIS will also consider the impacts of storage of waste, such as the impacts on the existing high level waste tanks at SRS. The EIS will analyze the incremental impacts of MOX FFF wastes to existing facilities at SRS and at other DOE and non-DOE facilities. The EIS will evaluate the impacts of wastes generated at the MOX FFF either specifically or through incorporation of reference material from existing NEPA documents that analyze the overall waste management impacts at the SRS.
- **Socioeconomics.** The socioeconomic issues that fall within the scope of the EIS include the direct and indirect economic impacts on city, county, and school district revenues and expenditures, property values, residential and commercial development, housing, and public services in a four county region surrounding SRS. In addition, the economic effects on employment (including agricultural employment), unemployment and income in a 15-county region will be evaluated. These would include potential economic impacts to commercial fishing downstream of SRS. The EIS will include an analysis of the impacts on these resources that would result from the construction and operation of the proposed facility. National level impacts will be discussed under cost-benefit analysis.
- **Environmental Justice.** Potential for disproportionately high or adverse human health or environmental impacts on the minority and low-income populations will be evaluated and discussed at the census block level. Environmental justice will not be evaluated in detail along transportation routes because of the uncertainty associated with routing.
- **Aesthetics.** The EIS will analyze the visual impacts from the MOX facility being constructed in the F-Area at the SRS.

- **Human Health Impacts.** The potential human health impacts of the proposed facility on the workers and the general public will be evaluated for normal operations (including handling, transfer, and inspection activities) and under accident conditions. Potential exposures to radioactive elements and to chemicals will be considered. Both cancer and non-cancer health effects will be evaluated, as appropriate. Calculations for the general public account for sensitive populations as well as normal healthy adults. Models, assumptions, and supporting data used to develop the impacts from these potential exposures will be clearly described. The SER will assess the impacts associated with all credible accidents at the proposed facility, both from natural events and human activities. The EIS will analyze the potential environmental impacts resulting from bounding credible accidents at the proposed facility.

Emergency preparedness and environmental monitoring were raised as significant issues by several commenters. The need and extent for emergency preparedness and environmental monitoring, in context of the EIS, would be considered as mitigation measures for potential impacts. These issues may be discussed in the EIS to the extent that they are required as mitigation measures. Emergency preparedness and environmental monitoring will be addressed in greater detail in the operation SER .

- **Decommissioning.** The December 2000 Environmental Report (ER) submitted by DCS considered only deactivation. Evaluating the impacts of decommissioning was identified during the scoping process as a significant issue and is required by NEPA. The EIS will evaluate the impacts of deactivating and decommissioning the proposed MOX FFF.
- **Cumulative Impacts.** The EIS will analyze the potential cumulative impacts of the proposed facility when added to other past, present, and reasonably foreseeable future actions. This will include impacts from auxiliary and infrastructure facilities associated with the MOX project. It will also include impacts to resources such as the Savannah River.
- **Unavoidable Adverse Environmental Impacts.** A discussion will be provided on the potential environmental impacts that could not be avoided if the proposed action were to be implemented.
- **Irreversible and Irrecoverable Commitment of Resources.** The irreversible and irretrievable commitment of resources, including land use, materials, and energy will be discussed. Potential waste minimization and pollution prevention activities and mitigation measures will be discussed.
- **Cost/Benefit Analysis.** The EIS will include a cost/benefit analysis that summarizes the environmental and other costs and benefits of the proposed action.
- **Compliance with Applicable Regulations.** The EIS will present a listing of the relevant permits and regulations that are believed to apply to the proposed facility.

Pertinent proprietary information, although not available to the public, will be reviewed by the NRC in preparing the SERs and the EIS. As indicated above, all available documentation generated by DOE and other agencies that is related to dispositioning of surplus weapons-grade plutonium and MOX fuel production will be used, as appropriate.

4. ISSUES CONSIDERED PERIPHERAL, OUTSIDE THE SCOPE OF THE PROPOSED ACTION, OR COVERED BY PRIOR ENVIRONMENTAL REVIEW

Issues raised during the scoping period for the MOX FFF EIS are summarized in Section 2. Section 3 outlines the subjects and issues that will be addressed in depth in the EIS. Issues raised during the scoping period have been considered in the preparation of this scoping report and are reflected in Section 2. As discussed below, certain issues will not be addressed in depth in the EIS. Major categories of these issues and the reasons for not analyzing them in detail in the EIS are explained below. In general, these issues are not directly related to the assessment of potential impacts from the proposed major federal action now under consideration. The lack of in depth discussion in the EIS, however, does not imply that an issue or concern lacks value. Issues beyond the scope of the EIS may be appropriately discussed and decided in other venues. For example, many commenters were concerned about the lack of a safety record for DCS. This issue will be addressed in the SERs.

4.1 PREVIOUS DOE DECISIONS

A number of commenters requested that the SPD EIS prepared by DOE be supplemented and many of the decisions already made by DOE be revisited. Because the scope of the MOX FFF EIS is limited to the licensing action now under review by NRC, which is specific to the MOX FFF, issues pertaining to decisions already made by DOE will be addressed by referencing the appropriate DOE analysis.

4.2 INTERNATIONAL AGREEMENTS AND NATIONAL, STATE, OR LOCAL LAWS, STATUTES, AND REGULATIONS

Comments that seek to alter international treaties or affect national, state, or local laws, statutes, or regulations (e.g., comments that asked to alter Price-Anderson Act limits) will not be addressed, because they do not pertain to reasonably foreseeable impacts arising from the proposed construction and operation of the MOX FFF.

4.3 REACTOR USE OF MOX FUEL

Comments on the scope of assessing reactor use impacts in the EIS for the MOX FFF were varied (see Section 2.2.16). The NRC will consider the environmental impacts resulting from the use of MOX fuel, pursuant to 10 CFR Part 51, if and when nuclear power plant operators apply for a license amendment to use such fuel. Nevertheless, since a MOX FFF is expected to fabricate fuel for use in one or more nuclear power reactors, it is reasonable to consider the impacts of reactor use as an indirect impact in the EIS. At this time, NRC is aware that two plants, McGuire and Catawba, are considering using MOX fuel under the DOE program. The NRC is aware that DOE has analyzed the reactor use impacts of MOX fuel in its SPD EIS. Scoping comments related to reactor use impacts that were determined to be beyond the scope of this EIS will be forwarded to the appropriate NRC offices.

4.4 COST AND READINESS TO RESPOND TO EMERGENCIES

A number of commenters requested that the MOX FFF EIS analyze the impacts of having to upgrade the emergency response equipment and retrain emergency responders in the communities around the SRS, at the reactors, and along transportation routes. Other commenters requested that the EIS identify capabilities of local, regional, and national medical facilities to manage the casualties resulting from potential accidental releases and assess the readiness of communities to evacuate certain areas along the transportation routes in case of an accident. The human health impacts of potential accidents will be analyzed in the EIS. However, the costs associated with emergency preparedness and capabilities of local, regional, and national communities to respond to emergencies will not be analyzed, because such impacts are not specific to the proposed action. It is not anticipated that activities related to the proposed action will require any emergency response capabilities among communities beyond what they already have for similar purposes. Issues related to general emergency preparedness of communities are outside the scope of this EIS.

4.5 POTENTIAL DELAYS IN DOE PROGRAMS

Several commenters wanted to know what would happen if the DOE programs related to weapons-grade plutonium disposition and the opening of the HLW repository were delayed. Any such potential delays are either speculative or do not clearly affect the licensing review of the MOX FFF by the NRC. Unless it is reasonably foreseeable that a change in a DOE program or that of any other federal agency (e.g., a formal decision either has been announced or is expected to be announced soon) will have a substantive effect on the licensing of the MOX FFF, the EIS process will continue as scheduled, and the impacts of potential delays will not be analyzed in the EIS.

4.6 IMPACTS FROM TERRORISM

Many commenters raised a number of different issues concerning terrorism. However, the EIS will not address the impacts of terrorism, because these impacts are not considered to be reasonably foreseeable as a result of the proposed action.

4.7 IMPACTS OF ACTIONS IN THE RUSSIAN FEDERATION

All activities in the Russian Federation related to manufacture of MOX fuel from Russian-origin weapons-grade plutonium as part of an agreement between that country and the United States are being undertaken by the Russian authorities. They are not subject to NEPA and, therefore, will not be analyzed in the EIS.

4.8 PROPRIETARY INFORMATION

NRC will evaluate all pertinent proprietary information in its decision to grant authorization to construct the MOX FFF and to grant a license to DCS to possess special nuclear material. However, by law, NRC has to protect the proprietary information from public disclosure. Therefore, proprietary data will not be released to the public.

Attachment A
Preliminary Outline
for the Mixed Oxide Fuel Fabrication Facility EIS

Summary

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APPENDIX J:
**PUBLIC COMMENTS ON THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT AND NRC RESPONSES**

APPENDIX J:

PUBLIC COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND NRC RESPONSES

J.1 Overview

The U.S. Nuclear Regulatory Commission (NRC) issued the Draft Environmental Impact Statement (DEIS) for public review and comment in February 2003 in accordance with Title 10, Parts 51.73 and 51.74 of the *Code of Federal Regulations* (10 CFR 51.73 and 51.74) and 40 CFR 1503.1. The NRC provided a 75-day public comment period (which ended May 14, 2003) on the DEIS. The length of the comment period exceeded the minimum of 45 days specified in 10 CFR 51.73.

During the comment period, the NRC held three public meetings to receive oral comments regarding the contents of the DEIS. These public meetings were held on March 25, 2003, in Savannah, Georgia; March 26, 2003, in North Augusta, South Carolina; and March 27, 2003, in Charlotte, North Carolina. The NRC published notice of these meetings in the *Federal Register* (68 Fed. Reg. 97208, February 28, 2003), on its Web site, and in local newspapers.

Approximately 45 people provided oral comments at the public meetings. A certified court reporter recorded the oral comments and prepared written transcripts. The transcripts of the public meetings are part of the public record for the proposed project and were used in developing the comment summaries contained in this appendix. In addition to oral comments received at the public meetings, the NRC received written comments, letters, facsimile transmittals, and e-mails regarding the DEIS and associated issues. The written comments and transcripts are reproduced in Appendix L.

The NRC has reviewed each comment letter and all transcripts of the public meetings and has grouped comments relating to similar issues and topics, as permitted by the Council on Environmental Quality's (CEQ's) National Environmental Policy Act (NEPA) regulations and the NRC regulations at 10 CFR 51.91 and 40 CFR 1503.4(b). Because the comments were voluminous, this appendix provides summaries of all substantive comments received on the DEIS. The NRC then prepared responses to each of the comments or summaries of comments. Commenters are identified in each summary with a commenter number. Appendix K contains an index of commenter names, commenter numbers, and the Agency-wide Documents Access and Management System (ADAMS) accession number. ADAMS is the NRC's document management system that is available through NRC's Web site (www.nrc.gov). The accession number would be used to locate specific documents in the ADAMS system.

Many of the comments specifically addressed the scope of the environmental review, analyses, and issues contained in the DEIS, including existing conditions, potential impacts, proposed

mitigation, the NRC review process, and the public comment period. Detailed responses to each of these comments are provided in this appendix.

Many comments addressed topics and issues that were not part of the environmental review process for the proposed action. Those comments include questions about the NRC's safety evaluation of the proposed mixed oxide (MOX) fuel fabrication facility, general statements of support or opposition to nuclear power, observations regarding past Savannah River Site (SRS) activities, comments on the NRC regulatory process in general, and comments on policies of the NRC and the U.S. Department of Energy (DOE). This appendix includes summaries of these comments. It does not, however, include detailed responses to such comments because they address issues that do not directly relate to the environmental effects of the proposed action and are outside the scope of the NEPA review of the proposed action.

The following sections present the comments, or summaries of those comments, along with the NRC's responses to them. When comments have resulted in modification or supplementation of information presented in the DEIS, those changes are noted. All changes made to the DEIS are indicated by side bars in the margin of the Final Environmental Impact Statement (FEIS). In some cases, the comments do not warrant a detailed response; in those cases, an explanation is provided as to why no further response is necessary. In all cases, the NRC sought to respond to all comments received during the public comment period. The sections referenced in the comments pertain to the DEIS. In general, the term "EIS" is used to apply to both the DEIS and FEIS. The term "FEIS" is used when noting that changes were made in the DEIS, or where section numbers have changed from the DEIS to the FEIS. Similarly, the term "SER" (safety evaluation report) is used to apply to both the SER for construction and the SER for operations.

J.2 Noteworthy Changes from the Draft Environmental Impact Statement

Several noteworthy changes have occurred since the issuance of the DEIS. Those changes include revisions to the human health risk of the proposed action, environmental justice impacts, and mitigation measures. These changes have resulted from (1) errors identified in the DEIS, (2) resolution of open issues in the draft SER (DSER), (3) changes to the Duke Cogema Stone & Webster (DCS) Environmental Report (ER), and (4) comments received on the DEIS. Section J.2.1 summarizes each of these causes, and Section J.2.2 summarizes changes in the human health risk, environmental justice, and mitigation sections of the FEIS.

J.2.1 Causes of Changes in the DEIS

J.2.1.1 Errors in the DEIS

After publishing the DEIS, the NRC identified an error in the accident analysis for the proposed action. On March 6, 2003, the NRC sent a letter to stakeholders who were sent a copy of the

DEIS to inform them of the calculational error. The NRC also published a notice of the error in the *Federal Register* (68 FR 12720). This error was associated with a flaw in the tritium model option in a computer code, GENII version 1.485, used by the NRC staff. The staff used the tritium model in its analysis of a large accidental tritium release from the Pit Disassembly and Conversion Facility (PDCF). During a review of this error, the NRC staff identified an additional error in Table D-1 of the DCS ER. This table presents a statistical summary of meteorological data over a 5-year period at the SRS. As part of this summary, wind speed ranges were incorrectly labeled as “meters per second” instead of “miles per hour.” These errors affected the radiological doses from normal operations and from potential accidents. The NRC discussed these errors at the public meetings on the DEIS in March 2003. The NRC also issued errata sheets to stakeholders and posted these data on its MOX Web site.

J.2.1.2 Resolution of Open Issues in the NRC’s Safety Review

Several open issues were identified in Appendix A of the DSER for construction of the proposed MOX facility issued on April 30, 2003. These open issues were areas where the NRC staff concluded that DCS had not met the requirements in 10 CFR 70.23(b). One of these issues (open item VS-1) related to the use of a leak path factor for two banks of high-efficiency particulate air (HEPA) filters under accident conditions. The leak path factor is an estimate of the percentage of contamination that would pass through the confinement systems during an accident. DCS had suggested using a leak path factor of 1×10^{-4} . In the DEIS, the NRC used a leak path factor of 1×10^{-2} in its accident analysis (see DEIS, Table E.12) for hypothetical internal fire and explosion events. As discussed in the DSER for construction, the NRC staff concluded that a leak path factor of 1×10^{-4} was appropriate for hypothetical internal fire and explosion events.

J.2.1.3 Changes to the DCS Environmental Report

On June 20, 2003, DCS submitted Revision 3 of its ER, on August 13, 2003, DCS submitted Revision 4 of its ER, and on June 10, 2004, DCS submitted Revision 5 of its ER. These revisions are summarized in the following sections.

Revision 3 Updates

The ER was updated in Revision 3 to include (1) responses to requests for additional information, (2) corrections to Revisions 1 and 2, (3) corrections resulting from an error in Table D-1 (see Section J.2.1), and (4) the latest design information for the Waste Solidification Building (WSB). In addition, DCS provided confirmation from the South Carolina Department of Health and Environmental Control that the proposed MOX facility does not need a Clean Water Act 401 Certification. DCS had previously replied to NRC requests for additional information in letters dated October 29, 2002, December 10, 2002, and December 12, 2002. The responses to the request for additional information were considered in the preparation of the DEIS.

Corrections to ER Revisions 1 and 2 consisted of clarifying Table 3-3 on page 3-53 of the ER. That table presents the aqueous polishing waste streams. The first column lists the names of several waste streams. The second column of the table originally showed a volume associated with a waste stream and another volume that was noted as “(max).” The second column in Revision 3 of the ER provides the same volumes; however, it has been clarified that the original number in column 2 applies to waste that would be generated from plutonium coming from the PDCF, and the “(max)” volume pertains to waste that would be generated from the alternate feedstock plutonium (see Section 2.2.3.2.1 of the EIS). The volumes in the original and revised Table 3-3 are the same, except that the high-alpha waste from PDCF plutonium changed from 54,135 L/yr to 58,136 L/yr (14,301 gal/yr to 15,358 gal/yr), and the liquid low-level (radioactive waste) (LLW) to the effluent treatment facility (ETF) from PDCF plutonium changed from 1,280,340 L/yr to 1,105,340 L/yr (338,230 gal/yr to 292,000 gal/yr).

As discussed above (Section J.2.2), errors were identified in the wind data contained in Table D-1 of the ER. The table has been corrected. These wind data were used in calculating the radiation dose associated with normal operations. Subsequently, DCS corrected the normal operational radiation doses of the ER (see pages 5-19 and 5-21, and Table 5-11 [page 5-85] of the ER).

Appendix G of the ER was revised to reflect the information for the preliminary design of the WSB. Appendix G of the ER Revisions 1 and 2 was based on conceptual design information. The following discusses noteworthy changes. The WSB will now process three waste streams (i.e., high-alpha-liquid waste from the MOX facility, stripped uranium waste from the MOX facility, and laboratory liquid waste from the PDCF). The WSB will no longer process the laboratory concentrated liquid waste stream from the PDCF. This waste stream will be processed at the PDCF. In evolution from conceptual design to preliminary design, the process changed slightly, and some of the tank sizes and numbers of tanks changed. The maximum capacity of high-alpha waste increased by 3,785 L (1,000 gal), and the maximum capacity of low-activity waste increased by 11,356 L (3,000 gal). The size of the low-activity waste evaporator capacity increased from 1,893 L to 2,271 L (500 gal to 600 gal). In addition, all waste transfers between facilities (i.e., MOX facility to WSB and PDCF to WSB) via pipelines would use a single flush of the pipeline instead of the two flushes originally proposed for transfers from PDCF, and no flushes for transfers from the proposed MOX facility.

Some of the impacts estimated for the WSB were also revised. In some cases, the impacts from the plutonium immobilization facility presented in the DOE Surplus Plutonium Disposition Environmental Impact Statement (SPD EIS) were used as bounding estimates for impacts from the WSB. The impacts for the WSB in the revised ER no longer reference the SPD EIS. In other cases, the impacts have changed as a result of the evolution of the WSB design. The water usage during construction was revised from 95 million L/yr to 1,968,414 L/yr (2.5 million gal/yr to 520,000 gal/yr). The water usage during operation was revised from 110 million L/yr to 19 million L/yr (29 million gal/yr to 5 million gal/yr). Nonhazardous liquid waste generated during construction was changed from 21 million L/yr to 240 million L/yr (6 million gal/yr to 63 million gal/yr). Air quality impacts were revised to eliminate the stand-by diesel generator and fugitive emissions from fuel storage tanks and to add emissions from cement storage tanks. Utility infrastructure demands (Table G-4 of the ER) were typically significantly lower.

The americium quantity in the final Waste Isolation Pilot Plant (WIPP) waste container was revised from 0.02 kg to 0.18 kg (20 g to 180 g).

The concentrations of various materials were also revised as a result of design changes and to reflect a more accurate representation of waste expected to be received by the WSB. The estimated concentration of PDCF laboratory liquids (Table G-8 of the ER) increased by approximately 1.6 times. The estimated concentration of the MOX stripped uranium waste stream (Table G-10 of the ER) increased by approximately 1.25 times, with the exception of uranium-235. The concentration of uranium-235 decreased to account for the waste acceptance requirement at the WSB that the uranium-235 percentage be less than 1% by weight. The estimated concentration of the MOX high alpha waste stream (Table G-11 of the ER) increased by approximately 3 times, with the exception of uranium-234 and uranium-235. The uranium-234 concentration increased by about 2 times, and the uranium-235 concentration increased by about 4.6 times. The estimated concentration of waste being processed (Table G-12 of the ER) varied slightly; however, the americium concentration increased by about 3 times in the feed, 2 times in the bottoms concentration, and by about 1.5 times in the overhead concentrations.

Radiation doses to the public from the WSB increased from 5×10^{-6} mSv/yr to 0.29 mSv/yr (5×10^{-8} mrem/yr to 2.9×10^{-3} mrem/yr) for normal operations. Radiation doses for facility workers were estimated as being below 2.0 person-Sv/yr (200 person-rem/yr), with a commitment that the average annual dose to workers would be below 5.0 mSv/yr (500 mrem/yr). The accident scenarios changed and the bounding accident also changed. Previously, three potential accidents at the WSB were considered: a fire in the low-activity area of the building, an explosion in the high-activity evaporator, and a facilitywide loss of confinement event caused by natural phenomena or an external event. The loss of confinement and fire accident events were revised with changes in the volumes and radionuclide concentrations of the waste streams involved in the accidents. This included the release of approximately 2 Ci and 1 Ci of americium to the environment for the loss of confinement and fire accidents, respectively. The original WSB explosion accident was removed from consideration because sufficient controls were determined to be in place to prevent such an occurrence. The postulated earthquake, previously considered to be a potential cause of the loss of confinement accident discussed above, was revised to include a fire event in conjunction with the loss of confinement. Thus, the postulated earthquake was added as a separate evaluation, the impacts being the sum of those estimated for the loss of confinement and fire accidents.

Revision 4 Updates

The ER was updated in Revision 4 to include revised design information for the WSB. These updates included an increase in the volume of solid LLW from 175 m³ (228 yd³) to 205 m³ (265 yd³). The volume of nonhazardous liquid waste was changed from 240 million L/yr to 21 million L/yr (63 million gal/yr to 6 million gal/yr). The annual consumption of cement at the WSB increased from 227,000 kg to 340,000 kg (500,000 lb to 750,000 lb), and the on-site inventory of nitric acid decreased from 8,000 L to 1,000 L (2,000 gal to 350 gal). The WSB accident source terms were revised in Revision 4 of the ER. The changes in the WSB design

were made to preclude the release of americium to the environment. Tables G-13 and G-14 were added to provide the material released to the environment from a postulated accident. The consequences of the accident analysis are summarized in Table G-16. The maximum estimated impact to a site worker changed from 0.788 Sv to 0.00529 Sv (78.8 rem to 0.529 rem). The maximum estimated impact to a member of the public at the SRS site boundary changed from 1.35×10^{-3} Sv to 9.8×10^{-6} Sv (1.35×10^{-1} rem to 9.8×10^{-4} rem).

Revision 5 Updates

The updates in Revision 5 of the ER concerned modifications to the WSB facility design to accommodate changes in waste volumes. Volume changes were primarily a result of the impacts from process optimizations, the removal of the silver recovery process, and the decision to route the liquid LLW streams to the WSB for treatment rather than the SRS Effluent Treatment Facility. However, discharges of the treated liquid effluents to surface water for the proposed action would remain approximately the same. Radiation doses to facility workers were not affected because administrative limits were used to compute exposure. Waste volumes during the 10-yr operation period were revised from: 23,500 m³ to 20,800 m³ for liquid LLW, 3,900 to 6,468 m³ for solid LLW, 1,030 to 120 m³ for hazardous/mixed waste, 5,180 to 4,431 m³ for TRU waste, 43,500,000 to 602,000 m³ for nonhazardous liquid waste, and 39,900 to 41,000 m³ for nonhazardous solid waste.

Further information on TRU waste treatment plans was incorporated into Revision 5 of the ER. Current plans call for volume reduction of the TRU waste before packaging and shipment to WIPP. An upper bound of approximately 8,240 m³ would be generated over the project lifetime if volume reduction at the WSB were not considered. The bounding impacts for shipment of the non-reduced TRU waste to WIPP were added to provide a potential range of transportation impacts. The number of TRU waste shipments over the WSB operating lifetime ranged from 299 to 2,314. No accidental fatalities or latent cancer fatalities from radiation exposure were estimated. Up to one latent fatality from vehicle emissions was estimated for the bounding case.

Revision 5 of the ER also removed references to the controlled area boundary. No changes to impacts presented in the EIS were required as a result of this administrative change.

J.2.1.4 Comments on the DEIS

Comments received in the areas of (1) accident scenario and assumptions, (2) mitigation measures, (3) air quality, and (4) waste management resulted in noteworthy changes to the DEIS. Specific comments are discussed below. A summary of all the comments is provided in Section J.3.

Accident Scenario and Assumptions: Comments on the DEIS varied from stating that the accidents analyzed were overly conservative to stating that the accidents underestimated the potential impacts. Many commenters questioned the assumption in the 1-year exposure scenario that people would be allowed to ingest contaminated crops. Questions were raised

regarding the computer code that was used to estimate the impacts from hypothetical accidents. It was stated that the accident scenarios lacked realism.

Additional text was added to Section 4.3.5 to clarify the assumptions used in the accident analysis. In addition, a third accident scenario was included. This scenario assumes a 1-year exposure period; however, crop ingestion is not included. The inhalation pathway immediately following the accident and direct radiation pathway from contaminants deposited on the ground from the hypothetical plume are included. The NRC reviewed the comments concerning the use of the GENII code and determined that using the code was appropriate for purposes of estimating impacts in the EIS from hypothetical accidents. The results of the accident analysis are discussed in Section J.2.2.1 below.

Mitigation: Comments on the DEIS varied from stating that the proposed mitigation measures were overly prescriptive to stating that the proposed mitigation measures were inadequate and lacked detail. Commenters stated that the NRC used an overly broad definition for mitigation such as stating that compliance with regulations was considered mitigation. The mitigation, measures proposed for the potential environmental justice impacts were viewed by some commenters as being unacceptable or inadequate.

The NRC determined that applying a broad definition of mitigation was consistent with CEQ regulations and guidance. The mitigation discussion (Chapter 5) was revised to better identify the proponent of the mitigation. As noted above, the impacts resulting from potential accidents has changed in the FEIS. The rationale for developing mitigation measures for potential environmental justice impacts has been added to the FEIS.

Air Quality: The statements in the DEIS regarding existing exceedances of the PM_{2.5} (particulate matter with a diameter less than or equal to 2.5 micrometers) standard for both the 24-hour and annual averaging periods, and the adequacy of the air quality data used to establish background values were questioned. The DEIS data were based in part on an air quality monitoring station that was a source-oriented, special-purpose monitor and thus not appropriate for developing a background value of PM_{2.5}. Data from air quality monitoring stations greater than 80 km (50 mi) from the SRS were also improperly used to establish background values in the DEIS.

The background data were reanalyzed using updated data (see Section 3.4.3 and Table 3.3 of the FEIS). Table 3.3 in the FEIS presents the results of this update and includes both the highest and lowest ambient levels; the DEIS presented only the highest level. The air quality impact analysis in Sections 4.3.2.1 and 4.3.2.2 (Tables 4.6 and 4.8) were revised using the new background values. The FEIS concludes in Section 4.3.2 that the PM_{2.5} standard levels would not be exceeded in the vicinity of the proposed MOX facility.

Waste Management: Commenters felt that the waste management section was confusing and difficult to follow. The DEIS reported liquid waste volumes in cubic meters (m³) rather than gallons (gal) or liters (L). The waste management section in the FEIS (Section 4.3.4) has been revised to describe how the waste is generated from each facility, how the waste will be

processed or treated by the SRS, and what the overall impacts of the proposed action are to SRS waste management capabilities.

J.2.2 Changes in the DEIS

J.2.2.1 Revisions to the Human Health Risk of the Proposed Action

Human health risk impacts are discussed in Section 4.3.1 of the EIS. In the DEIS, radiological and chemical impacts from the construction and operation of the PDCF, the proposed MOX facility, and the WSB were estimated to be well within regulatory limits for both workers and members of the public. The same outcome was determined in the revised analysis, which used the corrected wind speed data, resulting in an increase in impacts to SRS employees and the public, and which used lower ingestion rates of root vegetables, fruit, and grain for a maximally exposed member of the public for the radiological impacts, resulting in lower impacts.

The accident with the highest radiological impacts in the DEIS was the hypothetical explosion at the proposed MOX facility, with up to 50 latent cancer fatalities (LCFs) in the collective population estimated as a result of the short-term exposure, and up to 200 LCFs if all the contaminated crops were assumed to be eaten. The NRC has since allowed more credit (a factor of 100) to be given to the HEPA filtration system in the proposed MOX facility for the reduction in the amount released in both the hypothetical explosion and fire accidents at the proposed MOX facility. Thus, the impacts of these accidents were estimated to be a factor of 100 lower in the reanalysis for the FEIS. In the interim, the WSB accident analysis was revised on the basis of new scenarios and/or source terms, resulting in lower impacts by a factor of 2 or more.

J.2.2.2 Revisions to the Environmental Justice Impacts

Environmental justice impacts are discussed in Section 4.3.7 of the EIS. The DEIS concluded that the no-action alternative would have no disproportionately high and adverse effects on minority and low-income populations. The DEIS concluded that construction and operation of the proposed facilities would not result in disproportionately high and adverse effects on minority and low-income populations. On the basis of the accident analysis in the DEIS, the DEIS concluded that there was a potential for low-income or minority communities to be disproportionately impacted. Mitigation measures were proposed in Section 5.2.12 of the DEIS.

As discussed above, the NRC revised its accident analysis based on several factors. On the basis of the revised analysis and information in the ER, the NRC concludes that the impacts from potential accidents to low-income and minority populations could be high and adverse. The NRC believes that it is appropriate to mitigate these potential impacts. The NRC has revised the suggested mitigation measures for potential environmental justice impacts in Chapter 5.

J.2.2.3 Revisions to Mitigation Measures

Mitigation measures are discussed in Chapter 5 of the EIS. The NRC revised the mitigation discussion to state that mitigation measures for the PDCF were previously evaluated by the DOE and are not discussed further by the NRC. Therefore, the mitigation discussion is limited to the proposed MOX facility and WSB. Text has been added to clarify mitigation measures that are required by laws and regulations, those that are suggested by DCS as good practices, and those that were identified by the NRC.

The NRC staff has reviewed the mitigation measures and has concluded that no additional mitigation measures are required beyond the regulatory requirements and those measures identified by DCS.

J.3 Public Comments and NRC Responses

Sections J.3.1 and J.3.2 discuss comments related to general opposition or general support for the MOX project, respectively. Sections J.3.3 through J.3.11 cover policy issues, including purpose and need (J.3.3), the NEPA process (J.3.4), and the NRC licensing process (J.3.5). Comments on the scope of the EIS are covered in Sections J.3.6 through J.3.9. Sections J.3.10 and J.3.11 discuss the alternatives to the proposed action. Sections J.3.12 through J.3.29 discuss pertinent comments on technical issues and follow the order that such issues are discussed in the draft EIS. The last section (J.3.30) responds to editorial comments.

Readers can use Appendix K to link comment numbers to commenters. For example, for the comments number 10-002, the document number is 10 and the individual comment number is 2. Appendix L prints each comment document and indicates comments and comment numbers in the margin.

The following acronyms appear frequently and are not spelled out with each use:

DCS	Duke Cogema Stone & Webster
DEIS	draft environmental impact statement
EIS	environmental impact statement
FEIS	final environmental impact statement
MOX ER	Mixed Oxide Fuel Fabrication Facility Environmental Report
MOX facility	Mixed Oxide Fuel Fabrication Facility

J.3.1 General Opposition

J.3.1.1 Comments: 10-002 79-001 116-004
44-002 83-001

Comment: Opposition to the proposed MOX project was expressed because it was viewed as experimental. It was stated that, for experimental programs, prototype models are usually developed before final designs. It was noted no similar facility exists in this country. Because of this, it was suggested that the Nuclear Regulatory Commission (NRC) proceed with caution.

Response: The technology for the proposed MOX facility is based on two existing facilities in France. This technology has been adapted to comply with U.S. requirements or incorporate U.S. preferences. U.S. requirements include requirements in the areas of contracts, regulatory compliance, quality, design codes and standards, site and utility interface, security, and safety practices and principles. U.S. preferences refer to differences in the U.S. MOX design compared to the French design, including different throughputs, differences resulting from isotopic differences in the plutonium, component selection, and maintenance and operation. The design has progressed from a conceptual design, where differences in the U.S. and French technology were identified, to a preliminary design. The NRC is reviewing the principal structures, systems and components of the proposed MOX facility to assure that its design is adequately safe. The NRC staff's findings to date will be discussed in the safety evaluation report (SER) for construction. The NRC will review the final design if and when DCS submits a license application. The NRC's review of the final design will be documented in the SER for operations. For further information see Section 1.1.2 of the EIS.

J.3.1.2 Comments: 66-001
91-007

Comment: Opposition to the proposed MOX facility was expressed. It was believed that the assumptions and critical aspects of the analysis in the DEIS were flawed. Immobilization was considered to be a legitimate alternative that should have been assessed in more detail.

Response: The Nuclear Regulatory Commission (NRC) acknowledges the concerns expressed in the comments. The assumptions and critical aspects of the analysis for the proposed MOX facility were based on sound engineering and scientific principles. Immobilization was considered (see Section 2.3.3 of the EIS) but was not considered a reasonable alternative.

There the NRC sets forth two reasons why immobilization of plutonium is no longer a reasonable alternative to the proposed action (building and operating the proposed MOX facility).

characterization, treatment, storage, transportation, and disposal. Section 4.3.4 of the EIS discusses waste management associated with construction and operation of the proposed MOX facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB). All wastes associated with the project would be treated and/or disposed of in accordance with applicable regulations. This issue is further discussed in Comment J.3.7.4.

J.3.1.5 Comments: 8-001 30-001 46-001
 12-001 32-004 99-001

Comment: Opposition was expressed for any activity that involves the manufacture, processing, and transportation of radioactive materials. Local communities should not have to be exposed to increased nuclear contamination or waste.

Response: The Nuclear Regulatory Commission (NRC) acknowledges the commenters' opposition to activities that involve the transportation, handling, and processing of nuclear materials. The EIS describes the actions that would be undertaken to protect the safety of both workers and the public. This includes following all applicable NRC regulations and Department of Energy orders pertaining to the transport, storage, handling, and processing of special nuclear materials.

J.3.1.6 Comments: 10-006 69-001 90-001 106-001
 10-022 71-004 98-001 109-001
 22-003 77-009 98-010 110-001
 44-006 84-001 104-001 112-001

Comment: Several commenters opposed the proposed project believing it to have an unacceptable level of risk to humans and the environment. The safety of the proposed MOX facility was questioned, particularly in regards to terrorist threats. Safety considerations were also expressed concerning the transportation of special nuclear materials. It was stated that the MOX facility would be counterproductive in reducing nuclear risks because it would allow plutonium to enter civilian commerce and the international marketplace. Instead of the proposed project, safer and cleaner alternatives (i.e., immobilization or no action) should be pursued.

Response: The Nuclear Regulatory Commission acknowledges the commenters' opposition to the proposed action as a means of surplus plutonium disposition. The goal of the surplus plutonium disposition program is to securely dispose of surplus plutonium and thereby reduce the threat of nuclear weapons proliferation.

The proposed action fulfills the goal of the surplus plutonium disposition program. The design, construction, and operation of the proposed MOX facility are expected to be within reasonable cost limits. Further, MOX fuel production benefits national security by reducing plutonium supplies. National security would improve because the number of locations where plutonium is currently stored would be reduced. Thus, converting surplus plutonium

to MOX fuel was viewed by the Department of Energy (DOE) as a means of ensuring that the plutonium would not be obtained by rogue states and terrorist groups.

For a full discussion of the proposed action alternative and the immobilization alternative, see Sections 2.2 and 2.3.3 of the EIS, respectively. The impacts of the proposed action are discussed in Section 4.3 of the EIS.

Continuing research and development activities are expected to minimize technical risks of the proposed action. Further, the MOX Facility would be contained within the SRS, which is a secure DOE site.

Transportation of nuclear materials to or from the MOX Facility would be done in accordance with applicable orders and regulations. Couriers would be required to pass a background investigation, receive DOE's highest security clearance, be certified to operate safe, secure trailer/Safeguards Transporter, possess mental alertness, and meet physical performance requirements. Couriers are also trained in firearms, tactics, and driving. Furthermore, couriers receive specialized training in physical fitness, communications, radiation, and hazards detection. Emergency management training for couriers includes the above-mentioned areas, nuclear weapons safety, hazardous materials safety, emergency response training, general firefighting, and fire prevention explosive hazards. Any licensee seeking authority to use MOX fuel in a commercial reactor must apply to the NRC for a license amendment. Any such use of MOX fuel would involve a once-through cycle with no reprocessing of the spent MOX fuel.

J.3.1.7 Comment: 105-014

Comment: Stakeholders, who are concerned and alarmed by the proposed actions, are supposed to be protected by an impartial, unbiased and fair assessment performed by our government protectors (e.g., DOE, NRC, etc.). This DEIS fails to demonstrate that the public will be protected. The DEIS is biased in favor of the proposed action. This is illegal and fails the spirit of the laws meant to protect the citizens of this United States of America. It should be clear that the Nuclear Regulatory Commission (NRC) has good reasons to reject the requested license.

Response: The NRC has prepared this MOX facility EIS in accordance with the provisions of the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) and the related Council on Environmental Quality (CEQ) and NRC implementation regulations (40 CFR 1500 – 1508 and 10 CFR Part 51). As discussed in Section 1.1.2, this EIS is part of the NRC's decision making process regarding the potential licensing of the proposed MOX facility. The primary objective of the EIS is to provide a comprehensive description of the proposed action, alternatives, and the potential environmental impacts. Section 1.1.1 of the EIS provides an overview of the Surplus Plutonium Disposition Program and the steps that have led to the MOX fuel approach being selected as the preferred alternative by the DOE in its program for reducing the supplies of weapons-grade plutonium. The previous EISs evaluated relevant alternatives that resulted in the decision to proceed with the MOX facility as the preferred alternative. Section 2.3 of the EIS explains why several alternatives were

not analyzed in detail in the current EIS. The no-action alternative, which is assessed in the current EIS, is the continued storage of surplus plutonium at seven DOE facilities. This alternative was analyzed in detail in the Surplus Plutonium Disposal EIS prepared by DOE in 1999.

J.3.2 General Support

Comments:	11-001	17-001	26-001	51-001	57-001	63-001
	14-001	21-001	49-001	54-001	59-001	86-001
	16-001	25-001	50-001	55-001	60-001	

Comment: Commenters indicated general support for the proposed MOX facility, including issuing the license for its construction and operation in a timely manner. The proposed MOX facility will contribute to worldwide safety and security by making nuclear materials unusable as weapons. Additionally, construction and operation of the proposed MOX facility will provide benefits to the local economy. The proposed MOX facility will also provide a source of clean fuel for generating electricity. It is believed that the proposed MOX facility will operate safely. Confidence was also expressed in the technical abilities of all parties involved with the proposed MOX facility.

Response: The Nuclear Regulatory Commission acknowledges the comments in support of the proposed action and the agencies and organizations that are involved in the project.

J.3.3 Purpose and Need

J.3.3.1 Comments: 37-003
53-010
72-003

Comment: Reliance on the United States-Russia Agreement for the purpose and need statement was questioned. This reliance has resulted in the dismissal of other alternatives. The statements made by the U.S. Department of Energy that Russia will only proceed with the agreement if the United States disposes of its excess plutonium through MOX fuel production are unsupported. The NRC's reliance on the DOE's statements, that MOX was the only practical alternative that Russia would accept, limited the NRC's detailed consideration of other alternatives. The commenters questioned the NRC's elimination of other alternatives, solely to avoid violating the United States-Russia Agreement. The status of the agreement should be addressed in the DEIS. It was felt that the NRC's hiding behind the United States-Russia Agreement was misleading because the United States does not follow international nuclear treaties. The U.S. government has pulled out of several international treaties. Therefore, stating that the United States does not want to interfere with the United States-Russia Agreement is erroneous.

Response: Section 1.3 of the EIS discusses the purpose and need for the proposed NRC licensing action (authorizing the construction and operation of a facility to make MOX fuel). This action is part of the larger surplus plutonium disposition program being implemented by the U.S. Department of Energy (DOE). As described in Section 1.1.1 of the EIS, the DOE program stems from decisions made by the United States and the Russian Federation to mutually reduce each nation's stockpiles of weapons-grade plutonium. In September 2000, the United States and the Russian Federation agreed to disposition 34 metric tons (37.5 tons) of surplus weapons-grade plutonium from each nation's stockpiles. In implementing its part of this agreement on behalf of the United States, the DOE in 2002 decided that for budgetary reasons it could no longer pursue its planned hybrid approach under which part of the 37.5 tons of surplus weapons-grade plutonium would have been immobilized. In addition, the DOE in its Amended Record of Decision (ROD) stated that a MOX-only approach best ensures the joint reduction of existing plutonium stockpiles and is the key to successfully completing the United States-Russia Agreement. Accordingly, the DOE canceled its plans to build and operate a plutonium immobilization plant. Instead, the proposed MOX facility – if it is built and operated – would convert the 34 metric tons (37.5 tons) of surplus weapons-grade plutonium into MOX fuel. This fuel would then be irradiated in nuclear reactors authorized to use such fuel, thereby making the plutonium component of the fuel inaccessible for reuse as nuclear weapons material. As stated in Section 1.3 of the EIS, the general purpose of and need for the proposed MOX facility is thus to help reduce the threat of nuclear weapons proliferation by ensuring that surplus weapons plutonium is converted to a proliferation resistant form.

The statement of purpose and need is used to differentiate alternatives that should be analyzed in detail from those that do not need to be analyzed in detail. While national policy does not generally preclude alternatives that can be considered in an EIS, an EIS need not consider alternatives that would change U.S. foreign policy. Therefore, the NRC concluded that the proposed action to build and operate a MOX facility and any reasonable alternatives to that proposed action should be consistent with the United States-Russia Agreement and the goal of both the United States and Russia disposing of surplus plutonium. The fact that the United States has, in some cases, withdrawn or not fulfilled unrelated agreements or treaties in the past is not germane.

Additional comments were received relative to the United States-Russia Agreement. These comments and their responses can be found in Section J.3.7, Scope - DOE Policy and J.3.11, Alternatives - Immobilization.

J.3.3.2 Comment: 96-022

Comment: Concern was expressed that a new plutonium pit disassembly and conversion facility (PDCF) would be constructed at the Savannah River Site.

Response: The PDCF is needed to remove the plutonium from weapons pits and convert it to a form that can enter the proposed MOX facility for conversion to reactor fuel.

J.3.4 NEPA Process

J.3.4.1	Comments:	5-002	32-001	46-002	96-009
		5-003	45-003	77-008	96-015
		7-003	45-002	96-004	96-015

Comment: The lack of influence of the general public opinion on the National Environmental Policy Act (NEPA) process and Nuclear Regulatory Commission (NRC) decision making was raised. It was stated that the NRC does not care about the more than 200,000 people living in Savannah and Chatham County or those Georgians and South Carolinians living downwind and downstream of the Savannah River Site (SRS). Individuals believed that everyone in Savannah could be opposed to the proposed MOX facility and this issue would not affect the NRC's decisions. Some comments indicated the decision was already made and the NRC was just going through the motions. It was stated that the MOX DEIS was a clear violation of NEPA. This raised the issue that the NRC licensing process was not a democratic process. Furthermore, the decision of whether to move forward with the proposed MOX facility would be decided by people who will not be living near the proposed facility. It was also felt that the people who could be affected by the proposed MOX facility should be notified and that additional outreach to disadvantaged or vulnerable communities should be done.

Response: The NRC has a well defined process for determining whether to grant a license for the proposed MOX facility. The NRC follows a process required by federal regulations and NEPA. For the proposed MOX facility, the NRC's decision making process included the preparation of an environmental impact statement (EIS) that seeks the opinions of affected stakeholders. In determining the scope of the environmental review, the NRC contacted affected communities, including disadvantaged and vulnerable communities, to determine significant issues prior to conducting any analysis (See Section 1.4 of the EIS). Additional meetings were held with stakeholders to inform them of the progress of the NRC's environmental review and to solicit comments on the DEIS after it was published. The NRC advertised the availability of the DEIS and mailed copies of the DEIS to approximately 600 people. The NRC will take into consideration the FEIS findings and safety analyses before any final decisions are made.

J.3.4.2	Comments:	61-006	96-010	96-024
		64-003	96-023	97-001

Comment: The timing of the environmental impact statement (EIS) in the overall licensing process was questioned. It was suggested that the Nuclear Regulatory Commission (NRC) should do another EIS because of the uncertainty about what the actual process, parameters and scope will be. It was also suggested that the NRC extend the comment period on this DEIS until the safety evaluation report (SER) for the operating license is complete. It was stated that the NRC might need to redo its analysis as future decisions unfold if the report is to be fully responsive to the proposed actions. In addition, there may be a potential segmentation problem with regard to the way the NRC has chosen to evaluate this particular action. Specifically, there was a concern about the adequacy of the

Response: The NRC considered the requests for extending the comment period and determined that 75 days was adequate to allow stakeholder review and comment (10 CFR 51.73). Although the radiological dose values changed as a result of errors identified by the NRC, the revised values did not change the conclusions and preliminary recommendation of the DEIS.

J.3.4.5	Comments:	5-003	23-001	61-002	75-001
		7-001	45-003	62-001	96-023
		13-002	47-003	62-003	96-024
		19-001	55-002	66-006	96-028

Comment: In accordance with the National Environmental Policy Act (NEPA) process, citizens must be informed of the proposed action and provided the opportunity to comment when the DEIS is published. The citizens in the area surrounding the Savannah River Site (SRS) felt the NRC did not sufficiently inform the local citizens about the public meetings. Some individuals believed the meetings were held only to tell the public what will be done next, and the citizens had no input in the process. There were general requests to hold additional meetings so citizens would not be rushed in reviewing the DEIS. There were also requests to hold meetings in Columbia and Charleston, SC. Several individuals requested additional meetings be held in North Augusta, which is in the area most highly affected by the proposed MOX facility. Likewise, commenters indicated additional meetings should be held in black communities, which also would likely be affected. It was recommended that the Nuclear Regulatory Commission (NRC) delay its decision until environmental justice communities' input could be considered in the decision making process.

Response: The NRC acknowledges the concerns expressed by the commenters. The NRC considers the distribution of the DEIS and the public meeting notification process to be adequate.

In accordance with NRC regulations, the NRC staff published a notice of availability for the DEIS in the Federal Register (68 Fed. Reg. 9728, February 28, 2003). In the notice, the NRC staff provided information on how to obtain a free copy of the DEIS, listed contact people, and listed information about the public meetings. From February 28, 2003, to May 2003, the NRC distributed over 750 copies of the DEIS to state and local government officials and to the general public. Due to the vast amount of material in the DEIS, the NRC extended the comment period to May 14, 2003, and notified the public of the extension in the Federal Register (68 Fed. Reg. 12720, March 17, 2003).

During the comment period, the NRC held three public meetings regarding the DEIS (March 25, 2003, Savannah, GA; March 26, 2003, North Augusta, SC; and March 27, 2003, Charlotte, NC) to receive oral public comments on the DEIS. The NRC sent out invitation letters to over 550 citizens informing them of the meetings. The NRC also advertised the meetings in the local papers and on the local government television channels in Savannah, North Augusta, and Charlotte. These meetings were held to give interested citizens an opportunity to ask questions and to offer comments. Based on the number of commenters, it was necessary to limit the length of each comment in order to provide as many people as

Part 70 allow applicants to propose definitions for these terms, which may be qualitative or quantitative. The applicant, DCS, has defined “unlikely” to mean events that are not expected to occur during the lifetime of the facility but may be considered credible. “Highly unlikely,” as defined by the applicant, means events originally classified as not unlikely or unlikely to which sufficient principal structures, systems and components are applied to further reduce their likelihood to an acceptable level. The applicant also defined “not credible” events as those natural phenomena or external man-made events with an extremely low initiating event frequency and process events that are not possible.

J.3.5 Licensing Process

J.3.5.1 Comments: 13-001 80-001 93-001
61-003 81-003 103-001
78-002 92-001

Comment: The use of a two part licensing process (construction and operation) for the proposed MOX facility was of concern to stakeholders. Several comments indicated that both construction and operation were not adequately addressed in the DEIS. The comments reflected that the MOX application was split into two parts (construction and operation), but the DEIS contained no review of the operations data. Separating these two parts of the licensing process was considered irresponsible. It was felt that the environmental impacts of operation must be considered before the DEIS process is complete. Stakeholders felt that the Nuclear Regulatory Commission (NRC) was going to sign off on the DEIS before operational plans were taken into consideration and environmental impacts of operation were analyzed.

Response: The ER submitted by DCS (as revised) contains sufficient information to analyze the potential environmental impacts of constructing and operating the proposed MOX facility. On the basis of this information, the EIS sets forth the NRC’s environmental analysis. The NRC’s NEPA regulations do not call for delaying the NRC’s environmental review until completion of its operational safety review. On the contrary, to meet its NEPA obligations, the NRC must begin its environmental review early enough to allow completion before any action is taken that would significantly affect the environment. With respect to the proposed MOX facility, the environmental effects would begin with construction, and are not confined to operation. Accordingly, the NRC has properly completed its environmental review at the pre-construction stage.

J.3.5.2 Comment: 29-003

Comment: Questions were raised about the financial responsibility of the MOX project. A question was raised about who would be responsible for the decontamination of the four Duke reactors in the event of a financial collapse. In addition it was asked, whether the Duke reactors provide enough spent fuel to make MOX fabrication economical if the demand for electricity decreases.

Response: The financial health of Duke Power has no bearing on whether DCS has demonstrated that it will be able to obtain funds sufficient to build, operate, and decontaminate the proposed MOX facility in accordance with Nuclear Regulatory Commission (NRC) regulations on the environmental impacts of the proposed action's costs or benefits. NRC regulations (10 CFR 50.75) require existing reactor licensees, such as Duke Power, to provide financial assurance for decommissioning power reactors. The amount is based on either a standard NRC formula provided in the regulation or a plant specific cost estimate performed by the licensee. The funding must then be set aside as prepayment or in an external sinking fund such as a trust or escrow account or by other guaranteed method. The existing reactor licensee must report to the NRC every two years on the status of the decommissioning fund (every year after decommissioning has begun) and the NRC reviews these reports. Additionally, there are limitations on the amount of the decommissioning funds which may be spent until the existing reactor licensee has submitted a post-shutdown plant specific decommissioning cost estimate.

Although the rate has varied, the demand for electricity in the U.S. has steadily increased. The NRC expects that the Duke reactors will provide a reliable demand for the MOX reactor fuel.

J.3.5.3 Comment: 76-001

Comment: The EIS addresses the question of cost versus benefits throughout the document. Because of the consideration of cost and benefits, it raises the question of whether the Nuclear Regulatory Commission (NRC) is not a promoter of nuclear energy. As such, it was further questioned whether the NRC could act impartially and would act in the public interest.

Response: The Energy Reorganization Act of 1974 established the NRC as an independent government agency whose mission is the protection of public health and safety and the environment from the commercial uses of nuclear materials. Prior to 1974, the Atomic Energy Commission, the predecessor agency to the NRC and the Department of Energy, was criticized for both regulating and promoting nuclear energy. Therefore, the NRC was established as an independent agency that reports to Congress rather than the Executive Branch.

J.3.5.4 Comment: 95-003

Comment: The Nuclear Regulatory Commission (NRC) should use its influence on other policy-makers to review what is being proposed and redirect the surplus plutonium disposition program in a way that addresses the legitimate concerns of those living downstream of the Savannah River Site (SRS).

Response: As discussed in Section 1.1.2 of the EIS, Congress gave the NRC licensing and related regulatory authority over the proposed MOX facility. As part of its mission to protect public health and safety and the environment, the NRC is preparing a safety review

and an environmental review of the proposed MOX facility, in accordance with NRC regulations, the National Environmental Policy Act, and the Atomic Energy Act.

As noted in the comment, the NRC does not have jurisdiction over the SRS. However, part of the EIS process includes consideration of alternatives and impacts that may be outside an agency's regulatory authority. As discussed in Section 1.2.2 of the EIS, the NRC has included the impacts of connected DOE facilities. Furthermore, the existing environmental conditions at the SRS have been presented in Chapter 3 of the EIS. Another part of the EIS process is issuing the EIS in draft form for public comment. This includes seeking comments from other federal and State agencies, such as the Department of Energy, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control. In addition, the NRC has proposed mitigation measures in Chapter 5 of the EIS to reduce potential impacts from the proposed action, including connected DOE facilities.

J.3.5.5 Comment: 116-005

Comment: The Nuclear Regulatory Commission (NRC) is licensing the proposed MOX facility and is not licensing the Waste Solidification Building (WSB) or the Pit Disassembly and Conversion Facility (PDCF). The proposed MOX facility will generate chemical and radioactive waste, which is then transferred to unlicensed facilities for disposal. Given the polluting history of the Savannah River Site (SRS), it was suggested the NRC get involved with the proper disposal of the wastes generated by MOX. Incineration, burial, and transport of chemical and radioactive wastes require the NRC to become involved through the EIS in a proper outcome. The NRC should reconsider the bounds of its EIS.

Response: As noted in the comment, the NRC does not have regulatory (licensing) authority over the Department of Energy's PDCF, WSB, or waste processing and disposal facilities. Section 1.2.2 of the EIS discusses connected actions that are considered in the EIS. These include impacts from the PDCF, WSB, and waste processing and disposal facilities. Impacts for various resource areas from the PDCF and WSB are discussed in Chapter 4 and Appendix H of the EIS. The impacts associated with waste management are discussed in Section 4.3.4. Existing contamination at the SRS is discussed in the affected environment portions of the EIS (Chapter 3). The impacts referenced by the commenter are discussed in the EIS. Under NEPA, the NRC is obligated to consider impacts of connected actions such as waste management. However, acting on the suggestion that the NRC get involved with the DOE's waste disposal efforts would be outside of the NRC's regulatory authority.

J.3.6 Scope – General

J.3.6.1 Comments: 5-004 32-002 56-005
19-008 45-004

Comment: The use of a 50-mile radius as a boundary to assess impacts was questioned. It was stated that a major accident could impact an area greater than 60 miles, and the Chernobyl accident was cited as an example. The DEIS does not address the environmental impacts on the Savannah area. It was suggested that the evaluation of environmental justice impacts should be expanded to include impacts to downstream communities regardless of their racial or income demographics.

Response: The geographic area, in which impacts are assessed, varies depending on the type of technical area being evaluated. For example, cultural resource impacts are evaluated only in the vicinity of the site, because constructing and operating the proposed MOX facility would not impact cultural resources at a great distance from the proposed MOX site. But, air quality impacts are evaluated both on local and regional scales, and the cost-benefit analysis evaluates impacts on national and regional scales. The geographic area used to assess human health impacts to the public was selected to be a 50-mile radius from the proposed MOX site. The estimated doses to the public would decrease with distance from the site, because accident impacts to the public result from airborne plumes and the concentration of the plume decreases significantly with distance. The 50-mile area was considered sufficient to reasonably bound the impacts from a postulated accident without diluting collective doses to the public. This 50-mile area was also used in assessing the environmental justice impacts.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, issued in 1994, directs executive branch agencies to address, as appropriate, any disproportionately high and adverse human health or environmental effects of their actions, programs, or policies on minority populations and low-income populations. Guidelines for performing environmental justice reviews are described in the Nuclear Regulatory Commission's NUREG-1748. The first step in the process is to determine if a site has a potential environmental justice concern based on the identification of low-income and minority populations that could be affected by the proposed action. The next step is to determine whether possible impacts would disproportionately impact these populations. Finally, if it is determined that there would be a potential impact, an assessment would be made as to whether the impact of any aspect of the construction or operations of the proposed facilities (including accidents) on low-income or minority populations would be both "high and adverse." (See Section 4.3.7.1 for a more detailed description.)

As discussed above, the 50-mile area was considered sufficient to reasonably bound the impacts to human health. Savannah, Georgia, is located just outside the 50-mile radius and is not expected to be significantly impacted by airborne release from the most severe accident evaluated. As discussed in Section 4.3.7.3, the EIS considered impacts to downstream communities, including impacts to surface water quality of the Savannah River.

concern to stakeholders. The NRC believes that presenting the impacts associated with the WSB separately will add to the understanding of the overall impacts related to managing wastes associated with the proposed action. The impacts of the WSB were provided by the applicant in Appendix G of its ER. The WSB is discussed in the EIS in terms of being a “support” facility to the proposed MOX facility and PDCF. Therefore, the scope of the EIS appropriately includes impacts from the PDCF and the WSB.

J.3.6.4 Comment: 77-007

Comment: It was suggested that either the Department of Energy or the Nuclear Regulatory Commission (NRC) should prepare an EIS on the waste management in the manufacture and use of MOX fuel.

Response: The impacts on waste management associated with making MOX fuel are discussed in Section 4.3.4 of the EIS. The EIS concludes that the waste management capabilities at the Savannah River Site (SRS) and within the DOE complex (e.g., the Waste Isolation Pilot Plant) are adequate to handle the estimated types and volumes of waste associated with the proposed action. As discussed in Section 4.4.3 of the EIS, the impacts associated with using MOX fuel in reactors are based on the Department of Energy’s Surplus Plutonium Disposition (SPD) EIS. Section 4.28.2.2 of the SPD EIS states that the volume of waste from reactors is not expected to increase as a result of reactors using MOX fuel. It further states that waste handling processes at reactors would also not be expected to change as a result of reactors using MOX fuel. The scope of the EIS is sufficient to address this comment.

J.3.6.5 Comment: 93-003

Comment: Concern was expressed that the DEIS will provide a substrate for future MOX fuel fabrication facilities that the Nuclear Regulatory Commission (NRC) might license. As such, it is important to note that the plutonium under consideration is from dismantled warheads that were once from reprocessed irradiated fuel. The current proposal is not representative of any other MOX fuel fabrication facility that might be licensed in the future under Part 70, where waste reprocessing would be an integral part of the proposal and need to be considered. In this case, the Pit Disassembly and Conversion radiation doses and other impacts must be considered a part of the current process.

Response: This EIS evaluates impacts of the proposed action (i.e., potential licensing of the proposed MOX facility at the Savannah River Site) and alternatives to the proposed action. The impacts of the proposed action are facility and site specific, and include, as the commenter suggested, impacts from the Pit Disassembly and Conversion facility and other impacts considered part of the current process. While some impacts such as MOX fuel transport and MOX fuel use in reactors are presented on a generic basis, this EIS is not considered to be broad enough in scope to be considered suitable to support any future consideration of a generic MOX fuel fabrication. Further, as noted by the commenter, there are significant isotopic differences in plutonium from surplus nuclear weapons and plutonium derived from reprocessing spent nuclear fuel that would require substantial

design changes for any mixed oxide fuel fabrication facility that would use plutonium derived from reprocessing.

J.3.6.6 Comment: 97-013

Comment: The DEIS appears to use averages. Frequencies and likelihoods do not appear to be incorporated. This DEIS pertains to a proposed facility that would be licensed under 10 CFR Part 70, which included consequence and likelihood bins (e.g., see the Construction Authorization Request and the safety evaluation report). The DEIS should explicitly consider consequences and likelihoods.

Response: In general, the EIS assumes that a potential consequence would occur (i.e., a probability of one). Conservative models and parameters are used in estimating the potential consequences. For example, meteorological data used in the air transport model would only be exceeded 5% of the time. In evaluating the consequences of potential accidents, the Nuclear Regulatory Commission assumed that accidents could be possible, even though the applicant has proposed controls to reduce the likelihood and severity of accidents. In other words, the impacts discussed in the EIS are based on radiation doses and chemical exposures, were an accident to occur. No estimates of accident probability or likelihood are used in the calculation of these doses and exposures. Therefore, no consideration of probability or likelihood is required to estimate the environmental impacts presented in the DEIS.

J.3.6.7 Comment: 98-009

Comment: The DEIS must address the full impacts of the proposed action including how it is likely contributing to the eventual production of nuclear weapons components at the Savannah River Site (SRS) and the use of the site for permanent nuclear waste burial. A full accounting of what and how much plutonium is coming from where and being used for what project when it arrives should be done and made available to the public.

Response: The scope of the proposed action is described in Section 1.2 of the EIS. The scope of the proposed action includes connected actions that are closely related to the proposed action (i.e., potential licensing of the proposed MOX facility). The connected actions include impacts from some Department of Energy activities at the SRS such as the proposed construction and operation of the Pit Disassembly and Conversion Facility and the Waste Solidification Building, and related infrastructure upgrades at the SRS. However, this EIS does not address DOE activities that are not connected to the proposed action such as consideration of facilities to produce nuclear weapons or waste disposal not directly related to the proposed action. The consideration of actions suggested by the comment are outside the scope of this EIS. Related issues are discussed in Comment J.3.7.6.

J.3.6.8 Comment: 86-007

Comment: Section 1.4.1, page 1-12 of the DEIS states “Because the scope of this DEIS is limited to the licensing action now under review by the NRC, which is specific to the proposed MOX facility, issues pertaining to decisions already made by the DOE are addressed by referencing the appropriate DOE analysis.” The statement is misleading. Although the Nuclear Regulatory Commission (NRC) indicated that they would rely on the appropriate Department of Energy (DOE) analyses, the NRC recalculated accident analyses described in the DOE Surplus Plutonium Disposition (SPD) EIS using extremely conservative models and assumptions resulting in significantly different impacts than in the DOE SPD EIS.

Response: As discussed in Section 1.2.2 of the EIS, two DOE facilities (Pit Disassembly and Conversion Facility and Waste Solidification Building) would support the proposed MOX facility and are considered to be connected actions. The impact assessments and information supporting the impact assessments from the DOE EISs were used in the estimation of impacts in the DEIS. In some cases, the impact values used are taken directly from the DOE EIS. In other cases, because the NRC used different codes, models and scenarios in estimating the human health impacts (such as referred to in the comment) the NRC used supporting data from the DOE EIS to estimate impacts from these facilities that was consistent with the methodology used to estimate the impacts from the proposed MOX facility.

J.3.6.9 Comments: 12-004 24-004 64-004 92-003
13-004 30-003 71-009 93-010

Comment: The use of a generic analysis was questioned, given the unique nature of the proposed Catawba and McGuire candidate reactors ice condenser type containment and the population surrounding these reactors. It was felt that the DEIS for the proposed MOX facility both could and should include an analysis of the use of MOX fuel at the Catawba and McGuire reactors. Concern was expressed that the MOX EIS may be the only opportunity for the public to comment on using MOX fuel in reactors, unless interveners force the Nuclear Regulatory Commission (NRC) to prepare an EIS when the NRC considers a specific license amendment to use MOX fuel in a reactor. In that light, it was stated that the DEIS fails to analyze weaknesses in Catawba and McGuire ice condenser type reactors. These reactors have thin containment which is more likely to rupture in case of a severe accident. Issues related to reactor aging and MOX fuel use should be evaluated, including the impact of large component replacement after using MOX fuel. Given the past drought conditions in the south, thermal impacts of using MOX fuel should be evaluated for these reactors, including impacts on Lake Wylie, the Catawba River, and Lake Norman. The DEIS should acknowledge that Catawba and McGuire have higher latent cancer fatalities from accidents compared with other reactor sites in the country. It was stated that the Charlotte, North Carolina area could become a nuclear wasteland for decades if a worst-case accident happened.

Response: As discussed in Section 4.4.3 of the EIS, the generic analysis is based on an assessment presented in the DOE's Surplus Plutonium Disposition (SPD EIS) (Section 4.28 and Appendix K.7 of that document). In the SPD EIS three reactor stations (Catawba, McGuire and North Anna) were evaluated. The reactor use impacts presented in the DEIS present an aggregate of the range of impacts. Therefore, specific attributes and limitations of these reactors were considered in determining the impacts of using MOX fuel. For example, the impacts included projection of population growth surrounding these reactors. The text in Section 4.4.3 has been revised to reflect the basis of the generic impact assessments. Impacts of thermal discharges to surface waters were not evaluated as part of the generic analysis. These impacts are considered to be reactor site-specific, and therefore, would be evaluated within the scope of the NRC consideration of site-specific requests to use MOX fuel. The NRC staff believes that the impacts presented in the DEIS are a reasonable estimate of the potential impacts of using MOX fuel in reactors. As discussed in EIS Section 4.4.3, the NRC will perform its own site-specific National Environmental Policy Act (NEPA) and safety review in evaluating whether any specific reactor could use MOX fuel. Therefore, the scope of the EIS is considered adequate to bound the impacts raised in the comments.

J.3.6.10 Comment: 77-003

Comment: The use of lead test assemblies (LTA) was not addressed in the DEIS. This would include impacts associated with transporting the lead test assemblies to the reactor and using the lead test assemblies in the reactor.

Response: The use of lead test assemblies was not specifically addressed in the DEIS. However, the Department of Energy assessed the impact of the LTA program in its Surplus Plutonium Disposition EIS. The LTA program is considered to be independent of the proposed action. Text as been added to Section 4.4.3 of the FEIS to clarify this point.

J.3.7 Scope – DOE Policy

J.3.7.1 Comments: 19-010 56-006
47-001 82-006

Comment: The surplus plutonium program in the United States is connected through agreements to a similar program in the Russian Federation. The Russian MOX program is not moving as quickly as the U.S. program. The question of whether the Russian Federation was in violation of the United States-Russia Agreement was raised. It was felt that the U.S. MOX program should be delayed until the Russian program was fully funded and proceeding on track. Given the changes the Department of Energy (DOE) made in the surplus plutonium disposition program and the uncertainties with the future of this program, the timing of the Nuclear Regulatory Commission's (NRC's) action was questioned. It was felt that the DOE should clearly state what is really going to be done with the surplus plutonium and other facilities supporting this program before the NRC considers authorizing Duke Cogema Stone & Webster (DCS) to construct the proposed MOX facility. It was also

The EIS includes the impacts of decommissioning the surplus plutonium disposition facilities. As discussed in Section 4.3.6.1, the contract between DCS and the DOE calls for DCS to deactivate the proposed MOX facility and place it in safe-shutdown once operations have ended. The ultimate fate of the surplus disposition facilities would be the responsibility of the DOE. NRC regulations require the facilities it licenses to be decommissioned in a timely manner. DCS would be required to get an exemption or other waiver from the NRC to transfer the facility to the DOE prior to decommissioning. Since this has not been requested, the EIS includes impacts from decommissioning the facility.

J.3.7.11 Comment: 87-001

Comment: The Waste Solidification Building (WSB) is part of the Pit Disassembly and Conversion Facility (PDCF), which will be constructed after the proposed MOX facility is operational. The Department of Energy (DOE) has changed the design of the proposed MOX facility, which was originally to include equipment to solidify radioactive liquid waste, but now, according to the DOE's Supplement Analysis and Amended Record of Decision of April 2003, this equipment is to be located in the WSB. The DOE's current schedule, laid out in its February 15, 2002, Report to Congress, calls for construction of a MOX facility 2004-2007, once licensed by the Nuclear Regulatory Commission (NRC), with operations beginning in 2007. The PDCF will be constructed from 2006-2009, with startup in 2009. Furthermore, it is unclear which DOE plutonium stocks would be processed at the proposed MOX facility until the PDCF is completed. Clearly the DOE cannot use plutonium metal until the PDCF is completed. The remaining plutonium stocks have a variety of impurities which will require aqueous polishing which will create waste streams. The DEIS does not address the issue of what will happen to these waste streams in the interim. The DEIS should address the scheduling issues with regards to the treatment of radioactive waste.

Response: As discussed in Section 1.2.2 of the EIS, the impacts of the proposed action evaluated in the EIS are based on the assumption that approximately 25.6 metric tons (28.2 tons) of the plutonium will be processed as plutonium dioxide from the PDCF. The remaining 8.4 metric tons (9.4 tons) would be alternate feedstock. The NRC has evaluated the impacts based on the applicant's request of 34 metric tons (3.5 tons). Should the quantity of pit and alternative feedstock plutonium change in the future, the NRC would evaluate these possible changes on the environmental impacts and determine if additional analyses were required. The current plan is that the proposed MOX facility and WSB would be completed about the same time. Therefore, waste facilities would be operational prior to processing any alternative feedstock. It is anticipated that the proposed MOX facility, if its operation is authorized by the NRC, would begin processing alternative feedstock. The PDCF does not need to be operational to process alternate feedstock. Therefore, the scope of the EIS is considered adequate to address the issues raised in the comment.

J.3.8 Scope – Safety Evaluation Report

J.3.8.1 Comments: 10-020 62-003 97-003 105-005
18-001 96-035 97-005

Comment: Concern was expressed that the distinction between the Safety Evaluation Report (SER) SER and the Environmental Impact Statement (EIS) was confusing and needed to be simplified. The DEIS does not discuss if the Nuclear Regulatory Commission (NRC) finds the technical designs proposed by DCS to be adequate. It was suggested that the DEIS should contain a detailed evaluation of the proposed facilities against guidance for radiological facilities, including design criteria, technical specifications, and American National Standards Institute (ANSI) standards. It was stated that compliance with NRC risk goals and metrics should be provided in the DEIS. Furthermore, the DEIS lacks sufficient information on design bases to judge the operability of the facilities, general safety, and validity of projected off-site effects of accidents. Given the large number of process steps and complexity to make MOX fuel, it was questioned if this could be done safely. It was also stated that there must be no acceptance of any number of potential deaths. The DEIS focuses on programmatic and administrative controls for many hazards including potential accidents that could produce serious injuries and/or fatalities with relatively high likelihoods. The DEIS does not emphasize actual mitigation and/or prevention of the hazardous phenomena.

Concern was also expressed about having the opportunity to comment on the SER. It was suggested that comments or questions raised during the DEIS comment period pertaining to the SER should be transferred to contacts within the NRC working on the SER. It was further stated that the person who made the comment be included in a pool of participants interested in the SER. In addition, the SER needed to be thoroughly studied by the NRC before making any decisions.

Response: In evaluating applications, the NRC conducts an environmental review. An environmental review is documented in the EIS, and a safety review is documented in the safety evaluation report (SER). A discussion of the NRC's decision making process regarding the potential licensing of the proposed MOX facility is provided in Section 1.1.2 of the EIS. Text has been added in the FEIS to better discuss the relationship between the content of the SER and the EIS. The clarifying text describes the different purposes of an SER and an EIS. Generally, the purpose of an SER is to evaluate the safety of an applicant's proposed action. The purpose of an EIS is to evaluate environmental impacts of a proposed action and alternatives.

Where safety measures proposed by an applicant would have no direct environmental impact, the staff's evaluation of such measures is set forth only in the SER. Similarly, environmental issues carrying no safety significance (e.g., displacement or damage of archeological resources) are only discussed in the EIS. However, if there is a nexus between safety and potential environmental impacts, such as the human health and environmental consequences of potential accidents, these issues are described in both the SER and the EIS.

The SER for the construction of the proposed MOX facility evaluates safety systems and controls against the safety basis in NRC regulations. Many of the comments were general in nature and pertained to the safety discussions in the SER. The NRC staff safety evaluations are not repeated in the EIS. Some comments pertained to specific topics discussed in the SER that are beyond the scope of the EIS (see below). As requested, comments on the DEIS that pertain to the SER rather than the EIS have been forwarded to appropriate NRC staff for consideration in preparing the SER. As discussed in Section 1.1.2 of the EIS, the NRC takes into consideration findings in both the SER and EIS prior to making any licensing decisions.

J.3.8.2 Comments: 4-004 74-001 96-012 116-011
 43-003 82-003 96-025
 52-002 88-002 96-036

Comment: Concern was expressed about the adequacy of the emergency plans. Commenters indicated that an emergency plan for evacuating the Savannah and Chatham area must be evaluated. Having a tested and certified evacuation plan, to include areas downwind and downstream of the proposed facility, must be a prerequisite to going forward with the licensing process. If there is no evacuation plan, then the Nuclear Regulatory Commission (NRC) should deny the license. When the emergency plan is put into effect, it was questioned whether the surrounding areas near the Savannah River would receive the emergency plan after it is evaluated. The at-risk population should be educated about the emergency plan, and this should include drills and exercises. Another area of concern was the absence of an off-site emergency plan by DCS for any accident scenario. Concerns were expressed that NRC had stated that general emergency preparedness of communities is outside the scope of this EIS.

Response: The concerns expressed in the comments address safety issues that are outside the scope of the EIS. The baseline design criteria for emergency capability are stated in 10 CFR 70.64(a)(6). The design of the proposed MOX facility must provide for emergency capability to maintain control of (1) licensed material and hazardous chemicals produced from licensed material; (2) evacuation of on-site personnel; and (3) on-site emergency facilities and services that facilitate the use of available off-site services. In Chapter 14 of the applicant's Construction Authorization Request, DCS committed to providing an evaluation demonstrating that an off-site emergency plan is not required. Such an evaluation will be part of the DCS application for a license to possess and use special nuclear material, which has not yet been submitted. The NRC found this approach acceptable. The NRC, as part of its review of any such license application, would evaluate whether an off-site emergency plan is required. DCS has further committed to establish a protocol with the DOE to integrate its emergency plans with the existing Savannah River Site (SRS) emergency preparedness program. This protocol would be reviewed by the NRC as part of its evaluation of any later DCS application for a license to possess and use special nuclear material. The commitment by DCS to integrate its emergency plans with the existing SRS emergency preparedness program has been identified as a mitigation measure to mitigate potential impacts of a chemical accident. Mitigation of chemical impacts is further discussed in Section 5.2.8 of the EIS.

J.3.8.3 Comments: 4-002 44-012 73-003
 10-020 56-003 105-003
 19-009 65-004

Comment: Concerns were raised about the safety and environmental record of entities associated with the MOX project. Specifically, the involvement of COGEMA in the consortium of DCS caused significant concern. It was stated that COGEMA is an irresponsible company and should not be involved in the project because of sites like La Hague that have had poor environmental and safety records. It was stated that it may not be possible to get adequate information about COGEMA because France is far less open than the United States about its nuclear operations. Furthermore, it will be difficult to know if DCS will do it right, since it did not exist before the proposed plutonium fuel project.

Concern was expressed that our government is not concerned with the previous track record of COGEMA, Stone & Webster, and Duke Energy in handling commercial plutonium and nuclear waste. It was stated that evaluating issues associated with safety records in the EIS is permitted under the National Environmental Policy Act (NEPA). It was felt the DEIS should include background discussions on the entities composing DCS. Furthermore, the DEIS should examine the entities financial stability and environmental and safety records.

Response: These comments raise issues which are beyond the scope of the EIS. An applicant is required to demonstrate its qualifications in a license application. Nuclear Regulatory Commission (NRC) staff will document its evaluation of the applicant's qualifications in a safety evaluation report (SER). Related safety issues regarding the applicant's qualifications are discussed in Chapter 4 and 15 of the draft SER issued in April 2003. NEPA and implementing regulations by the NRC (10 CFR Part 51) and the Council on Environmental Quality (40 CFR Part 1500) do not require consideration of an applicant's qualifications in an EIS.

J.3.8.4 Comments: 67-003 96-021
 93-002 116-010
 93-015

Comment: Concerns were raised regarding the safeguarding of MOX material to prevent theft or loss during its processing, use, and storage. The issue of safeguarding MOX material was not addressed in the DEIS. Likewise, comments indicated concerns about tracking the inventory of plutonium and any other radioactive materials involved in the process. The DEIS did not reference problems in materials accounting at other U.S. facilities such as Rocky Flats. The problems at Rocky Flats led to spontaneous plutonium combustion. These safeguard issues are not addressed in the DEIS; and therefore, the DEIS does not fully document all the environmental impacts of the proposed MOX facility. An additional concern involved who would be responsible for plutonium security at the Savannah River Site.

Response: These comments raise issues which are beyond the scope of the EIS. The issues referenced above would be addressed in an SER, if DCS later files an application for a license to possess and use special nuclear material at the proposed MOX facility.

J.3.8.5 Comments: 18-001
116-012

Comment: The design bases and the analysis of criticality for the construction and operation of the proposed MOX facility were not addressed in the DEIS. In terms of accidents, only “generic accidents” were considered. Furthermore, “generic” was not described. Pertinent descriptions of the “generic” accident should include the bounds and bases for the assumed number of total fissions, peak pulse, and duration of the incident. A discussion of the observed differences between solution and solid incidents should be provided in the DEIS. It should be shown that the design provides criticality controls against all foreseen accidents, but also will mitigate consequences for the types of incidents that have occurred. Concern was expressed regarding a criticality event in pipes, especially between facilities. It was questioned whether the Nuclear Regulatory Commission (NRC) had complete jurisdiction to review these scenarios.

Response: These comments raise issues which are generally beyond the scope of the EIS. Nuclear criticality safety design issues, including the relevant bases, criticality analysis, and differences between solution and solid incidents, are discussed in Chapter 6 of the draft SER (safety evaluation report) issued in April 2003. The potential impacts of a criticality accident are discussed in Section 4.3.5 and Appendix E of the EIS. The amount of special nuclear material considered in the hypothetical accident is provided in Table E.12 of the EIS. NRC regulations require that criticality events be made highly unlikely. As discussed in Section 1.1.2 of the EIS, the NRC will prepare two safety evaluation reports. The SER for construction evaluates the safety systems and controls. The detailed review of the criticality safety program, which will include evaluating criticality in pipes, will be performed if and when DCS submits an application for a license to possess and use special nuclear material at the proposed MOX facility. Prior to authorizing construction or issuing an operating license, NRC staff will determine if the criticality safety program meets the NRC regulations.

J.3.8.6 Comments: 100-001 111-001
105-003 113-001

Comment: The DEIS should include a containment chapter. This chapter would include a discussion of the need for preventing the release of plutonium under all conceivable conditions and the need for measures that maintain plutonium management under all possible conditions. Given the hazardous nature of plutonium, precautions should be specified to prevent inadvertent releases of plutonium. Inadvertent releases have occurred in the past at the Kerr McGee Cimarron, Oklahoma site; the Nuclear Fuel Services West Valley, New York site; the Midwest Fuel Recovery near Morris, Illinois; and at the LaHague and Sellafield sites in Europe.

Response: These comments raise issues which are generally beyond the scope of the EIS. The applicant has proposed features in the MOX facility to both maintain confinement of radioactive material and minimize contamination of the facility. These features are designed with consideration of past experiences with handling plutonium. Some of these features are reusable storage cans to transfer material between process areas, gloveboxes, welded tank and piping in certain process areas, process cells with robust access controls, and multiple ventilation confinement zones throughout the facility. The staff's evaluation of these features is described in Chapter 11 of the draft SER issued in April 2003. The impacts of a loss of confinement accident are discussed in Section 4.3.5 and Appendix E of the EIS.

J.3.8.7 Comment: 116-014

Comment: DCS plans to use both preventive and mitigative measures in accident evaluations. The EIS should have considered a more conservative approach that would allow for the accident and mitigate the consequences while simultaneously designing to prevent the accident.

Response: Nuclear Regulatory Commission (NRC) safety regulations require that the risk of high and intermediate consequence events be limited. To meet these performance requirements, applicants may either prevent such accidents or mitigate the consequences of the accidents. Even though the probability of the accident occurring is unlikely or highly unlikely, for the purposes of the EIS, it is assumed that the accidents will happen, and the estimated consequences of the accidents are presented without taking credit for preventive measures. Mitigation measures, including mitigation features for accidents, are presented in Chapter 5 of the EIS. The principal structures, systems, and components (PSSCs), including PSSCs to prevent accidents and mitigate consequences for the proposed MOX facility, are evaluated in the draft SER issued in April 2003.

J.3.8.8 Comment: 116-020

Comment: It was questioned whether both off-site and on-site radiation monitors are planned. Details on the types and capability of the monitors to measure the various types of radiation (e.g., alpha, beta, gamma, and neutron) and the calibration frequency of the monitors were requested.

Response: These comments raise issues which are beyond the scope of the EIS. As discussed in Section 1.1.2 of the EIS, two safety evaluation reports will be issued by the Nuclear Regulatory Commission (NRC) prior to making decisions on whether to authorize construction and operation of the proposed MOX facility. Effluent and environmental monitoring are discussed in Chapter 10 of the draft SER for construction issued in April 2003. Radiation monitoring was not identified by DCS as a principle safety system component; and therefore, details requested in the comment have not been developed. Effluent and environmental monitoring are required by NRC regulation (10 CFR Part 20), and the details and adequacy of such monitoring systems and programs would be

evaluated if and when the NRC receives a DCS application for a license to possess and use special nuclear material.

J.3.8.9 Comments: 53-011
99-002

Comment: Concerns were expressed regarding the foreign ownership, control, and influence in the MOX project. It was stated that this is a French project that primarily benefits the French government. It was questioned whether a French company should be involved with handling plutonium.

Response: These comments raise issues which are beyond the scope of the EIS. Related safety issues regarding foreign influence and control are discussed in Chapter 1 of the draft SER issued in April 2003.

J.3.9 Scope – Terrorism

J.3.9.1 Comments: 5-005 24-010 56-001 71-010 88-001 112-004
10-001 30-002 58-001 71-012 91-006 114-009
13-007 44-001 65-002 77-006 93-005 114-013
19-002 45-005 66-008 82-001 96-020 116-002
24-002 52-001 68-002 85-004 103-004

Comment: The treatment of terrorism or lack thereof in the DEIS was a significant concern with many commenters. There was a concern with the Commission decision addressing whether terrorism must be considered in an Environmental Impact Statement. It was stated in the Commission decision (CLI-02-24, December 2002), that the Nuclear Regulatory Commission (NRC) is not obligated to consider risks associated with terrorism in any environmental impact statement. It was felt that this ruling sets a dangerous precedent and that the NRC is ignoring the imminent danger of terrorism.

Terrorism was not examined in the broad sense. It was stated that terrorist activities had not been evaluated with regard to accident scenarios, latent cancer fatalities, and costs in the DEIS. The comments stressed that the threat of terrorism cannot be ignored. Citizens felt the DEIS did not address a terrorist attack on the proposed MOX facility to the extent that it should have considered increased risk of terrorism in the world today. Citizens also felt that the DEIS did not address environmental risk from sabotage or malevolent attacks. It was stated that not addressing terrorism was unacceptable. A question was raised about how the terrorism issue was going to be addressed. It was stated that the issue of terrorism is supposedly going to be addressed in agency reviews.

The DEIS fails to acquaint the public with dangers associated with the possible impacts of terrorist events. It was stated that recent simulations of terrorist attacks strongly suggest that conventional methods for defending nuclear facilities are inadequate, and therefore it is reasonable to conclude that risk assessment strategies are woefully insufficient as a basis

for making decisions such as those inherent to the proposed MOX facility. It was felt that the public needs to be given information that will allow them to help themselves in case of a terrorist event, because there is danger in ignorance. Concern was expressed in Charlotte that with its large population and with it being a financial center, it may be even more of a target, if the Duke reactors used MOX fuel. A question was also posed about who will protect us if the NRC doesn't take into consideration all the possible risks.

Response: These comments raise issues which are beyond the scope of the EIS. But, as stated in CLI-02-24, although the NRC has declined to consider terrorism in the context of NEPA, the NRC is devoting substantial time and attention to terrorism-related matters. For example, as part of fulfilling its mission to protect public health and safety and common defense and security pursuant to the Atomic Energy Act, the NRC staff is conducting vulnerability assessments of commercial uses of radioactive material. The NRC has assessed potential vulnerabilities of radioactive dispersal devices, dirty bombs, and other diversion type activities. The NRC has issued interim compensatory measures and a number of other orders imposing enhanced security requirements on its licensees. Also, the NRC has acted to increase security awareness in its applicants.

J.3.9.2	Comments:	2-001	19-004	41-001	58-002	71-012	114-011
		4-003	19-005	47-002	65-001	91-006	
		10-001	24-010	56-001	68-002	93-019	
		15-002	39-002	56-002	71-003	114-009	

Comment: The proposed MOX facility would be the central point for storing uranium and plutonium. Concern was expressed that having 100 percent of the plutonium in the U.S. in one location, rather than spreading out the plutonium at numerous locations is a prime situation for a terrorist attack. There was concern expressed about shipping of the plutonium and uranium to the Savannah River Site (SRS) and the possibility of a terrorist attack. It was felt that the risk of terrorism would be increased during the shipment process. A question was raised regarding the logic of the Nuclear Regulatory Commission (NRC) stating in the DEIS that terrorism is not reasonably foreseeable and therefore would not be analyzed. The comments indicated that the transportation, storage, and processing of 34 metric tons (37.5 tons) of plutonium makes the plutonium a target of terrorism. The logic of shipping plutonium in the western part of the United States to the southeastern part of the United States was also questioned. Concern was expressed as to whether there would be protection during the transport of the plutonium. It was felt that the public outcry in the Northeast, Southwest, Northwest, and West has managed to prevent a license being issued for plutonium storage in those areas. Concern was also expressed about shipping the MOX fuel to commercial reactors in the Southeast which would be an open invitation for terrorism.

Response: These comments raise issues which are beyond the scope of the EIS. As discussed in Section 1.2.2 of the EIS, surplus weapons plutonium is currently stored at seven Department of Energy (DOE) sites. It should be recognized that the DEIS discusses DOE plutonium that has been declared as surplus for national defense and does not address other plutonium stockpiles within the DOE complex. In its amended Record of

Decision, the DOE stated 6.6 metric tons (7.3 tons) of surplus plutonium would be shipped from the Rocky Flats site to the SRS.

The transport of the surplus plutonium and fresh, unirradiated MOX fuel would be conducted by the DOE, and the DOE is responsible for ensuring its protection. This type of transport has been used to ship nuclear weapons, nuclear components, and special nuclear material for close to 50 years. This type of transport is discussed in Section 4.4.1 and Appendix C of the EIS.

J.3.10 Alternatives – General

J.3.10.1 Comments: 5-009 72-002 73-002
45-009 72-015 105-009

Comment: The no-action alternative was supported over the preliminary recommendation of the proposed action. The no-action alternative would save a great deal of money, not result in transporting plutonium at this time of war, and get us back on the right track on how to deal with dismantling weapons of mass destruction here in the United States. It was suggested that Congressman Max Burns, and Congressman James Clyburn should intervene and stop this project from proceeding forward. The \$309 million in the 2004 budget appropriation for the plutonium disposition program could be much better spent in some other area.

Response: Section 1.3 of the EIS discusses the need for the proposed action, particularly as part of a larger strategy for plutonium disposition, under international agreements. The strategy is intended to protect against proliferation of materials capable of making weapons of mass destruction. The no-action alternative would not meet the purpose and need of this project. The NRC staff's NEPA recommendation regarding the proposed action is discussed in Section 2.5.

J.3.10.2 Comments: 2-003
87-004

Comment: Off-specification MOX and immobilization alternatives should be considered in the DEIS. It was suggested that the off-specification MOX alternative could be expanded to include using other materials as a radiation barrier other than spent nuclear fuel. Most reactors do not have facilities to separate fuel pins from assemblies, which would be required by countries that do not have large quantities of high-level waste waiting to be vitrified. Instead of using spent fuel, one could adopt a variant of the can-in-canister approach planned for the immobilization facility. One could emplace the pellets of off-spec MOX into high-level waste glass, for instance.

Response: In Section 2.3.4 of the EIS, the Nuclear Regulatory Commission (NRC) considers the off-specification alternative and concludes that the direct radiation hazard to

workers and the public in implementing this alternative would be greater than the hazards of the proposed action. For example, the activities associated with the off-specification fuel alternative (fuel fabrication, MOX fuel transportation, and handling off-specification rods at the reactor site and at a geologic repository or Independent Spent Fuel Storage Installation) would result in greater direct radiation hazards. Also, the benefit of producing electricity from MOX fuel would not occur with the production of off-specification fuel. Placing off-specification fuel in waste glass would result in an additional processing step compared to production of MOX fuel. Worker risks from handling radioactive materials would be increased, as would costs of vitrifying off-specification fuel.

In Section 2.3.3 of the EIS, the NRC sets forth two reasons for not considering immobilization of plutonium a reasonable alternative to the proposed action (building and operating the proposed MOX facility). First, immobilization would not satisfy the purpose and need of the proposed action, because Russia does not consider immobilization alone to be an acceptable approach for achieving joint disposition of excess plutonium. The United States-Russia Agreement (White House 2000) discusses several approaches including immobilization. However, the Department of Energy (DOE) indicated that Russia would abandon its plutonium disposition efforts if the DOE selected an immobilization-only approach. Because of budget constraints, the DOE only had the ability to select one method for disposal of surplus plutonium. The DOE selected the MOX-only approach based on its judgment that it was the key to successfully completing the United States-Russia Agreement.

The second reason for no longer considering immobilization to be a reasonable alternative relates to the conduct of U.S. foreign policy. In the NRC's view, an alternative that would block the implementation of a foreign policy agreement between the U.S. and another country involves matters outside the scope of the National Environmental Policy Act.

J.3.10.3 Comments: 72-001 74-002
72-005 93-007

Comment: The Nuclear Regulatory Commission (NRC) could further point out to the Department of Energy (DOE) that it could facilitate the isotopic degradation with no reactor use and also reduce a proliferation threat by acquiring reactor grade plutonium from other countries and mixing U.S. and Russian surplus plutonium with these stocks. At that point it would be possible to immobilize or make off-spec MOX with this plutonium. Irradiated fuel could be used as the radiation barrier for this waste form.

Response: Text has been added in Section 2.3.6 of the FEIS to discuss the alternative suggested in the comment.

J.3.10.4 Comment: 19-003

Comment: Under the National Environmental Policy Act (NEPA) a range of other options including no action should be presented. This DEIS offers only the preferred option versus no option. The same should be true for the choice of the F-Area.

Response: The commenter used the term “options” presumably referring to the number of alternatives that are required by NEPA. The Nuclear Regulatory Commission (NRC) and Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA do not specify the number of alternatives that must be addressed in an EIS. The NRC chose to evaluate, in detail, the no action alternative and the proposed action. Section 2.3 of the EIS discusses a number of alternatives that were considered but were not evaluated in detail for the reasons discussed in the individual subsections. DCS conducted a siting study for the proposed MOX facility at the Savannah River Site (SRS) and reported its methodology and basis for choosing F-Area for a MOX fuel fabrication facility in Section 5.7.2.3 of the Environmental Report. The NRC evaluated the DCS Siting Study and concluded that F-Area is the most suitable location on the SRS for the proposed MOX facility.

J.3.10.5 Comments: 82-005
84-003
88-004

Comment: Cheaper and safer methods of achieving the same ends have not been thoroughly explored. The DEIS should consider other alternatives that would less negatively impact our environment.

Response: The Nuclear Regulatory Commission (NRC) considered other alternatives for disposing of surplus weapons grade plutonium that may have been more cost beneficial but they did not qualify as reasonable alternatives under the National Environmental Policy Act (NEPA). Immobilization was considered but was not evaluated in detail for the reasons discussed in EIS Section 2.3.3. The NRC also evaluated the no action alternative of leaving the plutonium at existing Department of Energy installations.

J.3.10.6 Comment: 116-006

Comment: The Nuclear Regulatory Commission (NRC) should alternatively consider a self-sufficient MOX facility with a Waste Solidification Building (WSB) and Pit Disassembly and Conversion Facility (PDCF) totally separate and independent of the remainder of the Savannah River Site (SRS). The necessary design changes should be included and reviewed at this time with a revised EIS.

Response: The NRC has no legal basis to authorize the building and operation of an independent WSB and PDCF. Moreover, such facilities would require separate support services that would substantially increase the impacts (both environmental and monetary) associated with the alternative without clear benefit over the proposed action. Therefore, the suggested alternative is not considered to be a reasonable one under NEPA.

J.3.10.7 Comments: 14-002
63-002

Comment: The safety and environmental risks associated with the no action alternative have been significantly understated. The no-action alternative assumes that the Department of Energy's (DOE's) surplus plutonium would remain in storage at seven DOE sites. The DEIS does not state the period of storage, and it appears that impacts are near-term and based on maintaining the status quo. We believe current methods of storage are only valid for a limited and finite time frame; storage without subsequent actions is not realistic for time frames of 100 years plus. At some time in the future, actions will be required to either repackage or disposition stored materials. The no-action alternative should assess the incremental added risk resulting from (1) actions to periodically process and repackage materials in long-term storage and (2) actions to eventually remove the materials from storage and preparation for disposition.

Response: The analysis of the no-action alternative impacts in the DEIS was based on all ongoing activities at each of the storage sites (and thus, the impacts are likely overestimated rather than underestimated for current storage activities). The impacts associated with possible future repackaging of some containers to maintain their integrity and with preparation of materials for disposition have not been included, since the extent of these hypothetical future activities cannot be known at this time. However, these activities would be conducted by radiation workers, with doses monitored to remain below DOE administrative limits. (For example, rotation of workers could be employed to minimize annual doses). All current storage locations are in secure areas without public access. By maintaining and monitoring the inventory, any exposures of the general public would be avoided. Therefore, it is not necessary to quantify the risk from repackaging and material preparation for the no-action alternative.

J.3.10.8 Comments: 10-016 97-017 115-002
73-005 97-018 116-013

Comment: It was recommended that both a sand filter and high-efficiency particulate air (HEPA) filters be used to protect workers at the Savannah River Site (SRS). The validity of the statement in the DEIS that the use of sand filters would not clearly result in lower net environmental impacts as compared to the use of HEPA filters was questioned considering that HEPA filters require administrative controls to maintain their efficiency. The brief discussions in the DEIS regarding the use of sand and HEPA filters imply better performance from sand filters, particularly during accidents. It is recommended that approaches more consistent with Nuclear Regulatory Commission (NRC) and nuclear industry practices in these areas, with reasonable mitigation, prevention and/or conservatism, be endorsed by the DEIS. The DEIS should include references and supporting information to support the conclusions regarding HEPA filters. Some individuals felt that HEPA filters are an unreliable means of controlling radionuclide emissions. Specifically, alpha emitters like plutonium can creep through multiple HEPA filters in sequence. The HEPA filter efficiency for plutonium is not known because of alpha migration, particle re-entrainment, and alpha recoil. A sand filter, unlike HEPA filters, is not

subject to deterioration from exposure to chemical emissions. The DEIS should include a discussion of measures the applicant plans to use to protect HEPA filters from chemical degradation.

Response: Consistent with the NRC's mission of protecting the public health and safety, the NRC regulations require that workers at the SRS and other members of the public be protected from routine facility emissions. The applicant has proposed using HEPA filters to reduce radionuclide emissions to acceptable levels. The NRC, in the draft SER issued in April 2003, has reviewed the use of HEPA filters and concluded that the proposed system provides adequate assurance of safety to members of the public, including SRS workers. Therefore, using both filtration systems is not required to achieve adequate protection of the public.

The conclusions relative to the technology option to install a sand filter are presented in Section 4.3.8 of the EIS. This section discusses administrative controls that are required to maintain HEPA filter efficiency. The assumption is that the HEPA filters would be maintained, similar to the assumption that a sand filter would be designed and constructed properly. Reliance on commitments to maintain safety is considered sufficient for estimating the environmental impacts from alternatives. Information used to support the safety basis of these commitments is discussed in Chapter 11 of the draft SER and is not repeated in the EIS. Text has been added to Section 4.3.8 of the FEIS to note the differences in sand and HEPA filter degradation and response to chemicals. The EIS states that by selecting sand filters, environmental impacts could be reduced in the specific areas of human health risk to the facility worker and accident mitigation. However, the sand filter option would not clearly result in lower net overall environmental impacts than the use of HEPA filters. Therefore, using a sand filter is not a clearly superior option.

J.3.10.9 Comment: 86-016

Comment: Section 2.2.5, page 2-18, line 29 of the DEIS states "Large fans or blowers are used to circulate the air through the sand filter media." The sentence is misleading and implies a re-circulating system rather than the "once through" system that is used. The blowers are used to draw air through the sand filter media.

Response: The text in Section 2.2.5 of the FEIS has been revised per the comment.

J.3.10.10 Comment: 86-017

Comment: Section 2.2.5, page 2-19 of the DEIS states "The facility is designed into numerous fire zones, in part to limit the exposure of individual banks of HEPA filters to failure." This sentence should read: "The facility is divided into numerous fire zones, to limit the amount of combustibles involved in a single fire which reduces the amount of soot reaching individual banks of HEPA filters and assures that the HEPA filters will not fail due to excessive plugging."

Response: The text in Section 2.2.5 of the FEIS has been revised per the comment.

J.3.11 Alternatives – Immobilization

J.3.11.1 Comments: 69-002
108-003

Comment: The immobilization of surplus weapons plutonium as a means of disposition was supported. It was stated that immobilization was the best option, rather than making MOX fuel.

Response: As stated in Section 1.1 of the EIS, the Department of Energy (DOE) is responsible for the surplus plutonium disposition program in the United States. As such, it is the DOE's responsibility to determine how surplus plutonium is dispositioned. The DOE has prepared two environmental impact statements for the surplus plutonium disposition program that evaluated a number of alternatives at a number of different locations within the DOE complex. The environmental impacts associated with immobilizing surplus plutonium have been previously considered by the DOE. The DOE decided in its April 2002 amended record of decision to pursue a MOX-only approach and to cancel plans to immobilize surplus plutonium. For more information on the DOE's decision to pursue a MOX-only approach, see Section 2.3.3 of the EIS and Comment J.3.7.2.

J.3.11.2 Comments: 4-001 37-002 64-002 81-002 96-006 112-002
10-023 37-004 68-001 87-003 96-027 114-008
13-003 40-001 71-013 87-005 103-002
15-001 58-003 78-001 91-001 105-008
24-007 61-007 80-003 92-002 105-010

Comment: Failure to consider the immobilization alternative in detail, in the DEIS, was questioned. It was stated the Department of Energy's (DOE's) decision to cancel immobilization should not limit the Nuclear Regulatory Commission's (NRC's) analysis of the alternative. The DOE's decision was based on budget constraints not conflict with Russian and United States policy. This decision was considered to be abysmal. It was also stated that the DOE has additional surplus plutonium that it not suitable to be made into MOX fuel and that the DOE may later decide to pursue immobilization in the future. It was stated that the DEIS does not provide opportunity for stakeholders to comment on the immobilization alternative as a viable and cost effective option.

Immobilization would effectively achieve the MOX program's stated goal to safeguard weapons grade plutonium. It was felt that the DOE should fund this alternative and support it through further research and development to resolve outstanding technical issues with immobilizing plutonium. Immobilization was viewed as being superior to the proposed action (building and operating the proposed MOX facility) for a number of reasons. Immobilization was considered to be less costly and less risky while providing a large number of jobs in the area. Because immobilization is faster than making MOX fuel, immobilization was considered to be beneficial for limiting diversion, theft and accidents. Immobilization was considered to be more environmentally sound and safer to workers. Immobilization would help manage existing waste at the Savannah River Site while not

producing a significant amount of new waste. Immobilization, unlike storage, addresses proliferation concerns and provides jobs. Immobilization would make the plutonium less attractive to terrorists and saboteurs. For these reasons, it was felt that an in-depth comparison of immobilization and the proposed action was required by the National Environmental Policy Act (NEPA). It was also suggested because of the cost and complexity of the proposed MOX facility that immobilization could be implemented as an interim solution to allow for better science to be applied in the future.

It was stated that making MOX fuel would send the wrong message to the international community by setting an example for the civilian use of plutonium and advance the technology associated with using plutonium. Also, the MOX fuel program was seen as a stepping stone for future reprocessing in the United States. In contrast, immobilization did not have these perceived draw backs.

NRC solicited comments in the Spring of 2002 on whether the NRC should continue to consider immobilization as an alternative in the DEIS. The question of who commented and how those comments are considered was raised.

Response: The DOE is responsible for the surplus plutonium disposition program in the United States. As such, it is the DOE's responsibility to determine how surplus plutonium is dispositioned. The DOE has prepared two environmental impact statements for the surplus plutonium disposition program that evaluated a number of alternatives at a number of different locations within the DOE complex. The comparison of the environmental impacts between immobilization of surplus plutonium and making MOX fuel have been previously considered by the DOE. Therefore, they do not need to be reiterated in the FEIS.

Furthermore, as discussed in Section 2.3 of the EIS, the immobilization alternative is considered by the NRC, but not evaluated in detail. The rationale for deciding not to evaluate the immobilization alternative in detail is set forth in EIS Section 2.3.3.

As noted in the comment, the NRC solicited stakeholder views on whether the NRC should still consider immobilization as an alternative in the DEIS. This is discussed in Section 1.4.1 of the EIS. The NRC reviewed the written comments and oral comments made at three public meetings and determined that no persuasive reasons were identified requiring a detailed evaluation of the immobilization alternative.

Additional comments relative to the purpose and need can be found in Section J.3.3.

J.3.11.3 Comments: 5-001 58-003 93-004 105-012
 45-001 72-013 98-002 114-007

Comment: The rationale for not considering the immobilization alternative to be reasonable based on a desire to keep the Russians at the negotiating table was questioned. The fact that Russia does not trust immobilization was not considered an acceptable reason to eliminate consideration of immobilization as an alternative. Additional arrangements could be made for Russia to verify the United States' disposal of the surplus plutonium.

Response: As discussed in EIS Section 2.3.3, part of the reason for eliminating detailed consideration of the immobilization alternative was based on the Nuclear Regulatory Commission's (NRC's) view that given DOE's 2002 amended ROD, a decision to consider the immobilization alternative would involve the NRC in foreign policy matters that are outside NEPA's scope. The Department of Energy (DOE) is the lead federal agency responsible for implementing national policy associated with the surplus plutonium disposition program and in implementing related agreements with Russia.

J.3.11.4 Comment: 86-002

Comment: The decision not to consider immobilization as an alternative to making MOX fuel (the proposed action) was supported. It was recognized that the Department of Energy, as the federal agency charged with developing the surplus plutonium disposition strategy, has already eliminated immobilization as a viable alternative.

Response: This comment is consistent with the EIS.

J.3.11.5 Comment: 105-002

Comment: The DEIS should select the cheapest disposition method as the preferred alternative. The Department of Energy (DOE) has stated that the immobilization plan is less expensive and has greater cost certainty. It was stated that the cost-benefit analysis ignores the cost to taxpayers. The cancellation of immobilization was viewed as a cost versus safety trade-off.

Response: Issues associated with not considering immobilization in the EIS are discussed in more detail in Comments J.3.11.1 and J.3.11.2. The decision on a preferred alternative is based on many factors, including costs. Other factors such as benefits, safety, and environmental harm are also considered. The cost-benefit analysis looks at both national and regional costs. The cost to taxpayers is evaluated in Section 4.6.2 of the FEIS.

J.3.12 Human Health Risk

J.3.12.1 Comment: 10-013

Comment: The Nuclear Regulatory Commission's (NRC'S) choice to use the less-protective health standard of 1 in 10,000 "accepted deaths" in the DEIS rather than the Environmental Protection Agency's 1 in 1 million was questioned.

Response: The basis for the commenter's view that the DEIS used a standard of 1 in 10,000 "accepted deaths" is not clear. In evaluating exposures to carcinogens, the Environmental Protection Agency (EPA) does consider an increased risk range of from 1 in 1 million to 1 in 10,000 additional cancers as a guideline to determine whether mitigation actions are needed. For example, mitigation actions are generally required if increased risks are greater than 1 in 10,000; mitigation actions are generally not required if increased

risks are less than 1 in 1 million, and mitigation actions may be discretionary or limited if they are within the risk range.

In the EIS, radiological doses under both the no-action alternative and the proposed action are compared with NRC standard and guideline levels. The NRC annual dose limit for exposures of any individuals in the general public is 1 mSv (100 mrem), used with the provision that doses should also be kept as far below these limits as is reasonably achievable. For comparison, the annual average individual exposure in the U.S. is 3.6 mSv (360 mrem) (3 mSv [300 mrem] from natural sources and 0.6 mSv [60 mrem] from man-made sources). The 1 mSv (100 mrem) per year dose limit corresponds to an increased latent cancer fatality (LCF) risk of about 6 in 100,000 for an individual. Estimated risks from radiological exposures for maximally exposed members of the general public under normal operations were 4 in 1 million and 4 in 1 billion additional chance of an LCF for the no-action alternative and the proposed action, respectively (see Table 2.1).

For exposures to chemicals under the no-action alternative, the increased cancer risks to the general public would be within the risk range of 1 in 1 million to 1 in 10,000 additional probability of developing cancer for an individual (see Section 4.2.2.2). The risk under the proposed action was not quantified, because the emissions would be small.

The EIS cites the standards and guidelines to use for comparison with calculated doses and risks, but the estimated values for both alternatives are meant to be compared with each other to facilitate decision-making for the proposed project.

J.3.12.2 Comments: 6-001
42-001
42-002

Comment: The proposed project has some risks associated with it. Safety and the health of employees, the general public, and animals should be a number one priority at the Savannah River Site (SRS).

Response: There is some level of human health risk associated with both the no-action alternative of continued storage, and also with the proposed action of constructing and operating the proposed MOX facility. Specifically, estimated risks from radiological exposures for maximally exposed members of the general public under normal operations were 4 in 1 million and 4 in 1 billion additional chance of a latent cancer fatality for the no-action alternative and the proposed action, respectively (see Table 2.1 of the EIS). The risks to the general public from exposures to chemicals under the no-action alternative were not explicitly quantified for the DEIS, but the increased cancer risks to the general public were estimated to be within the risk range of 1 in 1 million to 1 in 10,000 additional probability of developing cancer for an individual (see Section 4.2.2.2). The chemical risk to the general public under the proposed action was not quantified because the emissions would be small. The chemical and radiological risks for workers under the proposed action and the no-action alternative were within regulatory standard and guideline levels. Risks

from accidents are generally low, although some low probability accidents could result in injuries to facility workers and SRS employees.

J.3.12.3 Comment: 66-005

Comment: The data in the DEIS prevents corroboration of the human health impact figures. The document is therefore deficient and suspect because these values can not be corroborated and because of the inclusion of the Waste Solidification Building (WSB) and the Pit Disassembly and Conversion Facility (PDCF). It was suggested that additional and corrected data be provided so that the public can offer meaningful comments.

Response: It is unclear what the commenter means by “prevents corroboration of human health impacts figures.” The intent of the document was to provide enough details on the methods used to estimate health risks so that readers could understand those methods. Details on the methods are discussed in Section 3.10 and in Appendix E of the EIS. Risks associated with the WSB and PDCF were included in the analyses.

J.3.12.4 Comment: 52-003

Comment: The environmental impacts, human health risks, and waste management of the Pit Disassembly and Conversion Facility (PDCF) and the proposed MOX facility must be specifically evaluated. Latent cancer facilities associated with the proposed Waste Solidification Building (WSB) and all substantial handling and transport are significant portions of the real cost of this mission and are minimized in the DEIS. The DEIS should be revised.

Response: The radiological human health risks associated with normal operation of the proposed MOX facility, PDCF, and WSB are evaluated in Section 4.3.1.1 of the EIS (see Table 4.3 for a summary); the chemical risks are evaluated in Section 4.3.1.2. The radiological risk estimates are based on estimated air emissions provided by the applicant, DCS. The applicant stated that emissions to water would be small because any liquid discharges from the WSB would be under the existing NPDES permit guidelines. Additionally, chemical emissions to air were stated to be small because process controls limit the release of chemicals to the environment, and engineering controls and personal protective equipment protect workers from significant exposures, as necessary. Therefore, human health risk from chemical exposures would be small.

Because facility solid and liquid wastes would be treated and/or disposed of in accordance with applicable Nuclear Regulatory Commission regulations and Department of Energy Orders, significant exposure of workers or the public to chemical or radiological materials in these wastes would not be expected to occur. The waste facilities to which these wastes would be shipped are permitted facilities required to handle incoming wastes in ways which minimize impacts to the environment (including minimizing the potential for human exposures).

J.3.12.5 Comment: 53-005

Comment: The affected environment chapter should state what the impacts are from chemicals released at the Savannah River Site (SRS), not which chemicals are being released at a rate of more than one ton per year.

Response: The air quality section of the Affected Environment (Section 3.4.2 of the EIS) discusses site emissions and gives the tons/year of toxic air pollutant emissions (Table 3.2). The Human Health Risk section (3.10.4.2) discusses the baseline environment for chemical exposures associated with the SRS site (for example, potential receptors, pathways of exposure, and exposure sources). For chemical exposures, modeling results for the SRS boundary ambient air concentration of toxic pollutants from SRS point sources are summarized and compared with health-based guideline levels.

J.3.12.6 Comment: 66-003

Comment: Any accident would not likely create a uniform offsite dispersion among the population limited to a 160 pound man with effects stopping at one year. Using Federal Guidance Report 13 (FGR 13), which does not consider gender, race, or age differences in response to radiation exposure, results in cumulative errors in the DEIS. Further, an actual accident may cascade into several of the scenarios illustrated in the EIS, compounding health effects. The impacts of the proposed MOX facility were questioned because the DEIS says that statistically no fatalities will occur during normal operations, while the figures say that 50 people will die by latent cancer fatalities. The DEIS must be corrected to reflect these concerns.

Response: The EIS provides a conservative estimate of accident impacts and an independent review of previous accident analyses performed for the MOX facility, the Pit Disassembly and Conversion Facility and the Waste Solidification Building. The accident results presented were for a given direction from the SRS estimated to provide the largest potential dose to the exposed population, with exposure decreasing as a function of distance from the accident location. The largest exposure for most accidents occurs in the short-term from inhalation. If ingestion is considered, the highest exposure also occurs in the first year. In either case, the potential internal intake of the radioactive contamination results in a long-term internal exposure that was taken into account by the 50-year dose conversion factors used.

The health risk conversion factor is not limited to a standard man. As discussed in EIS Section 3.10.3, the FGR 13 health risk conversion factor of 0.06 fatal cancers per person-Sv (0.0006 fatal cancers per person-rem) is from the latest available study that provides a combined gender, age-averaged risk coefficient deemed to be representative of the public.

It was estimated in the DEIS that up to 50 latent cancer fatalities (LCFs) from short-term exposure could occur. In the FEIS, the LCF estimates for the public varied from 3×10^{-5} to 3 for the short-term exposure scenario, and from 0.0001 to 100 for the 1-year exposure scenario (see Table 4.14 in the FEIS). However, conservative assumptions were used in

the analysis to provide an upper bound on the estimated consequences. In addition, the likelihood of such an accident is very small. Thus, the overall risk (consequence times probability of accident occurring) of anyone dying from LCFs related to potential MOX facility accidents during its operational lifetime is much less than one (see Table 4.15 in the FEIS).

J.3.12.7 Comment: 86-033

Comment: In Sections 3.10.4.2 and 4.3.1.2.2, the DEIS uses data completely out of context to reach erroneous conclusions on several points. The data presented in Table 3.11 for 'SRS maximum modeled ambient concentration' and 'SCDHEC standard' are maximum 24-hour averages; i.e., the maximum value that occurred at the Savannah River Site (SRS) boundary over a single 24-hour period for a one-year period of analysis. Conversely, the Environmental Protection Agency (EPA) risk guideline levels assume a long term exposure. Since the wind does not blow in the same direction all through the year, the long term (e.g., annual) average concentration for a pollutant will be much less than the maximum 24-hour average.

Table 3.11 and accompanying text should be revised to indicate clearly the context of the information that is being presented (i.e., averaging period) and to remove any implication that SRS air toxic emissions pose unacceptable risk to the public, or that (implicitly) the South Carolina Department of Health and Environmental Control (SCDHEC) standards do not adequately protect public health.

The DEIS is wrong to state (page 3-54, lines 24-25) that any of the modeled-estimated concentrations (24-hour) from the 1998 submittal to the SCDHEC exceeds ambient standards. The SCDHEC Air Pollution Control Regulation 61-62.5, Standard 8, states that model estimated concentrations for pollutants with a zero standard are to be rounded to the hundredths decimal place. By applying this guidance to the four pollutants for which the SRS allegedly exceeds the standard (see Table 3.11), the maximum site boundary concentration becomes 0.00. These pollutants, therefore, meet the SCDHEC standard of 0.00 in each case.

Response: The comparison of modeled ambient levels of toxic air pollutants (TAPs) at the SRS with health-based guideline levels is appropriate and has been retained. However, some of the revisions and qualifiers suggested have been added to the text, as detailed below. Also, the comment was correct in stating that, when rounding is conducted in accordance with SCDHEC instructions, no standards are exceeded. The suggested text and table change to delete reference to exceeding SCDHEC standards has been made.

The most recent available version of the SCDHEC Standard No. 8 for Toxic Air Pollutants (dated Oct 26, 2001; available at <http://www.scdhec.net/eqc/baq/html/regulatory.html>), gives no details on the criteria or methods used to develop the standard concentrations. Under National Environmental Policy Act regulations, it is generally recognized that comparison with regulatory standards is not sufficient to demonstrate the absence of adverse impacts, because many criteria are considered in establishing regulations. For example, maximum

contaminant levels (MCLs) for drinking water are enforceable standards established with consideration of adverse health impacts and best available treatment technology and cost considerations. Therefore, it is appropriate to compare the modeled ambient air TAP levels with levels known to be based only on the potential for adverse human health impacts. Furthermore, Standard No. 8 itself recognized the applicability of U.S. EPA reference concentrations in evaluating ambient air levels; several of the standards have a footnote that states “Verified reference concentration (RfC) established by the United States Environmental Protection Agency.” However, there are many U.S. EPA RfC values that are not reflected in the SCDHEC standards. No information is given in the standard to explain this discrepancy.

Text has been added to Section 3.10.4.2 of the FEIS to clarify that the modeled concentrations are maximum 24-hour averages. The comment correctly pointed out that it is overly conservative to compare maximum 24-hr averages with the EPA guidelines for long-term exposures; however, it was deemed better to use a conversion factor of 0.2 (based on guidance in documentation for EPA’s SCREEN3 model) rather than the suggested factor of 0.01.

J.3.12.8 Comment: 86-034

Comment: In Section 3.10.4.2, page 3-54 of the DEIS, the statutory authority for the statement “However, emissions of the pollutants listed in Table 3.11 may require further investigation by the Savannah River Site to determine that ambient levels are not of concern with respect to human health impacts” was questioned.

Response: The sentence referred to has been deleted from the text.

J.3.12.9 Comments: 86-037
86-040
86-041

Comment: Reliance on Occupational Health and Safety Administration (OSHA) and South Carolina Department of Health and Environmental Control (SCDHEC) regulations as mitigation during construction and operation was questioned. On page 4-11, Section 4.3.1.2.1, the DEIS discusses exposure to hazardous materials during construction. Exposure to hazardous materials used during construction will be minimized by following applicable OSHA regulations and precautions. No additional mitigations are necessary. Rather, the DEIS should state that exposure to hazardous materials used during construction will be minimized by following applicable OSHA regulations and precautions.

Similarly in Section 4.3.1.2.2, the DEIS states, “However, the workplace environment would be monitored to ensure that airborne chemical concentrations were below applicable occupation exposure limits.” Exposure to hazardous chemicals used during operations will be minimized by following applicable OSHA regulations and precautions. No additional mitigation measures are necessary. Rather, the DEIS should state that exposure to hazardous materials used during operations will be minimized by following applicable OSHA

regulations and precautions. In addition, hydrazine emissions from the proposed MOX facility will be subject to South Carolina Department of Health and Environmental Control regulations. No additional mitigations are necessary; DCS will comply with SCDHEC air quality regulations.

Response: The text in Section 4.3.1.2.1 has been changed in the FEIS to indicate that exposure to hazardous materials used during construction (e.g., paints, solvents) would be limited by following applicable OSHA regulations and precautions, such as ensuring good ventilation and cleaning up small chemical spills as soon as they occur.

As indicated in Chapter 5, the Nuclear Regulatory Commission considers complying with OSHA regulations to be a form of mitigation. Following applicable OSHA regulations during operations includes monitoring the workplace environment to ensure that airborne chemical concentrations are within exposure limits. The text in Section 4.3.1.2.2 has also been changed to note that DCS will demonstrate that operational hydrazine emissions would be limited to levels that would not cause exceedance of the SCDHEC standards.

J.3.12.10 Comment: 86-038

Comment: In Section 4.3.1.2.1, page 4-12 of the DEIS, the statement, “The 29 October 2002 correspondence from DCS to NRC responding to requests for additional information included the results of the ‘further sampling’ referred to in the DEIS. The DEIS should have included the results of this report which confirm the previous DCS conclusion that there are no significant concentrations of radioisotopes or chemicals in the soil, that would be hazardous to construction workers health” is incorrect.

Response: The referenced characterization report (*Plutonium Disposition Program (PDP) Preconstruction Environmental Monitoring Report* [Fledderman 2002]) contained limited data for nonradiological constituents in soil (e.g., only 10 metals analyzed, no organic compounds analyzed), and only included shallow soil samples. The data from the report have been summarized and added to the discussion in Section 4.3.1.2.1 of the FEIS, but the conclusion that more testing may be required if evidence of possible contamination is encountered during excavation is retained.

J.3.12.11 Comment: 89-039

Comment: In Section 3.10.5, the DEIS states that a rate of 3.3 fatalities/1000 full-time equivalents (FTEs) and 4.6 injuries/100 FTEs is used based on Bureau of Labor Statistics/National Safety Council data. National safety statistics are not appropriate to represent baseline risks for estimating Savannah River Site (SRS) operations. There have been no fatalities for over 200,000 FTEs of operations or construction since 1989. The lost workday injury rate for SRS operations during the past 6 years (1997 – 2002) has averaged 0.38 cases per 200,000 hours (100 FTEs), less than 10% of the value cited in the DEIS.

Response: National statistics for physical hazards are used to estimate the risks from the no-action alternative and the proposed action, so these national rates are used in the

affected environment section (Section 3.10.5 of the EIS) to provide a baseline for comparison. However, text has been added to this section to acknowledge that actual injury rates at the SRS are lower than those predicted based on national averages.

J.3.12.12 Comment: 89-045

Comment: In Section 4.3.1.2.2, page 4-13 of the DEIS, the discussion of mixing and blanketing is unclear. A blanket of nitrogen above the hydrazine does not mix with the liquid hydrazine that is forwarded to the process.

Response: The text in Section 4.3.1.2.2 has been changed in the FEIS to clarify that the purpose of blanketing with nitrogen is to shield the liquid hydrazine from unwanted side reactions.

J.3.12.13 Comment: 89-050

Comment: It is not appropriate to assume in the DEIS that 240 gal of chlorine would be stored at the Pit Disassembly and Conversion Facility since the Surplus Plutonium Disposition (SPD) EIS indicates that the quantities of hazardous chemicals are generally small, and does not indicate that chlorine is an exception to that statement. The SPD EIS Table E-7 indicates that chlorine will be used in the pit conversion facility, and the discussion of the accident analysis on Page K-7 indicates that “On an industrial scale, the quantities of hazardous chemicals are generally small — No substantial hazardous chemical releases are expected.”

Response: The SPD EIS Table E-7 lists an annual operational resource requirement of 62 m³ of chlorine gas, which corresponds to approximately 240 gallons of liquid chlorine. The EIS accident analyses include all hazardous chemicals stored in any of the facilities in quantities greater than 10 gallons (see EIS Appendix E). Chlorine was assumed to be stored as a pressurized liquid, as is common in industrial facilities. The analyses showed that an accidental chlorine release would not have adverse impacts for the general public at the Savannah River Site (SRS) boundary, but that it could result in high adverse impacts for workers.

J.3.12.14 Comment: 97-009

Comment: A temperature of 25.8°C (78.5°F) is stated as an average. This is not a reasonable average nor does it provide any margin. Temperatures in excess of this would be anticipated to occur many times each year (i.e., an anticipated, annual event). In addition, solar heating effects on the structure (the Reagent Storage Building is a metal structure), other buildings and storage areas, and during deliveries could push local ambient temperatures in excess of 120°F. Thus, the assumed average temperature does not address anticipated conditions that occur annually nor do they provide any margin or conservatism. A higher temperature should be used for vapor pressures and release calculations.

Response: The 25.8°C (78.5°F) 95th percentile nighttime temperature is representative of conditions corresponding to the site-specific annual 95th percentile concentration determined from the radiological accidental release modeling. Review and analysis of on-site historical meteorological measurements taken at a nearby Savannah River Site operated tower shows that this temperature is exceeded only 5% of the time during nighttime low-wind speed conditions. The 95th percentile daytime temperature was found to be 30.8°C (87.5°F). Therefore, use of a value representing the 95th percentile is considered representative of a reasonable upper bound. These values were chosen to maintain consistency with the radiological accident assessment, and with Nuclear Regulatory Commission guidance. Details and rationale for the meteorological conditions assumed for accident modeling are provided in Appendix E, Section E.1 of the EIS.

J.3.12.15 Comment: 97-012

Comment: Nitrogen tetroxide is a chemical that requires great care during handling and use, as discovered from the space and missile programs. It boils at near ambient conditions and significantly dissociates into nitrogen dioxide at temperatures slightly above ambient, which greatly increases the effect of releases. It can also cause common mode failures. In addition, the nitrogen tetraoxide would be pressurized in the proposed MOX facility. The DEIS is not clear if this been accounted for in the analyses. The DEIS indicates an estimated concentration of 1,600 mg/m³ at 100 meters. This is a potentially lethal concentration and would likely result in large numbers of serious injuries and fatalities if the release occurred at the proposed MOX facility, and could negatively impact adequate safeguarding of nuclear materials. The DEIS does not discuss adequate mitigation and/or prevention of such events. The DEIS should acknowledge and address these concerns.

Response: In EIS analyses, the accidental release of nitrogen tetroxide is modeled as a pressurized release. Nitrogen tetroxide is identified in the accident impacts, chemical human health risks section of the EIS (4.3.5.3) as a chemical which, if accidentally released, could cause high adverse impacts to workers. Nitrogen tetroxide would be regulated by the Occupational Health and Safety Administration (OSHA) under its Process Safety Management Rule (29 CFR 1910.119). The Process Safety Rule contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. Under this rule, DCS would perform a hazard analysis, develop and implement written operating procedures that provide clear instructions for safely conducting activities involving process chemicals covered by the rule, develop and implement a training program, develop and implement an inspection and testing program, and develop and implement an emergency planning and response program. Text has been added to Table 5.1 to reflect these mitigation measures.

J.3.12.16 Comment: 107-002

Comment: The DEIS discusses the need to demonstrate that the offgas treatment system will limit hydrazine, (listed as a hazardous air pollutant under the Clean Air Act), to very low levels. The DEIS states that these levels would not cause adverse health impacts to members of the public or employees. Information about plans for monitoring the offgas treatment system for hydrazine should be included in the FEIS.

Response: During Clean Air Act permitting, it must be demonstrated that hydrazine emissions will not cause exceedance of the South Carolina Department of Health and Environmental Control ambient standard of $0.06 \mu\text{g}/\text{m}^3$ at the Savannah River Site boundary. This may be demonstrated in a variety of ways. It is possible that mass balance calculations based on the annual usage of hydrazine, coupled with conservative assumptions on fugitive emissions and air dispersion modeling, would indicate that an offgas treatment system is not necessary. These issues would be further investigated by DCS during the permitting process.

J.3.12.17 Comment: 85-003

Comment: Concern was express regarding the safety and health of all the individuals in this area. Additional attention and study of these safety issues should be undertaken. The DEIS does not provide conclusive evidence that this site is currently “safe” for the community that lives around its borders, much less that the people will be safe when this facility is built.

Response: The methods used to estimate safety and health impacts in the EIS were designed to ensure – through uniform and careful selection of assumptions, models, and input parameters – that impacts would not be underestimated and that relative comparisons among the alternatives would be meaningful.

Based on these methods, the DEIS identified some level of human health risk to the off-site public associated with both the no-action alternative of continued storage, and also with the proposed action of constructing and operating the proposed MOX facility. Specifically, estimated risks from radiological exposures for maximally exposed members of the general public under normal operations were 4 in 1 million and 4 in 1 billion additional chance of a latent cancer fatality for the no-action alternative and proposed action, respectively (see Table 2.1 of the FEIS). For exposures to chemicals under the no-action alternative, the estimated increased cancer risks to the general public were within the risk range of 1 in 1 million to 1 in 10,000 additional probability of developing cancer for an individual (see Section 4.2.2.2 of the FEIS). The chemical risk under the proposed action was not quantified, because the emissions would be small. Risks from accidents are generally low, although some low probability accidents could result in increased cancer risks (from radiological exposures) or injuries (from chemical exposures) for facility workers and Savannah River Site employees.

Investigation of the health records of the surrounding communities is beyond the scope of the EIS. However, the human health impact assessment (discussed above) did not indicate that the proposed action would result in an increase in adverse health effects in the surrounding communities.

J.3.12.18 Comment: 86-039

Comment: In Section 4.3.1.2.2, page 4-12, lines 19-21 of the DEIS, the list is missing oxalic acid, sodium hydroxide, and sodium carbonate all of which were listed in MOX ER Table 3-2.

Response: The chemicals listed in the DEIS text were not intended to include all the chemicals used in the process. The text has been revised in Section 4.3.1.2.2 of the FEIS to add a reference to Appendix E, where all the chemicals used are listed. Appendix E also explains why accidental releases of some of the chemicals were not modeled (i.e., some were dropped because they would be stored in quantities of less than 10 gallons; some were dropped because a temporary emergency exposure limit-1 (TEEL-1) value of greater than 15 mg/m³ indicated low toxicity).

J.3.12.19 Comment: 86-060

Comment: Table 4.16 presents a larger volume of nitrogen tetroxide (i.e. 240 gallons or 912 liters) in a storage/transportation cylinder than is planned to be used at the proposed MOX facility. DCS intends to use a storage/transportation cylinder containing 2000 lb (907 kg) of nitrogen tetroxide. This corresponds to 630 liters of nitrogen tetroxide.

Response: The assumed container sizes for accidental chemical releases were obtained from the October 31, 2002, revision of the Construction Authorization Request (CAR). Table 8-2a of the CAR gives a container size of 240 gallons (1 ton) for nitrogen tetroxide.

Although DCS may have now revised its plans for the nitrogen tetroxide cylinder size to be used at the facility, the outcome of the assessment would not change if the storage volume were reduced by approximately one third. That is to say, an unmitigated accidental release of either volume would not cause adverse impacts for the off-site general public, but could result in moderate to large adverse impacts for the Savannah River Site employee population. Preventive planning and mitigation measures in case of spill are required when extremely hazardous substances are in use at industrial facilities.

J.3.12.20 Comment: 97-008

Comment: Section 4.3.5.3, page 4-42 of the DEIS discusses the potential effects from chemical releases and accidents. The DEIS uses temporary emergency exposure limits (TEELs) which are adopted by the Department of Energy Subcommittee on Consequence Assessment and Protective Action (SCAPA). TEEL values also change frequently and may underestimate potential concerns and required mitigative or preventative methods. It is recommended that more conservative and regulator-endorsed values are used. This may

involve a methodology to select the lowest values from Acute Exposure Guideline Levels (AEGLs), Immediately Dangerous to Life or Health (IDLHs), Military Air Guidelines (MAGs), and National Institute for Occupational Safety and Health (NIOSH)/Occupational Safety and Health Administration (OSHA).

Response: It is agreed that certain acute exposure guideline values have received a higher level of research and peer review than others, and that those higher quality values should be used if available. Acute Exposure Guideline Level (AEGL) values would be the most preferable, because the AEGLs are derived by an independent panel of experts under the auspices of the National Research Council's Committee on Toxicology, and because the criteria for AEGL derivation take into account sensitive individuals (i.e., they would be protective for nearly all people). AEGL values are derived for three tiers of effects – essentially a threshold level below which no adverse effects would be expected (AEGL-1), a threshold level below which only minor adverse effects would be expected (AEGL-2), and a threshold level below which life-threatening effects would not occur (AEGL-3). AEGL values are currently available for only nine chemicals, and none of these are chemicals that would be used in the proposed facilities.

Of the 15 chemicals for which air dispersion modeling was conducted for the EIS accident analysis, 12 have IDLH values and two have NIOSH/OSHA ceiling values. Acute exposure guidelines not mentioned by the commenter are the Emergency Response Planning Guidelines (ERPGs) developed by the American Conference of Governmental Industrial Hygienists (ACGIH). These values are similar to the AEGL values in that three effect levels are derived for each chemical (with definitions similar to those for the AEGL values). The ERPG values are widely used for emergency response planning, because they are derived by panels of toxicologists reviewing all available data, and because they are well documented. ERPG values are available for about 100 chemicals. ERPG values were available for 6 of the 15 chemicals in the EIS analysis.

Temporary emergency exposure limit (TEEL) values are not intended to supercede values derived more rigorously through critical review of all available toxicity literature for a chemical. They are specifically “temporary emergency exposure limits” to be used only when other values (that is, AEGLs or ERPGs) are not available. In fact, whenever ERPG values are available for a given chemical, those values are adopted as the TEEL values. However, when data are lacking, the process of deriving TEELs is very similar to what the commenter suggested; there is a hierarchy that uses IDLH values to approximate the potentially life-threatening value (TEEL-3), uses IDLH/10 or ceiling values to approximate the irreversible injury threshold, and uses occupational short-term exposure limits to approximate the minor injury threshold. (Craig et al., 2000, “Derivation of Temporary Emergency Exposure Limits (TEELs),” *J. of Applied Toxicology*, 20, 11-20). Modified values from other countries, such as Germany's maximum allowable concentrations (MAKs) for occupational exposures, may also be used if no U.S. values are available. If none of these data are available, other data such as (lethal concentration) LC50 values are used. TEELs are now available for over 2000 substances. Because the TEEL values do incorporate readily available regulatory and guideline values, they are the best alternative for use in evaluating accidental exposures when AEGL or ERPG values are not available.

In EIS Appendix E, Section E.1 (Accidents, Chemical Human Health Risk), text has been added to explain the different acute emergency planning values that are available, and why the ERPG and TEEL values were chosen. An additional change that has been incorporated into the analysis is that the TEEL values used to evaluate the hypothetical hydrazine release have been changed from those for hydrazine hydrate to those for hydrazine. ERPG values are available for hydrazine (but not hydrazine hydrate), and the TEEL values are the same as the ERPG values. These ERPG (also TEEL) values are considered to better represent the toxicological database for hydrazine.

J.3.12.21 Comments: 86-114
86-115

Comment: In Table E.1 of the DEIS, the solution molecular weight (94 g/mole) and the solution density (2.13 kg/l) for hydrazine/sodium hydroxide appear to be incorrect.

Response: Table E.1 of the FEIS has been changed to reflect the correct molecular weights and densities for hydrazine and sodium hydroxide.

J.3.12.22 Comment: 86-116

Comment: In Table E.3 of the DEIS, evaporation rates and vapor pressures of evaporating chemicals appear to be incorrectly calculated for chemicals where mole fractions were used to calculate the vapor pressures, which in turn were used to calculate the evaporation rates.

Response: Mole fractions were estimated based upon the data provided on storage and process chemical compositions and concentrations.

J.3.12.23 Comment: 97-010

Comment: The chemicals are used in processes within the proposed MOX facility. Process temperatures will likely exceed ambient temperatures considerably. For example, solvent extraction processes routinely can exceed 50°C (122°F), while evaporators can exceed 100°C (212°F). These higher temperatures should be used as appropriate for modeling the evaporation of process spills and may necessitate the use of other models (e.g., flashing and bulk convection) for estimating release rates.

Response: None of the bounding chemical accidents analyzed in the DEIS involved process accidents (i.e., accidents that occur during aqueous polishing or fuel fabrication at the proposed MOX facility). Therefore, the chemical accident analyses did not consider temperatures of chemicals during processing.

J.3.12.24 Comments: 86-058
89-049

Comment: The temporary emergency exposure limit (TEEL) values given for hydrazine hydrate in Table 4.16 are the TEEL values for hydrazine hydrate, aqueous solutions. DCS

plans to use hydrazine monohydrate. The TEEL values for hydrazine monohydrate should be used instead of hydrazine hydrate.

Response: The MOX ER (Rev 3, June 2003), Table 3-2 (Chemical Consumption and Onsite Inventory) lists hydrazine (35%) as a process chemical, with an annual usage of 530 gallons, and an onsite inventory of 126 gallons. The EIS uses the TEEL values for hydrazine hydrate, aqueous solutions, to evaluate an accidental hydrazine release. The assessment has been revised to evaluate an accidental release on the basis of comparison with the TEEL values for hydrazine, which are the same as the Emergency Response Planning Guideline (ERPG) values and have received thorough critical review. The ALOHA model used to estimate the downwind hydrazine concentrations takes into account the concentrations of the released chemical (in this case, 35%). The use of the peer-reviewed ERPG values for evaluating the hydrazine release is preferable to using either the TEEL values for hydrazine hydrate or for hydrazine monohydrate, which have not received the same level of review and may be based on default data (see Comment J.3.12.20 for more information).

J.3.12.25 Comments: 86-059
86-113

Comment: The DEIS appears to contain an erroneous calculation of solute mole fraction and vapor pressure for hydrazine/sodium hydroxide, hydrazine/hydroxylamine nitrate, hydrogen peroxide, hydroxylamine nitrate, nitric acid, which has resulted in significantly larger estimates of the modeled airborne concentrations and distances to reach the temporary emergency exposure limit (TEEL) limits.

Response: The assumptions and calculations made to estimate spill evaporation rates were based upon data supplied by DCS. The calculations were checked by the Nuclear Regulatory Commission and are consistent with the chemical inventory data supplied and the assumptions necessary to carry out the calculations. The commenter provided no supporting data or calculations to substantiate an error in the mole fraction calculations.

J.3.13 Human Health – Radiological Risk

J.3.13.1 Comments: 24-003
71-008

Comment: It was suggested that long-term, well-controlled, epidemiologic studies of workers and other potentially exposed populations be conducted by impartial, qualified scientists. Such studies should have been conducted on populations which might have been exposed through air, water and food ingestion. Such studies should not be prejudiced by prior assumptions, such as extrapolating data derived from the flawed studies of Hiroshima and Nagasaki, which were limited to the survivors of those acute massive exposures. It is difficult to justify the absence of such studies and further how a DEIS can be adequately carried out in the absence of such data. The DEIS would have more validity

if risk factors were based more upon such information. Effects of chronic low dose radiation have been reported by scientists such as Drs. Alice Stewart and Dr. Steve Wing (UNC Chapel Hill). Absent the use of such epidemiologic data, skepticism is warranted regarding the estimated health risks presented in the DEIS.

Response: Health effects of low levels of radiation exposure are not determined solely on the basis of the Hiroshima and Nagasaki studies. Other epidemiological studies are used as well, such as those on patients exposed during medical treatment, occupational exposures of workers in the nuclear industries, and exposures of people in high natural background radiation areas. These studies have been ongoing for a long time, some for close to half a century, and they have been periodically updated and reviewed by a number of organizations, including the National Academy of Sciences. To date, no excess cancers have been identified below a dose of about 5 rem that can be attributed to radiation exposure. However, current understanding of the initiation and development of cancer, as well as available data, do not support a reliable conclusion that there are no effects below this level. It is therefore the cautious policy of the Federal Government to assume that the risk of cancer at low-levels of radiation exposure increases linearly in proportion to the dose, with no cut-off level below which there is no risk. This assumption is conservative in that it is likely to overestimate the risks at low levels of radiation exposure, which may be zero, but is not likely to underestimate such risks.

J.3.13.2 Comment: 37-001

Comment: It was stated that comparing human dosage that we receive from natural sources and things that we cannot avoid or things that we choose to benefit our health, such as radiation from the cosmic universe, medical exams, chest X-rays, with dosage from harmful radioactive isotopes that we do not choose is an obfuscation of the impacts.

Response: The comparison of human dosage we receive from natural or medical sources is intended to provide a unit of measure, a sense of scale, that the public may use to assess the estimated risks presented in the EIS.

J.3.13.3 Comment: 53-004

Comment: The DEIS does not state what the radiological impacts are. It provides potential radiological doses, but does not state what the impact is in terms of specific measurements such as curies or becquerels. The DEIS should state the quantity of radioactive material that is being released.

Response: Estimated releases of radioactivity for normal operations and accidents are presented in Appendix E, in Tables E.5 (microcuries per year) and E.13 (curies), respectively.

J.3.13.4 Comment: 53-006

Comment: The DEIS does not discuss the impacts of americium. Americium is significant because it poses a risk that is disproportionate to the risk of plutonium and there will be large waste streams of americium. It was suggested that the americium could be used or recycled in smoke detectors or other commercial products. The DEIS should state the hazards of americium.

Response: Americium is a hazardous radioactive material similar to plutonium that has been accounted for in the impact analyses (See Tables E.5 and E.13). Americium is not any different in its radiation effects from other radioactive materials of the same category, namely alpha radiation emitters, and it poses the same types of hazards. The differences in risk between americium and other alpha emitters such as plutonium is factored into, and considered, in the calculation of dose. A given dose equivalent of radiation poses the same risk, regardless of the source of the radiation that causes it. The amount of americium in a smoke detector is very small, approximately 1 microcurie. The amount of americium estimated to be separated from the plutonium is orders of magnitude larger than needed for this application and must be disposed of properly.

J.3.13.5 Comments: 71-005
71-007

Comment: Building and operating the proposed MOX facility at the Savannah River Site would place workers' health at greater risk from unnecessarily increasing their plutonium exposure. It places populations in nearby areas at increased risks of exposure to plutonium and other byproducts of such a facility.

Response: All operations at the proposed MOX facility would be carried out in a manner that reduces the risks to workers, the public, and the environment in accordance with Nuclear Regulatory Commission regulations. The main difference between exposure to plutonium and exposure to any other radioactive material is that, because plutonium often produces higher doses from a given amount of material than many other radioactive materials, it must be kept at low levels throughout the work areas. This is taken into account in the design of the facility.

J.3.13.6 Comments: 71-001 86-069 94-001
72-009 86-112
86-056 93-014

Comment: Concern was expressed regarding the data and basis on which radiation exposure and health risks were determined. The use of "standard man" does not adequately reflect radiation impacts to young and old people that are at a much higher risk. It was stated that a millirem is not a millirem. The health risk depends on other factors such as age and sex. It was suggested that the Nuclear Regulatory Commission (NRC) should follow the Environmental Protection Agency (EPA) and adopt a separate set of evaluation

standards for childhood cancers. In addition, the use of the EPA Federal Guidance Report 13 (FGR 13) health risk conversion factor was questioned. The FGR 13 risk factor relies on studies not yet incorporated into international standards and is another overly conservative assumption used in the risk assessment that results in an order of magnitude higher risk.

Response: The effects of low dose radiation are still being debated in the international scientific community after decades of study. The current approach attempts to ensure that the assessed impacts do not underestimate any potential hazards. It is true that young people tend to be more susceptible to radiation than adults. The use of FGR 13 data takes this into account because these dose conversion factors consider exposure to all age groups in a typical US population and calculates the average risk to such a population. These factors take into consideration the risk of exposure from childhood for a lifetime for children, as well as lifetime exposure starting at adulthood. The FGR 13 health risk conversion factor of 0.06 fatal cancers per person-Sv (0.0006 fatal cancers per person-rem) used in the EIS is from the latest available study that provides a combined gender, age-averaged risk coefficient deemed to be representative of the public.

The FGR 13 health risk conversion factor is based on U.S. population mortality statistics, but incorporates many of the more recent recommendations from the International Commission on Radiological Protection (ICRP), such as ICRP publications 66 and 67, since ICRP Publication 60. ICRP Publication 60 recommended a factor of 0.05 fatal cancers per person-Sv (0.0005 fatal cancers per person-rem; see Table 3 of that publication) for the public. The FGR 13 value of 0.06 fatal cancers per person-Sv (the next possible higher value considering the uncertainties involved) is only 20% higher, not an order of magnitude higher as suggested in some comments. The use of the FGR 13 risk factor, rounded to one significant figure, has been used by the NRC and other Federal agencies and is considered to be an appropriate estimate of the risks associated with radiation dose.

J.3.13.7 Comments: 53-002
73-001
105-004

Comment: The public health effects from radiation exposure in the DEIS are expressed in terms of cancer effects. If that is the only health consequence that is going to be addressed, at least say why other consequences are not being addressed, what you know and what you don't know about the impacts of ionizing radiation. It was suggested that, based on research by Dr. John Gothman, ischemic heart disease should be considered. It was stated that in Barnwell County there is a 15% elevated level of ischemic heart disease above the average of the State of South Carolina. In addition, birth defects and mental retardation (genetic damages) are more prevalent than cancer, but because they occur in the children of the workers they are often overlooked.

Response: The only effect of concern at the low levels of radiation considered in this EIS are the development of cancer and possible genetic effects. Genetic effects have not been demonstrated to occur in humans, and the only effect of concern here is cancer. Other

radiation effects do occur, but at much higher doses than can arise in this case. Mental retardation also does occur, but again, only at much higher radiation levels than those considered here. To protect against these effects, female workers who are, or may be, pregnant are given the option of requesting to be assigned duties that involve much reduced radiation exposure levels, until the end of the pregnancy.

The extent to which low levels of radiation cause cancer is currently the subject of scientific debate. The NRC used conservative assumptions and values to estimate potential LCFs from hypothetical accidents so as not to underestimate potential impacts. Because statistical data on low level radiation exposure and from previous accidents are inconclusive as to the inducement of cancer, these assumptions were based on extrapolation of data from exposure of humans to high levels of radiation, much higher than members of the public would expect to receive if an accident occurred at any of the proposed facilities.

Ischemic heart disease has a variety of causes as does cancer. To determine if the 15% elevated level is even statistically significant, regardless of the cause, a detailed analysis of the other counties in the area and potential confounding factors would first have to be conducted. The text in Section 3.10.3 of the FEIS was revised to indicate that cancer is the primary risk from radiation and that hereditary risks are also possible.

J.3.13.8 Comments: 73-004
115-001

Comment: The national emission standards for radionuclides, other than radon, from Department of Energy facilities states that emissions of radio nuclides to the air shall not exceed that which would cause any member of the public to receive a dose of ten millirems per year. Emission measurements from the stacks are stipulated in the existing Title V permit. But the millirem standard for the maximum allowable dose to the public is an ambient standard, not an emission limit. The existing permit fails to require any direct measurement of radioactive dose to the public, and cannot be enforced as a practical matter. This is a serious problem for many of the radionuclide-emitting facilities, including the proposed MOX facility.

The Savannah River Site does not currently meet five Title V emission standards with the existing operations. The addition of the Pit Disassembly and Conversion Facility (PDCF), the Waste Solidification Building (WSB), proposed MOX facility, the potential the siting of the Modern Pit Facility, and the potential use of the incinerator during the term of operation of the proposed MOX facility may cause additional violations.

The EIS must show that any additional activities, and cumulative and additive activities would not result in exceeding the National Emission Standards for Hazardous Air Pollutant (NESHAPs) limit when combined with current operations. Further, the NESHAP is written in millirems to individuals off site. There is no current monitoring done by the DOE, or reported in the DEIS that can, in fact confirm public doses from all current sources of radiation exposure to the public at the Savanna River Site.

Response: The primary restriction placed by NESHAPS is the 10-mrem/yr dose to any member of the public from air emissions. Placing restrictions on emissions is an indirect way of ensuring that this restriction is met. Whether the restriction is placed on the dose, or on emissions, it is necessary to use dose models that allow calculation of the dose to the public resulting from the emissions, to show that this 10-mrem/yr value is met. The main aim, therefore, is to ensure that the total of all air emissions from the facility does not result in a dose that exceeds this value. Emissions are monitored or estimated, and even though direct limits may not be imposed on them in a manner similar to that in Title V, the monitoring data are used to calculate the public doses to show compliance with all applicable limits. If other facilities in the vicinity of the MOX facility also contribute to public dose, adjustments will be made to ensure that the total dose does not exceed any applicable limit.

Conservative assumptions in dose modeling are used to ensure that the calculated dose to a maximally exposed member of the public is not underestimated. A maximally exposed individual (MEI) of the public is expected to receive approximately 0.04 mrem per year as a result of air emissions from SRS operations as presented in Table 3.10 in Section 3.10.3. Using conservative assumptions, the estimated exposure to a public MEI from operation of the proposed MOX facility, PDCF, and WSB was 0.0025 mrem per year as presented in Table 4.3 in Section 4.3.1.1.2. The combined exposure to current SRS activities and the MOX facilities would be about 0.0425 mrem, or about 0.425% of the 10 mrem NESHAP standard.

J.3.13.9 Comment: 86-117

Comment: In Section E.2.1.2, page E-17, line 32, the DEIS states that “To obtain conservative estimates of potential exposure and doses, the SRS employees were assumed to be exposed to radiation from airborne emissions without any shielding by buildings or other structures.” If factors of 0.5 and 0.7 from U.S. NRC 1.109 were used as stated on the next page, shielding was taken into account.

Response: The sentence in Appendix E, Section E.2.1.2, was removed from the text.

J.3.13.10 Comment: 86-118

Comment: In Section E.2.1.2, page E-18, line 37, the DEIS states that the total time of external exposure to a plume and contaminated soils for SRS employees was assumed to be 0.5 year. This is an incorrect interpretation of the 0.5 factor in U.S. NRC 1.109. The 0.5 accounts for shielding while the individual is present. When the individual is present approximately 23% of the time (2000/365/24), this factor is further reduced by 0.5.

Response: The factor of 0.5 does account for shielding while the individual is present. However, the bulk of the emissions from the MOX-related facilities during operations would occur while the Savannah River Site employees are present. Thus, it is not reasonable to assume a further reduction in exposure.

J.3.13.11 Comments: 86-119
86-120

Comment: In Section E.2.1.2, page E-18, line 45, the DEIS states that the total time of external exposure to a plume and contaminated soils for a maximally exposed individual was assumed to be 0.7 year. For the inhalation pathway, an exposure time of 1 year was assumed. This is an incorrect interpretation of the 0.7 factor in U.S. NRC Regulatory Guide 1.109. The 0.7 accounts for shielding while the individual is present. The individual is present approximately 23% of the time (2000/365/24) and this factor is further reduced by the 0.7 factor.

Response: The factor of 0.7 does account for shielding while the individual is present. However, the bulk of the emissions from the MOX-related facilities during operations will occur while the Savannah River Site employees are present. Thus, it is not reasonable to assume a further reduction in external exposure to the plume. The factor of 0.7 for external exposure to contaminated soil was retained as a conservative assumption that does not affect the estimated impacts. External exposure from the plume and soil was approximately 5 orders of magnitude less than the inhalation exposure.

J.3.13.12 Comment: 89-044

Comment: In Section 4.3.1.1.1, the number of facility workers at the proposed MOX facility should be stated as was done for the Pit Disassembly and Conversion Facility and the Waste Solidification Building.

Response: The number of facility workers at the proposed MOX facility was added to the discussion in Section 4.3.1.1.2.

J.3.13.13 Comments: 52-004 93-018
92-006 114-002

Comment: The DEIS assumes a 10-year MOX program but DCS plans to apply for a 20-year license. This assumption would tend to underestimate the human health impacts. Given the uncertainty in operational periods for the Pit Disassembly and Conversion Facility, the DEIS must analyze dose, risk and cost-benefit impacts of MOX production over 20-year duration.

Response: The rationale for assessing the 10-year operational period impacts is presented in Section 1.21 of the EIS (Proposed Action). As discussed, the minimum amount of time it would take the facilities to process the plutonium under consideration would be approximately 10 years, if the facilities were operated at their maximum design capacity. Thus, the highest human health impacts would occur on an annual basis as reported in EIS Section 4.3.1 (Human Health Risks) because a 10-year operational period was assumed. The assumption of a longer operational period, such as 20 years, would be less conservative because the annual impacts would be proportionately less since the impacts would occur over a longer period of time.

J.3.13.14 Comments: 1-001
116-017

Comment: The EIS estimates latent cancer fatalities (LCFs) from radiation exposure in a deterministic fashion without regard to any uncertainty in the estimate. Indeed, the estimate for the result of low doses should at least include the possibility of zero effect. The estimate of LCFs in the DEIS has already been the subject of media reports and public concern. This is an important issue that must be resolved.

The LCFs currently calculated in DEIS should be listed as the “upper limit.” The number of LCFs should be expressed as a range that includes zero effect. This opinion is supported by the Health Physics Society position paper, *Radiation Risk in Perspective*, of January 1996, reaffirmed March 2001. The Society of Nuclear Medicine and the American College of Nuclear Medicine voted unanimously to support that position.

The potential for positive health benefits from radiation exposure should be included at least as a note to the LCF discussion. There are ample references for the basis of this point.

The European Committee on Radiation Risk (ECRR) has published a 2003 set of recommendations on health effects of ionizing radiation exposure at low doses for radiation protection purposes. Regulator's Edition: Brussels, January 2003. This information should be compared with the information the NRC uses and the NRC should indicate which is valid.

Response: The estimated risk of LCFs is likely to represent an upper limit, and it is possible that there are no such risks at these low levels of exposure, which the proposed action is expected to produce. However, current knowledge does not permit reaching such a conclusion. It is therefore Federal policy, as well as the recommendations of all national and international advisory organizations, to assume that there is a risk at any dose level, and that this risk increases linearly with dose. The opinion expressed in the Health Physics Society Position Paper appears to be reasonable, but it does not provide sufficient supporting data to permit adoption of this position in Federal regulatory policy.

J.3.13.15 Comment: 27-009

Comment: The pathways discussed in Section 3.10.1.1 do not identify atmospheric particulate matter that has settled on the ground and that can be introduced into groundwater by recharging precipitation in a recharge area, or if the deposits are washed into surface water by overland runoff in areas where the surface water is in hydraulic connection with the ground water. It is suggested that the potential for groundwater contamination from atmospheric particulate matter deposited on the land surface at the MOX or F-Area sites be addressed in the DEIS.

Response: The potential impacts from the pathway suggested in the comment (i.e., airborne release to soil deposition to groundwater to humans) was not explicitly considered in this EIS. There is the potential that contamination from atmospheric deposition could reach groundwater; however, the contribution of this pathway to human exposure would be

much less than the human health impacts presented in this EIS for several reasons. The upper aquifer at the SRS is not used for drinking water, and significant dilution of any contamination would occur before the groundwater exited the SRS. Therefore, any contamination of this aquifer would not contribute significantly to human health impacts. A detailed discussion of the many pathways from operations at the SRS is presented in the SRS annual environmental report (Arnett and Mamatey 2001b) (see reference section for Chapter 3). The pathway suggested by the commenter is not listed as a significant pathway from airborne releases.

J.3.13.16 Comment: 53-003

Comment: The DEIS should state the value of natural background radiation at the Savannah River Site (SRS), not the national level. Because of the lower elevation, the lower radon levels, and the small number of basements, the natural background is different from the national average. In addition, the harm and benefits caused by natural background radiation needs to be presented in the DEIS.

Response: Natural background radiation in the Savannah River Site area, which includes consideration of the site's elevation and radon levels, is expected to be near the national average as presented in Chapter 7 of the *Savannah River Site Environmental Report for 2000* (WSRC-TR-2000-00328). Natural background radiation has the potential to cause latent cancer fatalities as does man-made radiation.

J.3.13.17 Comment: 86-035

Comment: The requirement for additional soil sampling discussed in Section 4.3.1.1.1, page 4-8 of the DEIS was questioned. The October 29, 2002, correspondence from DCS to the Nuclear Regulatory Commission responding to requests for additional information included the results of the 'further sampling' referred to in the DEIS. The DEIS should have included the results of this report which confirm the previous DCS conclusion that there are no significant concentrations of radioisotopes or chemicals in the soil, that would be hazardous to construction workers' health.

Response: Although no contamination is expected, further sampling may be necessary. The text was revised to include the reference to the sample results described in the October 29, 2002, correspondence, but the results do not include samples to the depth that will be required for building foundations in the area of the spoils pile. Samples were only taken down to a depth of 12 inches. Samples were not taken at the depths required to sample both the entire extent of the spoils pile and the ground underlying the spoils pile in areas which could be disturbed by construction activities.

J.3.13.18 Comment: 86-036

Comment: The DEIS (Section 4.3.1.1.2, page 4-8 and in Appendix E, page E-16) includes internal exposures for workers from normal operations. Since internal exposures would only

result from breaches of containment, these exposures should not be considered as part of normal operations, but should be considered only in the accident impacts assessment.

Response: Ideally, internal exposures are not expected under a normal operating environment. In practice, there will be some internal exposure during the course of normal operations because of residual levels of contamination.

J.3.13.19 Comment: 86-123

Comment: The values of ingestion parameters in Table E.9 for the maximally exposed individual (MEI) and the general public were questioned. Each line repeats the same number (276 kg/yr for the MEI and 163 kg/yr for the population), when this should be the total for all three.

Response: The values used for ingestion parameters for root vegetables, fruit, and grain were taken directly from Appendix D, Table D-4 (page D-20), of the MOX ER (Mixed Oxide Fuel Fabrication Facility Report, Revision 1&2) submitted by DCS. The values have been revised as suggested in the comment based on Savannah River Site data.

J.3.13.20 Comment: 86-125

Comment: Table E.13 does not include uranium-238, 99% of uranium inventory.

Response: The comment pertains to accidents and not normal operations. MOX ER Table D-7 lists source terms for isotopes released during normal operations, not from accidents as listed in Appendix E, Table E.13. Uranium-238 was not listed in DCS 2002b (App. E reference) as a component of the waste streams involved in potential accidents at the Waste Solidification Building.

J.3.13.21 Comment: 93-011

Comment: It is not acceptable to sign off on the environmental impacts of construction of the proposed MOX facility without a more detailed explanation of the impact of bull dozer activity on this contaminated site. The movement of soil that is contaminated will have an impact not only on workers, but also on those off site because particulates will be lofted into the atmosphere. The DEIS states on page 4-8 that any doses to workers from such contamination would be assessed. The DEIS does not describe who will make this assessment of workers and why the assessment would not include the off-site public.

Response: Although no contamination is expected, further sampling may be necessary because samples were only taken down to a depth of 12 inches. Samples were not taken at the depths required to sample both the entire extent of the spoils pile and the ground underlying the spoils pile in areas which could be disturbed by construction activities. It would be the responsibility of DCS and the Department of Energy to assess the risks from movement of contaminated soil if any were to be found. Any assessment of risks would necessarily include impacts to the off-site population.

J.3.13.22 Comments: 101-002
102-002

Comment: An 11% increase in the cumulative and collective dose to workers at the Savannah River Site (SRS) as a result of the proposed MOX facility, the Pit Disassembly and Conversion Facility (PDCF), and Waste Solidification Building (WSB) operations, is alarming and significant.

Response: The contribution of the MOX program to the cumulative collective dose to SRS workers was revised from 11.4% to 9.3% in Table 4.25 in Section 4.5.1.1 of the FEIS. As discussed in Section 4.3.1.1.2, each of the workers at the PDCF and the WSB was assumed to receive less than the SRS guideline maximum exposure (0.5 rem/yr). Due to lack of operational data and a desire not to understate potential risks, the cumulative collective dose to SRS workers was based on this maximum exposure which resulted in the contribution of 9.3% by the PDCF, the proposed MOX facility, and the WSB. However, the average SRS worker involved in radiological operations receives approximately 0.048 rem/yr as presented in Section 3.10.3. This average dose is ten times less than the allowed maximum. Thus, the contribution of the proposed MOX facility (15 person-rem) with a more realistic estimate (10% of maximum allowed) for the PDCF and WSB (1.97 + 0.5 person-rem) would contribute about 17.5 person-rem (rather than 257 person-rem) to a revised annual site total of 2,572.5 person-rem, or about 0.7%.

J.3.13.23 Comment: 105-013

Comment: DCS uses data from the MELOX plant in Marcoule, France to estimate worker radiation dose at 0.009 latent cancer fatalities (LCF) per year. There is no way to confirm this data, and people who oppose the proposed action have no means to substantiate their claims. The 0.009 LCF per year estimate is not accurate, but opponents have been unfairly denied the means to prove it.

Response: The annual latent cancer fatality rate for MOX facility workers of 0.009 is a reasonable estimate for the 400 workers expected at the proposed MOX facility. If the average annual dose per worker at the Savannah River Site of 0.048 person-rem is assumed (see Section 3.10.3), an annual collective worker dose of 19.2 person-rem (0.01 LCF) is the result. Such a result is very close to the value of 0.009 LCFs.

J.3.14 Accidents

J.3.14.1 Comments: 10-012
64-006

Comment: The Nuclear Regulatory Commission (NRC) concluded that there are minimal risks to human health if plutonium fuel is produced at the Savannah River Site (SRS). It was noted that this project represents a real and unacceptable risk, especially to workers.

The report states that “credible” accidents will be studied in either the EIS or the safety evaluation report (SER). The DEIS should define the term “credible accident” and state what the impacts are for “non-credible accidents.”

Response: The NRC does not evaluate the impacts of worst-case or non-credible accidents in its NEPA analyses. Credible accidents evaluated in the EIS include those caused by natural phenomena hazards and other possible process hazards. For NRC-licensed fuel-fabrication facilities, the risk of credible high and intermediate consequence events will be limited in accordance with 10 CFR Part 70. The principal structures, systems and components relied upon to reduce these risks are evaluated in the SERs.

J.3.14.2 Comment: 19-006

Comment: This DEIS estimated 400 deaths in the minority community based on computer modeling and is now coming back to revise that to 50. Although modeling is a valid technique for estimating the unknown, it must be based on realistic choices of variables and not too many of them. The assumptions need to be justified. A lot more information is needed about how the number were obtained.

Response: All assumptions and sources of data input into the computer models for radiological impacts were provided in Appendix E, Section E.2 of the EIS.

J.3.14.3 Comment: 53-008

Comment: Concern was expressed with a tritium accident. It was stated that there is not a list of the number of curies that are postulated to be released in an accident. Also, the routine releases at the pit disassembly and conversion facility were not documented. Three years ago it was about 1000 curies per year tritium being released. Concern was expressed regarding the amount of tritium already released by the Savannah River Site.

Response: The amount of tritium postulated to be released in the Pit Disassembly and Conversion Facility (PDCF) tritium accident was listed in Table E.13 in Appendix E. The amount of tritium assumed to be released from normal operations at the PDCF was listed in Table E.5 in Appendix E of the EIS.

J.3.14.4 Comment: 116-007

Comment: Concern was expressed about how to deal with natural phenomenon such as an earthquake. It is not obvious that the worst-case earthquake would not devastate the current MOX design. If principal system and structure components (PSSCs) survive an earthquake, non-PSSC equipment and structures might not survive and their destruction could have an adverse impact on the PSSCs. The worst-case earthquake could also cause explosions, spills, criticality accidents, fires, and leaks of radioactive material. The DEIS should review this worst-case scenario.

Response: The NRC does not evaluate worst-case scenarios in its NEPA analyses. But in developing its seismic safety design for the proposed MOX facility, DCS was required to consider the most severe documented earthquake for the site (the 1886 Charleston earthquake). Moreover, EIS Section 4.3.5.1.1 provides a bounding NEPA analysis for potential events up to and including design basis accidents. DCS has committed to design the proposed MOX facility to ensure PSSCs survive the design basis earthquake without subsequently exceeding the dose limits set forth in the 10 CFR Part 70 performance requirements.

J.3.14.5 Comment: 116-008

Comment: It was suggested that the postulated accidents should be evaluated in conjunction with a hurricane, when the winds are fiercest.

Response: As stated in Section 4.3.5.1.1 of the EIS, hurricanes were evaluated as the cause of accidents but were found not to be capable of causing a release of radioactive material to the environment. Most major operations at the Savannah River Site such as MOX operations would be expected to be shutdown or suspended pending the approach of a hurricane due to the potential disruption of electricity and supplies. Small environmental impacts might be expected if an accident were to occur simultaneously with a hurricane, but the winds associated with the hurricane would be capable of diluting any releases to the point where no appreciable dose to receptors more than a few hundred meters downwind would be expected.

J.3.14.6 Comment: 116-019

Comment: The DEIS should include the impact of the worst-case hydrogen explosion.

Response: The NRC does not evaluate worst-case scenarios in its NEPA analyses. As discussed in Section 4.3.5.1.1, the EIS attempted to provide a comprehensive, bounding analysis for all potential events up to and including design basis accidents. Impacts of the hypothetical hydrogen explosion accident postulated at the proposed MOX facility were given in Section 4.3.5.2.

J.3.14.7 Comment: 3-002

Comment: Concern was expressed regarding the impacts resulting from serious accidents in the area surrounding the Savannah River Site and in the Savannah area.

Response: Pursuant to the requirements of 10 CFR Part 70, the risk of credible high and intermediate consequence events at the proposed MOX facility must be reduced to acceptable levels before operation of the MOX facility would be authorized. As described in the draft SER for construction, DCS has identified principal structures, systems and components (PSSCs) to prevent or mitigate these events, and will maintain these PSSCs in accordance with an approved quality assurance program. To reduce the risk of accidents at the Waste Solidification Building and the Pit Disassembly and Conversion Facility, these

proposed Department of Energy facilities would have to meet the requirements of 10 CFR 830 for facility nuclear safety, 10 CFR 835 for worker protection, and other DOE orders and regulations.

J.3.14.8 Comments: 14-003 63-003 86-051
50-002 86-003 86-052

Comment: The risk to offsite population in the hypothetical accident analysis is significantly overstated. In analyzing the impact to off-site population from a hypothetical tritium release from the Pit Disassembly and Conversion Facility, the DEIS assumes and calculates a dose by ingestion during the one-year post-accident period. This scenario is simply not possible. An assumption that the South Carolina Department of Health and Environmental Control and the Georgia Environmental Protection Division would ignore contamination of agricultural products for one year is incredulous and an insult to their training, demonstrated performance and professional status. This impossible assumption must be eliminated and the analysis revised.

Response: In Section 4.3.5.2, the EIS discusses the possibility that the 1-year exposure accident consequences would be lower if contaminated food was not eaten. It further discusses the Food and Drug Administration protective action guides for interventions. A new 1-year exposure scenario without consideration of crop ingestion has been added to Section 4.3.5.2. The Nuclear Regulatory Commission recognizes that some interdiction would likely occur following a significant accident, even if contamination levels were below the protective action guides. Additional text has been added to clarify the reasonableness of the assumption regarding interdiction. Many stakeholders wanted to know what could happen if no interdiction of crops occurred. Therefore, the accident analysis also reports the 1-year exposure including the ingestion pathway. The 1-year exposure scenario including the ingestion pathway is provided as an upper bound estimate of the impacts of a potential significant accident. It should be recognized that many factors would result in a more realistic (lower) estimate of potential accident consequences. These include the selection of the computer code (See Comment J.3.13.16), and conservatism used in defining the potential accident scenario (See Comment J.3.13.9). However, for purposes of the National Environmental Policy Act, staff included a more realistic estimate of the impacts from potential accidents and an estimate that bounds the potential accident consequences.

J.3.14.9 Comments: 17-002 86-066 89-006
50-002 89-001 94-001
60-002 89-005

Comment: The DEIS has considered worst-case scenarios in the accident analysis. The likelihood of these accidents is extremely remote and cannot be considered “reasonably foreseeable” as required for a National Environmental Policy Act (NEPA) analysis. Furthermore, the assumptions made in performing the accident analysis were overly conservative by orders of magnitudes, leading to unrealistically high human health impacts. These assumptions include the use of the GENII code for performing the analysis as well as

ignoring engineered safety features or procedures such as permitting the ingestion of contaminated food.

Response: The NRC does not evaluate worst-case scenarios in its NEPA analyses. As discussed in Section 4.3.5.2, the EIS attempted to provide a comprehensive, bounding analysis for potential events up to and including design basis accidents. All accidents were taken from either the Surplus Plutonium Disposition EIS for the Pit Disassembly and Conversion Facility (PDCF) accidents or the MOX ER for the proposed MOX facility and Waste Solidification Building (WSB) accidents. No beyond design basis accidents for the PDCF were considered and no such accidents were considered in the MOX ER. However, the leak path factors for the MOX explosion and fire accidents were revised from 0.01 to 0.0001 to give more credit to the high-efficiency particulate air (HEPA) filters in reducing the amount of radioactivity released to the environment in the analyses as reported in Section 4.3.5.2.

The EIS provides a conservative estimate of accident impacts and an independent review of previous accident analyses performed for the proposed MOX facility, the PDCF, and the WSB. Concerns have been expressed about the use of the GENII code for accidents and the inclusion of ingestion doses in the impacts. As discussed in more detail in Comment J.3.14.20, the conservative nature of the GENII accident dispersion model was tempered by the use of direction-specific 95th percentile meteorology rather than 99.5th percentile as suggested by Nuclear Regulatory Commission Regulatory Guide 1.145. The rationale for inclusion of ingestion doses in the impacts is discussed further in the response to Comment J.3.14.8.

Thus, the accident impacts presented in this EIS are conservative in nature. The accidents are reasonably foreseeable and not overly conservative by orders of magnitude. Additional text was added to Section 4.3.5.2 of the FEIS to discuss the uncertainties involved in the assumptions and calculations.

As discussed in Section 2.5, it is estimated that the construction and operation of the proposed MOX facility would have small radiological impacts on, and risk to, human health. This finding is borne out by the low impacts assessed while using conservative assumptions.

J.3.14.10 Comments: 22-001
53-002

Comment: Concern was expressed with the use of hypothetical rather than real data for accidents. It was stated that the DEIS should have used the facts from real radioactive accidents instead of hypothetical accidents. It was suggested that these accidents affected generations of Americans not just the generation living when the accident occurred. The DEIS should explain why the only health consequence that was considered was latent cancer fatalities.

Response: The accidents evaluated were those considered to be reasonably foreseeable given the processes and procedures needed at the proposed MOX facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB). Data based on actual accidents does not exist for many of the potential hazards evaluated in the EIS.

Genetic effects and the development of cancer are the primary health concerns attributed to radiation exposure. Latent cancer fatalities (LCFs) are the radiological health effect end point used in this EIS as a measure of human health impacts. Although radiation-induced genetic effects have been observed in laboratory animals (given very high doses of radiation), no evidence of genetic effects has been observed among the children born to atomic bomb survivors from Hiroshima and Nagasaki. Thus, there is no basis for estimating genetic effects in descendants of persons exposed to high doses of ionizing radiation.

The extent to which low levels of radiation cause cancer is currently the subject of scientific debate. The Nuclear Regulatory Commission (NRC) used conservative assumptions and values to estimate potential LCFs from hypothetical accidents so as not to underestimate potential impacts. Because statistical data on low level radiation exposure and from previous accidents are inconclusive as to the inducement of cancer, the NRC's assumptions were based on extrapolation of data from exposure of humans to high levels of radiation, much higher than members of the public would expect to receive if an accident occurred.

J.3.14.11 Comment: 25-002

Comment: The DEIS, which included both the MOX plant and the Pit Disassembly and Conversion Facility (PDCF), did not contain sufficient detail to allow an independent assessment of their analyses. However, its worse-case incident, which occurred in PDCF, not the MOX plant, seems grossly exaggerated. A fire in a modern plutonium cabinet or glove box would be unlikely to generate either the heat or the releases of plutonium and tritium that was assumed. Any plutonium in such a fire, if it occurred, would not dissipate to the public. The assumption was made that the government would not collect the contaminated food to keep it from being eaten was questioned. Surely this hypothetical incident scenario is supposed to be at least remotely possible. This draft EIS needs significant revision.

Response: The accident scenarios evaluated in the EIS are based on information in the MOX ER and the DOE's SPD EIS. This included a fire in a glovebox that released plutonium and tritium. All accident release source terms and site-specific input data necessary to perform an independent assessment were provided in Appendix E of the EIS.

As stated in response to many of the above comments, the accidents considered were not worst-case accidents. The response to Comment J.3.14 8 discusses why the food ingestion pathway was included.

J.3.14.12 Comments: 62-002
116-003

Comment: The DEIS states that credible or reasonably foreseeable accidents are considered. Several past accidents that were previously considered “incredible” including Three Mile Island #2 in 1979; Chernobyl in 1986, the N.Y. City Twin Towers in 1993 and again in 2001 were provided as examples. The probability that these events would happen in the manner in which they occurred (before they occurred) is very, very small. Yet, the incredible happened. The DEIS should also consider “incredible” events and worst-case accidents.

Response: Worst-case accidents and specific terrorist initiated events are not considered to be reasonably foreseeable and are therefore not considered in this EIS.

J.3.14.13 Comment: 97-004

Comment: The analyses in the DEIS do not appear to address uncertainties - including uncertainties in design, uncertainties and inaccuracies in models, uncertainties in input parameters, and excluded or overlooked effects. In addition, the sensitivity of the results to changes in assumptions and parameters is unclear. It is recommended that uncertainty and sensitivity be addressed and included in the DEIS.

Response: The analyses in the EIS are based on the best, current information available. If significant changes in design or function are made, a future supplement to the EIS might be required. Furthermore, conservative assumptions and input parameter values were used so as not to underestimate risks.

J.3.14.14 Comments: 97-007 101-001
97-015 102-001
96-017

Comment: Concern was expressed regarding the computer codes that were used to estimate radiological impacts, including errors miscalculating the number of deaths in low income, African American communities as a result of a severe MOX accident. It is not clear if the computer codes are endorsed by Nuclear Regulatory Commission (NRC) regulations and/or guidance, and if they meet NRC quality assurance requirements, including verification and validation for the specific site and application. Concern was also expressed regarding the uncertainty of additional errors in the DEIS.

Response: The computer codes selected for performing the analysis have a proven track record in accident analysis and National Environmental Policy Act compliance. The accident input parameters and assumptions provided by DCS for the MOX facility and Waste Solidification Building accidents as well as those for the Pit Disassembly and Conversion Facility accidents from the Surplus Plutonium Disposition EIS have been carefully scrutinized by the NRC as part of the licensing process for appropriateness and modified if necessary. The preparation of the EIS followed applicable NRC guidance and

regulations. The NRC reviewed analyses performed by the contractor, Argonne National Laboratory (ANL). ANL does have a quality assurance program that was followed in the preparation of the DEIS. In addition, the NRC retained the Center for Nuclear Waste Regulatory Analysis to review the DEIS prior to publication. A discussion of the quality assurance associated with the GENII code is provided in the response to Comment J.3.14.16.

J.3.14.15 Comments: 64-006
86-003
86-051

Comment: The bounding accident for the Mixed Oxide Fuel Fabrication Facility – an explosion in an aqueous polishing cell – was not properly characterized. The discussion provided in Section 4.3.5.2 and Table 4.12 fails to explain that the accident is prevented. See Draft Safety Evaluation Report on the Construction Authorization Request for the Mixed Oxide Fuel Fabrication Facility (SER for construction) Table 10.1-3, footnote b. The DEIS should clearly state that an explosion in an aqueous polishing cell is provided for illustrative purposes because, pursuant to NRC’s own regulations, the design safety features, will prevent such an accident. The Draft EIS further fosters a misimpression on the public by postulating that, once this hypothetical accident occurs, neither DCS, the Department of Energy, the Nuclear Regulatory Commission, nor the States of South Carolina or Georgia would take any intervention to protect the public by removing contaminated food or soil. See Draft EIS page 4-36, lines 8-18. In fact, the document further assumes that contaminated food is distributed outside the immediate vicinity of the Savannah River Site. See Draft EIS page 4-41 lines 25-38. These assumptions are inconsistent with the NRC guidance to use “reasonably foreseeable” accident evaluations that are coordinated with the SER for construction. The DEIS should state the probability associated with the various accidents.

Response: The explosion event at the proposed MOX facility was characterized according to information in the MOX ER and considered to be “highly unlikely” because of the design features of the facility. However, as noted in Section 1.1.2, the EIS is broader in scope than the SER and has a different focus. The EIS assumes that an accident will occur and estimates potential impacts to human health and the environment from the accident. The likelihood of accident consequences is evaluated in describing the risk associated with a postulated accident. The FSER is concerned with documenting the NRC staff’s safety findings of an applicant’s application. As discussed in Section 1.1.2, information in the SER, that is not germane to environmental impacts, is not repeated in the EIS. Although conservative assumptions were applied to the source term and release fraction, the event would have been classified as “not credible” if the initiation of the event was totally out of the realm of possibility.

See Comment J.3.14.8 for the response to removing the ingestion pathway.

J.3.14.16 Comments: 86-053 89-007
86-066 94-001
89-002

Comment: The GENII code is not an appropriate model for estimating accident impacts to the collective public. A number of conservative assumptions compounded lead to excessively conservative results. Of major concern are 1) the use of the plume centerline air concentrations for the entire sector being analyzed, which results in unrealistically high impacts, and 2) the modeling of crop harvest immediately following an accidental release leads to excessive impacts from the food ingestion pathway.

Response: The GENII code was selected in order for the Nuclear Regulatory Commission (NRC) to perform an independent analysis of proposed MOX facility, Pit Disassembly and Conversion Facility (PDCF), and Waste Solidification Building (WSB) accidents. MACCS2 had been previously used to perform analyses for the proposed MOX facility and PDCF. These two codes were the only codes recommended for the DOE Safety Analysis Toolbox in the area of radiological dispersion and consequence analysis (WSRC-MS-2001-00091). The GENII code was developed under software quality assurance guidelines based on the American Society of Mechanical Engineers Nuclear Quality Assurance-1 (ASME NQA-1) standard. As with all accident analysis codes, both GENII and MACCS2 have been cited for problems with software quality assurance (WSRC-MS-2002-00118) which was an additional reason for using GENII as a peer-reviewed alternative to MACCS2. The error in the GENII tritium accident module regarding the use of the food grid was identified by the NRC during development of the EIS and a workaround developed in consultation with the code developer.

The GENII code has also been used in numerous previous environmental impacts statements in the analysis of accident impacts (e.g., DOE/EIS-0161, *Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling*; DOE/EIS-0200-F, *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste*; DOE/EIS-0269, *Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride*; DOE/EIS-0277, *Final Environmental Impact Statement on Management of Certain Plutonium Residues and Scrub Alloy Stored at the Rocky Flats Environmental Technology Site*).

Due to the conservatism inherent in the GENII accident population dose model, the direction-specific 95th percentile impacts were assessed rather than the direction-specific 99.5th percentile as suggested in Regulatory Guide 1.145. The response to Comment J.3.14.20 provides more information on this subject. In addition, it is not always apparent when the results from MACCS2 are conservative. For example, the site-wide 95th percentile result from the PDCF tritium accident from the Surplus Plutonium Disposition EIS (DOE/EIS-0283) was 110 person-rem in the short-term. Use of later 1987 weather data (worst-case for 1987 through 1996 as used in the MOX ER and in this EIS) in MACCS2 for the same accident results in a dose of approximately 70 person-rem, a 40% difference.

The accident analysis performed using GENII provided ingestion impacts for four different times during the year designated as “winter,” “spring,” “summer,” and “autumn” by the code. These four seasons represent different stages in the growth cycle of crops potentially affected over the course of a year by an accidental release of radioactive material. The impacts for “autumn,” representative of conditions immediately prior to harvest, were chosen for presentation in the DEIS. Such impacts were included to provide perspective on what could happen without the interdiction of crops or if contaminant levels fell below protective action guidelines.

In summary, the NRC performed an independent accident analysis with a computer code with an established track record in the area of accident analysis. Conservative assumptions were used but not to the extent that the analysis could be considered overly conservative.

J.3.14.17 Comment: 86-057

Comment: In Section 4.3.5.2 of the DEIS, the meteorological conditions for the proposed MOX facility hypothetical explosion involves winds directed to the west-northwest. The meteorological conditions for the Pit Disassembly and Conversion Facility hypothetical tritium release involves winds directed to the southwest. It is not intuitively obvious why both accident evaluations do not have the same meteorological conditions.

Response: As discussed in Section 4.3.5.2 of the EIS, the inhalation pathway dominates the short-term exposure. Thus, the west-northwest sector has the highest impacts because of the larger number of people in that direction. For the 1-year exposure, the ingestion pathway dominates. Because more crops are grown in the southwest, the highest impacts were estimated for this direction despite any differences in meteorological conditions such as stability frequency and wind speed and direction.

J.3.14.18 Comments: 89-003
89-007

Comment: The results reported in the DEIS errata sheets are not physically possible. The predicted doses for the explosion scenario for the proposed MOX facility would seem to require more plutonium to be ingested than would be released in the postulated accident. To result in the number of latent cancer fatalities attributed to the ingestion pathway, the calculations strongly suggest that the offsite population would be required to ingest contaminated food containing almost twice the amount of plutonium postulated by the Nuclear Regulatory Commission to have been released by this accident. In addition, DOE’s experience indicates that the realistic fraction of released contamination to be inhaled or ingested is several orders of magnitude less than these numbers indicate.

Response: The results reported in the errata sheets are physically possible. The claims of excessive conservatism are exaggerated in the comment. The internal dose conversion factors (DCFs) for ingestion and inhalation used by GENII and the DCFs in Federal Guidance Report 11 for ingestion and inhalation, are based on International Commission on

Radiological Protection (ICRP) Reports 30 and 48. The “worst case” solubility library as defined in GENII documentation (results in maximum dose) in GENII was used in the EIS accident analysis. If the entire amount of radioactive material released for the MOX explosion event (as reported in Table E.13 in the errata sheets) was assumed to be ingested, a 30,000 person-Sv dose would be expected using the worst case solubility values from Federal Guidance Report (FGR) 11 for each radionuclide. The dose reported in Table 4.14 of the EIS, 2,700 person-Sv, is 9% of the 30,000 person-Sv. Therefore, more plutonium is released than ingested.

Similarly, for inhalation, if all radioactive material released from the explosion was inhaled, a population dose of 3,650,000 person-Sv would result. Thus, the estimated dose in Table 4.14 of 910 person-Sv is only 0.025% of that expected if all of the material was inhaled, not 0.23% as suggested in the comment.

Much of the plutonium might settle to the ground prior to reaching 20 miles from the release point. However, under 95th percentile meteorological conditions, the contaminant plume will be more narrow and concentrated, resulting in higher concentrations downwind than for other conditions.

Finally, ingestion doses are routinely a small fraction of inhalation doses if the crop density ratio to population density is low in the areas considered or if direct deposition on crops is not considered. Neither condition applies to the analysis performed for this EIS.

J.3.14.19 Comment: 98-008

Comment: The original DEIS included significant errors in the calculation of latent cancer fatalities if there were an explosion at the proposed MOX facility – estimating nearly 400 deaths; the new calculations result in less fatalities, but we still consider 100 deaths to be significant and important enough to warrant denying approval.

Response: The calculation of 100 latent cancer fatalities (LCFs) involved the ingestion of all food crops that were assumed to be contaminated immediately prior to harvest. Text was added to Section 4.3.5.2 of the FEIS to explain the reasons for including the food pathway in the collective population 1-year exposure impacts. Impacts for the collective population 1-year exposure without ingestion have also been added to the impacts presented in Section 4.3.5.2.

One reason for inclusion of the ingestion dose was for perspective if interdiction of crops was not implemented. Because the Nuclear Regulatory Commission does expect interdiction to occur if potential crop contamination results from an accidental release, the primary focus is on the short-term exposures, which do not include ingestion, presented in Section 4.3.5.2 and in Table 2.1 in Section 2.4 of the EIS. The maximum short-term collective population exposure, assuming the accident occurs, results in approximately 3 LCFs. This estimate is the result of using conservative assumptions and represents small doses to all individuals in a large population. Moreover, the LCF estimate is a consequence of an accident with a very low probability.

J.3.14.20 Comments: 86-054
86-055
89-004

Comment: The use of the GENII computer code to calculate Chi/Q values in the DEIS for a single specific direction, without consideration of any other directions, will not produce a site-representative 95th percentile Chi/Q. Despite statements that population impacts in the DEIS are based on meteorological conditions at the 95th percentile, they may actually be based on conditions at the 99 to 99.5th percentile, leading to overly conservative collective dose impacts.

Response: The collective dose results from GENII are not overly conservative. For accident analyses, the Nuclear Regulatory Commission (NRC) accepts the maximum sector air concentration value or the overall site 95th percentile value, whichever is larger (Regulatory Guide 1.145). For this EIS, staff used the maximum sector value rather than the overall site 95th percentile value as discussed in the comment. The maximum sector air concentration value is determined by evaluating the impact in each of the 16 sectors. Using the guidance of Regulatory Guide 1.145, the 99.5th percentile value would be determined and the largest value for the 16 sectors selected. Because of the conservative nature of the assumptions used in the accident analysis, the maximum sector results were determined using the 95th percentile concentration values using GENII rather than the 99.5th percentile values. Use of the 99.5th percentile values would have resulted in larger estimated exposures that would have been overly conservative. Maximum short-term impacts were found to be to the WNW of the SRS, because that sector has the largest off-site population density. Maximum long-term exposures that included the ingestion pathway were found to be primarily to the SW of the SRS because that sector contains the the largest amount of crops in the area. Thus, accident impacts were assessed for all directions from the SRS. For each case, the impacts reported were for the sector with the largest impacts as suggested by NRC guidance.

J.3.14.21 Comment: 105-015

Comment: Plutonium is not the same as uranium. No mention in this DEIS is made for control of humidity, despite plutonium being much more reactive in a humid environment. Plutonium metal is also a concern in the Pit Disassembly and Conversion Facility (PDCF). From 6-1.3 of the Plutonium Handbook, "When a container is opened spontaneous ignition may then occur, usually resulting in destruction of the container and the scattering of metallic oxide (Pu) through the glove box train and the exhaust system." The DEIS mentions no precautions to prevent this.

Response: Spontaneous ignition of plutonium (and alloys) requires plutonium to be in the form of metal turnings or powder that have higher surface areas than monolithic pieces (such as the plutonium pits). Spontaneous ignition is a result of the plutonium metal reacting with oxygen and/or water in the air to form an oxide. Neither the PDCF or the proposed MOX facility is expected to handle metal plutonium in powder form. The plutonium pits that the PDCF is expected to receive are in a bulk metal form. The proposed

MOX facility will handle plutonium in the oxide form that does not have the potential for spontaneous ignition.

J.3.14.22 Comment: 116-015

Comment: For airborne releases of radiation, in an accident, the maximally exposed individual (MEI) is at the north Savannah River Site (SRS) boundary. Yet the 1 year maximum dose is at the SSW boundary. It is not apparent why this is the case. For most of the year there are no prevailing winds at the SRS. It appears there is no real “safe” direction to evacuate to in the event of an accident.

Response: For accident releases, the MEI is located to the north-west of the proposed facilities. As discussed in Section 4.3.5.2 of the EIS, the MEI is a hypothetical person who is assumed to be located at the SRS and could receive the highest possible dose of radiation or of a hazardous chemical from a given event or process. Because the site boundary is closest to the proposed MOX facility on the north-west side of the SRS, as shown in Appendix E (Table E.11 in the DEIS), the MEI is located to the north-west. The maximum dose to the SSW is a 1-year collective population dose. It considers several pathways of exposure including direct radiation, inhalation and ingestion. The SSW sector has the highest crop production. As discussed in Section 4.3.5.2 of the EIS, the 1-year exposure estimate assumes that all the contaminated crops are eaten. For this sector, more crops are produced than could be eaten by the people living there. Therefore, it is assumed that the crops are eaten by others, and the exposure to those people is included in the 1-year exposure estimate for the SSW sector.

As discussed in Section 4.3.5 of the EIS, impacts from accidents would depend on the wind direction and speed following a hypothetical accident. Figure 3.5 presents the annual wind rose for the SRS. The prevailing wind directions are W to S and NNE to ENE. The least prevalent wind direction is to the N and NW. The SRS emergency response plan takes into account the prevailing wind direction at the time of an accident.

J.3.14.23 Comment: 86-122

Comment: The GENII code is not an appropriate model for estimating accident impacts to the collective public. A number of conservative assumptions compounded lead to excessively conservative results. Of major concern are 1) the use of the plume centerline air concentrations for the entire sector being analyzed which results in unrealistically high impacts, and 2) the modeling of crop harvest immediately following an accidental release leads to excessive impacts from the food ingestion pathway.

Response: The comment specifically references text in Section E.2.1.3 in Appendix E. However, the discussion in Section E.2.1.3 discusses the use of the GENII code for normal operations, not accident conditions. It is the same code used by DCS in their MOX ER for assessing the risks from normal operations. The statements made in the comment do not apply to the use of GENII for normal operations. A discussion on the appropriateness of using GENII for accident analyses is presented in the response to Comment J.3.14.16.

J.3.14.24 Comment: 86-124

Comment: Table E.12 indicates that the Nuclear Regulatory Commission (NRC) used a leak path factor of 0.01 for the internal fire and explosion events (See Section J.2.1.3 of the EIS). DCS used a leak path factor of 0.0001 for these events. DCS is currently discussing with the NRC safety analysis staff the appropriate leak path factor to use. If the NRC staff ultimately agrees to a leak path factor of 0.0001, DCS assumes the EIS staff will reevaluate the accident scenarios with this new leak path factor.

Response: The NRC has accepted the leak path factor of 0.0001 for the MOX internal fire and explosion events. The input data presented in Section E.2.2.1 in Appendix E and the accident impacts as presented in Section 4.3.5.2 have been revised to incorporate the change.

J.3.14.25 Comment: 97-011

Comment: The basis for uranium dioxide release estimates in Table 4.16 of the DEIS needs to be explained. The Nuclear Regulatory Commission (NRC) staff's Safety Evaluation Report of April 2002 identified this as an open issue and implied higher potential concentrations.

Response: In Section 8.1.2.3.3 of the April 2003 draft SER, the NRC staff evaluated the DCS's proposal for safe storage of uranium dioxide and found it acceptable. The NRC reviewed the risk of this event, and, as shown in Table 4.16 of the EIS, considers this a low risk event.

J.3.15 Air Quality

J.3.15.1 Comments: 8-003 89-010
86-021 89-011
86-031

Comment: The proposed MOX facility will result in exceeding the air quality limits at the Savannah River Site (SRS). The legality of the SRS exceeding the $PM_{2.5}$ standard was questioned. Also, in Table 2.1, it should be made clear that the $PM_{2.5}$ is a 24-hour limit and should not be compared to the annual standard.

The definition of 'vicinity of SRS' and the resulting selection of South Carolina Department of Health and Environmental Control (SCDHEC) monitoring stations to characterize the existing ambient air quality in Table 3.3 appears arbitrary and cannot support subsequent statements regarding air quality compliance. Data in Table 3.3 suggest that local air quality is not in compliance with the 24-hour and annual standards for PM_{10} and $PM_{2.5}$. Most of these noncompliant data are from the Cayce monitor located over 40 miles from the proposed MOX facility which is classified as "commercial, urban-city center." In contrast PM_{10} monitors near the SRS boundary in more rural Jackson and Barnwell locations report

PM₁₀ values in compliance. Table 3.3 also lists a value of 71 micrograms per cubic meter from a rural monitor in Colleton County over 60 miles from SRS. This value was the absolute maximum for 2001, but the 98th percentile value should be used to evaluate compliance which was 27 micrograms per cubic meter for this monitor. Data for annual PM_{2.5} in Table 3.3 is again from Cayce and exceeds the standard. In contrast, the Colleton monitor saw an annual average below the PM_{2.5} standard.

As part of the discussion of environmental consequences in Chapter 4, Tables 4.6 and 4.8 use a more reasonable set of data for the existing 'background' air quality except for the PM_{2.5} annual average. Again, the Cayce data are used to support the unwarranted conclusion (page 4-1, lines 28-31, and page 4-18, lines 30-32 of the DEIS) that 'measured values in the vicinity of SRS already exceed the annual standard.' This conclusion is repeated several times in Section 4.7.

The DEIS should be revised throughout to present conclusions regarding PM_{2.5} that are based on more representative data. In addition, Tables 3.3 and Tables 4.6 and 4.8 and pages 3-22, 3-23, 4-11, 4-16 through 4-22, 4-89, and 4-90 should be revised to present consistent and more representative information where possible.

Response: The air quality data presented in Chapters 3 and 4 of the EIS are used for different purposes. Chapter 3 presents measured data chosen to establish the baseline the air quality conditions in the area around the SRS site. The data in Chapter 4 are chosen to estimate the background levels for use in modeling impacts of the proposed action. The data provided in the air quality section is not intended to demonstrate compliance with air quality standards. The air quality impacts assessment compares modeled air concentrations of air pollutants with EPA and SCDHEC standards as a measure of the magnitude of the potential impact. Under NEPA regulations, it is generally recognized that comparison with regulatory standards is not sufficient to demonstrate the absence of adverse impacts, because many criteria are considered in establishing regulations. In addition, a direct comparison of measured levels of the criteria pollutants with those specified in the standards do not necessarily constitute standards violations.

The data in Chapter 3 presents air concentrations from monitoring stations around the region. To reduce any problems associated with the choice of monitoring stations from the surrounding counties, Chapter 3 and Table 3.3 of the FEIS have been changed to use monitoring stations within 80 km (50 mi) of the proposed MOX facility site. This change eliminates the Cayce and Irmo sites from those presented in the DEIS. To provide a more comprehensive picture of air quality, both the minimum and maximum measured concentrations have been presented in Table 3.3.

As the comment noted, Table 3.3 might be interpreted as indicating that there are standard violations. As discussed above, the data provided in the air quality section is not intended to demonstrate compliance with air quality standards. The concentrations presented in Table 3.3 have been changed to be more in line with that of the corresponding standard. (For example, the 24-hr PM_{2.5} maximum and minimum are now 98th percentile values.) In addition, attainment of the annual PM_{2.5} standard requires a 3-year average of annual

values. The PM_{2.5} standard has not yet been implemented and official determination of compliance with this standard has not been made. Construction and operation of the proposed facilities would increase PM_{2.5} levels by small amounts (<0.1% of the standard value).

Except for PM_{2.5}, all the background values used in Chapter 4, came from SCDHEC's modeling summary for the SRS. As the comment noted, the Cayce monitor is not an appropriate choice for PM_{2.5} background for use in the impact analysis in Chapter 4. A closer look at the Cayce monitor showed that it is a source-oriented, special-purpose monitor and hence not appropriate for presenting a general picture of air quality or for picking a background. PM_{2.5} background levels were reassessed using monitors designated by the state as background sites. New values were chosen as the maximum concentrations measured in 2001 at the two rural background sites within 80 km (50 mi) of the MOX facility site. These values are 13.6 µg/m³ annual average and 27 µg/m³ 24-hr 98th percentile value. Tables 4.6 and 4.8 and the associated discussion in the FEIS have been updated using these values.

J.3.15.2 Comment: 47-004

Comment: The DEIS indicates that air flow is in a northeasterly direction. However, air flow data, from air quality monitoring systems, was gathered from the northwestern section of the Savannah River Site (SRS). It was questioned whether this was appropriate because the air would not be affected by the proposed MOX facility.

Response: The SRS has an air quality monitoring system that is used to verify air effluents are acceptable. This air quality monitoring system gathers data from all around the SRS. The data referred to in the comment is used for a different purpose than air quality monitoring. The purpose of the wind data is to characterize the air flow in the vicinity of the proposed MOX facility site. For modeling purposes, air flow data from the closest available meteorological station is typically used for assessment purposes. Given the proximity of H-Area to the proposed MOX facility site and the absence of significant terrain features, data from the H-Area meteorological station is considered adequate to characterize winds at the proposed site.

J.3.15.3 Comment: 86-042

Comment: In Section 4.3.2.2, page 4-23, line 9 of the DEIS, the discussion omits NO₂. The sentence should read: “. . .increments for SO₂, PM₁₀ and NO₂.”

Response: The text in the FEIS has been changed as suggested.

J.3.15.4 Comments: 19-007
56-004

Comment: Concern was expressed that the weather data used in the DEIS only covers a five year period. It was felt that this short period of time would not take into account some special South Carolina background. For example, it would not take into account effects of hurricanes such as Hurricane Hugo. It was suggested that the EIS consider a more expansive data set to cover weather patterns that have occurred in the Savannah River Site area and in South Carolina.

Response: Five years of data are frequently used to provide an overall picture of wind speed and direction. EIS Figure 3.5 presents such data. Five years of data are also suggested by the U.S. Environmental Protection Agency as the basis for dispersion modeling. Thus, the data set used is deemed adequate.

The time period for presenting extreme events such as hurricanes is longer because such events occur infrequently. Section 3.4.1 of the DEIS discussed tropical storms and hurricanes using data from 1700 to 1989. This has been supplemented with data for 17 storms from 1886 to the present.

J.3.15.5 Comments: 53-009
53-012

Comment: It was questioned whether the DEIS evaluated air quality impacts using actual air emission data from existing Savannah River Site (SRS) facilities or air emissions based on permit limits for those facilities. The consolidated incinerator facility is not currently operating. When this facility is operational, air emissions will be higher than reported in the DEIS. The DEIS should include emissions from the consolidated incinerator facility.

Response: As noted in Section 4.3.2, the air quality analysis adds the incremental impacts caused by the proposed MOX facility to the impacts of other sources. The impacts of other sources were taken into account by adding a maximum impact due to SRS sources and a background concentration representing the impact of non-SRS sources. The SRS maxima (See table 4.8) assume that all permitted sources, including the Consolidated Incineration Facility, operate at their permitted levels.

J.3.15.6 Comment: 86-126

Comment: In Section F.2.2, page F-7, line 11 of the DEIS, the sentence should be revised to read: "Engine-specific emission factors were not available for criteria pollutants."

Response: Vendor factors were provided by DCS for the emergency generators. The text in the FEIS has been revised to reflect that vendor factors were used.

J.3.15.7 Comment: 107-001

Comment: The DEIS states that transuranic (TRU) and low-level radioactive wastes (LLW) will be generated during operation of the proposed facility. Exhausts from the proposed facility will be treated to remove radioactive materials before the exhaust is discharged to the atmosphere. Please provide further information in the FEIS regarding frequency and duration of air quality monitoring measures and monitoring of the facility's emissions to the atmosphere.

Response: DCS discusses air effluent monitoring in Section 10.2.1 of the Construction Authorization Request. DCS notes that airborne releases are controlled by the building and glovebox ventilation systems, process effluent offgas system, and stack high-efficiency particulate air (HEPA) filters. DCS states that two redundant continuous air monitors and two fixed airborne particulate samplers will monitor the stack effluents. In its later application for a license to possess and use special nuclear material, DCS has committed to providing (1) a description of the sampling, collection, and analysis procedures; (2) a description of the proposed action levels and actions to be taken when action levels are exceeded; and (3) a description of the recording and reporting procedures. As discussed in Chapter 10 of the draft safety evaluation report for construction, the NRC has found this acceptable for purposes of the construction authorization.

J.3.16 Hydrology

J.3.16.1 Comments: 7-004 43-001 99-003
10-018 98-007 101-003

Comment: Currently, the Savannah River Site (SRS) requires enormous amounts of surface and ground water, in the tens of billions of gallons, just to support currently established operations. The DEIS does not clearly account for how much ground and surface waters will be used additionally by the proposed MOX facility versus the proposed no-action alternatives, including immobilization. Concern was expressed about maintaining the aquifers beneath the SRS.

The DEIS states that groundwater beneath the site is listed as a Class II drinking source by the Environmental Protection Agency, meaning it has potential for existing and future drinking water needs. It later states that contamination is present beneath the entire site. This should be clarified in the DEIS.

Response: Water use for the proposed action at the SRS is discussed in Section 4.3.3. Construction of the MOX building, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB) would require 139 million L/yr (37 million gallons/yr); operation of the MOX building would require 9.1 million L/yr (2.4 million gal/yr), the PDCF would require 48 million L/yr (12.7 million gal/yr), and the WSB would require 19 million L/yr (5 million gal./yr). These volumes are much less (about 0.1% and 0.05%, respectively) of the total water use at the SRS mentioned in Table 4.2. All of this water

would be obtained from wells; no surface water would be used (Sections 4.3.1.3.2 and 4.3.2.3.2).

Although the percentage of water needed for constructing and operating the proposed MOX facility is small compared to total water use at the SRS, actual impacts to the groundwater system were more conservatively evaluated for this EIS by comparing the predicted water use to total water use for the A-Area loop and the groundwater capacity for the A-Area loop wells. The evaluations made in this EIS were made using these values because groundwater for constructing and operating the MOX facility would be obtained from a combination of wells in the F Area and A-Area (i.e., the A-Area loop).

Groundwater beneath the SRS is classified as Class II waters (i.e., a current and potential source of drinking water). However, about 10% of the water beneath the site is known to be contaminated. No direct releases of contaminants to the aquifer would occur during construction or operation of the MOX facility (Section 4.3.3.2.1). No accident scenarios have been identified that would directly or indirectly release plutonium to the groundwater. Thus, no changes to groundwater quality would be expected as the result of allowing the proposed MOX facility to operate.

J.3.16.2 Comment: 27-003

Comment: Discharge information, including permitted and streamflow discharges, should be described with the same units of measure as those for stream discharge. The use of standard units of measure reduces confusion and facilitates comparison of values. For example, using the same unit of measure to describe the magnitude of the Savannah River Site (SRS) contribution to total streamflow in the two paragraphs above lines 39 and 40 on page 3-9 of the DEIS would facilitate comparison. A standard unit of measure format should be used throughout the document, such as describing discharge in millions of gallons per day (MGD), cubic feet per second (cfs), or cubic meters per day (m^3/s). Options include either following the standard unit of measure with equivalent measures in alternate units in parentheses in the text, or adding an appendix with conversion tables, comparative table, or equations to facilitate reader comparison between and among units of measure. The standard unit of measure format should be consistently applied for linear distances, area, volume, and discharges.

Response: In EIS Section 3.3.1, discharge for the National Pollutant Discharge Elimination System (NPDES) permits has been changed to the same units as those used for reporting flows in Upper Three Runs Creek. Permitted outfall F2, therefore, is $0.0048 m^3/s$ (0.17 cfs) and permitted outfall F5 has a flow of $0.0013 m^3/s$ (0.046 cfs).

J.3.16.3 Comment: 27-005

Comment: The description of aquifers in Section 3.3.2 of the DEIS should be expanded to include aquifer properties, such as lithology, horizontal and vertical transmissivity, and storage. This information would allow estimating the extent and timing of potential

groundwater contamination that could travel and impact nearby rural or municipal groundwater users.

Response: For the proposed action, there would be no discharges to groundwater during construction or operation of the proposed MOX facility, Pit Disassembly and Conversion Facility, and Waste Solidification Building, and there have been no accident scenarios postulated that would release plutonium to the groundwater system. Because there would be no direct discharges to groundwater, there would be no impacts to nearby municipal or rural groundwater users. Indirect impacts to groundwater could occur during construction and operation activities. These indirect impacts would be derived from surface spills and subsequent mobilization by precipitation and infiltration of treated wastewater that would be released to nearby surface water under appropriate surface water discharge guidelines. The impacts of these releases are expected to be small, based on adherence to best management practices and prescribed surface release guidelines. Because there would be no direct impacts to groundwater, and because indirect impacts would be small, including detailed information on aquifer properties, such as lithology, horizontal and vertical transmissivity, and storage, is deemed not to be necessary for this EIS. See Comment J.3.16.6 for more information on aquifer properties and groundwater contamination.

J.3.16.4 Comment: 27-006

Comment: The description of groundwater flow in F-Area provided in Section 3.3.2 of the DEIS is incomplete. As written, the description is inadequate for estimating the likelihood of potential contamination of underlying aquifers from the surface. Groundwater flows from areas of recharge to areas of discharge; the report describes lateral flow direction and identifies discharge areas but does not mention recharge areas or recharge rates. If the F-Area is located on a groundwater divide and the top of the aquifer begins as close as 3 feet below land surface as described elsewhere in this section, it is probable that the proposed MOX facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB) are located in a recharge area.

Surface contamination or spills occurring in a recharge area can easily be introduced into a shallow aquifer, as indicated by the existence of contaminated groundwater from past operations in F-Area (pages 3-11 through 3-13 of the DEIS). This section should be expanded to provide information about recharge rates and location of recharge areas in F-Area.

Response: Text has been added to Section 3.3.2 that states that F-Area is in a region of groundwater recharge from precipitation. Text has also been added to state that the average recharge to the Upper Three Runs Aquifer is 35.6 cm (14 inches) per year.

Text in Section 3.3.2 has been changed to give more local analysis of the depth to groundwater at the location of the proposed MOX facility. Assuming 12.2 meters (40 ft) for excavation, the shallowest depth to groundwater would be about 11 meters (36 ft). For

these conditions, surficial spills would have little possibility for adversely affecting the underlying groundwater, as discussed in Sections 4.4.3.3.2.1 and 4.3.3.2.2.

J.3.16.5 Comment: 27-007

Comment: The discussions in Section 3.3.2 of the DEIS indicate that the Upper Three Runs Creek Aquifer is divided into two zones by the Tan Clay Confining Unit of the Dry Branch Formation. The two zones and the Tan Clay Confining Unit, however, are not depicted in Figure 3.4, “Underground Aquifers at the SRS.” Without this information, it is not possible to visualize and understand the groundwater-flow system that underlies the proposed MOX facility. Specifically, it is not clear how the two aquifer zones and the Tan Clay Confining Unit within the Upper Three Runs Aquifer relate to the land-surface topography (outcrop areas), the Gordon Confining Unit, the Gordon Aquifer, and the Steed Pond Aquifer. Figure 3.4 should be redrawn or modified to reflect the text.

Additionally, the discussion regarding the occurrence of a water table in the lower aquifer zone beneath the Tan Clay Confining Unit is confusing. It raises the question whether there is a water table in the upper aquifer zone. Subsection 3.3.2 should be rewritten to eliminate the vague and incomplete description of the groundwater system underlying the proposed MOX facility in F-Area.

The text appears to refer to the Upper Three Runs Creek Aquifer and the Upper Three Runs Aquifer interchangeably. This is confusing and should be clarified. If the two names refer to a single geologic unit, then only one term should be used throughout the DEIS for consistency.

Response: Figure 3.4 is a generalized diagram of the groundwater system for the entire Savannah River Site (NW to SE transect). The figure is provided for general, not specific, information. The width of the figure, as shown at the top, is 70 miles. At this scale, F-Area and the location of the proposed MOX facility are not readily distinguishable and accurately splitting the Upper Three Runs Aquifer into two zones is not possible.

The text in EIS Section 3.3.2 discusses groundwater conditions beneath the location for the proposed MOX facility. The text states that the water table occurs in the lower aquifer unit beneath the Tan Clay. This occurs because, as stated in the text, the topography drops off sharply to the deeply incised Upper Three Runs Creek to the north (approximately 36.3 meters (120 ft) of incision) where the Upper Three Runs Aquifer discharges.

All references to “Upper Three Runs Creek Aquifer” were replaced with “Upper Three Runs Aquifer” as suggested in the comment.

J.3.16.6 Comment: 27-008

Comment: Section 3.3.2, page 3-13 of the DEIS indicates that groundwater in the Upper Three Runs Aquifer beneath the proposed MOX facility is contaminated with various heavy industrial and nuclear contaminants. Moreover, recent sampling indicates that groundwater

contamination is absent above the Tan Clay Confining Unit but is present in the lower aquifer zone beneath the confining unit. The discussion and analysis, as currently written, are inadequate for an assessment of the potential for additional contamination at the site relative to the contamination that already exists there, the spatial distribution of contaminated zones in the underlying aquifer, and the potential direction of groundwater movement and contribution to base flow in tributaries to the Savannah River near the F-Area.

We recommend improving the discussion to support this assessment. An adequate discussion should (1) explain why the upper aquifer zone is not contaminated, (2) identify the locations of the wells recently sampled for groundwater contamination at the MOX site, (3) identify the locations of sources that may have contaminated the lower aquifer zone, and (4) explain how the topography and surficial geology of the MOX site relates to the outcrops of the upper and lower aquifer zones.

Response: As discussed in Section 3.3.2, the direction of groundwater flow in the Upper Three Runs Aquifer is primarily to the north toward Upper Three Runs Creek, where it discharges. Contamination does not occur above the Tan Clay layer in this area because the groundwater table lies below the clay (the topography drops off sharply toward Upper Three Runs Creek as stated in the text, and the lower aquifer unit is near or outcrops at the base level of the creek). For clarity, reference to the Tan Clay confining layer was deleted.

A description of the existing groundwater contamination is also provided in Section 3.3.2. Contaminants of concern include gross alpha and beta activity, tritium, uranium, and trichloroethylene (TCE). These results are based on sampling 9 wells in the proposed location for the MOX facility. Text was added to Section 3.3.2 to state that 9 wells evenly distributed across the site were included in the sampling. Their specific locations, however, are not crucial to the argument presented.

New text was also added to state that the contaminant plume appears to originate inside the F-Area fence and is related to F-Area nuclear operations and waste management practices at the Old F-Area Seepage Basin (OFASB).

Additional details on hydrogeological properties, such as lithology, horizontal and vertical transmissivity, storage coefficient, effective porosity, and contaminant-specific distribution coefficients needed to perform independent assessments for contaminant transport are not included in this EIS because there would be no direct discharges to groundwater during construction or operation of the proposed MOX facility and there have been no accident scenarios postulated that would release plutonium to the groundwater system. Indirect releases to groundwater derived from surface spills and subsequent mobilization by precipitation could occur during construction and operation of the MOX facility. The impacts of these spills are expected to be small based on adherence to best management practices.

J.3.16.7 Comment: 27-010

Comment: Without further information in Section 4.3 about groundwater recharge and flow paths, there is insufficient information to determine whether all or any contaminants in a

hypothetical spill would be captured by base flow contributed to the Upper Three Runs Creek, or whether some could pass in groundwater that flows under the creek and continues downgradient. The DEIS should provide sufficient information to distinguish between these possibilities. The DEIS should also provide information on the ultimate fate of a hypothetical spill that is wholly or partly intercepted by the creek. We suggest that the DEIS provide information on processes that affect the transport and fate of these potential contaminants in the environment, for example, some forms of plutonium would be likely to sorb onto clay particles in subsurface materials or streambed sediments rather than travel with the water.

Response: The average recharge rate from precipitation for the Upper Three Runs Aquifer in the vicinity of the proposed MOX facility is 35.6 cm (14 inches) per year (WSRC 1997). This information was added to Section 3.3.2.

As discussed in Section 3.3.2, groundwater in the vicinity of the proposed MOX facility flows to the north toward the deeply incised Upper Three Runs Creek, where it discharges. On the basis of site topography, it is unlikely that water would underpass the Upper Three Runs Creek to any great extent because groundwater north of the creek is expected to flow to the south and discharge to the creek. Because the possibility of underpass is very unlikely, no additional text is required.

Because no accidents have been identified that would release plutonium to the groundwater and no direct or indirect releases of plutonium are planned, no additional discussion on its fate and transport following discharge to surface water is required.

Other surficial spills (e.g., oil) would have very little adverse impact on groundwater and even less impact on surface water following mixing and dilution and adherence to good engineering practices that would limit its initial mobilization and transport. Because the concentrations in groundwater derived from a typical industrial surficial spill would be very small and highly localized, there is no need to discuss the fate and transport of such material in tertiary receiving waters.

J.3.16.8 Comment: 43-005

Comment: The groundwater geology in this area is susceptible to variable conditions that are site-specific and cannot be accurately predicted. The consequences for those factors need to be taken into account in evaluating risk.

Response: Groundwater hydrology for the SRS and the F-Area are described in Section 3.3.2. Although groundwater hydraulic parameters are variable at the Savannah River Site and in the vicinity of F-Area, impacts of construction and operation on groundwater can be predicted with sufficient accuracy to ensure human and environmental safety (Sections 4.3.3.2.1 and 4.3.3.2.2) because there would be no direct releases to the groundwater. For such a situation, there would be no direct impacts. Indirect impacts to groundwater quality could also occur due to surficial spills. While precise pathlines and concentrations are difficult to predict accurately, their impacts are expected to be small

based on adherence to best management practices that would limit the quantity of contaminants reaching the groundwater system.

J.3.16.9 Comment: 86-027

Comment: The MOX ER Rev 2 discusses more recent subsurface analyses presented in WSRC 2002, *Work Task Authorization 06: Summary of Groundwater Quality of the Mixed Oxide Fuel Fabrication Facility Site*. A copy of this document was provided to the NRC with the references for the MOX ER Revision 1 & 2. The DEIS does not appear to account for this information. It is suggested that the last two sentences on page 3-12, lines 36-40 of the DEIS be deleted, and “Contaminated groundwater also exists beneath the Old F-Area Seepage Basin (OFASB)” be inserted at the beginning of the next paragraph.

Response: The text in Section 3.3.2 was changed to state that the source of groundwater contamination is from various heavy industrial and nuclear operations over the past 50 years in the F-Area. The contaminants plume appears to originate inside F Area and extend beneath the proposed MOX facility site with movement in a fan-like direction of groundwater flow under the proposed MOX facility site. Text was also added to state that contaminated groundwater also exists beneath the Old F-Area Seepage Basin.

J.3.16.10 Comment: 86-028

Comment: It is suggested that the text on page 3-12, lines 40-45 of the DEIS be changed to read: “The OFASB is located about 180 m (600 ft) north of F-Area, immediately adjacent to the western boundary of the MOX site. The OFASB has been remediated by filling the basin with clean soil, capping, and stabilizing the contaminated soil within the basin with grout (WSRC 1997a). Groundwater contaminants of concern at the OFASB include iodine-129, nitrate, strontium-90, tritium, and total uranium. Contaminants of interest include lead, radium-226, and radium-228. A small component of the contaminant plume from OFASB flows beneath the westernmost corner of the proposed MOX site. Groundwater is monitored on a regular basis with 15 wells. Contaminant fate and transport models predict that the aquifer is expected to return to an uncontaminated state (i.e., a condition in which no maximum contaminant levels are exceeded) within 2 to 115 years, depending on the specific contaminant.”

Response: The text in Section 3.3.2 was revised as suggested in the comment.

J.3.16.11 Comment: 86-029

Comment: It is suggested that the first sentence on page 3-13, lines 1-5 of the DEIS be deleted. Change the next sentence to read: “The results of recent sampling in the compliance wells for the OFASB indicated that concentrations of several target constituents were above drinking water standards in several wells.”

Response: The text in Section 3.3.2 was revised as suggested in the comment.

J.3.16.12 Comment: 86-030

Comment: It is suggested that the paragraph on page 3-13, lines 6-8 of the DEIS be appended with the following text: “There is, however, some uncertainty about whether these exceedances are related entirely to OFASB, to upgradient F-Area facilities, or to both.”

Append to this paragraph the following text: “There is, however, some uncertainty about whether these exceedances are related entirely to OFASB, to upgradient F-Area facilities, or to both.”

Insert a new paragraph: “The results of recent groundwater sampling at the proposed MOX facility site indicate that shallow groundwater (i.e., groundwater in the Upper Three Runs Aquifer) is contaminated. Gross alpha and beta activity, tritium, uranium, and trichloroethylene exceeded maximum contaminant levels for drinking water. Contamination is present beneath the entire MOX site, but is greatest beneath the western edge of the site. The contaminant plume appears to originate inside the F-Area fence and was and is related to F-Area nuclear operations and waste management practices at OFASB.”

Make the following text the final paragraph of this section: “Groundwater in the Upper Three Runs Aquifer beneath the MOX site is contaminated with various heavy industrial and nuclear contaminants. The proposed construction activities will take place at least 9 m. (30 ft.) above the zone of contaminated groundwater.”

Response: The text in Section 3.3.2 was changed as suggested in the comment.

J.3.16.13 Comment: 93-012

Comment: Page 4-18 of the DEIS states that water would be used to limit the amount of fugitive dust. This water will however interact with any radionuclides or other contamination in the soil and contribute to the already acknowledged plume of contamination under the site (page 4-7). No characterization of this plume is provided. How will it be possible to determine in the future whether the proposed MOX facility has contributed to this problem unless the current analysis includes a detailed characterization of what is currently in the soil, in the vadose zone, in the groundwater, in the plume, and the direction and speed of this plume’s movement.

Response: The newly added discussion on soil quality (Section 3.2.3) indicates that metal and radionuclide concentrations for near surface soils are well below the limits required by applicable regulations. Adding water to limit fugitive dust during construction would therefore have a small impact on groundwater resources.

As discussed in Section 3.3.2, a plume of contamination exists beneath the proposed location of the proposed MOX facility. This plume is moving north toward Upper Three Runs Creek where it discharges to surface water. Contaminants within the plume include iodine-129, nitrate, radium-226, radium-228, strontium-90, tritium, uranium (total), and lead.

Groundwater velocities in the Upper Three Runs Aquifer are on the order of several hundred feet per year. Due to sorption along the flow paths, however, contaminant velocities could be substantially less, depending on the degree to which they are sorbed to the surrounding material (contaminant-specific distribution coefficients). Because the proposed MOX facility would not discharge any contaminants directly into the Upper Three Runs Aquifer, it was determined that providing additional details on contaminant-specific velocities in the Upper Three Runs Aquifer was not required.

Surface spills could still lead to groundwater contamination. However, it is expected that the impacts of such spills would be small, based on adherence to best management practices.

J.3.16.14 Comment: 43-001

Comment: Concern was expressed about the quantity of surface and groundwater being used by the Savannah River Site (SRS). DEIS page 4-6 shows the annual usage and wastewater discharge for the sites of continued plutonium storage. The reported values for the SRS are 127,000 million liters from surface water and 13,247 million liters from groundwater. The discharge of liquid effluents is 700,000 million liters.

Response: As shown in Table 4.2, annual water use and wastewater discharges for the SRS is 140,247 million L/yr and 700 million L/yr, respectively. This table lists the total quantity of water used by the seven sites (Hanford, INEEL, Pantex, SRS, LLNL, LANL, and RFETS) at which continued plutonium storage is possible. Because the volumes of water are total quantities, they represent use from all ongoing activities at the sites. In all cases, the amount of water required exceeds the volume of water discharged. This difference occurs because water can be consumptively used by operations at the various sites that consume water, not just activities associated with continued storage of surplus plutonium. Because the water volumes listed in Table 4.2 are totals for all operations, they do not represent projected water use for constructing or operating the proposed MOX facility.

J.3.16.15 Comment: 86-099

Comment: The South Carolina Department of Health and Environmental Control (SCDHEC) informed DCS that a 401 Water Quality Certification is only required if a 404 Permit is issued by the Corps of Engineers. SCDHEC does not anticipate any requirement for a 401 Water Quality Certification for the proposed MOX facility.

Response: The text in the Protection of Water Resources section of Table 6.1 in the FEIS has been revised to indicate that the SCDHEC has notified DCS that a State Water Quality Certification in accordance with SC regulation R.61-101 is not required.

J.3.17 Waste Management

J.3.17.1 Comment: 86-045

Comment: The unit used in the DEIS on page 4-27, line 6 should be as follows: 47,000 yd³ per year (9.5 million gallons per year or 36,000 m³ per year).

Response: The values in question have been corrected. The value should have been 47,000 yd³/year as noted. This waste volume is converted to 36 million L/yr (9.5 million gal/yr) for consistency.

J.3.17.2 Comment: 86-048

Comment: The footnotes for Table 4.10 (h) and Table 4.11 (i) should be deleted. Nonhazardous liquid waste (sanitary sewage) is not stored and is released to site streams after treatment.

Response: The footnotes have been deleted.

J.3.17.3 Comments: 67-001 108-001 92-005 115-004 93-016

Comment: The DEIS analysis of the large volume of liquid radioactive wastes to be generated in the MOX program is incomplete. There are already millions of gallons of radioactive nuclear waste stored in this country. Liquid radioactive waste is highly corrosive, and there have been problems with such wastes degrading their containment vessels. The estimates of impacts for the liquid radioactive waste are baseless and therefore not verifiable. The assumption that simply transferring this waste to the Savannah River Site (SRS) and the Department of Energy (DOE) is an end-point when it comes to environmental impacts is specious. For example, stating that the low-level wastes associated with the proposed MOX facility is some percentage of the low-level waste at the SRS implies that the proposed MOX facility is cleaning up the SRS. Any incremental increase to the radioactive burden on the banks of the Savannah River is an unacceptable impact for the future generations. The DEIS should state how much liquid waste is anticipated, how long it will be necessary to store this waste, and what the long-term costs will be for storing this waste.

Response: The discussions of the waste generation and further waste management have been revised to more clearly show which processes are generating what types of wastes, how those wastes will be treated, if necessary, and how those wastes will be disposed of. Specific references have been added to show the source of the values used in the waste management analysis. Text has also been added to discuss the human and environmental impacts from waste management activities.

The highly radioactive slurry (or liquid high alpha waste) that would be produced would be transferred to a proposed facility (i.e., the Waste Storage Building [(WSB)] for further

processing. This facility would be newly constructed with containment vessels designed for the types of wastes planned to be generated by the proposed MOX facility and Pit Disassembly and Conversion Facility (PDCF). The liquid waste would not go to the high level waste tanks that have experienced corrosion problems noted in the comment. The processing of the liquid high alpha waste would generate solid transuranic (TRU) waste and solid low level radioactive waste (LLW) as its final waste forms. The TRU waste from the proposed MOX facility would be handled at the SRS like other TRU waste generated from other SRS activities. That is, the TRU waste would be packaged for disposal at the Waste Isolation Pilot Plant (WIPP) consistent with the national policy for this particular type of TRU waste in this country. Solid LLW is disposed of on-site [see revisions to the environmental report] at the E-area waste vaults or off-site at an approved facility. Liquid LLW would be treated and discharged to Upper Three Runs per permit. Environmental impacts associated with existing waste management activities are presented in the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE 1997a). Because the waste generated from the proposed action would be managed by the SRS within its existing facility capacities, the impacts from DOE 1997a are considered acceptable and are considered to include and bound the impacts for managing wastes from the proposed action. Therefore, comparing the capacities is considered a reasonable assessment method for assessing the waste management impacts of the proposed action. The cost for implementing the waste management activities has been included in the budget planned for managing the surplus plutonium.

J.3.17.4 Comments: 10-003 44-003 71-014 96-007
10-017 66-007 79-002 96-016
24-006 71-006 90-003

Comment: Concern was expressed regarding the production of additional radioactive waste at the Savannah River Site (SRS). The SRS is already plagued by enormous quantities of dangerous waste and previous contamination. Waste impacts associated with the proposed action were considered to only make the existing problems worse. The proposed MOX facility will produce waste for which there is no satisfactory solution. Concerns were expressed that transuranic (TRU) waste shipped to the SRS from other Department of Energy sites would delay the treatment of waste generated from the proposed MOX facility. The DEIS should include funds to address waste management.

Response: Existing waste management activities at the SRS are discussed in Section 3.9. Human health risks associated with existing waste management activities are included in the baseline human health risk discussed in Section 3.10. Environmental impacts associated with existing waste management activities are presented in the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE 1997a).

Waste generated from the proposed action is evaluated in the FEIS in terms of how it is going to be managed or handled (see Section 4.3.4), and what the impacts might be from transporting them to other locations for disposal (see Section 4.4.1). The cumulative

impacts associated with waste management activities are presented in Table 4.26 of the FEIS (DEIS Table 4.25). These evaluations indicate that the SRS has the resources and capacity for handling the additional waste. As discussed in Section 4.3.4 of the EIS and summarized in Table 2.1, the wastes generated by the proposed action are estimated to have a small to moderate impact on the waste management systems of SRS and WIPP.

The human health impacts from wastes are evaluated in terms of whether human exposure to the waste products would occur. Data provided for the proposed facilities indicate that no liquid discharges of waste would occur directly from the proposed MOX facility and the PDCF. Liquid discharges from the WSB would follow the NPDES permit guidelines. Data also indicate that air emissions impacts would be small. The waste streams generated would be disposed of at facilities designed and operated in accordance with Department of Energy (DOE) orders. Thus, disposal of these wastes is assumed to minimize human exposures to the wastes and have small impacts or no impacts on human health.

The DOE has budgeted for the surplus plutonium disposition mission including managing wastes from that mission. The cost of the proposed action discussed in Section 4.6 of the EIS includes costs for waste management activities.

J.3.17.5 Comments: 10-017 61-005
53-007 66-007

Comment: The clarity of the information in the waste management analysis was questioned. The DEIS does not adequately describe and track the various waste streams. A flow diagram would add to the clarity. The units in DEIS are not consistent. The liquid radioactive waste stream should be reported in liters and gallons. The human health effects associated with waste management activities are not addressed in the DEIS.

Response: The discussions of the waste generation and further waste management have been revised to more clearly show which processes are generating what types of wastes, how those wastes will be treated, if necessary, and how those wastes will be disposed. Specific references have been added to show the source of the values used in the waste management analysis. Text has also been added to discuss the human and environmental impacts from waste management activities. As suggested, Figure 4.1 has been added to the FEIS to help in the understanding of the process as to when and what types of wastes are generated and the ultimate disposition of these wastes. The FEIS has been revised to report liquid radioactive waste volumes in gallons and liters. The DEIS presented these volume in cubic meters for ease of comparison between various waste.

J.3.17.6 Comments: 13-006 103-003
97-016 112-003

Comment: The DEIS evaluates a proposal by DCS for the Department of Energy (DOE) to build a special waste building to handle the significant volume of highly radioactive liquid MOX wastes. The DOE has not yet generated any records or budget requests indicating acceptance of the MOX waste plan. The DEIS does not provide assurance that this can and will occur in a reasonable manner due to available and planned capacity, utilization, obligations, priorities, and acceptance criteria. The DEIS must discuss the environmental risks and consequences of DOE failure to implement MOX waste management. The DEIS should produce verifiable projections of waste volumes as well as discuss the environmental risks and consequences of DOE failure to implement MOX waste management.

Response: The DOE has included the construction and operation of the Waste Storage Building (WSB) into their planning for the proposed fabrication of the MOX fuel. The WSB is planned to be constructed and operated by the DOE to process the liquid high alpha waste from the proposed MOX facility. Because the WSB is required to be operational at the same time as the proposed MOX facility in order for the proposed MOX facility to operate, it is not reasonable to evaluate an alternative where this is not the case. See response to comment J.3.17.4 for additional information.

J.3.17.7 Comment: 116-016

Comment: The DEIS should clearly state how the high alpha waste will be treated and whether it would be classified as high-level waste, low-level waste, or mixed waste.

Response: The proposed plan for handling the liquid high alpha waste calls for transferring this waste stream from the proposed MOX facility to the Waste Solidification Building for further processing via a double-walled pipeline. The processing of the liquid high alpha waste would generate solid transuranic waste and low-level waste.

J.3.17.8 Comments: 86-019 86-050
86-047 86-073

Comment: The Savannah River Site (SRS) treatment capacity for nonhazardous liquid waste reported in Tables 4.10, Table 4.11, Section 2.4, and Section 4.3.4.2 of the DEIS is incorrect. The 35% value of the capacity of the Central Sanitary Waste Treatment Facility (CSWTF) was apparently calculated using values in Table 4.11. This is incorrect because treatment of waste from the proposed MOX facility, the Pit Disassembly and Conversion Facility, and the Waste Solidification Building requires much less than 35% of capacity. The correct value is closer to 10% (about half of the nonhazardous liquid waste from these facilities consists of non-process utility waters that will be released directly to permitted National Pollutant Discharge Elimination System (NPDES) outfalls).

The treatment capacity of the CSWTF is provided in the MOX ER on page 4-43 (1.1 M gals/day) or Table 5-6 (273M gal/yr). The permitted capacity is 1.05M gal/dy. The SPD EIS

(Table 3-41) reports CSWTF capacity as 1.45 Mm³/yr (383 Mgal./yr). It is recommended that 273 Mgal/yr value be used in the DEIS.

Response: The treatment capacity of the CSWTF has been changed to 273 Mgal/yr as suggested by the comment. The percentage in question has been recalculated based on the revised capacities of the CSWTF (from 73Mgal/yr to 273Mgal/yr). The value is now approximately 6%. The MOX ER does not provide a breakdown as to how much of the projected liquid nonhazardous waste is sanitary wastewater as opposed to process wastewater; and therefore, as a conservative approach the evaluation of impact assumed all of the projected volume to go to the CSWTF and calculations were performed accordingly.

J.3.17.9 Comment: 87-002

Comment: The DEIS discusses a number of the liquid waste streams to be dealt with including chloride, americium, and uranium. However, the DEIS does not mention other impurities that exist in some of the plutonium oxide stocks. The DEIS should address how these wastes will be handled.

Response: The impurities mentioned in the comment are present in very low concentrations in the plutonium feedstock. The impurities would be removed as part of the MOX plutonium polishing process and would become part of the liquid high alpha waste stream. The processing of the liquid high alpha waste would generate solid TRU waste and solid low level radioactive waste (LLW) as its final waste forms. These impurities would not affect the classification of these final waste forms or the capability to properly dispose of these waste forms.

J.3.17.10 Comment: 86-009

Comment: In EIS Section 2.2.4.1, page 2-14, the DEIS states that most of the solid waste generated in the Waste Solidification Building (WSB) would be mixed with concrete and poured into approved containers. This is an incorrect statement. The processed liquid wastes will be mixed in the WSB with concrete and poured into containers to produce solid waste. The solid waste will not be mixed with concrete.

Response: The text in Section 2.2.4.1 has been revised as suggested to state that the processed liquid waste will be mixed in the WSB with concrete and poured into containers to produce solid waste.

J.3.17.11 Comment: 114-005

Comment: Hazardous and radioactive wastes are permitted to be burned in the H-Area Consolidated Incinerator Facility (CIF) (Unit ID # H-010). Although South Carolina Department of Health Environmental Control (SCDHEC) has stated that the CIF is not currently in operation, it recently granted DOE-Westinghouse Savannah River Company a new permit to operate the waste incinerator. The DEIS states that some waste will be sent

to other facilities at the Savannah River Site (SRS). The CIF is required to comply with 40 CFR 61 Subpart H, "National Emission Standards of Radionuclides Other Than Radon From Department of Energy Facilities." Although radionuclide emission rates from the stacks of the CIF and other sources are measured, the millirem standard for maximum allowable dosage to the public is an ambient standard, not an emission limit. Without ambient measurements, neither DOE nor Westinghouse Savannah River Company can assure that emissions of radionuclides are below 10 millirem per year to any member of the public. Likewise, the DEIS fails to cite any direct ambient measurement as a basis for estimates of radioactive dose to the public.

Response: There are two separate issues: (1) radiation exposure; and (2) the ambient levels of criteria pollutants. In Section 4.3.1.1.2 of the EIS, the exposure of the public maximally exposed individual (MEI) at the Savannah River Site boundary to emissions of radionuclides from the proposed facilities was estimated to be 0.0040 mrem/yr. This exposure is less than 0.1% of the standard under Subpart H. The levels of criteria pollutants have been reanalyzed and updated as discussed in response to Comment J.3.15.1.

J.3.17.12 Comment: 97-014

Comment: The DEIS appears to use single tank or container quantities for a large number of analyses. This does not seem reasonably prudent and conservative given that the facility is still being designed and common mode failures cannot be discounted (e.g., multiple tanks failed by the same event or leaks via common piping and valves). It is recommended that larger inventories (up to and including the site inventory, as necessary) be used for releases of chemicals from fluids.

Response: The assumption that the contents of one container would be released is generally conservative enough to bound potential accident impacts, because in general the estimated spill volume (given in Table E-1) was about the same as the anticipated on-site inventory (given in Table 3-2 of the June 2003 version of the DCS Environmental Report); that is, for most process chemicals, there would only be one storage container at the facility at a given time. The accident analyses also include other conservative assumptions, such as that the releases would occur outdoors. Very stable meteorological conditions, leading to high air concentrations, are also analyzed.

One chemical which will have many containers present on the site is depleted uranium oxide. Many drums of depleted uranium dioxide (UO₂) will be in warehouse storage. The accident assessment for uranium dioxide conservatively assumed partial release of material from 200 drums during a fire.

J.3.17.13 Comment: 86-043

Comment: The DEIS incorrectly describes the treatment of nonhazardous wastewater. Nonhazardous wastewaters, except for traditional sanitary wastewater, will either be sent to an appropriate permitted treatment facility at the Savannah River Site, or, in the case of

runoff and uncontaminated heating, ventilation, and air conditioning (HVAC) condensate, be discharged directly to a permitted National Pollutant Discharge Elimination System (NPDES) outfall. Sanitary wastewater will be sent to the Westinghouse Savannah River Company (WSRC) Central Sanitary Waste Treatment Facility.

Response: The text in Section 4.3.3.1.2 and Section 5.2.2 was changed to more accurately describe the treatment of nonhazardous wastewater.

J.3.18 Deactivation and Decommissioning

J.3.18.1 Comment: 86-062

Comment: Because the impacts of decommissioning the proposed MOX facility were included in the MOX Environmental Report, Rev. 1 & 2, and responses to two request for additional information (RAI) questions (July 12, 2001), it is suggested to delete the phrase “Although impacts of decommissioning the facilities were not included in the ER (DCS 2002a)...” on line 1-3, page 4-48 of the DEIS.

Response: The text in Section 4.3.6.1 of the FEIS referring to the ER has been revised to indicate that since the scoping process identified decommissioning as a significant issue, the potential impacts of decommissioning the facilities is presented in the EIS.

J.3.18.2 Comments: 7-002 89-012

Comment: It was questioned what would happen when the proposed MOX facility was useless or not functional and how damage would be compensated. The DEIS should be revised to indicate that the proposed MOX facility will not be decommissioned under its Nuclear Regulatory Commission (NRC) license. Further, any analyses or discussions relative to decommissioning, such as license termination and regulatory requirements, should be revised as necessary to reflect the appropriate end state for the operating license.

Response: It is true that final disposition of the facility will be within the purview of the Department of Energy (DOE), and the end state of the facility would not be determined until the end of the operational period. However, for the sake of this impact analysis, decommissioning for ultimate release for unrestricted use is assumed. This assumption is made to bound potential impacts arising from the possible end uses of the facilities. For the purpose of analysis, the appropriate NRC license termination and regulatory requirements are assumed to apply. Furthermore, NRC regulations require NRC licensed facilities to be decommissioned. To date, the applicant has not requested nor been granted an exemption from this regulation.

J.3.18.3 Comment: 86-064

Comment: Although DCS is the licensee, the current contract calls for deactivation of the facility and return to Department of Energy (DOE) for decommissioning or reuse. It is improper to include the costs associated with borrowing funds to finance the project since DOE is a government agency.

Response: Section 4.3.6.3.2 of the FEIS has been changed to reflect the information provided in the comment.

J.3.18.4 Comment: 86-063

Comment: There appears to be an inconsistency in the decommissioning waste section and the costs section. Although the section on waste management indicates that the quantities and classification of waste types cannot be determined at this time, the costs are, nevertheless, based on "...the volumes and types of waste generated during the decommissioning of those buildings... ."

Response: Although there is considerable uncertainty surrounding the waste types and volumes that would be found in a MOX facility at the end of operations, the analysis was able to estimate the direct decommissioning costs based on the costs of dealing with broadly similar facilities in Colorado. These estimates are not based on projections of waste types and volumes in a proposed MOX facility as is suggested in the comment.

J.3.19 Environmental Justice

J.3.19.1 Comment: 94-002

Comment: The Nuclear Regulatory Commission's (NRC's) evaluation of environmental impacts in licensing actions is not consistent with the terms of Executive Order 12898. By letter dated February 10, 2003, the Commission stated that it intended to reconsider its policy concerning the application of Executive Order 12898.

Response: The NRC has published its "Final Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions" on August 4, 2004 (69 FR 52040). The analysis in the EIS is consistent with the NRC's Final Policy Statement and is based on NRC's current guidance.

J.3.19.2 Comment: 22-002

Comment: It was questioned about whether the Nuclear Regulatory Commission did an environmental justice analysis of the area of "ethnic low-income groups" around Lake Norman.

Response: The analysis of environmental justice impacts of the use of MOX fuel in commercial reactors is beyond the scope of the EIS, which analyzes the construction and operation of the proposed MOX facility.

J.3.19.3 Comments: 28-001 64-007 79-003 88-003
 28-002 70-001 81-001 93-017
 39-004 78-003 82-004 96-011

Comment: It was stated that environmental justice impacts should be included in the EIS. The entire environmental justice section needs to be reviewed again, due in part to NRC-acknowledged incorrect accident consequences. Concern was expressed regarding potential impacts to environmental justice communities, which were viewed as unacceptably high. It was suggested that the license should be denied based on the results of the environmental justice analysis.

Response: A discussion of the potential environmental justice impacts is provided in Section 4.3.7 of the EIS. Estimates of latent cancer fatalities in the population as a whole in the event of an accident have been revised since the DEIS was published (see Section J.2.2.1). Accordingly, the analysis of potential accidents and their impact on low-income and minority populations has also been revised in the FEIS. With respect to low-income and minority populations around the SRS, the impacts from an accident at the proposed MOX facility are not considered to be high and adverse. The impact analysis for potential accidents at the Pit Disassembly and Conversion Facility and the Waste Solidification Building indicate the potential for high and adverse impacts.

J.3.19.4 Comments: 9-001 35-002 35-006 93-017 96-026
 9-002 35-003 64-007 96-013 96-034
 9-003 35-004 80-002 96-014 96-038
 9-005 35-005 84-002 96-015

Comment: Concern was expressed regarding the appropriateness of proposed mitigation measures associated with potential environmental justice impacts. It was stated that the environmental justice mitigation measures were not adequate and should be stronger and more detailed. Mitigation should be to provide compensation or incentives to environmental justice communities. It was suggested that a health care center be built so that people who suspect that they are adversely affected can receive medical treatment. It was felt that the applicant should be made to meet and work with the environmental justice community. It was stated that some in the environmental justice community lack understanding of the proposed action. These communities should be educated and should be involved in developing any environmental justice mitigation actions.

Response: As discussed in Sections J.2.2.1 and J.2.2.2, the accident results have been revised based on errors found in the DEIS and resolution of issues identified during NRC's safety review. As such, the environmental justice section has been revised to reflect these changes. For environmental justice impacts from the proposed action, the FEIS concludes that although low-income and minority populations may, depending on wind direction, be

disproportionately impacted, that those impacts are not considered to be high or adverse for the proposed MOX facility. The impact analysis for potential accidents at the Pit Disassembly and Conversion Facility and the Waste Solidification Building indicates the potential for high and adverse impacts. Mitigation measures have been suggested to reduce these potential impacts.

In the event of an accident, general emergency response measures would occur at the Savannah River Site to protect the surrounding public. These are outlined in the response to Comment J.3.19.10.

J.3.19.5 Comments: 86-004 86-089
86-065 89-009
86-088

Comment: The accidents impacts presented in the DEIS that could cause a potential environmental justice impact are prevented by design safety systems; and therefore, should not be considered in the EIS. In addition, although these accidents may have significant consequences, the likelihood of such accidents are at very low frequencies, and hence they have minimal risk. The projection of an environmental justice impact and inclusion of these mitigative action requirements are inappropriate and inconsistent with the goal of the National Environmental Policy Act to provide the public with meaningful environmental analyses, and should be removed from the DEIS.

The DEIS provides no justification why DCS should provide local agencies or groups representing environmental justice groups with “public information “ on existing soil or groundwater contamination monitoring, or the nature, extent, or likelihood of surface releases. Providing such information is not mitigation action related to the proposed MOX facility, which has yet to be constructed. Similarly, the DEIS does not provide a justification why DCS should take the unprecedented initiative to create a spatial database for use by local authorities. In the event of any incident at the Savannah River Site, the authorities would alert all potentially affected communities, not just minority communities. For the Nuclear Regulatory Commission (NRC) to proscribe mitigative actions is beyond the statutory authority of NRC.

Although the DEIS states that the guidance in NUREG-1748 was followed, the DEIS, by using a 50-mile radius for environmental justice impacts does not follow the guidance of NUREG-1748, which proscribes a radius of 4 miles. Additionally the DEIS is directly contrary to specific guidance provided by NRC to DCS in the 11 Dec. 2000 letter from M. Galloway to R. Ihde. This guidance was that the 50-mile radius in NUREG-1718 was incorrect and DCS should follow the Office of Nuclear Material Safety and Safeguards (NMSS) Policy and Procedures letter proscribing a 4-mile radius. The DEIS should conform to NRC guidance and only analyze environmental justice impacts within a 4-mile radius of the proposed MOX Facility. If the FEIS will contain a larger area for environmental justice analyses in an effort to be overly conservative, the DEIS should acknowledge this, but not tie environmental justice mitigation to overly conservative analyses.

Response: Comments regarding accidents and the bases of the accident analysis are provided in Section J.3.14. In summary, the EIS attempted to provide a comprehensive, bounding analysis for all potential events up to and including design basis accidents. The EIS provides a conservative estimate of accident impacts and an independent review of previous accident analyses performed for the proposed MOX facility, the Pit Disassembly and Conversion Facility, and the Waste Solidification Building. The accident impacts presented in this EIS are conservative in nature, but not unreasonably.

The DEIS concluded that there was not an environmental justice concern for construction and operation of the proposed MOX facility. The DEIS further stated that there was a potential environmental justice concern, if an accident producing significant contamination occurred. The environmental justice section (Section 4.3.7.3) states that the risk to any population, including low-income and minority communities, is considered to be low. NRC proposed mitigation measures to reduce the potential impacts to low-income and minority communities. The mitigation measures proposed in the DEIS were based on the accident results published in the DEIS.

As discussed in Section J.2.2.1 and J.2.2, the accident results have been revised based on errors found in the DEIS and resolution of issues identified during NRC's safety review. As such, the environmental justice section has been revised to reflect these changes. Under 40 CFR 1500.2 (f), federal agencies shall to the fullest extent possible use all practical measures to avoid or minimize any possible adverse effects of their actions on the quality of the human environment. Mitigation measures were proposed in the DEIS consistent with the level of potential impact.

Although NRC guidance provides for the analysis of environmental justice impacts within a 4-mile radius of nuclear materials facilities, the guidance does allow for consideration of larger areas, as deemed appropriate. As discussed in the response to Comment J.3.6.1, the geographic area, over which impacts are assessed, varies depending on the type of resource. For human health risk, a radius of 50 miles was selected as appropriate to consider health impacts from the proposed MOX facility. Given these considerations, and the concern over environmental justice issues at the scoping meetings, it was decided to take a conservative approach to measuring the potential impacts of an accident on low income and minority populations by using a 80 km (50 mile) radius.

J.3.19.6 Comments: 31-001 64-005
35-006 96-002

Comment: Concern was expressed regarding the level of detail in the environmental justice analysis. It was stated that the environmental justice analysis is inadequate and needed additional details and explanation. It was requested that the EIS provide a table showing where low-income and minority people would die at the census block level. It was stated that this would add to the transparency of the document.

The data contained in the DEIS does not support the conclusion that there is an environmental justice concern. An independent analysis was provided by a commenter using a probabilistic approach and wind direction and probability (Figure 3.5), population by sector (Table E.8), and areas with disproportionate minority or low income population concentrations (Figures 4.1 and 4.2). For each sector, the number of low income and minority people were compared with the total the number of people. The commenter's analysis concluded that, if offsite health impacts result from windborne contamination, then there is no disproportionate impact on low income and minority populations.

Response: The environmental justice analysis was performed in accordance with Nuclear Regulatory Commission (NRC) guidelines (NUREG-1748). The analysis method is multi-step and consists of first determining if a site has a potential environmental justice concern based on demographics of low-income and minority populations. Next, the determination is made whether the impacts disproportionately impact low-income or minority populations. In cases where the environmental justice population is located next to the site, the impacts or potential for impacts will likely be disproportionate. In other cases, specific behavior of environmental justice populations, such as a greater portion of their diet consisting of crops grown at home, may result in a disproportionate impact. Finally, if it is determined that there is a disproportionate impact, the determination is made whether the impact to low-income or minority populations is "high and adverse." Additional text has been added to Section 4.3.6 to clarify the analysis method.

Sufficient data is provided in Figures 4.1 and 4.2 of the FEIS to establish the general distribution of the minority and low income population within a 50-mile radius of the proposed facility. Specific information on health impacts on minority or low income populations within any given block group cannot be provided as the actual distribution of population within the block group is not taken into account in the analysis. Entire block groups are simply classified according to the relevant minority and low income population concentration thresholds.

The analysis provided by the commenter is not consistent with NRC methodology. Disproportionate impacts are based on whether impacts are greater for environmental justice populations or if they experience impacts that non-environmental justice populations do not experience. Disproportionate impacts do not simply rely on the proportion of the total population that is potentially minority or low income in the area covered by the plume as a whole, as the commenter suggests.

J.3.19.7 Comments: 72-007
115-003

Comment: Concern was expressed that the environmental justice analysis shows that existing and past activities at the Savannah River Site (SRS) have impacted low income and minority communities surrounding the site.

Response: The DEIS concluded that there would not be an environmental justice concern for construction and normal operations of the proposed action. The DEIS further stated that there was a potential environmental justice concern, if an accident producing significant contamination occurred. The analysis does not imply that existing operations at SRS have caused environmental justice impacts. As discussed in Section 3.10, the human health risks for the surrounding community for existing SRS activities is very low. One could conclude that the impacts of existing SRS activities do not pose a high adverse impact; and therefore, there have been no environmental justice impacts from existing activities.

J.3.19.8 Comment: 72-010

Comment: The evaluation in environmental justice does not consider the long-term impacts of the waste from the proposed MOX facility. Although the NRC does not regulate waste management activities at the Savannah River Site (SRS), the impact from these activities will impact of these very same environmental justice communities.

Response: At the end of operations at the MOX facility, all wastes produced by the proposed facility would become the responsibility of the Department of Energy and would be managed in accordance with guidelines and procedures for all other waste materials at the SRS. EISs already completed by the DOE indicate that there are no significant human health impacts of waste management operations. Therefore, no environmental justice impacts would be associated with the management of the proposed MOX facility wastes produced during the operating period or decommissioning period. Text has been added to Section 4.3.7.3 of the FEIS to clarify this issue.

J.3.19.9 Comments: 10-015
82-002
84-002

Comment: There seem to be numerous contradictions within the report of what will and what will not be studied in terms of environmental justice. For instance, environmental justice impacts apparently will not be studied along MOX transportation routes but elsewhere in the document it states that transportation will be studied in terms of environmental justice. Impacts to less fortunate communities were viewed to occur from transportation activities. It was stated that the EIS should consider the environmental justice impacts of the transportation.

Response: The DEIS stated in Section 5.2.12 that mitigation measures would include relevant risks associated with MOX-related transportation programs. However, as noted in

the scoping summary report (Appendix I), environmental justice impacts along transportation routes were not included in the DEIS due to uncertainties surrounding the transportation routes that would be used, and the timing and quantity of MOX shipments. The statements in Section 5.2.1.2 of the DEIS have been deleted to address this contradiction, and text has been added to Section 4.3.7.1 of the FEIS to clarify the basis for not considering environmental justice impacts along transportation routes.

J.3.19.10 Comments: 77-005
96-030

Comment: The mitigation measures suggested are insufficient to achieve environmental justice for the low-income populations in the area surrounding the Savannah River Site (SRS). The mitigation measures should be revised to include: (1) warning sirens in the area of the facility, (2) free health care for those with health risks elevated due to the operation of the facility; and (3) an economic benefit for those who reside near the proposed MOX facility to offset the economic and health disadvantages of living in the area. It was suggested that the Nuclear Regulatory Commission (NRC) recommend that DCS work with potentially impacted communities.

Response: The NRC does not believe that normal operations of the proposed MOX facility increases health risks to the offsite public that warrants mitigation. In the case of an accident, warning sirens at the proposed MOX facility and the SRS boundary would be sounded as one means of alerting nearby residents. DCS and the SRS would follow established emergency procedures to inform local and state officials of the nature and extent of an accident and assist with appropriate actions to protect human health and safety.

J.3.19.11 Comment: 96-005

Comment: The mitigation measures section addressing the disproportionate impact to minority communities is totally unacceptable. The proposed mitigation measures place an unfair burden on communities and local government. Education will not address impacts described in the DEIS. Local governments and citizens should not bear the responsibility of emergency preparedness and associated costs.

Response: A reanalysis of impacts from accidents involving the MOX facility, the Pit Disassembly and Conversion Facility and the Waste Solidification Building to low income and minority populations has been conducted. Mitigation measures were revised to address the results of the new accident analysis and are reported in Chapter 5 of the EIS. The Nuclear Regulatory Commission does not intend for local communities to bear the full cost associated with emergency preparedness in the event of a severe accident affecting the local population. The DOE Emergency Preparedness Plan for the Savannah River Site would be implemented in case of an accident resulting in offsite releases of radioactive or chemical materials.

J.3.20 Transportation

J.3.20.1 Comments: 29-001 85-001

Comment: The transport of spent fuel and unused nuclear weapons pits to and from the proposed MOX facility was of concern. This presents a desirable target for terrorists. Many local communities do have sufficient law enforcement and National Guard to meet these challenges while many do not. It was suggested that costs for the law enforcement and National Guard to protect the MOX materials was an unfunded federal mandate. The Nuclear Regulatory Commission should address this unfunded federal mandate.

Response: The unfunded federal mandate comment raises issues that are outside the scope of this EIS. The shipments would be treated as other shipments of special nuclear materials under the protection of the U.S. Department of Energy Office of Transportation Safeguards as discussed in Section C.2.3 of Appendix C in the EIS. The nuclear weapons pits and MOX fuel would be shipped via the SafeGuards Transporter (SGT). The SGT is a structurally reinforced vehicle operated by armed federal officers and travels with armed escort vehicles.

J.3.20.2 Comment: 29-002

Comment: Although transportation casks have been looked at in regulation and testing for many years, the form of the spent fuel and the nuclear weapons pits have taken a back seat. The spent fuel has often failed in use and presents a peculiar problem in transportation and decanting. The design of the transportation casks often does not address the failures and the type of failures of the spent fuel. Any assumption that the fuel will be in a form which does not complicate accidents and handling may be flawed and needs to be addressed.

Response: The U.S. Nuclear Regulatory Commission (NRC) has requirements in its regulations in 10 CFR Part 71 that address the form of the radioactive fuel. The cask, also referred to as packaging, must be able to protect the contents from being released to the public and also must keep the dose to the public under specified limits for both routine and accident conditions of transport. The NRC has conducted a number of risk studies concerning the responses of spent fuel casks subjected to accident and severe accident conditions. The expected response of casts to these conditions can be found in such reports as *Shipping Container Response to Severe Highway and Railway Accident Conditions* (NUREG/CR-4829) published in 1987 and *Reexamination of Spent Fuel Shipment Risk Estimates* (NUREG/CR-6672) published in 2000. The NRC is currently working on the Package Performance Study which is a new risk study in the planning stage. This research program proposes to test the full scale transport casks under conditions that would exceed regulatory requirements. This type of information, including that used for plutonium metal, was incorporated into the transportation risk analysis in this EIS.

J.3.20.3 Comment: 86-067

Comment: The impacts resulting from shipping 50 metric tons of surplus plutonium to the Savannah River Site were covered in the DOE's Surplus Plutonium Disposition (SPD) EIS. The Nuclear Regulatory Commission should have simply deferred to that analysis instead of reanalyzing impacts already evaluated by another federal agency.

Response: The transportation risks for shipping the 50 metric tons (55 tons) of surplus plutonium were not presented separately from other transportation actions in the DOE's SPD EIS, making it impossible to extract the impacts directly associated with the plutonium shipments. In addition, decisions regarding the source of the plutonium, such as the Rocky Flats Environmental Technology Site (RFETS) shipments, were made after publication of the SPD EIS. Thus, the re-analysis of impacts associated with the shipments of plutonium provided more detailed information specific to the proposed action.

J.3.20.4 Comment: 86-068

Comment: The value for transuranic (TRU) waste on page 4-63, line 22 of the DEIS appears to be a great deal higher than experience.

Response: The detailed design information on the internal configuration of the TRUPACT-II containers, as it pertains to the Waste Solidification Building TRU waste shipments, is not yet available. Therefore, a conservative assumption was made to use the highest estimated dose rate for shipments expected to go to the Waste Isolation Pilot Plant (WIPP) as provided in the WIPP transportation studies. As referenced on line 23 of page 4-63 and line 20 on page C-21 in Appendix C, the 0.040 mSv/h dose rate for TRU waste shipments was taken from DOE's *Waste Isolation Pilot Plant Disposal Final Supplemental Environmental Impact Statement* (DOE/EIS-026-S-2).

J.3.20.5 Comment: 86-100

Comment: On page C-6, lines 37-38 of the DEIS, perhaps it would be better to state "The model allows the user to evaluate transportation risk, considering differences in the mode of transport and package used. The user selects parameters to represent the probability of an accident occurring and consequences of a spectrum of accident severities."

Response: The text in Section C.1.3.1 was revised in the FEIS to clarify that the model takes into account the mode of transportation and the type of packaging through selection of the appropriate accident probabilities and release fractions, respectively.

J.3.20.6 Comment: 86-102

Comment: A clarification should be made on page C-12, line 36 of the DEIS. The MOX ER specifies a 55-gallon Industrial Type 1 drum for the shipment of uranium dioxide (UO₂). The DEIS specifies a 30-gallon Type A drum size.

Response: The text has been revised in the FEIS to indicate that the uranium dioxide does not require Type A packaging and is expected to be shipped in industrial packaging. Text has been revised to indicate the use of a 55-gallon drum for uranium dioxide shipments.

J.3.20.7 Comment: 86-103

Comment: Shipment routes were of concern in Section C.2.1.1 of the DEIS. It is important to clarify that none of the shipments would meet highway route controlled quantity (HRCQ) requirements. The uranium hexafluoride (UF_6) and uranium dioxide (UO_2) won't meet HRCQ requirements because of the material hazards; the plutonium metal and MOX will be handled securely by DOE's Office of Secure Transportation (OST), and the transuranic (TRU) waste will follow Waste Isolation Pilot Plant (WIPP)-prescribed routes.

Response: The plutonium metal and MOX fuel meet HRCQ requirements whether or not they are handled by DOE's OST. Routing of a HRCQ of material is determined according to 49 CFR 397.101, "Requirements for motor carriers and drivers." Text has been added in the FEIS to clarify that the TRU waste shipments will follow the designated WIPP routes.

J.3.20.8 Comment: 86-105

Comment: It is suggested to provide a reference for how the number of shipments of plutonium metal to the Pit Disassembly and Conversion Facility (PDCF) was determined, since it differs from that used in the Surplus Plutonium Disposition EIS in Table C.2.

Response: The number of shipments was determined by the amount of plutonium metal shipped from Pantex and Hanford to the PDCF and the amount of plutonium metal in each shipment. As discussed in Section 4.4.1.1, 21.3 metric tons (23.4 tons) and 5.4 metric tons (5.9 tons) of plutonium metal was assumed to be shipped from Pantex and Hanford, respectively. The amount of plutonium metal in each shipment was determined from Table 4 in Didlake (1998) that listed 33 MT of plutonium pits and metal destined for the PDCF in 530 loads. Using the amounts to be shipped (21.3 and 5.4 metric tons) and the amount per shipment (33 metric tons divided by 530 shipments) the number of shipments were estimated to be 343 and 87 from Pantex and Hanford, respectively.

J.3.20.9 Comment: 86-110

Comment: The assumption that stops of Safeguards Transporter (SGT) shipments of both the fresh, unirradiated MOX fuel and the plutonium metal along the route would have the same duration and public exposure as spent fuel truck shipments is overly conservative.

Response: As discussed in Section 4.4.1.1 of the EIS a surrogate commercial nuclear power plant at a Midwestern location was chosen for assessing the transportation risks of the fresh, unirradiated MOX fuel. This conservative assumption was made to bound the impacts for use of the MOX fuel by any power plant in the eastern to Midwestern portion of the United States. In this case, rest stops would be needed over the 1,300-mile journey.

There is no reason to assume that the stop times used are specific to spent fuel shipments because truck maintenance and crew rest conditions would be similar.

The MOX ER assumed no stops for the MOX fresh, unirradiated fuel shipments because these shipments were assumed to be between the Savannah River Site and the McGuire and Catawba nuclear plants. These shipment distances are both on the order of 200 miles which is easily traversed without the need for refueling or rest for the crew.

J.3.20.10 Comment: 86-111

Comment: On page C-23, line 20 of the DEIS, units on this risk factor, based on the subsequent text, should be “latent fatalities-km/person.”

Response: For a population density of 1 person/km², as mentioned in the text, the factor is as written. When used to determine risks at other population densities the full set of units must be used: 8.36E-10 latent fatalities/km per person/km² which reduces to the form suggested in the comment.

J.3.20.11 Comment: 89-051

Comment: The values in the accompanying paragraph do not agree with the values presented in Table 4.20 of the DEIS. This inconsistency should be reconciled.

Response: The text was revised to present the proper values as listed in Table 4.21 of the FEIS (DEIS Table 4.20).

J.3.20.12 Comments: 24-001
71-002

Comment: The U.S. portion of the proposal involves shipment of plutonium from dismantled nuclear weapons sites in western states, some likely via Interstates 40 and 26 en route to South Carolina. The greatest transportation risk would be an accident in which plutonium metal, which rapidly oxidizes when it comes into contact with air, would vaporize or burn and disperse its deadly particles contaminating the air our citizens inhale, the water upon which we depend and the soil upon which we grow crops and upon which animals feed.

Response: The staff notes that the commenter assumes that an accident would cause a release of a cask's contents to the environment. The Nuclear Regulatory Commission (NRC) regulations require that the transport release of a cask be designed to withstand a sequence of four hypothetical accident conditions including drop, puncture, fire and submersion and still be able to perform its safety functions of containment and shielding. Such design requirements make it very unlikely that an accident would result in the release of the shipped material to the environment. The commenter should note, however, that the plutonium that will be shipped will not be in powder form, and thus if in the unlikely event

that it were released to the environment, it would neither be easily inhaled nor would it be easily vaporized or burned.

J.3.20.13 Comment: 86-101

Comment: In Section C.1.3.1, page C-7, lines 1-10 of the DEIS, the use of the ingestion pathway resulting from the consumption of contaminated food is highly speculative. Public policy and emergency response experiences from Three Mile Island in 1979 and Chernobyl in 1986 indicate that, essentially all food (whether contaminated or not) was destroyed, making the ingestion scenario not “reasonably foreseeable.”

Response: The ingestion of contaminated food is a potential exposure pathway for transportation accidents as recognized by its incorporation into the RADTRAN transportation risk code originally developed for the NRC when it produced NUREG-0170 in 1977, *Final Environmental Impact Statement on the Transportation of Radioactive Materials by Air and Other Modes*. Since that time, radiological transportation risk assessments have routinely included the ingestion pathway as a potential source of exposure (e.g., see *A Resource Handbook on DOE Transportation Risk Assessment*, DOE/EM/NTP/HB-01). One reason for this trend in conducting radiological transportation risk assessments is concern by the public that appropriate actions to protect the public would not be carried out and the desire to know what would happen in the absence of these actions (e.g., intervention or interdiction of contaminated crops).

The ingestion of contaminated food is not highly speculative. The Nuclear Regulatory Commission recognizes that some interdiction would likely occur following a significant accident, even if contamination levels were below the protective action guides. Such a response occurred after Three Mile Island where no crop contamination was found. On the other hand, some members of the public were found to return illegally to contaminated areas near Chernobyl to live for various reasons (e.g., attachment to ancestral home/high sense of displacement) that could easily result in the consumption of contaminated, locally grown food. Thus, the inclusion of the ingestion pathway provides upper bound estimates of the impacts of potential significant accidents.

J.3.20.14 Comment: 86-108

Comment: Plutonium isotopic distribution is the same for plutonium metal, MOX fuel, and transuranic (TRU) waste. The Curie content should be linear with mass of plutonium in each stream. This should be reflected in Table C.3.

Response: The numerical values for the activity of plutonium in the MOX fuel and TRU waste shipments were taken directly from the DCS references noted in Table C.3 without any type of conversion. These values were preliminary estimates and are still subject to small changes. No further action will be taken at this time.

J.3.20.15 Comment: 116-009

Comment: It was questioned whether the Nuclear Regulatory Commission considered both fatal and non-fatal truck accidents. Also, it was questioned why the “neutral weather” conditions and not the “worst case” weather conditions were considered in an transport accident. Excluding the transportation risks on-site at the Savannah River Site was also questioned.

Response: As discussed in Appendix C, Section C.1.1 of the EIS, both fatal and non-fatal truck accidents were considered when assessing impacts from potential radioactive releases. The vehicle-related fatalities reported were the direct result of physical trauma related to potential accidents. As discussed in Appendix C, Section C.2.4.3, neutral weather conditions were used for the transportation risk assessment because the exact time and location of an accident cannot be known ahead of time and neutral weather conditions prevail for more than 50% of the time in the United States where shipments may occur. Because the shipment distances on-site are much shorter than the off-site routes, low on-site speed limits, and the sparse population density, the transportation risks on-site at the Savannah River Site for the material considered in the EIS are not significant compared to the transportation risks presented in the EIS.

J.3.20.16 Comment: 114-012

Comment: Emergency response to rail or highway accidents must be well-prepared and rapid. Delays in response to accidents which involve the release of radioactive material would expose unknown numbers of people to negative health effects. In 1996, a Department of Energy (DOE) Transport and Safeguards Division Safe Secure Transport (SST) trailer carrying nuclear weapons slid off the road and rolled over in rural Nebraska. Four hours elapsed before DOE headquarters was notified, and it was 20 hours before a Radiological Assistance Program team determined there was no release. A similar delay in response to a plutonium-MOX fuel accident could make effective emergency response dangerous and clean-up impossible.

Response: Any accident scene involving vehicles containing plutonium or MOX fuel is expected to be promptly closed to vehicle traffic. As discussed in Appendix C, Section C.2.3 of the EIS, such shipments would be made using the SafeGuards Transporter (SGT) with armed federal officers on-board as well as in escort vehicles. The SGT and escort vehicles would contain advanced communications equipment and be monitored 24-hours-a-day. Any accident would be identified in real-time and the federal officers at the scene would be able to take appropriate measures to ensure the safety of the public as well as the security of the shipment.

J.3.21 MOX Fuel Use

J.3.21.1	Comments:	2-002	30-003	71-009	92-003
		12-004	47-005	72-006	105-007
		13-004	65-003	77-002	114-004
		24-004	67-002	90-002	114-010

Comment: In general, using MOX fuel in reactors was considered to be experimental and unsafe. Scientists are not in agreement as to the safety of this process. It was stated that the use of MOX fuel in a reactor would result in a smaller safety margin and was difficult to control which could result in serious accidents at a higher likelihood. Reactors were not designed to handle MOX fuel. Specific technical concerns were raised which included the lower delayed neutron fraction with plutonium, the reduced control rod effectiveness with using MOX fuel, a positive moderator temperature coefficient, increased fission gas production, twice the tritium production, lower melting temperature of MOX fuel, and formation of hot spots within a mixed core of MOX fuel and low enriched uranium fuel. It was noted that the first three issues were significant causes of the Chernobyl accident. It was questioned how emergency crews could respond to a reactor accident involving MOX fuel, given that plutonium is hotter than uranium. It was stated that the moderator temperature coefficient of reactivity is an example where European MOX fuel experience does not apply. Concern was expressed that modifications to reactors and increased monitoring would be required if MOX fuel was used in reactors. The reactor use, MOX fuel transportation, and spent fuel disposal impacts should assume the maximum throughput. It was further suggested that the proposed MOX fuel fabrication facility should not be authorized until problems with reactor use are resolved.

Response: All U.S. light water power reactors are designed to produce power from fuel that includes plutonium. By the end of a fuel cycle, light water reactors burning low enriched uranium (LEU) fuel produce a significant percentage of the energy in the reactor core from the fissioning of plutonium that was produced during normal operation from the irradiation of uranium-238. This is reflected in the design basis for the power plants.

Moderator temperature coefficient (MTC) is more strongly influenced by the choice of moderator (which is the same for MOX or LEU fuel) than the differences in the MOX and LEU fuel types considered here. In any event, the delayed neutron fraction, control rod worth, reactor vessel embrittlement, shielding analysis, MTC effects, fuel performance and source terms issues are typical of the issues that will be addressed in the NRC staff's safety review of any future amendment request by a reactor licensee to use MOX fuel. The results of the future site specific safety reviews will be considered, together with any future site specific National Environmental Policy Act (NEPA) evaluations in determining whether to authorize specific reactors to use 40% MOX fuel cores.

In planning for these reviews, the NRC has initiated a research program which includes developing tools to evaluate the neutronic and material behavior of MOX fuel, and to estimate source terms from potential accidents involving MOX fuel. Technical concerns, such as those mentioned in the comments, would be evaluated during the site-specific

safety review. Any modifications to the reactor, that would be required to ensure safety, would be determined within the scope of the NRC staff's future reviews of a specific request to use MOX fuel. The NRC believes that analyses performed to date are sufficient to reasonably estimate and bound the impacts of using MOX fuel. Reactor specific issues are beyond the scope of this EIS. However, the NRC staff believes that analyses performed to date are sufficient to reasonably estimate and bound the impacts of using MOX fuel for purposes of making a decision whether to authorize construction of the proposed MOX facility.

As discussed in Section 4.4.3 of the EIS, the impacts of using MOX fuel were tiered from an assessment presented in the DOE's Surplus Plutonium Disposition EIS (Section 4.28 and Appendix K.7 of that document). While weapons grade plutonium MOX fuel has not been used in reactors in the United States on a commercial scale, the impacts of doing so have been estimated assuming MOX fuel replaces about 40 percent of the low-enriched uranium (LEU) fuel. The DOE's analysis of using MOX fuel in reactors concluded that the operational safety would be essentially the same as using LEU fuel. The DOE determined that, depending on the accident, the risk of a latent cancer fatality among the general public associated with a potential accident, could decrease by up to 7% or increase by up to 14%.

J.3.21.2 Comments: 91-002
91-003
98-006

Comment: Water use issues relative to using MOX fuel were raised. Water would be used in the MOX processing to make MOX fuel, but water would also be used at nuclear power plants. Nuclear power plants were considered to be a water-intensive and toxic technology that imposes major long-term social, environmental, and economic costs. For example, the Hatch Plant withdraws 57 million gallons a day from the Altamaha River and returns only 24 million gallons a day. With ever-rising demands for water supply in this rapidly growing state, particularly during extended drought, such water intensive practices are increasingly unjustifiable, imposing avoidable burdens on many other sectors. Water resources are limited and discussions on how this precious resource should be protected are currently being debated in the Southeast. The link between energy and water resources is profound. At the national level, the electric industry follows closely on the heels of irrigation as the largest water user in the U.S. Yet, there is no discussion in the DEIS on the impacts of nuclear power production, which the MOX program will support the possible advancement of, on the region's water supply.

Response: Nuclear reactors use water, regardless of whether they use conventional low-enriched uranium (LEU) fuel or a combination of LEU fuel and MOX fuel. As discussed in Section 4.4.3 of the EIS, the Department of Energy's analysis of using MOX fuel in reactors concluded that, during normal operations, the impacts would be the same as using LEU fuel. Specific water use impacts at any particular reactor are beyond the scope of this EIS.

J.3.22 Cumulative Impacts

J.3.22.1 Comments: 72-008
39-001

Comment: There was concern about the decision to add new radioactive missions to the Savannah River Site (SRS) which has already been weakened by previous and ongoing exposures. It was stated that the SRS has the most radioactivity of any Department of Energy site nationally and that millions of gallons of high level radioactive waste are stored there. It was also stated that the proposed mitigation steps do not address the ongoing routine and repeated exposure. It was felt that the Nuclear Regulatory Commission analysis did not fully express the cumulative and synergistic nature of the situation.

Response: Cumulative radiological dose to the public and SRS workers from normal operations of the proposed facilities, existing SRS operations, past operations, and reasonably foreseeable future actions is presented in Section 4.5.1.1 of the EIS. This analysis indicates that MOX operations would contribute a relatively small incremental dose to the public and to workers and that the number of latent cancer fatalities that would result from cumulative radiological dose is less than one for the public (including the maximally exposed individual) and about 1 for workers.

J.3.22.2 Comment: 89-054

Comment: The DEIS references the Yucca Mountain environmental impact statement for high latent cancer fatalities from "general transportation" when the historical results are low. However, this reference cannot be found. Please verify the numbers used.

Response: The numbers presented in the EIS are correct. Please see page 8-90 of the Yucca Mountain environmental impact statement.

J.3.22.3 Comment: 89-055

Comment: Presuming the MOX shipments in line 16 of Table 4.27 of the DEIS are supposed to be the same as the totals presented in Table 4.20, the numbers for the population dose do not agree. If the information is supposed to be the same, it is suggested that the category be relabeled to more accurately reflect the nature of the information (e.g., All shipments for the MOX program).

Response: The numbers in Table 4.27 in the DEIS (Table 4.28 in the FEIS) were correct. The numbers have been revised in the FEIS to reflect changes made in the TRU waste shipments in ER Revision 5. A footnote has been added for clarity as suggested by the commenter.

J.3.22.4 Comment: 93-013

Comment: It is not correct to assume that the proposed MOX facility and Waste Solidification Building construction are “bounding,” since the movement of contaminated particulate off-site and movement of contamination from soil into ground water are both cumulative, and construction of all three facilities will result in one or both of these events. It should be necessary to assess the impacts of all three and look at them cumulatively, even though the Pit Disassembly and Conversion Facility (PDCF) construction may lag behind the other two.

Response: As discussed in Section 5.2.8 of the FEIS, the Nuclear Regulatory Commission is concerned that the spoils pile currently located on the proposed MOX site may be contaminated. Although DCS has conducted initial screening that does not indicate contamination, removal of the spoils pile constitutes a significant earthmoving activity and a potential source of exposure to construction workers. In contrast, significant earthmoving operations are not anticipated for the PDCF and Waste Solidification Building sites. The spoils pile is not considered a significant source of potential contamination to the environment. Construction of the MOX and associated facilities would not be expected to mobilize any contaminated particulates off-site. Dust control measures during construction (Section 5.2.4 of the FEIS) would limit migration of any contaminated particulates. The groundwater beneath the proposed MOX facility site is already contaminated. Past activities at the Savannah River Site do not indicate that the area where the spoils pile soils were excavated is a significant source of existing contamination; and therefore, would not be expected to be a significant source of groundwater contamination.

J.3.22.5 Comment: 86-072

Comment: The “SRS baseline” concentrations summarized in Table 4-23 do not represent regional air quality. They are only representative air monitoring data. The “SRS baseline” data are a hypothetical set of values that are based on modeling maximum potential emissions of Savannah River Site (SRS) sources and are applicable only as a screening level for evaluating and managing Savannah River Site air permits. This section of text must be revised accordingly. In addition, footnotes to the columns “SRS Maximum” in Tables 4-6, 4-8 or the column “SRS Baseline” in Table 4-23 should be modified to state that the listed values are hypothetical levels based on maximum potential (i.e., permitted) emissions from SRS sources and do not necessarily quantify actual air quality conditions.

Response: The text in Section 4.5 of the FEIS has been modified as suggested by the commenter. In addition, the footnotes to Tables 4.6, 4.8, and 4.24 (DEIS Table 4.23) have been modified.

J.3.22.6 Comment: 96-037

Comment: The cumulative impacts should be evaluated with respect to increasing or decreasing existing inequities.

Response: The cumulative impacts associated with the construction and operation of the proposed facilities are presented in Section 4.5 of the EIS. The impact evaluation considered the effects of past, present, and reasonably foreseeable future actions in the Savannah River Site region. High adverse impacts were not identified for any impact category in this cumulative impact analysis. Accident impacts are not considered in the cumulative impact assessment. Additional information regarding risks to low-income and minority communities from accidents can be found in Comment J.3.19.5.

J.3.22.7 Comment: 89-053

Comment: It would be helpful to the reader in Table 4.25 of the DEIS to include capacities of treatment facilities and storage capacities. The table provides no way to judge the significance of these numbers.

Response: Waste treatment and storage capacities have been added to Section 4.5 of the FEIS as suggested.

J.3.23 Cost-Benefit

J.3.23.1 Comments: 5-007 12-003 38-002 76-003
8-005 30-004 44-004 79-004
10-004 32-005 45-007 108-002
10-019 35-001 76-002

Comment: The project will waste valuable tax dollars. It was questioned whether spending money on upgrading nuclear reactors that would use MOX fuel was money well spent. It was alleged that Duke was receiving a government subsidy (favoring nuclear energy) to produce electricity. Duke would also be allowed to turn around and sell the electricity generated in part from the subsidy, to the citizens of Georgia, South Carolina, and North Carolina. It was argued that the citizens should receive the electricity for free.

There was disagreement about exactly who was bearing the costs of the proposed action and who was receiving the benefits. It was stated that the citizens of Georgia and South Carolina bear the environmental impacts, but others received the benefit of the electricity. Another point of view was expressed that the nation was bearing the financial costs of the proposed action, while the local communities were receiving the economic benefit. Likewise, others indicated the nation was bearing the financial costs of the proposed action, so that a small number of shareholders in the nuclear industry could receive a large benefit.

Response: There are both costs and benefits resulting from the proposed action to design, construct, and operate a MOX Fuel Fabrication Facility. The benefits are experienced at both the national and regional level. At the national level, the benefits include improving security by reducing the risk of plutonium falling into the hands of terrorists. In addition, processing plutonium into MOX fuel benefits the environment by reducing the risk of contamination and it reduces the risk to human health and safety at the current storage

sites. When presented with the cost of maintaining storage of plutonium, processing the plutonium into MOX fuel results in a cost savings to the federal government. At the regional level, the benefits include a boost to the local economy and employment opportunities associated with the construction and operation of the MOX facility.

As noted in the comments, benefits are also experienced in the private sector. After determining that, to comply with the United States-Russia Agreement, excess plutonium should be disposed of by making MOX fuel, the Department of Energy concluded that the most cost effective means of implementing the program was to hire a contractor. The contractor selected, DCS, was chosen from a series of competitive bids from qualified companies and is being compensated according to the costs it will incur in constructing and operating the proposed facility. Reactors irradiating MOX fuel will not receive the fuel for free, as alleged in the comments. Rather, the reactors will purchase fuel from the Department of Energy (DOE) at a set rate.

There are also costs at the national and regional level. The national costs are primarily the cost of constructing and operating the proposed MOX facility. The overall cost of the program is approximately \$4.1 billion (2003 dollars). However, the DOE will receive a monetary credit for the fuel sent to commercial reactors that would be used to generate electricity. The fuel credits (or money paid by the reactors for fuel use) amount to \$1.0 billion over the life of the project. Thus, the overall cost of the project is reduced from approximately \$4.1 billion to \$3.1 billion. The regional costs include potential impacts that an accident at the proposed facilities would produce. Additionally, routine operations of the proposed facilities would produce an annual latent cancer risk of about 1 in 250 million for the maximally exposed individual of the public. The environmental impacts, under normal conditions, are considered to be small; therefore, they do not constitute a significant regional cost.

For a full discussion of costs and benefits, see Section 4.6 of the EIS.

J.3.23.2 Comment: 48-004

Comment: The cost information presented in the DEIS is very confusing and vague. The cost of the MOX program is estimated to be \$3.8 billion. However, the cost was not broken down into research and development, construction cost, operation cost. It was suggested that the cost should be clearly stated. The DEIS did elude to a discussion on the decommissioning cost which gives a range. The fact the Department of Energy is trying to get \$415 million in fiscal year 2004 is going to draw some attention and requesting \$650 million for the overall program is going to get some scrutiny.

Response: Additional breakdown on the components of the costs can be found in *Report to Congress: Disposition of Surplus Defense Plutonium at Savannah River Site*, produced by the National Nuclear Security Administration (NNSA 2002), which provides more detail on project cost. Decommissioning costs were estimated using data from a number of studies of other large-scale nuclear fuel-cycle facilities. Details on how these estimates were made can be found in Section 4.3.6.3 of the EIS.

J.3.23.3 Comment: 89-056

Comment: The DEIS states that the benefits to national security are substantial but not quantifiable. The costs associated with continued storage of this material are quantifiable; avoiding these costs should be mentioned as a benefit in Section 4.6.1.

Response: Section 4.6.1 of the FEIS has been changed to reflect this comment.

J.3.23.4 Comment: 89-057

Comment: Section 4.6.3.2 of the DEIS discusses regional benefits in terms of money entering the local economy for labor associated with the construction and operation of the proposed facilities, and the multiplier effect this money has on the regional economy. The same is true for the national economy but no mention is made of these effects in this section.

Response: Because of the preliminary nature of the data needed to calculate national impacts, no quantitative estimate of the impacts of construction and operation of the proposed MOX facility on the national economy was included in the EIS. The text in Section 4.6.1 of the FEIS has been changed to provide a qualitative discussion of the national economic benefits of the proposed action to clarify the issue.

J.3.23.5 Comment: 89-059

Comment: The DEIS references the costs of continued storage (i.e., no-action alternative) from the Department of Energy's Surplus Plutonium Disposition EIS. However, according to the MOX ER, the National Nuclear Security Administration (NNSA 2002) estimated the costs associated with continued storage to be approximately \$246 million per year. One of the national benefits associated with this program should be the avoided safeguard and storage costs. If the no-action alternative were to store the plutonium for 50 years, the estimated storage costs would exceed \$12 billion while the cost of disposition is estimated to be \$3.85 billion as discussed in Section 4.6.2.

Response: Estimates of the avoided cost of continued storage have been added to Section 4.6.2 in the FEIS to reflect this comment.

J.3.23.6 Comment: 89-060

Comment: In the DEIS, it was mentioned that the Surplus Plutonium Disposition (SPD) EIS was used as a reference for data pertaining to the proposed MOX facility. However, it is not clear where the data is taken from in the SPD EIS. For the proposed MOX facility, employment estimates would most likely have come from the MOX ER since this included more recent information.

Response: The SPD EIS was used to establish the relationship between direct (on-site) and indirect (off-site) employment for the construction and operation of a MOX facility. This

was because the MOX ER only calculated direct employment impacts, with a qualitative description provided for the indirect socioeconomic impacts of the facility. As data on both direct and indirect impacts of a MOX facility at the Savannah River Site were provided in the SPD EIS, these data were used in this EIS to calculate indirect impacts. Text has been added to Section 4.6.3.2 of the FEIS to clarify the issue.

J.3.23.7 Comment: 105-011

Comment: On page 4-83, line 30 & 31, the DEIS states that, “Therefore, continued storage would result in higher annual impacts.” This statement appears incorrect considering the activities of storing the plutonium in hardened bunkers without touching or processing it when compared to all the plutonium transportation, processing, reactor use and removal to Yucca Mountain associated with the proposed action.

Response: The impacts for the no-action alternative (i.e., continued storage of surplus plutonium at existing DOE sites) were previously evaluated by the Department of Energy (DOE) in the Surplus Plutonium Disposition (SPD) EIS. As discussed in Section 4.2.1 of the EIS, the impacts in this EIS for the no-action alternative are essentially the same as those evaluated by DOE. Some of the impacts for the no-action alternative presented in this EIS represent impacts for the entire DOE site at which the surplus plutonium is currently stored. Text has been added to Sections 4.2.1 and 4.6.2 of the FEIS to clarify this point.

J.3.23.8 Comments: 87-006
89-058

Comment: The 2002 cost estimates do not reflect the costs of additional process time needed for the 34 metric tons (37.5 tons) of plutonium compared to the 25.6 metric tons (28.2 tons) the cost of handling additional purification of untreated plutonium from the immobilization facility, and the cost of the additional waste streams from the proposed facility. The discount rate used to normalize the costs in 2001 dollars was not specified in the cost estimate report.

Response: The NRC used cost estimates provided in the 2002 National Nuclear Security Administration report which does reflect the costs associated with processing 34 metric tons of plutonium, including the removal of impurities and treatment and disposition of associated wastes. No information is presented in the report on the discount rate used to normalize the costs in 2001 dollars.

J.3.23.9 Comment: 66-004

Comment: The DEIS states that any impacts associated with the transportation of fresh, unirradiated MOX fuel, including impacts on property values, will be minimal. The cost associated with changes in property values does not appear to be well addressed in the DEIS.

Response: The cost impacts of the transportation of MOX fuel, such as impacts on property values, were not considered in the DEIS due to uncertainty surrounding the transportation routes that would be used, and the timing and quantity of MOX shipments. Text has been added to Section 4.6.3 of the FEIS to clarify the basis for not considering impacts along transportation routes.

J.3.23.10 Comment: 43-004

Comment: The treatment of time line effects of costs and benefits in the DEIS was questioned. Typical cost benefit analysis reduces the impact of future costs in proportion to their distance away from the present time. It was suggested that environmental resources will be worth more in the future, not less. If one considers the worth of environmental resources in the present by applying a discount method, the worth of the environmental resources would be very much reduced in value compared to what they are likely to actually be worth in that future time. The DEIS needs to consider alternative methods for evaluating costs and benefits.

Response: Cost benefit analysis typically uses a positive discount rate in order to include the effects of time in the valuation of the overall costs and benefits of a project. This means that the valuation of future costs and benefits would be larger the further away from the present time these impacts occur. An estimation of the present value of all costs and benefits is then made to establish the value of all future costs and benefits back in time by expressing them in terms of their monetary value in the current year. As the measurable impacts on the environment and human health during construction and normal operation of the proposed MOX facility would be small, an estimation of the present value of these impacts was not undertaken for the EIS. Annual monetary costs of facility construction and operation are expressed in constant 2003 dollars, which takes into account the projected impacts of inflation on total life-cycle project cost.

J.3.23.11 Comments: 53-001
58-004
66-002

Comment: The EIS does not include an analysis of the economic impacts of accidents. This would include costs associated with victim health recovery, costs to farmers from interdiction of crops, and the costs of cleaning up contaminated lands.

Response: Human health risks associated with accidents are discussed in Section 4.3.5 of the EIS. The socioeconomic impacts of accidents associated with the proposed MOX facility were not estimated in the EIS, because accidents are not expected to have a significant economic impact on the communities surrounding SRS. Emergency response activities associated with a release from the facility would be handled by local emergency response and health authorities already prepared for accidents at SRS, with no resulting additional burden on local community financial resources. In the case of the most serious accidents postulated for the proposed facilities, the amount of radioactive material deposited per unit area would be relatively small and would be limited to the area under the

plume. Any interdiction of crops as a result of the deposition of radioactive material would be a limited, one-time event, and if it were to occur at all, would only affect a small number of farm communities. Text has been added to Sections 4.6 and Appendix D in the FEIS to clarify the issue.

J.3.24 Mitigation

J.3.24.1 Comments: 86-005 89-064
89-013 89-066
89-063

Comment: The DEIS lists 43 highly specific mitigative actions. Many of these mitigation measures simply duplicate state or federal agency regulations with which DCS is already required to comply. Doing what is required by law or common practice is not mitigation. Mitigation occurs when, if there are significant impacts, an action is taken to lower those impacts to a more acceptable level. The DEIS should be modified to state that DCS will comply with the regulations of the appropriate regulatory agency. The mitigation measures discussed in Chapter 5 and presented in Table 5.1 with the Nuclear Regulatory Commission (NRC) as the proponent are in general excessive relative to the postulated impacts and may not be necessary. Therefore, it was recommended that these proposed mitigation measures be reconsidered. In addition, each mitigation measure should specify who is responsible for taking action or assuring that action is taken. Clarifying language should precede the table, or additional columns should be added to the table, to indicate which entity is responsible for 1) implementation and 2) verification of completion, of the mitigation.

Response: Under 40 CFR 1500.2(f), federal agencies shall to the fullest extent possible use all practicable means consistent with the requirements of the National Environmental Policy Act (NEPA) and other considerations of national policy to avoid or minimize any possible adverse effects of their actions on the quality of the human environment. The Council on Environmental Quality (CEQ) definition of mitigation is provided in EIS Chapter 5. Mitigation includes measures that minimize impacts by limiting the magnitude of the action, measures that rectify the impact of an action, measures that reduce or eliminate the impact over time, and measures that compensate for the impact. In addition, CEQ's 40 most asked questions states that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency, and thus would not be committed as part of the Record of Decision. Identifying the full range of mitigation measures serves to alert agencies or officials who can implement these extra measures, and will encourage them to do so. Therefore, the NRC believes it is appropriate to include mitigation measures that are required by the regulations of the other federal agencies.

Text has been added to clarify mitigation measures that are required by laws and regulations, those that are suggested by DCS as good practices, and those that are suggested by the NRC. Generally, it is the position of the NRC that the applicant is

responsible for assuring that all necessary mitigation measures are fully implemented and completed.

The NRC staff has reviewed the mitigation measures and has concluded that no additional mitigation measures are required beyond the regulatory requirements and those measures identified by DCS.

J.3.24.2 Comment: 86-074

Comment: In Table 5-1 of the DEIS, grading the site to a uniform elevation is an inherent aspect of the MOX facility design (the grading would be the same regardless of the MOX facility location). Consequently, the grading is incorrectly identified as a “mitigation.”

Response: The Nuclear Regulatory Commission disagrees with the comment. If the site was not graded, extensive erosion is possible because of the relatively steep topography. Grading minimizes the potential for erosion and is thus a mitigation activity.

J.3.24.3 Comments: 86-075
86-076
86-077

Comment: DCS's MOX ER (page 7-13, Table 7-I) specifically notes that a Stormwater Pollution Prevention Plan will be developed for the proposed MOX facility, which is more comprehensive and responsive to South Carolina Department of Health and Environmental Control (SCDHEC) enabling regulations. The DEIS states that a Sediment Control Plan and Spill Prevention Control and Countermeasures Plan would be developed prior to construction. A Spill Prevention Control and Countermeasures Plan would be developed prior to operating the proposed MOX facility. The correct title for the plan that would limit sediment in the surface waters and control spills during construction is the Stormwater Pollution Prevention Plan. The mitigative action identified by the DEIS should be limited to implementation of a Stormwater Pollution Prevention Plan in compliance with SCDHEC regulations.

Response: The Nuclear Regulatory Commission staff reviewed the elements of the Stormwater Pollution Prevention Plan and concluded that it would be sufficient to mitigate potential spills during construction. A Stormwater Pollution Prevention Plan is required by the South Carolina Department of Health and Environmental Control prior to construction. The Plan would minimize and avoid soil and surface water contamination from spills or other accidental releases during construction. The text in Chapter 5 of the FEIS has been revised to delete reference to the Sediment Control Plan. Text has also been added to state that appropriate mitigation measures during construction would be chosen at the time of the spill event or release in conjunction with the Stormwater Pollution Prevention Plan.

J.3.24.4 Comment: 86-090

Comment: Section 5.2.2, page 5-7, lines 18-27 of the DEIS speculates what resources might be impacted if any MOX structures extended into groundwater. The fact is that the structures do not extend to groundwater. Speculation about what might happen if the structures should extend to groundwater should be removed from the DEIS.

Response: The text in Section 5.2.1 (DEIS Section 5.2.2) was revised to include sand filters as an example of structures that could impact groundwater.

J.3.24.5 Comment: 86-078

Comment: The South Carolina Department of Health and Environmental Control (SCDHEC) does not specify requirements for reduction of fugitive construction dust. As noted in the MOX ER, DCS will have a Construction Emissions Control Plan which will implement a number of different good engineering practices to reduce fugitive dust emissions. The MOX ER does not identify specific actions or emissions reductions. The mitigative action specified in the DEIS Table 5-1 and ES-1 should be limited to compliance with appropriate SCDHEC air quality regulations.

Response: The text in Section 5.2.4 and Table 5.1 has been revised to state that DCS will have a Construction Emissions Control Plan which will implement a number of good engineering practices to reduce fugitive dust emissions.

J.3.24.6 Comment: 86-079

Comment: The statement in Table 5-1, page 5-2, lines 46-49 of the DEIS was questioned. The MOX ER identifies that the concrete batch plant will be subject to the provisions of a South Carolina Department of Health and Environmental Control (SCDHEC) air quality permit. The concrete batch plant will meet the conditions of that permit. The mitigative action specified in the DEIS should be limited to compliance with appropriate SCDHEC air quality regulations.

Response: The cementation process would be part of the operation of the Waste Solidification Building (WSB), not the construction of the WSB as indicated in the comment. The text in Section 5.2.4 and Table 5.1 has been corrected to note that the reduction would occur during operation of the WSB.

J.3.24.7 Comments: 86-085
86-097

Comment: The mitigation actions associated with National Historic Preservation Act (NHPA) activities were questioned. Information provided by DCS to the Nuclear Regulatory Commission (NRC) on December 12, 2002, demonstrated that the State Historic Preservation Office (SHPO) has agreed that all mitigation action is complete. No monitoring is required. Inadvertent discoveries will be handled in accordance with Federal Law and the

Savannah River Site Programmatic Memorandum of Agreement (PMOA). Because the NRC and the Department of Energy (DOE) have designated the DOE as the lead agency for mitigation under the NHPA, NRC specified mitigation actions are not appropriate. The mitigative action specified in the DEIS should be limited to compliance with DOE PMOA policies for archaeological management of construction activities.

Response: The NRC agrees with the comment that the DOE is responsible for compliance with the PMOA for archaeological management during construction. However, past experience at construction sites suggests that the mitigation actions identified by the NRC in the EIS (e.g., periodic monitoring, awareness training) are potential means to ensure nearby archaeological sites would not be adversely affected either indirectly from erosion or directly from disturbance by the workforce. The comment correctly states that the letter from the SHPO indicates mitigative action is complete for the two eligible archaeological sites; however, the letter from the DOE to which the SHPO is responding, indicated that some monitoring would occur during construction. The text has been revised in EIS Section 5.2.9 to reference both letters (Long 2002 and Gould 2002) and to specify that the monitoring would focus on the removal of fill on the site areas. A similar text change on monitoring the removal of fill has been made to Table 5.1, in addition to deleting the NRC as a proponent for the monitoring of the two eligible sites.

J.3.24.8 Comment: 10-014

Comment: The DEIS states that “issues related to general emergency preparedness of communities are outside the scope of this EIS.” The DEIS also mentions that “consequences on human health would be mitigated by following SRS emergency procedures.” It was requested that a copy of the Savannah River Site (SRS) emergency procedures be provided to citizens in Savannah and other communities throughout the Savannah River corridor. Concerns was expressed that the SRS emergency procedures would not be protective of the public.

Response: The DOE is responsible for the SRS emergency response plan, and it is not a publically available document. SRS coordinates its emergency preparedness with local and State agencies, including conducting drill and community education.

J.3.24.9 Comment: 89-065

Comment: The DEIS Section 5.2.2, page 5-8, lines 7-9 should be reworded as follows for clarity: “Direct impacts to groundwater could occur if there were a failure in the underground pipeline carrying the liquid high-alpha activity waste stream from the proposed MOX facility’s”

Response: The text in Section 5.2.1 of the FEIS (DEIS Section 5.2.2) has been modified as suggested by the commenter.

J.3.24.10 Comment: 89-067

Comment: In Section 5.2, the DEIS states that DCS shall add appropriate revisions of the Savannah River Site (SRS) Emergency Response Plan for chemicals identified as presenting moderate or high risks to workers. It is not clear that this measure is within the jurisdiction of the Nuclear Regulatory Commission.

Response: Upgrading of the SRS Emergency Response Plan to include chemicals posing moderate or high risks to workers is a mitigation action that is appropriate for protection of DCS and SRS employees from an accidental release. DCS has committed to establishing a protocol with the Department of Energy — to be submitted by DCS as part of any request for a license to possess and use special nuclear material — to integrate DCS's emergency plans with the existing SRS emergency preparedness program. Because this is a commitment made by DCS, relating to the proposed MOX facility, the Nuclear Regulatory Commission does have regulatory authority to enforce this commitment.

J.3.24.11 Comments: 86-080
86-093

Comment: Section 5.2.3 of the DEIS discusses mitigation measures for ecological resources. The MOX ER 4.6 describes the ecological habitat and the habitat surveys conducted prior to construction activities. MOX ER Appendix A, pages A-25 and A-26 provides letters of negative declaration from the U.S. Fish and Wildlife Service that the MOX facility construction and operation will not affect resources under the jurisdiction of the U.S. Fish and Wildlife Service. All necessary ecological surveys are complete. No sensitive species or nests of migratory species are present. These precautionary and mitigative actions presented in the DEIS are misleading and unnecessary.

Response: The U.S. Fish and Wildlife Service has raised no objections and has stated that the proposed action will have no effect on resources under its jurisdiction (letter dated June 20, 2001, from L. Duncan [U.S. Fish and Wildlife Service] to A.B. Gould [DOE]). The mitigation commitment described in the DEIS for surveys of plants and nests of migratory birds, sensitive species, and habitats has been deleted.

J.3.24.12 Comments: 86-081
86-083

Comment: Statements in Section 5.2.1 and Table 5-1 of the DEIS that measures shall be taken to protect trees not selected for removal, that any trees or other landscape features accidentally scarred or damaged should be replaced and that environmental supervisors shall be present during vegetation clearing to ensure that impacts are held to a minimum are misleading.

As noted in DEIS 3.6.1 (pg.3-34) the Savannah River Site (SRS) forests are managed by the U.S. Forest Service. The removal of trees and protection of trees not designated for removal will be under the direction of the U.S. Forest Service. The mitigative action

specified in the DEIS should be limited to compliance with appropriate U.S. Forest Service regulations.

Response: Section 3.6.1 of the EIS states that the forests on the SRS are managed for timber production and that the U.S. Forest Service harvests the trees. However, DCS should still take action at the construction site to prevent the workforce from removing vegetation in excess of that needed for construction clearing.

J.3.24.13 Comment: 86-082

Comment: The statement in Section 5.2.1 and Table 5-1 of the DEIS that “The loss of the existing storm-water basin near the southern boundary of the proposed site would be compensated for by construction of a new basin that would provide more viable aquatic habitat” is misleading. As noted in Attachment 14a of the letter from P. Hastings to the Nuclear Regulatory Commission Document Control Desk, the U.S. Army Corps of Engineers concluded that the existing storm-water basin is not part of the waters of the United States. Consequently, it is not appropriate to specify any mitigative action.

Response: The staff agrees with the commenter that compensation for loss of the existing stormwater basin is not an appropriate mitigative action. This action was addressed in Section H.3.1.2 of the EIS simply to point out the small impacts that would occur to aquatic ecological resources from construction. The mitigation measure to compensate for loss of the stormwater basin has been deleted from the FEIS.

J.3.24.14 Comment: 86-084

Comment: The statement in Section 5.2.1 and Table 5-1 of the DEIS that “Reclamation plans shall be developed for laydown areas and other construction areas that will not be occupied by structures, parking lots, or roads. Reclamation will include removal of all temporary construction features, stabilization of soils, and reseeded with appropriate plant species” is misleading. Property beyond the 41-acre proposed MOX facility site is managed under the DOE jurisdiction for the Savannah River Site. Land reclamation will be in accordance with DOE directives. The mitigative action specified in the DEIS should be limited to compliance with appropriate DOE policies for reclamation of construction areas.

Response: The mitigation measure described in Table 5-1 and in Section 5.2.3 of the FEIS (DEIS Section 5.2.1) has been revised to state that site restoration (e.g., stabilization of soils and revegetation) shall be done in compliance with appropriate DOE policies for reclamation of construction areas.

J.3.24.15 Comment: 86-092

Comment: The statement in Section 5.2.3, page 5-8 of the DEIS that “For example, a portion of the construction activities for the proposed MOX facility would take place on a former spoils pile used for previous F-Ares construction” is incorrect. The proposed MOX

facility will not be constructed on a former spoils pile; the spoils pile will be removed prior to construction.

Response: The text in Section 5.2.3 of the FEIS has been modified to indicate that a portion of the proposed MOX facility site had been previously used for storage of spoils, rather than implying that construction would occur on the spoils pile.

J.3.24.16 Comment: 86-086

Comment: The October 29, 2002, correspondence from DCS to the Nuclear Regulatory Commission responding to requests for additional information included the results of the Plutonium Project Pre-construction Environmental Report, including the results of soil analyses at the proposed MOX facility site. The DEIS should have included the results of this report which confirm the previous DCS conclusion in the MOX ER that there are no significant concentrations of radioisotopes or chemicals in the soil that would be hazardous to construction workers health. Consequently, the mitigative action is misleading and unnecessary.

Response: Text has been added to section 4.3.1 of the FEIS to summarize the results of the Preconstruction report. Although no significant contamination was detected, further sampling may be necessary because the study did not include samples to the depth that will be required for building foundations in the area of the spoils pile, and also did not include testing for some chemical contaminants of potential concern. Therefore, the potential mitigation action has been retained.

J.3.24.17 Comment: 86-096

Comment: The word “on-site” should be removed from page 5-11, line 23-24 of the DEIS. Treatment can occur “off-site” as well.

Response: The text in Section 5.2.7 of the FEIS was revised and the referenced word was removed.

J.3.24.18 Comment: 86-098

Comment: The proposed MOX facility stack height is incorrect on page 5-14, line 7 of the DEIS. The revised MOX ER increased the height of the structure to 120 feet.

Response: The text in Section 5.2.10 of the FEIS has been revised to state that the height of the tallest structure would be 120 ft (37 m) above the existing grade.

J.3.24.19 Comment: 27-001

Comment: In Section 2.2.4.2.3, the DEIS does not provide information regarding monitoring buried and exposed pipes for leaks that could result in discharge of liquid waste

to ground water. Monitoring/detection, response, and enforcement protocols related to pipe integrity and leaks should be included in the DEIS.

Response: Staff evaluated the impacts of an accidental release from liquid waste pipes in Section 4.3.5.4 of the EIS. As described in this section, pipes carrying stripped uranium and high alpha activity wastes would be double-walled stainless steel pipes designed to withstand natural phenomena hazards, and for which the Savannah River Site Spill Prevention Control and Countermeasures Plan applies. The text has been revised in the FEIS to include the ability of the transfer lines to withstand external man-made hazards. The text has also been revised to include the applicant's commitment to monitoring of the annular space inside the pipes for leaks, as described in the Construction Authorization Request.

J.3.24.20 Comment: 97-002

Comment: The DEIS indicates the proposed action (to build and operate the proposed MOX facility) has some impacts but concludes that the impacts are acceptable regardless of the severity of the impact. This comes across as a non-sequitur. The DEIS should be extremely firm in its conclusions on the requirement of adequate safety and protection, as this is the primary mission of the Nuclear Regulatory Commission (NRC). For example, the DEIS should explicitly acknowledge which mitigation measures are required by the NRC, with clear and objective criteria. In addition, the proposed MOX facility has not been fully designed. However, the DEIS is not clear if reasonable conservatism has been incorporated into the analyses due to the lack of design information or if ALARA (As Low As Reasonably Achievable) considerations are included.

Response: The impacts presented in the EIS are intended not to underestimate the potential impacts of the proposed action. As discussed in responses to comments in the human health risk sections (J.3.12 and J.3.13), conservatism is used in selecting models and parameters used to estimate the impacts. In this way, the EIS should bound the actual impacts and account for future design changes that may occur. Text has been added to Chapter 5 (Mitigation) of the FEIS to clarify which mitigation measures are proposed by the NRC and which mitigation measures would be required as part of any construction authorization approval or operating license issuance.

J.3.24.21 Comment: 10-024

Comment: Many of the mitigation procedures that are identified in the draft EIS seem lacking in their ability to protect workers and surrounding communities.

Response: The discussion of mitigation measures in Chapter 5 of the FEIS has been revised. Text has been added to clarify which mitigation measures are required by laws and regulations, which are suggested by DCS as good practices, and which are recommendations by the Nuclear Regulatory Commission. As suggested by the commenter, a discussion of mitigation measures for the proposed action, including the

connected actions, has been added to more completely describe how workers and the public would be protected if the proposed action is taken.

J.3.24.22 Comment: 86-087

Comment: Hydrazine emissions from the proposed MOX facility will be subject to South Carolina Department of Health and Environmental Control (SCDHEC) regulations. The mitigative action specified in Table 5.1 in the DEIS should be limited to compliance with SCDHEC air quality regulations.

Regarding potential accidents, the offgas treatment system (or any ventilation system at the proposed MOX facility) is not required to be credited to reduce the hydrazine concentration in air after a spill because calculations indicate that releases that originate indoors (inside the reagent building or the MOX Building) do not result in concentrations that exceed any temporary emergency exposure limits (TEELs) for the site worker or public. There appear to be errors in the DEIS hydrazine airborne concentration calculation that leads to this conclusion (see comments on Appendix E.1) and furthermore, crediting the release as an indoor release, which reduces the air speed across the surface of the spilled solution, provides sufficient reduction in the airborne concentration to result in acceptable consequences without mitigation by any offgas treatment system.

Response: The text in Table 5.1 and Section 5.2.8 of the FEIS has been revised to state that DCS would limit operational hydrazine emissions to levels that do not cause exceedance of the SCDHEC standard. With respect to accidental releases, the NRC conservatively assumed that the accident would occur during chemical delivery, and that the container contents would be spilled on an outdoor concrete surface (See EIS Section 4.3.5.3). Therefore, modeled downwind air concentrations were not reduced by a factor assuming indoor release. Chemical accidents are also discussed in Comments J.3.12.9, J.3.12.21, J.3.12.22, and J.3.12.25.

J.3.24.23 Comment: 86-091

Comment: Section 5.2.2, page 5-7, lines 45-46 of the DEIS states, "Operation of a sand filter would not directly impact groundwater because the filter would be covered to prevent infiltration and it would have a concrete wall and bottom." Because the proposed action does not include a sand filter this statement is irrelevant.

Response: The NRC disagrees with the comment. Sand filters are being considered as an option for controlling air emissions from the proposed MOX facility, as part of the NRC's NEPA evaluation; the discussion presented in Section 5.2.1 of the EIS is therefore relevant.

J.3.25 Unavoidable Impacts

J.3.25.1 Comment: 89-061

Comment: DEIS Section 4.7.1 reads as a summary of potential unavoidable impacts, many of which are then dismissed if mitigation or good engineering practices are implemented. It is recommended that the discussion be limited to only those areas where unavoidable adverse impacts are certain to occur.

Response: Mitigation measures and good engineering practices identified in Section 4.7.1 of the DEIS were included to provide the reader with a sense of the magnitude of the unavoidable impacts. The NRC agrees that with appropriate mitigation some impacts can be reduced, but also believes that some impacts cannot be avoided entirely even with good engineering practices or other mitigation measures. This section of the FEIS has been revised to eliminate mitigation actions if unavoidable impacts no longer occur, based on revised impact conclusions presented in earlier sections of Chapter 4.

J.3.26 Geology and Soils

J.3.26.1 Comment: 89-031

Comment: In Section 3.2, page 3-1 of the DEIS, the statement that “prime farmland is protected by the U.S. Department of Agriculture” is an oversimplification and technically inaccurate. Although it is a moot point at the Savannah River Site, the Farmland Protection Policy Act offers no absolute protection to important farmlands (i.e., prime, unique, or other statewide or locally important farmlands). It was suggested that the text be changed to: “Certain soils are classified by the U.S. Department of Agriculture, Natural Resources Conservation Service as prime farmland or other important farmlands. The Farmland Protection Policy Act (7 U.S.C. 4201 et seq.) and its implementing regulations (7 CFR 658) requires Federal agencies as part of the NEPA process to consider the extent to which Federal projects and programs contribute to the unnecessary conversion of important farmlands to nonagricultural uses.”

Response: The text in Section 3.2 of the FEIS has been revised as suggested in the comment.

J.3.26.2 Comment: 89-032

Comment: In Section 3.2.2, page 3-4 of the DEIS, a citation should be provided for the estimated peak ground acceleration produced at the Savannah River Site from the Charleston earthquake. If the citation for the information in the preceding paragraph is USGS 2001, then this citation should be included at the end of the paragraph.

Response: The citation is DCS Environmental Report (DCS 2002). This citation was added to the text in Section 3.2.2 of the FEIS.

J.3.26.3 Comment: 89-033

Comment: In Section 3.2.2, page 3-5 of the DEIS, the sentence referencing the Uniform Building Code (UBC) should be deleted, as this Code was rendered obsolete with regard to seismic design provisions with publication of the International Building Code (IBC) in 2000. The IBC replaces all national model building codes previously in use. Instead of seismic zone designations, the IBC's seismic design provisions are based on the USGS' National Earthquake Hazard Reduction Program maps that depict maximum considered earthquake ground motions for the United States based on spectral response acceleration.

Response: The text in Section 3.2.2 of the FEIS has been revised as suggested in the comment.

J.3.27 Cultural Resources

J.3.27.1 Comment: 89-038

Comment: It was requested that in Section 3.7.1, the general location of site 38AK546/547 (as done for sites 38AK757, 38AK330, and 38AK548) be provided.

Response: The text in Section 3.7.1 of the FEIS has been revised to state the location of 38AK546/547 relative to the proposed MOX facility.

J.3.27.2 Comment: 86-022

Comment: To confirm Table 2.1, text should be added on page 2-34, lines 5-7 stating that mitigation measures are being planned by DCS, in conjunction with the State Historic Preservation Office, and the Savannah River Site cultural resources staff to mitigate any potential impacts to archaeological sites before construction.

Response: Data recovery obligations for Sites 38AK546/547 and 38AK757 have been completed. The text in the FEIS has been revised accordingly.

J.3.28 Ecology

J.3.28.1 Comments: 85-005
91-004

Comment: An area of concern about the Georgia coastal ecosystem was expressed. It was stated that 90 percent of the fish originate in this ecosystem and that the marshes in the coastal area are dying. In addition, these marshes are a vital habitat for a diverse variety of species that compose the food web for marine ecosystems. It was stated that the marshes alone should warrant further study before proceeding with this expansion. It was also felt that processing nuclear fuels seriously threatens these vital resources and could

contaminate groundwater, yet assessments such as this DEIS undervalues these risks and their potential irreversibility.

Response: Section 3.9 of the EIS discusses current waste management at the Savannah River Site; Sections 4.3.3.1.2 and 4.3.3.2.2 address potential impacts of the proposed action on surface water and ground water, respectively; and Section 4.3.4.2 discusses waste disposal impacts associated with the proposed action. No wastes would be discharged to groundwater. Only effluents from low-level waste and nonhazardous liquid waste treatment would be eventually discharged to surface waters. The effluents of treatment facilities are tested before release to ensure that discharges are consistent with waste discharge limitations (e.g., radionuclide contaminants are removed before discharge). Therefore, no nuclear wastes associated with the proposed action would contaminate the Savannah River or its associated marsh habitats. This issue is also discussed in Comment J.3.29.1.

J.3.28.2 Comment: 86-127

Comment: In Section H.3.14 of the DEIS, it is suggested that the text be changed to reflect that the transmission line area has been surveyed, that no smooth cone-flowers were observed, and that the U.S. Fish and Wildlife Service (USFWS) concurs that the proposed action will not affect resources under their jurisdiction.

Response: The text of Section H.3.1.4 of the FEIS has been changed to reflect that the transmission line area has been surveyed, that no smooth cone-flowers were observed, and that the USFWS concurs that the proposed action will not affect resources under their jurisdiction. The letter response from Duncan (USFWS) to Gould (DOE) has also been added to the reference list for Appendix H.

J.3.28.3 Comment: 89-035

Comment: The bat species *Myotis lucifugus* and *Myotis austroriparius* are discussed Section 5.5.4 of the DEIS but are not included in the companion list of protected species presented in Appendix A, Table A.1. Please reconcile this inconsistency. Also, to be consistent with the balance of the Ecology discussion, the common name of these two species of bats should be presented in the text, followed by the Latin name in parentheses.

Response: The sentences pertaining to the bat species have been deleted from Section 3.5.4 of the FEIS to avoid confusion or inconsistencies with Appendix A, Table A.1. Neither bat species has been reported for Aiken or Barnwell counties.

J.3.28.4 Comment: 89-036

Comment: In Section 3.5.4 of the DEIS, the common ground dove, loggerhead shrike, and American sandburrowing mayfly are presented in this discussion of protected species but are not included in the companion list of protected species presented in Appendix A, Table A.1. This inconsistency should be reconciled.

Response: The text of Section 3.5.4 of the FEIS has been modified to avoid confusion or inconsistencies with Appendix A, Table A.1. As the common ground dove is not currently listed by the State of South Carolina, mention of it in Section 3.5.4 has been deleted. Similarly, the loggerhead shrike is not reported for Aiken or Barnwell counties. Thus, mention of it has also been deleted. A text addition has been made that states that the American burrowing mayfly is not currently listed by either the U.S. Fish and Wildlife Service or the State of South Carolina.

J.3.28.5 Comment: 89-037

Comment: In Section 3.5.4 of the DEIS, the majority of plant species discussed here are either not listed in Appendix A, Table A.1 or are listed under a different common name. This inconsistency should be reconciled.

Response: The text of Section 3.5.4 of the FEIS pertaining to plant species has been modified to make it consistent with Appendix A, Table A.1. This entailed either editing the common and/or scientific names of the plants or deleting the names of those species that are not listed for the counties of concern.

J.3.28.6 Comment: 89-026

Comment: The statement on page 2-30 of the DEIS, “No wetlands or endangered/threatened species would be impacted” is too broad and not entirely consistent with what is presented in Appendix H, pages H-7 through H-9. Based on what is presented, it is difficult to state that no impacts would occur. Rather, it appears that it would be more appropriate for lines 23 and 24 of page 2-30 to state that negligible impacts to wetlands, aquatic habitat, and threatened/endangered species would be expected.

Response: The text in Table 2.1 of the FEIS on impacts to threatened species and wetlands has been revised to be consistent with the discussion of impacts presented in Appendix H.

J.3.28.7 Comment: 89-029

Comment: It is suggested that Table 2.1, lines 23-27 and the text in Section 2.4, lines 2-4 be revised to have similar wording.

Response: The text in Section 2.4 and Table 2.1 of the FEIS has been revised to state that impacts to endangered or threatened species, wetlands, aquatic and terrestrial habitats (including woodlands) would be small.

J.3.29 Socioeconomics

J.3.29.1 Comments: 43-002
91-005

Comment: The impacts resulting from the loss of fresh water, or contamination of fresh water, could have devastating adverse impacts on public health and the remaining ecosystem functions in the lower reaches of Georgia's five coastal rivers and the vast estuaries and nature-based economy they support. This includes some 40,000 jobs in coastal Georgia alone, about one out of five jobs in coastal Georgia, generating more than \$1 billion a year in revenue annually. Risks such as those linked to nuclear fuel processing, storage, handling, transport, use, and conversion to electricity (each of which pose serious threats to these resources and the businesses they support should) be included in the DEIS. These impacts should be evaluated in the DEIS.

Response: The socioeconomic impacts of postulated accidents of the proposed facilities on water and fish resources, and subsequently the economies of communities surrounding the Savannah River Site (SRS), were not estimated in the EIS because it is expected that such impacts, if any, would be small. In evaluation of postulated accidents, with potential damage to crops under the plume in the event of an airborne release and subsequent damage to water resources from the associated runoff, it was found that the amount of radioactive material deposited per unit area would be relatively small. Dilution of runoff would occur fairly rapidly in the affected rivers and streams and would not cause any significant risk to the economies of the communities downstream of the location of the proposed facility.

Text has been added to Sections 4.6 and Appendix D in the FEIS to clarify the issue.

The water resource impacts of the proposed action are discussed in Section 4.3.3 of the EIS. Water would be used during construction and operation. However, this water would come from deeper groundwater aquifers and would not significantly affect water flow in the Savannah River. There would also be no direct discharges into surface water during construction and discharges from the WSB during operation would have small impacts on surface water quality. Indirect discharges to the Savannah River would occur from treating liquid waste from the proposed MOX facility. However, treating this waste is not anticipated to significantly change the quantity or quality of the discharges for existing SRS waste processing facilities. Because the impact to water resources is expected to be small, alternatives to the proposed use of surface water to receive treated effluent are not required. Mitigation measures to further minimize any possible impact on water resources are discussed in Section 5.2.1 of the EIS. This issue is also discussed in Comment J.3.28.1.

This page is being withheld pursuant to 10 CFR 2.390(a).

This page is being withheld pursuant to 10 CFR 2.390(a).

J.3.30.10 Comment: 89-024

Comment: Revise page 2-25, line 36 of the DEIS to read “. . .was manufactured at the DOE’s Los Alamos National Laboratory (LANL) and at the Bochvar Institute in Moscow, Russia.”

Response: The text in Section 2.3.5 of the FEIS has been modified to include the Bochvar Institute.

J.3.30.11 Comment: 89-025

Comment: In the Waste Management, Construction Section of Table 2.1 (page 2-29, lines 12-14 of the DEIS) both the liquid and solid wastes need to be labeled as “nonhazardous waste” as done on lines 32 and 34.

Response: The text was revised to include nonhazardous liquid and nonhazardous solid in the Construction Waste portion of Table 2.1 of the FEIS.

J.3.30.12 Comment: 89-028

Comment: In the infrastructure, normal operations section of Table 2.1 (page 2-31, line 21 of the DEIS), the percent of electric power capacity for operation (38.5%) does not agree with the percentage presented in Section H.6.2 (p. H-13, line 6), 36.4%.

Response: The percentage of electric power capacity in Table 2.1 of the FEIS was revised to read “36.4%.”

J.3.30.13 Comment: 89-027

Comment: In Section 2.4, page 2-30 of the DEIS, the woodland habitat loss description under the proposed action column is awkward. Suggest it be reworded for clarity as follows: “Up to 14.7 ha (36.4 ac) of woodlands would be cleared for the proposed facilities. This would represent <1% of the annual timber harvest at SRS.”

Response: The suggested text revision has been made to Table 2.1 of the FEIS under the heading of “Habitat Loss.”

J.3.30.14 Comment: 89-048

Comment: In Table 4.13, the sixth column should be “Number of LCFs,” not “Chance of LCF.”

Response: The heading for the sixth column in Table 4.13 of the FEIS has been corrected to read “Fatalities (LCFs).”

J.3.30.15 Comment: 89-069

Comment: In Appendix F, page F-11, line 10 of the DEIS, “1900” should be “1990.”

Response: Text in the FEIS has been changed as suggested.

J.3.30.16 Comment: 86-008

Comment: On page 2-13, line 42 of the DEIS, it is suggested to change to whenever “practical” rather than whenever “possible.”

Response: Section 2.2.3.3.3 of the FEIS has been revised to indicate that the Savannah River Site is compacting solid waste whenever practical.

J.3.30.17 Comments: 86-010
86-015

Comment: On page 2-14, line 46 of the DEIS change “permitted” to “suitable.” Department of Energy low-level radioactive waste sites are neither permitted nor licensed nor do they need to be.

Response: The text in Section 2.2.4.1 of the FEIS has been revised to indicate that low-level radioactive waste would be sent to a suitable disposal site.

J.3.30.18 Comments: 86-011
86-012
86-014

Comment: DEIS should not specify design details such as tank sizes. Otherwise, design evolution might mandate DEIS revisions. Where necessary, bounding conditions can be specified for impact projections; but these should be restricted to the discussions where they are needed and not simply cast about in general descriptions of the facility.

Response: The text in Section 2.2.4 of the FEIS has been revised to eliminate numerical values on design capacity for tanks or containers, and waste volumes produced by processing materials from the proposed MOX facility. Values on volumes of chemicals that could be released during an accident are reported in Chapter 4 of the EIS in order to provide the reader with a bounding estimate on the magnitude of impacts.

J.3.30.19 Comment: 86-018

Comment: In the chemical accident section of Table 2.1 (page 2-27, lines 52-53 of the DEIS), the Nuclear Regulatory Commission should consider deleting reference to impact from chemical spills on the general public. The DEIS contains no scenario of a release from the MOX Facility, the Pit Disassembly and Conversion Facility, or the Waste Solidification Building that results in any effect beyond the Savannah River Site boundary.

Response: The commenter is correct. The reference to the general public has been deleted from that section of Table 2.1.

J.3.30.20 Comment: 86-020

Comment: In the land use, accident section of Table 2.1 (page 2-31, lines 49-50 of the DEIS), the use of the term “severe accident” is inappropriate. In 10 CFR Part 70 (see NUREG-1718), the appropriate terms are “likely, unlikely, high unlikely, and credible.” Text should be changed to say “highly unlikely” (see DEIS page 2-37 which notes that a severe accident is highly unlikely).

Response: The phrase “severe accident” has been replaced with the phrase “highly unlikely” in this section of Table 2.1.

J.3.30.21 Comment: 86-013

Comment: Section 2.2.4.2.1, page 2-15 of the DEIS states that the acid bottoms collected in the evaporator would be neutralized with sodium hydroxide in a neutralization tank. After neutralization, the waste would be pumped to two 110-L (30-gal) cement head tanks. The acidic bottoms will be collected in a bottoms tank where the solution will be sampled to determine concentrations. Based on this sample, the solution would be metered to one of three cement head tanks where neutralization would occur prior to transfer to the mixer. It is suggested that the text be revised to state the following, “After collection, the waste would be pumped into small batch cement head tanks to be neutralized.”

Response: The text in Section 2.2.4.2.1 of the FEIS has been revised to indicate that after the acid bottoms collected in the evaporator were neutralized the material would be mixed with cement and poured into approved containers.

J.3.30.22 Comment: 86-061

Comment: On page 4-47, line 16-17 of the DEIS, after “unrestricted use” add “or restricted use.”

Response: The text in the FEIS has been changed to indicate that the property would be released for unrestricted use or restricted used, under certain conditions.

J.3.30.23 Comment: 86-121

Comment: Table E.6 in the DEIS needs a reference.

Response: A reference has been added to Table E.6 in Appendix E, Section E.2.1.2 of the FEIS.

J.3.30.24 Comment: 86-070

Comment: In Section 4.4.2, page 4-67, line 20-21 of the DEIS, the citation for the environmental assessment for the conversion facility in Wilmington, NC, is incorrect.

Response: The commenter is correct that NUREG -0170 (NRC 1977) is not the appropriate reference. The new reference for the environmental assessment GE fuel fabrication facility in Wilmington, NC, will be added to the text in Section 4.4.2 of the FEIS.

J.3.30.25 Comment: 86-071

Comment: Inclusion of impacts from converting uranium hexafluoride to uranium dioxide and impacts from transporting spent MOX fuel to the geologic repository was questioned. If the Nuclear Regulatory Commission (NRC) feels compelled to retain these impacts, the DEIS should note that these impacts replace similar avoided impacts from the conversion and disposal of low enriched uranium fuel and that the net impact is zero.

Response: Conversion of uranium hexafluoride to uranium dioxide at the Global Nuclear Fuel-Americas, LLC Facility in Wilmington, North Carolina, is considered a connected action that is required for the surplus plutonium conversion process at the Savannah River Site.

The transport of spent MOX fuel to a geologic repository described in Section 4.4 would not occur without production of MOX fuel. A brief discussion of impacts from transporting spent MOX fuel thus seems appropriate. The NRC cannot conclude that the transportation impacts presented in Section 4.4 of the EIS “replace similar avoided impacts from conversion and disposal of low enriched uranium fuel and the net impact is zero” as stated in the comment.

J.3.30.26 Comment: 86-032

Comment: Line 13 on page 3-41 of the DEIS should be corrected to note 24-hour shifts rather than 12-hour shifts.

Response: The text in Section 3.8.5 of the FEIS was changed as suggested in the comment.

J.3.30.27 Comment: 86-094

Comment: In line 3 on page 5-11 of the DEIS, the word “recycling” should be deleted.

Response: The word “recycling” was deleted from the FEIS text as suggested by the commenter.

J.3.30.28 Comment: 86-095

Comment: It is suggested that line 18, page 5-11 of the DEIS be reworded to “A new tank would be constructed within the WSB so that the high-alpha-activity waste can be neutralized before being solidified to a TRU waste form.”

Response: The text in Section 5.2.7 of the FEIS has been revised and the text referenced in the comment has been deleted.

J.3.30.29 Comment: 89-040

Comment: The text on page 3-58, line 38 of the DEIS states that housing units are expected to reach 35,400 in 2001. However, this is not consistent with Table 3.16 on page 3-60, which states this estimate is for 2002.

Response: Data shown are for 2002. The text in the FEIS has been changed to reflect the comment.

J.3.30.30 Comment: 89-041

Comment: On page 3-59, lines 33 and 35 of the DEIS refer to housing units in the “county” when it should be housing units in the “ROI.”

Response: The data shown are for the region of influence (ROI). The FEIS has been changed to reflect the comment.

J.3.30.31 Comment: 89-042

Comment: In Table 3.16, the 2002 column of the table does not have a source footnoted (as do the 1990 and 2000 columns).

Response: A source has been added to the column showing the 2002 data.

J.3.30.32 Comment: 89-043

Comment: State Route 781 is not shown in either Figure 3.1 or 3.8, as indicated in the text. Also, the text refers to State Routes (SRs), while the Figure 3.8 refers to “SC.”

Response: State Route 781 has been added to Figure 3.8, and the text and figure in the FEIS have been made consistent with each other.

J.3.30.33 Comment: 89-068

Comment: A reference should be provided for U.S. Census Bureau data used in calculations in Appendix D, as well as for the sources provided in the appendix tables.

Response: The relevant references have been added to Appendix D in the FEIS.

J.3.30.34 Comment: 89-070

Comment: The text on page H-15, lines 7 and 8 of the DEIS states that four additional local public service employees would be required, while Table H.1 (p H-14) shows five additional employees. Please reconcile this inconsistency.

Response: The text in the FEIS has been changed to reflect the comment; the correct number is five.

J.3.30.35 Comment: 86-104

Comment: On page C-10, line 19 of the DEIS an editorial change should be “0 to 139.”

Response: The text in Appendix C, Section C.2.1.2 of the FEIS has been corrected to reflect this editorial change.

J.3.30.36 Comment: 86-106

Comment: In Table C.2, the per package quantities are not accurate. These may be more accurate for a “per shipment” amount.

Response: These are per shipment quantities as noted in Section C.2.3 of the EIS. A footnote will be added to the table in the FEIS for clarification.

J.3.30.37 Comment: 86-107

Comment: Page C-14 should be corrected to note that Transportation Safeguards Division (TSD) is now called the Office of Secure Transportation, and the DOE Albuquerque Office is now a National Nuclear Security Administration (NNSA) Service Center.

Response: The text in Section C.2.3 has been changed in the FEIS.

J.3.30.38 Comment: 86-109

Comment: There was concern about the footnote used in Table C.5. The footnote is misleading as this footnote currently is used for the Type A packages as well as Type B. Type A packages are not used for plutonium metal shipments. The intent is to differentiate between the Type B release fractions used for the plutonium metal shipments and those used for the fresh, unirradiated MOX fuel shipments (Footnote "c").

Response: The footnotes in Table C.5 have been changed in the FEIS.

J.3.30.39 Comment: 89-052

Comment: On page 4-66, line 12 of the DEIS, it may be more clear to use the phrase "from the PDCF" after "recovered HEU" so that it is not confused with waste uranium from the proposed MOX facility.

Response: The text in Section 4.4.1.3 has been changed in the FEIS.

J.3.30.40 Comment: 89-062

Comment: In Section 4.7.1, page 4-94 of the DEIS, the statement regarding proportionate increase in amount of transuranic (TRU) waste (9%) is inconsistent with Section 4.5.1.2 (24%).

Response: The text in Section 4.5.1.1 has been revised in the FEIS. The TRU waste generated would constitute 26% and 13% of the treatment and storage capacities respectively.

J.3.30.41 Comments: 86-049
89-047

Comment: It is recommend that line 2 on page 4-29 of the DEIS be reworded to say the process will produce a solid TRU waste "suitable" for disposal at WIPP. The use of the word "similar" implies some differences and issues.

Response: The word "similar" has been changed in the FEIS to "suitable" as suggested.

J.3.30.42 Comment: 86-044

Comment: On page 4-26, lines 37-40 of the DEIS the lists of hazardous "liquid" wastes contains examples that are not liquids (i.e. batteries).

Response: The text has been revised to delete the word "liquid."

J.3.30.43 Comment: 27-002

Comment: Fourmile Branch appears to flow southwesterly in Figures 3.2 and 3.3, not southeasterly as described in the text. This apparent discrepancy should be checked and corrected, if warranted.

Response: Section 3.3.1 was revised to state that Fourmile Branch flows southwesterly.

J.3.30.44 Comment: 27-004

Comment: The first sentence in Section 3.2.2 of the DEIS reads, "Several underground aquifers occur... ." The word "underground" is redundant and should be deleted; all aquifers are below ground.

Response: The word "underground" has been deleted.

J.3.30.45 Comment: 86-023

Comment: The typographical error on page 3-7, lines 23-24 of the DEIS should be corrected to "Beaufort-Jasper."

Response: The typographical error for the Water Authority name in Section 3.3.1 was changed to read "Beaufort-Jasper Water Authority."

J.3.30.46 Comment: 86-024

Comment: In Section 3.3.1, the DEIS refers to the S-Area sewage treatment plant. With the opening of the Central Sanitary Waste Treatment Facility, the S-Area plant, and all other area treatment plants at the Savannah River Site were closed.

Response: The text in Section 3.3.1 was changed to indicate that discharge is received from the Central Sanitary Waste Treatment Facility rather than the S-Area sewage treatment plant.

J.3.30.47 Comment: 86-025

Comment: In Section 3.3.2, page 3-11, line 3 of the DEIS delete the word "Creek." The aquifer is the Upper Three Runs Aquifer.

Response: The name of the aquifer has been corrected.

J.3.30.48 Comment: 86-026

Comment: It is suggested that “waste management facilities” be added to the lists for facilities that could possibly contaminate groundwater on Section 3.3.2, page 3-12, lines 27-29 of the DEIS.

Response: The text in Section 3.3.2 has been revised as suggested in the comment.

J.3.30.49 Comment: 86-034

Comment: On page 3-7, line 24 of the DEIS the correct spelling is Hardeevile (South Carolina), not Hardeville.

Response: The typographical error has been corrected.

**APPENDIX K:
COMMENTER AND COMMENT DOCUMENT INDEX**

APPENDIX K: COMMENTER AND COMMENT DOCUMENT INDEX

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0004	ml031210403	Jody Lanier
0005	same	Jody Lanier
0006	ml031210406	William D. Hooker, Sr.
0007	ml031210491	Whitney Erin Lamb
0008	ml031210487	Andre Entermann
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0011	ml031210434	Edwin S. Presnell, Augusta Metro Chamber of Commerce
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0017	ml031210450	C. David Cowfer, Savannah River Site Retiree Association
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0033		Whitney Erin Lamb
0034		Kirk Cobb
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0036		Kelli Pearson
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0070		Charles Utley
0071		Lew Patrie, Western N.C. Physicians for Social Responsibility
0072		Mary Olson, Nuclear Information and Resource Service
0073		Lou Zeller, Blue Ridge Environmental Defense League
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0075		James E. Smith, State House of Representatives, South Carolina
0076		Gregg Jocoy, York County South Carolina Greens
0077		Judy Aulette, Charlotte Area Green Party
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0079	ml031130043	Linda Ewald
0080	ml031140009	Betsy Rivard, Women's Action for New Directions
0081	ml031140008	Berta R. Laney, Women's Action for New Directions
0082	ml031320272	Chris Miller
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0089	ml031400037	Edward J. Siskin, U.S. Department of Energy, National Nuclear Security Administration
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0091	ml031400092	David Kyler, Center for a Sustainable Coast
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0107	ml031420017	Heinz J. Mueller, U.S. Environmental Protection Agency, Region 4
0108	ml031420019	Carolyn Cain
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Kushner (Action for a Clean Environment)	ml031210451	0015
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Murray, Alexander P.	ml031420029	0097
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Nuclear Information Resource Service (Mary Olson)		0072
Nuclear Information Resource Service (Mary Olson)	ml031420683	0093
Nuclear Information Resource Service (Mary Olson)		0115
O'Brien, Pamela J.	ml030940262	0003
Odom, Linda	ml031130031	0022
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Sierra Club, South Carolina Chapter (Robert Gould)		0064
Sierra Club, South Carolina Chapter (Dell Isham)	ml031620072	0113
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Sierra Club, Savannah River Group (William Hooker)	ml031210406	0006
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Southern Alliance for Clean Energy (Sara Barczak)	ml031420055	0098
Steele, Joanne		0069
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Warshauer, Meira	ml031420021	0100
Watson, Darrell		0065
Weiss, Charles (Greater Aiken Chamber of Commerce)		0057
Western North Carolina Physicians for Social Responsibility (Lewis Patrie)	ml031080139	0024
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Women's Action for New Directions (Berta R. Laney)	ml031140008	0081
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5-004	J.3.6.1	Scope - General	
5-005	J.3.9.1	Scope - Terrorism	
5-006	J.3.7.4	Scope - DOE Policy	
5-007	J.3.21.1	Cost Benefit	
5-008	J.3.7.6	Scope - DOE Policy	
5-009	J.3.10.1	Alternatives	
6-001	J.3.12.2	Human Health Risk	William D. Hooker, Sr.
7-001	J.3.4.5	NEPA Process	Whitney Lamb
7-002	J.3.18.2	Decommissioning	
7-003	J.3.4.1	NEPA Process	
7-004	J.3.16.1	Hydrology	
8-001	J.3.1.5	General Opposition	Andre Entermann
8-002	J.3.4.6	NEPA Process	
8-003	J.3.15.1	Air Quality	
8-004	J.3.7.10	Scope - DOE Policy	
8-005	J.3.23.1	Cost Benefit	
9-001	J.3.19.4	Environmental Justice	Vernell Cutter
9-002	J.3.19.4	Environmental Justice	
9-003	J.3.19.4	Environmental Justice	

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9-004	J.3.4.3	NEPA Process	
9-005	J.3.19.4	Environmental Justice	
10-001	J.3.9.1	Scope - Terrorism	Sara Barczak
10-001	J.3.9.2	Scope - Terrorism	
10-002	J.3.1.1	General Opposition	
10-003	J.3.17.4	Waste Management	
10-004	J.3.23.1	Cost Benefit	
10-005	J.3.7.9	Scope - DOE Policy	
10-006	J.3.1.6	General Opposition	
10-007	J.3.4.4	NEPA Process	
10-007	J.3.4.7	NEPA Process	
10-008	J.3.7.6	Scope - DOE Policy	
10-009	J.3.7.6	Scope - DOE Policy	
10-010	J.3.7.3	Scope - DOE Policy	
10-011	J.3.7.7	Scope - DOE Policy	
10-012	J.3.14.1	Accidents	
10-013	J.3.12.1	Human Health Risk	
10-014	J.3.24.8	Mitigation	
10-015	J.3.19.9	Environmental Justice	
10-016	J.3.10.8	Alternatives	
10-017	J.3.17.4	Waste Management	
10-017	J.3.17.5	Waste Management	
10-018	J.3.16.1	Hydrology	
10-019	J.3.23.1	Cost Benefit	
10-020	J.3.8.1	Scope - Safety Evaluation Report	
10-020	J.3.8.3	Scope - Safety Evaluation Report	
10-021	J.3.7.6	Scope - DOE Policy	
10-022	J.3.1.6	General Opposition	
10-023	J.3.11.2	Alternatives - Immobilization	
10-024	J.3.24.21	Mitigation	
11-001	J.3.2	General Support	Edwin S. Presnell
12-001	J.3.1.5	General Opposition	Scott Justice
12-002	J.3.7.6	Scope - DOE Policy	
12-003	J.3.23.1	Cost Benefit	
12-004	J.3.6.9	Scope - General	
12-004	J.3.21.1	MOX Fuel Use	
13-001	J.3.5.1	Licensing Process	Glenn Carroll
13-002	J.3.4.5	NEPA Process	

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13-003	J.3.11.2	Alternatives - Immobilization	
13-004	J.3.6.9	Scope - General	
13-004	J.3.21.1	MOX Fuel Use	
13-005	J.3.7.7	Scope - DOE Policy	
13-006	J.3.17.6	Waste Management	
13-007	J.3.9.1	Scope - Terrorism	
14-001	J.3.2	General Support	Ernest S. Chaput
14-002	J.3.19.7	Alternatives	
14-003	J.3.14.8	Accidents	
14-004	J.3.6.3	Scope - General	
15-001	J.3.11.2	Alternatives - Immobilization	Adele Kushner
15-002	J.3.9.2	Scope - Terrorism	
16-001	J.3.2	General Support	Gresham Barrett
17-001	J.3.2	General Support	C. David Cowfer
17-002	J.3.14.9	Accidents	
18-001	J.3.8.1	Scope - Safety Evaluation Report	Donald A. Orth
18-001	J.3.8.5	Scope - Safety Evaluation Report	
19-001	J.3.4.5	NEPA Process	Mary T. Kelly
19-002	J.3.9.1	Scope - Terrorism	
19-003	J.3.10.4	Alternatives	
19-004	J.3.9.2	Scope - Terrorism	
19-005	J.3.9.2	Scope - Terrorism	
19-006	J.3.14.2	Accidents	
19-007	J.3.15.4	Air Quality	
19-008	J.3.6.1	Scope - General	
19-009	J.3.8.3	Scope - Safety Evaluation Report	
19-010	J.3.7.1	Scope - DOE Policy	
20-001	J.3.1.4	General Opposition	Susan Cain Guisto
21-001	J.3.2	General Support	Roy G. Hurni
22-001	J.3.14.10	Accidents	Linda Odom
22-002	J.3.19.2	Environmental justice	
22-003	J.3.1.6	General Opposition	
23-001	J.3.4.5	NEPA Process	James E. Smith, Jr.
24-001	J.3.20.12	Transportation	Lewis Patrie
24-002	J.3.9.1	Scope - Terrorism	
24-003	J.3.13.1	Human Health - Radiological Risk	
24-004	J.3.6.9	Scope - General	

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24-005	J.3.7.8	Scope - DOE Policy	
24-006	J.3.17.4	Waste Management	
24-007	J.3.11.2	Alternatives - Immobilization	
24-008	J.3.7.6	Scope - DOE Policy	
24-009	J.3.1.3	General Opposition	
24-010	J.3.9.1	Scope - Terrorism	
24-010	J.3.9.2	Scope - Terrorism	
25-001	J.3.2	General Support	William J. Mottel
25-002	J.3.14.11	Accidents	
26-001	J.3.2	General Support	Camille Price
27-001	J.3.24.19	Mitigation	Gregory Hogue
27-002	J.3.30.43	Editorial	
27-003	J.3.16.2	Hydrology	
27-004	J.3.30.44	Editorial	
27-005	J.3.16.3	Hydrology	
27-006	J.3.16.4	Hydrology	
27-007	J.3.16.5	Hydrology	
27-008	J.3.16.6	Hydrology	
27-009	J.3.13.15	Human Health - Radiological Risk	
27-010	J.3.16.7	Hydrology	
28-001	J.3.19.3	Environmental Justice	Tom Clements
28-002	J.3.19.3	Environmental Justice	
29-001	J.3.20.1	Transportation	Marvin I. Lewis
29-002	J.3.20.2	Transportation	
29-003	J.3.5.2	Licensing Process	
30-001	J.3.1.5	General Opposition	Scott Justice
30-002	J.3.9.1	Scope - Terrorism	
30-003	J.3.6.9	Scope - General	
30-003	J.3.21.1	MOX Fuel Use	
30-004	J.3.23.1	Cost Benefit	
31-001	J.3.19.6	Environmental Justice	Ernest S. Chaput
32-001	J.3.4.1	NEPA Process	Kellie Gasink
32-002	J.3.6.1	Scope - General	
32-003	J.3.7.10	Scope - DOE Policy	
32-004	J.3.1.5	General Opposition	
32-005	J.3.23.1	Cost Benefit	
33-001	J.3.6.2	Scope - General	Whitney Erin Lamb

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34-001	J.3.7.10	Scope - DOE Policy	Kirk Cobb
35-001	J.3.23.1	Cost Benefit	Vernell Cutter
35-002	J.3.19.4	Environmental Justice	
35-003	J.3.19.4	Environmental Justice	
35-004	J.3.19.4	Environmental Justice	
35-005	J.3.19.4	Environmental Justice	
35-006	J.3.4.3	NEPA Process	
35-006	J.3.19.4	Environmental Justice	
35-006	J.3.19.6	Environmental Justice	
36-001	J.3.7.10	Scope - DOE Policy	Kelli Pearson
37-001	J.3.13.2	Human Health - Radiological Risk	Cheryl Jay
37-002	J.3.11.2	Alternatives - Immobilization	
37-003	J.3.3.1	Purpose and Need	
37-004	J.3.11.2	Alternatives - Immobilization	
38-001	J.3.7.4	Scope - DOE Policy	Carol Cain
38-002	J.3.23.1	Cost Benefit	
39-001	J.3.22.1	Cumulative	Ellen O'Leary
39-002	J.3.9.2	Scope - Terrorism	
39-003	J.3.7.4	Scope - DOE Policy	
39-004	J.3.19.3	Environmental Justice	
40-001	J.3.11.2	Alternatives - Immobilization	Bobbie Paul
41-001	J.3.9.2	Scope - Terrorism	Victor Mereski
42-001	J.3.12.2	Human Health Risk	Chester Dunham
42-002	J.3.12.2	Human Health Risk	
43-001	J.3.16.14	Hydrology	David Kyler
43-002	J.3.29.1	Socioeconomics	
43-003	J.3.8.2	Scope - Safety Evaluation Report	
43-004	J.3.23.10	Cost Benefit	
43-005	J.3.16.8	Hydrology	
43-006	J.3.4.3	NEPA Process	
44-001	J.3.9.1	Scope - Terrorism	Sara Barczak
44-002	J.3.1.1	General Opposition	
44-003	J.3.17.4	Waste Management	
44-004	J.3.23.1	Cost Benefit	
44-005	J.3.7.9	Scope - DOE Policy	
44-006	J.3.1.6	General Opposition	
44-007	J.3.4.4	NEPA Process	
44-007	J.3.4.7	NEPA Process	

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44-009	J.3.7.6	Scope - DOE Policy	
44-010	J.3.7.3	Scope - DOE Policy	
44-011	J.3.7.7	Scope - DOE Policy	
44-012	J.3.8.3	Scope - Safety Evaluation Report	
45-001	J.3.11.3	Alternatives - Immobilization	Jody Lanier
45-002	J.3.4.1	NEPA Process	
45-003	J.3.4.1	NEPA Process	
45-003	J.3.4.5	NEPA Process	
45-004	J.3.6.1	Scope - General	
45-005	J.3.9.1	Scope - Terrorism	
45-006	J.3.7.4	Scope - DOE Policy	
45-007	J.3.23.1	Cost Benefit	
45-008	J.3.7.6	Scope - DOE Policy	
45-009	J.3.10.1	Alternatives	
46-001	J.3.1.5	General Opposition	Andre Entermann
46-002	J.3.4.1	NEPA Process	
46-003	J.3.4.6	NEPA Process	
47-001	J.3.7.1	Scope - DOE Policy	Peggy Roche
47-002	J.3.9.2	Scope - Terrorism	
47-003	J.3.4.5	NEPA Process	
47-004	J.3.15.2	Air Quality	
47-005	J.3.21.1	MOX Fuel Use	
48-001	J.3.7.2	Scope - DOE Policy	Tom Clements
48-002	J.3.7.3	Scope - DOE Policy	
48-003	J.3.7.5	Scope - DOE Policy	
48-004	J.3.23.2	Cost Benefit	
48-005	J.3.7.4	Scope - DOE Policy	
49-001	J.3.2	General Support	Bill Robinson
50-001	J.3.2	General Support	Mal McKibben
50-002	J.3.14.8	Accidents	
50-002	J.3.14.9	Accidents	
51-001	J.3.2	General Support	Thomas Williams
52-001	J.3.9.1	Scope - Terrorism	William Hooker
52-002	J.3.8.2	Scope - Safety Evaluation Report	
52-003	J.3.12.4	Human Health Risk	
52-004	J.3.13.13	Human Health - Radiological Risk	
53-001	J.3.23.11	Cost Benefit	Don Moniak

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53-002	J.3.14.10	Accidents	
53-003	J.3.13.16	Human Health - Radiological Risk	
53-004	J.3.13.3	Human Health - Radiological Risk	
53-005	J.3.12.5	Human Health Risk	
53-006	J.3.13.4	Human Health - Radiological Risk	
53-007	J.3.17.5	Waste Management	
53-008	J.3.14.3	Accidents	
53-009	J.3.15.5	Air Quality	
53-010	J.3.3.1	Purpose and Need	
53-011	J.3.8.9	Scope - Safety Evaluation Report	
53-012	J.3.15.5	Air Quality	
54-001	J.3.2	General Support	Ed Presnell
55-001	J.3.2	General Support	David Walker
55-002	J.3.4.5	NEPA Process	
56-001	J.3.9.1	Scope - Terrorism	Mary Kelly
56-001	J.3.9.2	Scope - Terrorism	
56-002	J.3.9.2	Scope - Terrorism	
56-003	J.3.8.3	Scope - Safety Evaluation Report	
56-004	J.3.15.4	Air Quality	
56-005	J.3.6.1	Scope - General	
56-006	J.3.7.1	Scope - DOE Policy	
57-001	J.3.2	General Support	Charles Weiss
58-001	J.3.9.1	Scope - Terrorism	Carolyn Betsy Rivard
58-002	J.3.9.2	Scope - Terrorism	
58-003	J.3.11.2	Alternatives - Immobilization	
58-003	J.3.11.3	Alternatives - Immobilization	
58-004	J.3.23.11	Cost Benefit	
59-001	J.3.2	General Support	Brendolyn Jenkins
59-002	J.3.4.7	NEPA Process	
60-001	J.3.2	General Support	David Cowfer
60-002	J.3.14.9	Accidents	
61-001	J.3.1.3	General Opposition	Glenn Carroll
61-002	J.3.4.5	NEPA Process	
61-003	J.3.5.1	Licensing Process	
61-004	J.3.7.5	Scope - DOE Policy	
61-005	J.3.17.5	Waste Management	
61-006	J.3.4.2	NEPA Process	

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61-007 61-008	J.3.11.2 J.3.7.2	Alternatives - Immobilization Scope - DOE Policy	
62-001 62-002 62-003 62-003	J.3.4.5 J.3.14.12 J.3.4.5 J.3.8.1	NEPA Process Accidents NEPA Process Scope - Safety Evaluation Report	Ed Arnold
63-001 63-002 63-003 63-004	J.3.2 J.3.10.7 J.3.14.8 J.3.6.3	General Support Alternatives Accidents Scope - General	Ernest S. Chaput
64-001 64-002 64-003 64-004 64-005 64-006 64-006 64-007 64-007	J.3.1.3 J.3.11.2 J.3.4.2 J.3.6.9 J.3.19.6 J.3.14.1 J.3.14.16 J.3.19.3 J.3.19.4	General Opposition Alternatives - Immobilization NEPA Process Scope - General Environmental Justice Accidents Accidents Environmental Justice Environmental Justice	Robert Guild
65-001 65-002 65-003 65-004	J.3.9.2 J.3.9.1 J.3.21.1 J.3.8.3	Scope - Terrorism Scope - Terrorism MOX Fuel Use Scope - Safety Evaluation Report	Darrell Watson
66-001 66-002 66-003 66-004 66-005 66-006 66-006 66-007 66-007 66-008	J.3.1.2 J.3.23.11 J.3.12.6 J.3.23.9 J.3.12.3 J.3.4.4 J.3.4.5 J.3.17.4 J.3.17.5 J.3.9.1	General Opposition Cost Benefit Human Health Risk Cost Benefit Human Health Risk NEPA Process NEPA Process Waste Management Waste Management Scope - Terrorism	Jen Kato
67-001 67-002 67-003	J.3.17.3 J.3.21.1 J.3.8.4	Waste Management MOX Fuel Use Scope - Safety Evaluation Report	Tom Howell
68-001 68-002	J.3.11.2 J.3.9.1	Alternatives - Immobilization Scope - Terrorism	Adele Kushner

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69-001	J.3.1.6	General Opposition	Joanne Steele
69-002	J.3.11.1	Alternatives - Immobilization	
70-001	J.3.19.3	Environmental Justice	Charles Utley
71-001	J.3.13.6	Human Health - Radiological Risk	Lewis Patrie
71-002	J.3.20.12	Transportation	
71-003	J.3.9.2	Scope - Terrorism	
71-004	J.3.1.6	General Opposition	
71-005	J.3.13.5	Human Health - Radiological Risk	
71-006	J.3.17.4	Waste Management	
71-007	J.3.13.5	Human Health - Radiological Risk	
71-008	J.3.13.1	Human Health - Radiological Risk	
71-009	J.3.6.9	Scope - General	
71-009	J.3.21.1	MOX Fuel Use	
71-010	J.3.9.1	Scope - Terrorism	
71-011	J.3.7.8	Scope - DOE Policy	
71-012	J.3.9.1	Scope - Terrorism	
71-012	J.3.9.2	Scope - Terrorism	
71-013	J.3.11.2	Alternatives - Immobilization	
71-014	J.3.17.4	Waste Management	
71-015	J.3.7.6	Scope - DOE Policy	
72-001	J.3.10.3	Alternatives	Mary Olson
72-002	J.3.10.1	Alternatives	
72-003	J.3.3.1	Purpose and Need	
72-004	J.3.7.8	Scope - DOE Policy	
72-005	J.3.10.3	Alternatives	
72-006	J.3.21.1	MOX Fuel Use	
72-007	J.3.19.7	Environmental Justice	
72-008	J.3.22.1	Cumulative Impacts	
72-009	J.3.13.6	Human Health - Radiological Risk	
72-010	J.3.19.8	Environmental justice	
72-011	J.3.7.6	Scope - DOE Policy	
72-012	J.3.7.6	Scope - DOE Policy	
72-013	J.3.11.3	Alternatives - Immobilization	
72-014	J.3.6.2	Scope - General	
72-015	J.3.10.1	Alternatives	
73-001	J.3.13.7	Human Health - Radiological Risk	Lou Zeller
73-002	J.3.10.1	Alternatives	

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73-003	J.3.08.3	Scope - Safety Evaluation Report	
73-004	J.3.13.8	Human Health - Radiological Risk	
73-005	J.3.10.8	Alternatives	
74-001	J.3.8.2	Scope - Safety Evaluation Report	Peter Sipp
74-002	J.3.10.3	Alternatives	
75-001	J.3.4.5	NEPA Process	James E. Smith
76-001	J.3.5.3	Licensing Process	Gregg Jocoy
76-002	J.3.23.1	Cost Benefit	
76-003	J.3.23.1	Cost Benefit	
77-001	J.3.6.2	Scope - General	Judy Aulette
77-002	J.3.21.1	MOX Fuel Use	
77-003	J.3.6.10	Scope - General	
77-004	J.3.7.6	DOE Policy	
77-005	J.3.19.10	Environmental Justice	
77-006	J.3.9.1	Scope - Terrorism	
77-007	J.3.6.4	Scope - General	
77-008	J.3.4.1	NEPA Process	
77-009	J.3.1.6	General Opposition	
78-001	J.3.11.2	Alternatives - Immobilization	Amanda Voss
78-002	J.3.5.1	Licensing Process	
78-003	J.3.19.3	Environmental Justice	
79-001	J.3.1.1	General Opposition	Linda Ewald
79-002	J.3.17.4	Waste Management	
79-003	J.3.19.3	Environmental Justice	
79-004	J.3.23.1	Cost Benefit	
80-001	J.3.5.1	Licensing Process	Betsy Rivard
80-002	J.3.19.4	Environmental Justice	
80-003	J.3.11.2	Alternatives - Immobilization	
81-001	J.3.19.3	Environmental Justice	Berta R. Laney
81-002	J.3.11.2	Alternatives - Immobilization	
81-003	J.3.5.1	Licensing Process	
82-001	J.3.9.1	Scope - Terrorism	Chris Miller
82-002	J.3.19.9	Environmental Justice	
82-003	J.3.8.2	Scope - Safety Evaluation Report	
82-004	J.3.19.3	Environmental Justice	
82-005	J.3.10.5	Alternatives	
82-006	J.3.7.1	Scope - DOE Policy	
83-001	J.3.1.1	General Opposition	Joan O. King

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84-002	J.3.19.9	Environmental Justice	
84-003	J.3.10.5	Alternatives	
85-001	J.3.20.1	Transportation	Adrienne Valentino
85-002	J.3.1.4	General Opposition	
85-003	J.3.12.17	Human Health Risk	
85-004	J.3.9.1	Scope -Terrorism	
85-005	J.3.28.1	Ecology	
86-001	J.3.2	General Support	Peter S. Hastings
86-002	J.3.11.4	Alternatives - Immobilization	
86-003	J.3.14.8	Accidents	
86-003	J.3.14.16	Accidents	
86-004	J.3.19.5	Environmental Justice	
86-005	J.3.24.1	Mitigation	
86-006	J.3.30.4	Editorial	
86-007	J.3.6.7	Scope - General	
86-008	J.3.30.16	Editorial	
86-009	J.3.17.10	Waste Management	
86-010	J.3.30.17	Editorial	
86-011	J.3.30.18	Editorial	
86-012	J.3.30.18	Editorial	
86-013	J.3.30.21	Editorial	
86-014	J.3.30.18	Editorial	
86-015	J.3.30.17	Editorial	
86-016	J.3.10.9	Alternatives	
86-017	J.3.10.10	Alternatives	
86-018	J.3.30.19	Editorial	
86-019	J.3.17.8	Waste Management	
86-020	J.3.30.20	Editorial	
86-021	J.3.15.1	Air Quality	
86-022	J.3.27.2	Cultural Resources	
86-023	J.3.30.45	Editorial	
86-024	J.3.30.46	Editorial	
86-025	J.3.30.47	Editorial	
86-026	J.3.30.48	Hydrology	
86-027	J.3.16.9	Hydrology	
86-028	J.3.16.10	Hydrology	

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86-030	J.3.16.12	Hydrology	
86-031	J.3.15.1	Air Quality	
86-032	J.3.30.26	Editorial	
86-033	J.3.12.7	Human Health Risk	
86-034	J.3.12.8	Human Health Risk	
86-035	J.3.13.17	Human Health - Radiological Risk	
86-036	J.3.13.18	Human Health - Radiological Risk	
86-037	J.3.12.9	Human Health Risk	
86-038	J.3.12.10	Human Health Risk	
86-039	J.3.12.18	Human Health Risk	
86-040	J.3.12.9	Human Health Risk	
86-041	J.3.12.9	Human Health Risk	
86-042	J.3.15.3	Air Quality	
86-043	J.3.17.13	Waste Management	
86-044	J.3.30.42	Editorial	
86-045	J.3.17.1	Waste Management	
86-046	J.3.17.1	Waste Management	
86-047	J.3.17.8	Waste Management	
86-048	J.3.17.2	Waste Management	
86-049	J.3.30.41	Editorial	
86-050	J.3.17.8	Waste Management	
86-051	J.3.14.15	Accidents	
86-052	J.3.14.8	Accidents	
86-053	J.3.14.17	Accidents	
86-054	J.3.14.20	Accidents	
86-055	J.3.14.20	Accidents	
86-056	J.3.13.6	Human Health - Radiological Risk	
86-057	J.3.14.18	Accidents	
86-058	J.3.12.24	Human Health Risk	
86-059	J.3.12.25	Human Health Risk	
86-060	J.3.12.19	Human Health Risk	
86-061	J.3.30.22	Editorial	
86-062	J.3.18.1	Decommissioning	
86-063	J.3.18.4	Decommissioning	
86-064	J.3.18.3	Decommissioning	
86-065	J.3.19.5	Environmental Justice	
86-066	J.3.14.9	Accidents	

Comment ^a Number	Section Number	Section Name	Commenter
86-066	J.3.14.16	Accidents	
86-067	J.3.20.3	Transportation	
86-068	J.3.20.4	Transportation	
86-069	J.3.13.6	Human Health - Radiological Risk	
86-070	J.3.30.24	Editorial	
86-071	J.3.30.25	Editorial	
86-072	J.3.22.5	Cumulative Impacts	
86-073	J.3.17.8	Waste Management	
86-074	J.3.24.2	Mitigation	
86-075	J.3.24.3	Mitigation	
86-076	J.3.24.3	Mitigation	
86-077	J.3.24.3	Mitigation	
86-078	J.3.24.5	Mitigation	
86-079	J.3.24.6	Mitigation	
86-080	J.3.24.11	Mitigation	
86-081	J.3.24.12	Mitigation	
86-082	J.3.24.13	Mitigation	
86-083	J.3.24.12	Mitigation	
86-084	J.3.24.14	Mitigation	
86-085	J.3.24.7	Mitigation	
86-086	J.3.24.16	Mitigation	
86-087	J.3.24.22	Mitigation	
86-088	J.3.19.5	Environmental Justice	
86-089	J.3.19.5	Environmental Justice	
86-090	J.3.24.4	Mitigation	
86-091	J.3.24.23	Mitigation	
86-092	J.3.24.15	Mitigation	
86-093	J.3.24.11	Mitigation	
86-094	J.3.30.27	Editorial	
86-095	J.3.30.28	Editorial	
86-096	J.3.24.17	Mitigation	
86-097	J.3.24.7	Mitigation	
86-098	J.3.24.18	Mitigation	
86-099	J.3.16.15	Hydrology	
86-100	J.3.20.5	Transportation	
86-101	J.3.20.13	Transportation	
86-102	J.3.20.6	Transportation	
86-103	J.3.20.7	Transportation	

Comment^a Number	Section Number	Section Name	Commenter
86-104	J.3.30.35	Editorial	
86-105	J.3.20.8	Transportation	
86-106	J.3.30.36	Editorial	
86-107	J.3.30.37	Editorial	
86-108	J.3.20.14	Transportation	
86-109	J.3.30.38	Editorial	
86-110	J.3.20.9	Transportation	
86-111	J.3.20.10	Transportation	
86-112	J.3.13.6	Human Health - Radiological Risk	
86-113	J.3.12.25	Human Health Risk	
86-114	J.3.12.21	Human Health Risk	
86-115	J.3.12.21	Human Health Risk	
86-116	J.3.12.22	Human Health Risk	
86-117	J.3.13.9	Human Health - Radiological Risk	
86-118	J.3.13.10	Human Health - Radiological Risk	
86-119	J.3.13.11	Human Health - Radiological Risk	
86-120	J.3.13.11	Human Health - Radiological Risk	
86-121	J.3.30.23	Editorial	
86-122	J.3.14.23	Accidents	
86-123	J.3.13.19	Human Health - Radiological Risk	
86-124	J.3.14.24	Accidents	
86-125	J.3.13.20	Human Health - Radiological Risk	
86-126	J.3.15.6	Air Quality	
86-127	J.3.28.2	Ecology	
87-001	J.3.7.11	Scope - DOE Policy	Allison Macfarlane
87-002	J.3.17.9	Waste Management	
87-003	J.3.11.2	Alternatives - Immobilization	
87-004	J.3.10.2	Alternatives	
87-005	J.3.11.2	Alternatives - Immobilization	
87-006	J.3.23.8	Cost Benefit	
88-001	J.3.9.1	Terrorism	Soumya Ganapathy
88-002	J.3.8.2	Scope - Safety Evaluation Report	
88-003	J.3.19.3	Environmental justice	
88-004	J.3.10.5	Alternatives	
89-001	J.3.14.9	Accidents	Edward J. Siskin
89-002	J.3.14.17	Accidents	
89-003	J.3.14.18	Accidents	
89-004	J.3.14.20	Accidents	

Comment ^a Number	Section Number	Section Name	Commenter
89-005	J.3.14.9	Accidents	
89-006	J.3.14.9	Accidents	
89-007	J.3.14.16	Accidents	
89-007	J.3.14.18	Accidents	
89-008	J.3.6.3	Scope - General	
89-009	J.3.19.5	Environmental Justice	
89-010	J.3.15.1	Air Quality	
89-011	J.3.15.1	Air Quality	
89-012	J.3.18.2	Decommissioning	
89-013	J.3.24.1	Mitigation	
89-014	J.3.6.3	Scope - General	
89-015	J.3.30.1	Editorial	
89-016	J.3.30.2	Editorial	
89-017	J.3.30.3	Editorial	
89-018	J.3.30.4	Editorial	
89-019	J.3.30.6	Editorial	
89-020	J.3.30.5	Editorial	
89-021	J.3.30.7	Editorial	
89-022	J.3.30.8	Editorial	
89-023	J.3.30.9	Editorial	
89-024	J.3.30.10	Editorial	
89-025	J.3.30.11	Editorial	
89-026	J.3.28.6	Ecology	
89-027	J.3.30.13	Editorial	
89-028	J.3.30.12	Editorial	
89-029	J.3.28.7	Ecology	
89-030	J.3.30.3	Editorial	
89-031	J.3.26.1	Geology and Soils	
89-032	J.3.26.2	Geology and Soils	
89-033	J.3.26.3	Geology and Soils	
89-034	J.3.30.49	Editorial	
89-035	J.3.28.3	Ecology	
89-036	J.3.28.4	Ecology	
89-037	J.3.2805	Ecology	
89-038	J.3.27.1	Cultural Resources	
89-039	J.3.12.11	Human Health Risk	
89-040	J.3.30.29	Editorial	
89-041	J.3.30.30	Editorial	

Comment^a Number	Section Number	Section Name	Commenter
89-042	J.3.30.31	Editorial	
89-043	J.3.30.32	Editorial	
89-044	J.3.13.12	Human Health - Radiological Risk	
89-045	J.3.12.12	Human Health Risk	
89-046	J.3.30.1	Editorial	
89-047	J.3.30.41	Editorial	
89-048	J.3.30.14	Editorial	
89-049	J.3.12.24	Human Health Risk	
89-050	J.3.12.13	Human Health Risk	
89-051	J.3.20.11	Transportation	
89-052	J.3.30.39	Editorial	
89-053	J.3.22.7	Cumulative Impacts	
89-054	J.3.22.2	Cumulative Impacts	
89-055	J.3.22.3	Cumulative Impacts	
89-056	J.3.23.3	Cost Benefit	
89-057	J.3.23.4	Cost Benefit	
89-058	J.3.23.8	Cost Benefit	
89-059	J.3.23.6	Cost Benefit	
89-060	J.3.23.7	Cost Benefit	
89-061	J.3.25.1	Unavoidable Impacts	
89-062	J.3.30.40	Editorial	
89-063	J.3.24.1	Mitigation	
89-064	J.3.24.1	Mitigation	
89-065	J.3.24.9	Mitigation	
89-066	J.3.24.1	Mitigation	
89-067	J.3.24.10	Mitigation	
89-068	J.3.30.33	Editorial	
89-069	J.3.30.15	Editorial	
89-070	J.3.30.34	Editorial	
90-001	J.3.1.6	General Opposition	Rachel Western
90-002	J.3.21.1	MOX Fuel Use	
90-003	J.3.17.4	Waste Management	
91-001	J.3.11.2	Alternatives - Immobilization	David Kyler
91-002	J.3.21.2	MOX Fuel Use	
91-003	J.3.21.2	MOX Fuel Use	
91-004	J.3.28.1	Ecology	
91-005	J.3.29.1	Socioeconomics	
91-006	J.3.9.1	Scope - Terrorism	

Appendix K

Comment Number	Section Number	Section Name	Commenter
91-006	J.3.9.2	Scope - Terrorism	
91-007	J.3.1.2	General Opposition	
92-001	J.3.5.1	Licensing Process	Glenn Carroll
92-002	J.3.11.2	Alternatives - Immobilization	
92-003	J.3.6.9	Scope - General	
92-003	J.3.21.1	MOX Fuel Use	
92-004	J.3.7.7	Scope - DOE Policy	
92-005	J.3.17.3	Waste Management	
92-006	J.3.13.13	Human Health - Radiological Risk	
93-001	J.3.5.1	Licensing Process	Mary Olson
93-002	J.3.8.4	Scope - Safety Evaluation Report	
93-003	J.3.6.5	Scope - General	
93-004	J.3.11.3	Alternatives - Immobilization	
93-005	J.3.9.1	Scope - Terrorism	
93-006	J.3.7.4	Scope - DOE Policy	
93-007	J.3.10.3	Alternatives	
93-008	J.3.7.2	Scope - DOE Policy	
93-008	J.3.7.6	Scope - DOE Policy	
93-009	J.3.7.5	Scope - DOE Policy	
93-009	J.3.7.6	Scope - DOE Policy	
93-010	J.3.6.9	Scope - General	
93-011	J.3.13.21	Human Health - Radiological Risk	
93-012	J.3.16.3	Hydrology	
93-013	J.3.22.4	Cumulative Impacts	
93-014	J.3.13.6	Human Health - Radiological Risk	
93-015	J.3.8.4	Scope - Safety Evaluation Report	
93-016	J.3.17.3	Waste Management	
93-017	J.3.19.3	Environmental Justice	
93-017	J.3.19.4	Environmental Justice	
93-018	J.3.13.13	Human Health - Radiological Risk	
93-019	J.3.9.2	Scope - Terrorism	
94-001	J.3.13.6	Human Health - Radiological Risk	Ralph L. Anderson
94-001	J.3.14.16	Accidents	
94-001	J.3.14.9	Accidents	
94-002	J.3.19.1	Environmental Justice	
95-001	J.3.4.6	NEPA Process	Thomas R. Mott
95-002	J.3.7.10	Scope - DOE Policy	
95-003	J.3.5.4	Licensing Process	

Comment Number	Section Number	Section Name	Commenter
96-001	J.3.1.4	General Opposition	Mildred McClain
96-002	J.3.19.6	Environmental Justice	
96-003	J.3.4.7	NEPA Process	
96-004	J.3.4.1	NEPA Process	
96-005	J.3.19.11	Environmental Justice	
96-006	J.3.11.2	Alternatives - Immobilization	
96-007	J.3.17.4	Waste Management	
96-008	J.3.4.4	NEPA Process	
96-008	J.3.4.6	NEPA Process	
96-009	J.3.4.1	NEPA Process	
96-010	J.3.4.2	NEPA Process	
96-011	J.3.19.3	Environmental Justice	
96-012	J.3.8.2	Scope - Safety Evaluation Report	
96-013	J.3.19.4	Environmental justice	
96-014	J.3.19.4	Environmental justice	
96-015	J.3.4.1	NEPA Process	
96-015	J.3.19.4	Environmental Justice	
96-016	J.3.17.4	Waste Management	
96-017	J.3.14.15	Accidents	
96-018	J.3.4.7	NEPA Process	
96-019	J.3.7.7	Scope - DOE Policy	
96-020	J.3.9.1	Scope - Terrorism	
96-021	J.3.8.4	Scope - Safety Evaluation Report	
96-022	J.3.3.2	Editorial	
96-023	J.3.4.2	NEPA Process	
96-023	J.3.4.5	NEPA Process	
96-024	J.3.4.2	NEPA Process	
96-024	J.3.4.5	NEPA Process	
96-025	J.3.8.2	Scope - Safety Evaluation Report	
96-026	J.3.19.4	Environmental Justice	
96-027	J.3.11.2	Alternatives - Immobilization	
96-028	J.3.4.5	NEPA Process	
96-029	J.3.4.7	NEPA Process	
96-030	J.3.19.10	Environmental Justice	
96-031	J.3.4.6	NEPA Process	
96-032	J.3.7.3	Scope - DOE Policy	
96-033	J.3.6.2	Scope - General	
96-034	J.3.19.4	Environmental Justice	

Comment Number	Section Number	Section Name	Commenter
96-035	J.3.8.1	Scope - Safety Evaluation Report	Alexander P. Murray
96-036	J.3.8.2	Scope - Safety Evaluation Report	
96-037	J.3.22.6	Cumulative Impacts	
96-038	J.3.19.4	Environmental justice	
96-039	J.3.1.3	General Opposition	
97-001	J.3.4.2	NEPA Process	
97-001	J.3.4.4	NEPA Process	
97-002	J.3.24.20	Mitigation	
97-003	J.3.8.1	Scope - Safety Evaluation Report	
97-004	J.3.14.14	Accidents	
97-005	J.3.8.1	Scope - Safety Evaluation Report	
97-006	J.3.4.4	NEPA Process	
97-007	J.3.14.15	Accidents	
97-008	J.3.12.20	Human Health Risk	
97-009	J.3.12.14	Human Health Risk	
97-010	J.3.12.23	Human Health Risk	
97-011	J.3.14.25	Accidents	
97-012	J.3.12.15	Human Health Risk	
97-013	J.3.6.6	Scope - General	
97-014	J.3.17.12	Waste Management	
97-015	J.3.14.15	Accidents	
97-016	J.3.17.6	Waste Management	
97-017	J.3.10.8	Alternatives	
97-018	J.3.10.8	Alternatives	
98-001	J.3.1.6	General Opposition	Sara Barczak
98-002	J.3.11.3	Alternatives - Immobilization	
98-003	J.3.7.3	Scope - DOE Policy	
98-003	J.3.7.5	Scope - DOE Policy	
98-004	J.3.7.6	Scope - DOE Policy	
98-005	J.3.7.7	Scope - DOE Policy	
98-006	J.3.21.2	MOX Fuel Use	
98-007	J.3.16.1	Hydrology	
98-008	J.3.14.19	Accidents	
98-009	J.3.6.7	Scope - General	
98-010	J.3.1.6	General Opposition	
99-001	J.3.1.5	General Opposition	Bev Baker
99-002	J.3.8.9	Scope - Safety Evaluation Report	
99-003	J.3.16.1	Hydrology	

Comment^a Number	Section Number	Section Name	Commenter
100-001	J.3.8.6	Scope - Safety Evaluation Report	Meira Warshauer
101-001	J.3.14.15	Accidents	Judy Ponder
101-002	J.3.13.22	Human Health - Radiological Risk	
101-003	J.3.16.1	Hydrology	
102-001	J.3.14.15	Accidents	Bart Patton
102-002	J.3.13.22	Human Health - Radiological Risk	
103-001	J.3.5.1	Licensing Process	Terri Jagger Bline Emily B. Calhoun Faye McKay-Clegg Eleanor L. Richardson Maruguerite Sweet Terri Jagger Bline Emily B. Calhoun Faye McKay-Clegg Eleanor L. Richardson
103-002	J.3.11.2	Alternatives - Immobilization	
103-003	J.3.17.6	Waste Management	Maruguerite Sweet Terri Jagger Bline Emily B. Calhoun Faye McKay-Clegg Eleanor L. Richardson Maruguerite Sweet Terri Jagger Bline Emily B. Calhoun Faye McKay-Clegg Eleanor L. Richardson Maruguerite Sweet
103-004	J.3.9.1	Scope - Terrorism	
104-001	J.3.1.6	General Opposition	Petition
105-001	J.3.1.3	General Opposition	Robert B. Mills
105-002	J.3.11.5	Alternatives - Immobilization	
105-003	J.3.8.3	Scope - Safety Evaluation Report	
105-003	J.3.8.6	Scope - Safety Evaluation Report	
105-004	J.3.13.7	Human Health - Radiological Risk	
105-005	J.3.8.1	Scope - Safety Evaluation Report	
105-006	J.3.7.10	Scope - DOE Policy	
105-007	J.3.21.1	MOX Fuel Use	
105-008	J.3.11.2	Alternatives - Immobilization	
105-009	J.3.10.1	Alternatives	
105-010	J.3.11.2	Alternatives - Immobilization	

Appendix K

Comment^a Number	Section Number	Section Name	Commenter
105-011	J.3.23.7	Cost Benefit	
105-012	J.3.11.3	Alternatives - Immobilization	
105-013	J.3.13.23	Human Health - Radiological Risk	
105-014	J.3.1.7	General Opposition	
105-015	J.3.14.21	Accidents	
106-001	J.3.1.7	General Opposition	Diane F. Matesic
107-001	J.3.15.7	Air Quality	Heinz J. Mueller
107-002	J.3.12.16	Human Health - Gen	
108-001	J.3.17.3	Waste Management	Carolyn Cain
108-002	J.3.23.1	Cost Benefit	
108-003	J.3.11.1	Alternatives - Immobilization	
109-001	J.3.1.6	General Opposition	Jennifer Zanck
110-001	J.3.1.6	General Opposition	Mai Dang
111-001	J.3.8.6	Scope - Safety Evaluation Report	Ruth Thomas
112-001	J.3.1.6	General Opposition	Ruth Sanford
112-002	J.3.11.2	Alternatives - Immobilization	
112-003	J.3.17.6	Waste Management	
112-004	J.3.9.1	Scope - Terrorism	
113-001	J.3.8.6	Scope - Safety Evaluation Report	Dell Isham
114-001	J.3.7.5	Scope - DOE Policy	Louis Zeller
114-002	J.3.7.5	Scope - DOE Policy	
114-002	J.3.13.13	Human Health - Radiological Risk	
114-003	J.3.7.7	Scope - DOE Policy	
114-004	J.3.21.1	MOX Fuel Use	
114-005	J.3.17.11	Waste Management	
114-006	J.3.7.4	Scope - DOE Policy	
114-007	J.3.11.3	Alternatives - Immobilization	
114-008	J.3.11.3	Alternatives - Immobilization	
114-009	J.3.9.1	Terrorism	
114-009	J.3.9.2	Terrorism	
114-010	J.3.21.1	MOX Fuel Use	
114-011	J.3.9.2	Scope - Terrorism	
114-012	J.3.20.16	Transportation	
114-013	J.3.9.1	Scope - Terrorism	
115-001	J.3.13.8	Human Health - Radiological Risk	Mary Olson
115-002	J.3.10.8	Alternatives	
115-003	J.3.19.7	Environmental justice	
115-004	J.3.17.3	Waste Management	

Comment^a Number	Section Number	Section Name	Commenter
116-001	J.3.4.8	NEPA Process	Peter James Atherton
116-002	J.3.9.1	Scope - Terrorism	
116-003	J.3.14.12	Accidents	
116-004	J.3.1.1	General Opposition	
116-005	J.3.5.5	Licensing Process	
116-006	J.3.10.6	Alternatives	
116-007	J.3.14.4	Accidents	
116-008	J.3.14.5	Accidents	
116-009	J.3.20.15	Transportation	
116-010	J.3.8.4	Scope - Safety Evaluation Report	
116-011	J.3.8.2	Scope - Safety Evaluation Report	
116-012	J.3.8.5	Scope - Safety Evaluation Report	
116-013	J.3.10.8	Alternatives	
116-014	J.3.8.7	Scope - Safety Evaluation Report	
116-015	J.3.14.22	Accidents	
116-016	J.3.17.7	Waste Management	
116-017	J.3.13.14	Human Health - Radiological Risk	
116-018	J.3.4.9	NEPA Process	
116-019	J.3.14.6	Accidents	
116-020	J.3.8.8	Scope - Safety Evaluation Report	

^a Some comments are associated with more than one section.

**APPENDIX L:
PUBLIC COMMENT LETTERS AND TRANSCRIPTS**

00002

Leah R. Karpen
400 Charlotte St #603
Asheville NC 28901

Leah R. Karpen
400 Charlotte St #603
Asheville NC 28901

Leah R. Karpen

Phone: 828-254-5889
FAX: 828-254-9085
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Aff - Tim Harms

Friday, March 14, 2003

Mr. Michael T. Lesar, Chief
Rules and Directives Branch
Division of Administrative Services
Office of Administration; Mail Stop T-6D59
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Lesar:
Proposed MOX Nuclear Facility

As I am not able to attend the public hearing in Charlotte, NC, on March 27, I take this means to advise you of my opinion.

I understand that Duke Cogema Stone & Webster, a contractor of the Department of Energy, is proposing to build a Mixed Oxide (MOX) Fuel facility at the Savannah River site near Aiken, South Carolina. Surplus weapons-grade plutonium would be converted into fuel for use in commercial nuclear power reactors.

First of all, trucking the plutonium from nuclear weapons depots and trucking the MOX fuel to commercial reactors in the Southeast is an open invitation to terrorists and risks the danger of accidents which may not be foreseeable.

Use of MOX in nuclear reactors is not safe and could result in serious accidents. While some plutonium is split by fusion, new plutonium is being made in the reactor as a waste product. Thus, use of MOX fuel fails as a means of getting rid of plutonium.

MOX fuel could attack commercial nuclear reactors where they are weakest, as many reactors are aging prematurely and developing cracks. A nuclear accident involving MOX fuel could cause a serious meltdown.

Alternatives to this project must be considered: specifically, immobilization of surplus plutonium, or making off-specification MOX fuel unsuitable for reactors, which would have to go into spent fuel storage facilities.

I ask that the Nuclear Regulatory Commission not approve this project or the draft Environmental Impact Statement.

Sincerely yours,
Leah R. Karpen
(Mrs.) Leah R. Karpen

Sent by FAX

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2/28/03

68 FEB 27 2003

(1)

From: Mark Hogue <mark.hogue@srs.gov>
To: <nrcprep@nrc.gov>
Date: Thu, Feb 27, 2003 2:25 PM
Subject: Response from "Comment on NRC Documents"

Below is the result of your feedback form. It was submitted by

Mark Hogue (mark.hogue@srs.gov) on Thursday, February 27, 2003 at 14:23:34

Document Title: NUREG-1767, Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina

Comments: The EIS estimates latent cancer fatalities (LCFs) from radiation exposure in deterministic fashion without regard to any uncertainty in the estimate. Indeed, the estimate for the result of low doses should at least include the possibility of zero effect.

The estimate of LCFs in the draft EIS has already been the subject of media reports and public concern. This is an important issue that must be resolved.

The LCFs currently calculated should be listed as the UPPER LIMIT of protected LCFs. This should be clearly flagged as applying to the hypothetical situation that doses from high dose and high dose rate radiation exposure can legitimately be used as a predictor of effects of low doses of radiation. The number of LCFs should be expressed as a range that includes zero effect.

This opinion is supported by the Health Physics Society position paper, RADIATION RISK IN PERSPECTIVE of January 1996, reaffirmed March 2001. The Society of Nuclear Medicine and the American College of Nuclear Medicine voted unanimously to support that position.

The potential for positive health benefits from radiation exposure should be included at least as a note to the LCF discussion. There are ample references for the basis of this point.

organization:

address1: 350 Sunderland Rd.

address2:

city: Aiken

state: SC

zip: 29803

country: USA

phone: (803)208-7153

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NRC

*F-2155 = ADM-D3
Call = T. Harms (TEH)
A. Webster (W214)*

Templeton = ADM - 013

3/25/03

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RECEIVED

Pamela J. O'Brien
P.O. Box 1667, Apt. -1 Ft. 4: 22
Tybee Island, GA 31328
(912) 786-9319

2/28/03
68 P.C. 9128
(3)

March 23, 2003

Mr. Michael T. Lesar
Chief, Rules & Directives Branch Division of Admin. Svcs.
Office of Administration, Mail Stop T-6D59
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Lesar,

I am writing in opposition to the plan to convert nuclear weapons into fuel at the Savannah River Site and the associated environmental impact statement. I live down river from the site on beautiful Tybee Island, just outside the City of Savannah, and I have serious concerns about this project.

I am concerned about the lack of a long-term funding commitment and the potential for unstable plutonium to be stored indefinitely at SRS. There are safer and cheaper ways to produce energy. Why experiment with something so hazardous when there are proven, safer alternatives? Delays because of a new, untested process could ultimately cost lives.

I am also concerned about the potential for a serious accident. As a former member of the Tybee Island City Council, I am concerned not only for my own welfare, but the welfare of those of us living in communities that neighbor the site.

Please be a good neighbor and do not support this plan. It would be wiser, safer and cheaper to utilize existing approaches for the production of energy.

Sincerely yours,

Pamela J. O'Brien
Pamela J. O'Brien
Tybee Island, Georgia

Pamela J. O'Brien = ADM-013

*F-LIDS = ADM-03
Cred = F. Harris (THE)*

3-1

3-2

00004

618 McLaws Street
Savannah, GA 31405
September 26, 2002

Mr. Mike Lesar, Chief
U.S. Nuclear Regulatory Commission
Rules & Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
Washington, DC 20555

Sir:

Please accept the following as a supplement to the oral comments I gave at the September 18 public meeting in Savannah, GA regarding the proposed MOX fuel fabrication facility at the Department of Energy's Savannah River Site (SRS). Thank you.

I am opposed to the plan to build a MOX fuel fabrication facility at the Savannah River Site. SRS is overburdened with nuclear waste from over fifty years of operation stored in tanks that leak into the ground and water. I particularly recall the tritium leak of December 1991, which shut down Savannah's industrial water supply for about two weeks. It makes no sense to generate new waste laced with plutonium when the existing waste has yet to be cleaned up. Instead, the waste should be made into glass logs and used to immobilize the plutonium so no one will be able to get at it. Despite the Energy Department's decision to cancel the immobilization program, I believe it must remain an option whether you consider it a "no action" alternative or not. In light of the federal budget deficit it makes fiscal sense to spend our tax dollars on the cheaper and less risky immobilization process instead of the more expensive MOX fuel program. I would rather there not be any plutonium at SRS but as long as the Energy Department insists on shipping it to the site I would prefer it be immobilized and not made into MOX fuel.

4-1

I understand that the licensees for the MOX fuel facility plan to use Cogema's MOX fabrication process used in France as the basis for the process they plan to use at SRS. Cogema has had problems both with making and using MOX fuel in France and they should not be using what they know is a flawed process. To do so puts all of us in Savannah, Chatham County and the surrounding area unnecessarily at risk. It also demonstrates a reckless disregard to human life. Therefore you should carefully review their safety record when arriving at your final decision.

4-2

00005

618 McLaws Street
Savannah, GA 31405
March 25, 2003

Mr. Michael T. Lesar, Chief
U.S. Nuclear Regulatory Commission
Rules & Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
Washington, DC 20555-0001

Re: Comments on Report NUREG 1767, draft

Sir:

I would like to thank the NRC for having this meeting here tonight. At the September 26, 2002 meeting I spoke about my concerns regarding this project, mainly the inclusion of immobilization as a no-action alternative and evacuation plans for Savannah and Chatham County in case of an accident or terrorist attack at the MOX fabrication facility or any shipments of plutonium that may come into the Port of Savannah to support the facility. The report states that if the surplus plutonium were disposed of only by immobilization, Russia would not dispose of its surplus because they believe that we would eventually recover the plutonium and use it to make atomic bombs. To allay their fears we could use the famous Russian proverb: Trust but verify. At the end of the Cold War, monitors from the United States and Russia went to each others' countries to verify that nuclear missiles and other strategic weapons and delivery systems were destroyed. Now, this process could be repeated and supplemented with spy satellites and other surveillance technology to make sure immobilized plutonium is not made into nuclear weapons. With this in mind, I believe that immobilization should still be a viable option for a no-action alternative.

5-1

When I read over the draft FIS I felt like only a nuclear scientist, brain surgeon or an attorney could fully understand it. However, it became clear that one did not need any of those people to see that there was no mention of Savannah at all in the report, except for a few citations noting previous meetings here. This leads me to believe that the Commission does not really care about the opinions of the more than 200,000 people living in Savannah and Chatham County, or for that matter those Georgians and South Carolinians living anywhere downwind and downstream of SRS. If that is the case, why is this meeting taking place? The general message seems to be that we, the Commission, are holding this meeting to tell you what we are going to do next but there is nothing you can do about it. Tough luck! It also seems to say that DCS does not care about needlessly putting us at risk by proceeding with this project. That really doesn't come as a surprise since they apparently have no qualms about putting the people of their hometown, Charlotte, North Carolina, and the greater Metroline region at risk with their plan to use the MOX fuel at Duke's Catawba and McGuire nuclear power plants.

5-2

5-3

1/25/03

4-3

The proposed MOX fuel facility also represents a terrorist risk to Savannah. Although the Energy Department is using secret truck shipments to bring plutonium to SRS, an operational MOX plant may require some to be brought in by ship through the Georgia Ports Authority terminals, our gateway to the world and one of our mail economic engines. This puts a terrorist target right at our front door. In case of an attack on such shipments or the fabrication plant where and how would we evacuate? During the Hurricane Floyd evacuation it took me five hours to go from Savannah to Pembroke, a distance of about thirty miles. We also had between 24-36 hours advance warning before the storm threatened. There has been no mention of evacuation plans for nuclear emergencies in Savannah news media since the September 11, 2001 terrorist attacks. When I called the Chatham County Emergency Management Agency they could not provide any information about nuclear emergencies. Having a tested and certified evacuation plan must be a prerequisite to going forward with the licensing process and it is the responsibility of the licensees and the Energy Department to come up with this plan. The plan also must include areas downwind and downstream of the proposed facility, such as the metropolitan Savannah area. If the licensees and the Energy Department do not come up with such a plan you should summarily deny their license application.

4-4

4-5

We in Savannah have had to put up with contamination from SRS for over fifty years. The site should be cleaned up immediately. To not do so AND generate waste that is even more radioactive and toxic on top of that is completely unacceptable. I therefore strongly urge you to deny the application for the proposed MOX fuel fabrication facility.

Respectfully submitted,

Jody Lanier

Jody Lanier

3/25/03

Mr. Michael T. Lesar
Page 3
March 25, 2003

I am also concerned that communities downstream of SRS will face this same risk if the reactors at the Southern Company's Plant Vogtle are chosen as the fifth and sixth reactors to use MOX, which would put all of us in double jeopardy.

The section on environmental justice mentions the effects on fishing near SRS. Since waste that is released or leaked into the waterways eventually reaches Savannah and because fish can't tell the difference between bait from a fisherman in Blackville, S.C. and that from one in Chatham County, the effects the MOX facility would have on fishing in our area need to be studied. We already have radiation monitors in place that could be used for this purpose. The EIS also bases its definition of environmental justice on the impacts to areas with predominantly racial minority and/or low-income populations. I believe that the failure of this report to take into account the impacts to downstream communities beyond a fifty-mile radius, regardless of their racial or income demographics, constitutes environmental injustice. The definition of environmental justice must be expanded to include these impacts. Therefore, the final EIS for this project, and for that matter, similar reports about future activities at SRS, need to include these impacts as well.

The most disturbing part of the report to me is the mention of the Commission's ruling in December 2002 that it is not obligated to consider risks associated with terrorism in any environmental impact statement. In light of the tragedy of September 11, 2001, concluding that the risk of a terrorist attack is 'speculative' is absolutely absurd, irresponsible and unconscionable! With this ruling, the NRC has not only set a dangerous precedent, it has also stuck its head in the sand like an ostrich! What a shame! If the Commission will not consider these risks, who will? Who will protect us? The EIS further states that the wind at SRS mainly blows to the west-northwest and north and that the probability of a substantial leak is very low. I remember the infamous tritium leak of December 1991 that shut down Savannah's industrial water supply for almost two weeks. I would hate to think what would have happened if that had been plutonium-laced waste instead. Besides duct tape and plastic sheeting, does our only defense against an accident or terrorist attack at the MOX facility consist of praying that the wind continues to blow away from us and that SRS will dramatically improve its more than fifty year track record of leaks? If that is the case, we would be in the same predicament as Wile E. Coyote when he opened a miniature umbrella to protect himself from a falling boulder. Also, in light of recent congressional hearings and news reports pertaining to the Indian Point nuclear power plant in New York, if SRS security is anything like that at a commercial nuclear power plant, we would feel as confident as Bill Dana's famous character Jose Jimenez was before he was launched into space.

3/25/03

Mr. Michael T. Lesar
Page 3
March 25, 2003

The greater metropolitan areas of Augusta and Aiken can have expanded economic opportunities without jeopardizing downstream communities like Savannah. Making a firm commitment to clean up SRS once and for all can accomplish this. That way, Augusta and Aiken get the benefits of more jobs related to SRS and an expanded tax base. At the same time, downstream communities will not have to worry about more toxic and nuclear waste being generated, resulting in a win-win situation for all.

Since I believe that my concerns have not been adequately addressed in this draft EIS, I am submitting as an attachment a supplement to my oral comments from the previous meeting that was sent in before the prior comment period ended. I still believe that this project will flush our valuable tax dollars down the toilet, especially when one realizes that Duke will essentially be getting free MOX at taxpayer expense. Further, it will not reduce the amount of plutonium stored at the site, especially if the Department of Energy decides to build and operate its Modern Pit Facility at SRS. As I said back in September, this project is an attempt by the DOE and DCS to shove a giant Pu Pu Platter down our throat, and that when I want a Pu Pu Platter I want it from an honorable Chinese restaurant, not a disonorable MOX plant. I call on our congressman from Georgia's Twelfth Congressional District, Max Burns, whose home in Screven County is only one county downstream of SRS, as well as Congressman James Clyburn of South Carolina, a member of the Energy and Water Development Subcommittee of the House Appropriations Committee, to intervene and stop this project from proceeding forward. In the meantime, it's time for the NRC to get its head out of the sand and start thinking outside the box. Say NO to MOX. Choose the no-action alternative.

Respectfully submitted,

Jody Lanier
Jody Lanier

Attachment

CC: U.S. Representative Max Burns
U.S. Representative James Clyburn
U.S. Representative Jack Kingston
U.S. Senator Saxby Chambliss
U.S. Senator Zell Miller
Georgia Governor Sonny Perdue
Georgia State Senator Eric Johnson
Georgia State Senator Regina Thomas
Georgia State Representative Tom Bordeaux

00006

U.S. NUCLEAR REGULATORY COMMISSION
NRC PUBLIC MEETING FEEDBACK

NRC FORM 659 (8-2002) Meeting Date: 03/25/2003 Meeting Title: NRC Public Meeting on MOX Environmental Review Coastal Georgia Center Category: 3

In order to better serve the public, we need to hear from the meeting participants. Please take a few minutes to fill out this feedback form and return it to NRC.

1. How did you hear about this meeting?
 NRC Web Page NRC Mailing List Newspaper
 Radio/TV Other

2. Were you able to find supporting information prior to the meeting? Yes No (Please explain below)

3. Did the meeting achieve its stated purpose? Yes No

4. Has this meeting helped you with your understanding of the topic? Yes No

5. Were the meeting standing time, duration, and location reasonably convenient? Yes No

6. Were you given sufficient opportunity to ask questions or express your views? Yes No

7. Are you satisfied overall with the NRC staff who participated in the meeting? Yes No

COMMENTS OR SUGGESTIONS:
 Thank you for answering these questions.
 Please review my information so what happens
 I am my employer from happens again.
 Safety and the health of employees; the
 Federal ruling and my days we should
 be #1 priority at SRS.

OPTIONAL
 Name: W.D. Hooker Organization: Gr. Bowhunter's/Sports Club
 Telephone No. 706-855-0371 E-Mail: W.D.Hooker@ATMmi.com
OMB No. 3150-0187
 Public reporting burden for this collection of information is estimated to average 15 minutes per response, including reviewing instructions, gathering existing data, reviewing collected information, reviewing instructions, and a person is not required to respond to the information collection if it does not display a currently valid OMB control number. The NRC may not conduct or sponsor, and a person is not required to respond to, the information collection if it does not display a currently valid OMB control number. Expires: 06/30/2003

Continue Comments on the reverse. ⇄

Please fold on the dotted lines with Business Reply side out, tape the bottom, and mail back to the NRC.

6-1

6

USNRC
 Attention Mike Lesser
 Mail Stop 16D59
 Washington, DC
 20555

Re: NUREG-1767 Draft Report for Comment Date 3/25/03 Meeting Public Meeting on MOX Environmental Review

Comments and Suggestions are:

- 1.) Food must be checked example the Hair Analysis of employees of my company clearly show that just being these streams such as Four Mile Creek which had at least 9 different places to enter this stream at no time were the men that worked this stream use protection, sign permits to dig or wade in this stream until 2-22-99.
 - 2.) Congressional Investigation 13033 is at Charlie Norwood's Office 10th District Office
 - 3.) 48.4 tons depleted uranium is located in Steed Pond another area that we worked above and below and in this stream that holds the material. We also broke the 6 beaver pond dams that held this material back. I had to do two-bio assay for Uranium in 1993 and 1994 I was also working for Westinghouse on loan from BSRI in a clean area at that time. Only place I could get the up take was Steed Pond.
- Sampling Data at Site # 25 -HP-52 No chemical data identified this was stated by Westinghouse Manager Steve Johns please read the information I submitted to NRC on 3-25-03. EPA shows it as waste site and Bechtel has it listed as High Risk. Westinghouse committed fraud during the 3 day presentation to NIOSH on 3-20-2000. I did not know about the MOU signed between DHHS and DOE not allowing NIOSH do their jobs per the CFR this MOU was sign in 1996 and good for 5 years.

I would like someone to contact me concerning the fraud that has been committed to me and my employees that work in these high, medium and low risk sites at SRS without knowing it, and working without personal protection.

Thank You,

William D. Hooker Sr.
 William D. Hooker Sr.

COMMENTS OR SUGGESTIONS: (Continued)

Watch DOE and its Contractors and hold them to CFR, State Laws, FEDERAL LAW and Administrative Orders.

spreading toxic chemicals spreads cancer

00007

U.S. NUCLEAR REGULATORY



NRC PUBLIC MEETING FEEDBACK

Category 3

Meeting Date: 09/25/2003
 Title: NRC Public Meeting on MOX Environmental Review
 Coastal Georgia Center

In order to better serve the public, we need to hear from the meeting participants. Please take a few minutes to fill out this feedback form and return it to NRC.

- How did you hear about this meeting?
 NRC Web Page
 Radio/TV
 NRC Mailing List
 Other *and re environment*
- Were you able to find supporting information prior to the meeting?
 Yes No (Please explain below)
- Did the meeting achieve its stated purpose?
 Yes No
- Has this meeting helped you with your understanding of the topic?
 Yes No
- Were the meeting starting time, duration, and location reasonably convenient?
 Yes No
- Were you given sufficient opportunity to ask questions or express your views?
 Yes No
- Are you satisfied overall with the NRC staff who participated in the meeting?
 Yes No

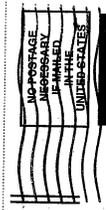
COMMENTS OR SUGGESTIONS: Thank you for answering these questions.

3. There were too few public representatives. (Elected)
5. The public was not informed. The News/No one of my questions was answered.
6. One of my questions was unanswered. → How will you include the impact of nuclear bombs on the environment?
7. They acted more like a private board to share holden

OPTIONAL

Name: *Whitney Lamb* Organization: *SCAP*
 Telephone No: *333-8855* E-Mail: *whlamb@aol.com*
OMB NO. 3150-0187
 Instructions: If a measure used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the collection of information unless it displays the OMB control number. Expires: 09/30/2003

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00008

NRC FORM 659 (5-2009) U.S. NUCLEAR REGULATORY COMMISSION

NRC PUBLIC MEETING FEEDBACK

Meeting Date: 09/25/2003 Meeting Title: NRC Public Meeting on MOX Environmental Review Coastal Georgia Center

Category: 3

In order to better serve the public, we need to hear from the meeting participants. Please take a few minutes to fill out this feedback form and return it to NRC.

1. How did you hear about this meeting?
- NRC Web Page NRC Mailing List Newspaper
- Radio/TV Other EWAL
2. Were you able to find supporting information prior to the meeting? Yes No (Please explain below)
3. Did the meeting achieve its stated purpose? Yes No
4. Has this meeting helped you with your understanding of the topic? Yes No
5. Were the meeting starting time, duration, and location reasonably convenient? Yes No
6. Were you given sufficient opportunity to ask questions or express your views? Yes No
7. Are you satisfied overall with the NRC staff who participated in the meeting? Yes No

COMMENTS OR SUGGESTIONS:

Thank you for answering these questions.

Dealing with Plutonium is a scary issue and I wish the stuff was never extracted and manufactured. The whole Nuclear idea is absolutely disgusting but it is definitely something that needs to be dealt with.

I oppose any activity dealing with manufacturing, processing, and transporting radioactive material + whatever else has to do with the nuclear issue.

I Live on Earth as a member of the global community and

OPTIONAL

Name: Andre Esterwan Organization: _____

Telephone No.: _____ E-Mail: enterthearea@hotmail.com

Check here if you would like a member of NRC staff to contact you.

DMR NO. 31804107

Please fold on the dotted lines with Business Reply side out, tape the bottom, and mail back to the NRC.

7-2 How would you feel if you lived by the plant? What happens when the facility is useless or not functional?

7-3 How will you make up for the damage? How will you make up for the damage?

7-4 Risks outweigh Action plan. Must notify all people potentially affected by a RISKY ACCIDENT Groundwater will be depleted! RISKY = possible! AFFILIARITIES IMPORTANT Did not consider impact of product.

COMMENTS OR SUGGESTIONS: (Continued)

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON DC 20555-0001

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WASHINGTON DC 20277-2904

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00009

NRC FORM 659
U.S. NUCLEAR REGULATORY COMMISSION
U.S. NUCLEAR REGULATORY

NRC PUBLIC MEETING FEEDBACK
Category 3

Meeting Date: 03/25/2003
Meeting Title: NRC Public Meeting on MOX Environmental Review
Coastal Georgia Center

In order to better serve the public, we need to hear from the meeting participants. Please take a few minutes to fill out this feedback form and return it to NRC.

- How did you hear about this meeting?
 NRC Web Page
 Radio/TV
 NRC Mailing List
 Newspaper
 Other
- Were you able to find supporting information prior to the meeting?
 Yes
 No (Please explain below)
- Did the meeting achieve its stated purpose?
 Yes
 No
- Has this meeting helped you with your understanding of the topic?
 Yes
 No
- Were the meeting starting time, duration, and location reasonably convenient?
 Yes
 No
- Were you given sufficient opportunity to ask questions or express your views?
 Yes
 No
- Are you satisfied overall with the NRC staff who participated in the meeting?
 Yes
 No

COMMENTS OR SUGGESTIONS: Thank you for answering these questions.

1. The mitigation measures section related to environmental justice must be more detailed.
 2. Duke Cogema must be mandated to meet and work with Environmental Justice stakeholders
 3. Stronger emergency response measures implemented in collaboration w/ Environmental Justice communities
 4. Independent research must be done to validate risk assessment associated w/ latent cancer fatalities

OPTIONAL Continue comments on the reverse.

Name _____ Organization _____
 Telephone No. _____ E-Mail _____
 OMB NO. 3150-0197
 Public Protection Notification: If a measure used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

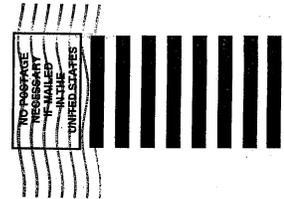
9-1
9-2
9-3
9-4

COMMENTS OR SUGGESTIONS: (Continued)

8-2 I have a sincere, compassionate feeling towards the environment and posterity. In the EIS, I was frustrated by the abundance of the words significant + insignificant. This is obviously a way to get around the actual explanation. It's so sad we're even considering dealing with this horrible stuff. At this point, the feeling I have is the decision has already been made. This is all part of the struggle of truth. I hope MONEY will be put aside and the obvious reality of ~~catastrophe~~ catastrophe will be realized.

8-3 I noticed during the presentation that there was mention about SRS exceeding the air quality limits by 2.5. By running this MOX facility you will raise the already illegal regulations by .01%? NO.

8-4 The fact that the majority of the stored "stuff" is in Texas and Colorado should wave a flag of relocation of consideration. There would be minimal transport if the site was ~~located~~ located near storage. If it had to go some where, of course not in the president's state? please explain why not? Also, the fact that Duke will be receiving the power + selling it to NC + SC is even more absurd. Lets hope the wind doesn't blow our way. The human beings are desperately asking for this nuclear ~~the~~ talk to end!



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 WASHINGTON DC 20277-2904

00010

3/25/03

COMMENTS OR SUGGESTIONS: (Continued)

5. Resources be allocated to Environmental Justice communities to analyze the complex EIS that states that they would be disproportionately impacted under the accident analysis

9-5



PUBLIC COMMENTS REGARDING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE MIXED OXIDE FUEL FABRICATION FACILITY FOR THE MARCH 25, 2003 SCOPING MEETING IN SAVANNAH, GA

My name is Sara Barczak and I am the Safe Energy Director for Southern Alliance for Clean Energy, formerly, Georgians for Clean Energy, in our Savannah field office. We are a regional non-profit conservation and energy consumer organization. We have members throughout Georgia and the Southeast and have focused on energy policy, including nuclear concerns, for over 20 years.

From the outset, we would like to state that the current draft Environmental Impact Statement (EIS) now before us leaves much to be desired and we are likely going to resubmit and restate all of our past concerns again. In a sense, it appears that many of the important objections to the plutonium bomb fuel, or "MOX," program have been entirely dismissed by the U.S. Nuclear Regulatory Commission (NRC).

For example, at the scoping meeting here in Savannah last September, many people were concerned about terrorism and wanted to know how terrorism would be addressed in the draft report. On P. I-29 the section on "Impacts from Terrorism" dedicates two sentences to this issue, stating, "Many commenters raised a number of different issues concerning terrorism. The draft EIS will not address terrorism, because these impacts are not considered to be reasonably foreseeable as a result of the proposed action."

That is not acceptable given the repeated concerns that we, along with NRC staff, heard voiced back in September. It is hard to believe that transporting tens of tons of weapons plutonium across the country to one single location, the Department of Energy's massive Savannah River Site nuclear facility that is about 90 miles upstream from Savannah, does not constitute an action that terrorists might want to take advantage of. Isn't plutonium a highly toxic substance with a hazardous radioactive life of 240,000 years and is a key component to modern nuclear weapons—and that one only needs several pounds of it to make a bomb? Though in numerous federal agency meetings on various nuclear-related topics, the issue of terrorism is supposedly going to be addressed in separate guidelines and under "top-to-bottom" agency reviews, it is extremely pertinent and vital to address terrorism concerns and security measures in this EIS.

Plutonium Disposition Program General Concerns

Southern Alliance for Clean Energy would like to make it clear from the outset that we strongly oppose the production of any type of plutonium bomb fuel for a variety of reasons: it is an experimental program that has never been pursued at this scale; poses a risk to workers and the surrounding communities at both the production and reactor sites; will increase the volumes of hazardous,

10-1

10-2

10-3

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON DC 20555-0001

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radioactive waste streams at a location already plagued by enormous quantities of dangerous waste and previous contamination; raises complex consumer and rate-payer concerns over government subsidies unfairly favoring a destructive type of energy production over environmentally friendly and safe alternatives; increases the negative health impacts to communities in cases of severe accidents at reactor locations; and blurs the division established between military and civilian nuclear programs.

We believe that the NRC has only one option that would truly protect the public health: deny the license application request for the MOX fuel fabrication facility (or plutonium fuel factory). We urge that the pursuit of developing a plutonium fuel economy be ceased in all sectors of government and private enterprise, as it will allow plutonium, a dangerous material, to enter civilian commerce and the international marketplace.

We thoroughly disagree with the NRC staff's preliminary decision in this report that the "overall benefits of the proposed MOX facility outweigh its disadvantages and costs." The NRC states on P. 2-37 four main points of consideration that brought them to this flawed decision:

- The national policy decision between Russia and the US to reduce surplus weapons plutonium;
- The minimal radiological impacts of and risk to human health posed by the construction, operating, and decommissioning of the plutonium fuel factory;
- The minimal environmental impacts the plutonium fuel project would pose; and
- The economic benefit to the local community.

On that same page, the NRC states that the most significant potential impact is if there were a large accident at the proposed fuel factory, but narrowly concludes that though the consequences of an accident "would be significant, the likelihood of such an accident occurring would be very low (highly unlikely)." We believe that the "No Action Alternative" the NRC was mandated to study is a better choice overall.

We will touch upon errors we have found with the four points and will follow up with more detailed written comments prior to the May 14th deadline. Which leads us to formally request an additional extension of the public comment period, beyond the recently adjusted May deadline. This program is a federal action, and given the state of our nation, and the degree to which Congress and the general public is distracted by events unfolding in the world, we find this request reasonable. Additionally, errors in NRC calculations allowed for the initial extension, and since they are not yet clearly understood, and one cannot be sure of what else may be incorrect, it seems to follow that the public should have more time to research and respond.

Significant Changes in Plutonium Disposition Program

We will first comment on the policy decision to reduce plutonium stockpiles in the US and Russia.

Plutonium Bomb Fuel (MOX) and Nuclear Bomb Factory Overlap

Even though our nation is supposedly engaged in a program being performed under the guise of "disposition" of surplus weapons plutonium in a supposed parallel venture with Russia to reduce our nuclear weapons stockpiles, the Department of Energy's National Nuclear Security Administration issued a press release on May 31, 2002 announcing that it would begin design work for a facility to manufacture plutonium pits, also known as "triggers" for nuclear weapons, a critical component. Rocky Flats—the site in Colorado that is now shipping its plutonium to SRS, had carried out this function up

until 1989 and is now closing. SRS is believed to be the preferred site for this plutonium trigger plant that will cost billions of dollars.

Southern Alliance for Clean Energy is concerned about the overlap or parallels that may occur between the plutonium mixed oxide fuel program (MOX) and the Modern Pit Facility program. At the October 2002 public meeting, DOE staff said that "synergies" would be evaluated in their draft EIS. We believe that the NRC should also give a very close look to the possible use of the same buildings by both programs, the exact amounts and types of waste generated by each and how those wastes will be "dealt with," the thorough tracking of plutonium into and out of both facilities, the possible overlap of contracting partners, etc. All of this information should be made available to the public and should be reviewed prior to issuing a final decision on the MOX plant.

The NRC should deny the plutonium fuel factory license application request based on the obvious conflict within the national policy on surplus weapons plutonium—what really is our national policy? Is it to bring weapons plutonium to SRS to secure it or to bring it here to help us build new nuclear weapons? There is enough public information available to show there is a major discrepancy. Since many of the decisions in this draft EIS are based on not wanting to conflict with foreign policy agreements, such as the unfortunate cancellation of the cheaper and possibly safer immobilization option, it appears that that in itself is a flawed argument since there is no cohesive policy on what we, the US, intends to do with our plutonium stockpiles.

We are very concerned about the number of significant changes that have occurred in the plutonium disposition program, such as the cancellation of immobilization and the implementation of long-term plutonium storage at SRS. We again urge the NRC to request that the Department of Energy conduct a Supplemental Environmental Impact Statement immediately, especially before the NRC issues its own final EIS on the plutonium fuel factory.

Additionally, the DOE's February 2002 Report to Congress: *Disposition of Surplus Defense Plutonium at Savannah River Site*, essentially recommends the need to add at least two additional, unnamed nuclear reactors for plutonium bomb fuel (MOX) use. Our nearby Southern Nuclear Plant Vogtle expressed interest in the plutonium fuel program back in 1996 and we are concerned about the implications of the need for more nuclear reactors. How will the NRC address this need for more nuclear power plants? How will additional reactors be selected? Will the public be involved in this process?

Radiological Risk

The NRC concluded that there are minimal risks to human health if plutonium fuel is produced at SRS. We will comment on this in more detail in our written comments but wanted to point out that from our perspective this project represents a real and unacceptable risk, especially to workers. The report states that "credible" accidents will be studied in either the EIS or the Safety Evaluation Report. What is the NRC's definition of a "credible" accident? Are there no risks of harm to human health if a "non-credible" accident occurs?

Why does the NRC choose to use the less-protective health standard of 1 in 10,000 "accepted deaths" rather than the EPA's 1 in 1 million? Has anyone here accepted their death already from events occurring up at SRS?

10-18
cont.

for existing and future drinking water needs. It later states that contamination is present beneath the entire site. Which is it? And regardless, isn't placing any additional burden on this resource considered more than just a minimal impact?

Economic Benefit

The NRC stated that the positive economic benefit to the local community was part of their preliminary decision to recommend the plutonium fuel plant. We are gravely concerned that this perceived economic benefit is being unfairly promoted to the expense of others. This is an extremely expensive program that is estimated to cost nearly \$4 billion, nearly doubling original estimates. And this is only for the program in the U.S. and does not include ALL the costs. The costs for developing this infrastructure within Russia is also staggering. The U.S. taxpayer is footing this bill. Is it fair for a local community like Aiken, SC to prosper at the expense of others...and that that advantage be used as a reason to recommend the project by the agency mandated to evaluate the merits of the license application?

How is Duke Cogema Stone & Webster going to benefit economically from this endeavor? Why is this not part of the review process? Are they deemed a local benefactor, or correctly as an international consortium?

How does a city like Savannah benefit from plutonium fuel? How are our lives improved if there is a severe accident or a leak to the surrounding environment?

Additional Concerns for DEIS

Due in large part to the errors in the calculation of latent cancer fatalities if there were an explosion at the MOX facility, we alert the NRC to sincere concerns on credibility in all of their calculations.

We also request that full scoping comments be provided instead of just a summary of scoping comments, as was done for this draft in Appendix I. This allows for the reader to see whether their original question was answered and also whether others asked the same item and received a similar or differing response.

We also suggest that if questions or comments are raised that will be addressed in the Safety Evaluation Report, that those comments be transferred over to the proper contacts within the NRC and that the commenter be placed into the pool of interested participants in the SER process. The division between the EIS and SER is very confusing and needs to be simplified in some way.

We again ask that the environmental and safety records of the individual contractors involved in the international consortium, Duke Cogema Stone & Webster (DCS), be studied thoroughly by the NRC. At a time when the French are not currently America's favorite partner, it is suspect that our government is not concerned with Cogema's (a French government owned company) previous track record in handling commercial plutonium and nuclear waste—we are after all giving them proposing to allow them to handle a highly dangerous material and one sought by numerous rogue nations and terrorists. DCS did not exist before this proposed plutonium fuel project came to light—how do we know they will do it right?

10-14

Many of the mitigation procedures that are identified in the draft EIS seem lacking in their ability to protect workers and surrounding communities. For instance, the report states that, "issues related to general emergency preparedness of communities are outside the scope of this EIS." That was one of the main concerns raised by Savannah residents in last September's meeting. The report also mentions that, "consequences on human health would be mitigated by following SRS emergency procedures." We formally request a copy of the SRS emergency procedures. Will citizens in Savannah and other communities throughout the Savannah River corridor also receive a copy? Why don't we know what this is? How do we know whether we are going to be protected?

The entire environmental justice section needs to be reviewed again due in part to NRC-acknowledged incorrect accident consequences. Additionally, there seem to be numerous contradictions within the report of what will and what will not be studied in terms of environmental justice. For instance, environmental justice impacts apparently will not be studied along MOX transportation routes but elsewhere in the document it states that transportation will be studied in terms of environmental justice.

We are concerned about the health of SRS workers at the proposed plutonium fuel factory. We recommended that both sand and HEPA filters be used. In the report, it mentions that only HEPA filters will be used. We again hope that a combination of both can be recommended by the NRC to enhance worker protection.

Environmental Concerns

The NRC concluded that there are minimal environmental impacts if plutonium fuel is produced at SRS. We disagree and will highlight just two concerns tonight.

Nuclear Waste Concerns

SRS has a severe nuclear waste problem and the plutonium bomb fuel is only going to make it worse. The site currently has the 2nd largest volume of high-level liquid nuclear waste (more than 30 million gallons) and wins the gold medal for having the most amount of radioactivity at any DOE site in the nation. The future is less than encouraging as the DOE projects that 95% of future high-level radioactive waste generation will occur at SRS. The plutonium fuel program is slated to bring more dangerous nuclear waste to this site—in some instances, waste streams that the site currently has no experience with. As the NRC may remember from the September meetings in Savannah, nuclear waste issues are of grave environmental concern locally. The draft report does not do a good job describing and tracking the various waste streams that will be created by the MOX process. We request that a process flow diagram be developed to clearly show what wastes are being generated where and where those resulting wastes will be eventually stored or treated.

Water Concerns

Water resources are limited and debates on how this precious resource should be protected is under heated debate currently in Georgia and elsewhere. Currently, SRS requires enormous amounts of surface and ground water, in the tens of billions of gallons, just to support currently established operations. It was difficult to discern what additional water use will be required and what additional water contamination will be generated by the plutonium fuel factory, over its entire operating life, versus the proposed "no action alternatives," including immobilization? In the report, it does state that groundwater beneath the site is listed as a Class II drinking source by the EPA, meaning it has potential

10-20

Southern Alliance for Clean Energy DEIS MOX FFF Public Meeting Comments Continued

Summary

From what has already occurred, it appears that the Department of Energy has decided that SRS will be the centralized, long-term plutonium storage dump, using the plutonium "disposition" plan as justification to bring the plutonium here and that the NRC is doing its part to allow that to unfortunately happen. We should remember that the storage of plutonium at SRS could create one potential source of feed for any new pit plant.

Southern Alliance for Clean Energy believes that the NRC must address the full impacts of the plutonium bomb fuel program—how this scheme is likely contributing to the eventual production of nuclear weapons components at SRS and the use of the site for permanent nuclear waste burial. A full accounting of what and how much plutonium is coming from where and being used for what project when it arrives should be done and made public.

We suggest that after the NRC has reviewed all of the comments on the draft and does more research, they should deny the license request or at least recommend that the "no action alternative" is more advantageous to health and safety than the MOX program.

Southern Alliance for Clean Energy believes this controversial nuclear energy program threatens national security. Support of the plutonium fuel program could lead to the development of a plutonium economy that would threaten nuclear non-proliferation goals and would increase already excessive volumes of deadly, highly radioactive nuclear waste at SRS.

Instead, other programs that appear to be more environmentally sound, safer to workers, less expensive, and could prevent the circulation of nuclear weapons materials, such as immobilization of surplus plutonium, should be funded and supported through further research and development. Though not a perfect technology, it is far cheaper than other options and appears to have less risks overall than the currently encouraged technologies.

Thank you to the staff for holding this meeting in Savannah.

Thank you.

Sara Barczak
 Safe Energy Director, Southern Alliance for Clean Energy
 3025 Bull Street, Suite 101
 Savannah, GA 31405
www.cleaneenergy.org
 (912) 201-0354

3/26/03

00011



March 26, 2003

Rules and Review and Directives Branch
 U.S. Nuclear Regulatory Commission
 Mail Stop 16-D59
 Washington, DC 20555-0001

Dear Sirs,

The Augusta Metro Chamber of Commerce, with member businesses from across our two-state community supports the MOX project. The Chamber has followed the progress of the project since the beginning and with the release of the Nuclear Regulatory Commission's draft environmental impact statement stating minimal environmental impacts, we believe NRC should issue a license for construction and eventually for operation of the MOX facility. Aside from being the right thing to do for the safety of our planet, support of this international effort will have the side effect of great economic benefit for our community.

We believe any concerns of safety have been answered. The safety of the process and the facility itself has been evaluated for years by many different groups. Every conclusion is the same—the MOX facility can be constructed and operated safely with minimal impacts. The technology has been safely used in Europe for over 35 years.

With the question of safety satisfied, we hope our citizens can now recognize the economic boost the MOX project will have in the regional economy. When focusing on some numbers listed in the Draft EIS for the construction and operation of the MOX facility and its associated facilities, the Pit Disassembly and Storage Facility and the Waste Solidification Building it is easy to see the positive impact on the community.

- In the peak year of construction, 1,820 workers will be required for the proposed action.
- On average, 1,000 jobs will be created for the proposed facilities.
- During operations, 1,260 employees will be required each year.
- Income for workers during construction will be \$350 million.
- Income during operations will be \$610 million.
- The proposed facilities will produce approximately \$110 million in tax revenues from state income and sales tax.
- The proposed facilities will produce \$1,850 million for the gross regional product.

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 Toll Free: 888/659-5898
www.augustiametro.com
 PO Box 1837
 Augusta, Georgia 30603-1837

11-1

3/24/03

The Central Savannah River Area will be proud to be home for the mission to reduce weapons plutonium. This project is one of great importance to the security of the world. That reason alone should be enough to see this MOX succeed. But it also positively impacts the CSRA in more ways than expected. It just shows that by doing the right thing and supporting our country, our citizens will receive benefits they never expected.

The Augusta Metro Chamber supports the licensure of the MOX facility and looks forward to both the global safety and local prosperity that it will create. Working together the Central Savannah River Area and the Department of Energy are making the world a better place.

Yours truly,



Edwin S. Presnell
President

00012

From: Justice Richard <wildlifejustice@yahoo.com>
To: <eh@nrc.gov>
Date: 4/16/03 2:55PM
Subject: opposition to the utilization of MOX fuel

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12-2
12-3
12-4

I Scott Justice of 400 Exley Rd S. do oppose the transportation and utilization of MOX fuel in the united states. It is now time for our country to realize that the nuclear experiment did not fully work. There are three obvious reasons why MOX fuel is a bad idea. First, the risk of proliferation increases if we begin shipping plutonium rods across country or across the world. Secondly, it will have a hefty price tag for the people of the U.S.. This program looks to me to be an attempt to get the federal govt. and the energy customers to subsidize a facelift for the major energy companies. We have given them enough money. Thirdly, There is a smaller margin for error when it is used in ageing reactors like the ones we have in the U.S. Frozen core reactors like McGuire in Charlotte,NC have thinner walls. The scientist are not in agreement as to how safe this process is. For these reasons I urge the NRC to deny authority for the use of MOX fuel in the U.S.
Respectfully, Scott Justice

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3/26/03

GLENN CARROLL

Comments on the Nuclear Regulatory Commission (NRC) Draft Environmental Impact Statement (DEIS) for the MOX Application

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00014



Fred E. Himes Director

Statement for the Record Draft Environmental Impact Statement Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina March 26, 2003

Thank you for the opportunity to provide comments on the draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina. My name is Ernest S. Chaput and I am the manager of special projects for the Economic Development Partnership of Aiken and Edgefield Counties, South Carolina.

Construction and operation of the Mixed Oxide Fuel Fabrication facility is an important part of our nation's international nuclear non-proliferation program. It is important that we do all possible to make surplus United States and Russian nuclear materials unusable for future use in nuclear weapons. We believe that the United States should continue to demonstrate moral leadership by expeditiously preparing to make these materials unsuitable for use in modern nuclear weapons.

We are pleased with the preliminary conclusion of the NRC staff that the overall benefits of the MOX facility outweigh its disadvantages and costs, and that unless safety issues mandate otherwise the action called for is the issuance of the proposed license. We agree that the proposed facility can be operated safely, and urge the NRC to issue the Construction Authorization Request in a timely manner.

We have reviewed the draft Environmental Impact Statement (DEIS) and offer three comments which result in additional support for your preliminary conclusion.

- 1. The safety and environmental risks associated with the No Action alternative have been significantly understated. The no action alternative assumes that DOE's surplus plutonium would remain in storage at seven DOE sites. The DEIS does not state the period of storage, and it appears that impacts are near-term and based on maintaining the status quo. We believe current methods of storage are only valid for a limited and finite timeframe; storage without subsequent actions is not realistic for timeframes of 100 years plus. At some time in the future actions will be required to either repackaging or disposition stored materials. The no action alternative should assess the incremental added risk resulting from (1) actions to periodically process and repackaging materials in long-term storage and (2) actions to eventually remove the materials from storage and preparation for disposition.

Post Office Box 1708 Aiken, SC 29802 (803) 648-3362 (803) 641-3369 www.edjpsc.org

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1. The primary flaw of the NRC's DEIS process is that it splits the MOX application into two parts — construction and operation — but the operations data is not subject to review. Environmental aspects of both must be considered. Most alarmingly, the NRC plans to sign off on its environmental review before operational plans are developed to safeguard 34 tons of plutonium during MOX processing. To separate construction and operation, and to not review critical aspects to contain the highly dangerous plutonium, is irresponsible and blatantly wrong (and is being legally challenged by GANE).

2. The DEIS was published containing large computer errors miscalculating how high death counts in low-income, minority communities would be from a severe MOX accident. Although the NRC is preparing new environmental justice data, its public meetings will take place before the public is in possession of accurate data on which to comment. It should be mandatory for the NRC to hold additional meetings subsequent to releasing the correct data ... especially in North Augusta which is in the most highly affected area from the proposed MOX activity at SRS.

3. The DEIS fails to address the reasonable alternative to MOX — plutonium immobilization. Immobilization would effectively achieve the MOX program's stated goal to safeguard weapons-grade plutonium. Continued storage, which the NRC analyzed instead of immobilization, is, conversely, an acknowledged security risk. The immobilization alternative compares favorably with MOX in other ways: large number of jobs provided; effective management for existing waste stocks at SRS; negligible waste stream as compared to MOX; cheaper than MOX. The public demands to see the in-depth comparison between MOX and immobilization which is required to satisfy NEPA.

4. The DEIS fails to analyze weaknesses in Catawba and McGuire's ice condenser-type reactors, currently proposed to use the MOX fuel. The ice condenser design has a thin containment which is more likely to rupture in the case of a severe accident. Additionally, severe accidents are more likely with MOX fuel use. The DEIS must address these reactor-related MOX risks in its analysis.

5. The DEIS fails to acknowledge the possibility of insufficient reactors in the MOX program to keep pace with the proposed MOX production rate. Two or three additional reactors would be required to process the proposed volume of MOX fuel. The DEIS must state the environmental risks from failure to process plutonium to MOX, or conversely, excessive inventory of fresh MOX fuel containing weapons-grade plutonium, an extra security risk.

6. The DEIS evaluates a proposal by Duke Cogema Stone & Webster (DCS, the applicant) for the Department of Energy (DOE) to build a special waste building to handle the significant volume of highly radioactive liquid MOX wastes. DOE has not yet generated any records or budget requests indicating acceptance of the MOX waste plan. The DEIS must discuss the environmental risks and consequences of DOE failure to implement MOX waste management.

7. Sabotage and terrorism have become increasingly common in recent years. The DEIS must analyze environmental risks from sabotage, malevolent acts, or terrorist attacks to: the MOX facility; reactors using MOX; transports of fresh fuel to reactors; or transports of plutonium to SRS. MOX, by involving weapons-grade plutonium, is an intrinsic security risk, and must be considered to have a strong attraction to terrorists. Absence of analysis of this environmental risk hampers efforts of public health authorities to respond to emergencies posed by potential security breaches.

GANE - Georgians Against Nuclear Energy • P.O. BOX 8574 • ATLANTA, GA 31106 • 404-378-4263 • g.a.n.e.@minuteping.com



00015

Action For a Clean Environment

Adele Kushner, Executive Director
Joanne Steele, Director, Oconee Nuclear Project

14-3

TESTIMONY ON THE MOX DRAFT EIS FOR SAVANNAH RIVER SITE
 AUGUSTA, GA, 3/26/03

BY ACTION FOR A CLEAN ENVIRONMENT, ALTO GA

People in this country expect to trust their government. After all, it is a democracy. Under other forms of government, people know not to trust official government statements – those governments could be telling lies.

In this case the Nuclear Regulatory Commission is telling us that there is very little danger from exposing people to accidental emissions produced by a MOX plant. Then it turns out that the Draft EIS contained large computer errors, and that there would be far fewer than the estimated 400 deaths in a population living within 50 miles of the plant. And anyhow this was a minority low-income community. And furthermore, the new data will not be available until after the public meetings. But trust us – we are your democratic government. Would we lie to you?

This reminds me of another campaign, also concerning radioactive materials. Years ago the NRC told us that a little bit of radioactivity in our cooking pots, our bicycles, our paper clips, our appliances would not hurt us one bit. The level of radioactivity would be so low it would be “Below Regulatory Concern.”

We found out there is no way you could tell how much radioactivity people would be exposed to once they were surrounded by such little bits if the little bits were scattered around randomly.

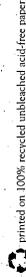
I once adopted a cat that the owner said was just a little tiny bit pregnant. That cat produced four good sized kittens right on schedule.

It is hard to believe that the Savannah River Site, already the most radioactively polluted Dept. of Energy site, would even be considered for a process that can only produce more radioactive pollution -- especially when there is an alternative.

Would you rather live and work near ancient tanks already leaking radioactive nitric acid, attractive only to saboteurs and terrorists, OR near glass logs in which nuclear waste is immobilized, out of reach for any re-use, providing safe jobs, leaving no mess behind? How about a real comparison of the pros and cons, NRC? Before a decision is made on this DEIS?

Think about the perils of transporting plutonium across the country, then taking the MOX fuel to reactors, all of which is subject to accidents and the possibility of spreading

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 adelek@alltel.net • <http://www.alltel.net/~adelek>



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2. The risk to offsite population in the hypothetical accident analysis is significantly overstated. In analyzing the impact to off-site population from a hypothetical tritium release from the Pit Disassembly and Conversion Facility, the DEIS assumes and calculates a dose by ingestion during the one-year post-accident period. This scenario is simply not possible. An assumption that the South Carolina Department of Health and Environmental Control and the Georgia Environmental Protection Division would ignore contamination of agricultural products for one year is incredulous and an insult to their training, demonstrated performance and professional status. This impossible assumption must be eliminated and the analysis revised.

3. The DEIS places unwarranted emphasis on impacts associated solely with the Pit Disassembly and Conversion Facility (PDCF). The PDCF facility is not solely required to support the MOX facility. PDCF has a broad capability to support a range of storage and disposition options for surplus nuclear weapon pits. For example, the PDCF prepared the plutonium that was included in the cancelled Plutonium Immobilization Project. There has also been discussion that PDCF may convert surplus weapon components currently being stored as pits to oxide for long-term storage. By coupling the MOX and PDCF facilities in the draft EIS, NRC implies that impacts from the PDCF will not occur if the MOX construction authorization is denied. That is not the case. PDCF and MOX are two separate actions, and the draft EIS should only analyze those combined impacts which result from the unique actions required solely to fabricate MOX fuel. DOE has previously prepared an Environmental Impact Statement for the PDCF facility with a finding that the facility provides adequate protection to the public and environment. NRC should not subject the PDCF facility to NEPA “double jeopardy”.

Thank you for the opportunity to comment on this important document.

00016



From the Office of Congressman Gresham Barrett
Representing the 3rd District of South Carolina

For Immediate Release
 March 26, 2004
 Contact: Colleen K. Mangone, Press Secretary
 Congressman Gresham Barrett
 202-225-5301
 Colleen.Mangone@mail.house.gov

Washington, DC— Congressman Barrett understands the Savannah River Site is not only important to the 3rd district, but the nation. SRS is an integral part of our nation's national security, as well as the United State's non-proliferation efforts, and for those reasons among others Congressman Barrett continues the tradition established by his predecessor of supporting SRS.

Congressman Barrett has secured language in House Report 108-37, which accompanies the House Budget Resolution. The language is as follows:

- Mr. Barrett raised the issue of Mixed Oxide Facilities. To be clear on this matter, the budget resolution assumes full funding of the President's \$415 million request for the construction of the Department of Energy's [DOE] Mixed Oxide [MOX] Fuel Facility and Pit Disassembly and Conversion Facility [PDCF] for fiscal year 2004. This funding would be used to initiate construction of the MOX Fuel Facility and complete the design of the PDCF at the Savannah River Site.

Congressman Barrett is currently supporting the following language concerning the funding level for the Department of Energy's Defense Environmental Management Program submitted by Congressman Hastings of Washington State.

- Mr. Hastings raised the issue of the Defense Environmental Management. To be clear on this matter, the budget resolution assumes full funding of the President's \$7.2 billion request for the Department of Energy's [DOE] Environmental Management Program for Fiscal Year 2004. The funding level provided in the resolution will allow for accelerating the completion of cleanup by decades and save billions of dollars in spending.

In addition, Congressman Barrett has held several meetings with members of the Department of Energy, the Washington Group, and employees of the Savannah River Site these issues. The one message Congressman Barrett continues to hear from each of these groups is just how important it is for SRS to acquire new missions. It is not only an integral part of the districts economy, but more importantly the security of our nation. Congressman Barrett knows that with these new missions SRS can be afforded a great opportunity to help secure our homeland.

15-2
 cont.

radioactive stuff in city centers and people's backyards. Think of weapons-grade plutonium out there waiting to be grabbed.

A conscientious examination of the facts might produce a decision that would restore some of our trust in our government. That is a conclusion devoutly to be wished.

Adele Kushner, Executive Director
 Action for a Clean Environment
 Alto GA

16-1

3/26/03

00017

SRS Retiree Association Presentation at the March 26, 2003 NRC Public Meeting to Discuss Draft Environmental Impact Statement on Proposed MOX Nuclear Facility

Presentation by: C. David Cowfer
Chairman, Savannah River Site Retiree Association
110 Boxwood Road
Aiken, SC 29803

Hello, my name is Dave Cowfer, and I am the Chairman of the SRS Retiree Association Board of Directors

I have 40 years collective experience in Federal Government and commercial nuclear industries and today, I would like to say that I, as well as the SRS Retiree Association that I represent, strongly support the construction and operation of the MOX facility. I hold a fellow grade membership in the American Society of Mechanical Engineers (ASME), an award I achieved by 30 years participation in non-government Boiler Codes & Standards developing committees. I have interacted with Nuclear Regulatory Commission (NRC) personnel for 30 years as Codes and Standards, and Federal Regulations Owner/User. I continue to interact with NRC personnel on standards developing national committees in my retirement. I am, you would say, very familiar with the NRC regulatory function.

I believe that the MOX facility can be constructed and operated safely, not-with-standing some concerns about NRC's worst case scenario in the subject EIS.

My understanding from having reviewed the EIS and spoken with some folks whom I believe to be independent from this process is that the evaluation that the NRC performed is not only very conservative, but actually makes assumptions that I believe to be incredible.

I am concerned about the perception that this kind of evaluation generates in the public eye with respect to the perceived dangers of such a facility. For the NRC to publish a scenario that breaches 1) at least 2 levels or more of containment, 2) site boundary monitors and 3) goes undetected for one year is preposterous. This scenario also disregards MOX Facility equipment engineered safety features and operating procedures mandated by Federal Regulations, enforced by several levels of regulators. I have worked at SRS and I can tell you the redundancy in facility safety basis and operations does not stop with Regulatory minimum requirements.

- We've seen over the years opponents of nuclear technology overstate the risks associated with this technology.
- The NRC is neither an opponent nor a proponent, but an objective regulator; I would expect the NRC to be even-handed and not overly dramatic in its assessments.
- Even if the NRC acknowledges that the assumptions they have used are conservative, and even if they acknowledge that their evaluation does not give credit for protection that we know will be in place, those kinds of statements can easily get lost in

17-1

17-2

SRS Retiree Comments on NRC MOX Facility EIS - 3/26/03 Public Meeting - Continued

the cloudiness that gets generated over the numbers that fall out of the conservative evaluations.

- I hope that the NRC heeds this concern, and ensures that their final analysis portrays the risks associated with this program in the proper context.

Sincerely,

C. David Cowfer
Chairman, SRS Retiree Board of Directors

17-2
CONT.

3/26/03

March 26, 2003 00018

Comments on the Draft Environmental Statement, NUREG-1767
From: Donald A. Orth, March 24, 2003

The Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, NUREG-1767, Draft Report for Comment, lacks sufficient information on design bases to judge the operability of the facilities, general safety, and validity of projected off-site effects of proposed facilities against guidances for radiological facilities, painstakingly established over a period of years, some 25 to 35 years ago. These include design criteria, technical specifications, and ANSI Standards as discussed later. It is true that the proposed facilities are not fuel processing plants and not all parts are to be licensed, but many of the operations are the same as in such plants and should meet the same licensing requirements. Also, the DEIS does not make apparent if there has been a detailed technical review of the designs themselves, rather than just presentation of information from the consortium to be responsible for construction and operation.

To satisfy these points, the Statement should provide evidence that the proposed projects have received an adequate technical review to support stated conditions of routine performance, possible accidents, and their off-site effects. As examples of past reviews of facilities that were to be licensed by NRC, special Subcommittees of the Advisory Committee on Reactor Safeguards were established, with knowledgeable consultants, for the GE Midwest Fuel Reprocessing Plant, the Allied General Barnwell Plant, and the extensive hearings on the Generic Environmental Statement for Mixed Oxide, (GESMO). To aid in the reviews, the ACRS had subcommittees develop both General Design Criteria and Contents of Technical Specifications to provide bases for review of fuel processing plant proposals during the late 1960's and early 1970's. Also, by 1971 the American national Standards Institute had a proposed standard for nuclear fuel reprocessing facilities, N101.5.5-1971, and more detailed guides were developed in following years. Evaluation of the Mixed Oxide Facility and associated operations against the ACRS and ANSI standards would increase confidence that a comprehensive review has been made.

A specific example of need for technical details is the analysis of criticality in the operations, which is treated only with the statement that a generic accident is being considered, with no description of what "generic" means. Actual criticalities have varied substantially. Note that information from past incidents involving both plutonium and uranium are pertinent. The majority of incidents have involved solutions and have resulted in both short duration reactions and continuing reactions that finally were extinguished by loss of moderator. Pertinent descriptions of the "generic" incident should include the bounds and bases for the assumed number of total fissions, peak pulse, and duration of the incident. A discussion of the observed differences between solution and solid incidents also should be given. In essence, it should be shown that the design provides criticality controls against all foreseen

accidents but also will mitigate consequences in case of the kinds of incidents that have occurred.

The Barnwell licensing action and the GESMO work ^{was} terminated by order of President Carter, but still shows the kind of attention that seems warranted for these new facilities. Note that the former Environmental and Waste Management Subcommittee of the ACRS was split off to become the Advisory Committee on Nuclear Waste, again to provide a technical review of proposed waste operations, including Yucca Mountain. If there is concern that facility details should be held confidential under current world conditions, then appropriate committees still could be established, possibly again under the ACRS, with cleared consultants from the complex or retired community, as before, with still final unclassified reports.

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00019



Mary T. Kelly, Ph.D.
 Assoc. Director, League of Women Voters of SC
 4018 Sandwood Drive, Columbia, SC 29206
 803-782-8410

**Statement for Nuclear Regulatory Commission Public Meeting
 Re the DEIS for the proposed MOX Fabricating Facility at SRS
 N. Augusta, SC, March 26, 2003**

My name is Mary T. Kelly, representing the League of Women Voters of South Carolina. We appreciate the opportunity to comment on the current Draft EIS for the building of the MOX manufacturing facility.

Our comments and concerns can be summed up as follows:

Failure to hold meetings in a variety of places in South Carolina, but especially, in the state capitol, Columbia. This meeting is being held to fulfill requirements of the National Environmental Policy Act, a law that is aimed at including the average citizen stakeholder in the process through which major decisions are made. You are proposing to build a factory that is essentially a heavy chemical manufacturing plant with potential for contaminating the air and water with a wide variety of substances only some of which are radioactive. Areas far beyond a fifty or sixty mile radius could be affected. We know that tritium spills have affected communities far down stream and ground water contamination is flowing towards Georgia.

Meetings in the N. Augusta/Aiken area tend to be dominated by those who see any and every proposal for the Savannah River Site in economic terms alone, a situation that at some other meetings has prevented valid information and concerns from being presented. Yet the experience of Chernobyl proves how far reaching the effects of a major accident can be. Not only are we all in danger but as tax payers, we all have a stake.

The failure of this DEIS to deal with possible terrorist acts or a criticality accident.

The failure of this DEIS to confront such issues is in line with the failure of the Home Land Security administration to acquaint the public with the dangers of such accidents for SRS and for nuclear power plants in this state. There is danger in ignorance. People need to know what they can do to protect themselves, and what to do if they have to evacuate. We are much better prepared for hurricanes.

Under NEPA a range of other options including no action should be presented. This DEIS offers only the preferred option versus no option. The same should be true for the choice of the F area.

The wisdom of concentrating so much plutonium at one site. SRS has to be one of the world's most inviting terrorist targets, even without the added plutonium. As the old

saying goes, "Never put all your eggs in one basket." Having so much plutonium in one place also increases the prospect of a criticality accident.

Should we be transporting plutonium and uranium around the country in a time of war and international hostility to the US? Some of that plutonium will be in the form of plutonium oxide powder, a highly reactive and flammable substance. Depleted uranium in the form of gaseous uranium hexafluoride, a nasty substance, will be transported to a processing plant in Wilmington, NC, solidified as uranium dioxide, and then transported to SRS.

This DEIS estimated 400 deaths in the minority community based on computer modeling and is now coming back to revise that to 50. Although modeling is a valid technique for estimating the unknown, it must be based on realistic choices of variables and not too many of them. The assumptions need to be justified. A lot more information is needed about how you got your numbers.

It is distressing that a truly valid study of the impact of SRS operations on public health has never been completed. The Dose Reconstruction Project was dropped by the CDC and DOE for lack of funding, just as it was beginning to interpret the results of all the data collection. Since DOE proposes further operations at this site, you owe it to the people of South Carolina who have and will be placed at risk to complete this study.

The weather discussion in this DEIS is inadequate and doesn't cover enough years and doesn't take into account some special South Carolina background. Hurricane Hugo showed how hurricanes and the accompanying tornadoes follow river courses. Charlotte, NC was heavily impacted by Hugo, a surprise to people, including me, who had taken refuge there. It came in just north of Charleston and followed the rivers through Sumter and up the Wateree to Charlotte.

The impact on the health of citizens should cover more than a fifty to sixty mile radius.

There should be more discussion about the backgrounds of the entities composing DCSW, from the standpoints of their financial status and history and their environmental and safety records. It is extremely troubling that one party to this consortium is COGEMA - a French company, owner and operator of sites like La Hague that have had environmental and safety records. It may not be possible to get adequate information about COGEMA since France is far less open than the US about its nuclear operations.

If the Russian MOX program does not proceed according to plan - it is reliably reported that it will not - how will the US program be affected? It could well mean that the MOX program will be delayed or aborted and that the surplus plutonium will be stored at SRS with no place to go.

I appreciate the opportunity to present these views and trust that all the views expressed by the participants at these meetings will be given careful consideration.

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cont.

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00020

From: Susan Giusto <susangusto@knology.net>
To: <TEH@nrc.gov>
Date: 3/28/03 6:32AM
Subject: MOX project

Mr. Harris:

I would like to add my name to the list of citizens highly opposed to the MOX project being introduced at SRS. Our mission should be CLEAN-UP, not the increased production of potential nuclear waste to add to the already abundant and dangerous cache we have amassed world wide.

We don't need this.

Sincerely,
Susan Cain Giusto
Augusta, GA

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Nuclear Directives
4/8/03
68 FR 9728
2

From: Roy G. Huml <mehlur@yahoo.com>
To: <nrcprep@nrc.gov>
Date: Sat, Mar 29, 2003 5:31 PM
Subject: Response from "Comment on NRC Documents"

Below is the result of your feedback form. It was submitted by

Roy G. Huml (mehlur@yahoo.com) on Saturday, March 29, 2003 at 17:32:06

Document Title: Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina (NUREG-1767) - Draft Report

Comments: Dear NRC,

Thank you for finally approaching the MOX issue and providing an excellent environmental statement for the Savannah River Site in South Carolina. This issue affects every one of us who live in the United States, as nuclear power is vitally important for our future, and developing MOX technology at the Savannah River Site is an important first step toward closing our nuclear fuel cycle. Burning MOX fuel in our reactors will produce much needed power so that my children and grand-children might hope to have at least as high of a standard of living as I have had, and it also removes plutonium from our weapons stock piles to make our world a little safer. It is unfortunate that so many people do not realize the benefits of this clean, safe source of energy. Respectfully,

organization: Private Citizen
address1: 2112 Newton Road
address2:
city: Hampton
state: VA
zip: 23663-1023
country: USA
phone: 757 851-2668

21-1

FLIDS = ADM-03
Cable = J. Harris (TEH)
P. Lester (FLKS)

Templeton - ADM-013

00022

From: "Linda" <lco@carolina.rr.com>
To: "Tim Harris" <TEH@nrc.gov>
Date: 3/29/03 5:39PM
Subject: Mox project meeting, Charlotte, N.C. March 27, 2003

Tim,

I know you are all good Americans just trying to do a good job. I also know you can not allow yourself to get personal with the people whose lives will be affected by your decision. It would be hard not to think about our safety once in a while and harder yet if an accident occurred.

The Gentleman with DOE told me they have no intentions of using fuel from Plutonium as an "alternate fuel." He said it was just a way to get rid of the Plutonium and it cost less money than storage. Another point he made to me was the French have been doing it for years. While it is true, that some of the French Scientist have been Brilliant, and most of them opposed the MOX fuel project in their country. However, the French Government has not proven to have made wise decisions in the past where their citizens are concerned.

The DOE's explanations are not good enough answers for me. As an American and the daughter of a disabled WW 11 Vet and the fiancé of a man ambushed in Viet Nam and now the mother of a 22 year old son, who may have to die for our country, I always trusted my country to protect us. Why do you think that is? Even a monkey learns not to take food from the hand that bites them! After all, my family is part of "The Ethnic Low Income Population" that is deemed expendable.

The NRC's Environmental Impact Statement publication should have used the facts from real radioactive accidents instead of hypothetical accidents. You would have been surprised to see that these accidents affected generations of Americans not just the generation living when the accident occurred. Of course, The Savannah River Plant says they can't find the records or someone didn't keep them. You know and I know that is a lie!

In 1973 Radioactive Iodine was accidentally released (430,000 units) from the Savannah River Plant in South Carolina. This was just one of the elements released in that accident. I believe this is what has caused my sister to develop thyroid cancer as a young mother pregnant with her 5th child. There is less than 1% of thyroid cancer in this country but in the SRS area it is 100% higher than the nation. That tells me a lot, does it you?

Her daughter, who is a graduate of Cornell and Boston University, was featured in U. S. World News and Report while she was at Cornell; she was also an "All American" and was honored by the Governor of her State for the

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selflessness she showed in helping others. My niece had a baby girl born with a defective heart that the doctors all agreed was caused by "chemicals in her environment" that my niece was exposed to. I am happy to say my beautiful little Great Niece, who was named after a warrior because she is such a little fighter and she is only 1, survived her grueling open heart surgery performed immediately at birth and only God knows what is in store for her down the road. I spent a lot of time crying, praying and begging God to save her. I know you can not imagine the torture her parents went through before the birth and during surgery.

My younger sister has not 1 but 3 forms or rare cancers not related to each other, she was only in her thirties. I want to go on and on but I will spare you, even though my family has not been spared. You see the accident in 1973, as well as the other accidents, I believe, so far, has affected FOUR (4) generations of my family not just One.

Of course, we will never know the extent of the damage done to our nation by nuclear power plants and there is no reason or excuse to ever risk the lives of more people. You see 1% is way too high of a risk for me to accept it is late for my family but not to late for others that will be affected.

I resent the NRC and the DOE referring to our population as the "Ethnic Poor". Is money the measure of a successful and productive life? I have two uncles who attended Harvard a cousin who attended Oxford and is now learning Japanese at McGill University. Too many of my family attended Ivey League Colleges and are very successful in life to mention here. The point I am making is even though we are considered the "Ethnic Poor" we are not all stupid.

As far as North Carolina's "ethnic low income group" is concerned - Did you look at the area around Lake Norman? Loni Anderson has a house there, as well as many other heads of fortune 500 companies. Do you really want to nuke them?

The way I see it is my Government has - is and wants to slowly poison part of its citizens and that makes the NRC and DOE no different than Hitler or Saddam to me. Excuse me, there is a difference - the people they killed knew they were being hunted down. Americans have a hard time believing our organizations only see "dollar signs", not the suffering of our population.

Isn't it ironic that if One Iraqis gets killed in war our government calls it "Tragedy"?

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TUE APR -2 AM 9:40
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03/27/03



House of Representatives
State of South Carolina

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Committee: Judiciary
March 27, 2003
Minority Leader

Via First Class U.S. Mail and Facsimile

Michael T. Lesar, Chief
Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
United States Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Public Meetings on the proposed new MOX plutonium fuel factory at the Savannah River Site

Dear Mr. Lesar:

I write you today in regards to the Nuclear Regulatory Commission's *Draft Environmental Impact Statement (EIS)* on the impact of building a new MOX plutonium fuel factory at the Savannah River Site. I understand that the NRC has held public meetings to have public input as a part of the official record. I respectfully request the Nuclear Regulatory Commission hold a public meeting in Columbia, South Carolina prior to the end of the comment period at May 14, 2003.

Additionally, I respectfully request that my name and address be placed on all mailing lists for any further meetings and other public forums regarding a new MOX plutonium fuel factory at the Savannah River Site. Thank you for your valuable time and consideration.

When we die, Do you think God is going to ask how much money we made - NO! I do believe, He will ask how many people died and suffered because of the decisions we made in our lives! Please do not put anymore American lives at risk for pain and suffering and even early Death!

May God grant you and the other officials making this decision the Wisdom of Solomon.

Thank you for your time. Please include this as my comment to the MOX Project Meeting.

Linda Odum
1561 Bennington Dr.
Concord, N.C. 28027 704-188-9458

CC: <leo@carolina.rr.com>, "Beverly Evancic" <iking@ida.net>, <MackrShansmom@ctc.net>, "Jill Shelhut" <bnutshet1@hotmail.com>, "Josie Hernandez" <josie_hernandez@hotmail.com>, <SKittrell@aol.com>, <coffeyc@lamere.net>, "Susan Morgan" <mustiangsue64@hotmail.com>, "TOM COFFEY" <imc56@hotmail.com>, <Tealady@attbi.com>, <nris@mindspring.com>, <eric.williamson@augustachronicle.com>, <localnews@charlottecbsenior.com>, <Abdrewtb@reccc.cc.nc.us>

00024

From: Lewis Patric <patric@nc.gov>
To: <TEH@nc.gov>
Date: 4/3/03 4:25PM
Subject: Regarding DEIS on Proposed MOX Facility

From: Lewis E. Patric, M.D.
WESTERN N.C. PHYSICIANS FOR SOCIAL RESPONSIBILITY
99 Eastmoor Drive
Asheville, N.C. 28805
March 17, 2003

To: Michael T. Lesser, Chief, Rules and Directives
Mail Stop 76D59
U.S. Nuclear Regulatory Commission,
Washington, DC 20555.

From the perspective of Physicians for Social Responsibility, I wish to cite the dangers and massive costs of the the entire plutonium bomb fuel experiment, the lesser costs and dangers of the option of plutonium immobilization, how such a venture could affect us in North Carolina and an apparent hidden agenda.

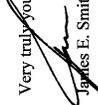
Dangers stem from this entire plutonium fuel experiment. The U.S. portion of the proposal involves shipment of plutonium from dismantled nuclear weapons sites in western states, some likely via Interstates 40 and 26 en route to South Carolina. The greatest transportation risk would be an accident in which plutonium metal, which rapidly oxidizes when it comes into contact with air, would vaporize or burn and disperse its deadly particles contaminating the air our citizens inhale, the water upon which we depend and the soil upon which we grow crops and upon which animals feed. Inasmuch as your staff have already introduced the subject of terrorism into tonight's discussion, it is appropriate to cite the increased risks that terrorism add to all other concerns about the proposed production and use of plutonium bomb fuel.

Creating the proposed Mixed Oxides Fuel Fabrication Factory would be counterproductive. Such a facility at Savannah River Site would place workers' health at greater risk from unnecessarily increasing their plutonium exposure. It would greatly increase the radioactive wastes generated at that already highly contaminated bomb building plant. It places populations in nearby areas at increased risks of exposure to plutonium and other byproducts of such a facility as stated above.

Over the decades that SRS has been in operation, there has been ample time to conduct long-term, well-controlled, epidemiologic studies of workers and other potentially exposed populations carried out by impartial, qualified scientists. Such studies should have been conducted on populations which might have been exposed through air, water and food ingestion. Such studies should not be prejudiced by prior assumptions, such as extrapolating data derived from the flawed studies of Hiroshima and Nagasaki, which were limited to the survivors of those acute massive exposures. It is difficult to justify the absence of such studies and further how a DEIS can be adequately carried out in the absence of such data. The DEIS would have more validity if risk factors were based more upon such information. Effects of chronic low dose radiation have been reported by scientists such as Drs. Alice Stewart and Dr. Steve Wing (UNC Chapel Hill). Absent the use

Should you have any questions or concerns, please do not hesitate to contact me.
With kind regards, I remain,

Very truly yours,


James E. Smith, Jr. *JES*

JES:smc

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of such epidemiologic data, skepticism is warranted regarding the estimated health risks presented in the DEIS.

Inseparable from the proposed MFFF is the fact that once manufactured, plutonium bomb fuel is destined for first use at Duke Energy's McGuire and Catawba nuclear reactors within 20 miles of Charlotte. Plutonium fuel is experimental, in that fuel derived from weapons grade plutonium has never before been used in commercial reactors. These plants are poor choices for an experimental program, because their cooling systems depend on a constant supply of ice; in the event of failure for even a few hours, a serious accident would result. The plants are encased in plate metal rather than the preferred four feet of concrete. Plutonium bomb fuel is inherently more dangerous than currently used uranium fuel, in that it bombards structures within the reactor chamber with more damaging radioactivity and would be more difficult to control, increasing the likelihood of a Chernobyl type disaster. Compared with currently used uranium, should a nuclear catastrophe occur involving a MOX fueled reactor, up to twice the number of cancer deaths would result due to the nature of radioactivity produced. The possibility of terrorism should not be ignored, either to the reactor vessel itself or to the "spent fuel rods" that are stored on site. A worst case scenario could result in the entire Charlotte area becoming a nuclear wasteland for decades to come, with national repercussions and most of the population becoming refugees.

One more danger comes from vastly increased radioactivity produced through MOX. Promoters deceptively claim its use would rid the world of plutonium, making it unavailable for future nuclear weapons use. As you well know, plutonium will be produced while MOX fuel generates electricity. The proposed parallel tract whereby plutonium is presumably converted into fuel in both the U.S. and Russian reactors would markedly increase the availability of plutonium on a global scale. It would be contrary to our national interests; it would favor further nuclear weapons proliferation.

Furthermore, MOX would vastly increase amounts of radioactive waste for which no satisfactory solution has yet been discovered. The railway or highway transportation of increased quantities of radioactive wastes to the proposed Yucca storage facility in Nevada would create new and extensive dangers which further increase the risks to large segments of our population because of the risks of accident or terrorism. Finally, when the Yucca facility would be filled to capacity, there will remain at the Catawba and McGuire sites at least as much high level nuclear wastes as at present. In addition, these sites will continue to be attractive targets to terrorists, due to their proximity to a large population and financial center.

Immobilization is the safest and least expensive alternative to converting plutonium into fuel. Originally immobilization was to have been developed along with the MOX program. It would consist of vitrifying plutonium into ceramic pucks, surrounding them with highly radioactive wastes and sealing them in corrosion resistant containers, making plutonium extremely difficult and dangerous to extract, but capable of long term storage. It would substantially reduce the risks of accident and terrorist procurement of this deadliest of all elements. Although it is the best choice for a problem like plutonium, all funds for this alternative have been deleted from the budget and the concept for such an alternative appears to have been placed on an indefinite hold. Failure to consider this option has to be considered abysmal decision.

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cont.

There appears to be a hidden agenda connected with the decision to continue with the MFFF despite the risks and uncertainties of proceeding with plans for this facility. The production of quantities of tritium in three of TVA's nuclear reactors which will be processed at Savannah River Site has to have significance. Such quantities of tritium can be used only in the production of nuclear weapons. An MFFF could make plutonium available in sufficient quantity for the production of nuclear weapons. What other explanation could there be than that another objective of the MFFF is connected with the production of large numbers of new nuclear weapons? If valid, this should be acknowledged as part of this DEIS and should be made apparent to the U.S. citizenry upon whose taxes this project would depend. Without a satisfactory explanation of this, the DEIS is incomplete.

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If these premises are correct and we are on the verge of constructing a new massive buildup of nuclear weapons, it will further signal the rest of the world that we have abandoned our prior commitment of moving toward eventually ridding the world of weapons of mass destruction and in fact are encouraging a new worldwide arms race.

For the reasons I have stated, the proposed MFFF should not be approved for construction.

Lewis E. Patrie, M.D.

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Augusta Tomorrow, Inc.

Supports

MOX Fuel Fabrication Facility

March 25, 2003

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Rules and Directives

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Bill Mottel
80 Glenmoor Place
Hilton Head Island, SC 29926
Phone: 689-2787

Comments For NRC on MOX
Draft EIS, 3/24/03

My name is Bill Mottel. I have lived for the past 10 years on Hilton Head Island, which is just a few miles north of Savannah, GA, and the Savannah River. I am now on the Hilton Head Island Town Council and the Lower SC Council of Governments. I had many years of experience on nuclear assignments, first in the U.S. Armed Forces nuclear weapons program and later with DuPont at the Savannah River Plant, where I was the Plant Manager. After retiring as DuPont's Director of Safety and Occupational Health, I served as Chairman of the National Safety Council.

I am mailing this statement to you because a conflict prevents me from attending the public meeting in Savannah on March 24.

I have great confidence that Duke Cogema Stone & Webster, DCS, working Westinghouse and with the Nuclear Regulatory Commission are very well qualified to fulfill this mission, and will do it safely and efficiently. Cogema has a long and distinguished record of manufacturing mixed oxide, MOX, fuel for the more than 30 commercial power plants in Europe that use MOX fuel. And, both Duke Power and Stone & Webster have long histories of excellence in the design, construction, and operation of nuclear facilities. Savannah River Site's record of safety is legendary, and both DOE and SRS will work with DCS to maintain that outstanding safety performance.

The recent Draft Environmental Impact Statement, which included both the MOX plant and the Pit Disassembly and Conversion Facility, did not contain sufficient detail to allow an independent assessment of their analyses. However, its worse-case incident, which occurred in PDCT, not the MOX plant, seems grossly exaggerated. A fire in a modern plutonium cabinet or glove box would be unlikely to generate either the heat or the releases of plutonium and tritium that was assumed. Any plutonium in such a fire, if it occurred, would not dissipate to the public. Also, I cannot imagine why the assumption was made that the government would not collect the contaminated food to keep it from being eaten. Surely this hypothetical incident scenario is supposed to be at least remotely possible. I do not think that this one is.

This draft EIS needs significant revision.

Bill Mottel
W.D. Mottel
Date 3/25/03

E-IDS = ADM-03
Call = T. Harris (EIS)
A. Lester (H&E)

Sample - ADM-013

25-1

25-2

Good evening. My name is Camille Price and I am the Chief Administrative Officer of Augusta Tomorrow, Inc. Since 1982, Augusta Tomorrow, Inc. has worked tirelessly to assist the City of Augusta and private investors in the revitalization of downtown

Augusta. Augusta Tomorrow's membership is made up of representatives from private business, banks, local utility companies, the City of Augusta, the City of North Augusta and not-for-profit institutions. We are not developers. We work behind-the-scenes to support projects we see as vital to the redevelopment of a thriving Metropolitan Augusta. In fact our mission is "to serve the community at large by planning, promoting and implementing the revitalization and development of Augusta with particular emphasis in the city center."

The Savannah River Site has been a tremendous asset to the economic development of the City of Augusta and the CSRA region. The economic impact of Savannah River Site is over \$3 billion dollars a year. This impact comes not only from the jobs generated, but

also from families who purchase homes and commodities that positively impact the entire region's vitality. This economic impact dovetails with Augusta Tomorrow's mission.

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Augusta Tomorrow has been concerned about Savannah River Site's job losses as the cleanup missions are completed. Losing jobs negatively affects Augusta's economy. We enthusiastically support the Pit Disassembly and Conversion Facility and the Mixed Oxide (MOX) Fuel Fabrication Facility. Not only are these programs designed to reduce the potential for proliferation of nuclear weapons, they will bring jobs to the Savannah River Site and continued economic development to Augusta.

In closing I want to say that because of the Savannah River Site's 50 years of unmatched safety record, we have complete confidence that the new projects will be handled safely and without incidence. Augusta Tomorrow completely supports the MOX Fuel Fabrication Facility.

Thank you.

26-1

ER 03/202

April 14, 2003

Michael Lesar
Nuclear Regulatory Commission
MS-16 D59
Office of Nuclear Materials Safety and Safeguards
Washington, DC 20555-001

RE: Draft Environmental Impact Statement (DEIS) on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at Savannah River Site, Columbia, and Richmond Counties, Georgia; Aiken, and Barnwell Counties, South Carolina

Dear Mr. Lesar:

The Department of the Interior has reviewed the subject document. We provide the following comments for your consideration..

GENERAL COMMENTS:

The document is well organized and written. We appreciate the obvious effort that has gone into it. However, our ability to assess groundwater impacts and to develop a sense of possible contaminant plume migration pathways is hindered by the lack of explicit and detailed geo-hydrologic information in some instances. We encourage expansion and enhancement of the relevant data and discussions in the text.

SPECIFIC COMMENTS:

Page 2-16, Section 2 Alternatives, Including the Proposed Action, Subsection 2.2.4.2.3 PDCF Liquid Stream:

No information is provided about monitoring buried and exposed pipes for leaks that could result in discharge of liquid waste to ground water. We suggest that monitoring/detection, response, and enforcement protocols related to pipe integrity and leaks be included in the DEIS.

Page 3-9, Section 3 Affected Environment, Subsection 3.3 Hydrology, Subsection 3.3.1 Surface Water, paragraph 3, line 24:

Fourmile Branch appears to flow southwesterly in figures 3.2 and 3.3, not southeasterly as described in the text. This apparent discrepancy should be checked and corrected if warranted.

27-1

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<p>Page 3-9, Subsection 3.3.1 Surface Water, paragraph 4, lines 39-40:</p> <p>Discharge information, including permitted and streamflow discharges, should be described with the same units of measure as those for stream discharge. The use of standard units of measure reduces confusion and facilitates comparison of values. For example, using the same unit of measure to describe the magnitude of the Savannah River Site (SRS) contribution to total streamflow in the two paragraphs above lines 39 and 40 would facilitate comparison. A standard unit of measure format should be used throughout the document, such as describing discharge in millions of gallons per day (MGD), cubic feet per second (cfs), or cubic meters per day (m3/s). Options include either following the standard unit of measure with equivalent measures in alternate units in parentheses in the text, or adding an appendix with conversion tables, comparative table, or equations to facilitate reader comparison between and among units of measure. The standard unit of measure format should be consistently applied for linear distances, area, volume, and discharges.</p>	<p>27-3</p>
<p>Page 3-10, Section 3 Affected Environment, Subsection 3.3.2 Ground Water, first sentence, line 8:</p> <p>The sentence reads "Several underground aquifers occur..." The word "underground" is redundant and should be deleted; all aquifers are below ground.</p>	<p>27-4</p>
<p>Page 3-10, Subsection 3.3.2 Groundwater, first paragraph, lines 8-23:</p> <p>The description of aquifers should be expanded to include aquifer properties, such as lithology, horizontal and vertical transmissivity, and storage. This information would allow estimating the extent and timing of potential ground-water contamination that could travel and impact nearby rural or municipal ground-water users.</p>	<p>27-5</p>
<p>Page 3-11, Subsection 3.3.2 Groundwater, lines 1-11 and 23-28, respectively:</p> <p>The description of ground-water flow in F-Area is incomplete. As written, the description is inadequate for estimating the likelihood of potential contamination of underlying aquifers from the surface. Ground water flows from areas of recharge to areas of discharge; the report describes lateral flow direction and identifies discharge areas but does not mention recharge areas or recharge rates. If the F-Area is located on a ground-water divide and the top of the aquifer begins as close as 3 feet below land surface as described elsewhere in this section, it is probable that the proposed Mixed Oxide Fuel (MOX) facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB) are located in a recharge area.</p> <p>Surface contamination or spills occurring in a recharge area can easily be introduced into a shallow aquifer, as indicated by the existence of contaminated ground water from past operations in F-Area (pp. 3-11 through 3-13). This section should be expanded to provide information about recharge rates and location of recharge areas in F-Area.</p>	<p>27-6</p>
<p>Page 3-13, Subsection 3.3.2 Groundwater, lines 8-20:</p> <p>This section indicates that ground water in the Upper Three Runs Aquifer beneath the proposed MOX facility is contaminated with various heavy industrial and nuclear contaminants. Moreover, recent sampling indicates that ground-water contamination is absent above the Tan Clay Confining Unit but is present in the lower aquifer zone beneath the confining unit. The discussion and analysis, as currently written, are inadequate for an assessment of the potential for additional contamination at the site relative to the contamination that already exists there, the spatial distribution of contaminated zones in the underlying aquifer, and the potential direction of ground-water movement and contribution to base flow in tributaries to the Savannah River near the F-Area.</p>	<p>27-7</p>
<p>Page 3-45, Subsection 3.10.1.1 Pathways for Human Exposure to Radiation and Radioactivity, second paragraph, lines 12-21:</p> <p>An additional pathway not identified in this paragraph is atmospheric particulate matter that has settled on the ground and that can be introduced into ground water by recharging precipitation in a recharge area, or if the deposits are washed into surface water by overland runoff in areas where the surface water is in hydraulic connection with the ground water. We suggest that the</p>	<p>27-9</p>

potential for ground-water contamination from atmospheric particulate matter deposited on the land surface at the MOX or F-Area sites be addressed in the DEIS.

Page 4-46, Section 4 Environmental Consequences, Subsection 4.3 Impacts of Proposed Action, Subsection 4.3.5.4 Hydrology, line 1:

Without further information about ground-water recharge and flow paths, there is insufficient information to determine whether all or any contaminants in a hypothetical spill would be captured by base flow contributed to the Upper Three Runs Creek, or whether some could pass in ground water that flows under the creek and continues down-gradient. The DEIS should provide sufficient information to distinguish between these possibilities. The DEIS should also provide information on the ultimate fate of a hypothetical spill that is wholly or partly intercepted by the creek. We suggest that the DEIS provide information on processes that affect the transport and fate of these potential contaminants in the environment, for example, some forms of plutonium would be likely to sorb onto clay particles in subsurface materials or streambed sediments rather than travel with the water.

If you should have any questions concerning these comments please contact Ms Brenda Johnson, U.S. Geological Survey, 703-648-6832.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
FWS, R4
USGS, Reston
OEPC, WASO

27-9
cont.

27-10

From: "Tom Clements" <tom.clements@wdc.greenpeace.org-
<leh@inc.gov>
Date: 3/16/03 12:11PM
Subject: for official DEIS record

I hereby submit the following news article from the Augusta Chronicle to be included as part of the official comments on MOX draft EIS.

Tom Clements
Greenpeace International

Augusta Chronicle (Augusta, Georgia)
Sunday, March 16, 2003

MOX plant worries residents

Local minister brings experts to area

By Eric Williamson
Staff Writer

AIKEN - Predominant winds from Savannah River Site are to the north, according to a recent government report, and that's what worries the Rev. Brendoyn Jenkins.

It means relatively poor towns such as New Ellenton would be the most affected over time if there were an airborne radioactive release at a mixed-oxide, or MOX, fuel plant proposed at the site.

But, depending on meteorology and other factors, all the communities within 50 miles of SRS, an area populated primarily by minorities and the poor, could be at risk from a plant accident.

The Rev. Jenkins calls such issues "the new civil rights."

SRS already handles tritium, a radioactive form of hydrogen used in nuclear warheads. If the proposed plant is built, it would take surplus plutonium, some of it from decommissioned warheads that will be disassembled, and blend it into the MOX fuel. The fuel would be shipped to nuclear power plants to be burned for commercial power.

SRS already has plutonium, and the volume it's storing is growing in anticipation of the MOX plant.

A recent report from the Nuclear Regulatory Commission delves into some of the environmental problems that could occur from plant construction and operation. The most dramatic scenario involves human exposure over a year's time to a hypothetical tritium release.

The draft version of the report, called an environmental impact statement, said at least 400 people would eventually die of cancer

28-1

28-2

from the exposure.

While that number is expected to be revised downward in the final version of the report, minorities and the poor would still be affected the most.

Early exposures might come from inhalation, but long-term exposures would be mostly through ingestion of tainted crops, the report said.

New Ellenton Mayor Jim Sutherland works at SRS, but he said last week he had not received a copy of the environmental report. He also said he was not aware of any disaster plans that address a tritium release, but he said Aiken County's emergency planning officials are prepared for any number of disasters.

The Rev. Jenkins said she initially spoke in favor of the MOX plant at public meetings and still favors the jobs the plant would bring. But she said the new understanding that some classes could be affected more than others needs to be addressed.

"Though they say it's highly unlikely, we live in the land of 'What if?'" she said. "I would like to see the guarantees, if there could be any, and how they would address and eradicate that problem."

The Rev. Jenkins has been making the rounds, inviting community members to attend a meeting to be held Thursday at her church, Second Baptist in Aiken.

Speakers from Westinghouse Savannah River Co., the Energy Department and the Environmental Protection Agency will be present to answer questions from environmental and social justice groups and from the general public, she said.

The government will hold a meeting March 26 at the North Augusta Community Center to take public comments on the environmental impact statement. The Rev. Jenkins says she'll be there.

"I don't think we have the ability to stop this project," she said, "but as Christians we're called to be good stewards of the Earth."

Reach Eric Williamson at (803) 279-6895 or eric.williamson@augustachronicle.com.

http://augustachronicle.com/stories/031603/met_237-6513.000.shtml

--From the Sunday, March 16, 2003 printed edition of the Augusta Chronicle

00029

From: Marvin I Lewis <marvlewis@juno.com>
To: <telh@nrc.gov>
Date: 3/25/03 8:40AM
Subject: Please forward these comments.

Mr. Timothy Harris
United States NRC
Dear Mr. Harris,

Please forward these comments to the proper docket.
Re: Draft Environmental Impact Statement on the planned new Mixed Oxide Fuel Fabrication Factory that the USDOE wants to build at SRS, Savannah River Nuclear Site.

I have been looking at the DEIS, which is very long, and comments which are being prepared by other commenters. Nothing that I state herein should be construed as contradiction to other commenters, pro or contra, but evaluated for actual value to the public: e. i. . . Do my comments increase the safety of the public if implemented?

There are many considerations which should be addressed in comments and the DEIS: economics, safety to the public, environmental justice, endangered species, etc. . . . I shall limit my comments to safety to the public. I do not have time and energy to comment comprehensively.

I have been commenting on NRC regulations since Director Minogue accepted my comments on the transportation of spent fuel, and amended a proposed rule to reflect the dangers that failed zircaloy coating might present in an accident or leak of a transport cask for spent fuel. That is over three decades ago.

This thrust for MOX fuel presents some of the very same problems. Although the DEIS is long, the DEIS does not look at some of the most tendentious problems. The first problem is one that is in the news daily: 'dirty bombs'.

Since the news media asked the question about mixing conventional explosives with high level radioactive wastes into a 'dirty bomb', the NRC seems to have used every maneuver to avoid addressing that concern. The problem of dirty bombs, spent fuel dispersed by conventional explosives, has a thousand and one tentacles. The dirty bomb is low technology. The dirty bomb is cheap, cost-wise. The dirty uses materials that are local to any area with a nuclear reactor or other radioactive source. Transportation of a dirty bomb presents little problems to a terrorist. This litany of dirty bomb weaponizations presents a serious reason that the NRC and the nuclear industry would like to avoid any discussion of dirty bombs.

Since the use of spent fuel and MOX in the nuclear fuel cycle presents a massive increase in the accessibility of dirty bomb-making materials, the time to ignore the dangers of increased accessibility to spent fuel and MOX for dirty bomb making use has passed. The time to face this problem is here.

An actual MOX fabricating factory will need to transport spent fuel and unused bomb pits for all over this Nation and probably other nations. This presents a prize that terrorists will strive to obtain. Many locals do have sufficient law enforcement and National Guard to meet these challenges. Many do not.

I shall not discuss economics, but protecting radwaste and bomb pit transport to a MOX fabrication facility may be a 'unfunded federal

00030

Pentecost, Edwin D.

From: wildlifejustice@yahoo.com
Sent: Tuesday, April 15, 2003 12:24 PM
To: opa2@nrc.gov
Subject: MOX Fuel Usage and transport in U.S.

Below is the result of your feedback form. It was submitted by Richard Justice (wildlifejustice@yahoo.com) on Tuesday, April 15, 2003 at 13:24:11

30-1

comments: To whom it may concern, I Scott Justice of 400 Exley Rd. S., Rincon Ga 31326, do oppose any effort for the interests, (private or public) of the United States, to utilize purchase or transport MOX nuclear materials. We must be willing to realize the cost does not out way the good. First, in the age of terrorism, piracy of these goods is a real threat to their transport. Secondly, the margin for error inside a energy producing facility is greatly reduced, especially in frozen core reactors such as McGuire Nuclear Station in Charlotte, NC. Science is not in agreement about what effect this fuel may have on such a reactor. Thirdly, Utilization of these MOX materials would waste money in the necessary retrofit of our nuclear facilities. This may just be a convenient excuse to funnel taxpayers money into the nuclear industry. The time has come for our country to accept that nuclear is not the future and begin investing in what we know makes sense and stop listening to po! we l r companies and their representatives when they talk about sticking more money into their already wet beaks. I wish to be put on record as opposing any effort to utilize MOX fuel and urge those of authority to act with common sense and not political expediency. Richard Justice

30-2

organization:
address1: 400 exley rd s.
address2:
city: rincon
state: GA
zip: 31326
country:
phone: 912-754-1656

30-3

29-1
CONT.

29-2

29-3

mandate which is disallowed under present US Congressional budget rules. The NRC should address this uninded federal mandate in the DEIS. I shall not discuss herein how and why the transport of spent fuel and bomb pits may be attractive terrorist targets as I do not like my comments to serve as a 'cook book' for terrorist activities. There are too many sites on the internet that do those activities too well.

Although transportation casks have been looked at in regulation and testing for many years, the form of the spent fuel and the bomb pits have taken a back seat. The spent fuel has often failed in use and presents a peculiar problem in transportation and decanting. The design of the transportation casks often do not address the failures and the type of failures of the spent fuel. Any assumption that the fuel will be in a form which does not complicate accidents and handling may be flawed and needs to be addressed. This was the kernel of my comments decades ago on spent fuel casks and is still valid

I do not wish to discuss economics, but its greedy head emerges in the discussion of the nuclear fuel cycle. The US economy is reeling for many causes. Can we be sure that there will be financial arrangements sufficient to decontaminate the 4 Duke reactors in the event of a financial collapse? Will these Duke reactors provide enough spent fuel to make MOX fabrication economical if the demand for electricity decreases? I expect that the NRC will address this financial collapse and electricity demand problem in relation to money for decontamination requirements.

I really believe that a Programmatic DEIS is more appropriate to the MOX problem than several DEIS's which do their best to avoid a overall problem.

Respectfully submitted,
Marvin Lewis
<marvlewis@uno.com>
3133 Fairfield St.
Phila., PA 19136
215 676 1291

CC: <nirs.se@mindspring.com>

Mr

Ernest S. Chaput
108 Cherry Hills Drive
Aiken, SC 29803

Attachment:

Wind Sector	Wind Probability (%)	Total Population	Predominately Minority or Low-Income Sector (Yes-No)	Impacted E-J Population	Impacted Other Population
S	0.095	20,996	Yes	735	
SSW	0.085	17,515	Yes	1,138	
SW	0.085	18,010	Yes	1,711	
WSW	0.070	25,049	Yes	1,753	
W	0.065	55,221	No		3,037
WNW	0.050	309,928	50-50	7,748	7,748
NW	0.050	186,214	No		9,311
NNW	0.060	71,488	No		4,290
N	0.070	84,204	No		5,894
NNE	0.070	42,704	No		2,989
NE	0.080	35,409	No		2,833
ENE	0.090	75,949	No		6,835
E	0.080	44,386	Yes	3,551	
ESE	0.085	13,978	No		909
SE	0.085	33,652	Yes	1,178	
SSE	0.050	7,770	Yes	233	
Total	1.000	1,042,483		24,883	37,011

Wind Probability – Estimated from Figure 3.5

Total Population by Sector – From Table E-8

Predominately Minority or Low-Income Sector – By examination of Figures 4.1 and 4.2

The WNW sector includes the city of Augusta and Columbia County, GA. This large sector has diverse demographics, but is estimated to be about 1/2 minority and/or low income and about 1/2 all other.

31-1

4/21/2003

Page 1 of 2

00031

Mr

Pentecost, Edwin D.

From: Ernest S. Chaput [esandc@prodigy.net]
Sent: Sunday, April 20, 2003 10:50 PM
To: TEH@NRC.gov
Subject: Draft MOX facility EIS - Environmental Justice Analysis

April 10, 2003

Mr. Tim Harris
Division of Waste Management
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Draft Report for Comment – Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina

Dear Mr. Harris:

During NRC's March 26 public meeting on the subject document we had a brief opportunity to discuss the environmental justice section in the Draft EIS. The purpose of this letter is to summarize my questions and solicit your assistance in understanding the material included in the draft EIS.

Section 4.3.7.3.3 (page 4-57) of the draft EIS states "In the unlikely event of a tritium release at the PDCF or an explosion at the MOX facility, the communities most likely affected would be minority or low income, given the demographics within 80 km (50 mi) of the proposed MOX facility." The data contained in the draft EIS does not support that conclusion. To the contrary, I have used your data to perform a summary analysis which finds that minority and low income populations are less likely than other populations to be affected by an accident in the MOX or PDCF facility. I am not stating that an environmental justice concern does or does not exist, rather I contend that the data in the draft EIS does not support your conclusion.

In performing my analysis I considered wind direction and probability (Figure 3.5), population by sector (Table E.8) and areas with disproportionate minority or low income population concentrations (Figures 4.1 and 4.2). I used a probabilistic approach to determine the number of persons in each sector downwind of an SRS accident (wind direction and total sector population). I sorted the sectors as minority-low income or other, and totaled the number of people in each category. My analysis resulted in:

- 24,900 persons in predominately minority and/or low income sectors downwind of SRS and
 - 37,000 persons in sectors which are not predominately minority and/or low income downwind of SRS
- If offsite health impacts result from windborne contamination, then there is no disproportionate impact on minority-low income populations. A complete copy of my analysis is attached.

While my analysis is simplistic, it is sufficient to identify the need for a more complete analysis and discussion of this important issue in the EIS. Specifically an analysis of the population in each census block would be helpful, including the effects of distance (dispersion, decay and dilution) from SRS. If your preliminary conclusion is supported, it should be carefully considered in NRC's decision-making. If the preliminary conclusion is not supported, then the discussion should be removed from the final EIS.

Thank you for the opportunity to raise this question and I look forward to your response. Please contact me if you have any questions or comments (telephone 803-648-5402, email esandc@prodigy.net, fax 803-649-5774).

Sincerely

4/21/2003

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Public Meeting on Proposed MOX Facility Draft Environmental Impact Statement

Docket Number: (not applicable)

Location: Savannah, Georgia

Date: Tuesday, March 25, 2003

Work Order No.: NRC-800 Pages 1-137

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

3 + + + + +

4 PUBLIC MEETING ON PROPOSED MOX FACILITY

5 DRAFT ENVIRONMENTAL IMPACT STATEMENT

6 + + + + +

7 TUESDAY,

8 MARCH 25, 2003

9 + + + + +

10 SAVANNAH, GEORGIA

11 + + + + +

12 The Public Meeting was held in the

13 Conference Room of the Georgia Coastal Center at 7:05

14 p.m., Francis "Chip" Cameron, Facilitator, presiding.

15

16 PRESENT:

17 FRANCIS (Chip) CAMERON

18 LAWRENCE KOKAJKO

19 TIM HARRIS

20

21

22

23

24

25

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1 P-R-O-C-E-E-D-I-N-G-S
2 MR. CAMERON: Okay, good evening,
3 everyone.
4 (Certain people respond.)
5 MR. CAMERON: I'd like to welcome you to
6 the Nuclear Regulatory Commission's public meeting
7 tonight. My name is Chip Cameron. I'm the Special
8 Counsel for Public Liaison at the Nuclear Regulatory
9 Commission. And we're going to try not to use a whole
10 lot of acronyms tonight.
11 UNIDENTIFIED: Thank you.
12 MR. CAMERON: And if we do, we'll explain
13 them. Everybody's in support of no acronyms.
14 UNIDENTIFIED: No acronyms.
15 MR. CAMERON: But one we will use is -- is
16 NRC for Nuclear Regulatory Commission.
17 And the subject of tonight's meeting is
18 the draft environmental impact statement that the NRC
19 has prepared to help the NRC in its decision-making on
20 the application that we received from -- from DCS to
21 construct a mixed oxide fuel fabrication facility.
22 And it is my pleasure to serve as your facilitator for
23 tonight's meeting. And in that role, I'm going to try
24 to help all of you have a productive meeting tonight.
25 And I just wanted to cover three items of

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1 meeting process before we get -- get on with the
2 substantive discussions. And the first thing I'd like
3 to talk about is the purpose of the meeting, why is
4 the NRC here tonight. And we have several purposes.
5 One is to clearly explain to all of you what the NRC's
6 process is for evaluating this application that we
7 have for the mixed oxide fuel facility, and also to
8 explain what the findings are in this draft
9 environmental impact statement that we've prepared.
10 Second purpose is to hear your
11 recommendations, your concerns on this process and the
12 draft environmental impact statement. And a related
13 purpose is to try to give you information tonight so
14 that if you want to submit a written comment to the
15 NRC on this draft environmental impact statement,
16 you'll have more information, be better equipped to do
17 that. And the NRC staff will be explaining how to
18 submit written comments. But just let me emphasize
19 that anything we hear from you tonight will carry the
20 same weight as a -- as a written comment. And, of
21 course, you can speak tonight and also submit a
22 written comment.
23 And the ultimate goal here is to have your
24 comments tonight, the comments that we get at other
25 public meetings that we're doing, the written

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questions that you have. And then we'll go back to the -- to the formal comments.

The third item that I wanted to talk about are ground rules for the meeting. And they're very, very simple. If you have a question, please signal me and I'll bring you this microphone. And please ask us your question or make a comment and tell us who you are and what your affiliation is, if appropriate. And we have a sign-up sheet for people who want to make a comment, make a statement tonight, and that's out in front. And I think everybody's been -- been signing up and indicating whether they want to -- to speak tonight.

I would ask you, in your -- your formal comments, to try to keep it to -- to five minutes. That's a guideline. I think that that is plenty of time. But we do want to make sure that everyone has a chance to speak tonight who wants to talk. So if you keep it to five minutes, then that will allow everybody else in the room to have their -- their opportunity. And we realize that there are a lot of other things, important events going on tonight in the city. And if -- if you need to go early and you do want to talk, can you just indicate -- you'll have some time when the NRC first starts to talk. Could

6

comments, to have those comments help us to make our decision on finalizing this draft environmental impact statement, and also in making a decision on the application that we have for -- to construct the mixed oxide fuel facility.

In terms of the format for the meeting, the second item I want to cover, we're going to have some brief NRC presentations, just to give you some -- some background, and then go out to you for questions that you might have, to make sure that you understand the process. And we'll try to answer those clearly. We're also asking for -- for formal comment tonight. Anybody who wants to say any -- anything on the draft EIS, we're going to give you an opportunity to do that. And as I mentioned, we are taking a transcript, so your comments will be -- will be recorded.

We thought that it might be useful -- usually what we do is we have the NRC presentations, and then we have question and answers, and then we just have people comment. And we thought what we'd do is have some comments -- we'd do the question and answer, have some comments, and then go back and have another question and answer session. There may be some things that the NRC hears in the comments that they'll want to clarify for you, there may be

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1 you just indicate on the sheet that you signed in that
2 you want to -- to speak early. And I would just ask
3 for everybody's indulgence to let those people who
4 have to leave early -- I'm going to put them on first,
5 and we'll hear their comments, and then they can --
6 they can get on with whatever else they need to do.
7 And I would also ask that only one person
8 at a time speak. That will allow us to -- Melanie is
9 our stenographer. She's taking the transcript. That
10 will allow us to get a -- a clean transcript so that
11 you can recognize who's talking. But more
12 importantly, it will allow us to give our full
13 attention to whomever has the floor at the moment.
14 And I just want to thank all of you for --
15 for being here. The NRC has an important decision to
16 make, and this is going to be helpful to us. And
17 we'll try to keep the meeting as informal as possible.
18 We need to do the microphones because we're taking a
19 transcript and -- so that we'll have a record of what
20 was -- what was said. But if you have something to
21 say, if you have questions, please -- please just say
22 that and what's on your mind, and relax, and we'll
23 just try to have a -- a nice, informal discussion and
24 give you some information and get some information
25 from you.

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1 The agenda is pretty -- pretty simple.
2 We're going to have two presentations. One is going
3 to be an overview of NRC responsibilities. And we
4 have Lawrence -- Mr. Lawrence Kokajko, right over
5 here, to do that. And then we're going to go to Mr.
6 Tim Harris, who's right here, who's going to talk
7 about the findings in the draft environmental impact
8 statement.
9 By way of introduction, Mr. Kokajko is the
10 acting Branch Chief of the Environmental and
11 Performance Assessment Branch in the Division of Waste
12 Management in the NRC's Office of Nuclear Materials,
13 Safeguards, and -- and Safety. He, before that, was
14 the Section Chief of a Risk Task Force that looked at
15 how you factor in risk into NRC decision-making. He's
16 been with the NRC for about 13 years. And he has a
17 Bachelor's in psychology from Memphis State, a
18 Bachelor's in applied science and technology, and also
19 a Master's in education from King State College. And
20 he'll be coming up in a minute.
21 And Tim Harris, who I think a lot of you
22 already know, is the Project Manager for the
23 environmental review on the construction application.
24 And he has a Bachelor's in civil engineering from the
25 University of Maryland.

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11

1 we do look forward to hearing from you this evening.

2 This meeting is one of a series of

3 meetings planned to inform the public about the

4 environmental impact statement for the proposed

5 facility, and to solicit public comment. There are

6 three handouts that you may have seen at the door.

7 The first is a set of slides; the second is the

8 agenda, with a facts sheet and a comparison of

9 alternatives; and the third one is a feedback form.

10 And we're very interested in getting feedback on how

11 this meeting went this evening. We would appreciate

12 you answering the questions on the feedback form and

13 either handing it back to an NRC staff person, or you

14 can staple the two together and drop it in the mail.

15 And the postage is prepaid. In fact, I'd like all the

16 NRC people, could you raise your hand one more time so

17 that everyone knows who to give it to.

18 (Certain NRC staff members respond.)

19 MR. KOKAJKO: And Adrienne is at the front

20 desk, too.

21 If you would like a copy of the draft

22 environmental impact statement, we have a limited

23 number here, and you may take one with you. If we run

24 out, we will mail you a copy. Next slide, please.

25 The presenters tonight will be myself, as

10

1 We also have other NRC staff here from our

2 regional office, our Office of General Counsel. David

3 Brown is the Project Manager for the safety aspect of

4 the construction authorization application. And I

5 think that if we need to clarify how all that comes

6 together, we -- we will for you. But environmental

7 review, Tim Harris; safety review, Dave Brown.

8 And with that, I'll just ask Lawrence to

9 -- to lead off for us. Lawrence is going to do his

10 piece, and then Tim will do his. And we'll try to

11 keep it brief. And then we'll go out to you for --

12 for questions, then.

13 Lawrence?

14 MR. KOKAJKO: Thank you, Chip.

15 Can everyone hear me? Thank you.

16 Good evening. My name is Lawrence

17 Kokajko, and I am the acting Branch Chief of the

18 Environmental Performance Assessment Branch in the

19 Division of Waste Management. And I'm very pleased to

20 be here this evening, and I'd welcome all of you to --

21 at this meeting.

22 We are meeting on the NRC's draft

23 environmental impact statement for the proposed mixed

24 oxide or MOX fuel fabrication facility. And I'd like

25 to thank you for taking the time to participate. And

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1 well as Tim Harris. Tim is a member of my staff. And
 2 we've included our phone numbers and Email addresses.
 3 You may contact us if you have any questions after the
 4 meeting. Next slide.

5 The purpose of tonight's meeting is to get
 6 your comments on the draft environmental impact
 7 statement. Before we hear your comments, we'll
 8 provide some information on the NRC's role in the
 9 proposed MOX project, and describe the *National*
 10 *Environmental Policy Act* and the EIS process, and how
 11 the EIS fits into NRC's decision-making. Tim will
 12 give an overview of the draft EIS, and then there will
 13 be time to answer questions. Next.

14 The proposed MOX facility would take
 15 surplus weapons plutonium and depleted uranium and
 16 make nuclear reactor fuel. Congress, in the *Defense*
 17 *Authorization Act of 1999*, gave NRC a role in the
 18 proposed MOX project. Specifically, NRC has licensing
 19 authority over the MOX facility, so our role is to
 20 make a licensing decision regarding the safe operation
 21 of that facility. NRC is an independent government
 22 agency, and our mission is to protect the public
 23 health and safety, and the environment, in the
 24 commercial use of radioactive material. Our role is
 25 different than the Department of Energy's.

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1 The Department of Energy's role in this
 2 project relates to implementing United States nuclear
 3 non-proliferation policy, including the disposition of
 4 surplus weapons plutonium. The Department of Energy
 5 also has responsibility to design, build and operate
 6 two facilities that support the proposed MOX facility.
 7 These two facilities are the pit disassembly and
 8 conversion facility, and the waste solidification
 9 building.

10 While the pit disassembly and conversion
 11 facility and the waste solidification building are
 12 considered in NRC's environmental review, it is
 13 important to note that NRC does not have the licensing
 14 authority over these two support facilities. That
 15 responsibility rests with the Department of Energy.
 16 NRC only has authority over the proposed MOX facility.
 17 Next slide, please.

18 I'd like to briefly describe the
 19 environmental impact statement process. The *National*
 20 *Environmental Policy Act* requires government agency to
 21 prepare an environmental impact statement for major
 22 federal actions such as the potential licensing of the
 23 proposed MOX project. An environmental impact
 24 statement presents environmental impacts of a proposed
 25 action, along with reasonable alternatives to that

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<p>1 proposed action.</p> <p>2 Note that the bolded areas are</p> <p>3 opportunities for public involvement in the process,</p> <p>4 and we consider this a very important -- very</p> <p>5 important part of the environmental impact statement</p> <p>6 process review. NRC's involvement with the MOX</p> <p>7 project started when DCS, the applicant, submitted an</p> <p>8 environmental report and request to construct the MOX</p> <p>9 facility. We published the notice of intent to</p> <p>10 prepare an EIS in the <i>Federal Register</i> in March of</p> <p>11 2001.</p> <p>12 During the scoping process, the public</p> <p>13 helped determine what issues would be addressed in the</p> <p>14 environmental impact statement, and now we have</p> <p>15 completed the draft environmental impact statement,</p> <p>16 and we have sent copies to approximately 550 people</p> <p>17 throughout the nation. We are currently in the</p> <p>18 comment period for the draft environmental impact</p> <p>19 statement. This meeting is being transcribed, and</p> <p>20 comments made here tonight will be included in the</p> <p>21 official comment record. The last slide shows that --</p> <p>22 shows several ways that you can submit comments to us.</p> <p>23 We will review and consider the public comments, and</p> <p>24 then finalize the environmental impact statement later</p> <p>25 this year. Next slide.</p>	<p>1 As I mentioned earlier, NRC's role is to</p> <p>2 make a licensing decision regarding the proposed MOX</p> <p>3 facility. I'd like to take some time to describe the</p> <p>4 licensing process, and how the EIS we're discussing</p> <p>5 tonight fits into NRC's decision-making.</p> <p>6 There are two decisions that NRC will have</p> <p>7 to make for the proposed MOX facility. The first is</p> <p>8 whether to authorize construction of the facility.</p> <p>9 The second is to -- is to whether to authorize</p> <p>10 operation of the facility. These decisions are shown</p> <p>11 in the middle of the slide.</p> <p>12 NRC's environmental review is shown at the</p> <p>13 top portion of the slide, and consists of preparing</p> <p>14 the final environmental impact statement. The final</p> <p>15 environmental impact statement will be used by NRC to</p> <p>16 decide whether to authorize construction, and later</p> <p>17 whether to issue the license to operate the MOX</p> <p>18 facility.</p> <p>19 NRC's safety review is shown at the bottom</p> <p>20 portion of the slide. The safety evaluation report</p> <p>21 for the construction authorization request focuses on</p> <p>22 safety assessment of the proposed design bases to</p> <p>23 determine if it meets NRC requirements. NRC's final</p> <p>24 environmental impact statement and safety evaluation</p> <p>25 report for construction authorization request will be</p>

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1 the basis for making a decision on whether to
2 construct the proposed MOX facility. We anticipate
3 that that decision could be made in the fall of 2003.
4 DCS plans to submit a license application
5 to operate the proposed MOX facility in October of
6 2003. The safety evaluation report on the operating
7 application and the FEIS will be the basis for making
8 a decision on whether to allow DCS to operate the
9 proposed MOX facility.

10 There will be two opportunities for
11 hearing. John Hull, with our Office of General
12 Counsel, is here and can answer questions related to
13 the hearing process.

14 John?

15 (Mr. Hull raises his hand.)

16 MR. KOKAJKO: To summarize, a single
17 environmental impact statement will be used to support
18 the decision to construct and later operate the
19 proposed MOX facility.

20 Now I would like to turn the presentation
21 over to Mr. Tim Harris of my staff. Tim is the lead
22 -- the lead for the environmental review for the
23 proposed project at the NRC.

24 Tim?

25 MR. HARRIS: Thanks, Lawrence.

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MS. BARCZAK: Question.

MR. CAMERON: Sara?

MS. BARCZAK: Mr. Harris, do we need --
are we able to ask the -- each presenter, or do you
want to wait until...

MR. CAMERON: Let's -- let's wait.

MS. BARCZAK: Okay.

MR. CAMERON: If you can just sort of keep
track of your questions.

MS. BARCZAK: That's fine.

MR. CAMERON: Okay, good.

MR. HARRIS: As Lawrence said, my name's
Tim Harris, and I'm the environmental review lead for
the MOX project. And I guess we've been doing this
for almost two years, and I think it's the third trip
down here. And it's a pleasure to see so many
friendly faces. Thanks for coming back again, and we
look forward to your comments.

What I'll do tonight is provide an
overview of the draft environmental impact statement.
You saw copies outside. It's a relatively thick
document. I'm going to try to hit the highlights. If
there's things that -- that we don't cover here,
they're certainly covered in the document. And if
there's something you want to know about, please feel

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1 free to ask a question. First off I'll describe the

2 alternatives that were considered, and then also

3 alternatives that were considered but not analyzed in

4 detail. Next slide, Dave.

5 To understand how we made that distinction

6 between alternatives we considered and alternatives

7 that we analyzed in detail, it's helpful to understand

8 the purpose and need related to the draft

9 environmental impact statement. As we stated in our

10 notice of intent, the purpose and need of the MOX

11 facility that's addressed in this draft environmental

12 impact statement is essentially the same as used by

13 the Department of Energy in its programmatic

14 environmental impact statements.

15 Specifically, the purpose and needs

16 relates to agreements between the United States and

17 Russia to reduce the threat of nuclear weapons by

18 assuring that those materials are converted into a

19 proliferation resistant form. And also to reduce the

20 risk of plutonium from falling into the hands of

21 terrorists or rogue states.

22 The draft environmental impact statement

23 evaluates two alternatives in detail. These are the

24 no-action alternative, and the proposed action. The

25 no-action alternative would be continued storage of

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1 surplus weapons plutonium at various DOE sites

2 throughout the nation. The no-action alternative is

3 used in the environmental impact statement as a

4 baseline for decision, as a comparison of different

5 alternatives.

6 The proposed action includes impacts from

7 the construction, operation, and decommissioning of

8 the proposed MOX facility. And it also includes

9 impacts from connected actions, such as the

10 transportation of surplus weapons plutonium, depleted

11 uranium, and MOX fuel. As Lawrence mentioned, our EIS

12 also includes impacts of two DOE facilities. I think

13 he made the point there that as far as EIS goes, we

14 included the evaluation of those DOE facilities to --

15 to get the full picture, but it's important to realize

16 that those facilities aren't part of our -- our

17 licensing review.

18 And again, those facilities are the pit

19 disassembly and conversion facility, which would take

20 plutonium metal and convert it into a powder or oxide

21 form. Waste solidification building would take waste

22 from the pit disassembly and conversion facility, and

23 also the proposed MOX facility.

24 We also included impacts associated with

25 the potential use of the MOX fuel in the environmental

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1 impact statement. For the proposed action, we also
 2 evaluated the differences in using a sand filter, as
 3 was suggested during scoping, with the use of HEPA
 4 filters, as we proposed by -- by the applicant, DCS.

5 As I said before, the purpose and need is
 6 used to determine which alternatives we evaluated in
 7 detail and those that were not. In addition to siting
 8 and technology options that were evaluated by Duke
 9 Cogema Stone & Webster in its environmental report,
 10 several other alternatives were raise during scoping,
 11 and also during meetings here last fall.
 12 Immobilization was initially considered to be a
 13 reasonable alternative; however, following the
 14 Department of Energy's admitted rod that we -- we
 15 talked about last September, DOE believed that an
 16 immobilization only approach would not meet the U.S.-
 17 Russia agreements; and therefore that alternative did
 18 not meet the purpose and need.

19 Another alternative that was discussed at
 20 our meetings last fall was deliberately making off-
 21 specification MOX fuel. This alternative involves not
 22 removing the impurities that generates a lot of waste.
 23 Basically, you leave the impurities in the powder form
 24 and make the fuel without removing them. The reason
 25 you remove the impurities is that it improves the

21

neutronics or basically makes the fuel more efficient.
 But again, you're not removing the impurities in this
 alternative, and you also wouldn't use the MOX fuel.
 Instead, the off-specification MOX fuel would be
 stored at spent fuel pools at existing reactor sites
 prior to geologic deposit -- prior to disposal at a
 geologic repository.

The impacts of this alternative are
 addressed qualitatively in the draft environmental
 impact statement. To summarize, the monetary costs of
 this alternative would be about the same as the
 proposed action. And, as I mentioned, this
 alternative would generate less waste. However, the
 benefits would be lower than the proposed action
 because electricity would not be produced. Therefore,
 the alternative of producing off-specification MOX
 fuel was not obviously superior to the proposed
 action. In addition, this alternative was viewed as
 not meeting the U.S.-Russia agreements.

For the proposed action and no-action
 alternative alternatives---next slide, Dave---the
 impacts associated with the following comprehensive
 list of technical areas were evaluated. The technical
 areas on the right are considered to have more
 significant impact or were issues that were raised

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The impacts to the public and workers from this no-action alternative---that is, continued storage---were considered to be low. There were no significant air quality or water quality impacts associated with this impact. As you can imagine, if you're just storing the material, you don't get a lot of air-water emissions. Also there was no significant waste management issues or environmental justice issues. Next slide, please.

UNIDENTIFIED: It's currently stored as a metal; right? Or if it's in different forms...

MR. HARRIS: Chip's going to tell you to -- to wait and ask questions. But the answer is it's in various forms.

MR. CAMERON: Yeah. I know there's a lot of detail here, but if you could just try to keep track and then we'll -- we'll get it all out, and that may be more efficient for us. But thank you.

MR. HARRIS: The next series of slides summarize the impacts of the proposed action. The proposed action includes impacts from three facilities, and those are: the proposed MOX facility; the pit disassembly and conversion facility; and the waste solidification building. I've presented the impacts in terms of increase or decrease relative to

during the public meetings. These are discussed in the body of the environmental impact statement in Chapter 4. To allow more time for public comment, as I said, I'll try to focus on the issues on the right. I'm sorry, your left. The issues on the right are discussed in appendices. Excuse me for getting...

Again, the things I'm going to talk about tonight are human health, air quality, hydrology, waste management, environmental justice. In addition, I'll summarize the impacts associated with transportation and potential MOX fuel use, and also summarize the cost-benefit analysis. Next slide.

First I'd like to summarize the impacts associated with the no-action alternative. The impacts for this alternative were previously evaluated by the Department of Energy. And the impacts included in our draft environmental impact statement are essentially a summary of those provided in earlier DOE environmental impact statement. The packet of information that we provided with you has a comparison of comparison tables which shows the no-action alternative and the proposed action. So if you want to look at numerical differences, we provided that in your handout. I won't get into specific numbers here, but you have that information.

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Accidents have the greatest consequences of the impacts that we evaluated in our environmental impact statement. Two conservative scenarios were evaluated for a number of potential accidents. The short-term scenario assumes that people are exposed by inhaling contaminant material in a plume. We also evaluated a long-term scenario, which includes the impacts of the -- of the short-term scenario, but also includes exposures from eating crops that could become contaminated. And this exposure period was assumed to be one year following an accident.

The potential accidents are evaluated in terms of risk. The classical definition of risk, just to, I guess, give a little risk education, is: The risk is the probability of the event, times the consequences, equals risk.

In keeping with NRC's mission to protect public health and safety, we want to insure that the overall risk to the public is maintained to be very small. Therefore, events that have significant consequences, like -- like the ones that are presented in the environmental impact statement, are required to be made highly unlikely through design safety features. These design safety features are the topic of our safety evaluation report. Remember, Lawrence

24

current conditions at the Savannah River Site. And, again, numerical values are provided in the table that you have as part of your handouts.

There would be no adverse chemical or radiological impacts during construction. From operation of the three facilities, the annual public collective dose would increase by about 11%. And, while that may seem significant, the next slide I'll show you will help put that in perspective. There would also be no significant impacts from chemical exposures during normal operation.

This slide shows the radiation dose from several sources, and also the NRC public dose limit. The average annual natural background, the top line, includes radiation from the earth, and that that comes from space, and is about 360 millirem. And a millirem is just a unit of radiation exposure or dose. The annual NRC public dose limit, the second line, is 100 millirem. To put it in a perspective, if you -- if you got a chest X-ray you'd get about six millirem. So the bottom line is the annual dose to the public from the three facilities, and that's less than one millirem. So even though it's 11% of -- of what's the public (sic) is currently receiving from living next to the Savannah River Site, it's a very small number.

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1 had the two slides; one was the environmental piece,
2 one was the safety piece. And those -- those types of
3 safety issues, to make sure that the accidents are
4 highly unlikely, are discussed in that -- that
5 document.

6 In March we notified a number of
7 stakeholders that we had identified an error in the
8 accident consequences due to a computer code bug. And
9 we felt that it was important to inform stakeholders
10 early in the process. I think actually I found out
11 about it on a Monday afternoon, and we issued a letter
12 on Thursdays. So we felt it was very important to --
13 to get the information out to you in a timely manner.

14 During subsequent review we also found an
15 additional error in wind data that DCS had provided in
16 its environmental report. Essentially a problem
17 related to units. They had reported meters per second
18 and the data was actually miles per hour. These
19 errors don't change our conclusions or preliminary
20 recommendations. The numbers presented on the slides
21 and in the comparison tables are updated, and we are
22 in the process of issuing errata sheets. Hopefully
23 those will go out next week. So by attending this
24 meeting you'll -- you'll receive errata sheets. And
25 we're also post that (sic) on the Web and -- and try

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1 to get it out to people. Another thing we did was
2 extend the comment period by 30 days, so comments are
3 due now by May 14th. So we tried to be very proactive
4 in engaging the public in this.

5 The hypothetical events that caused the
6 highest consequences are a MOX explosion from a
7 hypothetical explosion. And we estimated that this
8 would result in less than 50 latent cancer fatalities
9 for the short-term scenario, and less than 200 latent
10 cancer fatalities for the one-year scenario. The
11 hypothetical tritium fire at the pit disassembly and
12 conversion facility, that number was previously 400.
13 As is stated in the environmental impact statement,
14 the short-term impacts would be less than one latent
15 cancer fatality, but for the one-year scenario we're
16 estimating 100 latent cancer fatalities could be
17 produced if that accident did happen.

18 These estimates do not credit any
19 intervention actions. That is, it's assumed that the
20 crops become contaminated and the people eat them.
21 Obviously, that may not happen, but we try to be very
22 conservative in our analysis.

23 The probability of these hypothetical
24 events occurring is still considered to be highly
25 unlikely. And again, through the use of preventative

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1 and mitigative features that are part of the safety
 2 evaluation that NRC is currently doing. The
 3 consequences of these events are significant.
 4 However, the overall risk to the public is still
 5 considered to be very small because we're considering
 6 those to be highly unlikely events. Next slide.

7 Air quality relates to compliance with the
 8 *National Ambient Air Quality Standards for Emissions*
 9 *of Chemicals*. Air quality at the Savannah River Site
 10 already exceeds the particulate matter 2.5 or PM 2.5
 11 standard. The proposed action would result in an
 12 increase of about .1% during construction, and that's
 13 largely due from earth moving activities, and .01%
 14 increase during operation.

15 However, EPA has delayed implementing the
 16 PM 2.5 standard. And if and when attainment plans are
 17 developed by the State of Georgia and South Carolina,
 18 SRS could be required to develop some plans to meet
 19 those standards. It's not unlike areas that are non-
 20 attainment areas. Say Atlanta is a non-attainment
 21 for, say, ozone. And during the winter they burn
 22 reformulated gasoline as a mitigated measure. Those
 23 type of things could be implemented. Next slide,
 24 Dave.

25 Surface water would not be significantly

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1 affected during construction through the use of
 2 sedimentation control features. And there would be no
 3 direct operational discharges to surface water. Waste
 4 from the MOX facility would be managed by the Savannah
 5 River Site, and discharges from existing Savannah
 6 River Site waste management facilities are not
 7 expected to change significantly as a result of
 8 processing the additional MOX waste.

9 Groundwater would be used during
 10 construction and operation. Approximately 37% more
 11 groundwater would be used in the "F" area from the
 12 proposed action. And there is existing well capacity
 13 there, and we don't feel that using this water will
 14 create a significant impact either on groundwater
 15 quality or its availability.

16 There would be no significant impact on
 17 the current SRS waste management capability from
 18 processing waste from the proposed action. Operation
 19 of the three facilities would generate about 300% more
 20 TRU waste than is currently being generated at SRS.
 21 The TRU waste is planned to go to the waste isolation
 22 pilot plant in New Mexico for disposal. The volume of
 23 TRU waste at the waste isolation pilot plant would be
 24 about 3% of the capacity of that facility.

25 Operation of the three facilities would

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<p>1 increase low level waste by about 32% above what is</p> <p>2 currently being produced at the Savannah River Site.</p> <p>3 And non-hazardous solid waste would be about 60%.</p> <p>4 But, again, the SRS has capacity to handle this waste,</p> <p>5 and actually the increase is -- is a small percentage</p> <p>6 of what they can manage. So we don't think that the</p> <p>7 waste management impacts are significant. Next slide,</p> <p>8 Dave.</p> <p>9 An environmental order -- sorry. Excuse</p> <p>10 me. An executive order issued by President Clinton in</p> <p>11 1994 directed federal agencies to address any</p> <p>12 disproportionate -- excuse me, disproportionately high</p> <p>13 or adverse human health impacts to low income and</p> <p>14 minority populations. Impacts from constructing and</p> <p>15 operating the three facilities are not high or</p> <p>16 adverse. Therefore, there would be no environmental</p> <p>17 justice concern associated with either constructing or</p> <p>18 operating the proposed MOX facility.</p> <p>19 However, due to the prevailing wind</p> <p>20 directions, there is a potential impact to low income</p> <p>21 and minority populations in the highly unlikely event</p> <p>22 that a significant accident would occur. And we've</p> <p>23 put together mitigation measures to help reduce those</p> <p>24 impacts to those populations. Again, we think the</p> <p>25 risk associated with these potential accidents is</p>	<p>small to -- to any population.</p> <p>Transportation of material was identified</p> <p>during scoping as a significant concern to many</p> <p>stakeholders. I see Kirk is nodding his head over a</p> <p>conversation before the meeting. Transportation</p> <p>analysis includes shipping plutonium from various DOE</p> <p>sites to the Savannah River Site. It also includes</p> <p>shipping depleted uranium from an enrichment (sic)</p> <p>facility to a -- another conversion facility, where it</p> <p>would be processed into an oxide form, and then that</p> <p>depleted uranium oxide would go to the Savannah River</p> <p>Site. Our analysis also includes shipping fresh MOX</p> <p>fuel from the Savannah River Site to a generic Midwest</p> <p>reactor. And the transportation of -- of spent MOX</p> <p>fuel---that is, MOX fuel that has been in the reactor--</p> <p>--is also discussed generically.</p> <p>To summarize, there's not a -- we found</p> <p>that the impacts associated with all this</p> <p>transportation are not significant. There would be</p> <p>less than one latent cancer fatality from routine</p> <p>transport to the public along transportation routes,</p> <p>and also to transportation crews. Hypothetical</p> <p>accidents result -- during transportation would result</p> <p>in insignificant impacts.</p> <p>The potential impacts associated with</p>

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1 using MOX fuel are also discussed generically in the
 2 draft environmental impact statement. The collective
 3 dose to members of the public from normal operations
 4 would be essentially the same, whether the reactor
 5 used conventional, low enriched uranium fuel, or a
 6 mixture of low enriched uranium fuel and MOX fuel.

7 We also looked at design-base accidents
 8 and the risks associated with developing a latent
 9 cancer fatality between the two types of fuels; that
 10 is, low enriched uranium fuel or a mixture of MOX
 11 fuel. The risk varied from 6% lower to about 3%
 12 greater, depending on the event that was analyzed.

13 We also looked at various beyond-design
 14 basis accidents. And the risk there would vary from
 15 about 7% lower to about 14% greater.

16 We have received an application from Duke
 17 Power to place lead test assemblies in either their
 18 Catawba or McGuire reactor, and we will do additional
 19 site-specific evaluations before any lead test
 20 assemblies are placed in a reactor, or before MOX fuel
 21 is used in any reactor.

22 The draft environmental impact statement
 23 -- and I'm almost done, so bear with me. The draft
 24 environmental impact statement includes a cost benefit
 25 analysis of the proposed action. And we've looked at

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1 it both on a national scale and a regional scale. The
 2 cost benefit analysis is used by the NRC in
 3 determining its preliminary recommendation.

4 The national cost, the information on the
 5 left, would be about \$3.85 billion. The national
 6 benefits would include the safe use of excess
 7 plutonium, and also employment and income. On a
 8 regional scale---and, again, the region we looked at
 9 is -- is essentially a 15-county area surrounding the
 10 Savannah River Site---the proportion national cost
 11 within that region would be about \$8 million. The
 12 regional environmental costs are considered, and the
 13 environmental impacts that are presented in the draft
 14 environmental impact statement are not considered to
 15 be significant. The regional benefits would be about
 16 \$350 million in income during construction, and \$640
 17 million during operation. Next slide, Dave.

18 In conclusion, the impacts of the proposed
 19 action are generally not significant. Accident
 20 impacts from the pit disassembly and conversion
 21 facility and the MOX facility are significant.
 22 However, the probability of these accidents is
 23 considered to be highly unlikely. And, again, our
 24 regulations and our mission, as far as protecting the
 25 public health and safety, requires those accidents to

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1 be highly unlikely.
 2
 3 Therefore, the overall risk to the public
 4 is considered to be very small. There is a potential
 5 environmental justice concern, should an accident
 6 occur. And part of the reason we're out here is to
 7 hopefully get comments on whether the mitigation
 8 measures that we proposed are on target, or whether we
 9 should consider other things.

10 Staff's preliminary recommendation is the
 11 proposed MOX facility with appropriate mitigation
 12 measures to reduce the potential impacts. Before
 13 making any decision, the NRC will consider comments on
 14 the draft environmental impact statement. We'll
 15 prepare a comment summary document so that you can see
 16 how your comment was addressed, and then we'll revise
 17 the environmental impact statement as appropriate.

18 NRC will finalize the EIS and complete its
 19 safety evaluation report, and decide whether or not to
 20 authorize construction of the MOX facility. When DCS
 21 submits an operating license application, NRC will
 22 review that application and prepare a second safety
 23 evaluation report. NRC will only grant authority to
 24 operate the MOX facility if it can be shown to be
 25 safe.

The next slide shows ways that you can

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1 submit comments. Again, as I mentioned, we've
 2 extended the comment period to May 14th. You can mail
 3 comments to Mike Lesser; you can send me an Email; you
 4 can also submit comments on the Web; and then you can
 5 fax comments to me. And again, all the comments we
 6 hear tonight will be part of the official comment
 7 record. And I thank you and look forward to hearing
 8 your comments.

9 MR. CAMERON: Okay, thank you, Tim. And
 10 thank you all for your patience in sitting through
 11 what is a lot of detail, but...

12 MR. HARRIS: I tried to hit the high
 13 points.

14 MR. CAMERON: ...but I was just going to
 15 say Tim tried to hit the high points on it. But --
 16 and if we need to go back to a particular slide for
 17 your question, we'll -- we'll do that.

18 One important issue that I wanted to make
 19 sure that people understand, though, is that in
 20 addition to the NRC's evaluation -- the environmental
 21 evaluation and consideration of public comments in
 22 that, before we make a decision on whether to grant or
 23 to deny the construction authorization, there's the
 24 safety evaluation that has to be completed and
 25 combined with the environmental evaluation; is that

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1 correct?
 2 MR. HARRIS: Right.
 3 MR. CAMERON: Okay.
 4 MR. HARRIS: And that's -- I think that's
 5 an important -- important point.
 6 MR. CAMERON: Okay. Good.
 7 Sara, you had -- probably have a lot of
 8 questions. I know you had -- had one.
 9 MS. BARCZAK: I'll only ask one to start
 10 with. A clarification, I think, from Lawrence.
 11 What are the remaining chances for us to
 12 have public input in this process? I only -- I saw
 13 two public comment boxes. But I was hoping he could
 14 elaborate on that.
 15 And then secondly---and Dave might answer
 16 this---is there any input in the safety evaluation
 17 review? So...
 18 MR. HARRIS: I'll try to answer those, and
 19 if either -- either gentleman want to...
 20 MS. BARCZAK: Okay.
 21 MR. HARRIS: ...add more, they can.
 22 Essentially, the process that we talked
 23 about, the last public involvement is what we're doing
 24 right now. So we're out here trying to solicit
 25 comments, you know. We've tried to have been very

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1 proactive in getting information out to the public.
 2 I'll try to talk louder. Can you hear me,
 3 Chip?
 4 UNIDENTIFIED: We can hear you.
 5 MR. HARRIS: Okay.
 6 MR. CAMERON: Is it -- is it coming
 7 through, Melanie, onto the...
 8 COURT REPORTER: Is Tim coming through?
 9 Is that what you're asking me?
 10 MR. CAMERON: Yeah.
 11 COURT REPORTER: Go ahead and speak.
 12 MR. HARRIS: Yeah, it sounded -- I guess
 13 it's back now.
 14 MR. CAMERON: All right.
 15 MR. HARRIS: Your other comment related to
 16 public input during the safety evaluation report. And
 17 typically we don't solicit comment on the draft safety
 18 evaluation report. But we do have public meetings,
 19 trying to keep the public informed. And we're always
 20 receptive to comments. But there's no formal process
 21 as part of that review.
 22 MS. BARCZAK: Not like this?
 23 MR. HARRIS: Not like this. But again, we
 24 do have meetings on the safety evaluation report where
 25 the public can attend and ask questions and express

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1 views.

2 MR. CAMERON: And can you -- can you just

3 tell people a little bit more about that? And I don't

4 know if John wanted to talk to that or not, but...

5 MR. HULL: I just wanted to add something

6 in clarification.

7 MR. CAMERON: ...unfortunately we need to

8 get you on the microphone.

9 MR. HULL: On the safety review that's now

10 ongoing, there is a hearing that's also underway, a

11 legal hearing before the Atomic Safety and Licensing

12 Board. And there are two intervenor groups which are

13 -- do have several contentions that have been admitted

14 by the board on safety issues. So that's a form of

15 public input, although limited.

16 MR. CAMERON: Okay. And I guess just to

17 finish that up, when the staff meets with the

18 applicant on the safety evaluation issues, as you

19 said, those meetings are open, but they're usually --

20 are they usually in -- in NRC headquarters or...

21 MR. HARRIS: Well, we have them in

22 different places. And we have meetings in -- in North

23 Augusta; also at headquarters.

24 MR. CAMERON: And if Sara or anybody else

25 wanted to find out when those meetings were going to

39

1 be held...

2 MR. HARRIS: They're noticed on the NRC

3 Web page which I'm sure Sara is very familiar with, at

4 the meeting -- meeting notice section.

5 MS. BARCZAK: So if we write to you, then

6 that will be included in the official public comment

7 period only tonight?

8 MR. CAMERON: Let me get you -- I'm sorry,

9 we couldn't hear you, plus we need to get it on the

10 transcript. It's a nuisance, but...

11 MS. BARCZAK: So if we write to you after

12 this meeting, that will be included in the official

13 public commentary, or it won't be?

14 MR. HARRIS: Yes, it will. Up through May

15 14th. You can write to me; you can send me an Email.

16 If you go to the Web, there's a space there for you to

17 submit comments or you can fax them to me. So there's

18 lots of ways to hopefully -- for you to send comments.

19 MR. CAMERON: Let's -- let's go to Mr.

20 Dunham and then we'll come over. Okay.

21 COURT REPORTER: Be sure and give your

22 name when you start speaking, please.

23 MR. CAMERON: Oh, yes, please -- please do

24 that. In fact, let me get yours.

25 MS. PEARSON: Kelli Pearson.

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1 should have had all of our elected officials. This --
 2 we shouldn't have had room in this little building
 3 right here to hold the people. The seriousness of it,
 4 they all should know about what's going on. And
 5 that's the question I wanted to ask, so far as what we
 6 did so far as getting the communication out, you know,
 7 for them to be here speaking, you know, one way or the
 8 other.

9 MR. CAMERON: Okay. Thank you, Mr.
 10 Dunham.

11 Tim?

12 MR. HARRIS: To -- people like yourself,
 13 Mr. Dunham, that attended previous meetings, we mailed
 14 you a copy of the environmental impact statement. We
 15 also mailed you an invitation to these meetings. We
 16 also have an electronic newsletter that's broadcast to
 17 hundreds of people. I don't know what the exact
 18 number is. But a large number of people get that. We
 19 also advertise in the paper. So we -- we tried to do
 20 everything we could to get people out.

21 MR. COBB: It was in the paper last
 22 Friday. Unfortunately it told us the wrong day, but
 23 it was in the paper. It was in...

24 MR. CAMERON: We probably should get...
 25 MR. COBB: It says Monday.

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1 MR. CAMERON: Okay. Thanks, Kelli.

2 Mr. Dunham?

3 MR. DUNHAM: Chester Dunham.

4 You did say this is the last meeting of
 5 its kind? The type of meeting that we're having
 6 tonight, you said something...

7 MR. HARRIS: For the draft environmental
 8 impact statement we're -- we're holding two additional
 9 meetings later this week. But I don't believe that
 10 we're going -- planning to...

11 MR. CAMERON: Maybe we can get you up
 12 there. Because otherwise people are going to have to
 13 speak into the microphone so we get it on the
 14 transcript.

15 MR. DUNHAM: The only thing I want to ask
 16 at the present time is that, you know, this is real --
 17 this is some serious stuff.

18 MR. HARRIS: Uh-huh.

19 MR. DUNHAM: And what I'm saying, when I
 20 look around I want to see what you all did so far as
 21 getting the information out to the public. You know,
 22 I don't see no -- I see one elected official, I think.
 23 Alderman Pete McKacus (phonetic), I saw him earlier.
 24 Right. He's over there. And I think that's all.

25 You know, this -- serious as this is, we

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notice in the newspaper. And if someone showed up yesterday, then they could have come today. It's better that it wasn't yesterday, it was going to be tonight, you know.

MR. HARRIS: You know, and we also try to outreach, you know, to Sara, who's -- who's very connected to community, to have her help disseminate the word, as well, and solicit, you know, to Sara how -- how can we let people know better.

MR. CAMERON: But let's -- let's go back to Mr. Dunham's point, and maybe there's something we can do about this. I think his concern was to make sure that the elected officials here knew about this meeting. And the meeting is less important than -- than knowing that there is this process going on, that there is a draft environmental impact statement out for review.

Can we talk through various means, talking to Sara, Mr. Dunham, can we get a -- and Councilman, can we get a list of the elected officials in the City of Savannah, and make sure that we send them the fact that this is out for comment, if we haven't done that already?

MR. HARRIS: Well, if they attended meetings, any previous meetings, we mailed it to them.

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MR. CAMERON: We probably should get that on the transcript. I don't know what's the matter with this microphone. I don't know whether we're going to be able to...

COURT REPORTER: I think if -- if they'll stand up and just speak standing, without the...

MR. CAMERON: Without the mic, you'll be able to get...

COURT REPORTER: ...without the stick, that I'll be able to get them; yes.

MR. COBB: Okay. I'll make a comment...

COURT REPORTER: But I do need your -- I do need your name, though.

MR. COBB: Yes. Kirk Cobb. And the comment I have is the -- the notification for this meeting was in Friday's Savannah Morning News. And -- but it said 7:00 to 10:00 on Monday, and of course that was wrong, it was Tuesday.

MR. HARRIS: Yeah, we advertise in the paper, but that wasn't our advertisement. That was -- that was an article that was done by the paper.

MR. COBB: Right.

MR. HARRIS: And I don't -- I don't believe it was reviewed by us.

MR. COBB: Right. There was a public

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1 MR. CAMERON: But I don't think they have.

2 MR. HARRIS: But if they -- if they
3 haven't, then yeah, if Sara or -- or Chester wants to
4 put...

5 MR. COBB: If they get the list, we'll
6 make it available.

7 MR. HARRIS: Yeah, we'll make it available
8 to them.

9 MR. CAMERON: Okay. So we'll work with
10 you, we'll get it to the local officials so that they
11 have time to look at it and still meet the comment
12 deadline.

13 UNIDENTIFIED: The public virtually has no
14 idea about this.

15 UNIDENTIFIED: The people that were
16 impacted have no idea about this.

17 UNIDENTIFIED: Right. No one knows about
18 this going on now.

19 MR. CAMERON: Okay.

20 UNIDENTIFIED: And I luckily got an Email.

21 MR. CAMERON: All right. Thank you. I
22 think...

23 UNIDENTIFIED: Next time I'll know. I
24 mean, I'm in the loop now.

25 MR. CAMERON: Well taken. All right.

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Yes, sir. And let's...

1 MR. MERESKI: Okay, try it without. My
2 name is Victor Mereski, M-E-R-E-S-K-I.

3 I think part of the reason for the lack of
4 participation here is the general feeling that
5 decisions have already been made and this is just a
6 show for public benefit. And I hope that isn't true,
7 which is one reason I've come to make some comments.
8 But deep-down I believe the decision has been made and
9 my statements will make no difference.

10 MR. CAMERON: Can we -- I think it's
11 important to...

[Applause.]

12 MR. CAMERON: ...for the NRC to address
13 that concern.

14 MR. HARRIS: Yeah. I mean, I think that's
15 why we took the effort to come down here tonight and
16 have the meeting, is to get your comment. If -- if
17 your comments weren't going to make any difference, I
18 could have stayed at home and had dinner with my wife
19 and kids. It's important for us to come down here to
20 spend the time to get the comments. And to answer
21 your first point, no, no decision has been made. This
22 is just one step in the process. Again, the safety
23 evaluation report is still ongoing, and there's a

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1 number of significant items that are in discussion
 2 between NRC staff and the applicant. So no, the
 3 decision has not been made.

4 MR. CAMERON: And all the record for this,
 5 the how we consider the comments on the EIS,...

6 MR. HARRIS: We'd like...

7 MR. CAMERON: ...what is being considered
 8 in the safety evaluation is there for people to -- to
 9 see. In other words, it's a visible process.

10 MR. HARRIS: Right. If you -- if you
 11 submit a comment that relates to an issue that's in
 12 the safety evaluation report, staff will get that.

13 MR. CAMERON: Okay, let's -- let's go
 14 right here.

15 MS. PAUL: I don't want to use that; all
 16 right?

17 MR. CAMERON: Okay.

18 MS. PAUL: My name is Bobbie Paul. And I
 19 would like to address how our comments are received.
 20 And I did attend the other meeting. And as people
 21 make comments, what is the procedure that you all use
 22 to evaluate them? I understand there are lots of
 23 scientific, you know, equations and different things
 24 you use.

25 How many people are looking over these

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1 comments? I have a lot of people who want to write
 2 literally hundreds of letters, and they ask me a
 3 similar question: How will my comments be received?
 4 And I don't know what to tell them.

5 MR. HARRIS: Yeah. We take each comment
 6 and, you know, depending on how many specific issues
 7 are in that comment letter, it may be one comment,
 8 "I'm opposed to the facility," we take that. You
 9 know, one comment, "I'm for the facility." We take
 10 that. More importantly, the comments relate to, "I
 11 don't think you adequately addressed this issue
 12 because..." So we take that comment and combine it
 13 with other comments and look at the totality of
 14 comments within that area and say, "Should we change
 15 this? Should we do another analysis?"

16 MS. PAUL: So the more technical actually
 17 -- more technical, the more specific tends to rise to
 18 the top?

19 MR. HARRIS: Yeah. I mean, I have a hard
 20 time with -- with what to do with, "I'm opposed to the
 21 facility." "I'm for the facility."

22 MS. PAUL: Right. I understand.

23 MR. HARRIS: You know, a specific comment
 24 on a specific issue, and you may make many of those,
 25 you know. "I don't want the facility because I don't

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1 think these impacts were adequately addressed."
 2 All those get compiled, and we produce a
 3 common response document. So you can go and -- and
 4 look at say, "Okay, this was an issue. My comment is
 5 reflected in that comment. This is what the NRC did
 6 with the comment." So it's a very transparent
 7 process.
 8 MS. PAUL: So if we're looking at say the
 9 immobilization, for example, ...
 10 MR. HARRIS: Right.
 11 MS. PAUL: ...and as I recall during your
 12 presentation you said if -- mainly you backed up to
 13 the U.S.-Russia...
 14 MR. HARRIS: Right. Didn't meet the
 15 purpose and need of the...
 16 MS. PAUL: Right. Can you just succinctly
 17 say what -- why?
 18 MR. HARRIS: Why? Because it didn't meet
 19 the U.S.-Russia agreements. That the -- the
 20 Department of Energy felt that -- an immobilization
 21 only approach wouldn't be accepted by the Russians.
 22 So because...
 23 MS. PAUL: Because they wouldn't accept
 24 them or we couldn't...
 25 MR. HARRIS: Wouldn't accept that

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1 alternative. Because the purpose and need relates to
 2 those U.S.-Russia agreements, as well as other things.
 3 MS. PAUL: And that wasn't just a
 4 convenient thing so that we didn't need to look at it.
 5 Once we hit that portal, it was off the table; is that
 6 right?
 7 MR. HARRIS: That was their decision. I
 8 mean, people may comment otherwise, and we certainly
 9 welcome those comments.
 10 MS. PAUL: And about how many people
 11 decide on our comments, look at our comments?
 12 MR. HARRIS: Around 20.
 13 MS. PAUL: Okay. Thank you.
 14 MR. HARRIS: At various levels.
 15 MR. CAMERON: One thing that I think it
 16 might be important for people to understand, the issue
 17 that was raised just there, is that -- and I'm going
 18 to ask Tim or Lawrence or -- or John to perhaps
 19 address this, is that the NRC is given -- has been
 20 given a specific responsibility by Congress in our
 21 legislation to evaluate the safety and environmental
 22 impacts of an action. And that's why when someone
 23 writes in and they say, "We support it," period, or,
 24 "We're against it," period, without anything more, we
 25 don't have the authority -- in other words, our

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to that young lady. Go ahead.

And let -- Melanie, let me know if you can't hear and we'll try the microphone.

And please give us your name.

MS. GASINK: My name is Kellie Gasink.

I actually had a number of comments, though not lengthy. But I really don't have a question, any more than I feel that -- that you're coming to us with a question. In fact, what I just got through hearing is every last person in Savannah could be opposed to this and that wouldn't impact on you at all. And I think that that's an important thing right there.

There's a very big difference between democracy and pretend democracy. And what we have here is a pretend democracy. And so what that looks like is that we're not able to determine social policy. But, in fact, social policy is what perhaps being decided (sic) by people who don't have to live next to -- to this facility.

Democracy would mean that if we don't want our children--I have three of them, age 4, 4, and 6-- -living next to a dangerous nuclear material, I can't choose to not have that be. I can't choose that, and none of you can choose that. So that -- that's a

mission is not to count how many people were for or how many people are against. That's why, as in your phrase, the technical, and include environmental in there, rise to the top; because they go to our statutory authority and our -- our mission.

MR. HARRIS: And we look at -- look at the comment and look at what we had written and said, "Should we revise this? Should we do something else? Should we modify from the -- from the draft to the final?" So that's how your comments are used.

MS. PAUL: So if there were -- if there were, say, 200,000 people outside that just said they didn't want this, versus a technical thing that...

MR. CAMERON: The 200,000 people who don't want it, the NRC can't do anything about that because we're a creation of the Congress. The 200,000 people who don't want it need to talk to the -- to the legislature.

MS. PAUL: Legislature. Right.

MR. CAMERON: Okay, that's how that -- that works. We only have a specific...

MR. HARRIS: Yeah. Again, our mission is to protect public health and safety.

MR. CAMERON: Okay, we're going to -- we're going to go right here, and then we'll go over

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1 tremendous problem. And if we don't want to have
2 nuclear bombs and weapons near our children for moral,
3 ethical, and other reasons, that's also a choice we
4 can't make.

5 So I want to start by saying that this is
6 not a democratic procedure. And we're going to have
7 to go from there. But unfortunately the answers don't
8 lie with the people trying to offer us pretend
9 democracy.

10 And then I wanted to express my
11 disappointment at this environmental impact statement.
12 And I don't think it addresses the environmental
13 impact on us at all. And if I asked the people in
14 this room, I don't think that they would think that
15 what you've said addresses the environmental impact on
16 this community on having this facility here.

17 And I want to say that we don't agree with
18 the increased nuclear contamination or with nuclear
19 waste, and that we vote no, for what it's worth, and
20 that you should tell your superiors that. We don't go
21 with this mess. And -- and so I want to just say that
22 I am with the Green Party of Chatham County, and as
23 such, we're concerned very much with the environment.
24 We're concerned with three aspects of the environment,
25 actually. We're concerned with the physical

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1 environment, we're concerned with the social
2 environment, and we're also concerned with the
3 political environment. And I have concerns in regards
4 for all three.

5 As far as with the physical environment,
6 there is no way to eliminate -- there's risks.
7 There's no way to make the risk of nuclear accidents--
8 -I love this---highly unlikely without getting rid of
9 the facility. There's no way to make the risk of
10 these accidents highly unlikely, other than to not put
11 them next to a city of 135,000 people, which they
12 could do. Most of the place -- places in this country
13 are areas that are more than 90 miles from a large
14 city. And this is what they're not doing.

15 They won't address why they won't put this
16 in the desert. Why not? Okay. That's what they
17 should be answering. Not having pretend democracy.
18 We don't need pretend democracy.

19 Also we're concerned with the social
20 environment. This plan will increase racism in this
21 county. And that's a problem. That's a social
22 problem.

23 Also there is the issue of the political
24 environment, and this plan will take away political
25 power from us. Because of having nuclear weapons and

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1 nuclear materials in our neighborhood, we're actually
2 have less (sic) ability to control anything that goes
3 in our neighborhood. We're able to have less control
4 over our local elected officials because of the
5 interference of the federal government.

6 So we object to the impact on the
7 environment on the physical, social, and political
8 levels.

9 MR. CAMERON: Okay. Thank you, Kellie.
10 And I -- I just would encourage all of you, and not
11 just Kellie, but when you do have reasons why you
12 disagree with what is in this draft---and I'd
13 emphasize that---please -- you know, please let us
14 know in writing and please go into detail.

15 MR. HARRIS: Yeah, the more -- the more
16 specifics you can provide, the better.

17 MR. CAMERON: Okay. Yes. Do you want to
18 try it without?

19 MS. LAMB: Yes.

20 MR. CAMERON: Okay, go ahead. And please
21 give us your name.

22 MS. LAMB: My name is Whitney Erin Lamb.
23 First of all, I want to second everything that she
24 said. And I want to know why the damage from the
25 product that this place is going to create isn't

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1 included in the risk and with the overall damage of
2 the area?

3 MR. HARRIS: Can she be more specific,
4 Chip, as far as...

5 MR. CAMERON: Well, it sounds to me...

6 MS. LAMB: Bombs make a mess. Why isn't
7 that...

8 MR. CAMERON: ...sounds to me that...

9 MS. LAMB: ...going in with the mess of
10 the whole plant. The products.

11 MR. CAMERON: Is that more specific?

12 MR. HARRIS: Well, the product of the --
13 the proposed MOX facility is reactor fuel.

14 MS. LAMB: Some of the product that goes
15 to creating more damage and...

16 MR. HARRIS: I think the piece -- the
17 piece that we're looking at is -- only relates to the
18 surplus weapons plutonium being converted to reactor
19 fuel.

20 MS. LAMB: Right. Let me clarify.

21 MR. HARRIS: Okay, please.

22 MS. LAMB: I don't think that everything
23 has been included in a broad enough scale, as far as
24 the people in the area and the environment that is
25 impacted by this one site. I think it branches out

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1 more than we are talking about.

2 MR. CAMERON: So you think that like the

3 scope of impacts looked at has to be...

4 MS. LAMB: Right.

5 MR. CAMERON: ...broader, and that other

6 types of -- of cost, besides the costs that you saw in

7 those slide -- that slide, additional costs have to be

8 looked at.

9 MS. LAMB: And what happens when the

10 facility is useless? How will you clean it up?

11 MR. HARRIS: Yeah, well, we included the

12 environmental impacts associated with cleanup.

13 MS. LAMB: Can you summarize it?

14 UNIDENTIFIED: It's insignificant; right?

15 MR. HARRIS: I -- I don't know if I can

16 get into that -- it's been months since I read that

17 section, but...

18 MR. CAMERON: But first of all, though...

19 MR. HARRIS: ...I can try to get you some

20 answer. It was -- it was costly...

21 MR. CAMERON: Decommissioning impact has

22 been looked at?

23 MR. HARRIS: Yeah.

24 MR. CAMERON: Okay.

25 MR. HARRIS: It shows how much low level

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1 waste would be generated, what the cost would be, what

2 the doses to the public would be, what the doses to

3 the workers would be.

4 MS. LAMB: And how long it was out there?

5 MR. HARRIS: How -- yeah, right.

6 MR. CAMERON: Okay, let's -- we're going

7 to go for some questions back here, and then maybe

8 we'll shift gears. And Kellie sort of started us off

9 with a comment. Maybe we'll get some more comments

10 and then come back for questions. But I know there's

11 a number of people who have questions, so let's give

12 it a whirl.

13 Do you want to try, Kirk, without this?

14 MR. COBB: I think I can speak loud enough

15 that you can all understand me, and I don't need the

16 microphone; okay? And I'm Kirk Cobb. And I'm a

17 chemical engineer. Lived here in the Savannah area

18 for 24 years. Work in private industry. And I -- I

19 did get a -- I received a copy of your draft. And I

20 didn't read through it all, but I picked out a few

21 interesting points.

22 And first of all, unlike some of you, the

23 concern I have is that there are 38 metric tons of

24 plutonium in the United States located in these --

25 they're stored -- this plutonium is stored in the

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cont.

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1 plutonium's going to go in the fuel rods? And the
 2 answer was: Oh, about 4 or 5%. So you're like, all
 3 right, 94, 95% uranium fuel with 5% plutonium.
 4 Terrific. So let's do this program. And I -- I went
 5 through some numbers with Dave earlier today. You're
 6 going to use about a ton of this stuff in one reactor
 7 every 18 months. So you can work out some numbers.
 8 I thought it was very interesting. In about 12 years
 9 it'll be used up. It'll be tied up in waste fuel,
 10 which then can go to a geological deposit. This is
 11 good.

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cont.

12 My feeling -- my thought, though, is since
 13 the majority of the stuff is in the panhandle of Texas
 14 and in Colorado, why not build the MOX facility up --
 15 either in Texas, for example, where most of the stuff
 16 is located. Twenty-one (21) metric tons is at the
 17 Pantex site, which is the panhandle of Texas. Take
 18 everything there, do the process there, and there are
 19 enough nuclear power plants in Texas. As Dave said,
 20 you're probably planning to use these fuel rods in
 21 only four reactors. There's -- there are four
 22 reactors in Texas. Use -- do the whole thing in
 23 Texas, and be done with it.

MR. CAMERON: Okay.

MR. COBB: Okay?

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1 places that are shown here. They're Department of
 2 Energy facilities; right?

MR. HARRIS: Right.

3
 4 MR. COBB: Okay. They're all over the
 5 country. Most of them -- now, if you look, there's a
 6 table on Page 1-9 that shows us how many tons are in
 7 what location. There -- in the Pantex site and the
 8 Rocky Mountain Flats site, which are in the panhandle
 9 of Texas and in what -- and east of Colorado, of the
 10 38 metric tons of plutonium, 33 metric tons, and
 11 that's a significant total or significant amount of
 12 the total, are in the panhandle of Texas and in
 13 Colorado.

MR. HARRIS: Right.

14
 15 MR. COBB: Why not build -- no. And I do
 16 want this other statement. Because some of you will
 17 disagree with me. I think it's a very good idea to
 18 utilize this -- to tie up this plutonium as -- as fuel,
 19 rods and use it, dilute it, make it so that it's not
 20 an enriched plutonium, so that it's not susceptible to
 21 being stolen or -- by -- or hijacked or whatever by
 22 terrorists or something. Let's get this stuff out of
 23 circulation. And I think it's a good plan to...

24 And the last time we were here, the
 25 plutonium -- I asked the question: How much

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1 MR. CAMERON: Kirk,...

2 MR. COBB: Those are my thoughts.

3 MR. CAMERON: Great. And we're supposedly

4 in a question period now, and obviously we're...

5 UNIDENTIFIED: We're supposed to have

6 already been in the comment period.

7 MR. COBB: But I thought you were asking

8 for comments.

9 MR. CAMERON: We're hearing -- we're

10 hearing comments; okay? And we're going to treat --

11 when we hear a comment, even though it might be

12 phrased like a question, we're going to take that.

13 MR. COBB: I'm not offering a question.

14 MR. CAMERON: Okay.

15 MR. COBB: I'm not asking a question. I'm

16 offering a comment.

17 MR. CAMERON: Right. And I think that

18 what we need to do is, let's see if there's just

19 straight informational questions that we can clear up,

20 and then let's go to comment period. And I think,

21 Cheryl, we'll put you on first.

22 MS. JAY: Well, my -- my question is why

23 aren't we following our agenda? We've already --

24 we're supposed to be in public comments at 8:00, and

25 we're already -- it's already 8:00.

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1 MR. CAMERON: Well, I think that obviously

2 there's a lot of questions; okay?

3 MS. JAY: Well, that's my question.

4 MR. CAMERON: And we're trying to be

5 flexible to deal with those questions. Unfortunately,

6 it's far from running a train here, or maybe it is

7 like running a train; we're late. Let's see what

8 informational questions we have, and then we'll go

9 right into comment; okay?

10 Questions. Now, these are questions.

11 Yes, sir, go ahead.

12 MR. KYLER: Yeah. I'm Dave Kyler of the

13 Center for a Sustainable Coast.

14 Two questions. One is: How often have

15 either a construction authorization or operation

16 licensing been denied or revoked by NRC?

17 MR. HARRIS: It has occurred. More --

18 more likely what happens is that the applicant and the

19 NRC can't agree to close issues, and the thing just

20 basically dies on the vine. That's what happens more

21 often than not, rather than NRC...

22 MR. KYLER: Can you say how often that is?

23 Do you have any ballpark...

24 MR. HARRIS: The NRC has tons of licenses,

25 and I can't speak to how many have been -- how many

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1 applications have not been -- I just don't have that
 2 knowledge.

3 MR. CAMERON: If you are interested in
 4 specifics, we probably can -- can get you that. But
 5 there have been a number of large projects, reactor
 6 projects, that have been cancelled because the NRC
 7 regulations could not be met.

8 MR. HARRIS: You know, a recent example is
 9 the LES enrichment facility that the applicant
 10 withdrew their application.

11 MR. CAMERON: Second question?

12 MR. KYLER: Yeah. Accident impacts at MOX
 13 facilities are significant, but, according to your
 14 assessment, risk is small, you know, with a low
 15 probability of occurring. How is that probability
 16 determined?

17 MR. HARRIS: I'm going to let Dave answer
 18 that question.

19 MR. CAMERON: Lawrence, did you have
 20 something else that you wanted to say, too? I'm not
 21 preempting Dave, but I forgot you had your hand up.
 22 You wanted to clarify something.

23 MR. KOKAJKO: Well, I just wanted to say,
 24 you asked about what the NRC has done. The Atomic
 25 Safety and Licensing Board just recently made a

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1 partial decision on a private fuel storage initiative
 2 in Utah denying their request to build a large
 3 centralized interim storage facility. That just came
 4 out this month. As a data point, the -- the -- I
 5 could not tell you, you know, where we have ceased --
 6 told them to stop operations. I mean, there's a lot
 7 of examples. I worked on two projects, two reactor
 8 projects, and we maintained them shut down for
 9 extended periods of time until they got their safety
 10 program back up to where we thought it should be.

11 MR. CAMERON: Okay. Thank you, Lawrence.
 12 Dave, how is probability -- the
 13 probability part of the risk equation determined?

14 MR. BROWN: Well, the -- the applicant
 15 needs to make a case that -- that they're going to
 16 show that this accident is highly unlikely, and that
 17 they've applied the right kind of equipment and
 18 strategies to make that case to the NRC. And then
 19 that's what we're reviewing right now.

20 We've mentioned in our safety evaluation
 21 that's ongoing we've got about 66 open items that have
 22 been -- many of them have now been closed by getting
 23 additional information from the applicant about things
 24 like how are they going to reduce the probability of
 25 that accident.

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1 MR. CAMERON: Okay. Thank you.
2 We have a question here, and then we're
3 going to go down here. Yes?

4 MR. KOKAJKO: Could I make one more
5 comment on that, please.

6 The facility is required to submit an
7 integrated safety assessment in addition to their
8 safety analysis on how they come -- they think the
9 facility is safe. This is a tool that is used to
10 determine the probabilities of these accident
11 sequences and what they could do to help prevent and
12 mitigate them at the facility. This is required under
13 the Title X Code of Federal Regulations, Part 70. And
14 the DCS will have to submit this ISA as part of their
15 application process.

16 MR. CAMERON: Thank you.
17 Yes, ma'am?

18 MS. HARRIS: My name is Maxine Harris.
19 My question is: If the Savannah River
20 Site is funded by the federal government, what happens
21 if all of this weapons grade plutonium is gathered
22 together at this site and the government, as we know,
23 is headed into deep deficits already, and with the war
24 it's continuing. What happens if the government is no
25 longer able to fund the ongoing process, and this

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1 accumulation of plutonium or MOX are sitting in old,
2 antiquated, leaky tanks? And I understand that there
3 has been an incident of a leak already that caused
4 some problems. What is to prevent -- prevent this
5 situation from happening?

6 MR. HARRIS: I think we're going to let
7 the -- the gentleman from the Department of Energy --
8 but I think it's important to note that, you know, the
9 Department of Energy operates the Savannah River Site.
10 The NRC is an independent government agency, and our
11 only role at the Savannah River Site relates to
12 evaluating the safety of the proposed MOX facility.
13 As far as other -- other Savannah River Site
14 activities, we don't have any interaction at all.

15 I'll let my colleague from the Department
16 of Energy...

17 MR. CAMERON: I think maybe this is
18 working back here. Let's give it a try.

19 MR. BROMBERG: My name is Ken Bromberg
20 from the Department of Energy. And I would -- I would
21 make several points in regard to the question.

22 First of all, with the exception of the
23 Rocky Flats material, all of the plutonium will stay
24 at the respective DOE sites until just in time, when
25 it's ready to be made into MOX fuel. Then it will be

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1 brought to South Carolina to be made into MOX fuel,
2 other than Rocky Flats.

3 Point two, there's legislation that was
4 passed, introduced by now Senator Lindsay Graham that
5 requires that if the material is not made into MOX
6 fuel by 2012, and in each year after that by an amount
7 stipulated in the legislation, the federal government
8 is fined a million dollars a day, up to \$100 million
9 a year, for each and every year that that plutonium
10 stays there.

11 Third of all, none of the plutonium that
12 is going to be made into MOX fuel is in the form of
13 liquid waste. It's all in the form of -- two-thirds
14 of it is in the form of metal and pit form, which is
15 currently stored at the Pantex plant in Texas, and the
16 rest is stabilized and stored as -- in a powdered form
17 in a sealed 3013 container. So none of it is in a
18 liquid form that's going to spill from a high level
19 waste tank.

20 MR. CAMERON: Thank you very much, Ken.
21 Let's go down here. This seems to be
22 functioning, but -- it isn't?

23 UNIDENTIFIED: No, it's not functioning.

24 MR. CUTTER: Vernell Cutter.
25 Earlier it was stated that this is not a

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1 give me, that this is still open. Two weeks ago we
2 had the bi-state conference by the Savannah State
3 College, where we were glad that over 135 citizens
4 from around this area participated. But it was stated
5 at that meeting that there is a MOX facility building
6 on location at the Savannah River Site. Is that true?

7 MR. HARRIS: No, I don't believe that is
8 true. We did send invitations to try to publicly
9 advertise the series of meetings that were had at that
10 conference that you talked about. We talked to Dr.
11 McLean, and also to Renaul, and I can never pronounce
12 her last name, who was gracious enough to, I
13 understand, set those out. And I was happy to hear
14 from Dr. McLean that the conference was a success.
15 But I should clarify that there is no MOX facility at
16 the Savannah River Site. That's still under review.

17 MR. CUTTER: It was also alluded to
18 earlier -- it was actually stated that our country is
19 now at war and there seems to be some problems with
20 France. Isn't Cogema a French-owned company?

21 MR. HARRIS: That is correct.

22 MR. CUTTER: Just wanted to be sure.

23 If we're talking about MOX fuel, what is
24 the utilization of that fuel? Is it for electricity?

25 MR. HARRIS: Yes. The reactor fuel would

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1 be -- the current plan is to have the mixed oxide fuel
2 used in a reactor, and that reactor would produce
3 electricity.

4 MR. CUTTER: Produce electricity for whom?
5 MR. HARRIS: I assume for Duke -- Duke
6 Power customers.

7 MR. CUTTER: Duke Power customers,
8 meaning, then, for folk in the Augusta/Aiken, South
9 Carolina area, that would not cheapen their electric
10 bill or their power bill?

11 MR. HARRIS: Yeah. I don't -- I don't
12 think I can comment on that.

13 MR. CUTTER: I'm just saying, so you're
14 saying, then, that our government will spend money to
15 do this, build the facility, but then Duke would take
16 the benefit for producing power and charging a
17 customer?

18 UNIDENTIFIED: Yes.

19 UNIDENTIFIED: That's right.

20 MR. HARRIS: Is that correct, Peter?

21 Todd?

22 MR. KAISH: My name is Todd Kaish. I work

23 for...

24 UNIDENTIFIED: Speak up.

25 MR. KAISH: My name is Todd Kaish. I work

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1 with Duke Cogema Stone & Webster. The mission
2 reactors, the Duke reactors are not supplying power to
3 the Aiken and Augusta area. The area -- the area in
4 their service area is North and South Carolina.

5 UNIDENTIFIED: Not even in Savannah? Not
6 even in Georgia?

7 MR. CUTTER: So, again, I want to be sure
8 that my question is answered here. You're saying,
9 then, that the residents, citizens of Georgia, South
10 Carolina, will bear the main environmental impact
11 statement effect, but then the utilization of the
12 power will be benefit (sic) by the citizens of North
13 Carolina and South Carolina?

14 MR. CAMERON: And I guess that these fuel
15 rods from the MOX facility could go to any number of
16 reactors. But I think your point is coming across,
17 Mr. Cutter. But I think that people, as Tim had
18 indicated in his presentation, would say that the
19 benefits of this program, or the supposed benefits,
20 depending on what you think about it, is to -- to deal
21 with the weapons material. So there's a number of
22 benefits.

23 But let me go to my colleagues. Let's go
24 to Lawrence to see what his response is. And we
25 really need to -- I'm going to just have a -- go for

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assemblies are being done up there. So it's not a matter that they're all of a sudden receiving the benefit from it, to -- to take this fuel up there and use. It's -- it's more of -- it's done under a section in 10 CFR 5059, I think. They have to evaluate it and we have to evaluate it, too.

MR. CUTTER: If I'm hearing you correctly, then, Lawrence...

MR. CAMERON: Thank you.

MR. CUTTER: ...what you're saying, that actually this is a test for a nuclear power plant? You're saying?

MR. KOKAJKO: No, sir. No, MOX facility is not a test.

MR. CUTTER: No, I'm saying the process.

MR. KOKAJKO: To use that fuel -- to use that fuel, in order to insure that it is operating as it's designed, they've agreed to allow those lead test assemblies to be placed in there if they can find out that it's safe to do so, and if we agree with that. And right now we have not agreed with that.

MR. CUTTER: I just want to personally thank you all, because for 13 years I've been coming to these meetings and listening. And I want to thank you all personally, also, because I see now that you

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a couple more questions, and then we're going to start the formal comment, and we'll come back to you for questions. But I think we need to get on.

Lawrence?

MR. KOKAJKO: First, what the Duke plants have -- or will be doing -- first, what the Duke plants will be doing will be putting the fuel in as lead test assemblies. When you put in a new fuel type or a new enrichment of fuel type into a reactor, you just can't, I guess, go buy it and go put it in there. You have to evaluate it because it changes the parameters of the reactor operations design. It may change the accident consequences, as pointed out by Tim in one of his slides.

So what they've agreed to do thus far-- and it's by no means certain--is they would like to be able to put this fuel in the -- certain facilities, and then they'll evaluate its performance. So conceivably, the fuel -- let's say if it -- if it worked out, they would then try to be used (sic) in other reactors throughout the nation. So it's not just the -- the North Carolina plants. It could be plants in Iowa, Vermont, Arizona, California, or wherever. It could be anywhere. But the idea is that it's got to be tested first. And so these lead test

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1 all no longer just sit in groups. You do disburse
2 yourself among us, and that you have taken a concerted
3 effort to be genuine in your visitation. So I want to
4 thank you all again. And I'll stop my questions
5 there.

6 MR. HARRIS: Thank you.

7 Can I just add one point, Chip?

8 MR. CAMERON: Yeah, go ahead.

9 MR. HARRIS: You talked about the -- the
10 local environmental cost. As I talked about in my
11 slide, in the regional -- there is regional economic
12 benefit, also. So it's -- so it's -- you don't get
13 the benefit from, say, the electricity, but there's --
14 there's dollars that go into the local community,
15 jobs.

16 MR. CAMERON: But as -- yeah. I think Mr.
17 Cutter's point is there might be a mismatch between
18 impact and -- and cost.

19 MR. HARRIS: Right.

20 MR. CAMERON: We're going to go for two
21 more questions, and then we're going to ask Cheryl to
22 lead off the public comment for us.

23 Can you just tell us your name again,
24 please.

25 MS. PEARSON: My name is Kelli Pearson.

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1 And at the risk of sounding like a nimbi,
2 I just want to follow up with Mr. Cobb's question, and
3 wondering if you could give a short explanation of the
4 primary reason we're not considering that area of
5 Texas or Oklahoma or....

6 MR. HARRIS: Yeah, sure. The Department
7 of Energy, as I alluded to, has done two environmental
8 impact statements on the -- the whole program of what
9 to do with surplus weapons plutonium. And in that,
10 they looked at a number of alternatives, which
11 included locating the MOX facility, the pit
12 disassembly and conversion facilities at other
13 locations. Their decision, what they concluded was
14 that the Savannah River Site was the best location for
15 those facilities. So going into our -- our EIS, we
16 took that as a given.

17 MS. PEARSON: Okay.

18 MR. HARRIS: And stated that in the very
19 beginning in the notice of intent, that -- that we
20 weren't going to look at locating this facility
21 somewhere else in the country.

22 MS. PEARSON: Seems like that transport is
23 one of the riskiest parts of the whole process. Is
24 that true?

25 MR. HARRIS: Well, certainly depending on

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1 where the facilities are located, the transport would
 2 be more or less.

3 MR. CAMERON: And these comments like
 4 Kirk's and his comment are going to be considered as
 5 -- as comments. Even though the NRC has said this is
 6 what the scope is, they will be at least considered...

7 MR. HARRIS: Right.

8 MR. CAMERON: ...and evaluated.

9 And let's have one more question right
 10 here, and then let's go to some comments.

11 MR. LANIER: I'm going to try it without
 12 the mic.

13 MR. CAMERON: Okay.

14 MR. LANIER: My name is Jody Lanier, and
 15 I have three questions.

16 First, referring back to your slide #6,
 17 looks like there will be a -- there's a second comment
 18 period when the final EIS is released. Does that mean
 19 there'll be another meeting like this here after that?

20 MR. HARRIS: No, I think what those two
 21 boxes were meant to show, Jody, the first box was the
 22 meetings that we were having last September that you
 23 attended here.

24 MR. LANIER: Right.

25 MR. HARRIS: The second box is tonight.

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1 MR. LANIER: This one? Okay.

2 MR. HARRIS: Yeah. So, as Sara talked
 3 about in her comments, unless -- unless events say
 4 otherwise, this will be the last...

5 MR. LANIER: Okay.

6 MR. HARRIS: ...public outreach.

7 MR. LANIER: In the future, about
 8 notifying the local media, when I got a copy of the
 9 notice that you sent me about this meeting I went by
 10 the one locally owned radio station in town, WRHK,
 11 105.3, and asked one of the managers there if he could
 12 read this on the air sometime. And whether he has or
 13 not, I don't know. But for any future meetings here
 14 I think that the NRC should notify all of the local
 15 stations, radio stations and the TV stations or the
 16 companies that own them. Because the only public
 17 notification I've seen about this meeting was what the
 18 gentleman referred to in the newspaper.

19 MR. HARRIS: Well, actually we -- we do do
 20 that. We issue press releases to notify the press.
 21 We -- we actually had an ad--you may not have seen--
 22 but we did have an ad. We paid for an ad in the local
 23 paper to do that.

24 One of the suggestions that Sara had,
 25 which we followed up on, was to advertise on the local

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1 atom.

2 MR. LANIER: Whereas with immobilization

3 that would not happen?

4 MR. HARRIS: Right.

5 MR. LANIER: Okay. Thank you.

6 MR. CAMERON: Okay. Thank you, Jody. And

7 thank you all for questions. And we'll go back for --

8 for more questions. But as Cheryl pointed out, we're

9 not on time, and we're going to -- Cheryl, would you

10 like to lead off with a comment for us?

11 MS. JAY: So you're going to put me on the

12 spot?

13 MR. CAMERON: That's right.

14 MS. JAY: Okay, my name is Cheryl Jay. I

15 have lived in Savannah all of my life in the shadow of

16 the bomb factory, as we used to call it. I am a

17 clinical medical laboratory scientist, and I'm also a

18 science teacher.

19 As a clinical medical laboratory

20 scientist, I would like to comment on the obfuscation

21 that you use in your dose analysis. When you compare

22 human dosage that we receive from natural sources,

23 such as radiation from the cosmic universe, from

24 medical exams, from chest X-rays, those are either

25 things that we cannot avoid or things that we choose

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1 cable channel, apparently Channel 8 maybe.

2 MS. BARCZAK: The government channel.

3 MR. HARRIS: On the government channel.

4 We contacted them and arranged to have the meeting

5 noticed there. So we're trying -- trying to let

6 people know. But if you've got some more suggestions,

7 we're happy to hear them.

8 MR. CAMERON: And a final question?

9 MR. LANIER: Yes, a final question. On

10 Page 223 of the report I see here it mentions about

11 why you do not consider immobilization in the

12 statement. Says that, "since immobilization fails to

13 degrade isotopic composition of plutonium, Russia

14 fears that immobilization would leave open the

15 possibility that it could be used in weapons."

16 And just for the benefit of those of us

17 here who aren't nuclear scientists, could you explain

18 how using this plutonium in MOX fuel is going to make

19 it so that it can't be used as -- as a weapon, say in

20 case somebody tried to get a hold of it?

21 MR. KOKAJKO: It essentially changes into

22 different isotopes that cannot be used as weapons.

23 MR. HARRIS: Yeah, essentially, when you

24 put it in a reactor, there's a lot of neutrons. The

25 neutrons hit the atom and change it into a different

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1 to benefit our health.

2 We do not choose to increase our dosage of

3 harmful radioactive isotopes to ourselves and our

4 families by the military, industrial, and nuclear

5 complex that is going on at the Savannah River Site.

6 I see this MOX facility as just a continuation of

7 nuclear weapons production at the Savannah River Site.

8 It is a justification for the jobs, for the continuing

9 usage of this material. I resent the fact that you

10 have brought in the aspect of terrorism into this

11 situation. I submit to you that immobilization will

12 do exactly the same thing, and it will also decrease

13 the -- some aspects of terrorism because we will not

14 have as much transportation. In immobilization, the

15 -- this material is still at DOE facilities. All this

16 material is now at DOE facilities. If DOE facilities

17 are not safe, then MOX is not safe, either. So that

18 -- I think that is a total just obfuscation also,

19 trying to cloud the issue and -- behind the flag and

20 the issues that are going on worldwide.

21 Also, I -- I submit to you that saying --

22 also hiding behind this Russian treaty, quote-unquote,

23 that we have is a very misleading statement because we

24 do not follow international nuclear treaties. At the

25 moment our government has pulled us out of serval

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1 international nuclear treaties, and so saying that,

2 you know, we'll let those poor "Ruskies" down if we do

3 this is -- is just erroneous. And it is -- it is just

4 justification for -- as several people have alluded

5 to, taking the U.S. tax dollars and putting it into --

6 into something that has not been tried here, that we

7 don't need. We do not need MOX fuel. We do need to

8 get rid of plutonium. I -- I agree with that. But we

9 can do it cheaper, more safely, and with less waste by

10 immobilizing it.

11 Thank you.

12 MR. CAMERON: Okay, thank you.

13 [Applause.]

14 MR. CAMERON: Let me ask Carol. Carol

15 Cain. Do you want -- why don't I bring you this

16 microphone. Okay, yeah, because it seems like it's

17 doing better.

18 MS. CAIN: I'm Carol Cain, C-A-I-N.

19 Part of my problem with all this is the

20 financial aspects of it. There's so many questions,

21 as far as the nuclear processes. But I'm just

22 wondering about the -- the financial part of it. It's

23 like she said before, we're already at a deficit and

24 they want to build another new building down there at

25 Savannah River Site. And what's going to happen if,

37-1
cont.

37-2

37-3

37-3
cont.

37-4

38-1

38-1
cont.

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1 in the middle of it all, we run out of money? And
 2 then it gets back to the other thing about -- it's
 3 kind of like we're building this facility for Duke and
 4 everybody to turn around and make electricity for then
 5 the ratepayers to pay. And it just -- it's like --
 6 it's something like *Alice in Wonderland*, is what I
 7 think of all this. It's just -- it just really gets
 8 out of hand, when you start talking about it.
 9 And there are many issues to go into, but
 10 this is all I'm just going to say right now. And I'll
 11 write letters.

MR. CAMERON: Thank you, Carol.

12 And, Bobbie, did you want to -- did you
 13 want to talk now or do you want to...

14 MS. PAUL: I'll make my comment, because
 15 we need to go. Carol just...

MR. CAMERON: Okay. Good. Thank you.

MS. PAUL: Thanks.

17 I'm Bobbie Paul, and Sara asked me to read
 18 an Email that she got today from someone who couldn't
 19 come named Ellen O'Leary from Tybee Island, Georgia,
 20 because she had to go to the hospital for another test
 21 pursuant to her kidney operation.

22 "I'm a 49-year-old woman born and bred in
 23 Savannah. Two weeks ago I had my left kidney removed

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1 for a renal cell carcinoma. I have led an extremely
 2 health-conscious life. Unfortunately, environmental
 3 pollutants cause most cancers. I don't want to move
 4 from my home and family, but I suspect the DOE
 5 Savannah River Site in my case.

6 "SRS has the most radioactivity of any DOE
 7 site nationally. There are millions of gallons of
 8 high level radioactive waste in faulty storage there.
 9 We should not add the potentially dangerous MOX
 10 project to this overburdened site.

11 "Shipping plutonium, as well as the new
 12 MOX fuel, would present further concerns in safety and
 13 security. The MOX project has already doubled in
 14 price in the last few years. Who knows what it would
 15 cost us to support the sister program in Russia under
 16 questionable safety and security precautions.

17 "And finally, the low income community of
 18 color surrounding the SRS site is being unjustly
 19 burdened with yet another deadly, dangerous project.
 20 As a tax-paying citizen, I demand freedom from another
 21 unnecessary danger to my life.

22 "Signed," or Emailed, "Ellen O'Leary,
 23 Tybee Island, Georgia."

24 I don't live in Savannah, I live in
 25 Atlanta. And I went to the MOX hearing in Augusta.

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1 And he looked at me, he said, "Are you
 2 kidding? Do you -- do you know how much money we've
 3 spent on that plutonium?" And it's haunted me. And
 4 I don't know when we're going to say enough is enough,
 5 and we just take this stuff out of our universe. We
 6 can't put it back in the ground. Like the Native
 7 Americans once told us, "Never take it out of the
 8 ground." But we have. And I think we've got to put
 9 profit aside and -- and do things for future
 10 generations.

11 Thank you.

12 [Applause.]

13 MR. CAMERON: Thank you, Bobbie.

14 We're going to go to Victor Mereski, and
 15 then Mr. Dunham, and then Mr. Cutter.

16 MR. MERESKI: Thank you.

17 My name is Victor Mereski, M-E-R-E-S-K-I.

18 I'm a resident of Savannah for about 35 years (sic).

19 I'd like to tie into the last comment that
 20 was made about the concern of future generations. I
 21 really feel that the whole nuclear energy program has
 22 lost track of how long this pollution lasts. I
 23 believe that all of recorded human history is
 24 something like 10,000 years. But this pollution is
 25 going to last and be a danger to people, I understand

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1 And, you know, after my questions tonight, reading
 2 something so highly emotional in such a highly
 3 charged, emotional time for all of us, I, too, wanted
 4 to take some time to study the three copies I got in
 5 the mail---same address---and write my comments down.
 6 I head up a women's peace organization
 7 called WAND, Women's Action for New Direction. And
 8 it's national. And we have about 16 chapters and I
 9 don't -- I don't know how many members. About 500 or
 10 600 just in our Atlanta area.

11 I just wanted to share a little comment at
 12 the end of the last meeting I had with a gentleman in
 13 the parking lot. And I was so overwhelmed with all of
 14 the technical talk and what was really going on. And
 15 I said to the fellow, who was somehow related to the
 16 industry, "So what was really going on here tonight?"

17 And he -- he said, "What do you mean?"

18 I said, "Well, it just perplexes me. If
 19 this stuff is so -- if there's so many steps to go
 20 through all of this, and there's so many
 21 technicalities, and it's going to cost so much, and so
 22 many people are confused, why are we doing it? Why
 23 don't we just immobilize it until we can have a better
 24 science past a couple of hundred years, at least. Or
 25 100 years."

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1 from Sara, about 240,000 years.

2 And you think of all the disasters that
3 have occurred in the world during the 10,000 year
4 period that we know of, and here we're talking about
5 a period that's 24 times that. And yet they say
6 there's a low accident probability. Why don't I
7 believe the government?

8 [Laughter.]

9 MR. MERESKI: Well, in reading over
10 material about the release of nuclear pollution into
11 the air, water, so forth, I remember reading that they
12 were conducting tests of new mothers, testing their
13 milk. I forget the specific component that they were
14 checking for. But they were recording this, I think,
15 in various places in the country.

16 But in South Carolina the readings kept
17 going up; okay? And when this was pointed out, that,
18 you know, this is a concern, what do they do about it?
19 They stopped the test. You know, this is really
20 taking into consideration finding out what's going on.
21 Stop the test. We have no more rising pollution in
22 mothers' milk because we can't see it anymore. Why
23 aren't those tests being restarted?

24 I haven't heard anything about the taking
25 into consideration the risk of a terrorist attack

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1 while this material is being transported. And I
2 wonder what protection there is during the transport
3 of this material, you know, from preplanted land
4 mines, radio controlled stuff like that, that seems to
5 go on all over the world. Why can't it happen here?
6 I think it can.

7 I feel that too much of the material that
8 is presented to us is in a fashion of, well, you can
9 only comment on this specific thing. If it's outside
10 of that, well, it just goes into the wastepaper
11 basket. But the whole nuclear program is ill-
12 considered. I would really like an answer to why they
13 are not testing the mothers' milk in South Carolina,
14 and why they don't start again and see how it compares
15 with their previous tests.

16 Thank you.

17 MR. CAMERON: Thank you, Mr. Mereski.

18 [Applause.]

19 MR. CAMERON: Let's -- let's go to Mr.
20 Dunham, and then we'll go to Mr. Cutter.

21 MR. DUNHAM: I guess I wear many hats.
22 But my name is Chester Dunham. I works with the (sic)
23 International Longshoreman's Association, the shipping
24 industry. I'm a longshoreman. I'm also the Safety
25 Director for our union with the International

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cont.

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1 Longshoreman's Union right here in Savannah, Georgia.
2 Also the President of the A. Philip Randolph
3 Institute, which is a non-partisan organization to
4 deal with problems and other type of things. It's a
5 national organization, etcetera.

6 But what I want to talk about tonight is
7 that the representative here from NRC, in your own
8 mission, you -- you did a real good job in doing the
9 presentation to us about the -- the program. I
10 listened carefully and I jotted things down along the
11 line in your slides. When you're talking about the
12 environmental reviews, safety review, the situation
13 about the -- the proposal about the United States and
14 Russia, the storage spaces, impact area, proposed
15 action, impact human health, potential risks via
16 quality waste management, environmental justice,
17 transportation, all of those things. And you did a
18 very good job. But even with everything that you did,
19 and talking about a minimum risk here and there and
20 all of that, the risk factor is still there.

21 You know, it's a situation with these
22 ships that I work on. Sometime a ship may come up the
23 Savannah River that may have one container, and
24 they're dealing with some type of liquid explosive.
25 And what they will do is, they will stop the traffic

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1 in Savannah River. They would -- they would close the
2 traffic down to one vessel. No other movement within
3 that port until that ship reaches destiny and dock,
4 and whatever is on there comes off.

5 Sometimes some of the ship may come up,
6 and you look at the invoice, and they might -- Coast
7 Guard gets involved, and they say, well, we have a
8 particular container, or one or two containers or
9 something on that ship maybe discharging or -- and
10 what that tells you then, that the Coast Guard will
11 come in, and then they will have labor on those
12 facility (sic), on those boxes or what-have-you, with
13 liquid in it. And what they would tell you, that
14 certain areas, you have to move out of that area
15 because of the danger, explosive, that something
16 happen. In other words, it's another thing that
17 sometime in safety -- going through safety things that
18 they tell you, a situation is -- well, I tell you
19 what. Said if a situation happens where a box or
20 something is on board of a ship, and don't stop and
21 ask questions. That if you see any type of little
22 smoke or any type of thing that's unusual, get off the
23 ship and leave from that area. We'll talk and explain
24 later.

25 And when you look at that situation, and

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then think about what's up here, and the danger there, is what puzzle me and what -- you know, and that's my concern. That the situation that we talking about, Iraq, and we're talking about their weapons of mass destruction and all of those things over there. But some of that same stuff is in our -- in our back door.

And the thing that I'm saying, in listening to the expert -- listen, I'm not a scientist or nuclear person or expert or that type -- but listening to them and listening to you all, that it's a danger factor there. And it's the risk is there. And no matter what, the risk is still there. And I'm seeing that what these gentlemen (sic) here, the job that they did tonight, but the bottom line is still -- listen, you all -- and this building should have been packed, as I said. But the bottom line is still dealing with the federal government. It is dealing with politics. It's dealing with elected official. They're going to do a report, a study. But if we don't like what's going on, then it's up to us to speak up. It's up to us to write letters, starting -- I don't care if it local, state, and federal.

Because federal is the last stop. Federal is the key. And if that's what we have to do, we're not satisfied and we think it's a risk, then that's

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what we're going to have to do, get together and write locally, but make sure that we deal with the senators and congressmen, federal people, and do something about the situation.

Thank you very much.
[Applause.]

MR. CAMERON: Thank you, Mr. Dunham.
And let's go to Mr. Cutter now.

MR. CUTTER: Again, good evening to all I haven't had the opportunity of speaking to. Again, thanking our Creator for this opportunity to be able to speak this evening.

As I stand here this evening, I stand here again, Vernell Cutter, with Citizens for Environmental Justice. Have served as convener since that organization was formed.

I was sitting there and I was thinking about how and why our organization formed, when we looked at the Sierra Club and we looked at Green Peace. And folk were talking about save the spotted owl and save the humpbacked whale. But no one was speaking about saving the people of color. Our organization formed because, when we look historically at the disproportionate health risk to people of color, the facilities are built primarily in our

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1 areas.

2 And I listened. And I listened to your

3 cost analysis. But I don't see the cost that you can

4 place on a life. I don't see that. You talk about

5 jobs and how that would be a benefit. But then, when

6 I say how people of color are the ones that primarily

7 work with the exposure, and how then they must make a

8 choice between feeding their families and going to a

9 highly contaminated place, I don't see it as being

10 fair. I don't see it as being equitable. I don't see

11 it as being democratic.

12 I stand here tonight as an advocate for

13 the health of our people. Health of all people. I

14 listen, and I see how our country now -- our

15 President's asking for 75 billion for the rebuilding

16 of Iraq. How much money is being asked to put a

17 health center there in the Augusta-Aiken, South

18 Carolina area, so as that people who then suspect that

19 they are adversely affected can go and receive medical

20 treatment. I don't see that in your cost analysis.

21 I stand here tonight as a spokesperson for

22 the disenfranchised, for the folk who do not read or

23 receive Emails, for the folk who just don't understand

24 how to read the newspaper to know if the meeting was

25 yesterday or today. Speak for those who have been

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1 speaking for years and years, and have not been

2 listened to, have not been heard, and who have died

3 and gone on.

4 I've attended meetings all around this

5 world, and I've listened to the various stories of

6 folk, and I -- and I see how the meetings have changed

7 where it used to be government against people, people

8 against government, and we would chant, "I'm sick of

9 being tired. I'm tired of being sick."

10 And government would sit there and they

11 would shiver and they would wonder, 'Oh, are they

12 really going to attack us tonight?' And I can see

13 then, you know.

14 Now we converse about, "How are your

15 families doing? Good to see you. Haven't seen you in

16 two years. Yes, you remember our last meeting." But,

17 you know what, you can have all the scoping meetings

18 you want. But until you get serious and say this is

19 a true EIS, environmental impact statement, and allow

20 people to talk about each section and to be honest

21 about it, then it is not a true democracy. It is

22 simply folk doing a job, and learning how to use the

23 psychology of presenting it better so folk then

24 swallow it better.

25 I speak, then, for the ancestors who have

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1 died trying to tell folk to realize that at the end
 2 you ask yourself: What have I done for humanity? How
 3 have I contributed? It doesn't matter how much money
 4 you make. Can't take any of it with you. So, then,
 5 again, only what we do for one another will last.
 6 I can go on with comments such as that.
 7 But I would like to say some specific recommendations
 8 that we would present for you all. First of all, that
 9 the mitigation measures section related to the EJ
 10 community---environmental justice community---must be
 11 more detailed. You can't just give a little portion
 12 and say that's going to suffice, but it must be very
 13 specific.
 14 Secondly, that Duke-Cogema must be
 15 mandated to meet and work with the environmental
 16 justice community. You can't have them then just send
 17 the little people there and say, "Okay, we pay you
 18 this. You work with the environmental justice
 19 community." But if they're going to reap the
 20 benefits, they must have a working relationship with
 21 the environmental justice community.
 22 Thirdly, that a stronger emergency
 23 response measure be implemented in collaboration with
 24 the environmental justice community. You cannot say
 25 then, "This is what we'll do," but then these same

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1 folks who do not receive Emails, these same folk who
 2 do not read the newspaper, know exactly what they must
 3 do. We're saying it depends on how the wind blows.
 4 Well, who knows how the wind blows?
 5 Fourthly, that independent researchers
 6 must be allowed to validate risk assessment associated
 7 with latent cancer fatalities. True enough, it's good
 8 for you to tell us, but they always tell you if
 9 something happens to you, seek a second opinion. And
 10 I'm saying that's the same thing that should be
 11 allowed to the environmental justice community.
 12 And lastly, that resources be allocated to
 13 the environmental justice community to analyze the
 14 complete environmental impact statement, that states
 15 that there would be disproportionately (sic) impacted
 16 under the accident analysis. You say that. Anyone in
 17 their right mind, to look at the semantics of that,
 18 will say, "What does that mean?" You're saying
 19 there's going to be a disproportionately affect (sic)?
 20 Well, then, allow the environmental justice community
 21 the opportunity to research that and say what that
 22 would be. If you've spent so much money so far, then
 23 allow it to spend a portion of that, small portion, to
 24 let it really be known of the people that it's going
 25 to really affect. Thank you.

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[Applause.]

MR. CAMERON: Okay, thank you, Mr. Cutter.
And David Kyler.

MR. KYLER: Those are two very tough acts to follow, so I hope I don't put anybody to sleep. Due to the late hour and my needing to drive back to St. Simons. I'm just going to read a portion of my prepared statement, and *ad lib* on a few things that have come up tonight.

First, going to talk about some recommendations that I jotted down after arriving that I don't have in my prepared statement. Some of these track some other comments that have been made.

By the way, I'm Dave Kyler with the Center for a Sustainable Coast. We're a six-year-old non-profit organization supported by memberships and foundations, whose mission is to protect the public interest in issues related to coastal Georgia's growth, economy, and environment.

Further analysis of water use and contamination, and the options and alternatives, needs to be added to this draft impact statement. After looking at this thing -- and, by the way, I have an engineering degree so this should be a lot easier than it is trying to analyze this ponderous statement. On

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Page 4-6 is an "Annual Water Usage and Waste Water Discharge" for the various sites. If you'll look at the SRS line on that chart, water requirements in millions of liters per year. Millions of liters. 127,000 million liters from surface water; 13,247 million liters from groundwater are used. How much is discharged? 700,000 million liters. A little bit of retention of water appears to be taking place there.

That was not at all clear from what I read in the statement, nor from what I heard tonight. Which, by the way, looking at the hydrology slide we saw tonight: Surface water, no significant discharges during construction. Operational discharges through existing SRS facilities. No significant change for permitted discharges. Well, folks, there's should be (sic) a very strong concern in this region about water use, not just the quality of the water being discharged. Both are very important.

Something like 40,000 jobs in this region, 10,000 jobs in Chatham County, alone, depend upon nature-based businesses, and those depend upon the function of that river. And whether it's in the form of contamination or in the form of diversion and retention of water, that either way or both ways, that could have drastic effect not only on public health,

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1 but also on the economy of the region. That needs to
2 be much more thoroughly analyzed. And the
3 significance of that chart I referred to in terms of
4 water use needs to be thoroughly tracked and
5 alternatives need to be evaluated.

6 As Mr. Cutter said, evaluation of
7 emergency response capacity needs to be looked at.
8 It's been brought to my attention, from other reading,
9 that many times far more people attempt to evacuate
10 than are necessary to be evacuated. And because of
11 that, evacuation routes are overloaded, and the
12 facilities available that would be adequate if people
13 were properly notified, and only those needing to be
14 evacuated were. But instead, they get all tied up,
15 and the facilities are not sufficient. So both the
16 education of an at-risk population, and the capacity
17 of the facilities needed to evacuate need to be much
18 more thoroughly analyzed.

19 I think we also need to test the
20 assumptions, as they always say in cost benefits
21 analysis, of the time -- time line effects of costs
22 and benefits. Typical cost benefit analysis places
23 future -- reduces the impact of future costs in
24 proportion to their distance away from the present
25 time. Well, at the rate we're going it seems to me

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1 that environmental resources are going to be worth
2 more in the future, not less. And if they're brought
3 back to the present with a discount method, they're
4 going to be very much reduced in value compared to
5 what they are likely to actually be worth in that
6 future time. So alternative methods for evaluating
7 costs and benefits need to be factored in.

8 The groundwater geology in this area is
9 susceptible to variable conditions that are site-
10 specific and cannot be accurately predicted. And the
11 consequences for those factors need to be taken into
12 account in evaluating risk.

13 And last in the way of general
14 recommendations, we need to develop a process which
15 the Corps of Engineers is even considering, I guess
16 under pressure from Congress---and if they can do it,
17 certainly NRC can do it---called independent external
18 review. Essentially, what this is saying is that the
19 agencies that are responsible for administering these
20 projects, whether it's the Corps of Engineers or NRC,
21 are so compromised in their function that they become
22 advocates for the projects, rather than being capable
23 of objectively evaluating these projects. And that
24 job needs to be given to a -- for a second opinion, as
25 Mr. Cutter said, to another party that's more capable

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1 of being both objective and external, and has no
2 entanglements with the project.

3 A lot of other things I could say. I have
4 some other things in my draft statement. But that's
5 -- that's good enough for now. In essence, we need to
6 know a lot more than we know now before a responsible
7 decision can be made in public interest.

8 [Applause.]

9 MR. CAMERON: Thanks, Mr. Kyler, for those
10 very specific remarks.

11 MR. HARRIS: Did you want to let him know
12 he can hand in his public written comments to the...

13 MR. CAMERON: Sure, if it's -- if it's
14 ready. Yeah.

15 Mr. Kyler, if your -- if your -- if you
16 have a prepared statement -- if anybody has a prepared
17 statement that you would like us to attach to the
18 transcript, as well, we can do that.

19 Let's go to -- to Sara. Sara Barczak.

20 MS. BARCZAK: My name is Sara Barczak.
21 I'm the Safe Energy Director of Southern Alliance for
22 Clean Energy here in our Savannah field office. And,
23 not to brag, but I've actually gone through my draft,
24 and I have ran out of tabs, actually, because there's
25 so much to highlight in here. So let me start my

1 watch, because you all know that I can talk too much.
2 Before everybody leaves, I just want everybody to know
3 that there are numerous articles on the colorful tri-
4 fold display back there that highlight some of the
5 things that I'm going to touch on here. And I think
6 you all will be interested in them.

7 We're a regional non-profit. We were
8 formerly Georgians for Clean Energy last time you saw
9 me here in September. We have members throughout the
10 region, and primarily have focused on energy policy
11 for the last 20 years. We'd like to state that the
12 current draft environmental impact statement now
13 before us leaves much to be desired, and that we are
14 likely going to resubmit and restate all of our past
15 concerns again. In a sense, it appears that many of
16 the important objections to the plutonium bomb fuel or
17 MOX program have been entirely dismissed by the U.S.
18 Nuclear Regulatory Commission.

19 For example, at the scoping meeting here
20 in Savannah, which many of you were at last September,
21 many people were concerned about terrorism---and that
22 came up again tonight---and wanted to know how
23 terrorism would be addressed in the draft report. On
24 Page I-29, in the section on impacts from terrorism,
25 dedicates a whopping two sentences to this issue,

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1 stating, quote, "Many commentators raised a number of
 2 different issues concerning terrorism. The draft EIS
 3 will not address terrorism, because these impacts are
 4 not considered to be reasonably foreseeable as a
 5 result of the proposed action," end quote.
 6 That is not acceptable, given the repeated
 7 concerns that we, along with NRC staff, heard voiced
 8 back in September. It is hard to believe that
 9 transporting tons and tons of weapons plutonium across
 10 the country to one single location, the Department of
 11 Energy's massive Savannah River Site that's only about
 12 90 miles upstream from us, does not constitute an
 13 action that terrorists might want to take advantage
 14 of.
 15 Isn't plutonium a highly toxic substance
 16 with a hazardous radioactive life of 240,000 years,
 17 and is a key component to modern nuclear weapons, and
 18 that one only needs several pounds of it to make a
 19 bomb? Though in numerous federal agency meetings---
 20 and I've been to them; Department of Energy, Nuclear
 21 Regulatory Commission, EPA, etcetera---on various
 22 nuclear-related topics the -- the issue of terrorism
 23 is supposedly going to be addressed in separate
 24 guidelines and under "top-to-bottom," quote, agency
 25 reviews. It is extremely pertinent and vital to

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1 address terrorism concerns and security measures in
 2 this DEIS, in this draft.
 3 We have general concerns about the
 4 plutonium disposition program which we've all
 5 overheard today. We'd like to make it clear from the
 6 outset that we oppose the production of any type of
 7 plutonium bomb fuel program, and we oppose it for a
 8 variety of reasons. It's an experimental program that
 9 has never been pursued at this scale. It poses a risk
 10 to workers and surrounding communities at both the
 11 production and reactor sites. It will increase the
 12 volumes of hazardous radioactive waste streams at a
 13 location that is already plagued by enormous
 14 quantities of waste and previous contamination.
 15 It raises -- and this is where our
 16 expertise sort of in the -- the energy policy, it
 17 raises complex consumer and ratepayer concerns over
 18 government subsidies unfairly favoring a destructive
 19 type of energy production over a more environmentally
 20 friendly and safe alternatives that do exist. It
 21 increases the negative health impacts to communities
 22 in cases of severe accidents at reactor locations, and
 23 it blurs the division established between military and
 24 civilian nuclear programs.
 25 We believe that the NRC has only one

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1 option that will protect the public health, and that's
 2 to deny the application request for this facility. We
 3 urge that the pursuit of developing a plutonium fuel
 4 economy be ceased in all sectors of government and
 5 private enterprise, as it will allow plutonium, which
 6 we know is a dangerous material, to enter civilian
 7 commerce and the international marketplace.

8 We thoroughly disagree with the NRC
 9 staff's preliminary decision in this report that,
 10 quote, "the overall benefits of the proposed MOX
 11 facility outweigh its disadvantages and costs," end
 12 quote. The NRC states, on Page 2-37---and I would
 13 suggest everybody look this up when they leave here---
 14 the four main points of consideration that brought
 15 them to this---in our opinion---flawed decision.

- 16 1. The national policy decision between
- 17 Russia and the U.S. to reduce surplus
- 18 weapons plutonium;
- 19 2. The minimal radiological
- 20 impacts of and risk to human health posed
- 21 by the construction, operation, and
- 22 decommissioning of the plutonium fuel
- 23 factory;
- 24 3. The minimal environmental
- 25 impacts the plutonium fuel project would

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1 pose, and last;
 2 The economic benefit to the
 3 local community.

4 On that same page the NRC states---and we
 5 heard it again tonight---that the most significant
 6 potential impact is if there were a large accident at
 7 the proposed fuel factory. But narrowly concludes
 8 that though those occurrences -- though the
 9 consequences of an accident would be significant---and
 10 this is their quote---"the likelihood of such an
 11 accident occurring would be very low or," in
 12 parentheses, "highly unlikely."

13 We believe fundamentally that the no-
 14 action alternative the NRC was mandated to study is a
 15 better choice overall. We'll touch upon errors we
 16 have found with these four points in our detailed
 17 comments that we'll -- we'll get in before the May
 18 14th deadline.

19 But that does bring me to formally request
 20 an additional extension of the public comment period
 21 beyond the recently adjusted May deadline. This
 22 program is a federal action, and given the state of
 23 our nation and the degree to which Congress and the
 24 general public is distracted by events unfolding in
 25 the world, we find this request reasonable. And,

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1 additionally, errors in the NRC calculations allowed
2 for the initial extension. And since they are not yet
3 clearly understood, then one cannot be sure of what
4 else may be incorrect. It seems to follow that the
5 public should have more time to respond.

6 All right, I've already gone over and I
7 apologize. I'll summarize as fast as I can.

8 For those people here, I think one of the
9 biggest keys to this whole program is we keep hearing
10 this Russian policy agreement, blah, blah, blah, blah,
11 blah. And that, by the way, came under the Clinton
12 Administration because of Al Gore. So it's not like
13 they were helping us out, either. And it's been now
14 supported by the Bush Administration.

15 Even though -- and I'm going to get
16 through this. Even though our nation is supposedly
17 engaged in a program being performed under the guise
18 of disposition of surplus weapons plutonium in a
19 supposed parallel venture with Russia to reduce our
20 nuclear weapon stockpiles, the Department of Energy's
21 National Nuclear Security Administration issued a
22 press release on May 31st of 2002 announcing that it
23 would begin design work for a facility to manufacture
24 plutonium pits, also known as triggers, for nuclear
25 weapons, a critical component. Rocky Flats, which

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1 you've heard about tonight, which is the site in
2 Colorado that is now shipping its plutonium to SRS,
3 had carried out this function up until 1989, and is
4 now closing. SRS is believed to be the preferred site
5 for this plutonium trigger plant that will cost
6 billions of dollars. That press release is back there
7 by that tri-fold display. And it's not my press
8 release, it's the Department of Energy's press
9 release.

10 We are very concerned about the overlap or
11 parallels that may occur between the plutonium mixed
12 oxide fuel program and the modern pit facility
13 program. At the October 2002 public meeting that
14 Department of Energy had up in North Augusta on the
15 plutonium pit meeting -- or facility, that I went to,
16 DOE's staff said that, quote-unquote, "synergies would
17 be evaluated in their draft EIS." We believe that the
18 NRC should also give a very close look to the possible
19 use of the same -- to the possible use of the same
20 buildings, like the MOX plant, the pit disassembly
21 plant, by both programs, and that the exact amounts
22 and types of waste generated by each, and how those
23 wastes will be dealt with, the thorough tracking of
24 plutonium in and out of the facilities, and the
25 possible overlap of contracting partners. All this

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1 information should be made available to the public and
 2 should be reviewed prior to the issuance of this final
 3 MOX proposal.

4 We think that the NRC should deny the
 5 plutonium fuel factory license application request
 6 based on the obvious conflict with the national policy
 7 on surplus weapons plutonium. What really is our
 8 national policy? Is it to bring weapons plutonium to
 9 SRS to secure it, or to bring it there to help us
 10 build new nuclear weapons? There is enough public
 11 information available to show there is a major
 12 discrepancy. Since many of the decisions in this
 13 draft EIS are based on not wanting to conflict with
 14 foreign policy agreements, such as the unfortunate
 15 cancellation of the cheaper and possibly safer
 16 immobilization option, it appears that, in itself --
 17 in -- that it, in itself, is a flawed argument since
 18 there is no cohesive policy on what we, the U.S.,
 19 intends to do with our surplus plutonium stockpiles.

20 We're also very concerned about all the
 21 changes which, of course, the NRC didn't make; the
 22 Department of Energy made. And we -- we fully feel
 23 that the Department of Energy has to go back to the
 24 drawing board and do a supplemental environmental
 25 impact statement to what we were told, like Mr. Cobb

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1 when he said why can't it be done in Colorado.
 2 Changes have been made to this program---cancelling of
 3 immobilization, making SRS an immediate plutonium
 4 storage facility---that why can't the NRC say, "Look,
 5 we can't grant you your operating license because you
 6 need to do some of the regulatory things that all
 7 these people are asking about. Like, get them off our
 8 back and do your job, Department of Energy."

9 And then I'm -- finishing up here, I've
 10 mentioned this at the September meeting, but I want to
 11 let everybody here know that in February -- February
 12 -- well, February 2002, report to Congress by the
 13 Department of Energy called "Disposition of Surplus
 14 Defense Plutonium at Savannah River Site," that in it
 15 they recommend that we need at least two more
 16 additional unnamed nuclear reactors to get this
 17 plutonium bomb fuel program going. And our nearby
 18 Southern nuclear plant, Vogtle, expressed interest in
 19 the plutonium fuel program back in 1996, and we're
 20 concerned about the implication for the need for more
 21 reactors, and how will the NRC address this need. I
 22 didn't see it in this draft impact statement. And I,
 23 for one, don't want MOX fuel, period. I don't want it
 24 at Plant Vogtle, and I don't want it up at Catawba or
 25 McGuire, period. I don't want it.

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1 I have -- that was blowing that first
2 bullet point, in my opinion, out of the water, on
3 we're doing this because of our agreement with Russia.

4 I have four more pages, and I'm not -- I
5 can't get to them, on the environmental concerns, on
6 the nuclear waste concerns, on the water concerns, on
7 the economic benefit, and additional concerns. I'm
8 glad somebody already mentioned Cogema, which is a
9 French government owned company, and the concerns we
10 have in there. And I'm just going to state this
11 again. Their track record needs to be investigated.
12 DCS does not have any environmental track record
13 because they didn't exist prior to this program coming
14 into place. So why is it that unfeasible to look at
15 their -- each company separately that made this
16 international consortium, and see are they doing a
17 good job. Because they're not doing a good job in
18 France. And right now we supposedly don't like
19 France. And we're about to give them all our
20 plutonium.

21 So, anyway, I will potentially at this
22 point have this on our website so everybody else can
23 read it, because I think it's interesting reading. I
24 do want to thank the NRC staff...

UNIDENTIFIED: Yes.

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1 MS. BARCZAK: ...for being here in
2 Savannah.

[Applause.]

3 MS. BARCZAK: The Department of Energy
4 doesn't come here, and that's why you get a lot of the
5 questions that you get. And, you know, you have a
6 hard job, but you can still make the right decisions.
7 And the thought in that slide that said this -- this
8 final decision could be issued by this fall of 2003.
9 No way---excuse my language because I'm recorded---in
10 hell should that be allowed. No way. Please allow
11 for an extension, and please go back to the drawing
12 board and really, really look through this. And I
13 will provide the full comments to the recorder that I
14 didn't get to read. Thank you.

[Applause.]

15 MR. CAMERON: Could we have the
16 representative from the -- the Green Party. Is it --
17 who is the representative from the Green Party?
18 Kellie?

MS. GASINK: Yes.

MR. CAMERON: All right.

19 MS. GASINK: My name is Kellie Gasink. I
20 actually wasn't intending to -- to come here to speak
21 on behalf of the Green Party, but I'm happy to do so.

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1 I'm -- I wanted to say that one of the
 2 most appalling things I think that I noticed is that
 3 the people have discussed it, but that the only
 4 newspaper -- only daily newspaper in town has
 5 announced this meeting location at the wrong time, the
 6 wrong day. And that despite the fact that I'm also
 7 grateful that -- that this meeting is happening and is
 8 here, I think that we should -- that that shouldn't be
 9 a favor to the community. That, in fact, that's the
 10 minimum that we should ask. I mean, that's a part of
 11 democracy.

12
 13 And I think that there's a frustration
 14 here because the process is not democratic. It's
 15 simply not. It's not democratic when we can't make
 16 any of these decisions as a community. And when the
 17 process is so narrow that we're locked out of it, it's
 18 not going to reduce people's frustration about the
 19 democracy, that people can simply complain about it.
 20 And I'd like to think that we could do more than --
 21 than complain about what's happening.

22 And as I sit here, you know, tonight, I've
 23 learned a great deal more than I knew before I came
 24 into the room, and I'm grateful for that. But I would
 25 have liked to have known a lot of this stuff long

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1 before, and I wasn't aware of it. And it isn't
 2 covered in the -- on television, it isn't covered in
 3 the newspaper, it is not information that's made
 4 available to us. So I just wanted to say that at the
 5 outset.

6 But we are opposed to the shipping of --
 7 of surplus plutonium to this area. We're opposed to
 8 the shipping of depleted uranium. We don't agree that
 9 this community should have to suffer increased nuclear
 10 contamination or nuclear waste. And also, that when
 11 evaluating risk, risk is never something that's in
 12 isolation. And the fact that we're forced to discuss
 13 it as though it were is silly.

14 The question is not whether this plant or
 15 this idea or this plan would be safe; it's actually
 16 would it be safer to do something else. That is the
 17 only question. Nothing is safe. Apparently going
 18 outside isn't safe because the sun rays aren't exactly
 19 safe. But everything is relative. It's also the case
 20 that going out in the sun -- you know, the sunlight
 21 and having my children play is a good deal safer than
 22 having to worry about whether there's going to be a
 23 nuclear disaster. So it's -- so these things are
 24 relative. So the fact that we're not able to know why
 25 other options other than the Savannah River Site are

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1 being eliminated and are not being discussed here.
 2 We're supposed to be discussing, in isolation, how we
 3 feel about the fact that it's coming here, knowing
 4 that we don't have the control over that decision. So
 5 that's -- that's not a situation that creates either
 6 democracy or safety. Because we all know that when
 7 people get together they can, by discussing things
 8 together, come up with the safest proposals. But
 9 that's when you're in a democratic situation, when the
 10 people discussing it can make the decisions about what
 11 to do to make things safer. And it just seems to us
 12 that we can stay here and talk about things that are
 13 really, really important, and we're not the ones
 14 making this decision.

15 And so I'm -- so I basically -- that was,
 16 you know, what I wanted to -- to express. And I
 17 didn't have any, you know, prepared statements for --
 18 for you all. But the one other and last thing---I'm
 19 sorry---that I wanted to say was that also that using
 20 this -- creating this -- this fuel that is going to be
 21 -- the benefit of which was going to be used by
 22 corporations and not the general public is -- is
 23 completely repulsive and racist. That -- that one
 24 company now in one stage, and there may be other
 25 companies in other stages, are going to be getting

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1 something free and selling it to us, when the benefit
 2 should be directly to the public. If this fuel is
 3 given to them free, then they should be giving it to
 4 us free. The fact that a few people would be
 5 benefitting from this, and also, by the way, people
 6 who don't even live in this community and have to deal
 7 with any of the issues created by the facility, are
 8 just astoundingly unacceptable. And, again, that's
 9 out of the scope of what the public is able to discuss
 10 or impact on.

MR. CAMERON: Okay, thank you.

[Applause.]

MR. CAMERON: Jody, would you care to give
 us your comments and recommendations, please.

MR. LANIER: Good evening. My name is
 Jody Lanier. I'm here as a private citizen. I'm a
 lifelong Savannah resident. I have a two-and-a-half
 page prepared statement I'd like to read. But before
 I get started, I'd like to say at the last meeting
 that I really didn't appreciate being cut off too soon
 in my comments, especially when I was near the end.
 I timed myself at home saying this. This should be
 between five and ten minutes. So I know the hour's
 late, so please bear with me. I hope I don't put you
 to sleep.

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1 MR. CAMERON: So you're telling me you
2 don't want me to cut you off?

3 [Laughter.]

4 MR. LANIER: Well, that would be nice.
5 Okay. I'd like to thank the NRC for
6 having this meeting here tonight. At the September
7 26, 2002 meeting, I spoke about my concerns regarding
8 this project. Mainly, the inclusion of immobilization
9 as a no-action alternative, and evacuation plans for
10 Savannah and Chatham County in case of an accident or
11 terrorist attack at the MOX fabrication facility, or
12 any shipments of plutonium that may come into the Port
13 of Savannah to support the facility.

14 The report states that if the surplus
15 plutonium were disposed of only by immobilization,
16 Russia would not dispose of its surplus because they
17 believe that we would eventually recover the plutonium
18 and use it to make atomic bombs. To allay their
19 fears, we could use a famous Russian proverb, "Trust,
20 but verify."

21 At the end of the Cold War, monitors from
22 the United States and Russia went to each other's
23 countries to verify that nuclear missiles and other
24 strategic weapons and delivery systems were destroyed.
25 Now this processes could be repeated and supplemented

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1 with spy satellites and other surveillance technology
2 to make sure immobilization plutonium is not made into
3 nuclear weapons. With this in mind, I believe that
4 immobilization should still be a viable option for a
5 no-action alternative.

6 When I read over the draft EIS, I felt
7 like only a nuclear scientist, brain surgeon, or
8 attorney could fully understand it. However, it
9 became clear that one did not need any of these --
10 those people to see that there was no mention of
11 Savannah at all in the report except for a few
12 citations noting previous meetings here. This leads
13 me to believe that the Commission does not really care
14 about the opinions of the more than 200,000 people
15 living in Savannah and Chatham County; or, for that
16 matter, those Georgians and South Carolinians living
17 anywhere downwind and downstream of SRS. If that's
18 the case, why is this meeting taking place? The
19 general message seems to be that we, the Commission,
20 are holding this meeting to tell you what we're going
21 to do next, but there's nothing you can do about it.
22 Tough luck.

23 It also seems to say that DCS does not
24 care about needlessly putting us at risk by proceeding
25 with this project. That really doesn't come as a

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1 surprise, since they apparently have no qualms about
 2 putting the people of their hometown, Charlotte, North
 3 Carolina, and the greater Metrolina region at risk
 4 with their plan to use the MOX fuel at Duke's Catawba
 5 and McGuire Nuclear Power Plants.

6 I'm also concerned that communities
 7 downstream of SRS will face the same risk if the
 8 reactors at the Southern Company's Plant Vogtle are
 9 chosen as the fifth and sixth reactors to use MOX,
 10 which would put all of us in double jeopardy.

11 The section on environmental justice
 12 mentions the effects on fishing near SRS. Since waste
 13 that is released or leaked into the waterways
 14 eventually reaches Savannah, and because fish can't
 15 tell the difference between bait from a fisherman in
 16 Blackville, South Carolina, and that from one in
 17 Chatham County, the effects the MOX facility would
 18 have on fishing in our area need to be studied. We
 19 already have radiation monitors in place that could be
 20 used for this purpose.

21 The EIS also bases its definition of
 22 environmental justice on the impacts to areas with
 23 predominantly racial minority and/or low income
 24 populations. I believe that failure of this report to
 25 take into account the impacts to downstream

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1 communities beyond a 50-mile radius, regardless of
 2 their racial or income demographics, constitutes
 3 environmental injustice. The definition of
 4 environmental justice must be expanded to include
 5 these impacts. Therefore, the final EIS for this
 6 project and, for that matter, similar reports about
 7 future activities at SRS, need to include these
 8 impacts, as well.

9 The most disturbing part of the report to
 10 me is the mention of the Commission's ruling in
 11 December 2002 that it is not obligated to consider
 12 risks associated with terrorism in any environmental
 13 impact statement. In light of the tragedy of
 14 September 11, 2001, concluding that the risk of a
 15 terrorist attack is speculative is absolutely absurd,
 16 irresponsible, and unconscionable. With this ruling,
 17 the NRC has not only set a dangerous precedent, it has
 18 also stuck its head in the sand like an ostrich. What
 19 a shame. If the Commission will not consider these
 20 risks, who will? Who will protect us?

21 The EIS further states that the wind at
 22 SRS mainly blows to the west-northwest and north, and
 23 that the probability of a substantial leak is very
 24 low. I remember the infamous tritium leak of December
 25 1991 that shut down Savannah's industrial water supply

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<p>1 for almost two weeks. I would hate to think what 2 would have happened if that had been plutonium-laced 3 waste, instead. Besides duct tape and plastic 4 sheeting, is our only defense against an accident or 5 terrorist attack at the MOX facility consist of 6 praying that the wind continues to blow away from us, 7 and that SRS will dramatically improve its more than 8 50 year track record of leaks? If that is the case, 9 we would be in the same predicament as Wile E. Coyote 10 when he opened a miniature umbrella to protect himself 11 from a falling boulder. Also, in light of recent 12 congressional hearings and news reports containing to 13 the Indian Point Nuclear Power Plant in New York, if 14 SRS security is anything like that at a commercial 15 nuclear power plant, we would feel as confident as 16 Bill Dana's famous character, Jose Jimenez, was before 17 he was launched into space.</p> <p>18 The greater metropolitan areas of Augusta 19 and Aiken can have expanded economic opportunities 20 without jeopardizing downstream communities like 21 Savannah. Making a firm commitment to clean up SRS 22 once and for all can accomplish this. That way 23 Augusta and Aiken get the benefits of more jobs 24 related to SRS, and an expanded tax base. At the same 25 time, downstream communities will not have to worry</p>	<p>1 about more toxic and nuclear waste being generated, 2 resulting in a win-win situation for all.</p> <p>3 Since I believe that my concerns have not 4 been adequately addressed in this draft EIS, I am 5 submitting, as an attachment, a supplement to my oral 6 comments from the previous meeting that was sent in 7 before the prior comment period ended. I still 8 believe that this project will flush our valuable tax 9 dollars down the toilet. Especially when one realizes 10 that Duke will essentially be getting free MOX at 11 taxpayer expense. Further, it will not reduce the 12 amount of plutonium stored at the site, especially if 13 the Department of Energy decides to build and operate 14 its modern pit facility at SRS.</p> <p>15 As I said back in September, this project 16 is an attempt by the DOE and DCS to shove a giant Pu 17 Pu platter down our throat. And that when I want a Pu 18 Pu platter, I want it from an honorable Chinese 19 restaurant, not a dishonorable MOX plant. I call on 20 our congressman from Georgia's 12th Congressional 21 District, Max Burns, whose home in Screven County is 22 only one county downstream of SRS, as well as 23 Congressman James Clyburn of South Carolina, a member 24 of the Energy and Water Development Subcommittee of 25 the House Appropriations Committee, to intervene and</p>

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cont.

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1 stop this project from proceeding forward. In the
2 meantime, it's time for the NRC to get its head out of
3 the sand and start thinking outside the box. Say no
4 to MOX. Choose a no-action alternative.

5 [Applause.]

6 MR. CAMERON: Thank you, Jody.

7 And I just wanted to alert the audience to
8 something that -- that Jody mentioned, that you may
9 not know of. He referred to a December 2002
10 Commission decision that essentially, if I have it
11 right, ruled that terrorist concerns did not have to
12 be considered in the environmental impact statement.
13 And I just wanted to tell people that if you're -- if
14 you're interested in seeing that decision, that we
15 could probably get copies of -- of it for you, if you
16 want to see that. But that's what you were referring
17 to; right, Jody?

18 MR. LANIER: Right.

19 MR. CAMERON: All right.

20 Nadia? Nadia Baker?

21 Okay, how about Andre. Andre Entermann?

22 MR. ENTERMANN: Right here.

23 MR. CAMERON: Go ahead, Andre.

24 MR. ENTERMANN: Hi. My name is Andre
25 Entermann. I just had a couple of comments. I didn't

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do much planning or research before I came here, so
I'm pretty ignorant for most of these things. But I
think it's very, very, very extremely obvious that
this is just the most, you know, repulsive, disgusting
idea ever. Just the word "nuclear" is just so
horrible. Like I can't believe we're actually
considering this and getting so technical with it.
It's such a simple answer.

9 And, let's see. Yeah, like I think -- I
10 think this whole discussion is just a waste of time,
11 as far as just going through this environmental impact
12 statement. It's just -- it's, again, so obvious. And
13 the overabundance of the word "significant" and
14 "insignificant," it's just like what does that mean,
15 you know. What's the definition of "significant"? I
16 mean, it doesn't mean anything to me. You know, we
17 use it so freely here and there. And it just -- I'm
18 very, very, very concerned for the environment, and I
19 think we're just raping Mother Earth, you know, day-in
20 and day-out. And there's got to be some private
21 advantage in mind in this whole scenario in, you know,
22 the U.S. with this whole space command and putting
23 nuclear weapons in space and trying to dominate the
24 world. And, you know, it's just -- it's crazy, you
25 know.

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-- and the federal government have -- they don't benefit from this really at all, like -- like as far as making sure that the EIS gets out and doesn't prove anything bad?

MR. HARRIS: We have a disclosure. I -- whether the impact is good or bad, we want to disclose it, not -- I mean, our job isn't to only sugar-coat it and set it out there. We...

MR. ENTERMANN: Right, right, right.

MR. HARRIS: ...tried to say this is what we honestly think. You know, we did independent analyses. We didn't just accept what DCS did. We did our own analyses.

MR. ENTERMANN: Yeah. It just seems like so me information, I don't think really anyone can really get through. I mean, the book, in itself, is an environmental impact, you know, all the paper. It's just ridiculous, you know.

[Applause.]

MR. ENTERMANN: It's such a simple thing, it'd be done on one piece of paper, you know. It's just like, God, nuclear. It's nuclear. It's like why would you ever want to risk it. Oh, I -- I just don't understand.

But, let's see if I have anything else.

And I -- and real quick, can I get a vote. Is anyone in here for this site? Like does anyone want to go through with this, like actually get this thing running and make fuel in here? Anybody? You guys?

MR. HARRIS: We're neither for or against.

MR. ENTERMANN: Neutral. Okay.

MR. HARRIS: Our job is just to make sure that -- evaluate the proposal and determine whether it's safe or not.

MR. ENTERMANN: Right.

MR. HARRIS: We're not a proponent or against it.

MR. ENTERMANN: I had a question real quick. Like on the MOX facility, like what's the -- the corporation or like the business that benefits from it, like the -- who's like the business that's running it, kind of?

MR. HARRIS: It's a consortium called Duke Cogema Stone & Webster.

MR. ENTERMANN: So it is Duke. Okay.

MR. HARRIS: DCS. Yeah.

MR. ENTERMANN: Okay.

MR. HARRIS: Sorry. Sorry, Chip.

MR. ENTERMANN: So you -- so the NRC and

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1 And that -- yes, so making the MOX fuel, there is
2 waste involved; right?

3 MR. HARRIS: Oh, yeah.

4 MR. ENTERMANN: So what happens to the
5 waste? It just gets...

6 MR. HARRIS: It's going to be transferred
7 to the Savannah River Site where they'll manage it.
8 And depending on what type of waste it is, it goes
9 different places.

10 MR. ENTERMANN: Goes different places and
11 is swept under the rug, basically? I mean, is that
12 worse off from where it was in the beginning?

13 MR. HARRIS: No, I mean, it goes to -- to
14 licensed safe disposal facilities.

15 MR. CAMERON: Andre, you're going to have
16 to, first of all, get closer to the mic for people to
17 -- to hear you. And I guess we're going to have some
18 time for more questions like this after we're done
19 with the -- the speakers. I don't know if we have
20 anybody else.

21 But do you have any -- do you have any
22 more in the comments?

23 MR. ENTERMANN: Yeah, one more question.
24 Just a question. I don't have -- so many things on my
25 mind right now, I just don't even know where to start.

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1 But how is this going to benefit mankind in regards to
2 peace and environmental cleanup? Like this whole
3 idea?

4 MR. HARRIS: Do you want us to respond to
5 that, Chip?

6 MR. CAMERON: Well, I think that maybe you
7 could just say what you said at the beginning of -- or
8 maybe Lawrence said is what -- what we know of the
9 purpose of this program is.

10 MR. HARRIS: Yeah. If you look at the
11 purpose, purpose and need is to reduce the threat from
12 weapons -- nuclear weapons. So the whole project is
13 to convert it into a proliferation-resistant form.
14 That is, so people couldn't take it and do -- do bad
15 things with it. So you convert it into a form where
16 that can't happen.

17 MR. ENTERMANN: All right, I'll have to
18 think about what you said and do research, because I
19 can't really comment on that.

20 MR. CAMERON: Okay.

21 MR. HARRIS: It's discussed in the purpose
22 and need, if...

23 MR. ENTERMANN: Okay.

24 MR. HARRIS: Probably a couple of pages.
25 Shouldn't be too bad.

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1 MR. ENTERMANN: Yeah. Right, right.

2 I recently sent out a letter like opposing

3 the plutonium launches in Cape Canaveral, I think, May

4 2nd, coming up. And I received the same letter back.

5 It's just the environmental impact. It says, "No

6 significant impact." I mean, it's just -- that's what

7 they always tell us. It's just -- it's just a way to

8 get around it, I guess.

9 MR. CAMERON: Well, I think what -- I

10 think what -- what you need to do is you need to -- to

11 look -- I don't think -- the NRC didn't start with the

12 answer, "No significant environmental impact," and

13 then cook up a rationale to match that. You have to

14 read the -- read the statement. You may disagree with

15 the analysis that's done in the statement. But, by

16 and large, there's an analysis there to look at, an

17 evaluation that led them to that particular

18 conclusion.

19 And you may disagree with it. And if you

20 do, we want you to tell us about that, because we

21 could be wrong. We could benefit from some things

22 that you tell us about where we didn't consider this,

23 where we had to put more weight on. But...

24 MR. ENTERMANN: Yeah. It just seems so

25 simple. Such a simple -- I just -- don't mess with

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1 nuclear anything.

2 MR. CAMERON: All right. Okay, I think...

3 MR. ENTERMANN: But...

4 MR. CAMERON: ...let's -- thank you,

5 Andre.

6 MR. ENTERMANN: ...all right.

7 [Applause.]

8 MR. COBB: I made my statement earlier.

9 You don't need me to get back up and say it again; do

10 you?

11 MR. CAMERON: No, we don't.

12 MR. COBB: I think I can help this young

13 fellow understand. Outside of this meeting I'll offer

14 a few comments to you.

15 MR. CAMERON: That would -- thank you.

16 That would be very helpful.

17 And is there -- we have time for more --

18 for questions. But did I miss anybody in terms of

19 wanting to -- to make a comment? And I was being

20 facetious. I know that you made your comment.

21 MR. COBB: One real short, quick question.

22 MR. CAMERON: Right.

23 MR. COBB: When plutonium is transported,

24 how many tons can be transported on a truck during one

25 shipment? Do you know? Because I'm sure it's enclosed

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1 and all these stuff. Can you -- I mean, typical
 2 truck, can it handle 20 tons? You know, I mean, this
 3 is almost like two shipments. Then, of course, it's
 4 in lots of...

5 MR. HARRIS: The number's in the
 6 transportation section, Kirk. But...

7 MR. COBB: Yeah.

8 MR. HARRIS: ...it's not one that's up
 9 here. I'm sorry.

10 MR. COBB: Okay.

11 MS. BARCZAK: But it's a lot of shipments.
 12 It's not one shipment.

13 MR. COBB: Right. It's probably hundreds
 14 of shipments.

15 MS. BARCZAK: Yes.

16 MR. COBB: Right?

17 MR. HARRIS: If you look back in the
 18 appendix in the transportation section...

19 MR. COBB: Okay.

20 MR. HARRIS: ...it tells you how many
 21 shipments.

22 MR. COBB: That was my question.

23 MR. HARRIS: I mean, after the meeting
 24 I'll -- I'll find the number for you.

25 MR. CAMERON: And I would -- you know, I

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1 would call attention to -- again, to Sara's
 2 organizations and her handouts. But also DCS has some
 3 information back there. And one of them is
 4 transporting mixed oxide...

5 MR. COBB: Okay.

6 MR. CAMERON: ...fuel. So there is --
 7 there is information on this.

8 Sir?

9 MR. DUNHAM: How many different ways do
 10 they transport -- transport it?

11 MR. CAMERON: You mean truck, rail, barge?

12 MR. DUNHAM: Truck, rail, and ships,
 13 barges?

14 MR. CAMERON: Can we get a -- can we get
 15 a clarification for Mr. Dunham on that, Tim?

16 MR. HARRIS: And actually that's a --
 17 that's an answer I -- I hope I know the -- question I
 18 know the answer to. I think we only considered truck
 19 transport.

20 MR. CAMERON: And as far as -- as anybody
 21 who is with DCS or -- or Department of Energy, is any
 22 other mode of transport being considered besides truck
 23 at this point? I see a...

24 MR. BROMBERG: No, not in -- not in this
 25 country.

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1 MR. CAMERON: ...negative. Okay.

2 MR. BROMBERG: But it's shipped by what's

3 called safe, secure transport, which is a heavily-

4 armed convoy under satellite location at all times.

5 It's what's been used to transport nuclear weapons,

6 nuclear components, or special nuclear material for

7 probably close to 50 years. They've logged an excess

8 of 1.6 million miles without any radiation release.

9 It would be the same thing that would be used to

10 transport both plutonium as well as MOX fuel.

11 MR. HULL: Chip, I just wanted to add that

12 we had initially, in our -- the scoping summary report

13 we did, which came out, I believe, in August of 2001,

14 we -- we said we were also going to evaluate rail

15 shipments. But because of what the gentleman from DOE

16 just said, we decided that we only needed to evaluate

17 the truck transport, because it does have a proven

18 track record.

19 MR. CAMERON: All right, thank you. Thank

20 you, John.

21 Sara?

22 MS. BARCZAK: Sara Barczak.

23 I just wanted to make the statement that

24 one thing I thought about the user friendliness of the

25 draft environmental impact statement was that in the

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1 Appendix I, which summarized basically almost like all

2 the oral and written comments you guys asked for from

3 the fall 2002 time frame, is that I -- and maybe it's

4 just me, but I would prefer to see the comments.

5 I mean, I know that like the Department of

6 Energy, when they did their plutonium disposition that

7 got us to this point, it was enormous, but you could

8 actually read through everybody's comments instead of

9 seeing a summary. And perhaps that might touch on

10 some of what Bobbie Paul and others had mentioned.

11 And I have received phone calls on this.

12 'Well, how do I know they actually read my comments?'

13 And I'll say, 'Well, look in Appendix I and look under

14 the terrorism and you'll see that, you know, they

15 mentioned commentators, and you were one of those. But

16 I think people like to do a cross-reference to see if

17 they're all getting sort of the same answer. And I

18 would just highly recommend -- I like the summary

19 because it helps give a quick answer right there. But

20 I think for the final, I mean, it's going to make it

21 huge, but I think it's got to be in there so people

22 can see it, all the comments.

23 MR. CAMERON: Let me clarify, ask you

24 something to make sure we understand your

25 recommendation. Are you saying -- I don't think

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1 anything?
 2 The one thing that I think Mr. Cutter
 3 brought up is that Tim's slide on -- on the
 4 environmental justice talked about accident impact and
 5 mitigating measures. I don't know whether it would be
 6 helpful to -- to say a little bit about what those
 7 mitigating measures are. I -- you know, I didn't know
 8 if it was clear to everybody what -- what was going
 9 on. And I think Mr. Cutter may have implied or
 10 explicitly said that.

11 Do you want to say a little more about
 12 that?

13 MR. HARRIS: Sure, Chip.

14 Chapter 5 of the EIS talks about
 15 mitigation measures for all the impacted areas. And
 16 it also notes who proposed the mitigation. So you'll
 17 see DCS, where DCS said, "We're going to mitigate
 18 these impacts by..." say like surface water impacts
 19 from construction. They proposed to do sedimentation
 20 control. Well, they're required by law to do
 21 sedimentation control. But those measures will reduce
 22 the impacts. The environmental justice impacts were
 23 proposed by NRC, and that's one area that we're very
 24 interested. And I appreciate Mr. Cutter's comments on
 25 the specificity, and then taking that farther and

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1 you're saying that there should be a separate response
 2 to each comment letter. You're saying that the
 3 comment letters, themselves, should all be contained
 4 in an appendix...

5 MS. BARCZAK: Uh-huh.

6 MR. CAMERON: ...to the -- to the EIS.
 7 Now, all those comment letters are publicly available.
 8 But we just don't package them. We'll -- we'll put
 9 that up as a recommendation. And we had a number of
 10 process recommendations, I mean, things that we were
 11 going to do or try to do. And one was -- came from
 12 Mr. Dunham, which is at least send this notice that
 13 this was going on to the elected officials here.
 14 Extend the comment period. There was a comment about
 15 the independent, external review that falls in a
 16 different category than -- than these two. But I
 17 think the -- the fourth one we're hearing now is to
 18 include -- either include the comment letters in the
 19 draft, or to somehow make that available to people,
 20 the verbatim comment letters. All right, I'll put --
 21 I'll put that down.

22 Was -- let me ask the NRC folks whether
 23 there was anything that they heard people say in their
 24 comments that we -- we should clarify, in terms of
 25 giving them additional information? Is there

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1 saying these detailed things should be included. And
2 as you read through the document and engage the
3 community more, if there's other things that come to
4 mind, please -- please submit them.

5 So, basically, the mitigation measures
6 that NRC proposed for environmental justice would read
7 that: focused information campaigns to provide
8 technical and environmental health information should
9 be directed towards low income and minority groups, or
10 to local agencies and representatives of those groups
11 that could help disseminate the information;
12 additional programs directed at local communities
13 providing emergency response services and other
14 emergency facilities to incorporate additional
15 measures to protect low income and minority
16 populations. And I think Mr. Cutter helped clarify
17 that with saying, you know, we'd like to see a clinic
18 there that -- if people are concerned. That's a great
19 comment. Thank you.

20 But those were the two big mitigation
21 measures that the NRC proposed, and through the help
22 of -- of your comments, hopefully we'll refine those
23 to -- to make them a better and...

24 MR. CAMERON: Okay, thank you for
25 providing that additional.

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1 And we'll go to -- to Sara. But is there
2 any -- Dave, Lawrence, anything that you want to add
3 to what you heard Tim...

4 MR. HARRIS: I don't think there was
5 anything that anybody said that we felt required
6 clarification on our part.

7 MR. CAMERON: All right.

8 MS. BARCZAK: Is the NRC -- if this
9 operating license -- or construction license is
10 granted, is the -- like let's say you were just
11 talking about the mitigation procedures that you have
12 recommended on the environmental justice section. Is
13 the NRC going to be the regulatory body that goes
14 through and says, "DCS, you know, you weren't
15 distributing fliers and you weren't doing this and you
16 weren't doing that, and you're in violation," or where
17 do you -- are you the overseeing regulatory body to
18 make sure, even if you give the license the okay, do
19 you then oversee it?

20 MR. HARRIS: Yeah, typically, the way a
21 lot of these -- these things happen are through -- we
22 issue a license with conditions. You know, it says,
23 "You can do these things." And then it says, "You
24 shall do these things." And it's possible that those
25 mitigation measures could be under a license

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1 condition. Certainly we don't feel that there's an
2 environmental justice concern with construction or
3 operation. So it would be doubtful that, if we issued
4 a construction authorization request, that EJ would be
5 directly considered, you know, mitigation, because it
6 wouldn't be timely. But there -- there are probably
7 going to be other mitigation measures relative to
8 construction that would be incorporated in any kind of
9 action the NRC took.

10 MR. CAMERON: But is the question also if
11 we license this facility, we're also going to...

12 MR. HARRIS: Right.

13 MR. CAMERON: ...regulate the facility?

14 MR. HARRIS: I'm sorry, I -- right.

15 MR. HULL: We've got an inspection and
16 enforcement program that applies to any licensee.

17 MR. HARRIS: Right. So our job is to make
18 sure that DCS complies with the conditions of the
19 license that we issue them.

20 MR. CAMERON: Is there -- there anybody
21 else who hasn't had an opportunity to say anything
22 tonight, that would -- that would like to say anything
23 or ask a question, or are there other -- other
24 questions out there?

25 (No audible response)

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1 MR. CAMERON: Okay. Well, it always is
2 nice to -- to do a meeting in Savannah, because we
3 always get a lot of really challenging things to think
4 about in trying to do our job. So we just thank you
5 for -- for being here. And the staff will be here.
6 There are people here from the Department of Energy,
7 from Duke Cogema Stone & Webster. I mean, if you have
8 questions, you want to talk, I know we'll be here for
9 a while.

10 And thank you. Thank you all.

11 (Whereupon, the hearing was concluded at

12 10:05 p.m.)

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NUCLEAR REGULATORY COMMISSION

Title: Public Meeting on Proposed MOX Facility Draft Environmental Impact Statement

Docket Number: (not applicable)

Location: Augusta, South Carolina

Date: Wednesday, March 26, 2003

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
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4 PUBLIC MEETING ON PROPOSED MOX FACILITY
5 DRAFT ENVIRONMENTAL IMPACT STATEMENT
6 + + + + +
7 WEDNESDAY,
8 MARCH 26, 2003
9 + + + + +
10 AUGUSTA, SOUTH CAROLINA
11 + + + + +
12 The Public Meeting was held in the North
13 Augusta Community Center, 495 Brookside Avenue
14 North Augusta, South Carolina, at 7:05 p.m., Francis
15 "Chip" Cameron, Facilitator, presiding.
16
17 PRESENT:
18 FRANCIS (Chip) CAMERON
19 LAWRENCE KOKAJKO
20 TIM HARRIS
21
22
23
24
25

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meeting process before we get into -- to our discussions. One is the purpose, why the NRC is here tonight. We're here, first of all, to clearly explain what the NRC's process is for evaluating this application that we received, and to specifically talk about the findings that are in the draft environmental impact statement that's been prepared.

And most importantly, we want to hear from you, any concerns you have, any recommendations you have about the draft environmental impact statement, the NRC process for evaluating this application. And the ultimate goal is to use the comments that we hear tonight, the written comments that we receive, and comments from some of the other meetings that we're doing, that's going to help us to -- to make our decision on the application and to prepare the final environmental impact statement.

And what you hear tonight from -- from the NRC and from -- from other people in the community may help you to prepare your written comments, if you want to -- to submit any written comments to us. But let me just emphasize that whatever is said tonight, those comments will carry the same weight as written comments. And we are taking a transcript tonight. Melanie is our stenographer. And we will have a

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P-R-O-C-E-E-D-I-N-G-S
MR CAMERON: Good evening everyone. My name is Chip Cameron. I'm the Special Counsel for Public Liaison at the Nuclear Regulatory Commission. I just wanted to welcome all of you to the Nuclear Regulatory Commission, the NRC's public meeting tonight. And I have to say it's nice to be -- nice for all of us at the NRC to be with all of you in North Augusta. We've had several good meetings here in the past, and we look forward to having a good meeting tonight.

Our subject is the NRC's draft environmental impact statement that the NRC has prepared to help its -- help it make its decision on the evaluation of the application for the construction of the mixed oxide fuel facility. That application is from the consortium of Duke, Cogema, Stone & Webster. And you may be hearing that referred to tonight by its acronym, DCS. We'll try to keep the acronyms down, and explain what they are if we -- we use them. But that's -- that's one you might hear tonight.

And I'm going to help out by serving as the facilitator for tonight's meeting, to try to help all of you have a -- a productive meeting tonight. And I just wanted to go over a few things about the

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And in terms of ground rules, when we're in the question-answer period, if you have a question just signal me and I'll -- I'll bring you the microphone. And please tell us your name and affiliation, if appropriate, so that we'll have that on the transcript. And I would just ask you to try to be concise as possible. I know that's difficult because this is a complex issue. But if you try to do that, then we can make sure that everybody who's here tonight who wants to talk can have an opportunity to speak.

And when we get to the formal comments, we do have a lot of people signed up to talk tonight. So I'd like to keep the individual comments at five minutes; so that if you could try to keep it to five minutes, everybody will benefit from that. And I'll remind you when you're -- when you're getting there, although most people don't take that -- that five minutes. And I would just ask that only one person speak at a time, for obvious reasons, so that we can get a clean transcript, and also so that we can give our full attention to whomever has the floor at that time.

In terms of agenda, we're first going to go to Lawrence Kokajko, who is right here. And

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written record of what is said tonight. And that will also be available to anyone in the public who wants to see that transcript.

In terms of the format for the meeting, we're going to try to keep it real simple. We have a couple of brief -- two brief NRC presentations to give you some background information, and then we're going to go out for a question-answer period with you, make sure that -- that everybody understands what we're doing. And then we're going to go to you for a -- a comment session. And I don't want to say formal comment, although it is in a sense. We want to try to be as informal as possible tonight and -- and just have some good discussions. But when we get to the comment portion of the meeting, you can either come up to this podium and make your comment, or I'll bring you this -- this talking stick, this cordless mic, and you can -- you can use this to make your comments.

And sometimes it's -- we all know it's -- it's difficult to perhaps separate a question from a comment, or a question might lead into a comment. And so, when we're into question-answer period, it's fine if you sort of segue into a comment, but we really do want to save that question-answer period for -- for informational questions for the -- for the NRC.

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 1 Lawrence is the acting Branch Chief of the
 2 Environmental and Performance Assessment Branch at the
 3 NRC. It's in our Office of Nuclear Materials, Safety,
 4 and Safeguards. And Lawrence's staff had a
 5 responsibility for doing the evaluation, the
 6 environmental evaluation on this DCS application to
 7 construct this facility, and also for doing
 8 environmental evaluations on other -- other
 9 facilities. And Lawrence has been with the Agency for
 10 about 14 years. And before he became the acting
 11 Branch Chief, he was chief of a -- a Special Risk Task
 12 Group that the Agency had formed to take a look at how
 13 to make our processes more -- more risk-informed. And
 14 he's been involved in reactors and spent fuel
 15 activities at the NRC, also. And Lawrence is just
 16 going to give you an overview of what the NRC is, how
 17 this environmental evaluation fits into our
 18 responsibilities.
 19 And then we're going to go to Mr. Tim
 20 Harris, who's right here. And Tim is going to tell us
 21 about the findings in the draft environmental impact
 22 statement, what the schedule is for completing the
 23 environmental impact statement, how you submit
 24 comments, important information. And he's the Project
 25 Manager on the environmental review on this

9
 1 application. And he's been with the -- the Agency for
 2 about nine years now, and has a civil engineering
 3 degree from the University of Maryland. And he's one
 4 of Lawrence's staff.
 5 And I should -- before I stop, just to
 6 make sure everybody knows, we have Dave Brown here
 7 with us. And Dave is the Assistant Project Manager on
 8 the safety evaluation on the DCS application. And
 9 introducing him allows me to make an important point.
 10 The NRC's decision on this application has two major
 11 components to it. One is the environmental evaluation
 12 that we're here to talk about tonight; and the other
 13 is the safety evaluation of the proposed facility.
 14 And both of those come together to help the NRC make
 15 a decision. So we do have Dave here tonight in case
 16 there are questions on any of the safety issues, and
 17 perhaps we can explain the difference between those a
 18 little bit more in -- in the discussion.
 19 And with that, I just would thank you for
 20 -- for being here tonight. And we're going to go to
 21 Lawrence Kokajko.
 22 Lawrence?
 23 MR. KOKAJKO: Thank you, Chip.
 24 Can everyone hear me? Can everyone hear
 25 me? Let's try the cordless. Does it work now? No?

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a set of slides; an agenda, facts sheet, and comparison of alternatives; and then feedback forms. We would appreciate hearing you responding to the questions on the feedback forms, and either handing it back to an NRC staff person, or you can staple the form together and drop it in the mail. If the NRC people could raise their hand one more time so you could give it to one of us. I think John Hull there, as well. You can drop it in the mail, as well. The form is self -- is addressed, and postage has already been paid.

If you would like a copy of the draft environmental impact statement, we have a limited number here. And if we run out, we will mail you a copy. Next slide. Next slide.

As Chip mentioned, the presenters tonight will be myself, as well as Mr. Tim Harris of my staff. We've included our phone numbers and Email addresses. And please feel to contact us (sic) if you have any questions after this meeting. And we will be hanging around a little bit in case you have some other comments you'd like to talk to us about.

The purpose of tonight's meeting is to get your comments on the draft environmental impact statement. Before we hear your comments, we'll

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Okay. It's working; right?
MR. CAMERON: It's working. I think it just isn't quite level.

MR. KOKAJKO: How about now? Excellent. Good evening. My name is Lawrence Kokajko, and as Chip said, I am the acting Branch Chief for the Environmental and Performance Assessment Branch at the Division of Waste Management in the Office of Nuclear Materials, Safety, and Safeguards at the Nuclear Regulatory Commission. And I'd like to welcome you to this meeting on the NRC's draft environmental impact statement for the proposed mixed oxide or MOX fuel fabrication facility.

I'd like to thank you for taking your time out of your busy schedule to be here this evening. And we do appreciate it. And we do value your input. And we look forward to hearing from you this evening.

This meeting is one of a series of meetings planned to inform the public about the environmental impact statement, or the EIS, for the proposed MOX project, and to solicit public comments. Last night we met in Savannah, and tomorrow night we meet in Charlotte.

There are three handouts that you should have received on the way in. You should have received

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12	<p>1 provide some information on the NRC's role on the proposed MOX project, and describe the <i>National Environmental Policy Act</i> and the EIS process, and how the EIS fits into the NRC's decision-making process. Tim will give an overview of the draft environmental impact statement, and then there will be time to answer questions. Next.</p> <p>2 The proposed MOX facility would take surplus weapons plutonium and depleted uranium and make nuclear reactor fuel. Congress, in the <i>Defense Authorization Act of 1999</i>, gave NRC a role in the proposed MOX project. Specifically, NRC has licensing authority over the MOX facility, so our role is to make a licensing decision regarding the safe operation of that facility.</p> <p>3 The NRC is an independent government agency, and our mission is to protect the public health and safety, and the environment, in the commercial uses of radioactive material. Our role is different from the Department of Energy's. The Department of Energy's role in this project relates to implementing the United States nuclear non-proliferation policy, including the disposition of surplus weapons plutonium.</p> <p>4 The Department of Energy also has a</p>	13	<p>responsibility to design, build, and operate two facilities that support the proposed MOX facility. These two facilities are the pit disassembly and conversion facility, or the PDCF, and the waste solidification building, or the WSB. While the pit disassembly and conversion facility and the waste solidification building are considered in the NRC's environmental review, it is important to note that the NRC does not have licensing authority over these support facilities. That responsibility rests with the Department of Energy. The NRC only has authority over the proposed MOX project.</p> <p>5 I'd like to briefly describe the EIS process. The <i>National Environmental Policy Act</i> requires government agencies to prepare an environmental impact statement for major federal actions such as the potential licensing for the proposed MOX project. An environmental impact statement presents an environmental impacts (sic) of a proposed action, along with reasonable alternatives to that proposed action. Note that the bolded areas are opportunities for public involvement in the process, and we consider this a very important part of the EIS process.</p> <p>6 The NRC's involvement in the MOX project</p>
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1 decisions that the NRC will make for the proposed
 2 facility. The first is whether to authorize
 3 construction of the facility, and the second is
 4 whether to authorize operation of the facility. These
 5 decisions are shown in the middle of the slide. The
 6 NRC's environmental review is shown at the top portion
 7 of the slide, and consists of preparing the final
 8 environmental impact statement. The final
 9 environmental impact statement will be used by NRC to
 10 decide whether to authorize construction, and later
 11 whether to issue a license to operate the MOX
 12 facility.

13 The NRC's safety review is shown at the
 14 bottom portion of the slide. The safety evaluation
 15 report for the construction authorization request
 16 focuses on a safety assessment of the proposed design
 17 bases to determine if it meets NRC's requirements.
 18 NRC's final environmental impact statement and safety
 19 evaluation report for the construction authorization
 20 request will be the basis for making a decision on
 21 whether to construct the proposed MOX facility. We
 22 anticipate making that decision later this year.

23 Duke Cogema Stone & Webster plans to
 24 submit a license application to operate the proposed
 25 facility in October of 2003. The safety evaluation

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1 started when Duke Cogema Stone & Webster, the
 2 applicant, submitted an environmental report and
 3 requested to construct the MOX facility. We published
 4 a notice of intent to prepare an environmental impact
 5 statement in the *Federal Register* in March of 2001.
 6 During the scoping process, the public helped
 7 determine what issues would be addressed in the
 8 environmental impact statement. We have now completed
 9 the draft environmental impact statement in February
 10 of this year, and we sent copies to approximately 550
 11 people in that month.

12 We are currently in the public comment
 13 period for the draft environmental impact statement.
 14 This meeting is being transcribed, and comments made
 15 here tonight will be included in the official comment
 16 record. The last slide will show ways you can comment
 17 additional -- submit comments additionally. We will
 18 review and consider the public comments and finalize
 19 the EIS later this year. Next slide.

20 As I mentioned earlier, NRC's role is to
 21 make a licensing decision regarding the proposed MOX
 22 facility. I'd like to take a few minutes to describe
 23 the licensing process, and how the environmental
 24 impact statement we're discussing tonight fits into
 25 NRC's decision-making process. There are two

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Can everybody hear me?
 What I'd like to do is discuss the alternatives that we considered in detail in the environmental impact statement; and also those alternatives that we considered, but did not analyze in detail. Then I'll provide a summary of the impacts in they DEIS.
 To understand better how we decided which alternatives to consider in detail, and those that we did not, that relates to the purpose and need of the environmental impact statement. As we stated in our notice of intent that Lawrence mentioned, the purpose and need of the MOX facility that's presented in this draft environmental impact statement is essentially the same as used by the Department of Energy in its programmatic EIS's for the surplus plutonium disposition program. Those are: The purpose and needs relate to agreements between Russia and the United States to reduce the threat of nuclear weapons by insuring that those materials are converted into a proliferation-resistant form. It also relates to reducing the risk of plutonium falling into the hands of terrorists or rogue states.
 The draft environmental impact statement evaluates two alternatives in detail. These are the

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report on the operating application and the FEIS will be the basis for making a decision on whether to allow them to operate the proposed MOX facility. There will also be two opportunities for hearings. John Hull, with our Office of General Counsel, is here, and he can answer questions related to the hearing process. To summarize, a single environmental impact statement will be used to support a decision to construct and later operate the proposed mixed oxide fuel fabrication facility.
 Now I would like to turn this over -- presentation over to Mr. Tim Harris, of my staff. Mr. Harris is the Project Manager and the Lead for the Environmental Review for the MOX project at the NRC.
 Tim?
 MR. CAMERON: And if I could just interject one thing. Tim has a lot of material for you, and he's boiled it down to a minimum. And you're going to have a lot of questions, I know, as he goes through that. But what we'd like to do is to let him get through his presentation, and if you could just note your questions on the view graphs, then we'll -- we'll go back out to you and get those -- those questions.
 MR. HARRIS: Thank you, Chip.

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 1 no-action alternative and the proposed action. And
 2 I'll describe those. The no-action alternative would
 3 be continued storage of this surplus plutonium at
 4 existing DOE sites. The no-action alternative is used
 5 as a baseline to compare alternatives in an
 6 environmental impact statement.

7 The proposed action includes impacts from
 8 constructing, operating, and later decommissioning the
 9 proposed MOX facility. It also includes impacts
 10 associated with other connected actions, such as
 11 transporting radioactive materials. As Lawrence
 12 mentioned, DEIS also includes impacts associated with
 13 the two DOE support facilities that he mentioned, the
 14 pit disassembly and conversion facility, and the waste
 15 solidification building. DEIS also includes impacts
 16 associated with the potential use of MOX fuel. For
 17 the proposed action, we also evaluated differences in
 18 using a sand filter, which was a topic I think was
 19 raised here during scoping, with using a HEPA filter
 20 system that was proposed by DCS.

21 As I said before, the purpose and need
 22 determined which alternatives we analyzed in detail,
 23 and those that we considered, in discussing the
 24 environmental impact statement, but did not analyze in
 25 detail. In addition to siting and technology options

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 1 evaluated by DCS in its environmental report, several
 2 alternatives were raised during scoping, and also at
 3 our meetings here last fall.

4 Immobilization was initially considered as
 5 a reasonable alternative. However, following the
 6 Department of Energy's amended record of decision for
 7 the surplus plutonium disposition program, DOE
 8 believed that an immobilization-only approach would
 9 not meet the U.S.-Russia agreements. Therefore, it
 10 did not meet the purpose and need, and that
 11 alternative was not analyzed in detail in the EIS.

12 Another alternative that was raised at the
 13 Charlotte meeting that we had last fall was
 14 deliberately making off-specification MOX fuel. And
 15 I'll describe what that is. Essentially, the surplus
 16 plutonium has impurities in it that, in order to use
 17 it in a reactor, need to be removed. This off-
 18 specification MOX fuel alternative consists of not
 19 removing those impurities. It would also include not
 20 burning the fuel or using the fuel in a reactor.
 21 Instead, you'd make the MOX fuel off-specification,
 22 which had the impurities, and then you would store it
 23 at spent fuel pools at existing reactor sites prior to
 24 disposal in a geologic repository. Again, we felt
 25 that this alternative did not insure that it was going

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by the Department of Energy. And the impacts that are presented in their draft environmental impact statement are essentially the same as those in -- in their previous -- DOE's previous environmental impact statements.

We've included in the packet of information that Lawrence mentioned comparison tables, so that if you want to look at numerical differences for any particular resource area, what was the person rem for the no-action alternative compared to the proposed action, you have the numbers in your hands. When I talk about them tonight, I'm just going to summarize them relative to current SRS conditions.

The impacts associated with the no-action alternative to the public and workers are considered to be low, and there would be no significant air quality or water quality impacts associated with this alternative. As you can imagine, storing material in a building doesn't generate a lot of water concerns or air concerns. There was also no significant waste management concerns or environmental justice concerns.

Now I'd like to walk through the technical areas for the proposed action. And again, the proposed action includes the impacts associated with three facilities: the proposed MOX facility; the pit

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to be proliferation-resistant, and did not meet the purpose and need.

The proposed action and no-action alternative impacts were evaluated for the following comprehensive list of technical areas. The technical areas on the right are considered to be less significant, and those are discussed in appendices. The technical areas on the left are discussed in the body of the report, and these are because these are issues that we felt had more significant impacts or were raised during scoping, and these were issues that were more important to the public. So we provided detailed discussion in the body of the report.

To allow more time for public comment, I'm only going to focus on the impacts on the left. These are human health risk, air quality, hydrology, waste management, and environmental justice. In addition, I'll summarize the impacts associated with transporting radioactive materials related to this project, and also the potential use of MOX fuel. And I'll also provide a summary of the cost benefit analyses.

First, I'd like to summarize the impacts associated with the no-action alternative. The impacts of this alternative were previously evaluated

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22	<p>disassembly and conversion facility; and the waste solidification building. There would be no adverse chemical or radiological impacts during construction from operating the three facilities. The annual public collective dose would increase by about 11% above what is currently received at the Savannah River Site. And the following slide will help put that in perspective. While 11% seems like it may be of concern, the numbers are actually quite small. Next slide, Dave.</p> <p>This slide shows radiation doses from several sources, and also NRC's annual public dose limit. The average annual dose from natural radiation -- natural background includes radiation from the earth, and also from space, and is about 360 millirem. And a millirem is just a measure of radiation dose. The annual public dose limit -- NRC's annual public dose limit is 100 millirem. You would receive about six millirem if you had a chest X-ray. The annual dose to the public from normal operations of the proposed MOX facility, PDCF, and waste solidification building is less than one millirem.</p> <p>Accidents have the greatest potential consequences of the impacts that we evaluated in the draft environmental impact statement. Two</p>	23	<p>conservative scenarios were evaluated for a number of potential accidents. These scenarios are the short-term scenario, which assumed that people were exposed by inhaling contaminated material from a plume that would be generated following an accident. We also evaluated a long-term scenario, which includes the impacts of the short-term scenario, as well as impacts associated with eating crops that could become contaminated.</p> <p>Potential accident impacts are evaluated in terms of risk. The classical definition of "risk" is the probability of an event times the consequences of the event equals the risk. In keeping with NRC's mission to protect public health and safety, we want to insure that the overall risk to the public is very small. Therefore, events that result in significant impacts are required to be made highly unlikely through the use of design safety features. And these design safety features are currently being evaluated as part of the safety evaluation process that Lawrence talked about.</p> <p>In March we notified a number of stakeholders that we had identified an error in the accident consequences due to a computer code bug. We felt that it was important to inform stakeholders in</p>
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1 a timely manner. And, in fact, I think I found out
 2 about the -- the error on a Monday after, and by
 3 Thursday afternoon we'd issued a letter to about 500
 4 people. So we felt it was very important to provide
 5 the public with accurate information.

6 During our subsequent review, we found an
 7 additional error in wind data that was provided by
 8 Duke Cogema Stone & Webster. This error essentially
 9 doubles the impacts associated with normal operations
 10 and potential accidents. These errors, however, do
 11 not change NRC's conclusion or preliminary
 12 recommendations. The numbers presented on the slide
 13 and the numbers in the comparison table which you
 14 have, have been updated. We also plan to issue errata
 15 sheets to people that were mailed copies of the EIS.
 16 By you attending this meeting, you'll get a copy of
 17 the errata sheets, and also we'll post those on the
 18 web.

19 Hypothetical events that caused the
 20 highest consequences were an explosion event at the
 21 proposed MOX facility. This hypothetical accident
 22 would be estimated to result in less than 50 latent
 23 cancer fatalities for the short-term exposure, and
 24 less than 200 latent cancer fatalities for the one-
 25 year exposure scenario. The other event was a tritium

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1 fire at the pit disassembly and conversion facility.
 2 This event was estimated to result in less than one
 3 latent cancer fatality in the short-term, and less
 4 than 100 latent cancer fatalities for the one-year
 5 exposure scenario. These estimates are conservatively
 6 derived, and do not include credit for intervention
 7 actions that would be taken to reduce long-term
 8 exposure resulting from eating contaminated crops. We
 9 didn't -- these numbers assumed that those events
 10 wouldn't happen. So -- so we think that these are
 11 bounding numbers.

12 The probability of these hypothetical
 13 events occurring is considered to be highly unlikely,
 14 as I mentioned before. Part of the safety review is
 15 to make sure that the safety processes and features
 16 are into the plant to make sure that the accidents are
 17 highly unlikely. These consequences of these highly
 18 unlikely events are significant. However, we believe
 19 that the overall risk to public health and safety is
 20 very small.

21 Air quality relates to compliance with the
 22 *National Ambient Air Quality Standards for Emission of*
 23 *Chemical Pollutants*. Air quality at the Savannah
 24 River Site already exceeds the particulate matter 2.5
 25 micron or PM 2.5 standard. The proposed action would

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1 result in a 0.1% increase during construction, mainly
 2 due from earth-moving activities; and a 0.01 increase
 3 during operations. However, the Environmental
 4 Protection Agency has delayed implementation of this
 5 standard. If and when attainment plans are developed
 6 by states such as Georgia and South Carolina, the
 7 Savannah River Site could be required to reduce PM 2.5
 8 emissions, and this could have some future impact to
 9 the MOX facility.

10 Next I'd like to talk about surface water.
 11 Surface water would not be significantly affected
 12 during construction through the use of sedimentation
 13 control measures. And there would be no direct
 14 operational discharges to surface water. Waste from
 15 the proposed MOX facility would be managed by the
 16 Savannah River Site. Discharges from existing
 17 Savannah River Site waste management facilities are
 18 not anticipated to change significantly as a result of
 19 processing this waste.

20 Groundwater would be used during
 21 construction and operation. Approximately 37% more
 22 groundwater would be used in the "F" area in the
 23 proposed action. Their existing groundwater wells and
 24 existing capacity is present to allow this water to be
 25 used, and we don't believe that the use of this water

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1 will create a significant impact on the aquifer or
 2 water quality.

3 There would be no significant impacts on
 4 the Savannah River Site waste management capability
 5 from processing the proposed waste of the proposed
 6 action. Operation of three facilities would generate
 7 about 300% more transuranic waste than is currently
 8 being generated at the Savannah River Site. This
 9 transuranic waste is planned to go to the waste
 10 isolation pilot plant in New Mexico for disposal, and
 11 the volume of the TRU waste that would be generated
 12 would be about 3% of the waste isolation pilot plant
 13 disposal capacity. Operation of the three facilities
 14 would increase low level waste by about 32%, and non-
 15 hazardous waste by about 60%. But again, the current
 16 Savannah River Site waste management system can
 17 accommodate these waste volumes.

18 An executive order issued by President
 19 Clinton directed federal agencies to address any
 20 disproportionately high or adverse human health or
 21 environmental effects on low income and minority
 22 populations. This is commonly referred to as
 23 environmental justice. The impacts from construction
 24 and operation of these facilities are not high or
 25 adverse. Therefore, there would be no environmental

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in insignificant impacts.

The potential impacts associated with using MOX fuel are discussed in the environmental impact statement on a generic basis. The collective dose to members of the public from normal operations would be essentially the same, whether a reactor used low enriched uranium fuel, or a mixture of the MOX fuel and low enriched uranium fuel.

We also looked at various design-based accidents, and found that the risk associated with developing a latent cancer fatality between low enriched uranium fuel and a mixture of MOX fuel varied from about 6% lower to 3% greater. We also looked at beyond design-basis accidents. The risk there would vary from about 7% lower to about 14% greater.

We have recently received an application from Duke Energy to place lead test assemblies in either the Catawba or McGuire reactor. We will do additional site-specific evaluations before these lead test assemblies are placed in those reactors, and before MOX fuel would be placed in any reactor. That is, the NRC would determine whether it's safe to do that before it's allowed to happen.

The draft environmental impact statement includes a cost benefit analysis on both a national

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justice concern associated with construction or operation. However, due to the prevailing wind directions, there is a potential impact on low income and minority populations from these highly unlikely events.

The risk associated with these accidents is considered to be small to all populations. However, the NRC felt it was important to include mitigation measures to reduce these potential impacts to low income and minority populations.

Transportation of materials was identified during scoping as an important concern to many stakeholders. The transportation analysis includes the shipment of surplus plutonium from various DOE sites to the Savannah River Site, and also depleted uranium from an existing enrichment facility to a conversion facility where it would be converted to a powder form, and then to the Savannah River Site.

We also provided an analysis of shipping fresh MOX fuel from the Savannah River Site to a generic Midwest reactor. The impacts associated with this transportation would be less than one latent cancer fatality from routine transport to the public along transportation routes, and also to transportation crews. Hypothetical accidents result

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1 scale and a regional scale. The cost benefit analysis
2 is used by the NRC to determine its preliminary
3 recommendation. On a national scale, the project
4 would cost about \$3.85 billion. The national benefits
5 would include safe use of excess weapons plutonium,
6 and also employment and income.

7 On a regional scale, which includes 15
8 counties surrounding the Savannah River Site, which
9 would be of interest to you all, the proportion
10 national cost within that region would be about \$8
11 million. The regional environmental costs are
12 considered, and the impacts presented in the draft
13 environmental impact statement conclude that the
14 impacts are not significant. The regional benefits
15 would include \$350 million of income during
16 construction, and about \$640 million during operation.

17 In conclusion, the impacts of the proposed
18 action are generally not significant. Accident
19 impacts from the pit disassembly and conversion
20 facility and the MOX facility are significant.
21 However, the probability of such an accident is
22 considered to be highly unlikely. Therefore, the
23 overall risk to the public is considered to be very
24 small. There is a potential environmental justice
25 concern should an accident occur. And, again, NRC has

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1 proposed mitigation measures to reduce those potential
2 impacts.

3 Staff's preliminary recommendation is the
4 proposed action with appropriate mitigation measures
5 to reduce potential impacts in all areas. Before
6 making any decision, NRC will consider comments here
7 tonight, and decide whether changes need to be made in
8 the environmental report -- I'm sorry, environmental
9 impact statement, and then we'll finalize the
10 environmental impact statement, as Lawrence mentioned.
11 He also mentioned that we're doing a safety evaluation
12 report, and that -- those findings would be completed
13 before NRC makes any decision whether or not to
14 authorize Duke Cogema Stone & Webster to construct the
15 MOX facility.

16 When DCS submits an operating license
17 application, NRC will review that application, and
18 prepare a second safety evaluation report. NRC will
19 only grant authority to operate the MOX facility if it
20 can be shown to be safe.

21 The next slide shows ways that you can
22 submit comments. You can either submit them in
23 writing, you can Email them to me. There's also a
24 place on the Web where you can type in comments, or
25 you can fax them to me. Comments are due by May 14th.

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1 And I would ask that when you provide your comments,
 2 if you can provide detail that helps us in determining
 3 how to -- how to address your comment. You know, a
 4 comment that says, "I'm for the proposed MOX
 5 facility," "I'm against the MOX facility," are nice.
 6 But if you say, "I'm against the MOX facility because
 7 I don't like XYZ," that's a much -- much more useful
 8 comment to us. Or if you say, "I'm for the proposed
 9 MOX facility because it would create jobs in the
 10 area."

11 But that concludes my remarks, Chip, if
 12 you...

13 MR. CAMERON: Oh, great.

14 MR. HARRIS: Be happy to answer questions.

15 MR. CAMERON: Great. And thank all of you
 16 for your patience. That was a lot of material. And
 17 let's go out to people for -- for questions now.

18 Yes, sir? And if you could just give us
 19 your name, please.

20 MR. MARESKA: Bill Mareska, Augusta,
 21 Georgia. To Tim or Lawrence, is the DOE or the NRC
 22 prepared to terminate any further action and abandon
 23 creating the MOX facility if the Russian and American
 24 political agreement on MOX construction falls through?
 25 This was the principal reason for choosing MOX over

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1 immobilization. And if those agreements fail, is the
 2 NRC or the DOE prepared to terminate the MOX facility
 3 construction and revisit immobilization?
 4 Thanks.

5 MR. HARRIS: That's a good question which
 6 maybe will help identify the differences in roles
 7 between the Department of Energy and the Nuclear
 8 Regulatory Commission.

9 The Department of Energy, as Lawrence
 10 mentioned, has the overall mission to -- for the
 11 surplus weapons plutonium. And they talk to Russia
 12 and are involved in the agreements. So if something
 13 happens between Russia and the U.S. relative to the
 14 agreements, those decisions would be made by DOE. NRC
 15 is only involved in determining whether or not the
 16 proposed MOX facility can be built and operated
 17 safely.

18 MR. CAMERON: And I think that -- that
 19 answers...

20 MR. HARRIS: Does that answer your
 21 question?

22 MR. CAMERON: And if there -- I imagine if
 23 there was some type of a change that caused the
 24 Department of Energy to reevaluate, then they might
 25 withdraw the application or something like that.

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MR. HARRIS: Right. But those -- those decisions would be made by others.

MR. CAMERON: Okay. Yes, let's go back here.

Yes, ma'am. And please give us your name.

MS. ROCHE: My name is Peggy Roche. I'm with Carolina Peace Resource Center. And I had several questions.

One thing, I think the man's question needs to be addressed by somebody, because it's my understanding that the Russians have halted their MOX facility plans at the moment, so that we are currently in violation of that agreement.

Now, another thing is that you mentioned terrorist attacks. What better "come and get me" is there than having 100% of the plutonium in the United States in one single place, instead of spread out throughout the United States? In one single place. And the reason it's not spread out is because every place that you've gone to start a plant, public outcry has kept a license from being issued in the Northeast, the Southwest, the Northwest, the West, and now you're here in the Southeast.

My other comment is you said that the workers at the facility would not be -- their health

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would not be adversely affected. I direct you to Section 5, Page 11 of your DEIS that admits workers who are building the site could have their health adversely affected by, quote, "Exposure to soil or groundwater previously contaminated by radioactivity or chemicals."

Are you admitting the Savannah River Site is currently unsafe before you start stirring up dirt with construction? Could I have an answer to any of my questions, please?

MR. CAMERON: Let -- let's start with the -- the last question about the draft environmental impact statement and worker health. Tim, did you -- did you understand the...

MR. HARRIS: Yeah, I did.

MR. CAMERON: ...trail to that?

MR. HARRIS: Can you still hear me?

The -- the answer is, is that there -- there was a potential concern that since soil that's currently at the MOX site was moved, that there could be some residual contamination. We don't think that's likely. The applicant has done some testing. But we felt that it was important, to insure worker safety, that we had measures in there for testing during construction to make sure that that didn't happen.

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going to make a comment, we want to hear about anything like that. But what we want to do now is want to try to answer any questions that people have; okay?

Okay, go ahead, Lawrence.

MR. KOKAJKO: Okay. First of all, the purpose of the program, as we describe in the purpose and need, is to eliminate surplus weapons plutonium and to get it into a form that is not subject to being diverted to subversive or terrorist needs. And I mentioned that in my opening remarks.

The -- also I'd like to point out, as far as the location in one site, I'm not questioning the policy of the Department of Energy in this case. We were mandated by law to evaluate the fact that they're going to do the proposed MOX facility. I have no authority to question why they do that. I'm now trying to implement that and make sure that it was done safely and in accordance with the law.

In terms of the -- the general question about what the NRC may be doing in response to terrorist...

UNIDENTIFIED: Use the microphone, please.

UNIDENTIFIED: Use the other microphone.

That one's not working.

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And I think the answer to your question of whether or not we think it's unsafe now is: No, we don't think it's unsafe.

MS. ROCHE: (Inaudible)

MR. CAMERON: We need to get you on the -- the microphone; okay? So we'll go back to you right now to see if you have a follow-up.

MR. HARRIS: Chip?

MR. CAMERON: Yeah, go ahead, Tim.

MR. HARRIS: Did we want to have the Department of Energy address...

MR. CAMERON: Let's work -- let's work through these questions. There were three issues that were raised. And one was the one that you answered. And did you have a follow-up on that one?

Before we go to -- I'm going to ask Lawrence Kokajko to tell us a little bit, because we know it is a concern to all of us. Where are potential terrorist issues? Where -- where are those issues considered in the NRC's evaluation of the application, and what is the Commission doing generally in terms of the events after September 11th?

Well, fine. Peggy, when you -- is it

Peggy?

Peggy, when you get up, and I know you're

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1 yes, sir.

2 MR. CAMERON: Okay, good. Good.

3 And Peggy, when -- you'll -- you'll have

4 your -- your chance to speak. But just let me give

5 you -- is there any other question you have?

6 Okay, go ahead.

7 MS. ROCHE: Did the Department of Energy

8 tell you to license just one facility in the United

9 States?

10 MR. HARRIS: It's important to understand

11 that the Department of Energy has the overall lead.

12 But the applicant that we're reviewing is Duke Cogema

13 Stone & Webster. We're responding to one application

14 from them. We don't deal directly with the Department

15 of Energy. Our point of contact is the applicant, who

16 is Duke Cogema Stone & Webster.

17 MR. CAMERON: So, in other words, we have

18 an application for this facility, and that's why we're

19 reviewing it. And if the program that we're not

20 responsible for develops the need for another

21 application, that would come in to us and we would

22 review that. But we can only review what is in front

23 of us; is that...

24 MR. HARRIS: That's correct. We don't

25 make the decisions where to put it or who applies.

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1 MR. KOKAJKO: It's not working?

2 MR. CAMERON: Yeah, we're not hearing it

3 out here.

4 MR. KOKAJKO: Is this one -- is this one

5 working?

6 MR. CAMERON: Better.

7 MR. KOKAJKO: In terms of the general --

8 what is the NRC doing in terms of terrorist

9 activities, the NRC is -- throughout the -- for a lot

10 of commercial uses of radioactive material, are doing

11 vulnerability assessments to insure that the -- we

12 have assessed potential vulnerabilities of diversion

13 and use of whether it's radioactive dispersal devices

14 of dirty bombs or other diversion type activities. We

15 have issued interim compensatory measures to the

16 licensees and applicants as to what they need to be

17 doing. And we have taken an increased security

18 awareness for all commercial licensees and applicants.

19 Beyond that, I cannot go into a lot more detail. But

20 we are aware of the terrorist threat, and we are

21 sensitive to it.

22 MR. CAMERON: The bottom line is, is that

23 potential terrorist threats are considered in the

24 NRC's evaluation of the application?

25 MR. KOKAJKO: In the safety evaluation;

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the MOX facility, wasn't associated with any...

MR. HOOKER: We're talking about Four Mile Creek. That's the one we're talking about.

COURT REPORTER: I'm sorry, we're -- I'm just not getting you.

MR. CAMERON: Yeah, we need to -- we need to get all this on the transcript.

Do you have one more question?

MR. HOOKER: The particular stream I'm talking about is Four Mile Creek.

MR. HARRIS: Yeah, we -- we did look at -- did the water quality associated with Four Mile Creek.

MR. HOOKER: And what did you come up with?

MR. HARRIS: We concluded that the proposed MOX facility would not significantly change the water quality in Four Mile Creek.

MR. CAMERON: And if you have information -- Mr. Hooker, if you have information that would -- that would cause us to -- to reevaluate that, please submit it to us.

Okay, great.

MR. HARRIS: Thank you.

MR. CAMERON: We have some questions out here, and one back there. And I don't know, does

MR. CAMERON: Okay. Question, Mr. Hooker? Okay. Question?

MR. HOOKER: Did the NRC consider the environmental risk taken with the ratings on these streams that have got a high rate, medium rate, low risk? I mean, did you all get together with the EPA and look at where they match these things?

I'm going to give you a copy of it so you all can look at them. But...

MR. HARRIS: Yeah. What we evaluated...

MR. HOOKER: ...somebody needs to (inaudible).

MR. CAMERON: Okay. And that's why we're here, to find out what we should look at harder. And I think that your concern is -- is some of the streams.

MR. HOOKER: This had input with what you (inaudible).

MR. HARRIS: Okay, we looked at it. In Chapter 3 it evaluates what the current conditions are at the Savannah River Site. And -- but -- but as far as evaluating the impacts from the proposed action, we looked at those areas that would be connected to the proposed action. So -- so if there was a stream that was, you know, on the back 40 that was nowhere near

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1 anybody in the upper peninsula out there have a
2 question?

3 UNIDENTIFIED: (Indiscernible)

4 MR. CAMERON: All right. Okay. Let's --
5 let's go for some questions, and then at some point
6 we're going to have to go to comment. Because we have
7 -- luckily, we have a whole lot of people who -- who
8 want to comment.

9 So let me start over here, and we'll go
10 back there and over. And -- and please try to keep
11 this to -- to mainly questions.

12 Don?

13 MR. MONIAK: I have a question concerning
14 existing impact.

15 MR. CAMERON: Don Moniak.

16 MR. MONIAK: My name is Don Moniak, M-O-N-
17 I-A-K.

18 Did you evaluate the impact that SRS would
19 have if they were to -- say in their emissions if they
20 were to release as much air pollution as they're
21 permitted to, or did you evaluate what they are
22 releasing? And the same with waste water discharge.
23 Because their permit levels, what they're permitted to
24 release is very different than what they do on an
25 average. And some of the permit levels are very high.

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1 Then I had one other question regarding
2 the NRC role.

3 MR. CAMERON: Why don't you -- why don't
4 you put that before us now.

5 MR. MONIAK: Okay, the other question is,
6 is the Nuclear Regulatory Commission responsible for
7 making sure that the Atomic Energy Act is followed?
8 And I'm referring to the provision on foreign
9 ownership, control, and influence of a U.S. nuclear
10 facility. And is the current determination on foreign
11 ownership, control, and influence valid, considering
12 Framatone bought out Duke Engineering a year ago?
13 Thanks.

14 MR. HARRIS: The answer to the last
15 question is: Yes, we do enforce the Atomic Energy
16 Act. Those issues, ownership issues, are discussed in
17 the safety evaluation report. And Dave could provide
18 some information. But that's -- they're not really
19 germane to the environmental impact statement.

20 MR. CAMERON: Okay. If we need to get
21 more on that, we'll go to Dave. Can you answer
22 Don's...

23 MR. HARRIS: Yeah, let me -- let me work
24 -- let me work backwards.

25 The waste water issues I think we looked

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1 at because the waste from the proposed MOX facility
 2 would go to existing SRS facilities. We looked to see
 3 if -- if processing that waste would violate permits.
 4 For the air quality, to be honest, Don,
 5 I'm not sure whether we looked at existing emissions.
 6 I want to say we did, but -- I see Ed nodding. I
 7 think that's the case. We looked at what they are
 8 currently emitting, not what they're permitted to
 9 emit. But, again, we looked at that in terms of would
 10 the MOX facility cause them to be out of compliance
 11 with any of their air permits, and we thought the
 12 answer was no.

13 MR. CAMERON: Okay. Great.

14 We're going to let Dave Brown tell us a
 15 little bit. But the reference to Ed is Ed Pentecost,
 16 who's back here. Ed, identify yourself. He is one of
 17 our expert consultants that is helping with the
 18 preparation of the environmental impact statement.

19 Dave, on the question of Don's on foreign
 20 ownership.

21 MR. BROWN: Well, you know, just to give
 22 you some context, we anticipate issuing our draft
 23 safety evaluation report next month, in April. And in
 24 there I can tell you our draft determination is we've
 25 looked at the foreign influence and control

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1 information and we have advised and find there's no --
 2 no issue there.

3 MR. CAMERON: All right, thank you.

4 Let's go to this gentleman right here.
 5 Please give us your name.

6 MR. SUTHERLAND: I'm Jim Sutherland. I've
 7 got a question. I noticed in the book
 8 (indiscernible). Did you all send the EIS to anybody
 9 that's on this list? I mean, like sitting
 10 (indiscernible) first time I've seen the document, and
 11 some of the data in here is not correct
 12 (indiscernible).

13 MR. HARRIS: I'll take that as a comment
 14 and hope that you'll provide some -- a written comment
 15 showing where the datas are inaccurate and what the
 16 datas should be.

17 MR. SUTHERLAND: My question is...

18 MR. HARRIS: Whether we contacted...

19 MR. CAMERON: Yeah, can -- can we -- do we
 20 know if we sent a copy of the environmental impact
 21 statement to local government officials?

22 MR. HARRIS: Yeah, we sent it -- we sent
 23 it to about 500 people, and I don't remember whether
 24 New Ellington was on the -- on that list.

25 MR. CAMERON: Okay. Let's make sure is

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1 there -- are any local government units that did not
 2 get a copy, that people know about, or don't think you
 3 got a copy, please give us that address and we'll send
 4 them a copy.
 5 MR. HARRIS: Actually, if you let Adrienne
 6 know in the back table, she can make that happen and
 7 we'll...
 8 MR. CAMERON: And, Adrienne, just wave to
 9 us.
 10 All right, that's Adrienne back there. If
 11 we can...
 12 MR. HARRIS: But we'll take as an action
 13 item, Chip, to make sure that New Ellington gets a
 14 copy.
 15 MR. CAMERON: Great. Okay. We'll put
 16 that up on the board.
 17 Let's go to Glenn Carroll.
 18 MS. CARROLL: I actually thought he was
 19 talking about something else. He didn't get his copy,
 20 but do you have corrected data that you'll be getting
 21 to us?
 22 MR. HARRIS: Correct.
 23 MS. CARROLL: You put some figures up
 24 there tonight which were, you know, not very detailed.
 25 But are those final figures?

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1 MR. HARRIS: Yes.
 2 MS. CARROLL: So you do have the final
 3 data?
 4 MR. HARRIS: Yeah. Actually, the -- the
 5 information that's in your handouts that talks -- the
 6 numbers there are corrected numbers. But -- but
 7 not...
 8 MS. CARROLL: Are they just not attached
 9 to the agenda?
 10 MR. HARRIS: It's attached to the agenda;
 11 correct. But not all the numbers that are in the EIS
 12 are in there. That's why we're going to issue errata
 13 sheets with -- you know, there are several huge tables
 14 and other references. So we'll issue errata sheets
 15 hopefully next week, so that you'll have those.
 16 MS. CARROLL: Do you plan to hold public
 17 meetings following the issuance of the correct data?
 18 MR. HARRIS: I don't think that's
 19 currently in the plan. But if you're making a
 20 request, we would consider it, as always.
 21 MS. CARROLL: I'm making a request.
 22 MR. HARRIS: Well, thank you.
 23 MR. CAMERON: And I would imagine that the
 24 -- that issue might turn on whether the corrected data
 25 would lead to or could lead to a different conclusion.

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1 MR. HARRIS: Well, again, as I stated in
 2 my remarks, the corrected data does not change the
 3 NRC's conclusion, you know. If the impacts associated
 4 with operation, even though they're twice as much, are
 5 still less than one millirem. The accident
 6 consequences changed, but they're still large numbers.
 7 So -- so the -- you know, whether the number was 20 or
 8 400, it doesn't change the fact that they're
 9 significant. So -- so even though the numbers
 10 changed, it doesn't change our -- our conclusions.

11 MR. CAMERON: Okay. Thank you.
 12 And let's go to this gentleman, and then
 13 after that, down here, and we're working our way.

14 MR. CLEMENTS: My name is Tom Clements.
 15 Just two -- couple issue of questions. As
 16 we all know, four reactors have been chosen to do this
 17 mission, which are mentioned in the draft EIS. But
 18 four reactors are not enough to carry out the
 19 irradiation of 34 tons. Where are the other two
 20 reactors? Where does that stand? At least two more
 21 are needed.

22 MR. HARRIS: The other two reactors would
 23 be selected by either DCS or DOE. What we did in our
 24 draft environmental impact statement was evaluated
 25 impacts to reactors generically. So that would apply

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1 to whether the reactors near Charlotte ultimately
 2 would become part of the program, or whether another
 3 reactor in the nation would become. So we looked at
 4 it generically so it's not a specific evaluation. And
 5 also keep in mind that if and when a reactor requests
 6 to use the MOX fuel, that requires an additional site-
 7 specific review by the Nuclear Regulatory Commission
 8 to determine whether it's safe to use that fuel at
 9 that reactor.

10 MR. CLEMENTS: Also, because you -- you
 11 mentioned the -- eliminating the immobilization
 12 alternative because of the position of Russia. Has --
 13 and this is -- may be more of a DOE thing. But has
 14 the agreement with Russia been changed to dictate to
 15 the United States what disposition options we choose?
 16 I have a copy of it here and...

17 MR. HARRIS: I'm not aware that the
 18 agreement has changed since...

19 MR. CLEMENTS: Well, let me just...

20 MR. HARRIS: ...2001.

21 MR. CLEMENTS: ...clarify this, and I will
 22 make a comment. Because a mythology has been created
 23 that we -- Russia is dictating to us that we do MOX.
 24 And that is not true. The Article 3 of the agreement
 25 says, "Disposition shall be by one of the following

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1 methods: irradiation, immobilization, or any other
2 method agreed to by the parties in writing. So we
3 appreciate it if you'd correct the document to reflect
4 what is actually in the agreement. It allows
5 immobilization, and the Russians can't dictate to us
6 what we do with the material.

7 MR. CAMERON: Let's get some -- let's get
8 some clarification on that for you from the Department
9 of Energy. And, Ken, if you'd just introduce yourself
10 and...

11 MR. BROMBERG: My name is Ken Bromberg
12 from the Department of Energy. You are correct, the
13 2000 agreement with Russia, plutonium (indiscernible)
14 disposition agreement does not dictate. It allows
15 either party to use immobilization and/or MOX.

16 However, Russia has made it known in
17 negotiations with the U.S. over several years that
18 they would not proceed to dispose of their surplus
19 weapon grade plutonium if the U.S. used MOX -- rather,
20 used immobilization only. The Russians feel that
21 immobilization, to use their words, is another form of
22 storage, because immobilization does not degrade the
23 weapon grade plutonium so it can't be reused in
24 weapons. As a result, the Russians have refused to go
25 ahead and dispose of their plutonium. For that

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1 reason, the U.S. is proceeding, of course, as it is
2 currently.

3 The other thing is that there have been a
4 number of technical problems with immobilization in
5 terms of the high level waste barrier, with the in-
6 tank precipitation problem, and there are currently
7 additional technical studies that have called into
8 question the can and canister immobilization approach
9 that we have been working on for many years. That's
10 not to say it couldn't be fixed or corrected in the
11 long-term, but right now there are a number of
12 technical problems that MOX does not have.

13 MR. CAMERON: Thank you very much, Ken.
14 We've got a couple here, and then we're
15 going to come back here, and then we'll work over that
16 way.

17 Yes, sir? Please give us your name.

18 MR. TEESE: Greg Teese from Aiken, South
19 Carolina.

20 Tim, you stated that the numbers that were
21 in the handout are the correct numbers?

22 MR. HARRIS: Yes, sir.

23 MR. TEESE: The numbers in the handout for
24 the radiological accidents for continued storage, the
25 no-action alternative, the dose that it has on the

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1 handout is 6.6 person rem; the dose that's in the
2 draft environmental impact statement is 6.6 person
3 sieverts. There's a difference of a factor of 100.
4 Which is the correct number?

5 MR. HARRIS: Without looking at the
6 document, I believe the information -- those numbers
7 didn't change. So whatever's in the draft
8 environmental impact statement is correct. And if --
9 if, in fact, the handout used the wrong units, I
10 apologize.

11 MR. TEESE: If the handout used the wrong
12 units for that, on the same line as the proposed
13 action, the explosion event, it's showing 91,000.
14 What is the correct units for 91,000?

15 MR. HARRIS: I believe that person rem.

16 MR. TEESE: Not person sievert?

17 MR. HARRIS: Not person sievert. We -- we
18 had both units, and we decided to convert them to rem
19 since that's what most people understand in -- in the
20 United States.

21 MR. TEESE: Okay, thank you.

22 MR. CAMERON: And I guess that the implied
23 comment there is that we should really check these
24 carefully to make sure that it's correct.

25 MR. HARRIS: Comment received.

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1 MR. HARMON: My name is Harry Harmon.
2 On your waste management slide you
3 mentioned that the operation of the MOX plant would
4 generate certain percentages, in addition to waste.
5 My question is: Are those numbers for the total site
6 or for "F" area?

7 MR. HARRIS: I believe those numbers are
8 for the total site. Those are percentages above what
9 are currently being generated by the Savannah River
10 Site.

11 MR. HARMON: Is that on an annual basis
12 or...

13 MR. HARRIS: Correct, annual basis.

14 MR. HARMON: Annual basis. All right.

15 MR. CAMERON: Thank you very much.

16 I think we have two questions right here;
17 or one.

18 Yes, sir?

19 MR. WALKER: My name is David Walker. I'm
20 from Aiken.

21 Tim, you keep mentioning mitigating
22 consequences regarding environmental justice. What
23 exactly are those mitigating consequences?

24 And the second question is: Will the
25 corrected EIS statement from your department be

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1 available prior to the May 14 deadline for submitting
2 comments?

3 MR. HARRIS: Yeah, we hope to get that
4 information out to you next week. Obviously the mail
5 will take a little bit of time to get it to you. But
6 we're also going to post that on the -- on our
7 website. So if you want it quickly, you can access it
8 that way. And yes, it will be available before the
9 May 14 comment period.

10 Your question was: What are the
11 mitigation measures that are proposed? Is that...

12 MR. WALKER: Yes.

13 MR. HARRIS: The Nuclear Regulatory
14 Commission -- there's a number of mitigation measures
15 discussed in the EIS, some of which were proposed by
16 the applicant, DCS, and some of which were proposed by
17 NRC.

18 These were proposed by the NRC, and they
19 include focused public information campaigns to
20 provide technical and environmental health information
21 directly to low income and minority populations, or to
22 local agencies and representatives for those groups.

23 Also, additional programs directed at
24 local communities providing emergency response
25 services or other emergency facilities to incorporate

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1 additional measures to protect low income and minority
2 populations. So it's to EDC and also to provide some
3 additional focus on environmental -- I'm sorry,
4 emergency responses.

5 We received some comments last night from
6 a Mr. Cutter on -- on some specifics, and that's
7 really some of the things that will be helpful to us,
8 is -- is as you review these mitigation measures, if
9 you can provide some more details or additional ways
10 that you think mitigation could happen, we're very
11 receptive to that.

12 MR. CAMERON: Okay. Follow-up?

13 MR. WALKER: Follow-up. Will these
14 measures take effect before an accident or after?

15 MR. HARRIS: They would -- they would
16 happen before the accident. Certainly -- certainly
17 the information can...

18 MR. CAMERON: You may want to rephrase
19 that.

20 [Laughter.]

21 MR. HARRIS: Am I still beating my wife?
22 I don't know.

23 [Laughter.]

24 MR. HARRIS: The information campaigns
25 would happen if and when a license was granted, before

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1 any hypothetical event happened. So that -- you know,
2 we're not going to wait for an accident to decide, oh,
3 we better go to mitigate it. That mitigation needs to
4 happen before an unlikely event happens.

5 MR. CAMERON: Okay. Thanks, Tim.

6 MR. HARRIS: Is that better, Chip?

7 MR. CAMERON: Sounds better.

8 MR. HARRIS: And call my wife to see --
9 see if I'm still beating her.

10 MR. CAMERON: Okay. Brendolyn, do you
11 have a question?

12 MS. JENKINS: Good evening. My name is
13 Brendolyn Jenkins and I'm from Aiken, South Carolina.

14 I want to piggyback for a second on the
15 question that Reverend Walker asked. If it's done
16 before, you said that you would give technical
17 information in a public information campaign. Would
18 those campaigns be held specifically in the impacted
19 community?

20 MR. HARRIS: I think the answer would be
21 yes. But if -- but if you think that they should be
22 in other areas, you know, we're receptive to that.

23 MS. JENKINS: Heretofore, until last
24 Thursday, it was the first meeting we've had in our
25 community. So that's pointedly why I asked.

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1 My question is, with the waste management,
2 300% more TRU waste; 32% more low level; 60% more
3 solid waste. Will new or existing facilities be used
4 to handle that waste? And if it's coming from around
5 the site and not this facility, how, then, does these
6 numbers specifically address MOX?

7 MR. HARRIS: Those numbers represent the
8 percentage increase that the MOX facility would have
9 relative to what's currently being produced at the
10 Savannah River Site. That is, if you look at the
11 number of cubic meters or volume of waste, say TRU
12 waste that the MOX facility will create annually, and
13 divide that by what the Savannah River Site already
14 does, you get 300%, about. So those numbers relate to
15 that.

16 Your question also related to whether new
17 facilities would be built. Most of the waste would be
18 processed by existing Savannah River Site facilities.
19 And, as I mentioned, those facilities have the
20 capacity and are permitted to manage that waste. I --
21 we also talked about the waste solidification
22 building. And that will be a new facility that will
23 process waste from the proposed MOX facility and also
24 the pit disassembly and conversion facility. So that
25 would be new construction.

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MS. JENKINS: And did you look at the additional impacts, environmental impacts, on these waste streams?

MR. HARRIS: Yes, ma'am, we did. And as I stated in my presentation, we concluded that the effort of processing the waste from the proposed action would not change significantly the permitted effluents from those waste process facilities at the Savannah River Site.

MS. JENKINS: One last question. On the readjusted or recalculated figures shown, I understand how you made the readjustments and came up with the new conclusions. But what does DOE, NRC, and DCS consider an acceptable death or disease number?

MR. HARRIS: I don't know that we have an -- a definition for that. Certain numbers of latent cancer fatalities that are very small are generally acceptable, but I don't think there's a hard-and-fast number on that.

MR. CAMERON: And I think that Tim used the word "we." You said DOE, DCS, NRC. And I think Tim is just speaking for -- for the NRC at this point. But it's a very pertinent question for the regulatory agency.

Lawrence?

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MR. KOKAJKO: We don't consider any death acceptable, first of all. Let -- first, we're talking about latent cancer fatalities, and it's not an actual death. Although we have...

[Laughter.]

MR. KOKAJKO: ...although we have come up with...

[Laughter.]

MR. KOKAJKO: Sir, please. Although we have come up -- we have done a bounding analysis to see what possible could happen in terms of these hypothetical accidents. The other part of that -- our job is to insure -- assure that they don't happen. That's what the safety review is for. We want to make those things highly unlikely. But the NEPA process asks us to take a look at the broad bounding case, and so we have done that. But we do not -- we don't find any death acceptable. We never have, and we never will.

MR. CAMERON: Okay, thank you.

We're going to go to this side, questions, and then we're going to get started with public comments. And, Jen, I see your hand. We'll go to you before we get public comments.

Gerald?

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1 be working on the DOE when they -- when the material
 2 is in the hands of DOE, and when it's transferred to
 3 the NRC license facility, are you only considering the
 4 -- so there's no memorandum of understanding for
 5 identifying...
 6 MR. HARRIS: Well, I think MOX workers
 7 would be employed by Duke Cogema Stone & Webster, and
 8 other workers at the Savannah River Site are employed
 9 by -- by other various DOE contractors.
 10 MR. RUDOLPH: So there's no -- there's no
 11 memorandum of understanding for that?
 12 MR. HARRIS: Not that I'm aware of. But
 13 I'll let Dave talk about the memorandum of
 14 understanding for security of material, if you can.
 15 MR. BROWN: Let me just try to address
 16 your question with regard to who's a worker. For
 17 Savannah River Site employees who -- who would not be
 18 working at the MOX plant, DCS has committed to meeting
 19 a certain section of our regulation that says we're
 20 going to train those people about the risks at the MOX
 21 plant, and we're going to provide both posting --
 22 postings and notices. And if they do that, then our
 23 regulations allow that they be treated as workers for
 24 the purposes of the safety evaluation. That's their
 25 proposal, and that's what we're evaluating as part of

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1 MR. RUDOLPH: I'm Gerald Rudolph from
 2 Columbia. I have a few questions.
 3 One is about memorandum of understandings.
 4 Do you -- where can we get a copy of the memorandum of
 5 understanding between the Department of Energy and NRC
 6 about the security for materials, about the transfer
 7 of materials between the -- within the complex
 8 commercial process for MOX. And where are we going to
 9 find the memorandum of understanding for who is or is
 10 not a MOX factory worker, for purposes of this
 11 accident analysis? That's the first question.
 12 And you want me to go through all the
 13 questions first?
 14 MR. HARRIS: No, please.
 15 I'm going to ask Dave to talk about the
 16 MOU. I think as far as -- I didn't quite understand
 17 your last question about what was a MOX facility
 18 worker. Certainly...
 19 MR. RUDOLPH: Who is -- who is a MOX --
 20 for the benefit of accident analysis, who is or is not
 21 a MOX factory worker or a MOX facility worker.
 22 MR. HARRIS: Well, those would be workers
 23 that -- that operate within the footprint of the
 24 proposed MOX facility.
 25 MR. RUDOLPH: I mean, but some of them may

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1 the safety review.

2 MR. RUDOLPH: So that allows you to
3 exclude them from the submission of off-site impact?
4 If they -- other -- if they -- more people -- how does
5 that work? How do you define who's on-site and off-
6 site from the MOX facility?

7 MR. BROWN: It does -- there is a little
8 bit of a complication. For the purposes of a safety
9 review, when we're looking at potential accidents,
10 we're considering those Savannah River Site employees
11 who are within the site boundary to be workers. When
12 we're looking at normal operation, if the facility is
13 constructed and operating, the question of who's a
14 member of the public and who's a worker really is
15 determined by what does that person do for a living.
16 Are they already working at the Savannah River Site in
17 an occupation where they're exposed to radiation? If
18 they are, then they're workers. If they're not, then
19 they're members of the public. And the NRC's position
20 is: Yes, there can be members of the public on the
21 Savannah River Site, even employees of the plant. And
22 the radiation dose limits for those individuals would
23 be NRC's limits for members of the public.

24 Is that answer your question (sic)?

25 MR. RUDOLPH: Perhaps. Not

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1 satisfactorily, though. Let me go to the next
2 question.

3 MR. BROWN: Okay.

4 MR. RUDOLPH: You have -- from what I
5 understand, the NRC says that the throughput rate at
6 the factory could -- could (indiscernible) about 10
7 years or 20 years. What is that -- what is that
8 discussion about? And you showed us a 20-year license
9 period for the operations, but -- but then you used 10
10 years of operations for the analysis. What -- can you
11 explain?

12 MR. HARRIS: Yeah. Basically we assumed
13 that the license would be a 20-year period. And that
14 would include they would have to have a license for
15 initial startup and then processing. But the actually
16 throughput we estimated it would take about ten years.

17 So we looked at things on an annual basis,
18 and the maximum throughput I think was 3.5 metric
19 tons, number comes to mind, on an annual basis. So we
20 look at the impacts annually. So if they didn't
21 produce, if the period of operation was longer than
22 that, the throughput would be less. There's only so
23 much plutonium that's going to be put through the
24 facility.

25 MR. RUDOLPH: So you're assuming the

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1 impact is the same?

2 A. We assume that the impacts are bounded by
3 -- assuming a ten-year operation period, with a
4 maximum throughput of 3.5 metric tons.

5 MR. RUDOLPH: One more question. You say
6 that the -- that the -- the impacts of the -- of 40%
7 MOX or a 100% flow of enriched uranium would be the
8 same; is that -- how do you support that?

9 MR. HARRIS: There's details in the
10 environmental impact statement. But essentially, the
11 conclusion that was drawn was on a generic basis. The
12 emissions would be about the same from normal
13 operations, whether it used -- the reactor used a
14 mixture of MOX fuel or 100% low enriched uranium.

15 MR. RUDOLPH: Does it consider the
16 temperature difference between...

17 MR. HARRIS: That segment's based on
18 effluents that would come out of the plant; not
19 internal safety operations, which would, as I
20 mentioned, would be evaluated on a site-specific
21 basis.

22 MR. RUDOLPH: So you're assuming that --
23 that the hotter MOX fuel would have the same
24 parameters or have the same impact, the same...

25 MR. HARRIS: No, not the same -- not the

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1 same parameters, but the emissions from the reactor
2 would be the same.

3 MR. RUDOLPH: And is there a study for
4 that, or did you just assume that?

5 MR. HARRIS: We looked at some information
6 that the Department of Energy had, and the references
7 are provided in the environmental report -- I mean,
8 environmental impact statement, excuse me.

9 MR. CAMERON: Thank you, Gerald.

10 Did you have a question, sir?

11 MR. WATSON: My name's Darrell Watson.
12 I'm from Columbia. Got a couple of questions for you.

13 First, has a safe, efficient, and
14 successful use of MOX fuel been -- fuel made with
15 weapons grade plutonium ever been accomplished?

16 MR. HARRIS: Do you want to answer that,
17 Dave?

18 MR. BROWN: Could you repeat the question,
19 please.

20 MR. WATSON: Has the safe, efficient, and
21 successful commercial use of MOX fuel made with
22 weapons grade plutonium ever been accomplished?

23 MR. BROWN: No, there -- there is no
24 history in the United States of using weapons grade
25 MOX fuel in a commercial nuclear power reactor.

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1 MR. WATSON: Is there any record of that
2 being done anywhere in the world?

3 MR. BROWN: Not except on a test or
4 experimental basis. No, not that I'm aware of.

5 MR. WATSON: So South Carolina's going to
6 be the first test, so to speak, for the MOX program in
7 the world?

8 MR. BROWN: The -- the...

9 MR. WATSON: In this -- in this regards of
10 it being made with weapons grade plutonium.

11 MR. BROWN: With respect to weapons grade
12 plutonium. And the distinction you're making is
13 important. Because certainly there are countries in
14 the world that do reprocess nuclear fuel, recover the
15 plutonium, and put that back through a mixed oxide
16 fuel plant to put back into reactors. France, of
17 course, being the notable example, and the fact that
18 Cogema is a partner in the consortium that's the
19 applicant for this plant, reflects their experience in
20 this.

21 MR. WATSON: Okay, that leads to my second
22 question about Cogema. Given that Cogema's part of
23 the consortium to handle the MOX process in the United
24 States and South Carolina, given its bad safety and
25 environmental record, especially in La Hague at the

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1 processing plant in France, why would DOE even bring
2 a licensing consideration with Cogema involved?

3 MR. HARRIS: We have looked at some of the
4 information that the applicant has provided us, that
5 includes their experience in France, especially with
6 regard to environmental effluents or emissions, if you
7 will.

8 MR. WATSON: What's the status of Russia's
9 MOX program currently, and does it use weapons grade
10 plutonium like ours?

11 MR. BROWN: The Russian program, what
12 we're working to here is -- what DOE's plan is, is to
13 maintain parity between the U.S. and the Russian
14 programs. Of course, their program is also about
15 surplus weapons grade plutonium.

16 MR. WATSON: Okay, I'm -- correct me if
17 I'm wrong, but I thought their program was currently
18 at a stall. They're not processing MOX currently, as
19 we speak.

20 MR. BROWN: Oh, no, they -- they were --
21 there is no Russian MOX facility constructed or
22 operating at this time; that's true.

23 MR. CAMERON: Right. We really need to
24 get going to hear all of your -- your comments. We'll
25 take one question here; we'll go over to Jen; and then

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MR. HARRIS: Do you want to answer that, Dave? Dave's involved with the safety review, and these really relate to -- because the measures to make those accidents highly unlikely are in the safety report review. So I'll let Dave discuss what they're doing there.

MR. BROWN: In the handout and one of Tim's slides we showed like a fine line of the safety review and the environmental review. One thing you see right away is the safety review extends for a couple of years from now. And so one of the things we're going to be doing, as we go through that licensing review, is trying to get a much better understanding of what the applicant thinks the likelihood of those accidents are. And more importantly, what's the reliability of the equipment that's going to be -- be used to prevent those accidents.

MR. GUILD: I'm sorry to interrupt. But you're going to make the decision now as to whether or not the National Environmental Policy Act requirements are met, whether you should authorize going forward with this as a matter of cost benefit. You're telling us you don't know the answer as to the likelihood of that accident occurring?

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we're going to start public commenting.

Yes, sir?

MR. GUILD: My name is Bob, and I have a couple of questions. I think maybe an appropriate observation in response to the environmental justice question, that consequences are high for having significant facilities, whether it be 20 or 2000. But that consequence has to be taken into account of risk of that consequence, which is a probability (indiscernible). How likely is the fact -- assume the accident would happen that would lead to those cancer deaths.

Yet, I find the EIS completely devoid of any effort at putting a number on that probability function, which is a key to your conclusion which is that the risk is acceptable. So you use a very precise number for the number of deaths, and then acknowledge an error and correct that error and create the impression that you know what the consequence would be. Yet I don't see any serious effort at trying to project what the actual probability of that accident in that occurring. And can you enlighten us on why you didn't do that; and if you did do that, didn't express in the EIS what that -- what that chance of a serious accident is at the facility.

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MR. BROWN: We're -- right now we're going to issue a draft report next month that's our consideration of the likelihoods for a construction authorization. My point is we're going to continue to look at those likelihoods as we continue through looking at their application to possess and use this plutonium in the plant.

MR. CAMERON: Could we get -- could we let Lawrence speak here, because you're raising an important point as to where is the supporting data for the conclusion you've requested.

Lawrence?

MR. KOKAJKO: Yeah, part of it, as -- as I mentioned earlier, the -- is the NEPA process, itself. It said to take a look at...

UNIDENTIFIED: Can't hear you.

MR. KOKAJKO: Some of the -- the problem I know is with the NEPA process, itself. It told us to take a look at the bounding conditions and the parameters of what these consequences are. Our regulations say these accidents will be made highly unlikely. And the DCS has to submit an integrated safety assessment which takes a look at the probabilities of these accidents occurring. And, as Dave pointed out, reliability of equipment,

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preventative and mitigating measures that may be used to prevent and preclude these things from occurring, so that we don't ever get into an accident situation where there could be latent cancer fatalities, or even actual deaths.

And, by the way, it includes more than just radiation. It includes anything like chemicals, chemical exposures, and those -- those, as well. As well as physical -- you know, normal physical things like, you know, falling off ladders and stuff like that.

MR. GUILD: I mean, just an observation, not to belabor the point, but good government decision-making, the NEPA requires -- requires you to be explicit now about those very issues. Because I want to know what the risk is of me walking across the street and not getting hit by a car, but I want you to know what the risk is of a serious accident happening at the MOX facility before you decide that you should go forward with licensing this plant.

MR. KOKAJKO: Before we go forward with licensing, we will do that. But for the environmental purpose for this evening, the assessment of the draft environmental impact statement, we've given you what we think are the -- could be the potential

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1 happen. But I think that the question would be: What
2 would the NRC require in terms of new licenses,
3 etcetera, etcetera, if that ever did happen. And we
4 don't know if that's even feasible.

5 But, Lawrence, can you shed some light on
6 that? I don't know if you can or not.

7 MR. KOKAJKO: I'm not sure I can prove a
8 full response to your -- your question. Anything that
9 would be involved in fuel fabrication would be
10 licensed under 10 CFR -- excuse me, Title X, Code of
11 Federal Regulations, Part 70. And those regulations
12 do allow that any facility that fabricates and
13 enriches fuel for use in commercial nuclear power
14 plants, that it meet certain safety and environmental
15 standards.

16 MR. CAMERON: The license would be very
17 specific about what the facility could do.

18 MR. KOKAJKO: Correct.

19 MR. CAMERON: And if there was going to be
20 any major change to that, it would be a new license.

21 But let me see if we can get the
22 Department of Energy to shed some light on this. Ken?

23 MR. BROMBERG: Very simply -- this is Ken
24 Bromberg again. That facility that's being designed
25 and planted and built at the Savannah River cannot be

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1 consequences. And we know that the regulations are
2 going to require that those accidents be made highly
3 unlikely.

4 MR. GUILD: All right. The last question.
5 I heard some -- a useful question earlier about
6 license term and the projected expected throughput
7 term, if you will, for the processing of the surplus
8 plutonium. You know, I have a very strong concern
9 that we're going to end up with a MOX fabrication
10 facility that's -- that processed its surplus weapons
11 plutonium, and then is going to be available for
12 commercial mixed oxide fuel production for, you know,
13 the wonderful, long-promised, never realized closed
14 commercial nuclear fuel cycle in this country. And
15 that, like those facilities you mentioned in Europe,
16 we're going to suddenly have commercial mixed oxide
17 fuel promoted with weapons non-proliferation as the
18 foot-in-the-door.

19 So can you tell us what would be required
20 in order to convert this facility, at the end of its
21 license life, into a facility that does those things
22 that I'm concerned about, and that is becomes a
23 commercial fuel production facility.

24 MR. CAMERON: And you may -- you may not
25 know, in terms of physical adaptation, what needs to

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used as a commercial facility. The entire facility, the shielding in it, is designed for the low radiation for weapon grade plutonium. It's entirely impossible to use for reactor fuel grade plutonium.

UNIDENTIFIED: Impossible?

MR. BROMBERG: Yes. Without just completely basically tearing out all the piping in the entire facility, and redesigning and rebuilding it. The facility just can't be used for that purpose.

Furthermore, the facility will be shut down at the end of the approximately ten-year plutonium disposition mission.

MR. CAMERON: Great. Thank you very much, Ken.

Okay, we're going to go to one last question over here, and then we're going to go to hear some more from all of you a bit more formally.

Jen?

MS. KATO: I'm Jen Cooch Kato. I'm with the Sierra Club in Georgia. I have actually three questions that will be answered very quickly.

The first one is an extension of this gentleman's question, and it's very direct and has a very simple answer. And the question is: Was the probability of one used in assessing the human health

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impacts of any accident scenario?

MR. BROWN: When you're looking at the consequences of the accident that's summarized, yes, it's a probability of one. In other words, the event was assumed to have occurred. Those are the consequences we've estimated.

MS. KATO: When I -- when I look at the doses and the -- and the (indiscernible), for example, for an explosion, which would undoubtedly involve plutonium, these figures are so miniscule that it seems like what you have done is actually risk-informed calculations. And risk-informed calculations do not assume a probability of one when you actually go out as far as latent cancer fatalities. They have been diluted by the probability of the accident occurring, and then further diluted by the probability of it occurring in a given day.

MR. BROWN: I understand your comment. That is not what we did.

MS. KATO: Okay, thank you.

Second, why not a 20-year windrows instead of a five year, since we're dealing with a possibly 20-year mission?

MR. BROWN: The five-year windrows, I think, reflects a good estimate of the wind conditions

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1 at the Savannah River Site. But if you have
2 information about, you know, updated data or something
3 you'd like us to know about, we'd be happy to hear
4 about that.

5 MS. KATO: Well, the dose reconstruction
6 is looking at a 20-year window, so it's available.
7 I know DOE has it.

8 And my last question is: What is the
9 current NRC plan? This doesn't really have to do with
10 this DEIS, but I'm really curious about it. What's
11 the current NRC plan for continued supervision of the
12 MFFF? And I'd like to feel like the guys in the white
13 hats are out there on a daily basis or a very frequent
14 basis.

15 MR. CAMERON: And could you just enlighten
16 all of us on that acronym.

17 MS. KATO: MOX fuel fabrication facility.

18 MR. HARRIS: Fabrication facility.
19 Was your -- was your question, Jen, what
20 are we going to do...

21 MS. KATO: On the provision of ongoing
22 oversight.

23 MR. HARRIS: Yeah. I think -- I think, if
24 I understand your question---and I know you'll correct
25 me if I didn't get it right---is what are we going to

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1 do in the future. You know, are we going to issue
2 this license and walk away.

3 MS. KATO: I just want to know what your
4 plan...

5 MR. HARRIS: The plan would be that, you
6 know, again, we're going to look at the construction
7 decision. We talked about the EIS. We're going to
8 look at the operation. In the event that we do issue
9 a license, we do inspections at the facilities, the
10 current plan is to have an onsite resident there who
11 is there on a daily basis to look at the operation of
12 the facility. So, yeah, we will be there.

13 MR. CAMERON: If the NRC licenses it,
14 we're going to regulate it; right?

15 MR. HARRIS: I think if we license it, we
16 are regulating it; right?

17 MR. CAMERON: And -- you know what I mean.

18 MR. HARRIS: I know what you mean.

19 MR. CAMERON: All right. Okay, thank you
20 for those questions.

21 We're going to go to -- to speakers. We
22 have about 25 people. So I really need to ask you to
23 try to be concise and -- and don't go any longer than
24 five minutes. Of course, we want to stay and hear
25 what everybody has to say. But it would help us all

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1 if -- if you could try to keep it in that window.
 2 And the first four speakers, so that you
 3 have an idea of when you're coming up here, we're
 4 going to go to -- to Bill Robinson, then Camille
 5 Price, Mal McKibben, and Thomas Williams.
 6 So, is Mr. Robinson here? Oh, Mr.
 7 Robinson. There he is. All right.
 8 MR. ROBINSON: I'm Bill Robinson from
 9 Allendale County, Vice Chairman of the county council.
 10 I'm certainly proud to be here to express
 11 our support for the MOX fuel facility at SRS. As we
 12 went back and looked at our history, Allendale County
 13 has always supported our nation's effort to keep us
 14 strong and secure. Now, if you go back 50 years ago--
 15 --and I think we all can remember---now, this country
 16 was called upon to develop one of the most devastating
 17 weapon known to mankind. And we did it basically, not
 18 because we wanted to be the world powerhouse, so to
 19 speak; we did it simply because -- to protect this
 20 country. And we did it, also, to discourage the
 21 misuse of that most powerful weapon by other nations.
 22 Now, as we look today, to me the scenario
 23 is the same. We have different players. In fact, we
 24 have more players. The technology for weapons of mass
 25 destruction is available to any nation. And what's

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1 scary, weapon grade plutonium, the supply is
 2 plentiful. I think Russia looked at it, extended a
 3 hand to us to come and help. Again, I think we see
 4 our nation's security at risk.
 5 We support the MOX initiative, simply
 6 because we feel what we face today is as great as what
 7 we faced 50 years ago. I thank you.
 8 MR. CAMERON: Thank you very much, Mr.
 9 Robinson.
 10 And we're next going to go to Camille.
 11 Camille Price.
 12 Is Camille still here?
 13 (No audible response)
 14 MR. CAMERON: Okay. Mr. McKibben. Mal
 15 McKibben.
 16 MR. MCKIBBEN: Thank you very much.
 17 My name is Mal McKibben, and I'm a native
 18 of North Augusta and have an office over in Aiken as
 19 Executive Director of Citizens for Nuclear Technology
 20 awareness, CNTA.
 21 We are the nation's largest citizen-based
 22 pro-nuclear education group with about 2,400 members.
 23 We strongly support the pit disassembly and conversion
 24 facility and the MOX facility, and we have been
 25 encouraging that for a long time.

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cont.

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1 However, when we look at the -- the draft
 2 environmental impact statement, we do find quite a
 3 number of inadequacies and quite a number of flaws.
 4 I'm only going to talk about one of those tonight, but
 5 in the written statement I'll address some of the
 6 others, which have to do mainly with the lack of
 7 sufficient data so that you could analyze it.

8 The guidance that is given to NRC -- by
 9 NRC and DOE to the people who write environmental
 10 impact statement and who are required to evaluate
 11 accidents says that those accidents should be
 12 reasonably foreseeable. Unfortunately, it doesn't
 13 tell you what that is. Is that -- is that a once-in-
 14 a-million-year frequency for that accident; or is that
 15 a once-in-a-billion-year frequency for that accident;
 16 or is that once in a trillion? You know, the earth's
 17 only a few billion years old, so I'm not quite sure
 18 how silly we want to get with that.

19 But the hypothetical accident in the draft
 20 EIS is a fire that takes place in a plutonium glove
 21 box in the pit disassembly and conversion facility.
 22 There is also one in the MOX plant that I just saw
 23 tonight, I guess, for the first time. But it assumes
 24 that the fire in that plutonium cabinet or glove box
 25 gets out of control; it releases tritium and plutonium

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1 from its glove box confinement. The tritium and
 2 plutonium are soon to be expelled out of the
 3 ventilation stack of the building. And some fraction
 4 of that, then, gets disbursed and deposited on
 5 farmers' products that are intended to be eaten by
 6 people and not animals.

7 And then it further assumes that those
 8 products are eaten 100% by people with 100% of that
 9 radioactivity still on it. And it goes out for 50
 10 miles. And it contains both a tritium component and
 11 a plutonium component, but unfortunately the EIS
 12 doesn't give you enough data to figure out how much of
 13 each one.

14 The scenario contains a lot of
 15 uncertainty. And it is CNTPA's opinion, based on what
 16 we've looked at so far, that this pathway through the
 17 food chain simply is an accident scenario that does
 18 not meet the reasonably foreseeable criteria. And I
 19 want to talk a little bit about why we think that is
 20 so. And also we don't believe that the fluid pathway
 21 should be considered or put into the final
 22 environmental impact statement for that reason. It is
 23 not a viable or reasonably foreseeable incident.

24 The scenario, as I said, has a lot of
 25 unreality. Let me go through some of that reality,

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1 just quickly. First of all, the fire -- for the fire
 2 to occur is a very unlikely event, for just a little
 3 fire to start. During -- just a little history might
 4 be of value here. In the 1950s and 1960s, when we
 5 were starting up plutonium processing facilities here
 6 and in other places around the country, there were, in
 7 fact, some fires in plutonium processing facilities.
 8 They were small. And they taught us a lesson. They
 9 taught us why they happened, and we made changes to
 10 the design as well as to the administrative controls,
 11 to keep those from ever happening again. And -- and,
 12 by golly, it worked. We haven't had anymore since
 13 then.

50-2
cont.

14 But one other thing that happened that --
 15 that is more important and more relevant to the -- to
 16 the DEIS that we're talking about, in 1957, and again
 17 in 1969, serious fires occurred in plutonium glove
 18 boxes in Rocky Flats in Colorado. Now, these were
 19 glove boxes that were connected in a train, one glove
 20 box connected to another. And these glove boxes
 21 contained a number of combustible materials, including
 22 they were made -- some components of them were of
 23 wood. And the glove boxes today are designed quite
 24 differently. They're made of stainless steel. And
 25 the amount of plutonium and the amount of combustibles

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1 in a glove box is strictly limited by procedure and
 2 requirement.

3 At Rocky Flats there was no fire
 4 suppression system and there were no fire barriers
 5 between the glove boxes. Today there are fire
 6 barriers and there are fire suppression systems. The
 7 Rocky Flats glove box ventilation system pulled air
 8 from one end of the train all the way down through,
 9 and exhausted on the other end. It spread the fire
 10 very quickly from one glove box to another. Today we
 11 have each box ventilated separately, and barriers
 12 between them.

50-2
cont.

13 But not only that, these glove boxes in
 14 question, both in the PDCF facility and in the MOX
 15 facility, are inerted. There is no air there for
 16 combustion to take place.

17 MR. CAMERON: Mr. McKibben, can you sort
 18 of summarize for us.

MR. MCKIBBEN: Okay.

20 MR. CAMERON: We really appreciate your --
 21 your comments, but if you could -- could finish it.

22 MR. MCKIBBEN: All right, I'll rush
 23 through it real quick.

MR. CAMERON: All right.

MR. MCKIBBEN: Those fires, which were far

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1 worse than any fire that we could have today, had an
 2 interesting result that is relevant to this draft
 3 environmental impact statement. In one of those fires
 4 no plutonium left the facility, left the building. In
 5 the other one, there was a breach by the fire of the
 6 -- of a filter, and there was a small amount that got
 7 outside the building, but none of it could be detected
 8 more than two miles away. My point there is that
 9 because plutonium is not a volatile component, it is
 10 very dense, heavier than lead oxide, it does not
 11 migrate easily. So it stays put. So, assuming that
 12 plutonium is going to be scattered for 50 miles and
 13 land on farm products is not reasonably foreseeable.

50-2
cont.

14 Let me just quickly summarize, then, and
 15 close this out. The tritium in this accident would,
 16 indeed, go up the stack. It would, indeed, be
 17 deposited. But I think the amount that is assumed to
 18 have -- to be there and the amount that is assumed to
 19 deposit is grossly in excess of what it would be in
 20 reality.

21 But there are a lot of -- several other
 22 assumptions here in this that don't come close to
 23 reality. One of them is that the -- this only occurs
 24 -- or this will occur when the food is ripe and ready
 25 to pick. Now, that's interesting. But the tritium,

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1 if it landed any other time, would dissipate and not
 2 be in the food. It exchanges with the water vapor in
 3 the atmosphere and it evaporates as water. It assumes
 4 there's no rain before it's picked, because that would
 5 wash it away. It assumes that -- that food, once
 6 picked, is not washed by the packing house, by the
 7 wholesaler, by the retailer, by the housewife. At
 8 least in my house, that probability is zero. It also
 9 assumes that the food is eaten immediately, because if
 10 you sit it -- leave it sitting around in your
 11 refrigerator for a while it will evaporate and go away
 12 and there won't be any of it there.

50-2
cont.

13 Finally, and most importantly, it assumes
 14 that the government would not collect that
 15 contaminated food so that people couldn't eat it.
 16 Now, what do you think the probability of that is?
 17 Bottom line is, this is a hypothetical accident that
 18 was not occur, cannot occur, and it shouldn't be
 19 included in the draft EIS.

Thank you.

21 MR. CAMERON: Thank you very much, Mr.
 22 McKibben. And we'll look forward to your -- your
 23 written comments on this.

24 Is Mr. Williams -- Thomas Williams...
 25 Hi, Mr. Williams.

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MR. WILLIAMS: My name is Thomas Williams, and I'm from Barnwell, South Carolina, Chairman of the Barnwell County Council.

The Barnwell County Council has passed a resolution in support of the new MOX facility being built at the Savannah River Site. Some of us have reviewed the Nuclear Regulatory Commission's draft environmental impact statement on the MOX facility, and believe NRC's preliminary conclusion that the facility should be constructed is the right conclusion. We feel strongly that the MOX facility can be constructed and operated safely and efficiently. The companies involved are known expert in the nuclear arena (sic) and has many years of experience. In addition, the facility will be regulated by NRC. NRC has federal responsibility to insure the nuclear facility is designed and operated safely, with no current or future danger to the public or the environmental. This independent regulatory oversight should give the public confidence.

After almost a year of study and evaluation of the MOX facility, NRC says the benefit of MOX facility outweighs the disadvantage. The biggest benefit is to the world to get surplus weapons grade plutonium out of harm's way, out of circulation.

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This facility should be built. There is no major impact to the public or the environment from normal, routine operations. We think moving forward with this program would help insure a safe environment for years to come, and we feel that the construction and operation of this facility at Savannah River Site will truly be a benefit.

Thank you.

MR. CAMERON: Okay. Thank you very much, Mr. Williams.

I'm going to -- to assume -- Mr. Mareska? There was someone who signed in to speak, and there was just Sierra Club with that. Was that -- was that you?

51-1

MR. MARESKA: That -- that wasn't me.

MR. CAMERON: Was it Mr. Hooker? All right.

We're going to go to -- to Mr. Hooker. And amazing coincidence, Don Moniak is right after Mr. Hooker. And then Richard -- is it Richard Canty? Okay, we'll figure that out.

Mr. Hooker?

MR. HOOKER: Okay. Thank you for letting me speak tonight. Appreciate the opportunity.

First I'd like to have this put on record.

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cont.

<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p>88</p> <p>MR. CAMERON: Great. Thank you. (Mr. Hooker hands certain material to the court reporter.) MR. HOOKER: I'm William Hooker, Chair of the Savannah River Group of the Sierra Club, representing over 500 citizens of this area. We oppose the MOX fuel fabrication facility, and support immobilizing of plutonium as an alternative. Many aspects of the MFFF make it mostly risky, least cost beneficial option of plutonium management or disposal. MR. CAMERON: Mr. Hooker, can you just speak up a little bit. MR. HOOKER: This thing -- I can't see with my bifocals. MR. CAMERON: Oh, that's one of -- yeah, I know about that. MR. HOOKER: Due to the high alert level, all shipments to and from SRS have been halted. That the threat of terrorism inspires this action is commended. The highlights -- this highlights the DEIS deficiency is not addressing a terrorist or sabotage set of action scenarios. Dose and risk cost benefit analysis must be evaluated for PDCF, MFFF, WSB, plutonium transport to and from the site, and offsite fuel transport for terrorism sabotage accident</p>	<p>89</p> <p>scenarios. Absence of offsite emergency plan by DCS for any accident scenario -- scenario a severe oversight. Either compounding the effect of the lack of an emergency must be evaluated by the EIS or the emergency plans must be present. The environmental impacts and human -- human health risks waste management of the PDCF and MFFF must be specifically evaluated. Latent cancer facilities associated with the proposed WSB and all substantial handling and transport are significantly portions of the real cost of this mission are minimized in the DEIS. This must be corrected. With operation data from the PDCF and the MFF not currently subject for review, the range considered for operational life of 10 to 20 years is huge. The arbitrary use of the ten-year figure is RC analysis of a default low-end assumption that doesn't offer conservative estimates necessary to protect human health. A 20-year figure for operating life must be used in estimating dose and risk cost benefit analysis. DOE has a very poor history of caring for those American citizens it has exposed outside possible military, and that's questionable. And</p>	<p>52-1 cont.</p> <p>52-2</p> <p>52-3</p> <p>52-4</p>
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1 that's from -- from me. The NRC has the opportunity
 2 now to require that -- that proper care be taken to
 3 prevent or mitigate any harm or expenses to the
 4 stakeholders.
 5 I'm going to give a couple of examples --
 6 examples of fraud committed and covered up of exposure
 7 to subcontractors and employees to heavy metals,
 8 tritium, by DOE-Savannah River and its contracts to
 9 the Savannah River Site is clearly shown in both my
 10 congressional investigation I have, and the following
 11 information submitted tonight with -- which will show
 12 that they are still -- Savannah River Site is still
 13 covering up and committing fraud. The information
 14 submitted tonight is -- was sent to Dr. J. J. Stucker,
 15 who is over the governor's Nuclear Advisory Council in
 16 Columbia, South Carolina, certified receipt #7002 0510
 17 0000 0205 2433, which includes an Email concerning
 18 USCA reading room material being removed, Freedom of
 19 Information Case #VFA-0749, a final replay from DOE
 20 letter dated July 30th, 202 (sic), concerning my
 21 freedom of information from DOE-Savannah River. Work
 22 clearance permit signed on 2/22/1999, at 12:00, by
 23 Westinghouse manager not identifying any hazardous
 24 material in Four Mile Creek, from -- a reply from GSDL
 25 hair analysis from three employees of Georgia

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1 Bowhunters Supply Company, information from ATSDR
 2 concerning toxins: antimony 125 and 145, nickel,
 3 arsenic, and mercury. The last item is a claim of
 4 lien filed under miscellaneous Volume 1107, Page 281,
 5 on 1/9/02 in the RMC office, County of Aiken, South
 6 Carolina.
 7 The draft report NUREG-1767 clearly shows
 8 additional exposure path examples. We trusted
 9 Westinghouse and the Department of Energy at the
 10 Savannah River Site to tell us what we had been
 11 exposed to from 2/10/1992 through 12/31/1999 while
 12 working in high, medium, and low risk sites at the
 13 Savannah River Site unprotected, and they -- all they
 14 could do was laugh and make jokes out of what we had
 15 been in while we were working for the U.S. Forestry
 16 Service, slash, Savannah River Institute on 3/20, 21,
 17 22, and 2000 -- of the year 2000, during a NIOSH
 18 investigation. Lie and coverup is the name of the
 19 game at Savannah River Site, and safety and health of
 20 the employees or the general public is not the
 21 interest. How can we trust the prime contractor and
 22 its partners, let alone the U.S. Department of Energy
 23 now with anything such as a MOX facility at the
 24 Savannah River Site?

I included those three samples from -- for

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1 MR. HOOKER: Right.
 2 MR. CAMERON: Thank you.
 3 MR. HOOKER: I'd like to read the Email,
 4 the portion of it, and then I'll -- on top of Notebook
 5 Z105 is a sticky notepad that said, "William Hooker."
 6 This note was being hauled off as a potential
 7 sensitive, along with other 50 boxes. It contained
 8 records of spills from 1990 to 19-1 (sic) time frame.
 9 The person that wrote me this Email asked me do I have
 10 a freedom of information in for such information.

11 I went back for my freedom of information
 12 request that I -- and I got a reply on July 30th,
 13 2002, from DOE. I asked for environment report for
 14 2002, what caused the failures from 1988 -- 1999
 15 exceedance of SCDHEC issued NPDES permit liquid
 16 discharge limited as referenced. I asked for August
 17 4th outfall G-10, Four Mile Branch failure, chronic
 18 toxicity (sic), what causes failure. August 28th, acute
 19 toxic, it was unable to determine what causes failure.
 20 Seven exceeds as shown on Page 138 of 1991; ten
 21 exceeds of '92; ten exceeds of '93; 9 exceeds of '94;
 22 19 exceeds of '95; 14 exceeds of '96; 7 exceedances
 23 1997. And this is their reply.

24 "The Savannah River Site performed a
 25 search for exceedance and full-size map

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1 the analysis from the three individuals. And I'd also
 2 like to say that I've -- I have eight dogs. Five of
 3 them's been on the Savannah River Site; three of
 4 them's not. The three that I have at the house,
 5 alive; the five that worked on the Savannah River
 6 plant is dead. I have -- I have these dogs that used
 7 at the Savannah River Site, all these dogs are also
 8 dead. And I believe it was from the exposure they
 9 received from hunting them in these active waste sites
 10 listed on the EPA Drawing GCO-1999, rev. no. Five area
 11 Savannah River Site approved 4/6/1999 by Ed Campbell.
 12 BSRI environmental -- this is the same units as EPA
 13 drawing, except BSRI environmental management has
 14 ranked the units -- numbers and units name risk
 15 factors as low, medium, and high. These records also
 16 show the Unit 29, Hp-52 pond as high risk, and per
 17 Westinghouse presentation to NIOSH that was printed by
 18 -- was presented by Sandy Human and Steven Johns, both
 19 Westinghouse managers, that also committed fraud on
 20 3/20/2000 to NIOSH.

21 MR. CAMERON: Mr. Hooker, you may want to
 22 give us those numbers in -- in writing and just...

23 MR. HOOKER: They right there.

24 MR. CAMERON: ...give us your substantive
 25 point. But could you try to wrap up for us now?

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1 portion of your request and found no
 2 responsive documents to your remaining
 3 request numbers 2 through 12. Also,
 4 regarding these non-existing records, the
 5 freedom of information does not require
 6 compenation (sic) or creation of record
 7 for purpose of satisfying a request for
 8 records. Therefore, SRS does not -- did
 9 not locate any responsive documents to
 10 your request or what caused the
 11 failures."
 12 MR. CAMERON: And, Mr. Hooker, are you...
 13 MR. HOOKER: I'm through.
 14 MR. CAMERON: That's it?
 15 MR. HOOKER: Yeah.
 16 MR. CAMERON: All right.
 17 MR. HOOKER: Yeah, I -- I submitted...
 18 MR. CAMERON: And you've got this for the
 19 record? Great. Thank you very much, Mr. Hooker.
 20 [Applause.]
 21 MR. CAMERON: And we're going to -- we're
 22 going to go to Don Moniak now, and then we're going to
 23 hear from Ed Presnell.
 24 MS. CARROLL: Are you going to explain
 25 your crack about the "by coincidence thing"?

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1 MR. MONIAK: Yeah, that was a crack.
 2 MS. CARROLL: What does that mean?
 3 MR. CAMERON: It wasn't a crack. It was
 4 just that the next name on the list was Don Moniak.
 5 MS. CARROLL: And you were standing right
 6 next to him?
 7 MR. MONIAK: By coincidence.
 8 MR. CAMERON: Yeah. I mean, it's on the
 9 list. I mean, you can look at it.
 10 Don, go ahead.
 11 MR. MONIAK: I'll let you go. Just a
 12 second.
 13 My name is Don Moniak, and I'm here
 14 representing the Blue Ridge Environmental Defense
 15 League on behalf of Janet and Lou Zeller, who couldn't
 16 make it tonight. Janet had replacement hip surgery
 17 this week.
 18 Want to talk first about risk. It's
 19 probability times consequences. Consequences are
 20 economic and cultural. The stigma attacked -- the
 21 stigma attached to the consequences of a radiological
 22 accident are difficult to measure, but they have to be
 23 addressed. This was raised repeatedly in Texas during
 24 the surplus plutonium disposition EIS by people who
 25 farm for a living. Accidents that may have no

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1 measurable human impact can put a farmer out of
 2 business because nobody wants his product -- their
 3 product. That's fact. There are other consequences
 4 that have to be considered.

5 The only consequence that's considered in
 6 here is latent cancer fatalities. If that is the only
 7 health consequence that is going to be addressed, at
 8 least say why other consequences are not being
 9 addressed, what you know and what you don't know about
 10 the impacts of ionizing radiation.

11 There's not much in here about what is the
 12 hazard of radiation. We're presenting this chart all
 13 the time about what the average natural background is
 14 in this country. And Tim was wrong, in that the
 15 natural background averages about 290 millirems per
 16 year, and it was presented as 360. The 360's
 17 including X-rays and things. Not everybody gets X-
 18 rays. A Christian Scientist does not get X-rays. I
 19 Certainly not to my -- I don't get many X-rays. I
 20 don't let me dentist X-ray me every time I go in.
 21 That is not part of natural background. You need to
 22 say what is natural background around here, not what
 23 it is at a national level, because around here, at
 24 lower elevation, radon levels are low, there's very
 25 few basements around here because there are such sandy

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1 areas. What is it around here? That needs to be
 2 addressed in this. And what harm does natural
 3 background radiation cause? We know what the benefits
 4 are. Without solar radiation we'd be nowhere. Solar
 5 radiation, the sun, solar energy is still our number
 6 one power source. It just isn't on the grid. It
 7 still provides us with almost all of our energy needs,
 8 and always has and always will. And when it doesn't,
 9 we won't be sitting around here talking about
 10 plutonium.

11 What is not in this document is what the
 12 radiological impact is. They tell us what the
 13 potential radiological dose is, but not what the
 14 impact is in terms of concrete measurements, curies or
 15 becquerels. Whereas with the chemical hazard we're
 16 told concrete numbers. We're told this many tons a
 17 year of nitrous oxide or this many tons a year of this
 18 or that will be released. But there's no equivalent
 19 numbers for radiation impact. So that needs to be put
 20 in this.

21 The NRC reported annual air pollutants for
 22 select non-rad chemicals and elements at Savannah
 23 River Site. And for the affected area they chose this
 24 very arbitrary figure of one ton per year being
 25 released of a chemical. Well, that doesn't have much

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that have occurred since January 2000, three years ago, to this facility when the design cost was \$56 million. Today the design cost is \$171 million. And I'll bet you that it rises higher than that. The size of the facility has increased from 120,000 square feet of hardened space to 366,000 square feet of hardened space. Essentially, they're building a new canyon out there that will replace the capabilities of the existing canyons. That is a huge change from the Department of Energy's analysis. The amount of liquid radioactive waste has increased to about 500 gallons a year, to more than 400,000 gallons per year. And the decision was based to go forward with MOX instead of immobilization on this faulty analysis that occurred. The latent cancer fatalities that DOE said in a worst case accident, which would be an earthquake, it was much less risk of an explosion at a MOX fuel facility back then because it was all dry processing. They said we wouldn't need to do liquid processing. Now it's 200. There's a lot of other changes that have occurred, too. And the Department of Energy was very dishonest in their analysis.

355,000 gallons a year liquid radioactive waste. Yeah, that's not much compared to what Savannah River Site goes through every year. If it

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to do with what the hazard of that chemical is, because at SRS they release quite a bit of mercury into the environment, but they don't get up to one ton very often. More like anywhere from 100 to 600 pounds in the last ten years, which is a lot of mercury.

So what you need to do is, in the affected environment part, is say what kind of impacts are there, not which chemicals are being released at a rate of more than one ton per year. There's an absence of discussion on americium in here, because americium is the radioisotope that has to be separated from plutonium in order to make plutonium MOX fuel. And this poses a risk that's disproportional to plutonium, in general; and there will be a large waste stream of americium contaminated material. I asked: Why not just put all that americium into some smoke detectors and use it like a product, like we're trying to use plutonium to recycle. Tell us why that couldn't be done. What are the hazards of americium?

The units in this document are not consistent. You go from cubic meters to gallons, back and forth. I think the liquid radioactive waste stream should be reported in liters and gallons, like it has been all along.

Sort of like to get along to the changes

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1 was at a Greenfield facility people would be up in
 2 arms. It's still a waste stream that is unnecessary
 3 if immobilization was implemented. And it's not a low
 4 impact. That's a lot of waste that has to be treated
 5 at the effluent treatment facility, and what is left
 6 from that is going to end up in the streams of the
 7 state and the rivers of the country.

8 The tritium accident, they don't list the
 9 number of curries that are postulated to be released
 10 in an accident, and don't say what the routine
 11 releases will be at the pit disassembly and conversion
 12 facility. Three years ago it was about 1000 curies
 13 per year tritium being released. That's a drop in the
 14 bucket for SRS, because they have released so much
 15 tritium over time that an average day at SRS would be
 16 an accident at any other sites. Like Lawrence
 17 Berkeley, they actually do occurrence reports if they
 18 release, like, a millicurie. Here a millicurie is
 19 just nothing.

20 The non-rad toxins, as I addressed before,
 21 SRS currently is permitted to release 253 toxic air
 22 pollutants. Approximately 180 of these are permitted
 23 only at the consolidated incinerator facility.
 24 There's mention of the consolidated incinerator
 25 facility in here, but it's not operating right now.

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1 If it was to operate, the air emissions out there
 2 would be much, much higher than as what's been
 3 reported. And until the decision is made on that, you
 4 need to address that, because then the current impacts
 5 at SRS are higher than what is being said.

6 Why MOX? This is a political issue. This
 7 is a political decision here. The sole justification
 8 for this project is the U.S.-Russian agreement. The
 9 NRC did fail to address the status of the agreement.
 10 And as we know, as we speak, George Bush is
 11 antagonizing Russia by accusing them of providing
 12 military aid to Iraq, and Russia is accusing us of
 13 many other things. Vladimir Putin is a tyrant. He's
 14 just another communist, tyrant, authoritarian, bad
 15 person who cannot be trusted. Things are going
 16 downhill. And to move forward on this project without
 17 -- while pretending that things are just steady and
 18 we're getting along with Russia is crazy. Russia's
 19 Minatom is described as the last -- as the stronghold
 20 of the last regime, the most conservative elements
 21 within Russian society. Russian people despise
 22 Minatom. 80% of them generally vote against new
 23 nuclear projects. Minatom is an autonomous rogue
 24 agency that hopes to export plutonium fuel if they get
 25 an infrastructure to build it. And their trading

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before the world started to change.

The Atoms for Peace is the biggest casualty of this war in terms of political situation. If the UN is irrelevant, then the IAEA is irrelevant, then the NRC is irrelevant when it comes to this project. Because this project is an international verification and inspection project. It's not all about making power. And if you don't address the non-proliferation impacts and say to the Congress, as an independent agency, things have changed. DOE's analysis might have been okay. Then you're not doing your job. You have a responsibility just as a government employee to do this.

Thank you.

MR. CAMERON: All right. Thank you.

[Applause.]

MR. CAMERON: Ed Presnell.

MR. PRESNELL: Thank you.

My name is Ed Presnell, and I'm the President of the Augusta Metro Chamber of Commerce.

The Augusta Metro Chamber of Commerce, with member businesses from across our two-state community, supports the MOX project. Our chamber has followed the progress of the project since the beginning. And with the release of the Nuclear

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partners are Iran, Pakistan, generally the ones that are on our export control list.

MR. CAMERON: Don, could you sum up for us?

MR. MONIAK: Yes.

The final issue is that I asked about the foreign ownership and control and influence. And this is a French project. This project primarily benefits the French government at this point. Now, whether that's right or wrong is irrelevant. The French -- if anybody is to do the MOX, the best person for it's -- best company for it is Cogema, because we certainly don't want BNFL to do it with their falsified quality assurance data and an inability to get an plant license there.

53-11

However, France is now on our enemy list, essentially. We're boycotting French kissing, French fries, everything but French nuclear fuel. And this is controlled by them. I don't know how they arrived at the conclusion that this was not a French-run operation. Chairman Richard Meserve of the Nuclear Regulatory Commission, a year-and-a-half ago, was lobbying Dick Cheney and the Congress to remove foreign ownership and control rules, weaken them and lessen them. This is in a letter he wrote. This is

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proposed action. On average, 1,000 jobs will be created for the proposed facility. During operations, 1,260 employees will be required each year. Income for workers during construction will be \$350 million. Income during operations will be over \$600 million. The proposed facilities will produce approximately \$110 million in tax revenues from state income and sales tax. And finally, the proposed facilities will produce \$1,850 million for gross regional product.

The Central Savannah River Area will be proud to be home for the mission to reduce weapons plutonium. This project is one of great importance to the security of the world. That reason alone should be enough to see this MOX succeed. But it is also positively impacts (sic) the CSRA in more ways than expected. It shows that by doing the right thing and supporting our country, our citizens will receive benefits they never expected.

The Augusto Metro Chamber supports the licensure of the MOX facility, and looks forward to both the global safety and local prosperity that it will create. Working together, the Central Savannah River Area and the Department of Energy are making the world a better place.

Thank you very much.

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Regulatory Commission's draft environmental impact statement stating minimal environmental impacts, we believe NRC should issue a license for construction, and eventually for operation of the MOX facility. Aside from being the right thing to do for the safety of our planet, support of this international effort will have the side effect of great economic benefit for our community.

We believe any concerns of safety have been answered. The safety of the process and the facility, itself, has been evaluated for years by many different groups. Every conclusion is the same. The MOX facility can be constructed and operated safely with minimal impacts.

With the question of safety satisfied, we now hope that our citizens can now recognize the economic boost the MOX project will have in the regional economy. When focusing on some of the numbers listed in the draft EIS for the construction and operation of the MOX facility and its associated facilities, the pit disassembly and storage facility and the waste solidification building, it's easy to see the positive impact.

For example, in the peak year of construction, 1,820 workers will be required for the

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1 MR. CAMERON: And thank you, Mr. Presnell.
 2 Is Richard -- is there a Richard Canty?
 3 All right, Reverend Walker. And after
 4 Reverend Walker, Mary Kelly.
 5 MR. WALKER: Good evening. My name is
 6 David Walker. I am President of the Aiken Branch of
 7 the NAACP, and I'm the Regional Coordinator for Region
 8 2 of the NAACP which include the branch in North
 9 Augusta, Wagener, Salley, Edgefield, and Saluda.
 10 I am here tonight to state that the NAACP
 11 still fully support the MOX facility at Savannah River
 12 Site. After seeing the draft environmental impact
 13 statement released by NRC, I've noted a few things.
 14 One is that in their report the NRC has stated that
 15 they would most likely issue a construction license to
 16 DCS. I think that NRC feels that they are doing this
 17 because they have some degree of confidence in DCS.
 18 While we continue to support the MOX
 19 facility, we are awaiting the corrected EIS statement
 20 from NRC to compare that statement with the statement
 21 from DOE and from DCS. We feel that our support is
 22 necessary because one of the economic impact that it
 23 will have in this area. While there are some concerns
 24 regarding the environmental justice portion of the EIS
 25 statement, we will review all three EIS statements and

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1 submit a written report prior to the deadline.
 2 But we come tonight to say that we
 3 unequivocally -- the Aiken Branch NAACP supports the
 4 MOX facility. The MOX plant should come to SRS and
 5 DOE, and we are expecting DOE, SRS, and DCS to keep
 6 its citizen (sic) updated on the plant. Before I take
 7 my seat, I am making one request on behalf of the
 8 Aiken Branch NAACP. In the past all of these meetings
 9 have been held outside of the communities that will be
 10 mostly affected should an accident occur. I am
 11 requesting at this meeting that NRC, DOE, and DCS make
 12 a considered effort to hold a meeting in the African
 13 American community, the community that will most
 14 likely be affected. But at this time we still
 15 strongly support the MOX facility.
 16 MR. CAMERON: Okay, thank you, Reverend
 17 Walker.
 18 We're going to go next to Mary Kelly. And
 19 is there a -- is it Charlie Kleiss?
 20 Okay, Mary Kelly, and then Charlie.
 21 Let's see if we can make sure that this
 22 microphone works for you, Mary.
 23 MS. KELLY: Thank you. Short people.
 24 MR. CAMERON: Yeah. See if -- see how
 25 that is. Let's see if we can hear you.

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1 MS. KELLY: Okay. My name is Mary Kelly,
 2 and I'm representing the League of Women Voters of
 3 South Carolina. Some of what I was going to say is
 4 repetitious, but I'm going to repeat anyway because I
 5 think it's just so extremely important.
 6 We question the wisdom of concentrating so
 7 much plutonium on one site. SRS has to be the world's
 8 most inviting terrorist target, even without the added
 9 plutonium. And as the old saying goes, "Never put all
 10 your eggs in one basket." Having such -- so much
 11 plutonium in one place also increases the prospects of
 12 a criticality accident.
 13 We find it difficult to understand how you
 14 can justify not including considerations about
 15 terrorist acts or criticality accidents in this
 16 document. The whole issue of homeland security hasn't
 17 been well handled, I -- I think most of us would
 18 agree. The public needs to know about the
 19 possibilities of such accidents, and be given
 20 information that will empower them to do something to
 21 help themselves in such an event. There's a great
 22 deal of danger in ignorance.
 23 In addition, should you be transporting
 24 plutonium and uranium around the country in a time of
 25 war and international hostility to the United States?

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1 Some of that plutonium will be in the form of
 2 plutonium oxide powder, a highly reactive and
 3 flammable substance. Depleted uranium in the form of
 4 gaseous uranium hexafluoride, a nasty substance, will
 5 be transported probably from Ohio to a processing
 6 plant in Wilmington, North Carolina, where it will be
 7 solidified as uranium dioxide and then transported
 8 back to SRS.
 9 There should be more discussion about the
 10 backgrounds of the entities composing DCSW, Duke
 11 Cogema Stone & Webster, from the standpoint of their
 12 financial stability and history, and their
 13 environmental and safety records. It is extremely
 14 troubling that one party to this consortium is Cogema,
 15 a French company, owner and operator of sites like La
 16 Hague that have had environmental and safety records.
 17 It may not be possible to get adequate information
 18 about Cogema, since France is far less open than the
 19 United States about its nuclear operations.
 20 Another point on the subject of health
 21 effects. It's really distressing that the study that
 22 was underway about the -- the Dosimetry construction
 23 project proceeded to a certain point. They had
 24 collected a lot of data, organized it and so forth,
 25 and then the money was not forthcoming to analyze that

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1 data. That project should be completed and the
2 information made available to all the people in this
3 community and throughout South Carolina. It is most
4 important.

5 The other -- another problem that I see in
6 this DEIS is the weather discussion. You only discuss
7 five years. It doesn't take into account some special
8 South Carolina background. On a totally different
9 kind of project in Columbia, we've been fighting
10 against a big developer who wanted to put a
11 development in a flood plane. Well, his information
12 simply didn't go back far enough on the flooding that
13 had taken place in the Columbia area. It took
14 university people and interested people in the
15 community who could remember or who had fathers and
16 grandfathers who could remember the fact that there
17 had been tremendous flooding in the Columbia area
18 along the Congaree River.

19 The same thing is true with the
20 possibility of the effects of hurricanes. Now, that
21 all has by dismissed. But those of us who lived
22 through Hurricane Hugo know that what happened there
23 was that the hurricane came in just north of
24 Charleston and followed the water courses up to
25 Columbia; then went up the river, the Wateree River,

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to Charlotte. Charlotte was heavily impacted by
Hurricane Hugo. You really need to have a more
expansive idea of what weather patterns have occurred
in this area and in South Carolina.

You also seem to only be concerned about
the impact on the health of citizens within a 50 to 60
mile radius. Well, if you have a major accident here,
it will cover a far, far greater area than 60 miles.
When Chernobyl -- the accident at Chernobyl occurred,
people in Norway were affected. It just isn't true
that you can consider such a limited area.

Another point has been brought out, and
it's been about the Russian MOX program, which is not
proceeding according to plan. Another factor
involved, according to the *Global Security Newswire*
that comes out from the -- well, it's the NYT, and I
can't remember what that stands for. But,
nevertheless, they're talking about the difficulties
of adequately monitoring weapons of mass destruction,
including nuclear, in Russia. It just doesn't seem
that this program should be going ahead justified by
what the Russians are going to do, until the world
settles down a little more.

And I appreciate being able to make these
comments, and I hope that will receive -- get to a

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Greater Aiken Chamber supports -- support for the MOX project, for what it can do for our country, and what it will offer to our entire region.

In the draft EIS, the NRC says it does not see any significant health or environmental impacts, and that the risk to public health is, indeed, very small. With tighter, more stringent federal and state regulatory controls, environmental safety should not really even be considered a factor in deciding the location for the MOX project. It is vital we all remember that the economic boom of the '90s cannot be counted on to sustain the quality of life that each one of us have come to enjoy. MOX, ladies and gentlemen, is not a four-letter word. On the contrary, it equates to improved education, parks and recreation, health care, and other very important attributes that contribute to a well-balanced community.

I believe that NRC should make it their final decision to locate the MOX facility at the SRS, and that we, the citizens of the CSRA, should support this program of immense importance for the continued safe of continued quality of life (sic) and economic growth.

Thank you for allowing me to speak to you

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satisfactory resolution of this whole issue. But there are just these -- some of these very pertinent facts that are like elephants in the garden. They just aren't going to go away, and you really need to pay attention to them.

Thank you.

MR. CAMERON: Okay. Thank you, Mary.

Next we're going to hear from Mr. Charles Weiss, and then we're going to go to Tom Clements.

MR. WEISS: Thank you very much. Good evening. My name is Charlie Weiss, and I am President of the Greater Aiken Chamber of Commerce in Aiken, South Carolina. We represent approximately 730 businesses in the region. It equates also to roughly 30,000 employees who really depend on a sound and stable economy.

I am pleased to see that the NRC has taken into account the substantial economic benefits that the MOX project provide, and the plutonium disposition program in general will offer to our area. I'm also proud to be in a community that has the opportunity to contribute to such an important national mission. SRS and the local community have a long history of such contributions.

I am here this evening to convey that the

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1 this evening. Very much appreciate it. Thank you.

2 MR. CAMERON: Thank you, Mr. Weiss.

3 Let's go to Mr. Tom Clements, now, and
4 then we're going to go to Caroline Rivard.

5 MR. CLEMENTS: My name is Tom Clements,
6 and I work for Green Peace International based in
7 Washington, D.C., and I represent over two million of
8 our members with offices in about 35 countries
9 worldwide. And I'm a native to this area.

10 I just want to make some comments on the
11 process. I'm going to submit some written comments
12 about some accident scenarios and other issues, but I
13 just want to hold my comments to a couple more of
14 process and political points.

15 I found this draft EIS very confusing
16 because it attempts to also present environmental data
17 on two other facilities, in addition to the MOX plant;
18 those being the pit disassembly and conversion
19 facility, and the waste solidification building,
20 which, to my knowledge, DOE has never stated or
21 written publicly that that facility must be built.
22 I've been trying to get answers from DOE about the
23 facility, but so far there has been no response.

24 I'm also trying to find out if this
25 document is also the environmental impact statement

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for those other two facilities, and I have not heard
the question answered here tonight if this document is
going to serve as the EIS for two other major
facilities that are going to cost a lot of money and
could have substantial environmental impact. One of
the facilities is covered in this document to a very
minor degree. It was also covered in a 1999 EIS on
the plutonium disposition program. But the waste
solidification building, to my knowledge, DOE has
never done any NEPA analysis on its own. I think
there are going to be some legal questions raised
under NEPA if this document is substantial enough to
stand in for two other full environmental impact
statements which must be prepared.

Also, I can't determine now that there's
any legal basis for disposing of 34 metric tons in the
MOX program, and that's what this document basically
addresses. The department has never shifted the
plutonium that's being shipped from Rocky Flats from
long-term storage into the MOX program. We've been
waiting many, many months for a supplement analysis to
come out on that. We feel it should be -- that they
should prepare a supplemental EIS. So the program
right now only has about 27 metric tons in it. With
a wave of the pen, they could transfer the plutonium

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1 get some scrutiny.

2 We also believe that because of the
3 problems in the budget and the problems that have --
4 some of which have been pointed out with Russia, that
5 this money that's going to building the MOX plant in
6 the United States and Russia could be more efficiently
7 spent in protecting and securing nuclear materials in
8 Russia. There's a dirth of funds going into the
9 program to make sure that all the nuclear materials in
10 Russia are secured, and there's no need to rush into
11 building a MOX plant now---which we're opposed to---in
12 Russia unless the nuclear materials have been secured.
13 And I think that that's going to be something that
14 Congress is going to be watching very closely.

15 I'll submit the rest of my comments in
16 writing. Thank you.

17 MR. CAMERON: Okay, thank you very much,
18 Tom.

19 Caroline Betsy Rivard, and then we're
20 going to go to Brendolyn Jenkins, and then Dave
21 Cowfer.

22 MS. RIVARD: Good evening. Two weeks ago
23 tonight I was actually in Hiroshima and I visited the
24 peace museum for the first time. And I was startled
25 to see that on a tableau that's there, part of the

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1 into this MOX program. But we want to know how much
2 plutonium is coming from Rocky Flats, what the
3 impurities are in that plutonium, how some of it's
4 going to be disposed of if it's not going to be
5 disposed of as MOX. Rocky Flats has -- has clarified
6 that some of this is going to go to Whip. But we
7 don't know exactly what's going to happen to the
8 plutonium that's being shipped from Rocky Flats.

9 Just a couple more things, one related to
10 cost. The cost information presented in the document
11 is very confused and vague. They -- it gives a -- an
12 overall cost to the MOX program of \$3.8 billion, I
13 believe. But it doesn't break down this cost into
14 research and development, construction cost, operation
15 cost. There's a little discussion on the
16 decommissioning cost which gives a range. But the
17 people who wrote the document need to go back and
18 present very clearly what these costs are,
19 particularly given the budget crisis in this country
20 right now and the poor economy, and that \$75 billion
21 was just requested as a down payment on the war in
22 Iraq. The fact the DOE is trying to get \$415 million
23 in fiscal year 2004 is going to draw some attention.
24 The budget is going to be very tight. The \$650
25 million requested for the overall program is going to

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crashing into the Twin Towers, or two plane crashes into the Twin Towers. Is that like highly unlikely? Not predictable? Not considered? But, anyway, it did happen. So just wanted to consider that. It says, "If the accident occurred, the estimated consequences would include a dose of 4.5 rem to the maximally exposed offsite individual and a corresponding likelihood of .0023 that this individual would incur a fatal cancer.

Anyway, my point is that they were able to consider that, and I don't understand why -- their quote is that -- how is it? Will not address -- the EIS will not address impacts of terrorism because these impacts are not considered to be reasonably foreseeable as a result of proposed action -- of the proposed action of delivering 34 metric tons of weapons grade plutonium to the SRS plant and processing it. I -- I think that there's bad reasoning here. Is not the transportation, storage, and processing of 34 metric tons of plutonium reasonably foreseeable -- a reasonably foreseeable target for terrorism?

And I also disagree with the DEIS because it does not consider the immobilization alternative. And if the -- if the object is the disposition of

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museum is a list, half of it's in Japanese and half of it's in English, listing accidents that have happened since the dropping of the bombs on Hiroshima and Nagasaki. And there's only like 21 items listed, and one of the items mentioned SRS, which I was surprised about. And it says that in 28 years -- they have a date on it, 1988. September 30th, 1988. In 28 years, 30 major accidents at the Savannah River nuclear weapons plant in the United States. I'm not sure where they -- what -- you know, what information it says, but it certainly sent a chill up my spine.

I disagree with the DEIS, because the possibility of accidents was not adequately addressed. One of the related documents mentioned in the DEIS is the -- this final EIS from the Yucca Mountain -- the geological repository. And in here they managed to actually consider this terrorist possibility, and in -- it says, "In response to public comments, and to provide further information about accident risk, DOE analyzed an accident scenario in which a large commercial jet aircraft would crash into the repository facilities.

Now, you know, kind of raised the question in my mind, reading the DEIS, what -- you know, what probability would they have considered a plane

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1 weapons grade plutonium, immobilization needs to be
 2 considered. Russia's concerns don't really seem to be
 3 an adequate reason to not do it. And I also think
 4 that adverse economic effects -- I know that everybody
 5 is talking about the wonderful economic effects of
 6 building and having this MOX plant. I think we need
 7 to consider the adverse economic effects of a
 8 significant accident on the community.

9 Thank you very much.

10 MR. CAMERON: And thank you, Betsy.
 11 Brendolyn, and then David -- Dave Cowfer.
 12 MS. JENKINS: Good evening. And I thank
 13 you for this opportunity to speak regarding the draft
 14 EIS.

15 In an -- in an economy that can be
 16 described in my community at best as being depressed,
 17 I stand to support the growth and development of the
 18 economy of the community. This project can represent
 19 future jobs, professions, and careers for the youth of
 20 my community. This project can represent economic
 21 stability to the CSRA. This project can also
 22 represent the continuation of missions at the SRS.

23 But, comma, however, although I am in
 24 favor of all of these positive aspects, I have grave
 25 concern over the environmental impact portion of the

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1 draft EIS. Although it's been stated that NRC
 2 miscalculated their figures, and that an event is
 3 highly unlikely and improbable, there may have been a
 4 number of inadequacies found that causes even more
 5 concern to me about the concreteness of the data, and
 6 if it is likely to change again.

7 I'm also deeply concerned because we as a
 8 community, a nation, and now an entire world live now
 9 in the land of "what if." We never thought that a
 10 space shuttle would explode on liftoff, and we
 11 certainly never thought that one would disintegrate
 12 upon reentry. I never thought, after having lived in
 13 New York a number of years, that the magnificent Twin
 14 Towers would be felled, or that the icon of national
 15 security and defense would be attacked, or even that,
 16 on the other Monday evening, we would have an
 17 earthquake in Aiken. But we live now in the land of
 18 "what if." And although we can talk all day long
 19 about wind patterns and wind shifts, we still remain
 20 when it settles, it settles, wherever it settles, in
 21 a community of disenfranchised, poor, and minority.

22 One of the youth at a meeting the other
 23 evening pointed out to me, when it was talked about
 24 the wind shifts and wind patterns, that we also live
 25 on a spinning ball called earth. We are called to

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1 think critically about putting projects over people,
2 and jobs over lives. I'm deeply disturbed that so
3 much of the time and effort that my organization has
4 spent was challenging the DOE and Westinghouse
5 Savannah River Company about this issue, when both the
6 NRC and Duke-Cogema should have been more forthcoming
7 in their roles that were to be played.

8 I, as well as many of my members of my
9 community and the four or five members of the SRS
10 Alliance that was present at a meeting for the first
11 time ever in a disenfranchised community in Aiken,
12 we're very appreciative for Tim Harris attending the
13 meeting last week with members of that impacted
14 community that is spoken about in that draft EIS. We
15 are also, however, quite disenchanted, and perhaps
16 even insulted, that Duke-Cogema refused to meet with
17 members of the SRS Alliance or, instead -- or even
18 attend that meeting. But, instead, to go hundreds of
19 miles last evening and be present---although not
20 vocal---in Savannah, and present this evening, when
21 the community that is spoken about in the
22 environmental justice portion is not even the
23 community in the faces of those of you that are
24 present this evening.

25 So I don't want to be seem as -- seeming

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1 as unpatriotic for the questions that I raise that
2 call us to be critical prophets in a time of "what
3 if." I support the efforts of -- of the community, of
4 this project, and of the SRS. You've been very good
5 corporate neighbors that have empowered and impacted
6 the communities around my community and the families
7 of which I serve. But I also am called to critically
8 think and critically look at any issue and any impact
9 that would adversely affect the people that I serve.

10 Thank you.

11 MR. CAMERON: Thank you very much,
12 Brendolyn.

13 Dave? And the next three speakers are
14 going to be Glenn Carroll, Ed Arnold, and Ernie
15 Chaput.

16 And this is Mr. Cowfer.

17 MR. COWFER: Yes, Dave Cowfer. I chair
18 the Savannah River Site Retiree Association. I would
19 like to say, first of all, that I and the association
20 I represent strongly support the MOX facility.

21 My background, my 40 years in industry,
22 I've been retired three years now. I have worked
23 three-fourths of that under the jurisdiction or
24 actually the regulation of the NRC, and I'm very
25 confident the NRC will do a job -- a good job, an

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from even occurring. I've worked at SRS, and I can tell you the redundancy and certainly the safety basis for this facility, like others out there, would -- would bear out the fact that this is not a -- a credible scenario.

Over the years we've seen opponents of nuclear technology overstate the risks associated with the technology, and certainly we know that the NRC is neither a proponent or a proponent, but they're an objective regulator. I would expect the NRC to be even-handed and not overly -- be overly dramatic in the assessments of that facility. Even if they acknowledge that the assumptions they used are conservative, and if they acknowledge that the -- their evaluation does not give credit for protection that we know will be in place to prevent this accident scenario from happening, the statements gets lost in the cloudiness of what's generated in numbers---we've heard a lot of that discussion tonight---that fall out of these conservative evaluations. So I would hope the NRC heeds this concern and would insure that their final analysis portrays the risks associated with this program in a proper context.

Thank you.

MR. CAMERON: Thank you very much, Mr.

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excellent job on this project, both in the authorization of the construction and operation, and the regulation of the facility once it goes into operation.

I believe that the MOX facility can be constructed and operated safely. But I've got a concern about the EIS I'd like to -- some concerns I'd like to mention. Having reviewed the EIS and talked to some independent -- folks independent of the EIS development, I would like to say or make the concern, certainly, that the EIS is very conservative, and it makes some assumptions that I think are incredible. Particularly, and most particularly, on the worst case scenario.

I'm concerned that a perception of this kind of evaluation generates in the public eye -- that this kind of evaluation generates in the public eye with respect to perceive dangers at the facility are inflated. I think the NRC's postulating an accident that would breach at least two levels or more of containment, site boundary monitors, and go undetected for a year is just not -- not plausible. The scenario disregards the facility engineering safety features and operating procedures mandated by federal regulations that would prevent this sort of scenario

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1 Cowfer.

2 Glenn Carroll, and then Ed Arnold and

3 Ernie Chaput.

4 MS. CARROLL: Hello. My name is Glenn

5 Carroll. I represent Georgians Against Nuclear

6 Energy. We are intervening in opposition to

7 construction authorization for the MOX facility, so

8 we've been studying it pretty hard.

9 I'm carrying this image tonight because

10 it's a Native American thunderbird, but it sure looks

11 like a nuclear waste symbol; doesn't it? And I just

12 think -- I put this out here and share it because I

13 really believe that we can finish this business we

14 started. That we can finish with the nuclear genie

15 which we've let out of the bottle.

16 Oh, could I ask you to put Slide 6 up.

17 Thank you.

18 One of the things I want to say is we have

19 something in common. This is our plutonium. If you

20 have ever paid federal taxes, you bought this

21 plutonium. You bought this facility, Savannah River

22 Site, and you're buying whatever we do with this

23 plutonium.

24 I want to celebrate that we are arguing

25 about what to do with weapons grade plutonium. Now,

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1 this is a really good place to be. It's progress.

2 I request an additional meeting. I didn't

3 quite follow what happened with the revised data you

4 furnished us tonight, but it sounds like we just

5 really could use something -- what you put out next

6 week, and we could really use to review it, and we

7 could really use a public forum to discuss it, because

8 this document is vast, and I really wonder what

9 individual knows everything that's in here. And it's

10 really important. And so I think we really benefit

11 from having a public meeting to hear from each other

12 about it. And I think the minimum is to come to this

13 community, which is going to be the most affected.

14 Okay, I'm sorry, this gets tiresome. I

15 say this every time we come out. There's a basic

16 problem with what we're doing with this EIS process.

17 Can I have your walk-around-with-it mic so that I can

18 use the slides?

19 MR. CAMERON: Are you going to give it

20 back?

21 MS. CARROLL: Did you hear about that?

22 You weren't here. I was beating up DOE that night.

23 Okay. What we have here -- where do we

24 have it? Well, it was kind of an interesting layout.

25 Okay, we're not even discussing a license. Let's be

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1 And I want to tell you something else.
 2 This is our document. This is for us. Now, I love
 3 Dave, I love Tim, I love Chip, I like John Hull -- I
 4 love John Hull, I like that man over there, Peter.
 5 But this is kind of hard to read. Sorry. And I have
 6 a basic problem. I mean, one of the main issues GANE
 7 is interested in here is the waste issue. And it has
 8 been characterized differently in every single one of
 9 these really hard to use -- and I want to say this
 10 compares very favorably with the SBB EIS, which is
 11 like...

12 MR. HARRIS: Do you like it more or less,
 13 Glenn?

14 MS. CARROLL: I like it more. But, yes,
 15 please convert your waste to gallons. It would be
 16 helpful if you'd just use the same table that DCS used
 17 unless, you know, you need to differ from it. It
 18 would just make it a whole lot easier, because it
 19 almost looks like maybe something's being hidden on
 20 this waste issue, the way the language keeps changing
 21 that we're talking about. Okay.

22 Trying to figure this out. So we got a
 23 construction request. This is what we're talking
 24 about. And this EIS is going along with this
 25 construction request. Now, you notice this arrow

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1 clear on that. We're discussing construction
 2 authorization. This isn't even defined in NRC
 3 regulations, so we're pretty much making it up as we
 4 go, which sort of leaves it open to challenge. We'll
 5 have to see what happens with that.
 6 So what you've got here, what we're
 7 talking about here is a construction authorization
 8 request. We want to consider whether to construct
 9 this facility. Now, usually when you consider whether
 10 you're going to construct a facility that's up to
 11 something like -- Don Moniak said 360,000 square feet,
 12 that's going to process is it 27 tons or is it 34
 13 tons? I mean, that's another interesting point.
 14 There isn't even officially a mandate to consider that
 15 kind of plutonium. It hasn't been put in the MOX
 16 program yet; right? Okay, so that's interesting.

17 And I heard a man from DOE say something
 18 interesting tonight which is, well, you know, the
 19 public out here, the people that are litigating this
 20 have a record we have to refer to. We have to cite
 21 it, you know, and we're beating each other up with our
 22 citations out there. But you're saying, "Oh, well, we
 23 kind of got the impression, talking to the Russians,
 24 that they really don't like immobilization." I mean,
 25 put it on paper. We're the public.

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1 here, this is when this starts. Maybe the layout
2 would be clearer if this box was over here. Okay,
3 now, it says in the EIS that they might give a
4 license, they expect to give a license, unless
5 compelling safety issues would suggest otherwise.

6 But look at this. We're done. We are
7 done. This starts. And this is the main event. I'm
8 here to tell you. This is where the plutonium is. We
9 are not talking about plutonium in this construction
10 thing. We're planning to add the plutonium to the
11 game here. But we're finalizing this EIS.

12 Now, there's some promise, but it doesn't
13 look binding enough. That's what bothers us. I mean,
14 you have acknowledged this and you have said, "We'll
15 capture it." But you're not bound to. That bugs us.
16 We have a law. We had a hard time getting this law.
17 You know, this little public law, this *National
18 Environmental Policy Act* that generates a document
19 like this for us.

20 So here you are, you're finishing the
21 safety analysis. And let me tell you, I think it's
22 pretty good. I actually thought the SER finished
23 here, and it was news to me. Here I am litigating
24 plutonium for four years, and I just figured out that
25 there's going to be an operation SER. I think that's

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1 really great. But, I'm sorry, your only real solution
2 here, you can either do another EIS or you can extend
3 the EIS. But you cannot construct this facility until
4 you've got this -- until you've got this review and
5 you've done the EIS on it. That's how we're reading
6 NEPA. And so I've clued you in.

7 MR. CAMERON: I wish I could be as
8 dramatic as you are with this thing. And, Glenn, I
9 got to -- you know, if you can just...

10 MS. CARROLL: Hurry up?

11 MR. CAMERON: Yeah, because we -- we have
12 a lot of people who want to -- want to speak, too.

13 MS. CARROLL: Okay, the next thing we'd
14 like to talk about, then, and I'll touch on two
15 topics: immobilization and waste.

16 Your reason for not reviewing
17 immobilization was not accurate. And I actually think
18 you might have been given a bum steer from the DOE in
19 some conversations I had tonight. But Russia declined
20 to immobilization itself, but accepts the United
21 States immobilizing. NEPA requires an affirmative
22 alternative to be analyzed if there's a reasonable one
23 available. And immobilization is reasonable because,
24 unlike storage, it would address the proliferation
25 concerns. And it's positive because, unlike storage,

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cont.

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61-7

1 you again when you come back.
 2
 3 MR. HARRIS: Okay, thank you, Glenn.
 4 MR. CAMERON: Ed Arnold and Ernie Chaput.
 5 And I apologize for obviously running late. And we'll
 6 stay and hear everybody. But I apologize for -- for
 7 going over.

61-7
cont.

8 Ed?
 9 MR. ARNOLD: Thank you for the opportunity
 10 to address our understanding, which I have to say is
 11 -- is limited and confused.

12 My name is Ed Arnold, and I'm the Director
 13 of the local group of Physicians for Social
 14 Responsibility. We have over 500 physician and health
 15 care professional members and supporters in Georgia
 16 and Alabama. I come here from Atlanta, but we have
 17 members in the Augusta area, and downstream we have
 18 members in Savannah, as well.

19 This reiterates something I've said in the
 20 past at these meetings. I would hope that -- I was
 21 pleased to hear that you considered this a public
 22 health document. And I would encourage you to think
 23 about your visit to your physician. One thing that we
 24 always like to do is have enough time with our
 25 physician. And we're being told tonight that we don't
 really have enough time to discuss this fully. So I

1 it provides jobs. And, unlike storage, and certainly
 2 unlike MOX, would not generate waste, and would
 3 actually employ waste.

4 And I hear what you say about the
 5 vitrification problems. That vitrification facility,
 6 that's DOE's best success story. And I just really
 7 believe we can solve that problem with solvent
 8 extraction and ion exchange. That's what we'd like.
 9 So we really are going to make a case that
 10 immobilization should be analyzed, that NEPA requires
 11 it.

12 On the waste, we got a problem with the
 13 fact that we haven't heard anything from DOE yet on
 14 this waste solidification building. There's no
 15 budgets. And so we really think the analysis needs to
 16 reflect any possible -- you know, a possible outcome
 17 that a MOX facility is up and operating and the waste
 18 solidification building -- what...

19 MR. CAMERON: Okay, Glenn, is that -- is
 20 that it?

21 MS. CARROLL: Does it for me.

22 MR. CAMERON: Thank you very much.

23 MS. CARROLL: Thank you. Thank you.

24 MR. CAMERON: Ed Arnold?

25 MS. CARROLL: We look forward to seeing

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1 would urge the NRC to arrange for appropriate public
 2 discussion that won't rush us.

3 Full disclosure is something that you
 4 want. Your physician wants it from you; you want it
 5 from your physician. This is really confusing. I
 6 don't feel as though I have full disclosure from this
 7 document. This is -- we're trying to understand the
 8 risks, and frankly I don't -- I -- I won't say it
 9 again.

10 Let me read something directly from the
 11 document that was alluded to a couple of times earlier
 12 this evening, just this one example. I'm going to
 13 submit more comments in writing, but it's one example.

14 "The EIS will not address the impacts of
 15 terrorism because these impacts are not
 16 considered to be reasonably foreseeable
 17 as a result of the proposed action."

18 Well, how about a range of what might be
 19 foreseeable. How about a worst case scenario, which
 20 I think most public work is -- is required to provide
 21 on a statement like that. Now, for me it doesn't cut
 22 it. We were told tonight something more about some
 23 kind of a safety evaluation that will be provided next
 24 month. Well, what's the public procedure connected
 25 with that? And is it part of this? Is it separate

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1 from this? Will there be public participation once
 2 that's released? Will we have an opportunity to
 3 discuss it with you all? I -- these are -- this is a
 4 big mystery to me.

5 So as someone who works regularly -- I'm
 6 not a physician myself, but I work regularly with
 7 public health officials and physicians, this document
 8 doesn't look like any medical report I've ever read.
 9 And I encourage that you make an attempt to step up
 10 the standard.

11 MR. CAMERON: Thank you very much, Ed.
 12 Mr. Chaput? And then we have two more
 13 flights of three, I think. Robert Guild, Peggy Roche,
 14 and Darrel Watson, next trio.

15 MR. CHAPUT: Good evening, and thank you
 16 for the opportunity to provide comments on the draft
 17 EIS work, the mixed oxide fuel fabrication facility.
 18 I'm Earnest Chaput, and I am the Manager of Special
 19 Projects for the Economic Development Partnership of
 20 Aiken and Edgefield Counties in South Carolina.

21 Construction and operation of the mixed
 22 oxide fuel fabrication facility is an important part
 23 of our nation's international non-proliferation
 24 programs. It is important we do all possible to make
 25 surplus United States and Russia nuclear materials

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62-1 cont.

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1 unusual for future use in nuclear weapons. We believe
 2 the United States should continue to demonstrate moral
 3 leadership by expeditiously preparing to make these
 4 materials unsuitable for use in modern nuclear
 5 weapons. We are pleased that the preliminary
 6 conclusion of the NRC staff that the overall benefits
 7 of the MOX facility outweighs disadvantages. Unless
 8 safety issues mandate otherwise, the action called for
 9 is issuance of the proposed license. We agree the
 10 proposed facility can be operated safely, and urge the
 11 NRC to issue the construction authorization request in
 12 a timely manner.

13 We've reviewed the draft EIS, and offer
 14 three comments which result in additional support for
 15 your primarily conclusion. First, the safety and
 16 environmental risks associated with the no-action
 17 alternative have been significantly understated.
 18 These are comments that we have previously provided to
 19 DOE in their -- in their EIS statements on the surplus
 20 plutonium disposition. The no-action alternative
 21 assumes that DOE's surplus plutonium would remain in
 22 storage at seven DOE sites. The DEIS does not state
 23 the period of storage, and it appears the impacts that
 24 are included therein are near-term and based on
 25 maintaining the status quo. We believe current

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1 methods of storage are only valid for limited and
 2 finite lifetimes. Storage without subsequent actions
 3 is not realistic for time frames of 100 years plus.
 4 At some time in the future, action will be required to
 5 either repackage or to disposition the stored
 6 materials. The no-action alternative should assess
 7 the incremental added risk resulting from actions to
 8 periodically reprocess and repackage materials in
 9 long-term storage; and secondly, actions to eventually
 10 remove the materials from storage and prepare them for
 11 disposition. You can't babysit this stuff forever.
 12 Something's going to have to be done with it sooner or
 13 later.

14 Second comment. The risk to offsite
 15 population in the hypothetical accident is
 16 significantly overstated. Again, I don't have the
 17 benefit of the revised analysis, but my sense, from
 18 looking at the numbers, has not significantly changed
 19 as far as the -- the assumptions made.

20 In analyzing the impact to offsite
 21 population from a hypothetical tritium release from
 22 the PDCF, the draft EIS assumes and calculates a dose
 23 by ingestion during a one-year post-accident period.
 24 The scenario is simply not possible. An assumption
 25 that the South Carolina Department of Health and

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draft EIS should only analyze -- draft EIS for MOX should only analyze and include the combined accidents which result from the unique requirements associated to fabricate MOX fuel. Disassembly of the pit is not required solely to fabricate MOX fuel, and that's the primary impact that comes out of PDCF.

63-4
cont.

DOE has previously prepared an environmental impact statement for the PDCF---that was a question that was asked earlier---with a finding that the facility provides adequate protection to the public and the environment. NRC should not subject the PDCF facility to NEPA -- to NEPA double jeopardy.

Thank you for the opportunity to provide comments.

MR. CAMERON: Thank you very much, Ernie. And our next speaker is Mr. Robert Guild.

And then we'll go to Peggy Roche and Darrell Watson. Mr. Guild?

MR. GUILD: Good evening. My name is Robert Guild. I'm from Columbia, South Carolina. I'm an environmental lawyer by training, but I appear as a member of the Executive Committee of the South Carolina Chapter of the Sierra Club to speak in opposition to the proposed licensing of the MOX fuel fabrication facility and allied facilities included in

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Environmental Control and that the Georgia Environmental Protection Division would ignore contamination -- ignore contamination of agricultural products for one year is incredulous, and it's an insult to their training, demonstrated performance, and professional status. The impossible assumption must be eliminated and the analysis revised.

Third, the DEIS places unwarranted emphasis on impacts associated solely with the PDCF facility. And it's also sometimes called connected actions. I think that's what you called it in your -- in your presentations. The PDCF is not necessarily solely required to support the MOX facility. The PDCF has a broad capability support of a variety of storage and disposition options for surplus nuclear weapons pits. For example, the PDCF was to have prepared the plutonium. That was included in the cancelled plutonium immobilization project. There has also been discussion that PDCF may convert surplus weapon plutonium components currently being stored as pits to oxide for long-term storage. By coupling MOX and PDCF facilities in a draft EIS, NRC creates the implication that impacts from PDCF will not occur if the MOX construction authorization is denied. That is not the case. PDCF and MOX are two separate actions. And the

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1 this draft environmental impact statement.

2 The South Carolina Sierra Club has over

3 5,000 members in South Carolina. As you know, we're

4 a national conservation organization with over 100

5 years of history of advocating for the protection of

6 our environment. Our governing body, the executive

7 committee, passed by unanimous resolution last year a

8 statement opposing the mixed oxide fuel fabrication

9 facility as an element in the management of our

10 surplus weapons plutonium, and alternatively supported

11 the pursuit of the now apparently abandoned

12 immobilization program as the prudent and preferable

13 alternative to more safely and appropriately manage

14 this surplus weapons material.

15 We are supportive of the objective of

16 managing this weapons material and converting it into

17 a non-weapons accessible form, but believe the

18 environmentally preferable as well as the security

19 preferable alternative of immobilization is

20 inappropriately not properly assessed in this draft

21 environmental impact statement.

22 My view, NEPA does not -- simply does not

23 permit the Nuclear Regulatory Commission to assume the

24 unavailability of immobilization as is apparently done

25 in order to avoid assessing the cost of the

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1 immobilization alternative. I won't repeat the I

2 think eloquent observations, quoting from the actual

3 language of the Russian-United States plutonium

4 disposition agreement, which obviously is contrary to

5 the representations made by the authors of this DEIS

6 with respect to the binding character of the -- of the

7 MOX alternative. But, suffice it to say, that

8 regardless, NEPA requires you to assess the costs of

9 that alternative.

10 DOE, even if they are the decision-maker,

11 deserves, and the American public demands a full

12 assessment by the Nuclear Regulatory Commission of the

13 environmental costs and benefits of this action, as

14 well as available alternatives. It's fine for you to

15 say that an alternative has been rejected by your

16 sister agency. It's simply not adequate for you to

17 fail to assess that alternative so that the public

18 will understand that it is environmentally preferable.

19 And we urge you to do that.

20 Several other comments. We like to echo,

21 without repeating, the written comments submitted by

22 the Nuclear Information Resource Service which

23 submitted some useful comments on procedural issues,

24 particularly with respect to the what appear to be

25 segmentation problems with regard to the way the NRC

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has chosen to evaluate this particular action; that is, failing to evaluate the necessary connected action such as the effects of accident sequences at the McGuire and Catawba reactors which will be using the MOX fuel.

It simply seems incredible to say that you used a generic reactor and assumed the consequences of accidents in generic reactors, when I reviewed studies that indicate that because of the proximity of the high population concentration of Charlotte, North Carolina, to the reactors, out of all in the country that we've chosen to use as the MOX fuel facilities. Early cancer fatalities from -- from -- early fatalities and latent cancer fatalities from beyond design-based accidents at those very reactors exceeded virtually every other reactor site in the country because of the population concentration at Charlotte. And why you haven't acknowledged that in this -- in this review is beyond me.

Let me touch briefly on a couple of points. We believe fundamentally at the Sierra Club that the Savannah River Site should be required to honor its commitment to the people of South Carolina to focus principally on its environmental restoration mission. In conducting the 50-year mission of weapons

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production at the Savannah River Site, we had turned the Savannah River Site into literally a national sacrifice area. The number of -- of Super Fund sites, the number of high level and low level rad waste contamination sites are legion at the facility. The most optimistic version of DOE's views say it'll be until the year 2025 before we clean up the ground water contamination at a number of these sites. And yet this action contemplates a renewed waste production mission at this facility before we have completed a satisfactory plan for environmental restoration of the damage we've already done. That is simply unacceptable.

With respect to environmental justice, the NRC has appropriately complied with the executive order by at least analyzing the disproportionate impacts that the credible accident scenarios at this proposed facility will have on communities of color and of low income. That really reflects the dynamic that really has been at work at the Savannah River Site from its inception; and that is that the people in this area of South Carolina represent the path of least resistance with respect to doing what no one else in the country finds environmentally acceptable. Is it a surprise that Rocky Flats and its neighbors no

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1 longer will tolerate being responsible for managing
 2 weapons plutonium, and instead are sending it to the
 3 Savannah River Site in South Carolina?
 4 So you've acknowledged the fact that if
 5 there is an accident, disproportionate numbers of
 6 African Americans and poor people will die. But
 7 you've been glib in characterizing the numbers which
 8 you claim to be precise about in other regards. And
 9 I would strongly urge you, in your DEIS at Section
 10 4.3.7.3.3, to not simply give us a map at in grainy
 11 terms shows where those concentrations of
 12 predominantly African American, low income populations
 13 are. But to give us an actual table, as you do in
 14 some of the other places when the data supports your
 15 action, and tell us how many black people and poor
 16 people will die in that accident scenario that you
 17 assume. Tell us where they live. Tell us which
 18 census blocks they live in, because you know that
 19 data. That's the data source that generated the maps.
 20 Let's give us the numbers so that the public can
 21 transparently see what cost they're being asked to
 22 bear.
 23 And finally, as I tried to suggest in a
 24 question, it's simply unacceptable for you to tell us
 25 in this document, which purports to assess the costs

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1 and benefits of a proposed major federal action, and
 2 assures us that risks are small and acceptable, that
 3 you refuse to put a number on the probability of the
 4 accident scenarios that you say will not happen. You
 5 just refuse to tell us what that number is.
 6 Now, I know EPA, when it says we're going
 7 to release dioxin into the environment from an
 8 incinerator, will tell you that the chances of a death
 9 from cancer are, you know, 1 in 100,000 or 1 in
 10 1,000,000. And they'll make an explicit judgement
 11 that it's acceptable to expose the population to that
 12 level of risk. We should expect no less of the
 13 Nuclear Regulatory Commission when they tell us that
 14 the risk of an accident at this facility is
 15 acceptable, without giving us a value that represents
 16 that acceptable risk.
 17 And the last point I'd like to make with
 18 regard to environmental justice impacts is you
 19 acknowledge that more black people and poor people are
 20 going to be down wind, essentially, from that plume,
 21 from that accident location in the plume exposure
 22 pathway. And yet you fail to acknowledge what seems
 23 obvious to me, and that is poor people are largely
 24 going to be far more dependent on subsistence
 25 agriculture and dairy product consumption, the

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1 dominant ingestion pathways that you assume in your
 2 cancer risk scenarios, without telling us that in the
 3 EIS. I mean, the fact of the matter is it's very
 4 likely that poor people will be the ones who will
 5 continue to consume the vegetables that they're
 6 growing in their garden or the dairy products that
 7 come from the cow that eats the grass that's exposed
 8 to the deposition of contaminants in the accident.
 9 And you should be explicit about what those enhanced
 10 risks are exposed -- that are -- that those -- that
 11 those populations, communities of color and low
 12 income, are -- are exposed to. One moment, I'll wrap
 13 up.

That's all. Thank you very much.

14
 15 MR. CAMERON: Thank you. Thank you very
 16 much.

17
 18 Our next speaker is -- is Peggy still --
 19 Peggy? There's Peggy. And is it -- is it...

MS. ROCHE: Peggy Roche.

MR. CAMERON: ...Roche? All right.

21 MS. ROCHE: Thank you for allowing me to
 22 speak tonight. I'm down to just a few remarks. So
 23 one thing I'd like to address is the hearing process,
 24 itself. We ask for more hearings to be held so we
 25 wouldn't run this late. We'd ask for them to be -- I

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1 mean, this is a lovely area with friendly people, but
 2 it's not the most centrally located area in the state.
 3 We'd ask for them to be held in Columbia and
 4 Charleston and other places around the state. And I
 5 think that it would be very advantageous. You would
 6 get a lot more input from the public. And that is
 7 supposedly what you're wanting.

8 One point that I want to make, and one of
 9 the charts in your EIS, it's on the East Coast, the
 10 air flows in a northeasterly direction. But on one of
 11 the charts---and I'm sorry, I don't have the page
 12 number but it is in there---all the air quality
 13 monitoring systems are located in the northwestern
 14 section of the Savannah River Site. So you would be
 15 gathering data from air not affected by the MOX
 16 facility.

17 Then I also made some -- on a couple of
 18 your charts I did your calculations with your formula
 19 for the latent cancer fatalities, and I won't -- in
 20 the interest of time, and I know other people are
 21 wanting to speak. I won't go by them line-by-line.
 22 But the numbers were mathematically astronomical in
 23 the difference between short-term and the one-year-
 24 later.

And I want to make mention of the fact

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1 that a MOX fuel processing facility is actually a
 2 plutonium breeding facility. That when you -- when
 3 you are -- you're actually increasing the amount of
 4 plutonium you eventually end up with. Because as
 5 uranium that it's mixed with is irradiated by the
 6 plutonium, the irradiation of the mixture converts the
 7 uranium into plutonium; therefore giving you plutonium
 8 that you -- more plutonium than you started out with.
 9 Recently there was a tremendous public and
 10 official outcry about moving six tons of plutonium
 11 into the State of South Carolina. Now you're talking
 12 about move 34 metric tons into the state, which is
 13 approximately 75,000 pounds of plutonium. Put some
 14 perspective on that, the bomb that was dropped on
 15 Nagasaki had approximately 20 pounds of plutonium.
 16 With today's refinery numbers, it would take less than
 17 20 pounds to get more bomb for the buck. And we're
 18 talking about 75,000 pounds of plutonium being located
 19 in one site here in South Carolina, when it took less
 20 than 20 pounds to drop that bomb on Nagasaki.

21 I think more attention needs to be
 22 addressed to if there was an accident, how would you
 23 deal with it. Talked about a remote way. I don't
 24 understand how that would work if you had an explosion
 25 or you had a fire. Whatever remote facility was in --

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1 you know, remote control, whatever, was in the
 2 facility, it's going to be fried when they had the --
 3 and with plutonium being, you know, much hotter than
 4 uranium, it would be much worse than the Chernobyl
 5 incident. And the people that went in to shut down
 6 that reactor at Chernobyl knew that they would be
 7 incinerating themselves when they went in to do it.
 8 And so it would be -- it would not be possible to go
 9 into a MOX facility physically and do it. You'd be
 10 incinerated before you could get to it to shut down
 11 the reactor.

12 And any equipment that you had in there at
 13 the reactor, the reactor would be so hot that it would
 14 be -- we don't have anything that's capable of
 15 shutting it down. It would be incinerated. If
 16 there's an explosion or fire, then the reactor got so
 17 hot that it needed to be shut down, any equipment that
 18 we could put in there would be so hot that it wouldn't
 19 work. So I would like, you know, to have that issue
 20 addressed.

21 And the other thing is -- my last point is
 22 the language, the way the language is worded in this
 23 really bothers me. "Workers would be monitored as
 24 appropriate..." As appropriate to whom? "...to
 25 insure the radioactive doses are maintained at levels

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as low as reasonably achievable. What is "reasonably achievable"? You know, a scientists idea of what is reasonably achievable? To me that leaves a lot of human beings as collateral damage.

Thank you.

MR. CAMERON: Thank you, Peggy.

And I know it's -- it's late. And perhaps we can answer some questions after we're done.

Did you want to say something quickly in summary, Mr. Robinson?

MR. ROBINSON: No, no, no, no.

MR. CAMERON: Okay. All right. Thank you very much.

Darrell Watson?

MR. WATSON: I just have a few quick comments. A lot of what I'm going to talk about has already been said, so I'm going to keep it short.

I've got four main issues with this. Number one is the transportation of the plutonium. According to your diagram here, 95% -- this is -- this is going to be Section 1-8, Figure 1.3. 95% of the surplus weapons grade plutonium in this country is located west of the Mississippi River. Now, to bring in 95% of the plutonium in this country all the way pretty much across the country to South Carolina I

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think is a very, very bad idea, exposing that much plutonium to possible interception by exactly the entities you want to protect this plutonium from apparently in your MOX program, and that's terrorists and rogue states. I think that really needs to be considered. That's 34 metric tons of plutonium. That's almost 75,000 pounds to move across the country to our backyard, as it is.

Number two, I think terrorism really needs to be addressed in the draft EIA (sic). I think nowadays that's definitely to be something that you -- you'd be completely irresponsible not to include. That's a facet of our everyday life now, and that needs to be addressed. It's no excuse for not -- that not being addressed.

Third topic is, this is an experimental process. This has been done nowhere in the world. South Carolina is the test bed for this project. This has not been done in Russia, this has not been done in France. This has been done nowhere except in labs and experimental settings and controlled settings. So we're going to find out firsthand the consequences of possible side effects of this.

Also the very last comment I have is I'm fully opposed to Cogema being involved in this

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1 project, given their track record in France. Let's
 2 see. Matter of fact, they have just a bad track
 3 record, especially at La Hague or La Hague
 4 (pronouncing), I guess is how you pronounce it, in
 5 France. To me it proves that they are an
 6 irresponsible company and they should not be involved
 7 in this project in any shape or form if this project
 8 does go forward. I think that needs to be addressed.
 9 There needs to be more transparency in the histories
 10 of the countries that are involved in this project.
 11 And that's -- that's all I have. Thank
 12 you.

13 MR. CAMERON: Okay, thank you, Darrell.
 14 We have four speakers, and if I -- I think
 15 I've gotten everybody. But if there's someone who I
 16 don't have on my list, please tell me. We're going to
 17 start with Jen Kato, then we have Tom Howell, Adele
 18 Kushner, and Joanne Steele. And I'm sorry if I
 19 mispronounced any names.
 20 Jen Kato?

21 MS. KATO: I hope I didn't write my notes
 22 in the same invisible ink that I wrote my name on that
 23 list with.

24 MR. CAMERON: I hope not, either.
 25 MS. KATO: Anyway, I'm Jen Kato, and I'm

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1 a local. I'm with the Georgia Chapter Sierra Club.
 2 I represent the Executive Committee of the Georgia
 3 Chapter of the Sierra Club. And we represent 14,000
 4 people in the State of Georgia; 45% Republican, 55%
 5 Democrat. And we have grave concerns about the MOX
 6 fuel fabrication facility. We would like to see this
 7 entire process canned, and would be more likely to
 8 support the immobilization alternative, although we'd
 9 just have to see what the figures were that would come
 10 out of that.

11 The cost benefit analysis does not include
 12 the cost of any accident scenarios for victim health
 13 recovery or clean up to public property. This must be
 14 corrected. The estimated public collective offsite
 15 health impacts for accidentally scenarios are only
 16 considered for one year after an accident, and only
 17 for the standard man. Any accident would not likely
 18 create a uniform offsite dispersion among the
 19 population limited to a 160 pound man with effects
 20 stopping at one year. The very use -- well, the use
 21 of FRG-13 does not consider gender, race, or age
 22 differences in response to radiation exposure, and the
 23 radiation involved is hazardous for 240,000 years
 24 plus, and their effects are cumulative. The DEIS must
 25 be corrected to reflect these concerns. Further, an

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cont.

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1 people. And I think Tim has done a great job trying
 2 to help me arrive at one portion of the calculation at
 3 the region of influence. This prevents corroboration
 4 of human health impacts figures which are important to
 5 a lot of people. For this reason, and because of the
 6 inclusion of the WSB and the PDCF, it makes a document
 7 very, very deficient and suspect, and we need to have
 8 additional and corrected data to evaluate this EIS and
 9 offer comments on it. The distribution of this
 10 additional data must be followed by a lengthened
 11 public comment period and public meetings. Let me
 12 see. Not -- not going to invisible ink.

66-5
cont.

66-6

13 Well, right now Savannah River Site is
 14 actually courting TRU waste from other sites which it
 15 hopes to process -- characterize, process, and
 16 package. The TRU waste generated by your mission will
 17 just accumulate there behind all that other, waiting
 18 to go to Whip. And right now there's a WIR (phonetic)
 19 lawsuit against -- that's halting tank closer at
 20 Savannah River Site. And when you're looking at
 21 133,000 gallons of high level aqueous waste and what
 22 it -- actually 355,000 gallons of low level waste per
 23 year. If something like WIR persists, this -- this
 24 waste will also accumulate. And in general, the human
 25 health facts, the human health impacts have not been

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1 actual accident may cascade into several of the
 2 scenarios illustrated in the EIS, compounding health
 3 effects. And this must also be considered in the EIS.
 4 And some sections in the back, human
 5 health risk states statistically no fatalities during
 6 normal operations will occur. Yet, according to your
 7 own figures, 50 people -- and these figures I -- I
 8 contest, but I don't have all of the -- I don't have
 9 all the information to corroborate them. But yet you
 10 say 50 people will die by latent cancer fatalities.
 11 And they -- these will only be standard men, of
 12 course, during the 20-year operating period.

66-3
cont.

66-4

13 Also any impact -- you state any impacts
 14 associated with the transportation of fresh MOX fuel,
 15 including impacts on property values, will be minimal.
 16 Did someone even do an Internet search on this topic?
 17 It doesn't seem like it was very seriously addressed
 18 at all in the EIS, whatsoever, as a cost. And it will
 19 be a cost.

20 This, as well as transport of plutonium,
 21 will affect populations throughout Georgia, including
 22 property values. This must be just seriously looked
 23 at and evaluated in the EIS. The DEIS has -- has
 24 insufficient detail regarding how these calculations
 25 were arrived at. This has been brought up by several

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1 evaluated with regard to waste in the EIS. And
2 especially not in consideration of the variability of
3 the handling of the waste at Savannah River Site.

4 I have sought to give comments that were
5 not given by other people before, but I do want to
6 stress that I am in -- we are -- the Sierra Club is in
7 complete accord with very large concerns about
8 terrorist activities and that they have not been
9 evaluated at all with regard to any accident
10 scenarios, latent cancer fatalities, costs in the EIS.
11 This is a tremendous oversight. We need another EIS,
12 we need another -- we need to lengthen comment period,
13 and we need more meetings.

14 Thank you very much.

15 MR. CAMERON: Thank you, Jen.

16 Mr. Howell?

17 MR. HOWELL: My name is Tom Howell. I'm
18 from Columbia.

19 I'm concerned about several issues. There
20 are already millions of gallons of radioactive nuclear
21 waste stored in this country. I understand that
22 radioactive liquid waste is highly corrosive, and
23 there have been problems with such wastes degrading
24 their containment vessels. Liquid waste is projected
25 to be produced when plutonium is polished in the MOX

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1 process. Do we know how much liquid waste is
2 anticipated? Do we know how long it will be necessary
3 to store this waste? Do we know what the long-term
4 costs will be for storing this waste?

5 I understand that U.S. reactors are not
6 designed to handle MOX. I'm concerned about how U.S.
7 reactors will be modified to handle MOX, and how those
8 reactors will be monitored. Will there be independent
9 auditing of such a monitoring system? If there might
10 be problems with the reactors that use MOX, does it
11 make sense to build a MOX processing facility?
12 Shouldn't problems with the reactors be solved before
13 a MOX processing facility is approved?

14 I am also concerned about how the MOX will
15 be safeguarded to prevent theft or loss at all points
16 in its processing, use, and storage. Radioactive
17 material has gone astray in the past. Is there an
18 inventory system capable of tracking all the plutonium
19 involved? If so, is this inventory system capable of
20 tracking the other radioactive materials involved,
21 including all waste? Will there be independent
22 auditing of such an inventory system?

23 Thank you.

24 MR. CAMERON: Thank you, Mr. Howell.

25 We have Adele Kushner.

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cont.

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MS. KUSHNER: Thank you. My name is Adele Kushner. I represent Action for a Clean Environment, which is based in Northeast Georgia. We have a few representatives here. And this is very short, and you've all been very patient.

People in this country expect to trust their government. After all, it is a democracy. Under other forms of government people know not to trust official government statements. Those governments could be telling lies.

In this case, the Nuclear Regulatory Commission is telling us that there is very little danger from exposing people to accidentally emissions produced by a MOX plant. Then it turns out that the draft EIS contains large computer errors, and that there would be far fewer than the estimated 400 deaths in a population living within 50 miles of the plant. And, anyhow, this was a minority, low-income community. And furthermore, the new data will not be available until after the public meetings. But trust us. We are your democratic government. Would we lie to you?

This reminds me of another campaign also concerning radioactive materials. Years ago the NRC told us that a little bit of radioactivity in our

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cooking pots, our bicycles, our paperclips, our appliances would not hurt us one bit. The level of radioactivity would be so low, it would be, quote, "below regulatory concern," end quote. We found out there is no way you could tell how much radioactivity people would be exposed to once they were surrounded by such little bits, if the little bits were scattered around randomly. I once adopted a cat that the owner said was just a little tiny bit pregnant. That cat produced four good-sized kittens right on schedule.

It is hard to believe that the Savannah River Site, already the most radioactively polluted Department of Energy site, would even be considered for a process that can only produce more radioactive pollution. Especially when there is an alternative. Would you rather live and work near ancient tanks already leaking radioactive nitric acid attractive only to saboteurs and terrorists, or near glass logs in which nuclear waste is immobilized, out of reach for any reuse, providing safe jobs, leaving no mess behind? How about a real comparison of the pros and cons, NRC, before a decision is made on this DEIS.

Think about the perils of transporting plutonium across the country, then taking the MOX fuel to reactors, all of which subject to accidents and the

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1 possibility of spreading radioactive stuff in city
2 centers and people's backyards. Think of a weapons
3 grade plutonium out there waiting to be grabbed. A
4 conscientious examination of the facts might produce
5 a decision that would restore some of our trust in our
6 government. That is a conclusion devoutly to be
7 wished.

8 Thank you for your patient.

9 MR. CAMERON: Thank you for those
10 comments, Adele.

11 And is it Joanne -- is it Steed?

12 MS. STEELE: Steele.

13 MR. CAMERON: Steele. Sorry. I can't
14 read writing.

15 MS. STEELE: I probably didn't write it
16 well.

17 I'm also a member of Action for a Clean
18 Environment in Northeast Georgia -- in Northeast
19 Georgia. And I work on looking after some of the
20 activities going on at the Oconee Nuclear Power plant
21 which is also a Duke Energy facility. And what -- the
22 phenomenon that is going on is that so many old plants
23 that were only designed to go for 30 years of
24 licensing, or 40 years, are now being relicensed for
25 another 20 years. And they weren't -- really weren't

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1 designed to go that long. And there've been problems,
2 and there's been repairs of this part and that part of
3 these plants.

4 So they've got old vessels starting to get
5 new tops on them. And -- and the ways of monitoring
6 these -- these facilities weren't -- weren't designed
7 to look at 60 years of use, and surely weren't
8 designed to look at MOX fuel being used in them. And
9 so the whole MOX program is -- is dangerous to me. It
10 just doesn't make sense. And when you consider that
11 nuclear energy only provides 20% of the energy that we
12 have in our country, and we're going to all of these
13 risks of the unknown with this dangerous fuel, MOX
14 fuel, and the whole development of MOX fuel is
15 questionable, it just doesn't make any sense to me.

16 I'm a mother and I'm a grandmother, and
17 I'm ashamed that our generation is -- and the
18 generation before me is looking at this type of
19 electricity production and the dangers of -- that it
20 -- inherent dangers that it has, that it's leaving to
21 my children and my grandchildren and to their
22 children. And I'm just totally opposed to this. I
23 think we have -- immobilization seems like the best of
24 the worst situations that we've got with nuclear
25 energy and messing with this stuff to begin with. And

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1 so I'm opposed to the MOX fuel facility. I'm in
2 better support of the immobilization plan. But I just
3 think this is very irresponsible behavior for the past
4 50 years, and it's time for it to stop.

5 MR. CAMERON: Thank you, Joanne.
6 And real quickly, we have Mr. Charles
7 Utley who is just going to share a brief moment with
8 us.

9 MR. UTLEY: Good evening. I'm Charles
10 Utley, and I'm from the (indiscernible) Improvement
11 Committee. Also I work with (indiscernible) and with
12 Reverend Jenkins out of Aiken.

13 I just -- I wanted to just say briefly
14 that let us not forget those communities that are
15 impacted, and that is those communities in -- and
16 we've talked about them being socially, economically
17 deprived. But -- and we talk about wind shifts. And
18 -- and all of us know how the wind blows because that
19 even the Bible tells you that, so if you're a good
20 Bible student you would know which way it's going to
21 blow.

22 However, I want to remind you that,
23 irregardless of race, creed, or color, there's -- if
24 there's a fallout, it doesn't care about any of the
25 above. But what I do want you to -- not as an NRC or

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cont.

1 regulatory commission, I don't want you to take what
2 President Bush has said about affirmative action and
3 apply it to these neighborhoods. And no matter -- I
4 know Georgia and South Carolina are at the bottom of
5 our scholastic aptitude tests. But these are human
6 beings that we're talking about.

Thank you very much.

MR. CAMERON: Thank you, Mr. Utley.

7 There's at least one thing I think --
8 thank you all for your patience and your comments. I
9 think the NRC got some great, very thoughtful,
10 specific comments tonight.

11 One thing that we probably should just
12 emphasize again, and I'm going to ask Lawrence to do
13 that for us, is -- is that, even though terrorism
14 isn't part of the EIS, can you tell us how that is
15 factored in in our evaluation, and just close the
16 meeting out for us, Lawrence?

MR. KOKAJKO: Okay. I'd like to -- to
make several comments before I get to that, Chip.

First of all, we are not going to forget
environmental justice. We are not going to forget it,
and we will look into that.

A couple of comments. Fuel is accounted
for, by the way, under a materials control and

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of safeguards, security, terrorist threats, vulnerability assessments. And that will be a determination made by the fuel cycle -- Fuel Cycle Safety and Safeguards Division at the NRC. And I think that's about it, Chip.

I would like to point out that Adrienne Lester, is she -- Adrienne. This meeting, by the way, would not have happened if it wasn't for the work of Adrienne Lester. She put on a dynamite effort to get everything and all the meeting rooms and the space here, and I'd like to -- to make a public acknowledgment for her help for the last month or so.

[Applause.]

MR. KOKAJKO: With that in mind, I have no further comments, Chip.

MR. CAMERON: I think we're -- we're adjourned, and thank you.

(Whereupon, the hearing was concluded at 10:50 p.m.)

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accountability program. And there is monitoring at the facilities. And that's also part of our regulations.

MR. CAMERON: If you could just make sure you get that on the mic. I think it's -- it may be hard to hear you.

MR. KOKAJKO: Also the use of MOX fuel is generally considered acceptable. However, before they can even put a lead test assembly in, it has to be evaluated by both the licensee, who wants to do it, as well as us. And unless found to be acceptable by them and they submit that application to us for our approval, it does not happen.

Finally, there was two more items. One is the draft environmental impact statement for the -- is for MOX only. It is not for the PDCF or the WSB. That would have to be done separately. That would be another EIS. DOE would have to do another environmental report for that, and that would not -- since that is not regulated by the NRC, that would be under their authority.

And finally, the security concerns. I'd like to point out that security concerns are going to be considered in the safety review of the proposed facility. The safety review will consider all aspects

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NUCLEAR REGULATORY COMMISSION

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Draft Environmental Impact Statement

Docket Number: (not applicable)

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Date: Thursday, March 27, 2003

Work Order No.: NRC-801

Pages 1-120

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
+ + + + +
PUBLIC MEETING ON PROPOSED MOX FACILITY
DRAFT ENVIRONMENTAL IMPACT STATEMENT

+ + + + +
THURSDAY
MARCH 27, 2003
+ + + + +
CHARLOTTE, NORTH CAROLINA
+ + + + +

The Public Meeting was held in the Charlotte-
Mecklenberg Government Center, 600 East Fourth Street,
at 7:05 p.m., Francis "Chip" Cameron, Facilitator,
presiding.

PRESENT:
FRANCIS (Chip) CAMERON
LAWRENCE KOKAJKO
TIM HARRIS

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1 P-R-O-C-E-E-D-I-N-G-S

2 MR. CAMERON: Okay. Good evening,

3 everyone. My name is Chip Cameron. I'm the Special

4 Counsel for Public Liaison at the Nuclear Regulatory

5 Commission, and I welcome you all to the NRC---that's

6 one acronym we'll be using tonight for Nuclear

7 Regulatory Commission---I want to welcome you to the

8 NRC's public meeting tonight.

9 And our topic is the draft environmental

10 impact statement that the NRC has prepared to assist

11 the NRC in evaluating the application that we've

12 received from a consortium, Duke Cogema Stone &

13 Webster, better known as DCS; an application to

14 construct a mixed oxide fuel fabrication facility.

15 And it's my pleasure to serve as your facilitator for

16 tonight's meeting. And in that role, I'm going to try

17 to help all of you to have a -- a productive meeting

18 tonight.

19 And before we get into the substance of

20 the discussion tonight, I usually like to go over some

21 -- some items about the meeting process, why we're

22 here tonight, what the format and ground rules are for

23 the meeting, and to just briefly talk about the

24 agenda.

25 The agenda does not have a lot of moving

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1 parts, so it's a simple agenda tonight. And in terms

2 of the purpose, one purpose is we want to make sure

3 that we clearly explain what the NRC's process is for

4 evaluating the DCS application, and to also talk about

5 the findings in the draft environmental impact

6 statement, and to answer any questions you have about

7 the process or the findings.

8 Second purpose and most important purpose

9 is to hear any comments that you might have on the

10 draft environmental impact statement. And it may be

11 that the information you hear tonight from the NRC or

12 any of the other people in the audience will help you

13 to prepare any written comments that you might want to

14 submit on this draft environmental impact statement.

15 And the NRC staff will be explaining in a few minutes

16 what that process is for submitting written comments.

17 But I just wanted to emphasize, anything that you say

18 tonight will carry the same weight as a written

19 comment. We are transcribing the meeting, and your

20 comments tonight will be essentially in writing

21 because they will be on a transcript. It'll be a

22 written transcript. And we will make that available

23 to whomever wants to have that -- that transcript.

24 The ultimate goal is to use the comments that we hear

25 tonight, in the other public meetings, and the written

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1 Our two NRC presentations are -- first
 2 we're going to go to Mr. Lawrence Kokajko, who is
 3 right here. And he is the acting Branch Chief of the
 4 Environmental and Performance Assessment Branch at the
 5 NRC. It's in our Office of Nuclear Materials, Safety,
 6 and -- and Safeguards. And Lawrence's staff is
 7 responsible for evaluating the environmental aspects
 8 of this -- this application. And before he assumed
 9 this acting Branch Chief position, he was the -- the
 10 Section Chief of something called the Risk Task Group
 11 at the agency, which was looking at how risk should be
 12 factored into NRC decision-making. He's been involved
 13 in the reactor world, the spent fuel world at the NRC,
 14 so he has a wide breadth of -- of knowledge that he
 15 brings to his present position. And were -- were you
 16 a licensed reactor operator?
 17 MR. KOKAJKO: A senior licensed.
 18 MR. CAMERON: Senior licensed reactor
 19 operator. And Lawrence is going to give you the broad
 20 overview on this project, and then we're going to go
 21 to Mr. Tim Harris, who is right here. Tim is the
 22 Project Manager for the environmental review on the
 23 construction authorization application. He's been
 24 with the agency for about nine years now. And his
 25 expertise is in civil engineering, I believe. And Tim

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1 about.
 2 Adrienne?
 3 MS. LESTER: Good evening. I would like
 4 to you thank you all for coming out tonight. And I
 5 just want to briefly go over the information that you
 6 picked out -- picked up out on the desk out there.
 7 The first thing is the agenda. And behind that you
 8 have a facts sheet which just tells you what the NRC
 9 is, what it does, and also gives you some information
 10 on the MOX facility. And behind that is a very
 11 important sheet, because it has where you can send
 12 your comments to, which are due back by May 14th. And
 13 the additional sheets behind that are just a
 14 representation of the posters back there. So you can
 15 just take that home with you and look over that.
 16 The next sheet you should have picked up
 17 would be the slides that Lawrence and Tim are going to
 18 present tonight. And lastly is the public feedback
 19 form. And you can just mail that back to us, because
 20 the postage is already on there, or either you can
 21 give it back to me tonight.
 22 So thank you. And we hope to hear from
 23 you very soon.
 24 MR. CAMERON: Okay. Thank you very much,
 25 Adrienne.

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1 I'd like to thank you for taking your time
 2 out of your busy day and evening to be here this
 3 evening, and we look forward to hearing from you.
 4 This meeting is one of a series of meetings--in fact,
 5 this is the third one this week---which are designed
 6 to inform the public about the draft environmental
 7 impact statement for the proposed facility, and to
 8 solicit public comment.

9 As Adrienne said, there are several
 10 handouts. One is a set of slides, the agenda, facts
 11 sheet, and comparison of alternatives, as well as the
 12 feedback forms. And we are especially interested in
 13 getting the feedback forms from you as well, this
 14 evening, besides your comments on the draft
 15 environmental impact statement. We would use this
 16 information to try to improve these meetings in the
 17 future. And you may either hand it back to an NRC
 18 staff member. And, once again, could I have the NRC
 19 staff members raise their hand. You can give -- give
 20 it to one of those people and we will take it back, or
 21 you can mail it in the -- back to us. And it's
 22 already self-addressed, and postage has been paid.
 23 Also, if you'd like a copy of the draft environmental
 24 impact statement you may obtain one here. We have a
 25 limited number available. And if we run out, we will

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1 is going to walk you through -- walk us through the
 2 findings in the draft environmental impact statement.
 3 Those are the two presentations.

4 We also have Dave Brown, right here. Now,
 5 Dave is the Assistant Project Manager on the safety
 6 evaluation on this construction authorization. And
 7 he's here to answer any questions on the -- the safety
 8 side of the evaluation. So it's very important to
 9 understand that the NRC's review of this application
 10 has an environmental component and it has a safety
 11 component. And, although our focus is on the
 12 environmental tonight, we do know that you're
 13 interested or might have comments on the safety side,
 14 so Dave is with us to -- to help us out with that.

15 And with that, I'll turn it over to -- to
 16 Lawrence.

17 MR. KOKAJKO: Good evening. My name is
 18 Lawrence Kokajko. I'm the acting Branch Chief for the
 19 Environmental and Performance Assessment Branch in the
 20 Division of Waste Management in the Office of Nuclear
 21 Materials, Safety, and Safeguards at the Nuclear
 22 Regulatory Commission. And I'd like to welcome you to
 23 this meeting on the NRC's draft environmental impact
 24 statement for the proposed mixed oxide or MOX fuel
 25 fabrication facility.

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1 mail you a copy. Next slide.

2 Tonight there will be two presenters,
3 myself and Tim Harris of my staff. And we've included
4 our phone numbers and Email addresses. And please
5 feel free to contact us if you have any questions
6 after the meetings.

7 As I indicated, the purpose of tonight's
8 meeting is to get your comments on the draft
9 environmental impact statement. Before we hear your
10 comments, we'll provide some information on NRC's role
11 in the proposed project, and describe the *National*
12 *Environmental Policy Act* and the EIS process, and how
13 the EIS fits into the NRC's decision-making. Tim will
14 give an overview of the draft environmental impact
15 statement, and there will be time to answer some
16 questions before we begin to take your comments.

17 The proposed MOX facility would take
18 surplus weapons plutonium and depleted uranium and
19 make nuclear reactor fuel. Congress, in the *Defense*
20 *Authorization Act of 1999*, gave NRC a role in the
21 proposed MOX project. Specifically, the NRC has the
22 licensing authority over the MOX facility, so our role
23 is to make a licensing decision regarding the safe
24 operation of that facility.

25 The NRC is an independent government

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1 agency, and our mission is to protect the public
2 health and safety, and the environment, in the
3 commercial uses of radioactive material. Our role is
4 different than the Department of Energy's. The
5 Department of Energy's role in this project relates to
6 implementing the United States nuclear non-
7 proliferation policy, including the disposition of
8 surplus weapons plutonium.

9 The Department of Energy also has a
10 responsibility to design, build, and operate two
11 facilities that support the proposed MOX facility.
12 And these two facilities are the pit disassembly and
13 conversion facility, also known as the PDCF, and the
14 waste solidification building, or the WSB. While the
15 pit disassembly and conversion facility and the waste
16 solidification building are considered in NRC's
17 environmental review, it is important to note that
18 these -- that the NRC does not have regulatory
19 licensing authority over these two support facilities.
20 That responsibility rests with the Department of
21 Energy. The NRC only has authority over the proposed
22 MOX facility.

23 I'd like to briefly describe the
24 environmental impact statement process. The *National*
25 *Environmental Policy Act* requires government agencies

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 1 to prepare an environmental impact statement for
 2 proposed major federal actions such as the potential
 3 licensing of the proposed MOX project. An
 4 environmental impact statement presents environmental
 5 impacts (sic) of the proposed action, along with
 6 reasonable alternatives to that proposed action. Note
 7 that the bolded areas are opportunities for public
 8 involvement in the process, and we consider this a
 9 very important part of the EIS.

10 NRC's involvement with the MOX project
 11 started when Duke Cogema Stone & Webster, or DCS, the
 12 applicant, submitted an environmental report and
 13 requested to construct the MOX facility. We published
 14 a notice of intent to prepare an EIS in the *Federal*
 15 *Register* in March of 2001. During the scoping
 16 process, the public helped determine what issues would
 17 be addressed in the environmental impact statement.
 18 We have completed the draft environmental impact
 19 statement, and we sent copies to approximately 550
 20 people in February.

21 We are currently in the public comment
 22 period for the draft environmental impact statement.
 23 This meeting is being transcribed, and comments made
 24 here tonight will be included in the official comment
 25 record. And the last slide that Tim will show this

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 1 evening will show you ways you can submit public
 2 comments. We will review and consider the public
 3 comments and finalize the environmental impact
 4 statement.

5 As I mentioned earlier, NRC's role is to
 6 make a licensing decision regarding the proposed MOX
 7 facility. I'd like to take some time to describe the
 8 licensing process just briefly, and how the EIS we're
 9 discussing tonight fits into NRC's decision-making
 10 process. First, there are two decisions that the NRC
 11 will have to make for the proposed MOX project. The
 12 first decision is whether to authorize construction of
 13 the facility, and the second is whether to authorize
 14 operation of the facility. These decisions are shown
 15 in the middle of the slide. The NRC's environmental
 16 review is shown at the top portion of the slide, and
 17 consists of preparing the final environmental impact
 18 statement. The final environmental impact statement
 19 will be used by NRC to decide whether to authorize
 20 construction, and later whether to issue a license to
 21 operate the MOX facility.

22 And I need to point out that the
 23 environmental impact statement does not cover
 24 everything that would normally be covered in the
 25 safety review. For example, response to terrorists

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activities, which is a security and safeguards matter, is -- would be considered in the safety review, not the environmental impact statement. It is not that it's not going to be considered, it's just that the forum for that will be in the safety review and not in the environmental impact statement.

The NRC's safety review is shown at the bottom portion of the slide. The safety evaluation report for the construction authorization request focuses on a safety assessment of the proposed design bases to determine if it meets NRC's requirements. NRC's final environmental impact statement and safety evaluation report for the construction authorization request will be the basis for making a decision on whether to construct the proposed MOX facility. And we anticipate making that decision later this year.

Duke Cogema Stone & Webster plans to submit a license application to operate the proposed facility around October of 2003. The safety evaluation report on the operating application and the final environmental impact statement will form the basis for making a decision on whether to allow DCS to operate the proposed MOX facility.

I also want to point out that there will be at least -- there will be another opportunity for

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hearing on the operation of the facility. John Hull, with our Office of General Counsel, is here this evening, and he can answer questions related to the hearing process.

To summarize, a single environmental impact statement will be used to support the decision to construct and later operate the proposed MOX facility. And let me also stress, once again, the environmental impact statement has a separate mission than the safety review. And the safety review will be -- will be used to determine if it meets the regulatory requirements as outlined in Title X, Code of Federal Regulations, Part 70.

Now, I would like to turn the presentation over to Mr. Tim Harris of my staff. Mr. Harris is lead for the environmental review for the MOX project at the NRC.

Tim?

MR. CAMERON: And Tim is going to cover a lot of material for you. And let's let him get through that material and go for questions. So if you could mark any questions that you have on your -- your view graphs, then -- so that we make sure and get them.

Tim?

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administered by the Department of Energy. So the purpose and need for this, our draft environmental impact statement, is essentially the same as used by the Department of Energy in its programmatic EIS's for the surplus weapons plutonium disposition program.

The purpose and need relates to agreements between the United States and Russia to reduce the threat of nuclear weapons by insuring that those materials are converted into proliferation-resistant form. And also to reduce the risk that that plutonium might fall into the hands of terrorists or rogue states.

The draft environmental impact statement evaluates two alternatives in detail. These are the proposed action and the no-action scenarios. The no-action alternative would be continued storage of surplus weapons plutonium at existing Department of Energy sites. The no-action alternative is used as a comparison -- as a baseline for comparing different alternatives.

The proposed action includes impacts from constructing, operating, and later decommissioning the proposed MOX facility. And it also considered impacts of other connected actions that are things that are closely related to the operation of the MOX facility.

18

MR. HARRIS: Thanks, Chip. Thanks, Lawrence.

The document we sent out is a culmination of approximately two years of effort. And I would like to provide an overview of that document. It's quite lengthy, so I'm going to try to focus the discussion on several issues. And if one of the issues we don't talk about is important to you, please ask a question and we can provide some additional detail.

I'll describe the alternatives that we analyzed in detail, and also alternatives that we considered but did not analyze in detail. And then, as I stated, I'll go through a summary of the alternatives we did analyze in detail.

To understand how we did, that---that is, which alternatives we analyzed in detail and those that we just considered but did not do a detailed analysis of---it's very useful and helpful to understand the purpose and need associated with the environmental impact statement. As we stated in the notice of intent that Lawrence noted was published back in March of 2001, the purpose and need for the MOX facility relates to a larger surplus plutonium disposition program that, as Lawrence mentioned, is

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These would be transportation of various nuclear materials, feed stocks, fresh fuel, spent fuel. And also, as Lawrence mentioned, DEIS includes impacts associated with those two DOE support facilities. And again, those were the pit disassembly and conversion facility and the waste solidification building.

The pit disassembly and conversion facility would take weapons material in a classified form, declassify the form, and convert it from a metal into a plutonium powder. That powder would go to the MOX facility where it would be mixed with depleted uranium in order to make reactor fuel. The waste solidification building would take waste from the proposed MOX facility and the pit disassembly and conversion facility and process that waste. The impacts associated with the proposed action also includes the potential use of MOX fuel in reactors.

For the proposed action, we also evaluated differences in using a sand filter versus HEPA filters. The idea of using sand filters was raised at a scoping meeting in North Augusta.

As I said before, the purpose and need is used to determine which alternatives we considered to be reasonable and were analyzed in detail, and those that were not. In addition to siting and technology

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options that were evaluated by DCS in its environmental report, several alternatives were raised during scoping, and also at public meetings that we had last fall.

Immobilization was initially considered to be a reasonable alternative. However, following DOE's -- excuse me, the Department of Energy's amended record of decision, DOE believed that an immobilization-only approach would not meet the U.S.-Russia agreements. Therefore, it did not meet the purpose and need, and we did not analyze that alternative in detail.

Deliberately making off-specification MOX fuel was also raised during meetings we had last fall. This alternative involves not removing impurities that are in the -- the weapons plutonium that would make it less useful to use in the reactor fuel. They have to remove the impurities in order to make it useful in a reactor. This alternative would not remove those impurities, so you wouldn't get the waste associated with the removal, and also they would make the fuel, but it would not be used in a reactor. Instead, the off-specification MOX fuel, under this alternative, would be stored at spent fuel pools at existing reactor sites prior to disposal in a geologic

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the EIS.

First, I'd like to summarize the impacts associated with the no-action alternative. The impacts of this alternatives (sic) were previously evaluated by the Department of Energy, as I mentioned, the programmatic EIS's that they did. They evaluated the impacts of continued storage. And the impacts that are included in our draft environmental impact statement are essentially the same as DOE had previously evaluated.

The information packet that Adrienne mentioned includes tables which shows numerical differences. So if you want to compare the differences for a particular resource area, like how much groundwater would be used or what the air quality impacts would be, you have that information in your handouts. I'll just summarize those quickly.

The impacts to the public and workers from this no-action alternative--that is, continued storage--are considered to be low. There would be no significant water quality or air quality impacts associated with this alternative. As you can imagine, if you're storing material in a warehouse or other type of facility, you're not going to generate a lot of air emissions or -- or water impacts. Also, there

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repository.

The impacts of this alternative are addressed qualitatively in the draft environmental impact statement. The monetary costs of the off-specification MOX alternative would be about the same as the proposed action. That is, you would still build the facility. Those costs would still be there. However, the off-specification MOX fuel alternative would generate less waste than the proposed action. However, the benefits would be lower because you would not produce electricity. Therefore, the off-specification MOX fuel alternative was not obviously superior to the proposed action. And also, this alternative did not fulfill the U.S.-Russia agreements.

For the proposed action and no-action alternatives, the impacts associated with the following list were evaluated. In order to allow time for public comment, I won't go through the -- the exhaustive list. I'll focus on the impacts on the left, which are human health, air quality, hydrology, waste management, and environmental justice. I'll also talk about the impacts associated with transportation and potential MOX fuel use. And I'll also summarize the cost benefit analysis discussed in

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would be no significant waste management impacts or environmental justice concerns.

The next series of slides summarize impacts associated with the proposed action. And again, the proposed action includes the impacts from three facilities: the proposed MOX facility; the pit disassembly and conversion facility; and also the waste solidification building. I've presented the impacts on the slides in terms of increase or decrease relative to current conditions at the Savannah River Site. And again, if you want to see the actual numerical numbers, those are on the handouts. There would be no adverse chemical or radiological impacts during construction. From operating these three facilities, the annual public collective dose would increase by about 11%. But as I'll show in the next slide, we'll put that in perspective. There would also be no significant chemical exposures during normal operations. Thanks.

This slide shows the radiation dose from several sources, and also, importantly, NRC's annual public dose limit. The average annual dose from natural background is about 360 millirem. And a millirem is just a unit of radiation exposure, to kind of give you a benchmark. If you looked at the -- the

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important thing to note is NRC's annual public dose limit, which is 100 millirem. And if you -- if you provide context, if you got a chest X-ray you'd receive about six millirem. The annual dose to the public from normal operations of the three facilities would be less than one millirem. So that, while the increase is 11%, it's still less than one millirem.

Accidents have the greatest potential consequences of the impacts that we evaluated. Two conservative scenarios were evaluated in the draft environmental impact statement for a number of potential accidents. The short-term scenario assumes that people would be exposed by inhaling contaminant material from a plume that would be generated following the accident. We have also evaluated a long-term scenario. And these would include the impacts from the short-term scenario, as well as potential impacts from eating crops that could become contaminated.

The potential accident impacts are evaluated in terms of risk. The classical definition of "risk" is you take the probability of an event times the consequences equals the risk. In keeping with NRC's mission to protect public health and safety, we want to insure that the resulting overall

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1 risk to the public from an accident is very small.
 2 Therefore, events that could have significant
 3 consequences are required to be made highly unlikely
 4 through design safety features. And I think Lawrence
 5 touched on that. With the safety evaluation report is
 6 where those safety features are addressed. The safety
 7 features are not defined in the EIS. Those are
 8 covered in a separate document.

9 In March we notified a number of
 10 stakeholders that we had identified an error in the
 11 accident consequences that was due to a computer code
 12 bug. And we felt it was very important to get that
 13 information out to the public in a timely manner. I
 14 think I got a phone call on Monday afternoon notifying
 15 me of the error, and by Thursday we had sent out a
 16 letter to over 500 people notifying them that, hey, we
 17 think there's an error. We think the numbers are
 18 going to change. We'll provide more information.

19 During our review, we also found an
 20 additional error, and that was related to wind data
 21 that Duke Cogema Stone & Webster had provided in its
 22 environmental report. This error would essentially
 23 double the impacts associated with normal operations
 24 and potential accidents. However, we reviewed the
 25 impacts associated with these errors and determined

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1 that they did not change NRC's conclusion or
 2 preliminary recommendations. That is, if you double
 3 a number that was significantly less than one
 4 millirem, that number's still going to be less than
 5 one millirem from normal operations, and we didn't
 6 consider that to be significant. If you looked at the
 7 accident impacts, if you double, say, 10 and get 20,
 8 10 is significant, 20 is significant. That didn't
 9 change our conclusions that potential accidents have
 10 significant consequences.

11 We also promised in the letter that we
 12 sent out in March that we would provide you additional
 13 information. And hopefully we'll have those errata
 14 sheets prepared next week. And those will be mailed
 15 out. We're also going to post those on the Web site.

16 Hypothetical events caused the highest --
 17 that caused the highest consequences were an explosion
 18 event at the proposed MOX facility. For the one-year
 19 scenario that I talked about, this would have an
 20 estimated result of less than 50 latent cancer
 21 fatalities. And then, for the long-term scenario, we
 22 estimated less than 200 latent cancer fatalities. And
 23 again, these numbers are one significant figure. So
 24 the -- the actual impact that was calculated
 25 numerically was less, but we reported 200 to be

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activities; and 0.01% increase from normal operations. Now, as I mentioned, this is a -- a proposed standard. EPA has delayed implementing the PM 2.5 standard. And if and when attainment plans are developed by the State of Georgia and South Carolina, SRS could be required to reduce PM 2.5 emissions or develop measures to -- to mitigate those.

Surface water would not have a significant effect -- or surface water would not be significantly affected during construction through the use of sedimentation control measures. And there would be no direct discharges during operation. Waste from the proposed MOX facility would be managed by existing Savannah River Site facilities. And discharges from those facilities are not anticipated to change significantly as a result of processing this waste. Groundwater would be used during construction and operation, and the figures are shown there. But existing well capacity exists to allow this water to be used. And it would not have a significant impact on the aquifer.

There would be no significant impact on the Savannah River Site waste management capability from processing the waste from the proposed action. Operation of the three facilities would generate about

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significantly accurate. These estimates for the long-term impacts do not credit any interventions that might be taken to reduce long-term exposures from eating contaminated crops. That is, it's assumed that the crops are contaminated shortly before harvest, that the people harvest the crops, eat the crops. So intervention that would follow an accident, such as not allowing people to eat crops and other things, are not credited in our analysis.

The probability -- getting back to risk, the probability of these hypothetical events is considered to be highly unlikely through preventative and mitigative features that are being developed in the safety review. The consequences of these highly unlikely events are significant; however, the overall risk--that is, consequences times probability---we believe is very small to members of the public.

I'll walk through these rather quickly. Air quality relates to compliance with national ambient air quality standards for chemical pollutants. Air quality at the Savannah River Site already exceeds one proposed standard, which is the particulate matter 2.5 micron or PM 2.5 standard. The proposed action would increase the PM 2.5 by about 0.1% during construction, and that's primarily from earth-moving

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1 300% more transuranic waste than is currently being
 2 generated at the Savannah River Site. This TRU waste
 3 is planned to be disposed of in New Mexico at the
 4 Waste Isolation Pilot Plant. And the volume of the TRU
 5 waste that would be generated would be about 3% of the
 6 Waste Isolation Pilot Plant disposal capacity.
 7 Operation of the three facilities would increase low
 8 level waste by about 32%, and non-hazardous solid
 9 waste by about 60% above what is currently being
 10 generated at the Savannah River Site. But, again, the
 11 current Savannah River Site waste infrastructure can
 12 accommodate these waste volumes.

13 In an executive order issued by President
 14 Clinton in 1994, it directed federal agencies to
 15 address any disproportionate or high adverse human
 16 health impacts to low income and minority populations.
 17 And this is commonly referred to as environmental
 18 justice. The impacts from construction and operation
 19 from the three facilities are not high or adverse;
 20 therefore, there would be no environmental justice
 21 concern associated with operating the facility or
 22 constructing the facility. However, due to prevailing
 23 wind directions, we believe that there is a potential
 24 impact to low income and minority populations in the
 25 highly unlikely event that an accident might occur.

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1 The risk associated with that accident, as
 2 I mentioned, is considered to be very small to all
 3 populations. NRC felt it was important to include
 4 mitigation measures to help mitigate those potential
 5 impacts to low income and minority populations. And
 6 those are addressed in Chapter 5.

7 Transportation of material was raised
 8 during scoping as an important issue to many
 9 stakeholders. And the transportation analysis is --
 10 the transportation analysis includes shipping the
 11 surplus weapons material from the various DOE sites to
 12 the Savannah River Site, and also includes shipping
 13 depleted uranium from an enrichment facility where it
 14 would be converted to a powder form and then go to the
 15 Savannah River Site. The analysis also includes
 16 shipping of fresh MOX fuel to a generic Midwest
 17 reactor. Transport of spent MOX fuel is also
 18 discussed generically in the EIS.

19 To summarize the impacts, there would be
 20 less than one latent cancer fatality from routine
 21 transportation to members of the public living along
 22 transportation routes, and also to transportation
 23 crews. The hypothetical accidents that were evaluated
 24 did not result in significant impacts.

25 The potential impacts of -- associated

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1 includes a cost benefit analysis of the proposed
 2 action on both a national and regional scale. The
 3 cost benefit was used in helping determine staff's
 4 preliminary recommendation. The national cost would
 5 be about \$3.85 billion, and the national benefits
 6 would be the safe use of excess weapons plutonium, and
 7 also employment and income. The regional numbers
 8 include a 15-county area surrounding the Savannah
 9 River Site. And those numbers are provided for your
 10 review.

11 In conclusion, the impacts of the proposed
 12 action are generally not significant. Accident
 13 impacts from the pit disassembly and conversion
 14 facility and the proposed MOX facility are
 15 significant. However, the probability of such an
 16 accident is considered to be highly unlikely. And
 17 again, that's -- part of our job is to make sure that
 18 those accidents are highly unlikely. Therefore, the
 19 overall risk to the public is considered to be very
 20 small. There is a potential environmental justice
 21 concern should these accidents occur. And we've
 22 provided mitigation measures to do that. Also, we've
 23 been engaging communities around the Savannah River
 24 Site to help refine those mitigation measures.

25 Staff's preliminary recommendation is the

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1 with using MOX fuel are also discussed generically in
 2 the draft environmental impact statement. The
 3 collective dose to members of the public from normal
 4 operations would be about the same, whether you used
 5 conventional, low enriched uranium fuel, or a mixture
 6 of MOX fuel and low enriched uranium fuel.

7 We also looked at various design-based
 8 accidents, and found that the risk of developing a
 9 latent cancer fatality, comparing the two fuel types,
 10 ranged from about 6% lower to 3% greater. And we also
 11 looked at beyond design-based accidents, and found
 12 that the risk was about 7% lower to 14% greater. And,
 13 again, it depended on the actual scenario event tree
 14 that was looked at, which is why in some cases the
 15 impacts were actually lower.

16 We have received an application from Duke
 17 Power to place lead test assemblies in either the
 18 Catawba or McGuire plants. We will do additional
 19 site-specific evaluations before these lead test
 20 assemblies are placed in a reactor. That is, we will
 21 determine whether or not they can be safe -- that can
 22 be safely done. And also, before MOX -- we'll do
 23 additional analysis before MOX fuel is placed in any
 24 reactor.

25 The draft environmental impact statement

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presentations and hope that that was succinct enough, Chip, for a document that was two inches.

MR. CAMERON: Very, very good, Tim. Thank you. Good summary. A lot of material there.

Let's go out to you for -- for any questions that you might have about the presentation. And I'm going to go back here, and then I'll come up front. And if you could just, again, give us your name and affiliation, if appropriate.

MS. ODOM: Okay. My name is Linda Odom. I have no affiliation other than I'm from the Savannah River plant area.

I wanted to ask you, all the accidents, potential hazards that you have used are hypothetical. Why not look at the actual accidents, like I said to you earlier? When you were talking about the radioactive millirem that people are exposed to, in 1973 the accident from the Savannah River plant, it was estimated that the average person in the way received over 300 millirems of radiation. Now, how -- if that happens here, hypothetically, how would that affect people for the next 30 years?

And also, if just 20 pounds of -- of -- excuse me, 14 pounds of plutonium can cause a bomb destruction as big as Nagasaki, how big of an accident

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proposed action, again with appropriate mitigation measures to reduce potential impacts in all areas. Before making any decision, NRC will consider comments on the draft environmental impact statement, and we'll prepare a comment summary document, and we'll revise the environmental impact statement as appropriate. That is, comments that you make in writing and here tonight we will review and determine whether or not the analyses need to -- need to be changed, whether we need to consider additional information. And that will be documented in the final environmental impact statement.

When DCS submits an operating license application, NRC will review that application and prepare a second safety evaluation report. NRC will only grant authority to operate that facility if it can be shown to be safe.

The last slide shows ways that you can submit comments, and these are either by mail to Mike Lesser, you can Email me, you can provide comments directly through the Web, or you can fax me. And again, I think our phone numbers are up there if you -- if you have questions. We really want to hear your comments.

And with that, I'll conclude my

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first one. Okay.

I want to appreciate that you did look at the plutonium and uranium transport portion of this program, because clearly, to do MOX at Savannah River Site you have to move plutonium. I am curious, though, because the last time somebody told me that transportation impacts were not significant, they were using a population to make that determination that never occurred to me, which was the entire U.S. population. So I -- I'd like you to remind me, anyway, what the base of your compare -- you know, your group is to be able to say significant or not significant.

MR. HARRIS: I believe that the group was just people directly next to transportation corridors. The -- as determining whether or not the public was significantly impacted. The computer code that's used to do those estimates, you plot out your route, and then it has population data along that route, and it uses formulas and -- to determine, sum up all the exposures along that route.1

MR. CAMERON: So there were...

MR. HARRIS: And that's -- it's not the entire nation. It's people directly next to the transportation corridors.

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MR. HARRIS: I guess I can't tell you what the impacts would be because I'd need a calculator, and there's a lot of things involved. The EIS does tell you, if you know how many millirem you were exposed to, you can convert that to a risk of developing cancer. And if you have questions on how to do that, give me a call and I'll walk you through the steps. But I'm not sure I want to get into calculating impacts from an accident at a Department of Energy site that happened years ago.

MR. CAMERON: Okay.

MR. HARRIS: That's kind of outside our -- our...

MR. CAMERON: But we do, in the -- in the draft EIS, as you point out, you -- we do discuss the long-term impacts of the hypothetical?

MR. HARRIS: Impacts associated with -- that are hypothetical, associated with the proposed action, which is -- which is constructing the MOX facility.

MR. CAMERON: Okay. Thank you.
 Mary?

MS. OLSON: I actually wrote down three different types of questions, but I'll do them one at a time, and you can come back to me again after the

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and I can't remember every word in there, but -- but I'll get you an answer.

MR. CAMERON: Do you want to ask your other questions now, or do you want me to come back?

MS. OLSON: That's it.

MR. CAMERON: I'll go to others, then I'll come back for -- for that.

Peter?

And that was Mary Olson.

And Peter, if you could just give us your name, and then we'll go to...

MR. SIPP: Sure. My name is Peter Sipp, Asheville, North Carolina. And I have two questions.

First of all, is -- you didn't talk about the Parallelex Project on -- on the one page there, alternatives considered but not analyzed in detail. Would you tell me what the Parallelex Project is?

MR. HARRIS: Sure. The Parallelex Project is a Department of Energy-Canadian project which is an experimental project to use MOX fuel in Canadian CANDU reactors. I think the quantity associated is 35 pounds. It's a very small amount compared to 34 -- 34 metric tons.

MS. OLSON: It's a test.

MR. HARRIS: It's a test. It's an

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MR. CAMERON: But there -- there were specific routes that were...

MR. HARRIS: No, there were not specific routes.

MR. CAMERON: Okay.

MR. HARRIS: Living in the new age that we are with terrorism and security, the routes are not plotted. What we did provide in the EIS is the stuff would come from here to here, but we didn't tell you what roads it was going to go on.

MS. OLSON: Just a word to the wise. There's currently pending in -- I've forgotten which federal court, a case questioning whether there is an environmental justice issue around the Yucca Mountain shipments. So I guess at this point, since you find no significant impact to anybody, this program doesn't have to worry about that. But should those numbers change, it's fairly evident to the casual observation that, for the most part, low income and minority people are the ones living near those transportation routes, no matter which one they are.

MR. HARRIS: Right. Let me -- let me check, but I think we looked at that, Mary. I want to say we did. I'll get you the answer, but I think we looked at that. Again, it's a two-inch thick document

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1 experiment. So that's what that relates to. And it's
2 just -- the description, Peter, is in Chapter 2. It
3 goes into a little bit more detail.

4 MR. CAMERON: Peter, why don't you ask
5 your -- excuse me, Mary, let me squeeze past.
6 Peter, why don't you ask your second
7 question, and then we'll go...

8 MR. SIPP: Yeah. Yeah, sure.
9 The other question is, Linda asked about
10 how much plutonium is going to be -- you may be
11 answered it, but I didn't quite hear it.

12 MR. HARRIS: How -- how much plutonium is
13 going to be used?

14 MR. SIPP: Well, I don't -- what -- what -- what
15 was that question, Linda?

16 MS. ODOM: You said that it would be
17 regulated, the amounts that would be used. It would
18 be a safe amount. Actually, you said it would be
19 safe. Well, just 14 pounds from -- according to the
20 scientist at MIT University, he said 14 pounds of
21 plutonium, if there is an accident, a human error,
22 that 14 pounds would cause destruction like a bomb at
23 Nagasaki. And that's where I got that information.
24 So how much -- I mean, 14 pounds is a really small
25 amount to me.

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1 MR. HARRIS: But the idea that Dave tried
2 to say is that they use safe amounts in discrete
3 locations. The throughput of the facility annually is
4 about 3.5 metric tons. So 3.5 metric tons would go
5 through the facility in any given year during normal
6 operations. But, again, that -- the amount of
7 plutonium would be in a number of different locations
8 in order to make sure that it was safe.

9 MR. CAMERON: Okay, let's go to Dr.
10 Patrie. Could you just introduce yourself.

11 DR. PATRIE: I'm Dr. Lew Patrie, L-E-W, P-
12 A-T-R-I-E, from Asheville. I'm with the Western North
13 Carolina Physicians for Social Responsibility.

14 I would like to find out -- follow up on
15 Mary's question with regard to the denominator used
16 for the population at risk in the case of an accident.
17 I wonder if you could tell us the magnitude. If it
18 wasn't the total population of the United States, if
19 it was of a population of people along -- within a
20 certain distance of transportation routes, what --
21 what is that magnitude of denominator of population?

22 MR. HARRIS: Can we do this, Chip? Dave
23 is going to go over and find the number in the EIS.
24 I'm sorry, I -- I don't have that up here.

25 DR. PATRIE: Another question, and that

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Dave.

MR. BROWN: I don't...
That number reflects the more recent recommendations of the ICRP. The kind of data...
DR. PATRIE: I don't -- I don't know that acronym.

MR. BROWN: Oh, I'm sorry. The International Commission on Radiological Protection. Which forms the basis for many of NRC's radiation standards, protective guides.

DR. PATRIE: Do you think those standards are primarily derived from data that was extrapolated from the bomb -- bomb experience in Japan in 1945, or do you think they have modified those, considering the studies that were carried out by people like Dr. Alice Stewart and Dr. Steve Wing, who happens to be from North Carolina?

MR. BROWN: I don't know the answer to your question about the latter part. I do know that the Hiroshima and Nagasaki bombs do form a basis for our current understanding of the risk of radiation. I'm not familiar with the latter two studies.

DR. PATRIE: I understand that they have been used as sort of sacrosanct data basis for calculating risks, even though there's other data that

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is: What assumptions were you making when you calculated the risks of morbidity and/or mortality from acute or long-term exposure for the...
MR. HARRIS: We're talking about transportation?
DR. PATRIE: On any of the risks. Are we -- are you using the base -- assumptions based on studies that were extrapolated from world -- from the Nagasaki and Hiroshima experience?
MR. HARRIS: Yeah, we -- I think you're asking about the conversion factor to convert from exposure to latent cancer fatalities. Is that what you're asking about?
DR. PATRIE: Yes, or latent...
MR. HARRIS: The number that we used was in *Federal Guidance Report 13* which is issued by the Environmental Protection Agency.
DR. PATRIE: And do you know where they came from?
MR. HARRIS: They came from -- I'll let Dave answer that, since he's a certified health physicist.
MR. BROWN: That is -- as I understand, that is the most...
MR. HARRIS: Use your mic right there,

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1 suggests a low level radiation over a long period of
2 time, and some other kinds of radiation, may not
3 follow those premises.

4 MR. CAMERON: And I -- I think that
5 perhaps we -- I think we could say, Dr. Patrie, that
6 there -- ICRP and other organizations are continually
7 looking at -- at new data. But whether they're
8 looking at data from people like Wing or Stewart is --
9 is something that we don't know. But perhaps we
10 could...

11 MR. HARRIS: Well, I...

12 MR. CAMERON: ...it's simple to get Dr.
13 Patrie some information on that.

14 MR. HARRIS: ...I think you -- I think you
15 can go to the EPA Web site and pull up a copy of
16 *Federal Guidance Report 13* and look at the basis. And
17 also I think that was a quasi-comment, Chip, that, you
18 know, if there's a different basis or additional
19 information that would be used to develop -- estimate
20 latent cancer fatalities, that could be a comment.

21 MR. CAMERON: Good. And that's a good
22 reminder, Tim, is that as we're asking questions here,
23 there may be comments by implication or explicitly,
24 and we will evaluate the transcript to make sure that
25 we -- we capture all those, too.

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Yes, sir?

MR. TROZZI: My name is David Trozzi, and
I have no affiliation at this point.

I had a question concerning travel safety.
And I'll try to -- try to make this as simple as I
can. What protocols surround transportation, number
one?

And to qualify that, is -- do -- does DOE
and EPA have a mocked -- a mocked plan? In other
words, if an accident happened, what do they do? And
let me -- let me qualify this a little more in a time
period. Years ago I worked at IBM as a safety auditor
and with the haz com team. And in 1989, at the
Fishkill, New York plant, we had mocked up if we were
bombed, so to speak. Because it was -- it was a semi-
conductive facility that used quite a bit of lethal
elements or chemicals.

And during this presentation that we --
that we did, it actually showed where the site was
bombed, and what to do for it and what to do with it
and how to stop that proactively. Again, this is back
in 1989. And I understand this program came up in '95
when Clinton was in the -- when Clinton was in office;
is that correct? So I don't know...

MR. HARRIS: '93. But yes.

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governments are -- can provide certain protective features, if necessary.

And, okay, the -- the other piece I want to tell you is the NRC is also looking at interim compensatory measures for transportation, as well as other aspects of the regulatory program, to insure that they are responsive to the terrorist threat. And we're also doing vulnerability assessments on certain things that are -- that we regulate, to insure that we understand the vulnerability, so that we can protect against it. And the interim compensatory measures are one step in how we're trying to handle that.

MR. CAMERON: I believe -- do you have a follow-up, Mr. Trozzi? And I think Dave has some information for you.

Here, other questions? And, Mary, I'm not forgetting. I'm going to come back.

Yes, sir?

MR. KEISLER: My name's Bill Keisler. I'm a resident of Lexington County, South Carolina, and been active in the nuclear industry for many years, including some standards of (indiscernible) engineering (indiscernible) consulting work.

There are a couple of things. Go back to Slide #6 with the process of the environmental impact

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MR. TROZZI: Okay. I don't know if terrorism, at that point and at that time, really was looked at as it is now. So I'm -- I'll stop right there and let you answer those questions.

MR. HARRIS: Just to make sure, you're asking one question? Okay.

MR. TROZZI: All right. Yeah. Yes.

MR. HARRIS: Okay. The answer is that the NRC is currently looking at design threats and -- the word -- the word just left me, Lawrence.

MR. KOKAJKO: The NRC takes its responsibility toward safe transport very seriously. UNIDENTIFIED: Could you get closer to the microphone.

MR. KOKAJKO: Certainly. The NRC takes its responsibility for safe transport very seriously, and I know the Department of Energy does, too. There are route controls and approvals, there -- many shipments are monitored by satellite and they're tracked, many have armed escorts. These shipments would qualify for those types of activities. Route approvals are not released prior to shipments. States typically are made aware and -- so that they're -- in case of -- as a shipment is rolling down the -- the highway, so that the state

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1 statement and the safety review.

2 MR. HARRIS: Dave, go back to Slide 6.

3 Go ahead. I'm...

4 MR. KEISLER: Okay. It's not clear to me.
5 You have public comment up here with the EIS. Is
6 there no public comment and review for the safety
7 review?

8 MR. HARRIS: That's correct. Public
9 comment is typically not a part of the safety
10 evaluation. Again, that -- those -- the safety
11 evaluation focuses on compliance with NRC regulations.

12 MR. KEISLER: Okay. Because you said --
13 or whoever had this slide, maybe (indiscernible) said
14 that terrorism or whatever would be covered under the
15 safety review and not the environmental impact, and
16 yet the environmental impact speaks to accident
17 analyses, in trying to keep that to a minimum.

18 I was a senior consultant for the Davis-
19 Besse Nuclear Facility in the late '80s following the
20 June '85 event. We all know that there has been a
21 serious problem with the discovery last year of their
22 -- the regulatory failure to that, and there are open
23 issues that cover a broad breadth of culture internal
24 to the NRC. Also throughout the license. It's too
25 lengthy now, but there is some relevance, particularly

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1 out of the Chicago office as relates to Paducah,
2 Kentucky; Portsmouth, Ohio; the inspectors, same ones
3 overseeing that didn't find a hole in a reactor
4 vessel.

5 I spent 23 years on (indiscernible) boiler
6 and pressure vessel (indiscernible), and the initial
7 chairman of the replacement's working group, subgroup
8 on repairs and replacements, a number of things. It
9 is impossible to get to a hole in a reactor vessel
10 that's leaking. And we all know that. But to
11 conclude (indiscernible) implemented.

12 What we're saying here is -- but I don't
13 know how -- and there's some things still emerging.
14 I will assure you of that. That haven't seen the
15 light of day yet. But it does have a relevance to
16 this, and it was covered in the safety review with no
17 public comment. How does the public make a comment to
18 bring that to bear?

19 MR. KOKAJKO: Okay, I understand your
20 question.

21 First of all, there -- I'd like to say
22 three things. There are a number of public meetings
23 that have occurred between the NRC and DCS over this
24 process. And those are open, public meetings. And
25 many times those meetings -- people have been --

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1 public members can observe them. And typically you
2 may have the opportunity to comment at them, and
3 particularly if you talk to the person who is in
4 charge of the meeting. They will allow people to
5 speak if you want to say something.

6 Second thing is, there is, as I mentioned,
7 an opportunity for hearing in this. This is a formal,
8 adjudicatory process that -- that may occur if you
9 have a contention. It can be admitted and it will
10 have a hearing on it. So that is a very formalized
11 process and a very legal process that they have to go
12 through if a hearing is requested. I would ask John
13 Hull to perhaps comment on that after I finish.

14 The latter piece, the safety oversight,
15 NRC does not abdicate its responsibility for safety
16 oversight. I can't speak to the Davis-Besse incident.
17 I haven't been in nuclear reactor regulation in some
18 time, so I don't exactly know. But I do know that
19 there has been a rather scathing report on lessons
20 learned from the Davis-Besse event within the NRC.
21 That is available, I believe. And we've taken
22 ourselves, you know, to the cleaners, so to speak,
23 trying to solve the problems that may have led to
24 that.

25 In this case, the MOX case, I think we

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1 plan to have a resident inspector onsite for the MOX
2 facility. It will be inspected in our post-licensing,
3 and it will be monitored as we would any other fuel
4 fabrication facility.

5 MR. CAMERON: And before we see if John
6 wants to add anything, I guess one question for -- for
7 you, Lawrence, is if anybody wants to find out about
8 the meetings between the applicant and the NRC on the
9 safety side, how would they do that, and are there
10 minutes of those meetings that are publicly available
11 if anybody wanted to tune into the safety side?

12 MR. KOKAJKO: Okay, first of all, the --
13 the meetings are posted on the NRC Web site. And, in
14 fact, those all -- most public meetings are open to
15 the public. There are some that are not, primarily
16 when they deal with privacy act information, or
17 perhaps when they deal with safeguards and security
18 matters. But you can look on the Web site to see what
19 meetings are there.

20 I believe, also, the Davis-Besse incident,
21 in itself, has its own subpage on the NRC Web site, so
22 you can go to the Davis-Besse to find out more about
23 that.

24 MR. CAMERON: And minutes of the -- are
25 there minutes taken that are publicly available?

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1 MR. KOKAJKO: Typically...

2 MR. KEISLER: I'm well aware of that
3 process.

4 MR. CAMERON: Okay.

5 MR. KEISLER: I've been involved in that
6 process (indiscernible).

7 MR. CAMERON: Okay, we've got to get you
8 on the -- the record.

9 MR. KOKAJKO: Let me finish that, because
10 some other people may not know.

11 We do take -- we do have a meeting summary
12 after each public meeting. Many meetings are
13 transcribed, but I would say most probably are not
14 transcribed. But at least a meeting summary is
15 generated and is publicly available.

16 MR. CAMERON: Okay. And just -- you know,
17 we -- we know that you may know a lot of that -- that
18 part about it. But for other people's edification --
19 and we do have David Ayres here from our regional
20 office, the inspection specialist. And why don't you
21 tell us a little bit in regard to one question, David.

22 MR. AYRES: Okay, I'm David Ayres. I'm
23 the Chief of the Fuel Facility Inspection Branch in
24 Region 2.

25 MR. CAMERON: It's not obvious, yeah. I

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1 think that that's -- so people...

2 MR. AYRES: And as was mentioned here just
3 a minute ago, we do plan to have a resident inspector
4 there at the site. If the construction authorization
5 is approved, we would have a resident there from the
6 beginning of construction all the way through startup
7 and -- and beyond. Our plans are to have at least one
8 resident there at all times.

9 And we are going to have fairly extensive
10 region-based inspection program that will include
11 virtually all of the aspects of the safety evaluation
12 report that will come out, such that all of the -- all
13 the commitments and requirements that are in the
14 approved construction authorization that come out of
15 the safety evaluation report would be inspected. So
16 we were going to cover all the bases we possibly
17 could.

18 MR. CAMERON: Okay, thank you very much,
19 David.

20 Let's -- before we go back over to Mary,
21 is there any other -- any questions over here?

22 Okay, Catherine, if you could just
23 introduce yourself to us.

24 MS. MITCHELL: I'm Catherine Mitchell, and
25 I'm here -- I'm not representing any organization.

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I was really struck, I was really pleased, I must say, that you did give a qualitative review of the off-spec MOX plan that was put forward by Frank Von Hippel and Alice (indiscernible) and others as a way to kind of go down the middle path. I didn't agree with a lot of your analyses, but one of the things that struck me the most is this invocation of DOE's statement that the Russians might not like something that doesn't degrade the plutonium from its current isotopic distribution. And it really bothered me so much, that I had the horrifying experience of a new idea at this late date in the game.

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But there's reactor grade plutonium lying around in large quantities. I mean, there may not be that much in the U.S., but West Valley operated for a while, and I'm sure there's other degraded plutonium around. We could probably even buy it at a pretty good price from European countries that really don't want to use MOX because it's so expensive. So why not just mix it. Instead of MOX it, let's mix it, and then do any of the other things we might do that wouldn't have the reactor risks associated with it, which I think you way underplayed in your cost benefit on the off-spec MOX, and DOE underplays on the immobilization decision. So, anyway, I'm now

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But my question is: Since this program was initially started as a joint program between the United States and the Russian government to dispose of surplus materials from dismantled nuclear warheads, what plans are in place in the event of -- and certainly, in light of current events, of deteriorating relations with the Russian government? How would that affect the ongoing plan for this particular program?

MR. CAMERON: Okay, thank you, Catherine.

MR. HARRIS: Those issues, Catherine, really relate to the Department of Energy who has the overall mission for implementing the agreements with Russia and the overall surplus weapons -- weapons -- surplus weapons plutonium -- the program. Sorry.

As it relates to us, likely what would happen would be, if -- if things did deteriorate. The applicant, DCS, would withdraw their application.

MR. CAMERON: Okay, let's -- let's go back to Mary, and then we'll go to -- to Gregg.

Mary, you have another question; correct? All right.

MS. OLSON: I am Mary Olson, the Southeast Office Director for Nuclear Information and Resource Service.

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1 advocating mix rather than MOX.
 2 MR. CAMERON: And I think we -- we treat
 3 that as a -- as a comment.
 4 MR. HARRIS: As a comment, but let me just
 5 make sure I understand, Mary. You're talking about
 6 mixing the surplus weapons grade plutonium with
 7 reactor grade plutonium and making reactor fuel?
 8 MS. OLSON: No.
 9 MR. HARRIS: Or you're saying mix -- oh,
 10 I'm sorry. I got you. Mixing surplus plutonium,
 11 reactor plutonium, making off-specification mixed
 12 fuel, and storing that and disposing of it. That...
 13 MS. OLSON: What I'm suggesting is
 14 isotopic degradation through mixing rather than
 15 irradiation.
 16 MR. HARRIS: Okay, got you.
 17 MS. OLSON: It might take a large quantity
 18 of reactor grade plutonium, which is why I'm
 19 suggesting that other countries might have to be
 20 vendors of this stuff. But it could be done. It
 21 would isotopically degrade the weapons grade
 22 classification. And then you would not have all the
 23 reactor-related risks, which I believe you are still
 24 underplaying in your analysis.
 25 MR. HARRIS: Okay, that -- thank you,

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1 Mary.
 2 MR. CAMERON: Let's go over here to -- to
 3 Gregg Jocooy. If you'd introduce yourself to us.
 4 MR. JOCOY: Sure. Thank you, Chip.
 5 I'm Gregg Jocooy. I'm here representing
 6 the York County South Carolina Green Party.
 7 One question that I have. You talked
 8 about these resident inspectors. Now, we've all heard
 9 on the radio people -- reports that a listeria
 10 outbreak has happened in a meat packing plant and 12
 11 people have died and 40 billion pounds of meat have
 12 been recalled and so on like this. They have U.S. DA
 13 resident inspectors, as well. How long do NRC
 14 resident inspectors stay at any one particular plant,
 15 and what steps does the NRC take to assure that the
 16 resident inspectors don't develop an unhealthy
 17 relationship with the people that they're supposed to
 18 be watching?
 19 MR. CAMERON: We're going to go to David
 20 for that one.
 21 David? I think you have a sense of...
 22 MR. AYRES: Right.
 23 Right now the time frame for resident
 24 inspectors at the sites is a maximum of seven years.
 25 And they are, you know, extensively trained in not

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1 fraternizing with the licensee, that kind of thing.
2 I've known several personally, resident inspectors who
3 lament about having to, you know, be kind of stand-
4 offish in the community because they can't really
5 interact with a lot of the people that we meet because
6 of their status as an NRC resident inspector.

7 Now, I'm not that familiar with the
8 residents at the reactor sites because I really deal
9 with just the fuel facilities. But that's -- that's
10 the way we've done.

11 MR. CAMERON: Thank you very much, David.

12 MR. JOCOY: Have any of the resident...

13 MR. CAMERON: Gregg, we better get you on
14 the transcript. We'll give you a follow-up here.

15 MR. JOCOY: Thank you.

16 Have any of the resident inspectors at any
17 of the power plants that have faced challenges like
18 Besse -- I've got my state legislator on my mind. I
19 want to call it Bessie Moody.

20 Have any of the resident inspectors at any
21 of the power plants that have experienced difficulties
22 lost their job as a result of dropping the ball and
23 not noticing problems they should have noticed in
24 advance, or have they been kept on? And, in fact,
25 have people who have been resident inspectors been

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1 hired by the companies that they were inspecting?
2 MR. CAMERON: David, do you have any --
3 any information on that?

4 MR. AYRES: I really don't know about the
5 residents at the reactor sites, whether or not
6 anybody's been let go or whatever. I do know in the
7 fuel facility arena there have been a couple of times
8 where the resident inspectors, after their five to
9 seven years time was up, that they didn't want to
10 move, so they got a job with the licensee. So that
11 has happened.

12 MR. CAMERON: Okay, thank you.

13 Lou, did you have a question before?

14 MR. ZELLER: In your presentation here,
15 Tim, you talked about impacts on public health in your
16 investigation. And largely the discussion is about
17 cancer effects from ionizing radiation. Are you
18 familiar with some of the work of Dr. John Gothman
19 that (indiscernible) on some of the plutonium weapons
20 in the early days before he turned to medicine,
21 produced a report several years ago which point to
22 ionizing radiation in the form of X-rays as a major
23 component of ischemic heart disease, wholly and
24 separate from cancer. And what we have found is that,
25 for example, in Barnwell County, alone, there's a 15%

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1 a question that we haven't heard from at this point?

2 (No audible response)

3 MR. CAMERON: Okay. Well, let's -- let's
4 go to -- Mary, you have one other question?

5 MS. OLSON: I think I'll fold it into a
6 comment.

7 MR. CAMERON: Okay, good.

8 Well, let's go to -- we'll go to Linda,
9 and then we'll -- we'll go over here, and then we'll
10 get started with the formal comment. All right.

11 MS. ODOM: Tim, can I ask about something
12 I read in this book that I was concerned about?

13 MR. HARRIS: Yeah, that -- that's...

14 MS. ODOM: At Wilmington, North Carolina,
15 at a GEE plant, I was reading by the conversion of
16 uranium hexafluoride and uranium dioxide.

17 MR. HARRIS: Correct.

18 MS. ODOM: And it said they are changing
19 their process of converting that to -- from a wet
20 process to a dry process. I want to know have they
21 done that.

22 And also it says discharges are permitted,
23 are -- they're monitored to insure compliance with
24 permit requirements. I tried to find what the permit
25 requirements would be, like how much of a discharge

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cont.

1 elevated level of ischemic heart disease above the
2 average of the whole State of South Carolina.

3 MR. CAMERON: Was that considered?

4 MR. HARRIS: I think -- I think the answer
5 is your observation was correct, that we only
6 considered latent cancer fatalities as an impact. And
7 I don't know if you want to add more to that, Dave, as
8 far as -- I'm not familiar with the work of Dr. Goth
9 (sic).

10 MR. BROWN: I'm a little bit familiar with
11 Dr. Gothman's work. At this time his conclusions are
12 not part of NRC's bases for assessing risk from
13 radiation. I would be interested in the specifics of
14 the information you have about Barnwell County, if you
15 could give us a citation, that sort of thing.

16 MR. CAMERON: And it would be appropriate
17 if Mr. Zeller wanted to submit the information on Dr.
18 Gothman's work for us to -- to look at.

19 MR. ZELLER: We've got it.

20 MR. CAMERON: Okay, that's -- that's good.
21 Before I -- and we'll -- we'll take a
22 couple more questions and then go to comment, and then
23 we can come back, if we have time, for questions. I
24 know Linda has one, and Mary. And I just want to make
25 sure that -- is there anybody else who wanted to ask

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1 can they release into the environment.

2 And I -- can I say one thing about the
3 Russians? By Talli Khizhnyak, he was the head of --
4 I'm sorry. I can spell it. K-H-I-Z-H-N-Y-A-K, who is
5 head of the Russian nuclear agency, said it will never
6 happen, the MOX project with the United States. And
7 that we are paying their scientists, which I spoke to
8 the DOE, who was kind enough to talk to me earlier.
9 They -- we are still paying their scientists, but I
10 understand why; to keep from the plutonium getting in
11 terrorist hands, or Iraq, or -- which is probably a
12 good thing. But he does say that will never happen.

13 MR. CAMERON: Okay, this is Section 4
14 point...

15 MR. HARRIS: No, I -- I got it, Chip.

16 MR. CAMERON: ...4 point -- for other
17 people, though, 4.4.2. And I'm glad you know that,
18 too. That's...

19 MR. HARRIS: You mean not everybody is
20 familiar with the document as I am, Chip?

21 MS. ODOM: I read it.

22 MR. HARRIS: Thank you.

23 I think Dave's going to confirm that, in
24 fact, they have gone over to the dry process. That's
25 my understanding.

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1 MR. BROWN: I'm going to ask Dave Ayres to
2 confirm that.

3 MR. HARRIS: Oh.

4 MR. CAMERON: Let me bring this to you,
5 David.

6 MR. HARRIS: But -- but it -- but, Linda,
7 it's also important to note that we looked at both
8 processes.

9 MR. AYRES: Yes, the facility at
10 Wilmington converted over to a dry process two or
11 three years ago. I was the inspector during the time
12 of the conversion over to the dry process, and it has
13 happened. The (indiscernible) detail I believe are in
14 Part 20 either (indiscernible) in their license
15 application. And if you need some more information,
16 I'll get my project manager to send you some
17 information on it.

18 MR. CAMERON: Great.

19 Okay, let's go for a final question, and
20 then we'll...

21 MR. HARRIS: Can we thank David for
22 coming? Thank you, David.

23 MR. CAMERON: Okay, here we are.

24 MR. KEISLER: This is Bill Keisler again.
25 In July of 2000 there was one of these meetings in

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1 That that would fail the umbrella means, and it would
2 instantaneously (indiscernible) the NRC.

3 How -- in this integration of regulatory
4 authorities, what is the hierarchal protocol for
5 accident events?

6 MR. KOKAJKO: Okay, I am -- by the way,
7 I'm familiar with certain licensing things that we do
8 regulate DOE on. For example, the -- the Independent
9 Spent Fuel Storage Installation at the Idaho National
10 Environmental and Engineering Laboratory which is
11 storing the old Fort St. Berin spent fuel. We also
12 regulate them and their storage of the Independent
13 Spent Fuel Storage Installation at Fort St. Berin. So
14 that fuel is in two different locations.

15 This is very comparable to the situation
16 at Idaho where there is a small regulated area that we
17 control within the overall site complex at the DOE, at
18 the -- at the Idaho lab. In that case, DOE had to
19 meet all our regulatory requirements for whether
20 meeting the safety specifications to emergency
21 planning, everything that -- that they would normally
22 have to do. And, in fact, we ended up imposing upon
23 them more stringent requirements in some areas for
24 that facility and within the DOE complex.

25 And in this case, we would do the same

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1 Columbia, South Carolina. I attended that one. And
2 I don't think there was a transcript made of that, at
3 that meeting. But I asked a question there and it's
4 never been answered. It was supposed to have been and
5 it never has.

6 There's an umbrella of protection for the
7 public that is never breached, ever, under the Atomic
8 Energy Act. And yet, when we look now at the NRC-DOE
9 interface, or even state -- State of South Carolina,
10 I believe it indicates there's 199 licenses they have.
11 There are issues in the State of South Carolina,
12 violations of the Atomic Energy Act under 10 CFR 150,
13 issuing licenses. There was one with an issue of a
14 DOE contract for plutonium in a city in violation of
15 that, who was allowed to continue to operate for seven
16 years.

17 This is a unique situation now where
18 geographically NRC has a facility inside a whole DOE
19 boundary, 350 square miles. How is the hierarchy of
20 authority, in the event of an accident or event, in
21 that situation who holds that? Typically, with the
22 way the Atomic Energy Act is written, it appears, with
23 the Energy Reorganization Act of '74 and the DOE which
24 was in '78, that the DOE exemptions from the NRC --
25 NRC authority are predicated on certain conditions.

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1 thing. The MOX facility would be regulated according
2 to our safety standards. It would have to meet our
3 standards in terms of emergency planning, procedure,
4 control, configuration control, and a whole host of
5 other things. And we would have that authority over
6 them, whether it was through licensing, inspection, or
7 enforcement. So that is -- that is allowed by the
8 Atomic Energy Act, the Energy Reorganization Act. It
9 is very well understood that once they submit to our
10 licensing program that is what the rules of the game
11 are.

12 MR. CAMERON: And that cannot be
13 delegated, under the Atomic Energy Act, to an
14 agreement spec.

15 MR. KOKAJKO: No, that cannot be delegated
16 to an agreement spec.

17 MR. CAMERON: And, Dave, do you have some
18 things to add on that? And you have a mic there, too.

19 MR. BROWN: I thought I would have. We
20 did have a question last night, I believe. There is
21 a question about, for example, there are many areas
22 that Lawrence outlined. One is radiation safety
23 standards, you know, which ones apply. And we think
24 we've laid that out pretty clearly for DCS, the
25 applicant, with respect to how to treat workers who

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1 would be in the Savannah River Site area who are not
2 employees of DCS and that sort of thing. So that
3 issue, I think, has been resolved.

4 MR. CAMERON: Okay, thank you. And if we
5 do have time to follow up on any of this, we will.
6 But I think we should get on with the -- hearing from
7 -- from all of you in terms of what your comments are.
8 We're going to go to Mr. Lou Zeller first. Lou, if
9 you could come up and talk to us.

10 MR. ZELLER: Okay, thank you. My name is
11 Lou Zeller, and I'm on the staff of the Blue Ridge
12 Environmental Defense League. And I appreciate the
13 opportunity to speak tonight.

14 Many of you know my co-worker and my wife
15 of going on seven years, Janet. She had hip surgery
16 this week. She'd love to be here tonight. But she
17 came home from the hospital today and she's recovering
18 quite nicely. So I do want to get into my comments,
19 though, tonight about this facility.

20 I do have to agree with -- with Linda, in
21 that this may seem like a collective whistling past
22 the graveyard, in that the international tensions and
23 the problems between the United States government and
24 the Russian government and the French government at
25 this time could ultimately scotch this project. The

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international agreements required for it to keep moving forward, the parity requirements explicit in the agreement may ultimately cause this project to come to a grinding halt.

The \$309 million increase in fiscal year 2004 budget appropriation for the plutonium fuel factory alone could be much better spent in some other area. So, the long and short of my comments is tonight that the no-action alternative would save us a great deal of money, and get us back on the right track on how to deal with dismantling weapons of mass destruction here in the United States.

One of the problems that we have identified with regards to safety lapses, false promises, environmental violations, and public health hazards, and illegal activities, have to do with one of the partners of DCS, the "C," which stands for Cogema over the last two decades. The record reveals a company which ignores or flouts the law, and which is oblivious to the dangers to public health and safety caused by its operations in Europe and in North America.

Cogema is a French company. It is a lead partner in DCS, and the sole provider of experience and techniques regarding the reprocessing of

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commercial plutonium into fuel. However, weapons grade plutonium has never been reprocessed into commercial nuclear fuel.

While I won't indulge in French bashing, as is -- seems to be the -- the rage these days, at least on some of the talk radio stations, the problems of dealing with a French company which is outside of United States law is a problem for the Nuclear Regulatory Commission. So you do have to deal with that. Cogema's flagship in -- in Europe is its giant reprocessing facility at La Hague on the north coast of France. During reprocessing, toxic and radiological chemicals are released into the air and the water at that facility. A recent report released by the European Parliament found that the combined discharges from La Hague---and the nearby Sellafield Plant in the United Kingdom---reprocessing sites correspond in contamination to a large-scale nuclear accident every year.

Cogema has consistently ignored international treaties that safeguard the seas from contamination, and Cogema has chosen to disregard findings of extreme contamination and health effects resulting from its own reprocessing activities, and has refused to abate its discharges as requested by

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1 the European governments, and as mandated by
2 international laws and treaties.

3 The U.S. Nuclear Regulatory Commission
4 simply cannot and must not repeat the failures of the
5 U.S. Department of Energy in this matter. Cogema's
6 track record must be considered by the Commission
7 before issue a license for construction of a plutonium
8 fuel factory. This is entirely proper and permitted
9 under the *National Environmental Policy Act*.

10 We hereby request that, as a function of
11 its environmental review of the mixed oxide fuel
12 fabrication facility, the plutonium factory, that the
13 Nuclear Regulatory Commission investigate the track
14 records of Cogema, as well as Stone & Webster and Duke
15 Energy. I might point out to a -- a quote which comes
16 out of the *Augusta Chronicle* regarding Cogema and the
17 failure of the Nuclear Regulatory Commission thus far
18 to do this very thing. In July 14, 2000, *Augusta*
19 *Chronicle* article, Nuclear Regulatory Commission's
20 Melanie Galloway said that, quote, "Whatever their
21 record, good, bad, or indifferent, it isn't going to
22 affect our decisions," end quote. This assumption
23 that Cogema, Inc., will abide by United States law---
24 that's the American affiliate of Cogema---leaves much
25 to be desired.

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1 Two other points which I would like to
2 cover in my time tonight have to do with the
3 contamination from such a facility. We have been
4 commenting and investigating and doing research in the
5 State of South Carolina offices with regards to the
6 *Clean Air Act* permit which was recently issued for the
7 Savannah River Site. Now, there are 1,500 emission
8 sources, air emission sources located within that --
9 the Savannah River Site reservation emitting a great
10 many radio nuclides, as well as hazardous air
11 pollutants. The national emission standards for radio
12 nuclides, other than radon, from the Department of
13 Energy facilities states that emissions of radio
14 nuclides to the air shall not exceed that which would
15 cause any member of the public to receive a dose of
16 ten millirems per year. Emission measurements from
17 the stacks are stipulated in the existing Title V
18 permit.

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19 But the millirem standard for the maximum
20 allowable dose to the public is an ambient standard,
21 not an emission limit. The permit fails -- the
22 existing permit fails to require any direct
23 measurement of radioactive dose to the public, and
24 cannot be enforced as a practical matter. This is a
25 serious problem for many of the radio nuclide-emitting

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1 facilities, including the proposed plutonium fuel
2 factory.

3 One other point I'd like to go into here
4 tonight is the fact that it is very difficult to
5 estimate the emissions because of the problems with
6 the HEPA filters, the paper filters, the high
7 efficiency so-called filters which are an unreliable
8 means of controlling radio nuclide emissions. We have
9 been in touch with Dr. Peter Richards, who is a former
10 member of the Centers for Disease Control Advisory
11 Panel at the Idaho National Engineering Laboratory.
12 Dr. Richards has outlined the problems with alpha
13 emitters like plutonium which creeps through four
14 HEPA filters in sequence, the problems with alpha
15 migration, reintrainment of particles, and alpha
16 recoil, which is a DOE term for the ability of alpha
17 emitters, like plutonium, to creep through these
18 filters.

19 The bottom line here is no one knows how
20 much plutonium comes out of the last filter. The
21 Nuclear Regulatory Commission needs to get to the
22 bottom of the plutonium releases for this factory
23 before moving forward. Once again, thank you for the
24 opportunity to speak here tonight. And we will be
25 submitting written comments before the comment

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1 deadline.

2 Thank you.

3 MR. CAMERON: Thank you very much, Lou.
4 Let's go to Dr. -- Dr. Lew Patrie. And I
5 apologize if I'm mispronouncing your name, Dr. Patrie.
6 DR. PATRIE: That's -- that's perfectly
7 all right, Chip. Everybody else does.

8 Appreciate the presentation and the
9 opportunity, very studied reports, so many people here
10 tonight. I want to just say that from the perspective
11 of Physicians for Social Responsibility, I wish to
12 cite the dangers and massive costs of the entire
13 plutonium bomb fuel experiment, the lesser costs and
14 dangers of the option of plutonium immobilization, and
15 how such a venture could affect us in North Carolina
16 and the general area, and an apparent hidden agenda.

17 Dangers stem from this entire plutonium
18 fuel experiment. The U.S. portion of the proposal
19 involves shipment of plutonium from dismantled nuclear
20 weapons sites in Western states, some likely by way of
21 Interstates 40 and 26 en route to South Carolina. The
22 greatest transportation risk would be an accident in
23 which plutonium metal, which rapidly oxidizes when it
24 comes into contact with air, would vaporize or burn
25 and disburse its deadly particles, contaminating the

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1 air, our citizens inhale, the water upon which we
2 depend, and the soil upon which we grow crops and upon
3 which animals feed.

4 Inasmuch as you've already brought up the
5 subject of terrorism in regard to a presumed reduction
6 of MOX fuel and supposedly reducing the risk of being
7 taken over and used by terrorists, I would also like
8 to say the increased risks of -- the risks of
9 terrorism on the highway create additional concerns.
10 Is there some reason this is making this
11 clicking noise?

12 MR. CAMERON: I was going to make a joke
13 that sometimes a raccoon gets under the podium.

14 DR. PATRIE: I don't know if I had a
15 glottic click in my throat or something. But, anyway,
16 I am sorry if it's disturbing folks.

17 MR. CAMERON: Don't worry.

18 DR. PATRIE: Creating the proposed MOX,
19 mixed oxide fuel fabrication factory, would be
20 counterproductive. Such a facility at Savannah River
21 Site would place workers' health at greater risk from
22 unnecessarily increasing their plutonium exposure. It
23 would greatly increase the radioactive waste generated
24 that are already highly contaminated -- at the highly
25 contaminated bomb-building plant. It places

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1 populations in nearby areas at increased risks of
2 exposure to plutonium and other byproducts of such a
3 facility as stated.

4 I think that there has to be some
5 consideration of the risks that are presented by the
6 experts for reasons I've already stated in my
7 question. I would feel better about it if there were
8 some carefully carried out, long-term epidemiological
9 studies by impartial, qualified scientists of workers
10 and other potentially exposed people, populations.
11 These should have been conducted on populations which
12 have been exposed through air, water, or food
13 ingestion over the many decades of the nuclear
14 industry. Such scientists should not have their mind
15 sets prejudiced by assumptions that were made as a
16 result of extrapolating the data gathered from
17 Hiroshima and Nagasaki experiences, which are pretty
18 well limited to high levels of acute radiation. I
19 fail to understand why such studies haven't been
20 carried out and publicized; and further, how a DEIS
21 can be adequately carried out without the results of
22 such studies.

23 Inseparable from the proposed MFFF is the
24 fact that once manufactured, plutonium bomb fuel is
25 destined for use at Duke Energy's McGuire and Catawba

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1 reactors within 20 miles of downtown Charlotte.
 2 Plutonium fuel is experimental, in that the fuel
 3 derived from weapons grade plutonium has never before
 4 been used in commercial reactors. These plants are
 5 poor choices for an experimental program because their
 6 cooling systems depend on constant supplies of ice.
 7 In the event of failure for even a few hours, there is
 8 a risk of a severe accident. Plants are encased in
 9 weaker metal plates than the preferred thicker amounts
 10 of concrete. Plutonium bomb fuel is inherently more
 11 dangerous than currently used uranium fuel, in that it
 12 bombards structures within the reactor chamber with
 13 more damaging radioactivity, and would be more
 14 difficult to control, increasing the likelihood of a
 15 Chernobyl-type disaster. Compared with currently used
 16 uranium, should a nuclear catastrophe occur in a MOX
 17 fuel reactor, up to twice the number of cancer deaths
 18 would result due to the nature of radioactivity
 19 produced.

20 The possibility of terrorism should not be
 21 ignored, either to the reactor vessel, itself, or to
 22 the spent fuel rods that are stored onsite. A worst
 23 case scenario would result in the entire Charlotte
 24 area becoming a nuclear wasteland for decades to come,
 25 with national repercussions, and most of the

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1 population becoming refugees. More and more danger
 2 comes from vastly increased radioactivity produced
 3 through MOX. Promoters deceptively claim it would rid
 4 the world of plutonium, making it unavailable for
 5 future nuclear weapons use. As you well know,
 6 plutonium will be produced while MOX fuel generates
 7 electricity. The proposed parallel tract whereby
 8 plutonium is presumably converted into fuel in both
 9 the U.S. and Russia reactors would markedly increase
 10 the availability of plutonium on a global scale. It
 11 would work contrary to our national interest. It
 12 would favor further nuclear weapons proliferation.

13 Furthermore, MOX would vastly increase amounts of a
 14 radioactive waste for which no satisfactory solution
 15 has yet been discovered. The railway or highway
 16 transportation of increased quantities of radioactive
 17 waste to proposed Yucca storage facility in Nevada
 18 would create new and extensive dangers which would
 19 further increase the risk to large segments of our
 20 population because of the risks of terrorism.

21 Finally, when the Yucca facility would be filled to
 22 capacity, there would remain at Catawba and McGuire
 23 sites almost as much high level nuclear waste as is at
 24 present. In addition, these sites will continue to be
 25 attractive targets to terrorists due to their

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71-12

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1 proximity to a large population and financial center.
 2 Immobilization is the safest and least expensive
 3 alternative to converting plutonium into fuel. Even
 4 though this has been discarded as an option, ongoing
 5 immobilization was to have been developed along with
 6 the MOX program. It would consist of vitrifying
 7 plutonium, and made into a safer material for
 8 indefinite storage. It would substantially reduce the
 9 risks of accidents and terrorist procurement of this
 10 deadliest of all elements. Although it is the best
 11 choice for a problem like plutonium that we know of
 12 today, all funds for this alternative have been
 13 deleted from the budget, and the concept of such an
 14 alternative appears to have been placed on an
 15 indefinite hold. Failure to consider this option has
 16 to be considered an abysmal decision. There appears
 17 to be a hidden agenda with the decision to continue
 18 with the MFFF, despite the risks and uncertainties of
 19 proceeding with plans for this facility. The
 20 production of quantities of tritium in three of TVA's
 21 nuclear reactors which will be processed at Savannah
 22 River Site has to have significance. Such quantities
 23 of tritium can be used only in the production of
 24 nuclear weapons, and MFFF could make plutonium
 25 available in sufficient quantities for the production

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71-12
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1 of nuclear weapons. What other explanation could
 2 there be that another objective of the MFFF is in
 3 conjunction with the production of large numbers of
 4 new nuclear weapons. If this premise is valid, this
 5 should be acknowledged as part of the DEIS, and should
 6 be made apparent to the U.S. citizenry upon whose
 7 taxes this project would depend. Without a
 8 satisfactory explanation of this, the DEIS is
 9 complete. If these premises are correct and we're
 10 planning to create a new massive buildup of nuclear
 11 weapons, it will create a massive increase in the
 12 world's supply of weapons of mass destruction, and
 13 stimulate even greater risks of nuclear weapons
 14 proliferation. For the reasons I have stated, the
 15 proposed MFF should not be approved for construction.
 16 Thank you.

71-13

17 MR. CAMERON: Okay, thank you very much,
 18 Doctor. And I hope that you will submit those written
 19 comments to us.

20 DR. PATRIE: I will expand on them and
 21 submit them later.

22 MR. CAMERON: Okay, great. Thank you.
 23 Let's go to -- to Mary Olson. That's --
 24 and then we'll -- we'll go to Peter Sipp.
 25 Mary?

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MR. JOCOY: Chip, are we going to be able to hear from people whose name -- whose faces we don't recognize? I think there are some other people on the list who wanted to speak.

MR. CAMERON: Oh, yeah, we're going through the list of people who signed up to talk, Gregg. So we'll hear them and we'll know who they are. And this is Mary Olson.

MS. OLSON: I don't mind coming later if somebody needs to leave.

MR. CAMERON: I think we're fine. I don't think we have any problems with that, so go ahead, Mary.

MS. OLSON: My name is Mary Olson. I'm the Director of the Southeast Office of Nuclear Information and Resource Service. We are a national, and now international organization in our affiliation with the World Information Service on Energy, and have 15 offices on four continents.

The office in the Southeast has been primarily focused on the MOX issue, and I want to thank the NRC for coming to Charlotte, and I want to also give the information that a number of people I know, in addition to Janet Zeller, are here in spirit because of other health situations and competing

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events. So I want to emphasize that we appreciate this meeting's being held.

It's a little bit unusual for me to do a written statement. I usually like to just talk. But I do have a written statement tonight that I am going to embroider a little bit.

That being said, I'm deeply moved and having some difficulty standing here today while people are dying over the question of weapons of mass destruction, as well as power and control of resources. These matters are what ultimately we are talking about here.

The Nuclear Regulatory Commission has prepared a detailed analysis of the proposed -- proposal by DCS on behalf of their client, the Department of Energy, to build a factory to make plutonium fuel using plutonium from weapons of mass destruction that are being dismantled. NIRS is disappointed that NRC has issued a tentative approval for this project to go forward. We support the no-action alternative.

This approval is, however, based on a rather desultory dismissal of any other alternative. We are asked many times, in the introduction to the draft environmental impact statement, to concur that

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1 making MOX will, in fact, prevent plutonium from being
2 used for mass destruction. We are asked to take the
3 Department of Energy's word for it that the Russians
4 will only accept U.S. MOX fuel production to stay in
5 the program, and that NRC, even considering in detail
6 the environmental consequences of any other option,
7 would violate this consummate agreement.

8 Nuclear Information and Resource Service
9 rejects the idea that making plutonium fuel from
10 weapons grade plutonium will safeguard it from use in
11 weapons of mass destruction. In fact, we believe that
12 placing this material into commerce will vastly
13 increase the risk that weapons grade material will be
14 diverted, both in this country and in Russia.

15 Further, since the inception of this
16 program, the U.S. DOE has stated that the weapons
17 grade MOX fuel would be irradiated in other countries,
18 in addition to Russia. First Ukraine was named;
19 later, simply, quote, "Russia trading partners" were
20 added to the list. In case people have failed to
21 notice, many of the countries which the current
22 administration in the U.S. labels "evil" or "rogue"
23 nations are on the list of those who could potentially
24 receive this material.

25 If Russia supposedly will not accept any

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1 alternative that would not degrade the isotopic
2 composition of the plutonium, why would the United
3 States accept a program that would -- could send
4 weapons grade MOX fuel to countries like Iran, Syria,
5 and potentially some day Iraq. And I'm sorry I don't
6 have the full list of trading partners, but I'm sure
7 it's available in the public record.

8 A very simple alternative was never
9 considered by the DOE, and only recently considered by
10 myself, which is to mix---M-I-X---mix weapons grade
11 plutonium with reactor grade plutonium that could be
12 purchased from any number of countries that have a
13 huge plutonium, quote, "waste burden" that will be
14 using it as problematic, expensive, deadly MOX fuel.
15 There's a number of European nations with such
16 inventories, not to mention Japan.

17 This mixed plutonium would then be
18 isotopically degraded, and could be considered for a
19 number of alternatives to MOX, none of which I am
20 specifically advocating, but none of which would carry
21 the risks associated with reactor use.

22 Instead, the U.S. Department of Energy,
23 with lots of help from the U.S. Nuclear Regulatory
24 Commission, is going forward with a program that
25 places Charlotte at unprecedented risk. Plutonium

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72-5

72-4

72-6

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1 fuel generates more radioactive activity and more
2 deadly radionuclides than uranium fuel. In the event
3 of an accident, or, heaven forbid, a retaliatory
4 attack against our government or our corporations, the
5 health consequences would up to double in proportion
6 to the MOX fuel in the reactor core. And I will have
7 to spend time with the current document to look at the
8 estimates that are given there.

9 But that could happen on Lake Norman or
10 Lake Wiley. We all now agree it could happen. The
11 question is will it happen, and when will it happen.
12 We can only hope that Duke Energy, in its
13 international dealings, is making friends. And this
14 is simply the tip of the iceberg.

15 I want to appreciate that NRC has
16 faithfully analyzed the environmental justice impacts
17 of the proposed factory. At the same time I am deeply
18 disappointed. The analysis that shows that low income
19 and minority people are disproportionately impacted by
20 the proposed plutonium fuel factory also shows that
21 these same people are and have been disproportionately
22 impacted by the current and previous missions of the
23 Savannah River Site. There is no recognition that the
24 decision to add new radioactive missions to this site
25 will impact a region already weakened by previous and

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ongoing exposures.

Not only is the cumulative and synergistic
nature of this situation not fully expressed in the
NRC analysis, but the proposed mitigation steps do not
address this ongoing routine and repeated exposure.
And I will insert here that the work of Dr. Alice
Stewart, mentioned earlier, found that the Hiroshima
and Nagasaki studies are deeply flawed, because only
the survivors of an extremely traumatic and fatal set
of experiences are analyzed, and many of those who
were assumed to be outside the area walked into the
center to find their loved ones, or try to find their
loved ones, the day of and the day after the actual
blast. And so that data has been reanalyzed by Dr.
Stewart to show that, indeed, the young and the old
are at much higher risk for radiation.

A millirem is not a millirem, it depends
on who got the millirem as to what the dose risk is.
And I will also add my other comment here, that the
EPA has begun to adopt a separate set of evaluation
standards for childhood cancers, and I think the NRC
should follow suit and not use the standard man. Nor
does the evaluation in environmental justice consider
the long-term impacts of the waste from the MOX fuel
factory, since the wastes are conveniently put into a

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72-10

1 shell game and moved over the NRC regulatory boundary,
2 but not over the boundary of impact of these very same
3 people.

4 This is another case of the powerful and
5 the wealthy or the better informed dumping on those
6 with less power or fewer resources, and less
7 information. I have to admit that I have a part in
8 this situation. In the years that DOE was considering
9 where to put the MOX factory, I had working
10 associations with people at the alternate sites under
11 consideration in the West. There was a strong fight
12 from people in Washington, Idaho, and Texas. Nuclear
13 Information and Resource Service opposes a MOX factory
14 anywhere, but we erred in not working more proactively
15 in the Southeast to prevent the siting at the Savannah
16 River Site. And I want to point out, while I'm in
17 this room tonight, that it's rather convenient that
18 the MOX factory, its potential for accidents and the
19 environmental justice dimensions of those accident
20 consequences, are far from Charlotte and Duke's
21 headquarters.

22 Nonetheless, I do not believe that if we
23 had placed our limited resources in the Southeast at
24 that time, it would have been sufficient, since the
25 decision to put the MOX factory at SRS was a fete a

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72-10
cont.

1 comp11. The Savannah River Site is where DOE has
2 always processed the bulk of the plutonium it
3 generated. Now the MOX factory has been used as the
4 camel's nose under the tent or the cover story for the
5 Department of Energy's long-term plan to return to
6 making new nuclear weapons. This is no longer swords
7 into plowshares.

8 As such, the U.S. MOX program has become
9 a magnet for other plutonium missions. We must turn
10 again to the environmental justice concerns and admit
11 that there will be even more elevated risks of
12 accidents if the modern pitt factory is sited at SRS.
13 There will also be more risk of accidents at the pit
14 disassembly and conversion facility if it is
15 processing twice or greater amounts of plutonium.
16 There will also be more ongoing exposures to the
17 workers and the public. All of this is a direct
18 consequence of DOE siting the pit conversion and
19 plutonium polishing at SRS, ostensibly for, quote,
20 "peaceful MOX."

21 The second cover story for these new pits
22 is that it is simply refurbishment of the existing
23 U.S. nuclear arsenal that is there for deterrence.
24 This statement is no longer credible. First, the
25 current administration has declared deterrents a thing

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1 of the past and stated its decision to use nuclear
 2 weapons preemptively. Secondly, the Oak Ridge Y12
 3 factory has not -- has not only been updated, it has
 4 been redesigned to make new nuclear weapons assemblies
 5 for small, usable mini-nukes. Third, the production
 6 levels of tritium in TVA reactors, as approved by the
 7 U.S. NRC, indicate an intention to fuel as many as
 8 60,000 weapons. This astronomical number might seem
 9 ludicrous since the current U.S. arsenal has the
 10 potential to destroy every population center on earth
 11 several times over. On the other hand, the stated
 12 U.S. intention to weaponize near space would require
 13 a number of weapons on this order. I can only imagine
 14 the payoff that Duke Energy must have negotiated to
 15 posture disarmament while providing the cover for the
 16 most massive arms deployment in the history of the
 17 world.

18 We are asked by NRC to believe that the
 19 rejection of any alternatives to MOX is to keep the
 20 Russians at the table. Get real. This table has
 21 nothing to do with the Russians, except to put them
 22 and all other nations in the servile position that
 23 they will share once the U.S. has control of near
 24 space and can target any site on earth from space.
 25 Surgically, of course.

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1 When it comes to the local aspects of all
 2 this, it is important to note, for those in this room
 3 who live in the Charlotte area, it is entirely
 4 possible that the brief consideration given by the NRC
 5 in this DEIS to the environmental and health impacts
 6 of the reactor use of MOX fuel may be the only
 7 environmental impact statement analysis we ever see.
 8 This document affirms that other environmental reviews
 9 will be conducted for any license amendment to use
 10 MOX. This assertion, we hope, means that there will
 11 be an environmental impact statement on the upcoming
 12 MOX fuel test, or LTA, not mentioned at all in the
 13 current report, and also when Duke applies for a
 14 license amendment for each of the reactors to begin
 15 using MOX fuel, if this program gets to that point.

16 There is no basis for confidence in these
 17 environmental impact statements (sic) will, however,
 18 ever be written, or that the public will have the
 19 opportunity to be involved in these decisions. I am
 20 being charitable here, since clearly we have been
 21 effectively shut out of this one by the assertion that
 22 the Russians can dictate the terms of our program.
 23 Duke has four license amendment applications for the
 24 20-year extension of the operating licenses of Catawba
 25 and McGuire pending. Duke avoided any consideration

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which I believe would be the transport across Michigan, which was so heavily opposed by the local population, but nonetheless pursued by DOE.

As for the reactor license amendments to use MOX fuel, we similarly hope that the NRC will require that a full EIS be done for each of the reactors. We are not assured of this, however. In 1991, when then NRC Chairman Meserve was asked directly at a meeting whether the use of MOX fuel would trigger a full EIS he said no. Certainly this was an opinion, and an opinion that NIRS, and we believe the residents of Charlotte and the region, do not agree with. And we hope that the new chair will reverse this point of view.

This brings me, finally, to the concerns I raised in 1996 when then U.S. Secretary of Energy Hazel O'Leary announced the plutonium surplus disposition program in a public press conference. That day I was privileged to ask the Secretary a question that was featured later that evening on the *Leher News Hour*. My question started by pointing out that it is likely that MOX fuel use would increase the amount of plutonium in the so-called low level waste from the operations of nuclear power reactors. My question was: What would the impact of that

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of their participation in the MOX fuel program in these applications. When Nuclear Information and Resource Service and the Blue Ridge Environmental Defense League brought MOX into the license renewal process, the Atomic Safety Licensing Board first accepted us -- the contentions. But then the ASLB was overridden by the five NRC commissioners on Duke's appeal. Therefore, MOX use is not reflected in the NRC's supplemental EIS for the Duke reactors' license renewal at this time.

The MOX fuel test or lead test assembly program will likely be given only an internal environmental assessment, and finding of no significant impact. NIRS will challenge this amendment in an effort to broaden public participation in the decision to put people in this community at higher risk, not to mention those along the transport routes to and from Europe, and the potential for malicious diversion in transit. Nonetheless, it will be a miracle if we win a full EIS for the test fuel. The U.S. NRC could act in good faith by ordering that an EIS on the test fuel be prepared because the unique nature of this program and the fact that the overall risk environment has changed since the last time such a matter was considered for significance of impact,

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1 additional plutonium be on the newly proposed, so-
 2 called low level radioactive waste dumps? The
 3 Secretary assured me that day, and the viewing public
 4 that night, that there would be many analyses
 5 performed under the *National Environmental Policy Act*
 6 before the decision to make MOX fuel would be
 7 finalized.

8 The Department of Energy did not analyze
 9 the impact of MOX fuel use on reactor waste in any
 10 depth, let alone any other affiliated nuclear service
 11 such as nuclear laundries, component repair,
 12 decontamination services, or decommissioning. We were
 13 told that the NRC would do this. Today we are
 14 reviewing a draft environmental impact statement that
 15 devotes, perhaps appropriately, only a fraction of its
 16 volume to the reactor use -- to the reactor use of the
 17 fuel the factory would produce. But is not the reason
 18 for the production of the fuel its use? Is it not
 19 justified, the whole program, because of production of
 20 electricity? The NRC should have done a programmatic
 21 EIS that would encompass the impacts of from what is
 22 known from all phases of this program. Instead, there
 23 are all these cracks. And, barring NRC decision to
 24 close them, my questions will continue to fall
 25 through, right along with the victims. It is -- is it

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1 not the reason to not produce this fuel to avoid the
 2 potentially catastrophic impacts that it could wreak
 3 on this very location and a wide radius around here?

4 Once again, the federal government is
 5 proceeding with decisions made long ago behind closed
 6 doors, and now engaged in a masquerade where their own
 7 employees are told it is their job to play by the
 8 rules that will, in the end, inevitably deliver the
 9 right decision, no matter how thin the stated
 10 justification. In the end, that thin veil reveals
 11 beneath the players who are paid to play this game,
 12 Duke Cogema Stone & Webster, civil servants we like
 13 very much, doing their job. But who is really paying
 14 them? Who is paying them?

15 Us. You and me. Our tax dollars. I'm
 16 almost done. In the end it is left to the victims to
 17 fight for their rights. It is not too late to stop
 18 this mess. And I call upon all those who want to help
 19 to join forces with all the other potential victims
 20 here in Georgia, in South Carolina, to support the
 21 organizations that are intervening in these licensing
 22 proceedings, and ultimately into federal court, if
 23 that's where we have to go. Your time and your money
 24 are needed. It is sad that we must first pay these
 25 folks----it is tax season. Just remember some of your

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1 money goes to DOE and then to DCS and then to NRC.
 2 That's how these guys get paid. And then also pay to
 3 stop them. But that is the way it is when the so-
 4 called protector of the U.S. public health and safety
 5 sells out to Minatom and DOE. I sound completely
 6 resigned, but I do believe in miracles. NRC, it's not
 7 too late to change your mind. We support the no-
 8 action alternative, including not transporting
 9 plutonium at this time, particularly when this country
 10 is at war.

11 NIRS will be submitting written comments.
 12 We appreciate this opportunity to speak tonight.

13 MR. CAMERON: Okay, thank you, Mary.
 14 [Applause.]

15 MR. CAMERON: Let me go to Peter Sipp, and
 16 then we're going to go to Gregg Jocooy.

17 MR. JOCOY: Do you know (indiscernible)?

18 MR. CAMERON: I don't -- I don't know.
 19 But we're calling all the people who -- who signed up.
 20 There's another person after you; okay?

21 MR. SIPP: Thank you, Tim, and everyone
 22 from the NRC, for coming today. And thanks for
 23 putting all the work you put into this book. Just
 24 didn't happen in five minutes.

25 And you are right about the minorities

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1 being affected. Because I lived in Georgia for 21
 2 years and I know the area quite well. I can't agree
 3 with the numbers part. I know you made a mistake and
 4 then you -- and then you changed it. I still can't
 5 agree with it. I worked at the SRS in the "K" area
 6 for six months, and there's a whole lot of folks over
 7 there that would be affected if something was to
 8 happen at the -- at this new -- these new places.

9 And then your mitigation plan isn't --
 10 isn't good enough. Sorry, but on Page 515 it -- it
 11 doesn't say anywhere where you'll have a meeting, how
 12 many meetings you'll have. And you ought to say,
 13 "We're actually going to have an actual evacuation.
 14 We're going to practice," to give -- to give the
 15 locals -- like in school, when we went to school we'd
 16 have fire drills where we'd leave our classroom and
 17 we'd go down to the other hall and we'd wait or
 18 whatever. We -- that's -- that ought to be part of
 19 it.

20 Back to the part about being real familiar
 21 with the Georgia and South Carolina area, there's a
 22 whole lot of two-lane roads and they would get clogged
 23 by people trying to get away. If there was a real
 24 accident and everybody was trying to get away, there'd
 25 be -- there wouldn't be -- people couldn't get away.

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1 And with Augusta there's nearly a million people. And
2 they call it the Central Savannah River Area. There's
3 nearly a million people there. There just -- there
4 wouldn't be enough people to get away safely.

5 And for you Cogema employees, you people
6 from France, I want you to know I'm very proud of your
7 president, President Chirac. He wanted to take care
8 of the Iraq situation with inspections and the
9 President over here wanted to give the Turkey --
10 Turkish people \$26 billion so that our folks could go
11 there and our supplies could go there. \$26 billion
12 could buy a whole lot of inspectors for a very long
13 time, and wouldn't anybody gotten hurt like -- like
14 they are right today, people being maimed and cut up.
15 So the best toast in the world is French toast, and
16 the best fries in the world are French fries. My --
17 Mary's and my daughter is engaged to a Frenchman. I
18 take my hat off to the French people. I can't do that
19 for -- for the administration over here trying to beat
20 up on everybody. Doesn't work well. It's not --
21 people don't accept that.

22 And just like it doesn't work to -- to
23 force all the -- all the smiling faces at the PR
24 meetings that supposedly are going to be had in the
25 minority communities, all those smiling faces, that

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1 ain't going to be good enough to get people away when
2 there's a -- when there's a mess, when people got to
3 get away. All them smiling faces, that's not going to
4 be good enough. You need to actually have evacuations
5 and have people try to get away so they can get used
6 to it, what roads they should go on.

7 And -- and then there's another small
8 comment. When people say "the environmental," well,
9 that's almost right. It's our environment. Takes up
10 the same amount of space in a -- in a paragraph.
11 "Our," rather -- "our," O-U-R, is three letters, just
12 like T-H-E. Whereas "the" implies separation, "our"
13 implies ownership. Can't live here without clean air
14 and clean water. We just can't do it.

15 So I thank you, everyone in the NRC, and
16 you all have a tough job. I don't think I'd want to
17 be there. But, so thanks for the chance to talk. And
18 I think it'd be worthwhile to consider mixing the --
19 the bomb grade plutonium with the other, like Mary was
20 saying. So if you all would consider that, that'd be
21 a good -- good option, also. There's still time.

22 MR. CAMERON: Okay, thank you. Thank you,
23 Peter.

24 Our next speaker is -- is Gregg Jocoy.

25 MR. JOCOY: Thank you, Chip. I'll be

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1 plutonium fuel factory at the Savannah River
 2 Site. Thank you for your valuable time and
 3 consideration. Should you have any questions
 4 or concerns, please do not hesitate to contact
 5 me.

6 "With kind regards, I remain,

7 "Very truly yours, James E. Smith, Jr."
 8 MR. CAMERON: Gregg, can we attach that to
 9 the transcript?

10 MR. JOCOY: Please. It includes the fax
 11 cover sheet.

12 MR. CAMERON: Okay, thank you very much.

13 MR. JOCOY: I had been anticipating two to
 14 three minutes, so I trimmed my -- my presentation
 15 down. But apparently I've got more than two or three
 16 minutes, so fortunately I brought the longer version
 17 with me, too.

18 This is a...

19 MR. CAMERON: Well, don't get too -- don't
 20 get too carried away.

21 [Laughter.]

22 MR. JOCOY: Three pages versus two.

23 This is a statement of the York County
 24 South Carolina Greens. The Nuclear Regulatory
 25 Commission has issued a draft report for comment. The

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1 first presenting a statement on behalf of James E.
 2 Smith, Jr., who is a member of the South Carolina
 3 State House of Representatives, minority leader
 4 representing the Democratic Party in the South
 5 Carolina State House of Representatives. It's
 6 addressed to Michael Lesar, and it says, "Dear Mr.
 7 Lesar," is that pronounced right? Lesar, Lesar
 8 (pronouncing).

9 MR. CAMERON: Lesar.

10 MR. JOCOY: Lesar. Okay.

11 "I write you today in regards to the
 12 Nuclear Regulatory Commission's draft
 13 environmental impact statement on the impact of
 14 building a new MOX plutonium fuel factory at
 15 the Savannah River Site. I understand that the
 16 NRC has held public hearings to have public
 17 input as part of the official record. I
 18 respectfully request the Nuclear Regulatory
 19 Commission hold a public meeting in Columbia,
 20 South Carolina, prior to the end of the comment
 21 period at May 14th, 2003.

22 "Additionally, I respectfully request
 23 that my name and address be placed on all
 24 mailing lists for any further meetings and any
 25 -- and other public forums regarding a new MOX

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1 York County South Carolina Greens offer this comment
 2 on the environmental impact statement on the
 3 construction and operation of the mixed oxide fuel
 4 fabrication facility at the Savannah River Site.
 5 The Nuclear Regulatory Commission has
 6 stated at public hearings on record that they are a
 7 regulatory agency, alone, and plays no role in the
 8 promotion of nuclear energy. Were the nuclear
 9 industry examined with a careful eye, we are certain
 10 that none of the justifications for nuclear energy
 11 would stand scrutiny.

12 The environmental impact statement
 13 addresses the question of cost versus benefits
 14 throughout. Because of this dynamic, it is impossible
 15 to believe that the Nuclear Regulatory Commission does
 16 not behave as a promoter of nuclear energy. The
 17 convergence of systems in the production of plutonium
 18 fuel and plutonium triggers for nuclear weapons lays
 19 bear the hydra nature of nuclear energy. Nuclear
 20 weapons cannot exist without nuclear power. The
 21 plutonium fuel program is nothing more than an attempt
 22 to prop up the nuclear energy industry, advance the
 23 production of new nuclear weapons which may well
 24 violate any number of international treaties the U.S.
 25 subscribes to, and line the pockets of those anytime-

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1 patriots who benefit from the promotion of war and
 2 misery. Were this an agency which had at its heart
 3 dedicated to regulating nuclear energy, it would be
 4 out of business within a few dozen years. Over that
 5 sort of time frame, almost all the difficulties we
 6 face from nuclear power will be manageable, providing
 7 that the NRC acts in the public interest and shuts
 8 down each and every operational power plant as unsafe.
 9 Instead, the NRC continues to offer a fig leaf to the
 10 nuclear industry, all the while deceiving the public
 11 as to who gets the benefits and who takes the risks.

12 The simple, naked truth is that those who
 13 benefit from plutonium fuel programs can be counted in
 14 the hundreds, while those accepting the risks number
 15 in the millions. The top shareholders who will get
 16 the financial benefit of this program and the top
 17 managers at the companies involved will get a huge
 18 windfall from this program. New multi-million dollar
 19 homes, top-of-the-line college education, and world
 20 travel will be funded by this program, all for a very
 21 few. These are the ones getting the benefit from this
 22 proposal.

23 Who takes the risks? These people and
 24 more? Perhaps. And certainly so in the case of some
 25 of the top managers of the companies in question.

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cont.

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1 However, the stockholders who ownership stake (sic)
 2 entitles them to profits from the effort are unlikely
 3 to live anywhere close to the places where risks are
 4 the highest. A stockholder who lives in France,
 5 Japan, Saudi Arabia, the Bahamas, or any other tax
 6 haven, nor one who lives in the swankiest places in
 7 the United States is at substantial risk. In short,
 8 the rich folks will, by and large, take no direct risk
 9 to personal well-being, and millions of average people
 10 will be close enough to the action to pay the costs.
 11 The risk benefit analysis is unusable, for it assumes
 12 that benefits flowing to a tiny portion of
 13 shareholders are enough to justify the risks borne by
 14 millions of others, almost all of whom will have no
 15 chance to get a portion of the benefits.

16 Recently, Fred Rogers died. During a
 17 radio appearance before he passed, he took a call from
 18 a fellow who had heard him speak at his university's
 19 graduation ceremony. During that speech he asked the
 20 audience to think about the teachers who had brought
 21 them to the point that they could graduate from
 22 college. He gave them one minute. That's a long
 23 time.

24 I ask us now to take a minute of silence
 25 to remember. Remember the children you have raised,

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1 the parents who raised you. Think about
 2 grandchildren, born and as yet unborn. Think about
 3 your loves, your friends, your co-workers. Consider
 4 the serious nature of the risks you are considering
 5 exposing them to, and think about plutonium fuel with
 6 them in mind. Think seven generations down the road,
 7 about where we are, how we got here, and how we can
 8 get out of this mess. One minute to think.
 9 Concentrate on those we love the most, who love us the
 10 most.

11 (Momentary pause.)

12 MR. JOCOY: Thank you.

13 MR. CAMERON: Okay, thank you, Gregg.

14 We have another speaker, and someone from
 15 the Charlotte Green Party. I'm sorry I didn't, you
 16 know, have your name on the list.

17 DR. AULETTE: I wrote it down.

18 MR. CAMERON: Well, why don't you come up
 19 and introduce us.

20 DR. AULETTE: Hello. My name is Dr. Judy
 21 Aulette, and I'm a member of the Charlotte Area Green
 22 Party. I'm here to present our organizations
 23 reactions to DEIS.

24 The Charlotte Area Green Party would like
 25 to thank the NRC for this opportunity to speak about

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the environmental impact of the lead test assembly program which will impact the Charlotte area as part of the preparation for the use of MOX. These impacts include not only the dangers of putting experimental fuel into a nuclear reactor core, but also the transport of the plutonium and fresh MOX fuel.

Third, there is not yet an environmental impact statement on the new plutonium pit factory in South Carolina that seems to be part of the whole deal. Such a report may not be an assigned duty of the NRC, but it is a study that is necessary for a complete assessment of risk of this ever-expanding plan.

Fourth, although we were glad to see that the required environmental justice policy is being implemented, we do not believe the mitigation measures suggested are sufficient to achieve environmental justice for the low income populations in the area surrounding the SRS. At least these three additional efforts should be made.

First, we believe there need to be warning sirens in the area of the facility; second, there should be free health care for those with health risks elevated due to the operation of the facility; three, some economic benefit should be provided for those who

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the mixed oxide fuel factory proposed for the Savannah River nuclear site. At first glance, the draft environmental impact statement appears exhaustive, even to the point of being overwhelming. However, there is no overall assessment of the risk which would accumulate from all of the processes involved in the MOX production, in its transport, and in its use as a fuel. Information is presented in such a fragmented manner that it is very difficult to see the whole picture. No average citizen can be expected to glean from the statement the information necessary for a decision on whether or not to support the plans of -- of Duke Cogema Stone for a MOX factory at the Savannah River Site.

In addition to there being no overall assessment of risk for humans and the environment, there are several additional issues we wish to mention. First of all, there is no environmental impact information on MOX use in the specific reactors which will eventually burn this fuel. These reactors will have to be modified for MOX. The effects that these modifications may have on performance of equipment at these reactors has not been considered in this DEIS.

Second, there is no consideration given to

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1 reside near the MOX facility to offset the economic
 2 and health disadvantages of living in the area.
 3 However, we want to be clear that these efforts do not
 4 justify exposing any population to the hazards of MOX
 5 production.
 6 Fifth, there is no mention of possible
 7 security problems at the facilities manufacturing and
 8 handling MOX. There's now an undeniably higher risk
 9 of domestic terrorism than ever before, and these
 10 facilities would be prime terrorist targets. And I
 11 know a lot of other people who articulated this very
 12 well tonight, but I just thought it was worth
 13 mentioning because I think it -- it is a serious
 14 issue.
 15 Sixth, someone, whether it is DOE or the
 16 NRC, needs to do an environmental impact study of
 17 waste management in the manufacture and use of MOX.
 18 This is a particularly glaring omission of relevant
 19 facts.
 20 Although the Charlotte Area Green Party
 21 appreciates the time and effort of the NRC in hosting
 22 these hearings, it is our fear that the NRC is just
 23 going through the motions of pretending to listen to
 24 public comments, when the decision to build and use
 25 the facilities is already being taken for granted by

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1 the companies involved. Why, for example, has Duke
 2 Energy already stated its commitment to the use of MOX
 3 fuel? It appears they do not intend to pay attention
 4 to the concerns of the public.
 5 In closing, we would like to urge the NRC
 6 not to approve the construction of the MOX factory at
 7 the Savannah River nuclear site. The NRC's draft
 8 environmental impact statement has failed to convince
 9 us that this enterprise involves an acceptable level
 10 of risk either to humans or to the natural
 11 environment.
 12 Thank you.
 13 MR. CAMERON: Thank you, Doctor, for those
 14 specific recommendations, too. We appreciated that.
 15 That's the last speaker that we -- we
 16 have. And I want to go out to you again to see if
 17 there's any last questions. But I thought that I'd
 18 ask Lawrence Kokajko if there's anything that he heard
 19 that he might want to clarify for us.
 20 MR. KOKAJKO: Thank you very much. I
 21 appreciate you all coming out. We did hear some new
 22 comments this evening that we have not heard in the
 23 previous two meetings, and we do appreciate them. And
 24 we also hear some of the same concerns, too, that
 25 we've heard at both of the previous meetings, as well.

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1 I'd like to -- to provide a few
 2 clarifications. One is the -- to use the MOX fuel in
 3 the reactors does require license amendment. And that
 4 is handled by the Office of Nuclear Reactor
 5 Regulation. And as -- as you may know, for an
 6 amendment to the operating license there is some type
 7 of environmental assessment done, as well as an
 8 opportunity for hearing. I do not know the full
 9 status of that, but I know the licensee has to do a
 10 review, and I know we have to do a review, and we have
 11 to approve it. The project manager for that, I
 12 believe his name is Robert Martin. And if you would
 13 like to contact him to get the details on that
 14 amendment....

15 UNIDENTIFIED: I speak with him regularly.
 16 MR. KOKAJKO: Okay. I -- I do not, so --
 17 but I do know that those things are done in the normal
 18 Part 50 process.

19 Also, you mentioned about EPA and NRC,
 20 about the child doses. There is a -- in the federal
 21 government, a -- something called ISCORS, Interagency
 22 Steering Committee on Radiation Safety. That is being
 23 -- that is one of the topics that they do discuss, and
 24 the NRC and the EPA are working together to come up
 25 with something in that regard. I do not know the

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1 details of that, but I do know that that committee
 2 does exist and those things are occurring.

3 MS. OLSON: NRC's participating in that?
 4 MR. KOKAJKO: In ISCORS; yes, ma'am.
 5 MS. OLSON: Well, I know in ISCORS, but is
 6 it....

7 MR. CAMERON: Let's -- let's make sure we
 8 get this on the record. I apologize for the
 9 awkwardness of not being able to just have a simple
 10 conversation, but we do need to get it on the record.

11 MS. OLSON: I appreciate that you're
 12 telling people about ISCORS. I am aware of ISCORS.
 13 But I was not aware that NRC was participating in a
 14 consideration of a new way to set standards that would
 15 consider children in a different way than the standard
 16 man. So this is news to me. And let me understand
 17 that you are saying that NRC is proactively seeking to
 18 participate in this?

19 MR. KOKAJKO: The -- what I can tell you
 20 is that we are aware of it and we're following the
 21 work. I cannot tell you that we have -- we have made
 22 a -- reached an agreement with the EPA or anyone else
 23 as far as what the outcome will be. But I do know
 24 that that work is -- is ongoing. That's -- that's
 25 what I'm trying to tell you.

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1 One of the things that also was brought up
 2 about Cogema, in particular. But the Duke Cogema
 3 Stone & Webster consortium would be under our
 4 oversight. If Cogema, to the extent that their
 5 involvement in this activity, once it is licensed,
 6 they would be within our regulatory reach. So Cogema
 7 does not exist as this French entity that is beyond
 8 our control. Because they've submitted themselves in
 9 this consortium, and if this activity does get
 10 licensed, that company, DCS, would be within our
 11 regulatory reach.

12 And the final thing I want to say is that
 13 there has been no approval, tentative or otherwise,
 14 that has been made regarding the construction or
 15 operation of this facility. DCS can take no action as
 16 a result of the draft environmental impact statement
 17 or even the final environmental impact statement.
 18 That decision is based upon -- both the decision to --
 19 to construct and operate the facility can only be made
 20 after the safety evaluation is complete, the safety
 21 evaluation reports are prepared, and any conclusion of
 22 any adjudication, as a result of a hearing request,
 23 has been made. So there has been no decision reached
 24 anywhere in this process yet.

25 What we're saying in today (sic) is that

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1 there is a -- for the environmental review, the
 2 tentative conclusion is that we feel we understand the
 3 environmental impacts, and we feel we understand it
 4 enough that we wanted to come out and solicit public
 5 comments. That's why it's a draft. That's why the
 6 Congress, in its wisdom, said you will have two
 7 processes here. You're going to go out with a draft
 8 first and get -- seek other comments, and then you
 9 come out with a final. And that's why we're here this
 10 evening. So I'd like to make sure that we understand
 11 no decision has been reached on the -- the proposed
 12 MOX facility.

13 MR. CAMERON: Okay, thank you.

14 Is there anybody who has not had a chance
 15 to ask a question or anything, that you've been
 16 listening to a lot of us who's -- anybody else who
 17 wants to ask a question or say anything?

18 Let me see if there's anybody else first,
 19 and then we'll go over there. Anybody? All right.

20 MR. KEISLER: This is Bill Keisler again,
 21 in regards to environmental justice. This included
 22 this environmental impact statement, but there was a
 23 paper given or a speech given I believe in Australia
 24 July 2000 by one of the commissioners, stated that the
 25 -- being an independent agency, the NRC was not bound

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where they have to follow the presidential orders.
What we do is, we evaluate them to see what may be applied to us, and then, you know, we may take it, we may not. The Securities and Exchange Commission also does the same thing. That they, as an independent agency, they can try to be independent of the executive branch as necessary.

The interesting thing is the NRC has said we would take the executive order on environmental justice and we would apply it. And we have, in fact, done so. Environmental justice is a very big concern. We are -- in fact, I know that our environmental review group, of which Tim and Adrienne and Stacy are involved in, take environmental justice very seriously. And, in fact, I would say that environmental justice has been one of the -- the stronger comments and themes throughout each of these meetings, particularly the first two meetings that we had on the draft environmental impact statement.

So the answer is we are following the environmental justice. I believe we did write -- we did write back to the executive branch and we said we would follow it to the degree that it applied to our environmental impact statements.

MR. CAMERON: And -- and, in fact, the NRC

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by executive order for the application of environmental justice standards.

MR. HARRIS: I was at that meeting with Commissioner Dicus, and I don't believe she made that statement. I think the point...

MR. KEISLER: Well, it was on the Web site (indiscernible).

MR. HARRIS: ...I think the point she was trying to make was that environmental justice could be viewed in a broader sense.

MR. KEISLER: She stated that it did not -- that they -- the NRC tried to accommodate it where they could, but was not bound by that executive order.

MR. CAMERON: Maybe I could...

MR. KOKAJKO: Let me -- let me...

MR. CAMERON: Go ahead, Lawrence, you -- you can clarify this.

MR. KOKAJKO: Okay, yeah, I -- I think I know the answer to this.

There is -- we're under a federal system of government. Once again, the Congress, in its wisdom, when it set up the Commission, it -- we are -- exist as an independent executive agency. And we do not follow under the executive branch, as say the Department of Energy or the Department of Commerce,

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WOMEN'S ACTION FOR NEW DIRECTIONS

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Dear Mr. Scarz:

As a U.S. citizen of Georgia and a member of Women's Action for New Directions I would like to commend you & the U.S. government for understanding the importance of dealing with plutonium so that it is not used to make weapons.

However, I have grave concerns about the DEIS process. First, I am deeply concerned that DEIS has not addressed the reasonable alternative to MOX-plutonium immobilization. Immobilization would meet the goal of safeguarding weapons-grade plutonium, and it would provide a large number of jobs, less waste, and it would be cheaper!

Also, the DEIS process fails to address operational plans & licensing. ~~These~~ The environmental impacts of operation must be considered before the DEIS process is completed.

E-0236 = ADM-03
Case = Harris (TEN)
A. Lester (Hex 2)

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not importantly, the DEIS finds from 50-200 people in low-income, minority communities will die from an explosion at a MOX factory. As an environmentalist & racial justice issue, this has to be unacceptable. Please address the following deficiencies in the final EIS:

1. MOX vs. Plutonium Immobilization (which provides more jobs & is safer!)
2. Failure to subject operations data to review in EIS process
3. The unacceptably high risk of 50-200 deaths in an explosion at a MOX plant.
 - someone living close to the S.R.S., the above must be addressed in the EIS process to ensure support for any program dealing with weapons grade plutonium by the local community.

Thank-you,
Annora Wood
Atlanta, GA

April 11, 1983

2/28/83
68FR 9728
(10)

Linda Ewald 00079
949 Ponder Rd.
Knoxville, TN
37923

Michael T. Lesar, Chief
Rules & Directives Branch, Division of
Administrative Services, Office of Administration
Mail Stop T-6059
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Lesar,

I am writing to express opposition to production of mixed-oxide (MOX) fuel from surplus weapons plutonium at the Savannah River Site nuclear facility.

This is experimental program has never been pursued at this scale. It poses a serious threat to public safety and health and will increase the volume of hazardous, radioactive waste streams at a location already plagued by dangerous waste contamination. An accident could have severe

F-EDS = ADM-03
Call = Harris (Tel)
A. Lester (Ac/E)

Thompson = ADM-013

ML 03113 0043

Consequences in nearby communities which are primarily minority and low-income.

79-3 (Cont)

This proposal also raises complex consumer and rate-payer concerns over government subsidies unfairly favoring a destructive type of energy production over environmentally safe alternatives.

79-4

Please reconsider conclusions made in the Draft Environmental Impact statement released in late February.

Sincerely,
Linda Ewald.

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Michael J. Levan
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Levan,

I am writing concerning the DEIS for the MOX application. I am concerned that the DEIS is being finalized before the MOX operations license is submitted for NRC review. The operation of the MOX facility must be subject to review during this same period in the NEPA process governing the EIS. Not reviewing critical aspects of containing the highly dangerous plutonium is irresponsible and blatantly wrong. Separating the construction and the operation of this planned facility in the review process makes no sense.

Template = AD4-013

E-DEIS = AD4-013
Case = J. Harris (BTH)
A. Lester (MARS)

Although it is laudable that there is discussion of the environmental justice impacts of the MOX facility in the DEIS, no deaths are acceptable for a plant designed to safe guard plutonium. The mitigation denied ~~for~~ the disproportionate impact on low income and minority people is not adequate. There are not even any sirens in the area. Why not provide health care to the communities most impacted by this facility?

The DEIS does not address the reasonable alternative to MOX - plutonium immobilization. NEPA requires presentation and analysis of a choice of alternatives. The alternative which would also provide jobs, is cheaper than MOX has a much smaller waste stream, and could provide effective management for existing waste stocks at SRS.

Sincerely,
Betsey Rivard
3388 Valley Circle, NW
Atlanta, GA 30305

80-2

80-3

00081



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April 16, 2003

Mr. Michael T. Lesar 4/16/03
U.S. Nuclear Regulatory Commission 68 FR 9728
Washington, D.C. 20555

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Dear Mr. Lesar,

Women's Action for New Directions has been studying the problems of plutonium during MOX processing. I have become very concerned that the Draft Environmental Impact Statement for the MOX Project estimates 50 to 200 latent cancer fatalities from an explosion at the MOX facility. This catastrophe would be hardest on the poor minority communities living near the Savannah River Site.

An attractive alternative to MOX immobilization should be analyzed and compared to MOX. I am most concerned that the EIS process would terminate before the NRC reviews the MOX operating license.

Please address these deficiencies in the final EIS. We feel the magnitude of this process should be made clear to the public - now -

Sincerely,
Berla Laney
E-EDS = ADM-03
Call - H. Lester (NRC)

Template - ADM-013

00082

From: Chris Miller <csmsav@bellsouth.net>
To: <teh@nrc.gov>
Date: 5/5/03 12:35AM
Subject: Re:NUREG 1767

Michael T. Lesar, Chief, Rules & Directives Branch,
Division of Administrative Services,
Office of Administration,
Mail Stop T-6D59,
U.S. Nuclear Regulatory Commission,
Washington, DC 20555.

Mr. Lesar,

As a Savannah resident and a US citizen who is concerned about the health, safety and security impacts of Federal programs, I am deeply troubled by the DOE's proposed MOX facility at the Savannah river site. I have read the recently released EIS and I am strongly opposed this proposal until the following issues can be reasonably addressed:

- * Shouldn't terrorism be addressed in the report? (P. 1-29) 82-1
- * Shouldn't environmental justice impacts along transportation routes be evaluated? (more important than studying "visual impacts" - P. 1-26) 82-2
- * Shouldn't emergency preparedness in dealing with accident impacts in nearby communities be studied? (P. 1-29) 82-3
- * Should any deaths be considered "acceptable"? Why are some communities unfairly burdened with higher risks? (P. 4-57) 82-4
- * Why aren't safer and cheaper options being studied? (P. 2-23) 82-5
- * Shouldn't it be clearly stated what is really going to be done with surplus weapons plutonium stockpiles before the NRC approves the MOX facility? 82-6

Chris Miller
314 E. 65th St
Savannah, GA
912-351-0649

00083

ATTENTION: TIM HARRIS

May 6, 2003
304 Manor Drive
Sauttee, GA 30571

Michael T. Lesar, Chief Rules & Directives Branch
Division of Administrative Services
Office of Administration Mail Stop I - 6D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Lesar,

Please consider my opposition to a MOX facility at the Savannah River Site and any use of Mox fuel in our nations nuclear reactors.

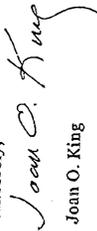
I have followed nuclear issues for a number of years, have attended DOE risk assessment workshops, and been a speaker at forums along with NRC spokespersons. In other words, I have done my homework. I am also a Duke Energy stockholder.

83-1

I don't want another nuclear production facility on Georgia's borders. I don't want more nuclear waste....in any form....stored anywhere in the country. I don't want a company in which I have a financial interest to be involved in this risky and experimental program.

The only really proper roll for the Nuclear Regulatory Commission at this time is security and clean up. Mox helps neither.

Sincerely,



Joan O. King

00084

Received: from lgate.nrc.gov by nrcgwia.nrc.gov; Wed, 07 May 2003 22:13:31 -0400
Received: from lino-02.nrc.gov [152.163.225.96] by nrcgwia.nrc.gov for <steh@nrc.gov>; Wed, 07 May 2003 22:09:18 -0400 (EDT)
Received: from LALAND18@aol.com by lino-02.nrc.gov; Wed, 07 May 2003 22:13:22 -0400 (EDT)
Received: from steh@nrc.gov; Wed, 07 May 2003 22:13:22 -0400 (EDT)
ESMTP id MAILNID64-3d85989bd411cb; Wed, 07 May 2003 22:13:22 2000
From: LALAND18@aol.com
To: steh@nrc.gov
Subject: Plutonium and MOX Fuel
MIME-Version: 1.0
Message-ID: <4B62AEC4.39F85E95.0ACAED16@aol.com>
Content-Type: text/html; charset=iso-8859-1
Content-Transfer-Encoding: 8bit

In response to the review being done of these military tools, I would like to register my outrage and disgust at the apathy of the government to continue to disregard years of advancement in protecting the public health and the environment. The burden lies with the government. The current plans do not allow for accident protection to these communities. How will this be reconciled? The current plans do not allow for less negatively impact our environment. I hope a future review would consider other options that would

84-1

84-2

84-3

Lauren Sorokin
10 Pinkham Road
Bedford, MA
02135
(781)-680-6221



DUKE COGEMA
STONE & WEBSTER

00085

From: Valentino, Adrienne [Adrienne.Valentino@us.gambro.com]
Sent: Tuesday, May 13, 2003 8:38 AM
To: 'eh@nrc.gov'
Subject: Plutonium concern

Dear Mr. Harris,

I am a citizen of Savannah and very concerned about the shipment of weapons-grade plutonium to the Savannah River Site. It is my understanding that this nuclear site already has a long history of poor compliance w/ previous regulations concerning proper containment of hazardous materials. Now the NRC is considering expanding this facility?????

I am concerned for the safety and health of all the individuals in this area. These safety issues have not been given the attention and study they deserve. I do not feel your organization has given us conclusive evidence that this site is "safe" for the community that lives around its borders currently, much less that the people will be safe when this facility is expanded. Where are the health records of the surrounding communities now, before this expansion?

Throughout the country, individuals are concerned about a terrorist assault. How will this site be protected from a terrorist threat after the expansion when it is already highly vulnerable to this type of an assault?

Another major concern is the effects of these materials into our ecosystem. Nuclear waste is already seeping under the Savannah river and likely soon into our water system. Our people are already dying. This is where 90% of the fish in the sea originate. Do you not realize that destroying a highly sensitive ecosystem like this will have profound effects on the entire world? Does this not justify a little further research?

There are too many unanswered questions. When I have written previous letters, my concerns were not addressed nor even responded to. Please consider our concern for our community and our environment. Destroying coastal GA may mean little to the majority of the country, but our marshes alone should warrant further study before proceeding w/ this expansion.

Thank you for you time,
Adrienne Valentino

Mr. Michael T. Lesar, Chief
Rules & Directives Branch
Division of Administrative Services
Office of Administration, Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

13 May 2003
DCS-NRC-000133
Response Required: No

SUBJECT: Docket Number 070-03098
Duke Cogema Stone and Webster
Mixed Oxide Fuel Fabrication Facility
Comments on *Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina*

On 14 February 2003, the Nuclear Regulatory Commission (NRC) issued the *Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina* (Draft EIS). In the 28 February 2003 Federal Register notice, comments were requested by 14 April 2003. In a 6 March 2003 letter to stakeholders, Mr. Lawrence Kokajko, Acting Chief, Environmental and Performance Assessment Branch, stated that the comment period was extended 30 days to 14 May 2003. Duke COGEMA Stone and Webster (DCS) submits the attached table of comments on the Draft EIS. DCS would like to highlight the following comments because we believe they represent significant issues.

1. DCS agrees with the Draft EIS conclusion that the recommended action is to proceed with the licensing of the Mixed Oxide Fuel Fabrication Facility. 36-1
2. DCS also agrees with the Draft EIS position to not evaluate immobilization as an alternative. The Department of Energy, as the federal agency charged with developing the surplus plutonium disposition strategy, has already eliminated immobilization as a viable alternative. 36-2
3. The bounding accident for the Mixed Oxide Fuel Fabrication Facility—an explosion in an aqueous polishing cell—was not properly characterized. The discussion provided in Section 4.3.5.2 and Table 4.12 fails to explain that the accident is prevented. See *Draft Safety Evaluation Report on the Construction Authorization Request for the Mixed Oxide Fuel Fabrication Facility* ("Draft SER") Table 10.1-3, footnote b. The Draft EIS should clearly state that an explosion in an aqueous polishing cell is provided for illustrative purposes because, pursuant to NRC's own regulations, the design safety features, will prevent such an 36-3

PO Box 31847
Charlotte, NC 28231-1847

128 South Tryon Street, FC-12A
Charlotte, NC 28202

Mr. Michael T. Lesar
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13 May 2003
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Mr. Michael T. Lesar
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13 May 2003
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accident. The Draft EIS further fosters a misimpression on the public by postulating that, once this hypothetical accident occurs, neither DCS, the Department Of Energy, NRC, nor the States of South Carolina or Georgia would take any intervention to protect the public by removing contaminated food or soil. See Draft EIS page 4-36, lines 8-18. In fact, the document further assumes that contaminated food is distributed outside the immediate vicinity of the Savannah River Site. See Draft EIS page 4-41 lines 25-38. These assumptions are inconsistent with the NRC guidance to use "reasonably foreseeable" accident evaluations that are coordinated with the Draft SER.

4. In addition to being unreasonably conservative, the Draft EIS projects a potential environmental justice impact for an accident that is prevented by the designed safety systems. The Draft EIS proceeds to impose mitigative actions (see Draft EIS, pages 5-5, lines 18-40 and 5-6, lines 1-11) for this hypothetical accident that is prevented. The projection of an environmental justice impact and inclusion of these mitigative action requirements are inappropriate and inconsistent with the goal of NEPA to provide the public with meaningful environmental analyses, and should be removed from the Draft EIS.
5. The Draft EIS, on pages xxi through xxiv and pages 5-2 through 5-6, lists 43 highly specific mitigative actions, such as, "...the use of straw bales or siltation fences adjacent to areas disturbed during construction..." Many of these mitigation measures simply duplicate state or other federal agency regulations with which DCS is already required to comply. For example, DCS is required to comply with OSHA regulations regarding workplace exposure to chemicals and South Carolina permit requirements for air emissions from the concrete batch plant. The Draft EIS should be modified to state that DCS will comply with the regulations of the appropriate regulatory agency.

If you have any questions please contact me at 704-373-7820 or Mary Birch at 704-382-1401.

Sincerely,

/s/

Peter S. Hastings, P.E.
Manager, Licensing and Safety Analysis

Attachment: DCS Comments on *Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina*

86-3 cont.	xc: with enclosure Hitesh Nigam, NNSA/HQ Timothy E. Harris, USNRC/HQ Andrew Persinko, USNRC/HQ Donald J. Silverman, Esq., DCS Document Control Desk, USNRC/HQ PRA/EDMS: Corresp/Outgoing/NRC/Licensing/DCS-NRC-000133
86-4	without enclosure David Alberstein, NNSA/HQ Timothy S. Barr, NNSA/CH Bernard F. Bentley, DCS Mary L. Birch, DCS Theodore J. Bowling, DCS Edward J. Brabazon, DCS James R. Cassidy, DCS Sterling M. Franks, NNSA/SR Kathy H. Gibson, USNRC/HQ Joseph G. Gitter, USNRC/HQ Philippe Guay, DCS Robert H. Ihde, DCS James V. Johnson, NNSA/HQ Lawrence E. Kokajko, USNRC/HQ Eric J. Leeds, USNRC/HQ Edwin D. Pentecost, ANL Robert C. Pierson, USNRC/HQ Luis A. Reyes, USNRC/RII Thomas E. Touchstone, DCS Martin J. Virgilio, USNRC/HQ
86-5	

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
1	1.1.2	1-3 / 11-15	Although the DOE has prepared previous EISs that cover impacts of the proposed MOX facility on a programmatic level, those EISs are not considered sufficient to meet NRC needs under NEPA, because DCS has since submitted additional site-specific information, and the proposed MOX facility design has been revised since the DOE's EISs were issued.		Suggest rewording the statement to say that NRC has prepared this DEIS to incorporate additional site specific information and design detail and satisfy the requirements of 10 CFR Part 51 without the judgmental assessment that the DOE SPD EIS is "not considered sufficient."
2	1.4.1	1-12 / 11-14	A number of commenters requested that the SPD EIS prepared by the DOE be supplemented and many of the decisions already made by the DOE be revisited. Because the scope of this DEIS is limited to the licensing action now under review by the NRC, which is specific to the proposed MOX facility, issues pertaining to decisions already made by the DOE are addressed by referencing the appropriate DOE analysis.		The statement in the DEIS is misleading. Although NRC indicated that they would rely on the appropriate DOE analyses, the NRC recalculated accident analyses described in the DOE SPD EIS using extremely conservative models and assumptions resulting in significantly different impacts than in the DOE SPD EIS.
3	2.2.3.3.3	2-13 / 42	Wherever possible, the solid wastes would be compacted by the SRS to reduce volume and disposal costs. (Emphasis added)		Currently, SRS is compacting solid waste whenever "practical" rather than "possible."
4	2.2.4.1	2-14 / 32	Most of the solid waste generated in the WSB would be mixed with concrete and poured into approved containers.	ER Appendix G, G-1.2, Waste Processing	This is an incorrect statement. The processed liquid wastes will be mixed in the WSB with concrete and poured into containers to produce solid waste. The solid waste will not be mixed with concrete.
5	2.2.4.1	2-14 / 46	The LLW form would be sent to E-Area (SRS) or to another permitted disposal site.		Change "permitted" to "suitable". DOE LLW sites are neither permitted nor licensed nor do they need to be.
6	2.2.4.2.1	2-15 / 31-34	The WSB receipt tanks would be sized to hold three transfers (six weeks capacity in two 11,400-L [3,000-gal] tanks).	ER Appendix G, Table G-7	DEIS should not specify design details such as tank sizes. Otherwise, design evolution might mandate DEIS revisions. Where necessary, bounding conditions can be specified for impact projections; but these should be restricted to the discussions where they are needed and not simply cast about in general descriptions of the facility.
7	2.2.4.2.1	2-15 / 40-42	After neutralization, the waste would be pumped to two 110-L (30-gal) cement head tanks. One tank would receive material while the other tank is being pumped to the cement mixer. A metering pump would inject controlled amounts of the waste stream from the 110-L (30-gal) head tank to a cement mixer to be continuously mixed with supplied dry		DEIS should not specify design details such as tank sizes. Otherwise, design evolution might mandate DEIS revisions. Where necessary, bounding conditions can be specified for impact projections; but these should be restricted to the discussions where they are needed and not simply cast about in general

86-6

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86-12

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
8	2.2.4.2.1	2-15 / 39-44	<p>cement powder.</p> <p>The acidic bottoms collected in the evaporator would be neutralized with sodium hydroxide in a neutralization tank. After neutralization, the waste would be pumped to two 110-L (30-gal) cement head tanks.</p>	ER Appendix G	<p>descriptions of the facility.</p> <p>The acidic bottoms will be collected in a bottoms tank where the solution will be sampled to determine concentrations. Based on this sample, the solution would be metered to one of three cement head tanks where neutralization would occur prior to transfer to the mixer.</p> <p>Suggest the following, "After collection, the waste would be pumped into small batch cement head tanks to be neutralized."</p>
9	2.2.4.2.3	2-16 / 42	in two 5,700-L (1,500-gal) tanks	ER Appendix G, Table G-7	DEIS should not specify design details such as tank sizes. Otherwise, design evolution might mandate DEIS revisions. Where necessary, bounding conditions can be specified for impact projections; but these should be restricted to the discussions where they are needed and not simply cast about in general descriptions of the facility.
10	2.2.4.3	2-17 / 41	LLW would be disposed of either at the E-Area at SRS or at another permitted disposal site.		Change "permitted" to "suitable". DOE LLW sites are neither permitted nor licensed nor need they be.
12	2.2.5	2-18/29	Large fans or blowers are used to circulate the air through the sand filter media.		This sentence may lead the reader to think that SRS has a "re-circulating" system. SRS uses a "once through" system. The blowers are used to draw air through the sand filter media.
13	2.2.5	2-19/2 & 3	The facility is designed into numerous fire zones, in part to limit the exposure of individual banks of HEPA filters to failure.		Should read: "The facility is divided into numerous fire zones, to limit the amount of combustibles involved in a single fire which reduces the amount of soot reaching individual banks of HEPA filters and assures that the HEPA filters will not fail due to excessive plugging."
14	2.4, Table 2-1	2-27/ 49-54	Large spills of nitrogen tetroxide, hydrazine hydrate, hydroxylamine nitrate or nitric acid could have adverse impact on SRS workers or general public and would require rapid emergency response actions.		NRC should consider deleting reference to impact from chemical spills on the general public. The DEIS contains no scenario of a release from the MOX Facility (or PDCF or WSB) that results in any effect beyond the SRS boundary (see p. E-15).
15	2.4	2-29 / 39 Table 2.1	Nonhazardous liquid waste would be 35% of SRS treatment capacity		The 35% value is apparently calculated by NRC from table 4.11, page 4-30, line 12. This is incorrect because treatment of waste from MFFF, PDCF, and WSB requires much less than 35% of capacity. The correct value is closer to 10% (about half of the

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
16	2.4, Table 2-1	2-31/47-50	Impacts to off-site land use in the immediate vicinity of SRS could occur in the unlikely event of a severe accident		'nonhazardous liquid waste' from these facilities consists of non-process utility waters that will be released directly to permitted NPDES outfalls). See comments related to Section 4.3.4.1 and 4.3.4.2 Tables 4.10 and 4.11
17	2.4, Table 2.1	2-33/47	PM2.5 standard level = 65 ug/m ³		This is an inappropriate use of the term "severe accident" In 10 CFR Part 70 (see NUREG-1718), the appropriate terms are "likely, unlikely, high unlikely, and credible." Text should be changed to say "highly unlikely" (see DEIS p. 2-37 which notes that a severe accident is highly unlikely).
18	2.4	2-35/32 2-34 /6-8	PM2.5 levels exceed the annual standard of 15 ug/m ³ . Measures are being planned by DCS in conjunction with SCHPO to mitigate any potential impacts to historic sites before construction	Information provided in ER Section 4.8.2	Clarify that 65 ug/m ³ is a 24 hour limit.
19	3.3.1	3-7/23-24	The closest downstream water intake to the SRS is that of the Beauford-Jasper Water Authority at Hardeville, South Carolina, about 130 river miles downstream of the SRS (WSRC 2000a).		These actions are complete and correctly noted in DEIS Table 2.1 lines 1-7. The fact that they are complete needs to be noted in the text on page 2-34. Typographical error, should be "Beaufort-Jasper".
20	3.3.1	3-9/16-19	It receives water from groundwater aquifer discharges and permitted discharges from several areas at the SRS, including F-Area, S-Area, the S-Area sewage treatment plant, and treated industrial wastewater from the Chemical Waste Treatment Facility steam condensate.		DEIS refers to the S-Area sewage treatment plant. With the opening of the Central Sanitary Waste Treatment Facility, the S-Area plant, and all other area treatment plants at SRS were closed.
21	3.3.2	3-11 /3	Groundwater in the Upper Three Runs Creek Aquifer, ...		Delete the word "Creek"; the aquifer is the Upper Three Runs Aquifer.
22	3.3.2	3-12 /27-29	The sources of the detected groundwater contamination included burial grounds, canyon buildings, seepage basins, and saltstone disposal facilities (WSRC 2000c).		Change to read "The sources of the detected groundwater contamination include burial grounds, waste management facilities, canyon buildings, seepage basins, and saltstone disposal facilities (WSRC 2000c)".
23	3.3.2	3-12 /36-40	In addition, a subsurface plume of tritium and strontium contamination has recently been found in F-Area. This plume is believed to originate from the Old F-Area Seepage Basin (OFASB). The OFASB is located about 180 m (600 ft) north	ER 4.3.3.3, "The source of groundwater contamination is from various heavy industrial and nuclear operations over the past 50 years in the F-Area. The contaminants plume appears to originate inside F Area and extend	The MFFF ER Rev 2 discusses more recent subsurface analyses presented in WSRC 2002, <i>Work Task Authorization 06: Summary of Groundwater Quality at the Mixed Oxide Fuel Fabrication Facility Site. A</i>

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cont.

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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
24	3.3.2	3-12 / 40-45	<p>The OFASB is located about 180 m (600 ft) north of F-Area. Other contaminants of concern at the OFASB include iodine-129, nitrate, uranium-234, and uranium-238. The site has been remediated by filling the basin with clean soil, capping, and stabilizing the contaminated soil within the basin with in-situ grout (WSRC 1997a). Groundwater monitoring is performed on a regular basis with 15 monitor wells. The aquifer is expected to return to an uncontaminated state within a period of 2 to 115 years, depending on the specific contaminant.</p>	<p>beneath the MFFF site with movement in a fan-like direction of groundwater flow under the MFFF site."</p>	<p>copy of this document was provided to NRC with the references for the MFFF ER Revision 1&2. The DEIS does not appear to account for this information. Please consider the following which accounts for the additional information.</p> <p>Remove the last two sentences "In addition ... (OFASB)." The source of this plume is not believed to be the OFASB.</p> <p>Insert the following sentence at the beginning of the next paragraph: "Contaminated groundwater also exists beneath the Old F-Area Seepage Basin (OFASB)."</p>
					86-27 cont.
					86-28
25	3.3.2	3-13 / 1-5	<p>The predicted fate and transport of shallow groundwater contaminants near the OFASB were examined as part of the <i>Groundwater Mixing Zone Application for the Old F-Area Seepage Basin</i> (WSRC 1997a). The results of sampling in the compliance wells for the OFASB indicated that</p>	<p>Delete the first sentence "The predicted fate ... (WSRC 1997a)." Change the next sentence to read: "The results of recent sampling in the compliance wells for the OFASB indicated that concentrations of several target constituents were above drinking water</p>	86-29

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
26	3.3.2	3-13 / 6-8	concentrations of several target constituents were above drinking water standards in several wells.		standards in several wells.” The MFFF ER Rev 1&2 discusses more recent subsurface analyses presented in WSRC 2002, <i>Work Task Authorization 06: Summary of Groundwater Quality at the Mixed Oxide Fuel Fabrication Facility Site</i> . A copy of this document was provided to NRC with the references for the MFFF ER Rev 1&2. The DEIS does not appear to account to this information. Please consider the following which accounts for the additional information. Append to this paragraph the following text: “There is, however, some uncertainty about whether these exceedances are related entirely to OFASB, to upgradient F-Area facilities, or to both.” Insert a new paragraph: “The results of recent groundwater sampling at the proposed MOX facility site indicate that shallow groundwater (i.e., groundwater in the Upper Three Runs Aquifer) is contaminated. Gross alpha and beta activity, tritium, uranium, and trichloroethylene exceeded maximum contaminant levels for drinking water. Contamination is present beneath the entire MOX site, but is greatest beneath the western edge of the site. The contaminant plume appears to originate inside the F-Area fence and was and is related to F-Area nuclear operations and waste management practices at OFASB.” Make the following text the final paragraph of this section: “Groundwater in the Upper Three Runs Aquifer beneath the MOX site is contaminated with various heavy industrial and nuclear contaminants. The proposed construction activities will take place at least 9 m. (30 ft.) above the zone of contaminated

86-29
cont.

86-30

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina				
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text
27	3.4.13	3-18 / 35 and 3-22 Table 3.3, also 4.3.2, Table 4.6 and corresponding discussion; Table 4.8 and corresponding discussion; as well as Section 4.5.1, page 4-75 and Section 4.7, Table 4-29, with discussion on page 4-90.	A list of the ambient standards and the highest ambient concentrations at the air quality monitoring stations in the vicinity of the SRS is shown in Table 3.3.	<p>groundwater.”</p> <p>The definition of “vicinity of SRS” and resulting selection of SCDHEC air monitoring stations to characterize existing ambient air quality for the SRS and adjacent counties appears arbitrary. As a result, the air monitoring data that is presented in Table 3.3 has questionable representativeness and cannot support subsequent unequivocal statements regarding air quality compliance. In particular, air monitoring data for particulate matter (PM₁₀ and PM_{2.5}) reported in Table 3.3 suggest that local air quality is in noncompliance with ambient standards for both the 24-hour and annual averaging periods in each pollutant category. Most of these noncompliant data are attributed to the Cayce, Lexington County, SC monitoring site. This monitor is located near downtown Columbia, SC (over 40 miles from the SRS and MFFF sites) with a setting classified by SCDHEC as ‘commercial, urban-city center’. Furthermore, monitoring summaries on the SCDHEC web site show that this monitor consistently reports the highest PM measurements of any monitor in the State. In contrast, PM₁₀ monitors near the SRS boundary in the more rural Jackson and Barnwell locations report results for 2001 that are less than one half the values observed at Cayce. For the PM_{2.5} 24-hour category, Table 3.3 lists a value of 71 micrograms per cubic meter from a rural monitor in Colleton County, approximately 60 miles southeast of SRS. A further inspection of the data from Colleton shows this value was the absolute maximum recorded in the year 2001; however, the 98th percentile value (the value that should be used to evaluate compliance with the air standard) for this monitor was 27 micrograms per cubic meter. The 24-hour standard is 65 micrograms per cubic meter. Data given in Table 3.3 for the annual PM_{2.5} category (21.5 micrograms per cubic meter) again is from the Cayce monitor. In contrast, the Colleton monitor gave an</p>

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina				
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text
28	3.8.5	3-41/ 13	...using 12-hour shifts...	annual average of 12.7 micrograms per cubic meter for 2001 which is below the PM _{2.5} standard of 15 micrograms per cubic meter.
29	3.10.4.2	3-54/ 27-31 3-55 Table 3.11	To assess the potential for adverse human health impacts from ongoing SRS operations, the reported maximum ambient concentration estimates were also compared with health risk-based air concentrations developed by the EPA's Office of Air Quality Planning and Standards (OAQPS) (Smith et al. 1999). The modeled maximum ambient concentrations of several toxic pollutants exceeded or approached the health risk-based concentrations (see Table 3.11).	<p>As part of the discussion of environmental consequences in Chapter 4 of the DEIS, tables 4.6 and 4.8 use a more reasonable set of data for the existing 'background' air quality, except for the PM_{2.5} annual average. Again, the Cayce monitoring data is used (21.5 micrograms per cubic meter) to support the unwarranted conclusion (page 4-11 lines 28-31 and page 4-18 lines 30-32) that 'measured values in the vicinity of SRS already exceed the annual standard'.</p> <p>This conclusion also is repeated in several instances in Section 4.7. The DEIS should be revised throughout to present conclusions regarding PM_{2.5} that are based on more representative data. In addition, Table 3.3 and Tables 4.6 and 4.8 should be revised to present consistent information where possible.</p> <p>Minor point, but the site uses 24-hour shifts. The DEIS uses data completely out of context to reach erroneous conclusions on several points.</p> <p>The data presented in Table 3.11 for 'SRS maximum modeled ambient concentration' and 'SCDHEC standard' are maximum 24-hour averages; i.e., the maximum value that occurred at the SRS boundary over a single 24-hour period for a one-year period of analysis. Conversely, the EPA risk guideline levels assume a long term exposure. Since the wind does not blow in the same direction all through the year the long term (e.g., annual) average concentration for a pollutant will be much less than the maximum 24-hour average. Common extrapolation algorithms suggest that an annual average would be at least 1/100th the 24 hour average. Actual SRS modeling results (see DEIS table 4.8, for example) indicate a much greater ratio; however, applying a conservative factor of 0.01 to the 24-hour values results in adjusted concentrations that</p>

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
	4.3.1.2.2	4-13 / 16-22	As discussed in Section 3.10.4.2 and Table 3.11, although SRS sitewide hydrazine emissions do not result in exceedance of the ambient level specified in the South Carolina Department of Health and Environmental Control (SCDHEC) standard, the existing emissions may result in exceedance of federal EPA health-risk-based air guideline concentrations.		are all less than the EPA's 10 ⁻³ risk concentration levels listed in the table. Furthermore, as noted on page 3-54, line 33, the basis of the modeled 24-hour values are already quite conservative with the use of maximum potential, rather than actual emissions. Table 3.11 and accompanying text should be revised to indicate clearly the context of the information that is being presented (i.e., averaging period) and to remove any implication that SRS air toxic emissions pose unacceptable risk to the public, or that (implicitly) the SCDHEC standards to not adequately protect public health. The DEIS is wrong to state (page 3-54, lines 24-25) that any of the modeled-estimated concentrations (24-hour) from the 1998 submittal to SCDHEC exceeds ambient standards. The SCDHEC Air Pollution Control Regulation 61-62.5, Standard 8, states that model estimated concentrations for pollutants with a zero standard are to be rounded to the hundredths decimal place. By applying this guidance to the four pollutants for which the SRS allegedly exceeds the standard (see Table 3.11), the maximum site boundary concentration becomes 0.00. These pollutants, therefore, meet the SCDHEC standard of 0.00 in each case.
30	3.10.4.2	3-54/ 34-36	However, emissions of the pollutants listed in Table 3.11 may require further investigation by the SRS to determine that ambient levels are not of concern with respect to human health impacts. Soil would be further sampled for radioactive contamination before excavation begins at the site.		Suggestions by NRC that DOE take any actions for emissions not regulated by NRC are beyond the statutory scope of NRC and should be deleted from the DEIS.
31	4.3.1.1.1	4-8/ 1-2		Letter from P. Hastings (DCS) to Cheryl Trotter (NRC), 29 October 2002, Responses to the Request for Additional Information on the Environmental Report, Revisions 1&2, DCS-NRC-0001.16; Attachment 26, Plutonium Project Pre-construction Environmental Report	The 29 October 2002 correspondence from DCS to NRC responding to requests for additional information included the results of the "further sampling" referred to in the DEIS. The DEIS should have included the results of this report which confirm the previous DCS conclusion that there are no significant concentrations of radioisotopes or chemicals in the soil, that would be hazardous to construction worker health.

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32	4.3.1.1.2	4-8 / 42 E-16 / 40	... the MEI dose ... was estimated from inhalation exposure. Facility workers may also receive an internal dose.		Internal exposures result from breaches of containment and should be included in accident impacts, not normal operations.
33	4.3.1.2.1	4-11 / 42-45	Exposure to hazardous materials used during construction (e.g., paints, solvents) could be kept to a minimum by following good engineering practices, such as ensuring good ventilation and cleaning up small chemical spills as soon as they occur.		Exposure to hazardous materials used during construction will be minimized by following applicable OSHA regulations and precautions. No additional mitigations are necessary. Rather, the DEIS should state that exposure to hazardous materials used during construction will be minimized by following applicable OSHA regulations and precautions.
34	4.3.1.2.1	4-12 / 3-6	At this time, however, available data are insufficient to determine whether subsurface soil contamination is present in the proposed construction area. Groundwater contamination exists below the site of the proposed facilities. However, the soils overlying the aquifer are not expected to be contaminated.	Letter from P. Hastings (DCS) to Cheryl Trotter (NRC), 29 October 2002, Responses to the Request for Additional Information on the Environmental Report, Revisions 1&2, DCS-NRC-0001.16; Attachment 26, Plutonium Project Pre-construction Environmental Report	This statement is incorrect. The 29 October 2002 correspondence from DCS to NRC responding to requests for additional information included the results of the "further sampling" referred to in the DEIS. The DEIS should have included the results of this report which confirm the previous DCS conclusion that there are no significant concentrations of radioisotopes or chemicals in the soil, that would be hazardous to construction workers health.
35	4.3.1.2.2	4-12 / 19-21	During operations, the proposed MOX facility would use about 30 chemicals for processing, mostly for aqueous polishing to remove impurities from the plutonium (DCS 2002a, Table 3-2), the chemicals would include dodecane, hydrazine, hydrogen peroxide, hydroxyl amine nitrate, nitric acid, nitrogen, nitrogen tetroxide, and tributyl phosphate.		DEIS list is missing oxalic acid, sodium hydroxide, and sodium carbonate all of which were listed in MFFF ER Table 3-2.
36	4.3.1.2.2	4-12 / 36-37	However, the workplace environment would be monitored to ensure that airborne chemical concentrations were below applicable occupation exposure limits.		Exposure to hazardous chemicals used during operations will be minimized by following applicable OSHA regulations and precautions. No additional mitigations are necessary. Rather, the DEIS should state that exposure to hazardous materials used during operations will be minimized by following applicable OSHA regulations and precautions.
37	4.3.1.2.2	4-13 / 20-22	During permitting of the proposed MOX facility, demonstration that operational hydrazine emissions would be limited to very low levels that would not cause adverse health impacts to members of the public or SRS employees would		Hydrazine emissions from the MFFF will be subject to South Carolina Department of Health and Environmental Control regulations. No additional mitigations are necessary, DCS will comply with

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38	4.3.2.	4-23 / 9	be conducted. ...increments for SO ₂ and PM ₁₀ .		SCDHEC air quality regulations. NO ₂ is omitted from the discussion. The sentence should read: "...increments for SO ₂ , PM ₁₀ , and NO ₂ ."	86-42
39	4.3.3.1.2 and 5.2.2	4-25 / 13-14 and 5-7 / 33-35	Nonhazardous wastewater would be treated if necessary and discharged to the F-Area process sewer system that connects to the SRS Effluent Treatment Facility	ER pg 3-18, "The uncontaminated HVAC condensate is discharged to the stormwater system in accordance with SCDHEC standard stormwater permit conditions. The remaining nonhazardous wastewater is discharged to the SRS F-Area sanitary sewer system that connects to the CSWTF."	Nonhazardous wastewaters, except for traditional sanitary wastewater, will either be sent to an appropriate permitted treatment facility at SRS, or, in the case of runoff and uncontaminated HVAC condensate, be discharged directly to a permitted NPDES outfall. Sanitary wastewater will be sent to the WSRC Central Sanitary Waste Treatment Facility.	86-43
40	4.3.4.1	4-26 / 37-40	Hazardous (liquid) wastes that would be generated would be similar to those expected during the construction of any industrial facility. Examples of these wastes include liquids (such as motor oil), batteries, and other machinery-related products, cleaning products, and other chemicals (such as insecticides and pesticides).		Not all examples listed (i.e. batteries) are liquid.	86-44
41	4.3.4.1	4-27 / 6	Liquid nonhazardous waste from MOX = 178 m ³ /yr (47,000 gal/yr)	ER Table 5-6 Liquid nonhazardous waste from MOX = 47,000 yd ³ /yr	There appears to be an error in the unit used in the DEIS. The correct value is 47,000 yd ³ /yr (9.5 million gallons/yr or 36,000 m ³ /yr).	86-45
42	4.3.4.1 and 4.3.4.2	4-28 / 12 Table 4.10	MOX nonhazardous construction waste = 178 m ³ /yr	ER Table 5-6 Liquid nonhazardous waste from MOX = 47,000 yd ³ /yr	See comment regarding section 4.3.4.1, p. 4-27, line 6. Correct volume is 36,000 m ³ /yr.	88-46
43		4-28 / 12 Table 4.10 4-30 / 12 Table 4.11	SRS treatment capacity for nonhazardous liquid waste = 276,000 m ³ /yr. (73 Mgal/yr)		Value is wrong. SRS treatment capacity (CSWTF) is provided in the ER on page 4-43 (1.1M gals/day) or Table 5-6, p. 5-80, 1.35M cu. yds/yr (273M gal/yr). Permitted capacity is 1.05M gal/yr. SPD EIS Table 3-41 reports CSWTF capacity as 1.45 Mm ³ /yr (383 Mgal/yr). Recommend use of 273 Mgal/yr value from Table 5-6.	86-47
44		4-28 / 12 Table 4.10 4-30 / 12 Table 4.11	Storage and disposal of nonhazardous liquid waste are shown as NA with footnote h in Table 4.10 and footnote i in Table 4.11		Delete footnote. Nonhazardous liquid waste (sanitary sewage) is not stored and is released to site streams after treatment. No footnote needed.	86-48
45	4.3.4.2	4-29 / 2	...to produce a solid TRU waste matrix similar to that accepted for disposal at WIPP		The solid TRU waste form will be certified to comply with the WIPP Waste Acceptance Criteria. The use of the word "similar" implies some differences and issues. Recommend rewording to say the process will produce a solid TRU waste "suitable" for disposal at	86-49

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
46	4.3.4.2	4-31 / 19	Wastes of this type are estimated to be about 35% of the capacity of the Central Sanitary Wastewater Treatment Facility		WIPP. The 35% value is apparently calculated by NRC from table 4.11, page 4-30, line 12. This is incorrect because treatment of waste from MFFF, PDCF, and WSB requires much less than 35% of capacity. The correct value is closer to 10% (about half of the 'nonhazardous liquid waste' from these facilities consists of 'non-process utility waters that will be released directly to permitted NPDES outfalls).
47	4.3.5.1.1	4-32/ 36-40	The events for which accident consequences were evaluated in this DEIS are internal fire, explosion, load handling event, criticality, and chemical releases. The methods employed to analyze accident consequences were based on conservative assumptions and were intended to provide a comprehensive, bounding analysis for all potential events up to and including design basis accidents.	a) The U.S. Supreme Court ruled in <i>Roberts v. Methow Valley</i> , 490 U.S. 332 (1989), that NEPA does not require a worst-case analysis. The Court also acknowledged that the CEQ expressly withdrew the requirement to perform a worst-case analysis from its regulations. Similarly, in denying the admission of contentions relating to the inclusion of the environmental impacts of a terrorist attack, the Commission confirmed that the spirit of NEPA is not to require inclusion of speculative events. b) <i>Environmental Review Guidance for Licensing Actions Associated with WAMS Programs</i> (Draft NUREG-1748), pg 77-78, states, "The following information should be included in the EIS: ... Comparison of the offsite dose consequences and resulting health effects for reasonably foreseeable (i.e. credible) accidents as calculated by the applicant..." c) MFFF ER Rev 2, pg 5-42 states, "The MFFF processes are designed to preclude explosions through the use of reliable engineering features and administrative controls. ... Thus, explosions at the MFFF resulting in a radioactive material release are remote and speculative and need not be considered under NEPA. ... Although explosion events resulting in a radioactive material release at the MFFF are remote and speculative events, a hypothetical explosion event	See comments related to Section 4.3.4.1 and 4.3.4.2 Tables 4.10 and 4.11. The bounding accident for the Mixed Oxide Fuel Fabrication Facility, an explosion in an aqueous polishing cell, was not properly characterized. The discussion provided in Section 4.3.5.2 and Table 4.12 fails to explain that the accident is prevented through the use of PSSCs. Additionally, both NUREG-1748 and the DEIS [pg 4-32] limit accident evaluations to "reasonably foreseeable (credible) accident" and design basis accidents. The DEIS statements on page 4-36, lines 10-18 imply that, in response to a comment, the NRC Staff has selected a "worst case" accident. This is contrary to the Commission, which in its Order CLL-02-25, specifically notes that the "rule of reason" excludes "worst case scenarios." Furthermore, because the Staff could not predict the mitigative actions that would be taken, the Staff assumed that no mitigative actions would be taken. This is in direct conflict with NEPA's "rule of reason." The inclusion of a worst-case impact, even though requested by commenters, is contrary to the Staff's own guidance document, NEPA case law, and the Commission Order. The FEIS should clearly identify that the accidents discussed are "highly unlikely" accidents which are prevented. MFFF, as a facility within SRS, would implement the SRS emergency response procedures, the DEIS should assume that
	4.3.5.2	4-36/ 10-18	The scoping process identified concerns about the impacts from accidents, and commenters requested that the worst-case impacts be presented. Whether an individual would be exposed to contaminated soil and food would depend upon the specific protective actions that the applicant and government agencies might take following the accident. If protective actions were taken, the component of dose attributable to exposure to contaminated soil and consumption of contaminated food would be effectively mitigated. However, the actions that would be taken cannot be predicted at this time, so both the early phase and unmitigated intermediate and late phase consequences (corresponding to one year of exposure to the contaminated environment) are provided in this DEIS.		

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48	4.3.5.2	4-33, 39 & 40 Table 4.14 & 4.15		is evaluated.” d) NRC Order CLI-02-25, pg 10-11 states, “Grappling with this concept, various courts have described it as a ‘rule of reason,’ or ‘rule of reasonableness,’ which excludes ‘remote and speculative’ impacts or ‘worst case’ scenarios.”	DCS, DOE, and regulators such as NRC and the States would notify the public of such a release and warn the public not to consume garden crops (both of which are reasonable foreseeable mitigative actions). The DEIS should provide more reasonable consequence projections based on DOE and other regulator intervention. Population and MEI ingestion dose from Tritium release seems high. Suggest revisiting assumptions that were input into model to ensure proper application of methods. The inclusion of an unmitigated food consumption pathway following an accident is more conservative than necessary. Interdiction is established in SRS site emergency response procedures and therefore calculation of ingestion doses is not appropriate.
49	4.3.5.2	4-36/20-22	Population doses were calculated for up to a distance of 80 km (50 mi) from the release point for 10 downwind distances and 16 wind directions. Radiation doses were calculated for the following receptors for accident conditions:	Letter from Dr. William Glaze (EPA Science Advisory Board) to Christine Todd Whitman (EPA Administrator), Review of ORIA’s Use and Adaptation of The GENII Version 2 Environmental Radiation Dosimetry System, EPA-SAB-RAC-ADV-01-002 “The RAC found the environmental transport modeling capabilities for air and surface water releases of radionuclides to be adequate for screening purposes but not necessarily appropriate for detailed analysis or emergency situations. ... The conservative nature of the code may lead to excessively conservative dose estimates (i.e., higher than more realistic assumptions might produce), resulting in unnecessarily costly controls and unnecessary expenditures in site cleanup operations. The RAC strongly encourages ORIA to provide more realistic bounds on their dose and risk estimates. ... [T]he straight-line Gaussian and Lagrangian-puff models were designed for “well-behaved” pollution transport from chimney “stacks” and do not apply to more critical scenarios involving fires, explosions and accidental or terrorist aerial releases of contaminants, which the EPA may be called	The DEIS’s accident consequences do not provide members of the public with realistic exposure scenarios because the NRC Staff did not use an appropriate model to evaluate dispersion of a highly unlikely MOX explosion event. The NRC used the GENII code to model this accident; the ER used the NRC’s MACCS2 code. The EPA Science Advisory Board in their evaluation of the GENII model for EPA use noted that “The conservative nature of the code may lead to excessively conservative dose estimates (i.e., higher than more realistic assumptions might produce), resulting in unnecessarily costly controls and unnecessary expenditures in site cleanup operations.” On page 10 of their report, the SAB specifically notes that, “... the straight-line Gaussian and Lagrangian-puff models were designed for ‘well-behaved’ pollution transport from chimney ‘stacks’ and do not apply to more critical scenarios involving fires, explosions and accidental or terrorist aerial releases of contaminants, which the EPA may be called on to evaluate. (emphasis added)” The NRC Staff used the GENII model for exactly the types of accidents that the SAB

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				on to evaluate."	<p>specifically noted the model should not be used.</p> <p>The GENII code makes a number of simplifying assumptions to make the calculation easier. While the GENII estimates would clearly bound the potential impacts, actual impacts from accidental releases would likely be orders of magnitude lower for both the short-term and 1-year doses. For example,</p> <ul style="list-style-type: none"> The GENII code evaluates the dose along the centerline of the plume and assumes that all individuals receive that dose. For the cases evaluated in the DEIS, the accident plumes would be narrow and not expose most of the downwind population to air concentrations nearly as high as the centerline of the plume. This assumption alone could result in collective dose consequences approximately a factor of 7 greater than those produced by MACCS2 depending on the plume characteristics. The principal author of the GENII code indicated that the GENII algorithms for acute releases were designed primarily for evaluating doses to nearby individuals. The July 2002 DOE guidance "Recommendations for Analyzing Accidents under NEPA", (Sect. 3.1 Scenario Development, Conservatism, page 7) indicates that using estimates of plume centerline concentrations may be appropriate for evaluating impacts to maximally exposed individuals, but would not be appropriate for evaluating population impacts (would overestimate impacts); sector-averaged plume concentrations would yield more realistic results for population impacts. The GENII code does not calculate the lateral dispersion of the plume and overlay that with detailed food production distributions. Similarly, the GENII code simply predicts the

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				<p>concentrations at the centerline of the plume and assumes food produced is exposed to air concentrations equal to those on the centerline of the plume for the entire plume passage. This simplification results in over prediction of the air contamination level that plants and animals might be exposed to by at least an order of magnitude.</p> <ul style="list-style-type: none"> The code does not realistically model the time-dependent harvesting of contaminated food. Instead, the model assumes that all food grown in the sector is harvested instantaneously just after the plume passes. This assumption may be defensible for some crops, but is extremely over-conservative for crops and animal products. An entire year's supply of milk or eggs (or meat or poultry) is not collected in one day. The animals re-equilibrate with air nearly as quickly as the plants. Even allowing for weekends and holidays, the assumption of 100% harvest is probably conservative by a factor of about 200 (it would be close to 365 if harvest was really continuous). The time-dependent consumption of contaminated food is not realistically modeled. <p>Each of these factors is multiplicative. Collectively, the simplifying modeling assumptions result in an over prediction of ingestion doses by several orders of magnitude.</p> <p>Since it is not possible to fulfill the basic NEPA responsibility of informing the public of the reasonably foreseeable environmental impacts of the proposed action with the GENII code, other codes developed specifically for modeling accident consequence should be used. DCS strongly recommends that a well-established accident consequence code with a strong</p>

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text
50	4.3.5.2	4-39/19-22	Table 4.14 under the sub-title "Proposed MOX Facility," the dose consequences and "Chance of LCF" for all accident events	<p>QA record, such as NRC's MACCS2, be used. The use of the GENII computer code to calculate the collective dose (person-Sv) in the DEIS for a single specific direction, without consideration of any other directions will not produce a site-representative 95th percentile collective dose. For the specific direction selected by the NRC (i.e., the most populated direction), the collective dose appears to be a factor of approximately 20 to 40 greater than the 95th percentile collective dose established from MACCS2 (or a factor of 40 to 80 greater when correcting the error in Table E.7, see comment below).</p> <p>This difference results in a factor of 40 to 80 increase in the reported dose consequences, which DCS believes is not representative of a 95th percentile result. In fact, the collective dose calculated by GENII in this one direction (WNW) is expected to result in a value greater than the 99.5th percentile collective dose produced by MACCS2. This is a result of several differences in these codes:</p> <ul style="list-style-type: none"> • GENII assesses the consequences to a single direction thereby not producing a site-representative collective dose. The collective dose cited in the DEIS, which is based on the most populous direction, is approximately 4 times greater than a weighted average of the 95th percentile results produced for each direction around the MFFF (as produced by GENII). • The decoupling of the sequential hourly meteorological data measurements by GENII, which uses joint frequency data instead, may allow for unfavorable meteorological conditions to occur for unrealistic durations (i.e., conditions which may occur several times a year, but not several hours in a row, and that produce unfavorable collective doses may be considered to

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text
51	4.3.5.2	4-40/17-20	Table 4.15 under the sub-title "Proposed MOX Facility," the dose consequences and "Chance of LCF" for all accident events	
<p>occur within a single analysis period by GENII).</p> <p>Hence, the collective dose results from GENII are considered overly conservative and not representative of a 95th percentile result for accidents involving the proposed MOX facility.</p> <p>The use of the GENII computer code to calculate X/Q values in the DEIS for a single specific direction, without consideration of any other directions will not produce a site-representative 95th X/Q. For the specific direction selected by the NRC (i.e., the direction with the nearest boundary to the MFFF), the X/Q appears to be a factor of approximately 4.5 greater than the 95th X/Q established from MACCS2.</p> <p>This difference results in a factor of 4.5 increase in the reported dose consequences which DCS believes is not representative of a 95th percentile result. In fact, the X/Q calculated by GENII in this one direction (NW) results in a value greater than the 99.5th X/Q calculated by MACCS2. This is likely a result of two differences in these codes:</p> <ul style="list-style-type: none"> • The aforementioned difference in establishing a site-representative X/Q (i.e., a result based on an analysis of a single direction vs. a result considering values from all directions). • The decoupling of the sequential hourly meteorological data measurements by GENII, which uses joint frequency data instead, that may allow for unfavorable meteorological conditions to occur for unrealistic durations (i.e., conditions which may occur several times a year, but not several hours in a row, and that produce large X/Q's may be considered to occur within a single analysis period by GENII). 				

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
52	4.3.5.2	4-38 through 4-40 Tables 4.13 through 4.15	Footnote. Latent cancer fatalities are calculated by multiplying dose by the FGR 13 health risk conversion factor of 0.06 fatal cancer per person-Sv (6x10 ⁻⁴ fatal cancers per person-rem)(Eckerman et al. 1999)	<p><i>Cancer Risk Coefficients for Environmental Exposure to Radionuclides</i>, pg iv, "The dose coefficients given in Federal Guidance Report No. 11 and Report No. 12 continue to be recommended for determining conformance with radiation protection guidance for Federal agencies issued by the President and will be updated in the future as warranted. ... Although the application of these [Federal Guidance Report No 13] risk coefficients for ... Environmental Impact Statements ... is encouraged to promote consistency in risk assessments, such use is discretionary. ... Also the coefficients are based on radiation risk models developed for the application to either low acute doses or low dose rate and should not be applied to accident cases involving high doses and dose rates in either prospective or retrospective analyses "</p> <p>MFFF ER – Appendix E, E.2.1, last sentence: The health risk conversion factors (expected health effects per dose absorbed) were taken from the 1990 <i>Recommendations of the International Commission on Radiological Protection</i> (ICRP 1991).</p> <p>Section E.4 states: "Radiation doses to populations... were multiplied by the ICRP-60 (ICRP 1991) conversion factors and the estimated number of shipments to produce risk estimates in units of LCFs. The ICRP-60 health risk conversion factors are 0.0005 and 0.0004 fatal cancer cases per person-rem for members of the public and workers, respectively."</p>	<p>Consideration of these differences, leads DCS to believe that the results from GENII are overly conservative and not representative of a 95th percentile result.</p> <p>The Draft EIS does not explain why it relies on EPA Federal Guidance Report 13, rather than international standards such as the ICRP for cancer risk conversion factors. Federal Guidance Report 13 clearly states that the conversion factors in Federal Guidance Report 12 still continue to be recommended for radiation protection. The EPA Federal Guidance Report 13 relies on new studies that have not yet been incorporated into the international standards. This results in an order of magnitude higher risk (10⁴) than the studies presented in international standards (e.g. ICRP documents) (10⁻⁵). Use of the EPA data, with the other unrealistically and overly conservative assumptions, paints an unrealistic potential impact from the proposed action.</p>
53	4.3.5.2	4-41/13-15	An estimated collective dose of 400 person-Sv (40,000 person-rem) was projected to be received by a population of approximately 309,900 persons extending out to 80 km (50 mi) to the west-northwest of the proposed MOX facility.		<p>The meteorological conditions for the MFFF hypothetical explosion involves winds directed to the west-northwest. The meteorological conditions for the PDCF hypothetical tritium release involves winds</p>

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		4-41/24-25	The largest 1-year collective population dose was estimated to be 6,100 person-Sv (610,000 person-rem) from a hypothetical tritium release from the PDCF. This impact was calculated for winds blowing toward the southwest , where 18,010 people reside.		directed to the southwest. It is not intuitively obvious why both accident evaluations do not have the same meteorological conditions.
54	4.3.5.3	4-45/8	Table 4.16 under the sub-title "Proposed MOX Facility," hydrazine hydrate TEEL values		The TEEL values given for hydrazine hydrate are the TEEL values for hydrazine hydrate, aqueous solutions. DCS used the TEEL values for hydrazine monohydrate. The TEEL values for hydrazine monohydrate are: TEEL-1 0.0075 mg/m ³ TEEL-2 0.06 mg/m ³ TEEL-3 50 mg/m ³
55	4.3.5.3	4-45/9-18	Table 4.16 under the sub-title "Proposed MOX Facility," the modeled concentrations and distances to reach the TEEL limits for: Hydrazine / sodium hydroxide Hydrazine / hydroxylamine nitrate Hydrogen peroxide Hydroxylamine nitrate Nitric acid		The DEIS appears to contain an erroneous calculation of solute mole fraction and vapor pressure for the listed chemicals (see comment on Appendix E below), which has resulted in significantly larger estimates of the modeled airborne concentrations and distances to reach the TEEL limits.
56	4.3.5.3	4-45/19	Table 4.16 under the sub-title "Proposed MOX Facility," the maximum storage amount per container for nitrogen tetroxide		This table presents a larger volume of nitrogen tetroxide (i.e. 240 gallons or 912 liters) in a storage/transportation cylinder than is planned to be used at the MFFF. DCS intends to use a storage/transportation cylinder containing 2000 lbm (907 kg) of nitrogen tetroxide. This corresponds to 630 liters of nitrogen tetroxide.
57	4.3.6.1	4-47/ 16-18	Decommissioning involves the removal of the facility safely from service and reduction of residual radioactivity to a level that permits release of the property for unrestricted use.		After "unrestricted use" add "or restricted use."
58	4.3.6.1	4-48/ 1-8	Although impacts of decommissioning the facilities were not included in the ER (DCS 2002a), the scoping process did identify decommissioning as a significant issue; therefore, the potential impacts of decommissioning the facilities are	Sections 5.3.4, Projected Environmental Impacts of Deactivation, and 5.3.5, Projected Environmental Impacts of Decommissioning.	The impacts of decommissioning the MFFF were included in the MFFF Environmental Report, Rev. 1 &2, and responses to two RAI questions (July 12, 2001).

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59	4.3.6.3.2	4-51/32-36 and 4-52/11-13	presented below. The section on waste management indicates that the quantities and classification of waste types cannot be determined at this time, but the costs are based on "...the volumes and types of waste generated during the decommissioning of those buildings..."	5.3.5, Projected Environmental Impacts of Decommissioning.	There appears to be an inconsistency in the decommissioning waste section and the costs section. Although the section on waste management indicates that the quantities and classification of waste types cannot be determined at this time, the costs are, nevertheless, based on "...the volumes and types of waste generated during the decommissioning of those buildings..."
60	4.3.6.3.2	4-52/17-18	...and costs associated with borrowing funds to finance the project.	RAI Question 50, July 12, 2001, stated that the projected costs did not include site security, residue and fuel deactivation and removal, environmental programs, or overhead management and financial activities.	Although DCS is the licensee, the current contract calls for deactivation of the facility and return to DOE for decommissioning or reuse. It is improper to include the costs associated with borrowing funds to finance the project since DOE is a government agency.
61	4.3.7.1	4-53/ 27-36	The analysis was based on guidelines for environmental justice analyses described in <i>Environmental Review Guidance for Licensing Actions Associated with NMSS Programs</i> (NRC 2001). An 80-km (50-mi)-diameter buffer zone around F-Area at the SRS was used as the basis for the analysis so as to include potential adverse human health or socioeconomic impacts related to the construction and operation at the SRS that might occur at greater distances than have been used in other analyses. On the basis of information received during scoping meetings at the site, a larger area was also used to address the concern that any accidental releases to the environment would also have the potential to affect fishing resources that might be used for subsistence by low-income and minority population groups some distance downstream of the site (see Appendix I).	a) <i>Environmental Review Guidance for Licensing Actions Associated with NMSS Programs</i> (Draft NUREG-1748), Appendix B states, "Guidelines for determining the area for assessment are provided in the following discussion. If the facility is located within the city limits, a radius of approximately 0.6 miles (1 square mile) from the center of the site is probably sufficient for evaluation purposes; however, if the facility itself covers this much area, use a radius that would be equivalent to approximately 0.6 miles from the site. If the facility is located outside the city limits or in a rural area, a radius of approximately 4 miles[footnote 3] (50 square miles) should be used. [footnote 3 - Because of the nature of NMSS facilities a 50 mile radius is not automatically required as is the case for NRR facilities.] b) Letter from M. Galloway (NRC) to R. Ihde (DCS), 11 Dec. 2000, states, "The SRP states that the description of the affected environment should include '[s]ocioeconomic information, including that for low income and minority populations within a 50-mile radius.' This dimension is incorrect. DCS should follow the Nuclear Materials Safety and Safeguards Policy and Procedures letter 1-50, Rev 2, which states,	Although the DEIS states that the guidance in NUREG-1748 was followed, the DEIS, by using a 50-mile radius for environmental justice impacts does not follow the guidance of NUREG-1748, which proscribes a radius of 4 miles. Additionally the DEIS is directly contrary to specific guidance provided by NRC to DCS in the 11 Dec. 2000 letter from M. Galloway to R. Ihde. This guidance was that the 50-mile radius in NUREG-1718 was incorrect and DCS should follow the NMSS Policy and Procedures letter proscribing a 4-mile radius. The DEIS should conform to NRC guidance and only analyze EJ impacts within a 4-mile radius of the proposed MOX Facility. If the Final EIS will contain a larger area for EJ analyses in an effort to be overly conservative, the DEIS should acknowledge this, but not tie EJ mitigation to overly conservative analyses. In other words, if no EJ mitigation measures would have been imposed had the Draft EIS adhered to the applicable Staff EJ guidance, then the fact that a more conservative EJ assessment was performed should not be the basis for imposing such measures.

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62	4.3.7.3.3	4-57/42-45	In the unlikely event of a tritium release at the PDCF or an explosion at the proposed MOX facility, the communities most likely affected would be minority or low income, given the demographics within 80 km (50 mi) of the proposed MOX facility.	“...if the facility is located outside the city limits or in a rural area, a 4-mile radius (50 square miles) should be used.”	As established in our comments to DEIS 4.3.5.2, the accident scenario relied upon to justify the conclusion that there are disproportionate impacts to low-income or minority populations is flawed. NRC should validate the accident scenario using an appropriate model and proper “reasonably foreseeable” assumptions before asserting that there are any impacts to low-income or minority populations.
63	4.4.1.1	4-61/32-end	Assessment of the transport of plutonium pit material considered shipments from existing storage sites to the SRS. Of the 34 MT (37.5 tons) of plutonium expected to be processed into MOX fuel, 7.3 MT (8.0 tons) would be initially available at the SRS site. Under a separate action (DOE 2002a), approximately 6 MT (6.6 tons) of surplus plutonium is to be shipped from RFETS to SRS (Roberson 2002), which currently has 1.3 MT (1.4 tons) (DOE 1996a). The proposed action would therefore require the shipment of another 26.7 MT (29.4 tons) of plutonium, approximately 21.3 MT (23.4 tons) of which is expected to come from the Pantex Plant in Texas. This DEIS analyses the transportation impacts of the Pantex shipments and the remaining 5.4 MT (5.9 tons) of plutonium whose origins are not yet determined. However, the remaining plutonium would come from storage at other DOE sites. For the purposes of this DEIS, the analysis assumed that the remaining 5.4 MT (5.9 tons) of plutonium would come from the Hanford Site, the plutonium storage site farthest from the SRS. Thus, the actual transportation impacts are expected to be lower than those presented here because some plutonium from closer storage sites is expected to be used.		The impacts resulting from shipping 50 metric tons of surplus plutonium to the SRS were covered in the DOE’s SPD EIS. NRC should have simply deferred to that analysis instead of reanalyzing impacts already evaluated by another federal agency.
64	4.4.1.2.1	4-63/22	0.040 mSv/h for TRU waste		Value for TRU appears to be a great deal higher than experience.
65	4.4.1.2.1	4-64, Table	Footnote “d”. Latent cancer fatalities are calculated by	Cancer Risk Coefficients for Environmental Exposure	The Draft EIS does not explain why it relies on EPA

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		4-20, Lines 39-40	<p>multiplying dose by the FGR 13 health risk conversion factor of 0.06 fatal cancer per person-Sv (6x10⁻⁴ fatal cancers per person-rem)(Eckerman et al. 1999)</p>	<p><i>to Radiomieloides</i>, pg iv, "The dose coefficients given in Federal Guidance Report No. 11 and Report No. 12 continue to be recommended for determining conformance with radiation protection guidance for Federal agencies issued by the President and will be updated in the future as warranted. ... Although the application of these [Federal Guidance Report No 13] risk coefficients for ... Environmental Impact Statements ... is encouraged to promote consistency in risk assessments, such use is discretionary. ... Also the coefficients are based on radiation risk models developed for the application to either low acute doses or low dose rate and should not be applied to accident cases involving high doses and dose rates in either prospective or retrospective analyses"</p> <p>MFFF ER – Appendix E, E.2.1, last sentence: The health risk conversion factors (expected health effects per dose absorbed) were taken from the 1990 <i>Recommendations of the International Commission on Radiological Protection</i> (ICRP 1991).</p> <p>Section E.4 states: "Radiation doses to populations ... were multiplied by the ICRP-60 (ICRP 1991) conversion factors and the estimated number of shipments to produce risk estimates in units of LCFs. The ICRP-60 health risk conversion factors are 0.0005 and 0.0004 fatal cancer cases per person-rem for members of the public and workers, respectively."</p>	<p>Federal Guidance Report 13, rather than international standards for cancer risk. Federal Guidance Report 13 clearly states that the conversion factors in Federal Guidance Report 12 still continue to be recommended for radiation protection. The EPA, Federal Guidance Report 13 relies on new studies that have not yet been incorporated into the international standards. This results in an order of magnitude higher risk (10⁻⁶) than the studies presented in international standards (e.g. ICRP documents) (10⁻⁵). Use of the EPA data, with the other unrealistically and overly conservative assumptions, paints an unrealistic potential impact from the proposed action.</p>
66	4.4.2	4-67, Lines 20-21	<p>The impacts of the general conversion process are described in the environmental assessment for the last license renewal of that facility (NRC 1977).</p>		<p>Incorrect reference cited – NRC 1977 (NUREG-0170) is the FEIS for all commercial types of radioactive material shipments --not specific for the GE conversion facility in Wilmington, NC.</p> <p>Why does this impact need to be discussed since the MOX fuel will be replacing an equal quantity of low-enriched uranium fuel that would also undergo this conversion process. Comment is also relevant for the impacts of spent MOX fuel to the geologic repository</p>
67	4.4.2	4-67, Lines 16-37	<p>Conversion of Uranium Hexafluoride to Uranium Dioxide</p>		

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68	4.5.1	4-70 / 42-44, Tables 4-6, 4-8, and 4-23.	Impacts to air quality resulting from operations of new facilities and roads would result in changes to regional air quality as represented by the SRS baseline in Table 4.23.		(replacing a like quantity of low-enriched uranium fuel). If the NRC Staff feels compelled to retain these impacts, the DEIS should note that these impacts replace similar avoided impacts from the conversion and disposal of low enriched uranium fuel and that the net impact is zero. The 'SRS baseline' concentrations summarized in Table 4-23 do not represent regional air quality – only representative air monitoring data or regional modeling studies can characterize regional conditions. The 'SRS baseline' data are a hypothetical set of values that are based on modeling maximum potential emissions of SRS sources and are applicable only as a screening level for evaluating and managing Savannah River Site air permits. This section of text must be revised accordingly. In addition, footnotes to the columns 'SRS Maximum' in Tables 4-6, 4-8 or the column 'SRS Baseline' in Table 4-23 should be modified to state that the listed values are hypothetical levels based on maximum potential (i.e., permitted) emissions from SRS sources and do not necessarily quantify actual air quality conditions.
69	4.7.1	4-92 / 29 4-92 / 36	The nonhazardous liquid waste generated would represent less [than] about 35% of the SRS capacity Nonhazardous liquid waste generated by facility operations are estimated to be about 35% . . .		The 35% value is apparently calculated by NRC from Table 4.11, page 4-30, line 12. This is incorrect because treatment of waste from MFFF, PDCF, and WSB requires much less than 35% of capacity. The correct value is closer to 10% (about half of the 'nonhazardous liquid waste' from these facilities consists of non-process utility waters that will be released directly to permitted NPDES outfalls). See also comments related to Section 4.3.4.1 and 4.3.4.2 Tables 4.10 and 4.11.
70	5.2.1 – Table 5-1	5-2 / 13-14	Soils on-site will be graded or moved to create a uniform elevation that would reduce soil erosion. DCS	40 CFR 1508.20 "Mitigation" includes: (a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or	Grading the site to a uniform elevation is an inherent aspect of the MFFF design (the grading would be the same regardless of the MFFF location). Consequently, the grading is incorrectly identified as a "mitigation."

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71	5.2.1 – Table 5-1	5-2/ 19-21	Accidental spills during construction shall be promptly cleaned up as required by DCS's Spill Prevention Control and Countermeasures Plan.	<p>magnitude of the action and its implementation.</p> <p>(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.</p> <p>(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.</p> <p>(e) Compensating for the impact by replacing or providing substitute resources or environments</p>	86-74
72	5.2.1 – Table 5-1	5-2/ 23-24	A Sediment Control Plan will be developed prior to disturbance of areas exceeding 2 ha (5 acres).		86-75
73	5.2.1 – Table 5-1	5-2/ 31-34	Good engineering practices, such as the use of straw bales or siltation fences adjacent to areas disturbed during construction, will be used to control sediment and limit runoff to Upper Three Runs Creek.		86-76
74	5.2.1 –	5-2/ 43-45	Dust suppression measures such as watering will be used		86-77
				<p>MFFF ER page 7-13, Table 7-1 specifically notes that a Spill Prevention Control and Countermeasures Plan is not required for the MFFF. DCS indicated in ER Section 7.2.1.2 that prior to operations a Spill Prevention Control and Countermeasures Plan will be developed. DCS did not commit to a Spill Prevention Control and Countermeasures Plan during construction, and it is inappropriate to levy this as a mitigation requirement when the SCDHEC regulation clearly does not require it.</p> <p>MFFF ER page 7-13, Table 7-1 specifically notes that a Stormwater Pollution Prevention Plan will be developed for the MFFF not a Sediment Control Plan. The DEIS should correctly identify the mitigative action as the implementation of the Stormwater Pollution Prevention Plan in compliance with SCDHEC regulations.</p> <p>MFFF ER page 7-13, Table 7-1 specifically notes that a Stormwater Pollution Prevention Plan will be developed for the MFFF, which is more comprehensive and responsive to SCDHEC enabling regulations. Details of this comprehensive plan are contained in ER Section 7.2.1.2 paragraphs 5 and 6. DCS has not stated which specific controls will be part of the Stormwater Pollution Prevention Plan. The mitigative action identified by the DEIS should be limited to implementation of a Stormwater Pollution Prevention Plan in compliance with SCDHEC regulations.</p>	86-78

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	Table 5-1		during construction to reduce fugitive dust emissions by at least 50%.	Control Plan will be developed to provide assurance that fugitive dust emissions will be effectively managed and minimized throughout MFFF construction.”	Environmental Control does not specify requirements for reduction of fugitive construction dust. As noted in the MFFF ER, DCS will have a Construction Emissions Control Plan which will implement a number of different good engineering practices to reduce fugitive dust emissions. The MFFF ER does not identify specific actions or emissions reductions. The mitigative action specified in the DEIS should be limited to compliance with appropriate SCDHEC air quality regulations.
75	5.2.1 – Table 5-1	5-2/ 46-49	Particulate emissions from the silo hopper and concrete mixer used during the cementation process to construct the WSB shall be reduced by 90%.		The MFFF ER identifies that the concrete batch plant will be subject to the provisions of a South Carolina Department of Health and Environmental Control air quality permit. The concrete batch plant will meet the conditions of that permit. The mitigative action specified in the DEIS should be limited to compliance with appropriate SCDHEC air quality regulations.
76	5.2.1 – Table 5-1	5-3/ 1-12	Prior to construction, sites will be surveyed for plants and nests of migratory birds. To ensure compliance with the Migratory Bird Treaty Act and to provide additional protection for other bird species of concern (e.g., raptors), the following steps should be taken: (1) obtain a list from the Department of the Interior of migratory birds protected by the Act; (2) determine if protected migratory birds or their nests exist in the areas to be cleared for the proposed action; and (3) if protected birds or their nests or eggs are present, consult with the Department of the Interior for the appropriate precautions to be taken. This consultation should be undertaken as far in advance of construction as practicable.		The MFFF ER 4.6 describes the ecological habitat and the habitat surveys conducted prior to construction activities. MFFF ER Appendix A, pages A-25 and A-26 provides letters of negative declaration from the U.S. Fish and Wildlife Service that the MFFF construction and operation will not affect resources under the jurisdiction of the U.S. Fish and Wildlife Service. All necessary ecological surveys are complete. No sensitive species or nests of migratory species are present. These precautionary and mitigative actions presented in the DEIS are misleading and unnecessary.
77	5.2.1 – Table 5-1	5-3/ 20-21	Consultation and coordination with state and federal natural resource and wildlife agencies shall be conducted prior to any site disturbances to ensure that all potential sensitive species (including candidate and listed species) are protected to the maximum extent possible. Environmental supervisors shall be present during vegetation clearing to ensure that impacts are held to a minimum.		As noted in DEIS 3.6.1 (pg.3-34) the SRS forests are managed by the U.S. Forest Service. The removal of

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78	5.2.1 – Table 5-1	5-3/ 29-32	The loss of the existing storm-water basin near the southern boundary of the proposed site would be compensated for by construction of a new basin that would provide more viable aquatic habitat.	Letter from P. Hastings (DCS) to Document Control Desk (NRC), 29 October 2002, DCS-NRC-000116, Responses to the Request for Additional Information on the Environmental Report 1&2, Attachment 14a, letter from D Osteen (SRS) to F. Veal (USA C of E), Waters of the United States Walkdown on July 16, 2002	As noted in Attachment 14a of the letter from P. Hastings to the NRC Document Control Desk, the U.S. Army Corps of Engineers concluded that the existing storm-water basin is not part of the waters of the United States. Consequently, it is not appropriate to specify any mitigative action.
79	5.2.1 – Table 5-1	5-3/ 34-36	Measures shall be taken to protect trees not selected for removal. Any trees or other landscape features accidentally scarred or damaged should be replaced.		As noted in DEIS 3.6.1 (pg.3-34) the SRS forests are managed by the U.S. Forest Service. The removal of trees and protection of trees not designated for removal will be under the direction of the U.S. Forest Service. The mitigative action specified in the DEIS should be limited to compliance with U.S. Forest Service regulations.
80	5.2.1 – Table 5-1	5-3/ 38-42	Reclamation plans shall be developed for laydown areas and other construction areas that will not be occupied by structures, parking lots, or roads. Reclamation will include removal of all temporary construction features, stabilization of soils, and reseeded with appropriate plant species.		Property beyond the 41-acre MFFF site is managed under the DOE jurisdiction for the SRS. Land reclamation will be in accordance with DOE directives. The mitigative action specified in the DEIS should be limited to compliance with appropriate DOE policies for reclamation of construction areas.
81	5.2.1 – Table 5-1	5-4/ 7-12	<ul style="list-style-type: none"> Monitoring of ground-disturbing construction activities will be conducted for the two directly affected eligible archaeological sites to complete obligations set forth in the data recovery plan for sites. Awareness training will be conducted for workers so they do not disturb eligible archaeological sites. Restrictions will be established regarding where heavy machinery is allowed. Periodic monitoring of nearby eligible archaeological sites will be conducted to check for possible erosion. Additional mitigation measures, such as avoidance agreements, will be determined in consultation with the SCSHPO. 	Letter from D.Nulton (DOE) to C. Ahrams (NRC), 25 Sep 2001, Designation of Department of Energy as the Lead Agency for Mitigation at National Historic Preservation Act Eligible Site Within the Proposed Location of the Mixed Oxide Fuel Fabrication Facility	Because NRC and DOE have designated DOE as the lead agency for mitigation under the NHPA, NRC specified mitigation actions are not appropriate. The mitigative action specified in the DEIS should be limited to compliance with DOE PMOA policies for archaeological management of construction activities.
82	5.2.1 –	5-4/ 34-39	Construction workers will be protected from inadvertent	Letter from P. Hastings (DCS) to Cheryl Trotter	The 29 October 2002 correspondence from DCS to

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	Table 5-1		chemical and radiological exposures by soil testing and analysis prior to excavation to ascertain that levels of inorganic and/or organic chemicals in soils would not present a health hazard during construction activities.	(NRC), 29 October 2002, Responses to the Request for Additional Information on the Environmental Report, Revisions 1&2, DCS-NRC-000116; Attachment 26, Plutonium Project Pre-Construction Environmental Report	NRC responding to requests for additional information included the results of the Plutonium Project Pre-Construction Environmental Report, including the results of soil analyses at the MFFF site. The DEIS should have included the results of this report which confirm the previous DCS conclusion in the MFFF ER that there are no significant concentrations of radionuclides or chemicals in the soil that would be hazardous to construction workers health. Consequently, the mitigative action is misleading and unnecessary.
	5.2.8	5-11/40-43	During construction, workers could be adversely affected by exposure to soil or groundwater previously contaminated by radioactivity or chemicals. Impacts from contaminated soil would be mitigated by conducting further sampling of the soil for radioactive contamination before excavation begins at the site.		
83	5.2.1 – Table 5-1	5-5/ 1-5	During licensing of the proposed MOX facility, DCS should demonstrate that the offgas treatment system will limit hydrazine to very low levels that would not cause adverse health impacts to members of the public or SRS employees.		Hydrazine emissions from the MFFF will be subject to South Carolina Department of Health and Environmental Control regulations. The mitigative action specified in the DEIS should be limited to compliance with SCDHEC air quality regulations. Regarding potential accidents, the offgas treatment system (or any ventilation system at the MFFF) is not required to be credited to reduce the hydrazine concentration in air after a spill because calculations indicate that releases that originate indoors (inside the reagent building or the MOX Building) do not result in concentrations that exceed any TEEL limits for the site worker or public. There appear to be errors in the DEIS hydrazine airborne concentration calculation that leads to this conclusion (see comments on Appendix E.1) and furthermore, crediting the release as an indoor release, which reduces the air speed across the surface of the spilled solution, provides sufficient reduction in the airborne concentration to result in acceptable consequences without mitigation by any offgas treatment system.
84	5.2.1 – Table 5-1	5-5/ 18-40 5-6/ 1-11	• DCS should work closely with SRS to implement procedures to protect low-income and minority groups in the event of an accidental chemical or radiological release from		As established in our comments to DEIS 4.3.5.2, the accident scenario relied upon to justify the conclusion that there are disproportionate impacts to low-income

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			<p>the proposed MOX facility that impacts areas beyond the SRS boundary.</p> <ul style="list-style-type: none"> DCS should conduct focused public information campaigns to provide important information to low-income and minority groups/communities. Included in these campaigns would be descriptions of existing monitoring programs, and information on the nature, extent, and likelihood of any airborne release from the facility. The campaigns would also include a description of the relevant risks associated with the proposed MOX facility and MOX fuel transportation programs. These campaigns should include information on sheltering and other protection strategies that may be needed, including detailed descriptions of any evacuation procedures that may be required. DCS should provide public information to local agencies and groups representing low-income or minority groups on existing soil or groundwater contamination monitoring programs and the nature, extent, and likelihood of surface release. Key information would include the extent of any likely damage to drinking water supplies and subsistence resources, and the relevant preventative measures that may be taken. Meet with local communities providing emergency response services and other emergency facilities to discuss additional measures to ensure that the low-income and minority population in their jurisdictions are located and fully prepared in the event that sheltering or evacuation procedures are required. In addition to public information campaigns targeting low-income and minority groups, this would include the development of spatial databases providing information on the location of low-income and minority populations, local resources available to emergency response agencies, and any evacuation routes that might be required. 		<p>or minority populations is flawed. Furthermore, the projection of potential impacts from a highly unlikely accident scenario that is prevented by the design requirements resulting from the safety regulations in 10 CFR Part 70 does not provide a reasonable basis for the proscribed mitigative actions and runs counter to the Commission guidance to use "reasonably foreseeable" events.</p> <p>As a separate matter, the DEIS provides no justification why DCS should provide local agencies or groups representing EJ groups with "public information" on existing soil or groundwater contamination monitoring, or the nature, extent, or likelihood of surface releases. Providing such information is not a mitigation action related to the MOX Facility, which has yet to be constructed.</p> <p>Similarly, the DEIS does not provide a justification why DCS should take the unprecedented initiative to create a spatial database for use by local authorities.</p> <p>In the event of any incident at SRS, the authorities would alert all potentially affected communities, not just minority communities.</p>
85	5.2.1 – Table 5-1	5-5/35-40	<p>DCS should provide public information to local agencies and groups representing low-income or minority groups on existing soil or groundwater contamination monitoring programs and the nature, extent, and likelihood of surface release. Key</p>		<p>For NRC to prescribe mitigative actions for existing soil or groundwater contamination is beyond the statutory authority of NRC. The DEIS has not identified a pathway involving soil or water contamination resulting from MFFF operations that</p>

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86	5.2.2	5-7/ 18-27	information would include the extent of any likely damage to drinking water supplies and subsistence resources, and the relevant preventative measures that may be taken. However, construction could directly impact groundwater quality if any of the buildings or structures extended below the surface of the groundwater. This direct impact would be mitigated by selecting a site in which the groundwater is deeper than any of the anticipated construction, as is the case for the proposed site.		would result in disproportionate impacts to low-income or minority groups. As established in our comments to DEIS 4.3.2, the accident scenario relied upon to justify the conclusion that there are disproportionate impacts to low-income or minority populations is flawed. Furthermore, the projection of potential impacts from a non-credible accident scenario that is prevented by the design requirements resulting from the safety regulations in 10 CFR Part 70 does not provide a basis for the proscribed mitigative actions. This entire paragraph hinges on the speculation of what resources might be impacted if any MFFF structures extended into groundwater. The fact is that the structures do not extend to groundwater. Speculation of what might happen if the structures should extend to groundwater should be removed from the DEIS.
87	5.2.2	5-7/ 45-46	Operation of a sand filter would not directly impact groundwater because the filter would be covered to prevent infiltration and it would have a concrete wall and bottom.		Because the proposed action does not include a sand filter this statement is irrelevant.
88	5.2.3	5-8/ 23-25	For example, a portion of the construction activities for the proposed MOX facility would take place on a former spoils pile used for previous F-Area construction,		The statement is incorrect. The MFFF will not be constructed on a former spoils pile; the spoils pile will be removed prior to construction.
89	5.2.3	5-8/ 35-44	Prior to construction, the proposed facility sites would be surveyed for nests of migratory birds in accordance with the Migratory Bird Treaty Act, and preconstruction surveys and consultations with the U.S. Fish and Wildlife Service and the South Carolina Department of Natural Resources would be conducted to ensure that impacts on any sensitive animal and plant species (e.g., the smooth coneflower) living in or near F-Area or rights-of-way would be insignificant. Some possible mitigative measures include avoiding species and their habitats entirely or just during critical time (e.g., during breeding season) or relocating sensitive species away from areas likely to be disturbed. These mitigation strategies would be coordinated with appropriate state and federal regulatory	ER, Appendix A, pg A-26, Letter from L. Duncan (USFWS) to A. Gould (DOE-SR), <i>Informal Consultation Under Section 7 of the Endangered Species Act for the Surplus Plutonium Disposition-Mixed Oxide Fuel Fabrication Facility</i> , 20 June 2001.	The MFFF ER 4.6 describes the ecological habitat and the habitat surveys conducted prior to construction activities. MFFF ER Appendix A, pages A-25 and A-26 provides letters of negative declaration from the U.S. Fish and Wildlife Service that the MFFF construction and operation will not affect resources under the jurisdiction of the U.S. Fish and Wildlife Service. All necessary ecological surveys are complete. No sensitive species or nests of migratory species are present. These precautionary and mitigative actions presented in the DEIS are misleading and unnecessary.

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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
90	5.2.7	5-11 / 3	... permitted commercial recycling, treatment, or disposal facility.		Eliminate "recycling".
91	5.2.7	5-11 / 18	A new tank would be constructed at the WSB so that the high-alpha-activity waste could be neutralized before being transferred to the F-Area HLW tank Farm		Reword: A new tank would be constructed within the WSB so that the high-alpha-activity waste can be neutralized before being solidified to a TRU waste form.
92	5.2.7	5-11 / 23-24	... SRS facilities for on-site treatment and disposal.		Remove "on-site". Treatment can occur "off-site" as well.
93	5.2.9	5-13 / 16	Impacts of construction to two prehistoric archaeological sites have been mitigated in part through data recovery as described... Monitoring of these site during construction activities is also part of the mitigation strategy.	Letter from P.S. Hastings (DCS) to Document Control Desk (NRC), 12 December 2002, (DCS-NRC-000122) provided NRC with a copy of the letter from C.C. Long (SHPO) to A.B. Gould (DOE). "...our office concurs with the Department of Energy's determination that field obligations have been met for data recovery investigations at 38AK546 and 38AK757. The excavations exceeded the requirements of approved data recovery plans."	Information provided by DCS to NRC on 12 December 2002 demonstrated that the SHPO has agreed that all mitigation action is complete. No monitoring is required. Inadvertent discoveries will be handled in accordance with Federal Law and the SRS PMOA. The NRC mitigation is inappropriate.
94	5.2.10	5-14 / 7	The tallest new structure would be a stack that is less than 30 m (100 ft) above the existing grade.	ER section 5.1.7, page 5-7. "the tallest new structure is an exhaust stack which is located on top of the MFFF building. The stack is 120 ft (37 m) above the existing grade."	Note that the revised ER increased the height of the structure to 120 feet.
96	6/ Table 6.1	6-6/ 40-48	State Water Quality Certification certifying that the applicable state water quality standards will not be violated as a result of discharges to navigable waters by an activity authorized by a federal license. DCS has initiated consultation with the SCDHEC regarding a determination of whether an NRC license requires a 401 Water Qualification Certification in accordance with SCDHEC regulations 61-1.01 (DCS 2003).		SCDHEC informed DCS that a 401 Water Quality Certification is only required if a 404 Permit is issued by the Corps of Engineers. SCDHEC does not anticipate any requirement for a 401 Water Quality Certification for the MFFF.
98	C.1.3.1	C-6/ 37-38	The model takes into account the mode of transportation and the type of packaging.		Perhaps it would be better to state "The model allows the user to evaluate transportation risk, considering differences in the mode of transport and package used. The user selects parameters to represent the probability

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
99	C.1.3.1	C-7/ 1-10	The calculation of the collective population dose following the release and dispersal of radioactive material includes the following exposure pathways: <ul style="list-style-type: none"> • External exposure to the passing radioactive cloud • External exposure to contaminated ground, • Internal exposure from inhalation of airborne contaminants, and • Internal exposure from the ingestion of contaminated food. 		of an accident occurring and consequences of a spectrum of accident severities.” The use of the ingestion pathway resulting from the consumption of contaminated food is highly speculative. Public policy and emergency response experiences from TMI in 1979 and Chernobyl in 1986 indicate that, essentially all food, whether contaminated or not was destroyed making the ingestion scenario not “reasonably foreseeable.”
101	C.2	C-12/36	Depleted UF6 and UO2 shipments would use Type A packaging.		The MFFF ER specifies a 55-gallon Industrial Type 1 drum for the shipment of UO2. The DEIS specifies a 30-gallon Type A drum size.
102	C.2.1.1	C-9	However, the final determination of the route is left to the discretion of the carrier, such as for shipments of depleted UF6 and UO2, unless the shipment contains a “highway route controlled quantity” (HRCQ) of radioactive material as defined in 49 CFR 173.403 (Definitions), such as the plutonium metal or the MOX fuel.		It is important to clarify that none of the shipments would meet HRCQ requirements. The UF6 and UO2 won’t because of the material hazards; the Pu metal and MOX will be handled securely by DOE’s OST, and the TRU waste will follow WIPP-prescribed routes.
103	C.2.1.2	C-10/ 19	0 to 39		Should be “0 to 139”
104	Appendix C, C.2.3	C-14, Table C.2, lines 7- 9	“Number of shipments” for Pu metal from Pantex and Hanford to PDCF – 343 and 87, respectively	SPD EIS – Appendix L, Table L-1 gives 330 shipments of the pits from Pantex to the PDCF.	Provide reference for how the number of shipments of Pu metal to PDCF was determined, since it differs from that used in the SPD EIS.
105	C.2.3	C-14/ Table C.2	124 (273)		These are not accurate (per package) quantities. Please note that these may be more accurate for a “per shipment” amount.
106	C.2.3	C-14/26-29			Need to update. TSD is now called the Office of Secure Transportation, and the DOE AL is now an NNSA Service Center.
107	C.2.3	C-15 Table C.3	Curies related to various Pu isotopes in Pu metal, MOX fuel, and TRU waste		Pu isotopic distribution is the same for Pu metal, MOX fuel, and TRU waste. Curie content should be linear with mass of Pu in each stream. In Table C.3 it is not.
108	Appendix C,	C-19, Table	Footnote “b” for Type A and Type B Release fraction		Footnote is misleading as this footnote currently is

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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
	C.2.4.2	C-5, line 7 & 19	columns. Footnote "b" currently gives: Source: NRC (1977b), used for Pu metal shipments.		used for the Type A packages as well as Type B. Type A packages are not used for Pu metal shipments. The intent is to differentiate between the Type B release fractions used for the Pu metal shipments and those used for the fresh MOX fuel shipments (Footnote "c").
109	Appendix C, C.2.5 and C.3	C-22, Table C.7, Line 9 And C-24, Table C.8, lines 45-46	Stop Time (h/km) parameter used as RADTRAN input of 0.011 for all shipments (RADTRAN default value)	MFFF ER, Appendix E, Table E-4 footnote: It has been assumed that no stops would be required for MOX fresh fuel shipments by SGT.	Assumption that stops with the same duration and public exposure as spent fuel truck shipments would occur for SGT shipments of both the fresh MOX fuel and the Pu metal is overly conservative.
110	C.2.7	C-23/ 20	Thus, in this assessment, a value of 8.36×10^{-10} latent fatalities/km for truck transport was used.		Units on this risk factor, based on the subsequent text, should be "latent fatalities-km/person", taking into account the "latent fatalities/km" divided by "persons/km**2."
111	Appendix C, C.3	C-24, Table C.8, lines 45-46	Footnote "c": Latent cancer fatalities are calculated by multiplying dose by the FGR 13 health risk conversion factor of 0.06 fatal cancer per person-Sv (6x10 ⁻⁴ fatal cancers per person-rem)(Eckerman et al. 1999)	<i>Cancer Risk Coefficients for Environmental Exposure to Radionuclides</i> , pg iv, "The dose coefficients given in Federal Guidance Report No. 11 and Report No. 12 continue to be recommended for determining conformance with radiation protection guidance for Federal agencies issued by the President and will be updated in the future as warranted. ... Although the application of these [Federal Guidance Report No 13] risk coefficients for ... Environmental Impact Statements ... is encouraged to promote consistency in risk assessments, such use is discretionary. ... Also the coefficients are based on radiation risk models developed for the application to either low acute doses or low dose rates and should not be applied to accident cases involving high doses and dose rates in either prospective or retrospective analyses."	The Draft EIS does not explain why it relies on EPA Federal Guidance Report 13, rather than international standards for cancer risk. Federal Guidance Report 13 clearly states that the conversion factors in Federal Guidance Report 12 still continue to be recommended for radiation protection. The EPA Federal Guidance Report 13 relies on new studies that have not yet been incorporated into the international standards. This results in an order of magnitude higher risk (10 ⁻⁴) than the studies presented in international standards (e.g. ICRP documents) (10 ⁻⁵). Use of the EPA data, with the other unrealistically and overly conservative assumptions, paints an unrealistic potential impact from the proposed action.
112	E.1	E-5/38-42	Raoult's Law was used to make additional adjustments to	MFFF ER – Appendix E, E.2.1, last sentence: The health risk conversion factors (expected health effects per dose absorbed) were taken from the 1990 <i>Recommendations of the International Commission on Radiological Protection (ICRP 1991)</i> .	The calculations of mole fractions in Table E-1 are

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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina					
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
		E-7/4-16	spill vapor pressures to account for dilute solutions (such a solution lowers the vapor pressure of the solvent below that of the solute in proportion to the mole fraction of the solute). Table E.1 gives the computed mole fractions used in the analysis, along with the assumed spill volumes and the given chemical inventories and concentrations.		incorrect, which leads to errors in the modeled airborne concentrations and distances to reach TEEL limits in Table 4.16. It appears there are also errors in the calculation of the moles of solvent in a solution, total moles of solution, mass of solvent in a solution, and the total spill mass, some of which may have led to the error in the mole fractions.
113	E.1	E-6/12	Table E.1		The solution molecular weight (94 g/mole) and the solution density (2.13 kg/l) for hydrazine / sodium hydroxide appear to be incorrect.
114	E.1	E-6/13	Table E.1		The solution density for hydrazine / hydroxylamine nitrate (1.54 kg/l) appears to be incorrect.
115	E.1	E-11/9-35 E-12/1-27 E-14/5-30	Table E.3 Table E.4		Evaporation rates and vapor pressures of evaporating chemicals appear to be incorrectly calculated for chemicals where mole fractions were used to calculate the vapor pressures, which in turn were used to calculate the evaporation rates. See previous comments on Table E.1.
116	E.2.1.2	E-17 / 32	To obtain conservative estimates of potential exposure and doses, the SRS employees were assumed to be exposed to radiation from airborne emissions without any shielding by buildings or other structures.		If factors of 0.5 and 0.7 from US NRC 1.109 were used as stated on the next page, shielding was taken into account.
117	E.2.1.2	E-18 / 37	On an annual basis, the total time of external exposure to the plume and contaminated soil for all SRS employees was assumed to be 0.5 year (NRC 1977).		This is an incorrect interpretation of the 0.5 factor in US NRC 1.109. The 0.5 accounts for shielding while the individual is present. The individual is present approximately 23% of the time (2000/365/24) and this factor is further reduced by the 0.5.
118	E.2.1.2	E-18 / 45	On an annual basis, the total time of annual external exposure to the plume and contaminated soil for the MEI was assumed to be 0.7 year. For the inhalation pathway, an exposure time of 1 year was assumed (NRC 1977).		This is an incorrect interpretation of the 0.7 factor in US NRC 1.109. The 0.7 accounts for shielding while the individual is present. The individual is present approximately 23% of the time (2000/365/24) and this factor is further reduced by the 0.7 factor.
119	E.2.1.2	E-18 / 45	On an annual basis, the total time of annual external exposure to the plume and contaminated soil for the MEI was assumed to be 0.7 year. For the inhalation pathway, an exposure time of 1 year was assumed (NRC 1977).		The individual is present approximately 23% of the time (2000/365/24) Exposure time should be 0.23 years and not 1 year for workers.
120	E.2.1.2	E-19 / 2 Table E.6			Table needs a reference.

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Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
121	E.2.1.3	E-19/28	The GENII code was used to assess radiation exposures of members of the public outside the SRS boundaries.	<p>Letter from Dr. William Glaze (EPA Science Advisory Board) to Christine Todd Whitman (EPA Administrator), Review of ORIA's Use and Adaptation of The GENII Version 2 Environmental Radiation Dosimetry System, EPA-SAB-RAC-ADY-01-002</p> <p>"The RAC found the environmental transport modeling capabilities for air and surface water releases of radionuclides to be adequate for screening purposes but not necessarily appropriate for detailed analysis or emergency situations. ... The conservative nature of the code may lead to excessively conservative dose estimates (i.e., higher than more realistic assumptions might produce), resulting unnecessarily costly controls and unnecessary expenditures in site cleanup operations. The RAC strongly encourages ORIA to provide more realistic bounds on their dose and risk estimates. ... However, the straight-line Gaussian and Lagrangian-puff models were designed for "well-behaved" pollution transport from chimney "stacks" and do not apply to more critical scenarios involving fires, explosions and accidental or terrorist aerial releases of contaminants, which the EPA may be called on to evaluate."</p>	<p>The DEIS's accident consequences do not provide members of the public with realistic exposure scenarios because the NRC Staff did not use an appropriate model to evaluate dispersion of a highly unlikely MOX explosion event. The NRC used the GENII code to model this accident; the ER used the NRC's MACCS2 code. The EPA Science Advisory Board in their evaluation of the GENII model noted that, "The conservative nature of the code may lead to excessively conservative dose estimates (i.e., higher than more realistic assumptions might produce), resulting unnecessarily costly controls and unnecessary expenditures in site cleanup operations." On page 10 of their report, the SAB specifically notes that, "... the straight-line Gaussian and Lagrangian-puff models were designed for 'well-behaved' pollution transport from chimney 'stacks' and do not apply to more critical scenarios involving fires, explosions and accidental or terrorist aerial releases of contaminants, which the EPA may be called on to evaluate. (emphasis added)" The NRC Staff used the GENII model for exactly the types of accidents that the SAB specifically noted the model should not be used.</p> <p>The GENII code makes a number of simplifying assumptions to make the calculation easier. While the GENII estimates would clearly bound the potential impacts, actual impacts from accidental releases would likely be orders of magnitude lower for both the short-term and 1-year doses. For example,</p> <ul style="list-style-type: none"> The GENII code evaluates the dose along the centerline of the plume and assumes that all individuals receive that dose. For the cases evaluated in the DEIS, the accident plumes would be narrow and not expose most of the downwind population to air concentrations nearly as high as the centerline of the plume. This assumption alone

DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina				
Comment Number	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis
				<p>could result in collective dose consequences approximately a factor of 7 greater than those produced by MACCS2 depending on the plume characteristics. The principal author of the GENII code indicated that the GENII algorithms for acute releases were designed primarily for evaluating doses to nearby individuals. The July 2002 DOE guidance "Recommendations for Analyzing Accidents under NEPA", (Sect. 3.1 Scenario Development, Conservatism, page 7) indicates that using estimates of plume centerline concentrations may be appropriate for evaluating impacts to maximally exposed individuals, but would not be appropriate for evaluating population impacts (would overestimate impacts); sector-averaged plume concentrations would yield more realistic results for population impacts. The GENII code does not calculate the lateral dispersion of the plume and overlay that with detailed food production distributions.</p> <ul style="list-style-type: none"> • Similarly, the GENII code simply predicts the concentrations at the centerline of the plume and assumes food produced is exposed to air concentrations equal to those on the centerline of the plume for the entire plume passage. This simplification results in over prediction of the air contamination level that plants and animals might be exposed to by at least an order of magnitude. • The code does not realistically model the time-dependent harvesting of contaminated food. Instead, the model assumes that all food grown in the sector is harvested instantaneously just after the plume passes. This assumption may be defensible for some crops, but is extremely over-conservative for crops and animal products. An entire year's supply of milk or eggs (or meat or poultry) is not

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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina																				
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis															
122	E.2.2	E-23 / 11-13 Table E.9	Ingestion parameters for root vegetables, fruit, and grain		<p>collected in one day. The animals re-equilibrate with air nearly as quickly as the plants. Even allowing for weekends and holidays, the assumption of 100% harvest is probably conservative by a factor of about 200 (it would be close to 365 if harvest was really continuous).</p> <ul style="list-style-type: none"> The time-dependent consumption of contaminated food is not realistically modeled. <p>Each of these factors is multiplicative. Collectively, the simplifying modeling assumptions result in an over prediction of ingestion doses by several orders of magnitude.</p> <p>Since it is not possible to fulfill the basic NEPA responsibility of informing the public of the reasonably foreseeable environmental impacts of the proposed action with the GENII code, other codes developed specifically for modeling accident consequence should be used. DCS strongly recommends that a well-established accident consequence code with a strong QA record, such as NRC's MACCS2, be used.</p> <p>Each line repeats the same number (276 kg/yr for the MEI and 163 kg/yr for the population) when this should be the total for all three.</p> <table border="1"> <thead> <tr> <th>Vegetable</th> <th>Average consumption (kg/yr)</th> <th>Maximum Consumption (kg/yr)</th> </tr> </thead> <tbody> <tr> <td>Fresh Vegetables</td> <td>66</td> <td>92</td> </tr> <tr> <td>Fruits</td> <td>60</td> <td>120</td> </tr> <tr> <td>Grains</td> <td>37</td> <td>64</td> </tr> <tr> <td>Total</td> <td>163</td> <td>276</td> </tr> </tbody> </table>	Vegetable	Average consumption (kg/yr)	Maximum Consumption (kg/yr)	Fresh Vegetables	66	92	Fruits	60	120	Grains	37	64	Total	163	276
Vegetable	Average consumption (kg/yr)	Maximum Consumption (kg/yr)																		
Fresh Vegetables	66	92																		
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DCS Review of NRC Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina																														
Comment Number	DEIS Section	Page / Line	DEIS Statement or Text	Source Document & Statement or ER Text	Comment & Basis																									
123	E.2.2.1	E-28/ Table E.13	<p>Table E.12. Source terms for detailed accident analysis</p> <table border="1"> <thead> <tr> <th>Hypothetical accident event</th> <th>Quantity of plutonium at risk (kg)</th> <th>Damage ratio</th> <th>Respirable release fraction</th> <th>Leak path factor</th> </tr> </thead> <tbody> <tr> <td>Internal fire</td> <td>84 (polished)</td> <td>1</td> <td>0.0008</td> <td>0.01</td> </tr> <tr> <td>Load handling</td> <td>254 (polished)</td> <td>1</td> <td>0.0008</td> <td>0.0001</td> </tr> <tr> <td>Explosion</td> <td>76 (unpolished)</td> <td>1</td> <td>0.01</td> <td>0.01</td> </tr> <tr> <td>Critically</td> <td>41.5 (unpolished)</td> <td>1</td> <td>0.0005*</td> <td>0.0001*</td> </tr> </tbody> </table>	Hypothetical accident event	Quantity of plutonium at risk (kg)	Damage ratio	Respirable release fraction	Leak path factor	Internal fire	84 (polished)	1	0.0008	0.01	Load handling	254 (polished)	1	0.0008	0.0001	Explosion	76 (unpolished)	1	0.01	0.01	Critically	41.5 (unpolished)	1	0.0005*	0.0001*		<p>Table E.12 indicates that NRC used a leak path factor of 0.01 for the internal fire and explosion events. DCS used a leak path factor of 0.0001 for these events. DCS is currently discussing with the NRC safety analysis staff the appropriate leak path factor to use. If the NRC staff ultimately agrees to a leak path factor of 0.0001, DCS assumes the EIS staff will reevaluate the accident scenarios with this new leak path factor. Does not include U-238, 99% of uranium inventory.</p>
Hypothetical accident event	Quantity of plutonium at risk (kg)	Damage ratio	Respirable release fraction	Leak path factor																										
Internal fire	84 (polished)	1	0.0008	0.01																										
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Critically	41.5 (unpolished)	1	0.0005*	0.0001*																										
124	E.2.2	E-29 / 11-15 Table E.13	Curies of Uranium isotopes released for WSB accidents	ER Table D-7 lists source terms for isotopes released.	Does not include U-238, 99% of uranium inventory.																									
125	F.2.2	F-7/11	Engine-specific emission factors were available for criteria pollutants.		Sentence should read: "...factors were NOT available for..."																									
126	H.3.1.4	H-9 / 13 - 16	The transmission line Right of Way provides suitable habitat for the smooth coneflower. Thus the ROW would need to be surveyed before clearing . . .	ER, Appendix A, pg A-26, Letter from L. Duncan (USFWS) to A. Gould (DOE-SR), <i>Informal Consultation Under Section 7 of the Endangered Species Act for the Surplus Plutonium Disposition-Mixed Oxide Fuel Fabrication Facility</i> , 20 June 2001.	The ecological survey is complete and conclusive and did not reveal any populations of the smooth purple coneflower within the designated survey area. It was acknowledged by the US Fish & Wildlife Service in June 2001 that, "...We concur with your determination that the proposed action will have no effect on resources under the jurisdiction of the USFWS..."																									

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From: Allison Macfarlane [allisonm@MIT.EDU]
Sent: Tuesday, May 13, 2003 9:14 PM
To: Mary Olson; Frank von Hippel; mnelson@Princeton.EDU; jmkang55@hotmail.com
Cc: leh@nrc.gov
Subject: NRC DEIS comments

Dear Colleagues,

Here are my comments on the NRC's draft FIS for the MOX fuel fabrication facility, for your information. You will note that on page 2-24, they mention our report on Storage MOX explicitly.

with best regards,

Allison

Comments on NRC's "Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina" NUREG-1767, February 2003

Allison Macfarlane
 Senior Research Associate
 Security Studies Program
 MIT
 Cambridge, MA 02139

There are a number of unresolved, significant issues in the NRC's draft environmental impact statement on the construction of a MOX fuel fabrication facility (MOX FFF) at the Savannah River site, in South Carolina (hereafter DEIS). I outline them below.

(1) Cart Before the Horse.

The most alarming problem is the NRC's endorsement of a cart-before-the-horse plan. The entire point of a new environmental impact statement was to address the changes wrought by DOE's decision to use only MOX to disposition plutonium, instead of the hybrid immobilization and MOX plan. These

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changes will result in an expansion of a process at the MOX FFF called the "aqueous polishing" process. This process is simply a version of that used to reprocess spent nuclear fuel, including the PUREX process. New radioactive waste streams will result from "aqueous polishing", and these will require further processing at a facility to be constructed called the Waste Solidification Building (WSB). Herein lies the problem: the WSB is part of the Pit Disassembly and Conversion Facility (PDCF), which will be constructed *after* the MOX FFF is operational!

In fact, DOE has changed the design of the MOX FFF, which was originally to include equipment to solidify radioactive liquid waste, but now, according to DOE's Supplement Analysis and Amended Record of Decision of April 2003, this equipment is to be located in the WSB.

DOE's current schedule, laid out in its February 15, 2002 Report to Congress, call for construction of a MOX FFF from 2004-2007, once licensed by the NRC, with operations beginning in 2007. The PDCF will be constructed from 2006-2009, with startup in 2009. What does DOE plan to do with the waste streams generated by "aqueous polishing" in the MOX FFF in the interim?

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Cont.

Furthermore, exactly which plutonium stocks will the DOE process at the MOX FFF until the PDCF is complete? Clearly DOE cannot use plutonium metal until the PDCF is completed. My understanding of the remaining plutonium stocks (25 MT being pure metal) is that of the available weapons grade plutonium to be processed (6.5 MT according to DOE's SA and ROD 2003) is all of the impure variety. These impure stocks, therefore, will require "aqueous polishing", which will create waste streams. *The NRC's DEIS does not address the issue of what will happen to these waste streams in the interim.*

I would suggest that the NRC in its EIS carefully address the scheduling issues with regards to the treatment of radioactive waste. In its DEIS, the NRC acknowledges the existence of "connected actions" in that the PDCF must exist first to handle the waste streams generated by the MOX FFF, the subject of the DEIS. I would argue that acknowledgement of these connections is simply not enough to license a facility whose operation without the PDCF will produce potentially large safety impacts to humans and the environment, especially since the DOE has explicitly stated that the required facility will not operate until years after the MOX FFF is planned to begin operations.

(2) Waste Streams.

In its account of liquid wastes, the NRC details a number of the waste streams to be dealt with including chloride, americium, and uranium. NRC does not mention other impurities that exist in some of the plutonium oxide stocks. They are listed below. How will these wastes be dealt with?

Impurities in Plutonium Feedstock for MOX FFF

Impurity Concentration Am-241 <200 ppm to ~15 wt%/Depleted U <200 ppm to >70 wt%/Enriched U trace to >99 wt%/Np Highly variable (Highly variable Al, C, Ca, Cl, Cr, Fe, F, Ga, K, Mg, Mo, Na, Si, Ta, W, and Zr <100 ppm to ~90 wt%/Other potential impurities and forms of impurities: MgF₂, CaF₂, NaCl, KCl, MgCl₂, ZnCl₂, CsCl₂, Co, Ni, Hf, Nb, B, P. The salts can be driven off through heating (they are volatile).

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(3) Alternatives Considered But Not Analyzed in Detail.

(a) Immobilization

NRC discounts consideration of immobilization as a path for disposing of plutonium because of the DOE decision to cancel the immobilization plant. Though part of DOE may no longer require immobilization facilities for disposing some weapons-grade plutonium, the fact remains that DOE currently has no plans for the remaining 10.5 MT of plutonium, both weapons- and reactor-grade, from the original 17 MT that was to be sent to an immobilization facility. Even if DOE transfers "ownership" of this plutonium from one subdepartment (materials disposition) to another (environmental management), it is quite possible that an immobilization facility will be necessary to dispose of this material that the government declared excess to military needs. It seems short-sighted, then, to completely discount immobilization as a "reasonable" alternative.

A smaller point: on page 2-23, lines 20-21, in the DEIS, NRC states that it "solicited views" on whether immobilization should be considered. Whose views did it consider?

(b) Off-Spec MOX Fuel

First, as one of the "principal proponents" of this approach, I must point out that the off-spec MOX alternative is simply a variant of immobilization. NRC seems to stumble on to that fact near the end of their discussion of this issue. I am flattered, though, that they have given this option a reasonable amount of consideration, but I have a number of comments on this section.

First, on page 2-24, lines 5-6, there is no need for a country like the United States to limit its radiation barrier for the off-spec MOX to spent fuel. Most reactors do not have facilities to separate fuel pins from assemblies, which would be required by countries that do not have large quantities of high-level waste waiting to be vitrified. Instead of using spent fuel, one could adopt a variant of the can-in-canister approach planned for the immobilization facility. One could replace the pellets of off-spec MOX into high-level waste glass, for instance. NRC should not limit itself to such narrow analysis.

The analysis in lines 23-32 all applies to immobilization in general, of course.

In lines 43-46 on page 2-24, continued on page 2-25 (lines 1-2) NRC makes a specious argument. It should be omitted from this analysis. Yes, Am-241 would not be removed from the impure plutonium in immobilization. But the MOX fuel method does not eliminate it from the planet - it just puts it into a different waste stream. Am-241 will still pose a hazard. Moreover, there will be *very little* Am-241 in the plutonium because it will be weapons-grade plutonium, not reactor-grade plutonium - at least for that covered by the Bilateral Plutonium Disposition Agreement.

Lines 4-8 on page 2-25 report yet another specious argument. By DOE's *own analysis*, the immobilization method (via can-in-canister) would be much cheaper than the MOX-only plan they are currently following. In its 2001 cost estimate (the last time DOE compared MOX and immobilization

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costs), the MOX FFF was projected at \$2.5 billion versus \$1.5 billion for the immobilization facility (planned for 50 MT of plutonium through-put). That's a savings of \$1 billion, even given the "fuel credit."

In its February 2002 Report to Congress, DOE asserts its 2002 plutonium disposition budget projections are \$2 billion less than its 2001 estimates. The reduction is due, they claim, to the elimination of the immobilization program, the streamlined design of the PDCF, and the shorter operating lifetimes of both the MOX FFF and the PDCF. The total cost of the disposition program in 2001 was estimated to be \$6.2 billion versus \$3.8 billion in the 2002 estimate. Removing the immobilization facility from the 2001 numbers reduced the difference between the 2001 and 2002 budgets by \$1 billion. The remaining \$1 billion difference between the 2001 and 2002 cost estimates is from the PDCF, whose capital costs have been inexplicably halved. Though additional modifications will be required of the MOX FFF, the costs presented in the congressional report do not reflect that. They also do not reflect the capital cost of dealing with the additional waste streams created by plutonium purification. Furthermore, the 2002 cost estimates do not reflect the additional operating time needed to (1) handle more material through the MOX FFF (34 MT versus 25.6 MT), (2) purify the surplus plutonium streams that would previously have remained untreated in the immobilization program, and (3) to handle the additional wastes generated from purifying the contaminated plutonium.

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Department of Energy
National Administration
Washington, DC 20585

May 14, 2003

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555

May 14, 2003

Plutonium Bomb Fuel is a Threat

Dear Sir:

I am concerned about the MOX fuel program for the following reasons:

1. Shouldn't terrorism be addressed in the report? (P. 1-29)
2. Shouldn't emergency preparedness in dealing with impacts from an accident in nearby communities be studied? (P. 1-29)
3. Should any deaths be considered "acceptable"? Why are some communities unfairly burdened with higher risks? (P. 4-57)
4. Shouldn't we study safer and cheaper options? (P. 2-23)

Please consider these points before making your decisions. As these decisions will affect generations to come.

Sincerely,

Seemya Ganapathy
14 Thadkery Place
Savannah GA 31405

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Mr. Michael T. Lesar, Chief
Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop 16-D59
Washington, D.C. 20555-0001

Subject: Comments on NUREG-1761, Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina

Dear Mr. Lesar:

Attached are the Department of Energy's (DOE) comments on the Nuclear Regulatory Commission's (NRC's) Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina (DEIS), NUREG-1767. DOE's greatest concern with the DEIS is that the consequences reported for postulated accidents at the Mixed Oxide (MOX) facility and the Pit Disassembly and Conversion Facility (PDCF) are unrealistically high and, if accurate, would raise environmental justice issues that could require the implementation of unnecessary mitigative actions. DOE believes this potentially erroneous result is caused by a number of factors, in particular the code used for accident analysis and the multiplicative effects of using overly conservative assumptions for each analytical parameter. DOE's concerns in a number of areas related to the accident analyses in the DEIS are summarized below and discussed in greater detail in Attachment 1.

- The use of the GENII v. 1485 ("GENII") code for evaluating accident scenarios for the MOX facility and PDCF is not appropriate. The GENII code was developed for modeling small, routine releases of radionuclides to confirm that these releases remain below regulatory limits. Although the GENII code does have an acute release component, the simplifying assumptions in the code produce highly unrealistic results when applied to the short-term, puff-type release characteristic of accidents.^{1,2} The accident analysis community generally uses codes such as MAACS2, a code developed under NRC sponsorship, that is designed to realistically, but conservatively, estimate both the short-and long-term

¹ EPA's Science Advisory Board, in a published review of the GENII code, found the environmental transport modeling capabilities for air and surface water to be adequate for screening purposes but not necessary appropriate for detailed analysis or for emergency situations. Among the Board's conclusions is that the conservative nature of the GENII code may lead to excessively conservative dose estimates, i.e., estimates higher than more realistic assumptions might produce, and that could, in turn, result in unnecessarily costly controls.

² The use of the GENII code also indicated in an e-mail message of February 26, 2003 to Doug Oudiz of SAIC (DOE Contractor), that there is a potential for obtaining erroneous results while using the GENII code for accident analysis.

In addition to providing more details about the DEIS accident analyses, the following issues are discussed in Attachment 1:

- Reanalysis of the PDCF
- Identification of Environmental Justice issues
- Use of non-representative air quality monitoring stations
- Treatment of decontamination and decommissioning in the DEIS
- Identification of excessive mitigation measures
- Discussion of the waste solidification building

Attachment 2 contains specific textual comments for your consideration. Please contact Hitesh Nigam of my staff if you have any questions or wish to discuss any of our comments. He may be reached by telephone at (202) 586-0750, or via e-mail at Hitesh.Nigam@nmsa.doe.gov.

Sincerely,



Edward J. Siskin
 Assisted Deputy Administrator for
 Fissile Material Disposition

Attachments

cc: Tim Harris, NRC
 Mary Birch, DCS

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impacts of large accidental releases of radionuclides. Moreover, MACCS2 has been used extensively for accident analysis for both NRC-licensed and DOE facilities. It is validated and is widely accepted as the code of choice.

- *The results reported in the DEIS errata sheets are not physically possible.* The predicted doses for the explosion scenario for the MOX facility would seem to require more plutonium to be ingested than would be released in the postulated accident. To result in the number of latent cancer fatalities attributed to the ingestion pathway, the calculations strongly suggest that the offsite population would be required to ingest contaminated food containing almost twice the amount of plutonium postulated by the NRC to have been released by this accident.

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- *Despite statements that population impacts in the DEIS are based on meteorological conditions at the 95th percentile, they may actually be based on conditions at the 99th to 99.5th percentile.* DOE's attempts to duplicate the DEIS calculations indicate that what is reported in the DEIS appears to be actually 99 to 99.5 percent meteorology. Using the overly-conservative GENII code, reanalysis with 95 percent overall meteorology indicates that for plutonium releases, population doses due to inhalation could actually be 6 times lower than indicated in the errata sheets, and for ingestion 44 times lower. Likewise, for tritium releases, population doses due to inhalation could actually be 6 times lower than indicated in the errata sheets, and for ingestion, 4 times lower.

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- *The plutonium source term is far greater than would be expected for a reasonably foreseeable, credible event (i.e., the evaluated bounding accidents are beyond design basis).* The multiple conservative bounding assumptions used are additive and result in significant overestimation, by orders of magnitude, of the explosion source term.

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- *DOE believes that the NRC's DEIS is inconsistent with the NUREG-1748 Environmental Review Guidance for Licensing Actions Associated with NIMSS Programs (September 2001), to consider the potential impacts of Reasonably foreseeable, not worst case, accidents.* By evaluating worst case accidents instead of reasonably foreseeable accidents, and further, by compounding conservative assumptions for each input parameter in the analysis, NRC is inadvertently presenting the public and the decision makers with an unrealistic picture of the potential consequences of operation of the MOX facility and PDCF. The potentially erroneous results may engender ill-founded safety concerns among the public, especially local residents, by suggesting unrealistically high accident consequences. Further, the consequences presented in the DEIS and its errata sheets indicate the need for mitigation measures to relieve potential environmental justice issues. These measures, which but for the potentially erroneous accident results may be unnecessary, would be costly to implement and unduly burdensome to both the applicant and the public.

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ATTACHMENT 1

Department of Energy's Major Comments

I. Accident Analysis

The Department of Energy (DOE) is concerned about the methodology used by the Nuclear Regulatory Commission (NRC) for the accident analyses for both the Mixed Oxide Fuel Fabrication Facility (MOX facility) and the Plutonium Disassembly and Conversion Facility (PDCF). DOE is concerned not only with the code used to evaluate the potential effects of postulated accidents, but also with the manner in which NRC's code of choice may have been implemented. The results reported in the Draft *Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site* (DEIS), NUREG-1767, are higher than would be predicted with accident consequence models using the DEIS source terms and assumptions. In addition, the results are higher than those reported in the *Surplus Plutonium Disposition Environmental Impact Statement* (SPD EIS), the *Mixed Oxide Fuel Fabrication Facility Environmental Report*, and the MOX Construction Authorization Request. DOE has reanalyzed the accidents using NRC's inputs with consequence models designed specifically for accident analysis and the results contained in the DEIS do not appear to be realistic and moreover may not be physically possible. DOE's basic concerns about the accident analysis methodology are as follows:

- *The use of the GENII v. 1485 ("GENII) code for evaluating accidents at the MOX facility and PDCF is not appropriate.* NRC used the GENII code to evaluate accidents for the DEIS. Although the GENII code does have an acute release component, the code was developed for modeling small, routine releases of radionuclides from DOE facilities to confirm that the releases remain below regulatory limits. Because routine releases from DOE facilities are very small, a number of simplifications were included in the code to make it easier to use and less time-consuming to run, and still be able to demonstrate that potential impacts are well below regulatory limits. These bounding, simplifying assumptions, such as use of plume centerline doses to represent the doses from the entire plume, lack of plume depletion, and "instantaneous" harvesting of crops followed by consumption of an entire year's production, while acceptable for estimation of annual doses from routine releases, appear to be unrealistic when applied to the short-term, puff-type release characteristic of accidents described in the DEIS.

Furthermore, the Radiation Safety Information Computational Center issued a notice in March 2003 that there is a potential for obtaining erroneous results using the GENII code for accident analyses. This notice was issued based on information provided by the lead author of the GENII code who identified the concern while reviewing DEIS accident analyses.

¹ The lead author of the GENII code also indicated in an e-mail message of February 26, 2003, to Doug Outlaw of SAIC (DOE Contractor), that there is a potential for obtaining erroneous results while using the GENII code for accident analysis.

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The accident analysis community generally uses codes such as MAACS2, a code developed under NRC sponsorship, that is designed to realistically, but conservatively, estimate the short- and long-term impacts of large accident releases of radionuclides. MAACS2 has been used extensively for accident analysis for both NRC-licensed and DOE facilities. It is validated and is widely accepted as the code of choice. DOE analysis using the MAACS2 code for the explosion at the MOX facility results in less than 1 latent cancer fatality (LCF), as compared to 200 LCF reported in the DEIS for collective off site public one-year exposure. (WSMS-TR-03-0011, May 2003)

In addition, at the Savannah River Site (SRS), DOE has been using a computer model, UFOTRI, developed by the German national laboratory Karlsruhe to assess radiological consequences due to postulated accidental releases of tritium from nuclear facilities. The UFOTRI model was selected for use at SRS after evaluation of a number of codes to determine which code best predicted the results of environmental sampling in the vicinity of SRS. This model was used to evaluate the postulated tritium release from the PDCF, and the results were compared with the DEIS. The DEIS errata sheets estimated a collective off site public one-year exposure that results in approximately 100 LCFs, whereas the UFOTRI model results in approximately 1 LCF. (WSMS-TR-03-0011, May 2003)

Moreover, the Radiation Advisory Committee (RAC) of EPA's Science Advisory Board, in a review of the GENII v.2 requested by the EPA's Office of Radiation and Indoor Air (ORIA) (EPA-SAB-ADV-01-002, June 2001), found the environmental transport modeling capabilities for air and surface water releases of radionuclides to be adequate for screening purposes but not necessarily appropriate for detailed analysis or for emergency situations, and came to similar conclusions with respect to the modeling of exposures to tritium, among other radionuclides.² The report states that the more complex environmental radionuclide transport modeling inputs required for catastrophic events (e.g., fires, explosions, accidents and terrorist acts) involve "near-field" physics not captured by the generalized GENII module. Comments in the transmittal letter include:

- *The level for the dose and risk estimates to be as unbiased as possible. The high level of conservatism apparently built into the GENII code is not sufficiently transparent to the user, who must be able to decide explicitly on the level of conservatism appropriate for the particular application.*
- *The conservative nature of the code may lead to excessively conservative dose estimates (i.e., higher than more realistic assumptions might produce), resulting in unnecessarily costly controls and unnecessary expenditures in site cleanup operations.*

² This review was conducted on draft Version 2 of the GENII code, which is an update of Version 1.485 used for the DEIS analyses. The analytical model in Version 2, is similar to Version 1.485. Therefore, EPA's comments about the technical aspects of the code are also applicable to Version 1.485.

ORIA was strongly encouraged in the latter comment to provide more realistic bounds on their dose and risk estimates than available by using GENII.

- *The results reported in the DEIS errata sheets are not physically possible.* DOE's analysis indicates that the predicted doses for the explosion scenario for the MOX facility require more plutonium to be ingested than is postulated to be released. DOE has performed calculations that start with the doses and LCFs reported in the DEIS errata sheets, and worked backwards to calculate the source terms necessary to achieve these results.

The DEIS errata sheets report that for the MOX facility explosion scenario, the highest initial population impacts, 50 LCFs due to inhalation of plutonium, would occur if the wind transported the initial plume to the populated west-northwest sector. The DEIS also reports that if the plume instead traveled to the southwest, one-year doses due to the consumption of contaminated agricultural products would be maximized. The DEIS errata sheets indicate that, absent mitigative actions (e.g., crop interdiction), there would be 200 LCFs from initial plume passage towards the southwest where there is substantial farming activity. DOE analyses using the NRC modeling assumptions indicate that for this case, more than 95 percent of the dose would be received from ingestion of contaminated foodstuffs. However, DOE's experience in performing similar accident analyses strongly shows that ingestion doses are routinely a small fraction of inhalation doses.

DOE used EPA Federal Guidance Report-13 dose conversion factors (also used in the DEIS) to estimate the amount of plutonium that would have to be ingested to result in the reported population doses. These calculations demonstrate that the offsite population would be required to ingest contaminated food containing almost twice the amount of plutonium postulated by the NRC to have been released by this accident to result in the number of LCFs attributed to the ingestion pathway. It would seem to be unreasonable to assume that a population ingests more plutonium than is released.

Similarly, inhalation dose conversion factors were used to estimate the amount of plutonium that would have to be inhaled to result in the population doses reported in the DEIS. For 50 LCFs to result from the initial plume passage, the downwind offsite population to the west-northwest (more than 5 miles away) would have to inhale approximately 0.23 percent of the total amount of plutonium released in the accident. It is usually not possible for the downwind population to inhale such a high fraction of the material released in the accident. More than 96 percent of the people in the west-northwest sector reside farther than 20 miles from the MOX facility. Most of the plutonium would settle to the ground well before reaching the highly populated areas.

Similarly, for the tritium release from PDCF, the DEIS results imply that about 0.04 percent of the total tritium released would have to be inhaled if the initial plume passes to the west-northwest and 0.51 percent of the total tritium release would have to be ingested by the consumption of contaminated food over the next year if the plume travels to the southwest. As with the plutonium accident cases, DOE's experience indicates that

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the realistic fraction to be inhaled or ingested to be several orders of magnitude less than these numbers indicate.

In addition, DOE believes that this consequence modeling appears to be overly conservative and unrealistic, thus, misleading. Due to the natural effects of dilution with the transport of radioactive materials, the actual fraction of the plutonium or tritium released that could be realistically inhaled is typically much smaller than the reported results would indicate. The amount that could realistically be ingested would be even smaller.

- *The DEIS indicates that the analyses use meteorology at the 95th percentile, but it may actually be 99th to 99.5th percentile.* Page E-31 of the DEIS indicates that impacts are based on 95 percent meteorology, which the DEIS defines as "weather conditions that produce impacts that are not exceeded 95 percent of the time." Attempts to duplicate the DEIS calculations appear to indicate that what is reported is actually 95 percent meteorology in the worst sector rather than 95% overall as stated in the DEIS. Based on a Monte Carlo simulation using the results of GENII with the addendum meteorology, the consequences reported in the addendum actually correspond to 99 to 99.5 percent meteorology. The reported results therefore correspond to weather conditions that produce impacts that are not exceeded 99 percent or more of the time. The resulting effects are significant. Reanalysis using GENII with true 95 percent overall meteorology (rather than 95 percent in the worst sector), indicates that for plutonium releases, population doses due to inhalation are 6 times lower than indicated in the errata sheets; and for ingestion 44 times lower. Likewise, for tritium releases, population doses due to inhalation are 6 times lower than indicated in the errata sheets, and for ingestion 4 times lower.

- *The plutonium source term appears to be far greater than would be expected for a reasonably foreseeable, credible event (i.e., the evaluated bounding accidents are beyond design basis).* The assumed parameters for the plutonium source terms, material at risk, damage ratios, respirable release fractions, and leak path factor listed in Table E.12 of the DEIS are clearly bounding but also so overly conservative as not to be realistic. Each is based on a bounding, worst-case type accident for that category without consideration of the design of specific systems. As such, they may be more appropriate for determining performance factors and license conditions for safety systems, such as the building confinement systems. However, values for *reasonably foreseeable* accidents specified by National Environmental Policy Act (NEPA) regulations would require a more reasoned view of the performance of safety systems. For example, each of the MOX facility accidents identified would be "design-basis" type accidents for which the safety systems, including mitigation systems such as building confinement and filtration systems, would be expected to continue to perform their minimum safety function. For example, in the case of the explosion scenario, it would appear beyond the rule of reason to assume, as the DEIS analysis does:

- That all the plutonium is involved in the accident. Because the material at risk is in three separate tanks within a cell, only a fraction of total plutonium would be involved in the event. Therefore, it is very unlikely that all the material would be

subject to the full explosive forces that would support the assumed airborne release factor and respirable fraction. The release is therefore unlikely to involve more than one-third of the plutonium in the cell, since there are three separate tanks within the cell.

- The upper limit of possible airborne release fractions and respirable fractions for explosions without considering the design of the processes and potential energies that might be involved. Many types of events would have much lower values for the product of the airborne release fractions and the respirable fractions, or involve a smaller fraction of the inventory. (DOE-HDBK-3010-94 [Mishima] and NUREG/CR-6410 [NRC Accident Analysis Handbook] provide more guidance on this subject.)
- That the building confinement system suffers a major breach without a strong technical basis to demonstrate that this breach might be reasonably foreseeable. This accident is a design basis accident and the building confinement system, including HEPA filters, would not be substantially impaired. The conditional probability that the building confinement system would also be substantially impaired is very low. The typical historical recommendation for safety analysis is 99.9 percent efficiency for the first HEPA filter and 99.8 percent for the second. This implies that a leak path factor of as low as 2×10^{-2} could be considered reasonable, as opposed to the leak path factor of 1×10^{-3} used in the DEIS (Elder 1986; NUREG/CR-6410, Section F2.1.3, 1998).

Collectively, these multiple conservative bounding assumptions are additive and DOE believes that they result in significant overestimation, by orders of magnitude, of the explosion source term.

- DOE believes that the NRC's DEIS is inconsistent with NUREG-1748, *Environmental Review Guidance for Licensing Actions Associated with NMSS Programs (September 2001)*, to consider the potential impacts of reasonably foreseeable, not worst case, accidents. NUREG-1748 specifies in several locations (Sections 5.4, 5.4.12.2.2, 6.4, and 6.4.12.2.2) that (quoting specifically from Section 5.4, Environmental Impacts),

This section summarizes the known and potential impacts of the proposed action and each alternative. These impacts should consider normal operational events as well as reasonably foreseeable accidents (e.g., ... credible consequence events for Part 70 licenses).

By evaluating worst case accidents instead of reasonably foreseeable accidents, and further, by compounding conservative assumptions for multiple input parameter in the analysis, NRC is inadvertently presenting the public and the decision makers with an overly conservative and, we believe, unrealistic picture of the potential consequences of operation of the MOX facility and PDCF. This makes it difficult to make an informed decision, and does not, as required by NEPA, allow a reasoned comparison between reasonable alternatives. Even though the DEIS properly explains that the probability of either of these accidents is so remote that the risk to the public is negligible, it would

seem inappropriate to present such unrealistic consequences. If unchanged, these results are likely to engender ill-founded safety concerns among the public, especially local residents, by suggesting unrealistically high accident consequences. Further, the consequences presented in the DEIS and its errata sheets indicate the need for mitigation measures to relieve potential environmental justice issues. These measures, which but for the questionable accident results may not be necessary, would be costly to implement, and would be unduly burdensome to both the applicant and the public.

II. Reanalysis of the Pit Disassembly and Conversion Facility

DOE believes that the NRC should not have reanalyzed the PDCF at all, since as the NRC points out in the DEIS (page 1-12, lines 12 through 15):

Because the scope of this DEIS is limited to the licensing action now under review by the NRC, which is specific to the proposed MOX facility, issues pertaining to decisions already made by the DOE are addressed by referencing the appropriate DOE analysis.

NRC was informed by DCS that the most recent information available for the PDCF is that which is found in the SPD EIS. Absent new information, NRC seems bound by its own admission to accept and reference DOE's analysis of the PDCF. As existing DOE analyses pertain to issues covered in the DEIS, NRC should incorporate, either by reference or by reprinting, the information already on the record. DOE completed a thorough analysis of the potential impacts of construction and operation of the PDCF at the SRS in the SPD EIS. This accident analysis should be incorporated into the DEIS without reevaluation.

III. Environmental Justice

Because the DEIS accident analysis predicts significant consequences (albeit with a very low frequency, hence minimal risk) from postulated facility accidents, NRC has indicated that these potential impacts would disproportionately affect minority and low-income populations residing in the vicinity of SRS, and has required DCS to implement programs and procedures to protect these groups, conduct focused public information campaigns, and implement other mitigative actions. DOE believes that no mitigative measures are required, and that those identified in Table 5.1 (pages 5-5 and 5-6) should be deleted, because our reanalysis of the accident impacts (as mentioned above) appears to be negligible.

IV. Air Quality Monitoring Stations Not Representative

The DEIS should use the most representative ambient monitoring data and reach conclusions regarding exceedence of ambient standards using a methodology consistent with those standards. Instead, the affected environment section of the DEIS presents ambient air quality data from a number of monitors in Georgia and South Carolina, not necessarily close to or representative of the SRS area, and records the highest measured values for each of the parameters. In some cases the monitors are representative of urban locations rather than the more rural location around SRS, while data from monitors in counties adjacent to SRS are not presented. While it may be reasonable to assume that when the highest monitored value at a representative monitoring

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<p>station is well under an ambient standard the ambient standard is met, it is not reasonable to presume that an ambient standard is not met based on unrepresentative monitoring data or data averaged inconsistently with that standard. This error in reasoning is most notable for PM_{2.5}, for which background PM_{2.5} levels are not available from the South Carolina Department of Health and Environmental Control (SCDHEC). Compliance with the PM_{2.5} standard should be evaluated by using the most representative monitored values, and consistent with the ambient standard, i.e., for 24-hour standard use the 3-year average of the 98th percentile values should be used; for the annual standard, the 3-year average of the annual average values should be used.</p> <p>Therefore, the ambient air quality monitoring data presented in DEIS Table 3.3 should be replaced with data that are more representative of the SRS area, and the conclusions based on these data revised accordingly (pages 3-22, 3-23, 4-11, 4-16 through 4-22, 4-89 and 4-90). Table 3.3 presents data from a number of monitors including urban monitors that are not representative of the more rural conditions around SRS, the area for which air quality impacts are being assessed. For example, the Cayce monitor in Lexington, SC, used for PM₁₀ and the annual PM_{2.5} is an urban monitor. But the Colleton, SC monitor, may be more representative of the area around SRS since it is a suburban or rural monitor. The Cayce monitor is located near downtown Columbia, SC with a setting classified by SCDHEC as "commercial, urban-city center."</p> <p>Air monitoring data for particulate matter (PM₁₀ and PM_{2.5}) reported in Table 3.3 suggest that local air quality is in noncompliance with ambient standards for both the 24-hour and annual averaging periods in each pollutant category. Most of these data are attributed to the Cayce, Lexington County, SC monitoring site. In contrast, PM₁₀ monitors near the SRS boundary in Jackson and Barnwell report results for 2001 that are about half or less of the values observed at Cayce. For the PM_{2.5} 24-hour standard, Table 3.3 reports a value of 71 g/m³ from Colleton County. A further inspection of the data from Colleton County shows this value was the absolute maximum recorded in the year 2001; however, the 98th percentile value (the value that should be used to evaluate compliance with the air standard) for this monitor was 27 g/m³. The 24-hour standard is 65 g/m³. Table 3.3 cites data from the Cayce monitor for the annual PM_{2.5} category (21.5 g/m³). In contrast, the annual average for the Colleton County monitor was 12.7 g/m³ for 2001, below the PM_{2.5} standard of 15 g/m³.</p> <p>As part of the discussion of environmental consequences in Chapter 4 of the DEIS, Tables 4.6 and 4.8 use a more reasonable set of data for the existing 'background' air quality, except for the PM_{2.5} annual average. Again, the Cayce monitoring data (21.5 g/m³) is used to support the unwarranted conclusion (page 4-11, lines 28-31 and page 4-18, lines 30-32) that "measured levels of PM_{2.5} in the vicinity of the SRS already exceed the annual standard." This conclusion is also repeated several more times in Section 4.7. The DEIS should be revised throughout to present conclusions regarding PM_{2.5} that are based on more representative data. In addition, Tables 3.3, 4.6 and 4.8 should be revised to present consistent information where possible.</p>	<p>89-10 Cont.</p>
<p>DOE for decommissioning or reuse. As a result, final disposition of the facility will be within the purview of DOE. The DEIS should be revised to indicate that the MOX facility will not be decommissioned under its NRC license. Further, any analyses or discussions relative to decommissioning, such as license termination and regulatory requirements should be revised as necessary to reflect the appropriate end state for the operating license.</p>	<p>89-12 Cont.</p>
<p>VI. Excessive Mitigation Measures</p> <p>DOE believes that the mitigation measures discussed in Chapter 5 and presented in Table 5.1 with NRC as the proponent are in general excessive relative to the postulated impacts. DCS has proposed to implement a number of mitigation measures to address those resource areas that could potentially be impacted more than is desirable. However, in aggregate, the mitigation measures ascribed to NRC are excessive and may not be necessary. Therefore, DOE recommends that these proposed mitigation measures be reconsidered.</p>	<p>89-13</p>
<p>VII. Discussion of the Waste Solidification Building</p> <p>The DEIS discusses the waste solidification building as if it were a third major facility, equal in stature to the MOX facility or PDCF. This occurs, for example, on page 1-7, lines 33-40: <i>Two new DOE facilities (the PDCF and the Waste Solidification Building [WSB]) are needed to support the proposed MOX facility.</i> In fact, the waste solidification building is part of the PDCF complex, and should be discussed as such. Both the MOX facility and the PDCF, although spoken of as a single "facility," comprise a major production building and several smaller associated buildings. Similar wastes from the pit disassembly and conversion and MOX fuel fabrication processes that would have been processed separately in each of these facilities will now be processed in the waste solidification building, thereby reducing the amount of space and equipment needed for both the MOX facility and the PDCF. The DEIS should be revised so as to not give the impression that the waste solidification building is a major, stand-alone facility.</p>	<p>89-14</p>

V. Decontamination and Decommissioning

The DEIS discusses decommissioning of the MOX facility on pages 1-4, line 38; 1-7, line 2; 4-47 through 4-52 (Section 4.3.6); 5-6, line 34; 5-8, line 1; 5-9, line 15; 5-10, line 31; 5-11, line 32; 5-13, line 5. The current contract calls for DCS to deactivate the facility and return it to

ATTACHMENT 2

Department of Energy's Specific Comments

Review of NUREG-1767
Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina

DEIS Section	Page/Line	Comment
ES 1.2.1	Page xvii, line 29 Page 1-4, line 24	The DEIS is inconsistent regarding the designed maximum throughput of the MOX facility. The MOX facility is designed to process 3.5 MT of plutonium per year, not 3.5 MT of plutonium oxide, as stated several places in the DEIS including those identified in this comment.
ES	Page xvii, line 35	Please update the DEIS to reflect that the General Electric facility in Wilmington is now called Global Nuclear Fuel-Americas, LLC.
ES	Page xx, line 9	"distrusted" should be "distrusts."
1.1.2	Page 1-3, lines 11-15	Suggest rewriting the statement "although the DOE has prepared previous EISs that cover impacts of the proposed MOX facility on a programmatic level, those EISs are not considered sufficient to meet NRC needs under NEPA, because DCS has since submitted additional site-specific information, and the proposed MOX facility design has been revised since the DOE's EISs were issued," to remove the judgmental determination that the DOE EIS is "not considered sufficient to meet NRC's needs under NEPA." Suggest stating instead (and more appropriately) that NRC has prepared the DEIS to incorporate additional site-specific information and design detail, and to satisfy the requirements of 10 CFR 51.
1.2.2	Page 1-9, line 1	The first sentence as written could imply that fresh fuel is different from unirradiated fuel. Suggest changing the sentence to read "fresh, unirradiated," or edit it another way so that it doesn't say "fresh or unirradiated."
1.2.2	Page 1-9, Note c to Table 1.1	This table indicates that there is 0.1 MT at LLNL, and the table note indicates that the LLNL total may increase to 1.7 MT of Pu because some RFETS material was shipped to LLNL. The table note references DOE 1996. DOE 1999 indicates that there will be approximately 1.7 MT of Pu from LLNL, including processing/recovery of the RFETS material (footnote 7, pg 1-2).

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DEIS Section	Page/Line	Comment
2.2.2	Pages 2-3-2-5	This section is taken nearly verbatim from DOE 1999, and no citation is provided. However, footnote 1 on page 2-2 indicates that "except as noted, the descriptions provided in this section are based on information from DCS (2000, 2001, and 2002)." PDCF information used in preparation of this DEIS was taken from DOE 1999, and is not provided in DCS documents. This section should be properly attributed.
2.2.4.2	Page 2-15, line 10	It would be useful to include a diagram of the WSB processes in this section.
2.2.5	Page 2-19, lines 2-3	The correct terminology is fire <i>areas</i> not fire <i>zones</i> . Please correct.
2.3.5	Page 2-25, line 36	Revise as follows: "... was manufactured at the DOE's Los Alamos National Laboratory (LANL) and at the <i>Bochvar Institute in Moscow, Russia</i> ."
2.4	Page 2-29, lines 12-14	Need to label these as "nonhazardous waste" as done on lines 32 and 34. The statement "No wetlands or endangered/threatened species would be impacted" is too broad and not entirely consistent with what is presented in Appendix H, pages H-7 through H-9. Based on what is presented, it is difficult to state that no impacts would occur. Rather, it appears that it would be more appropriate for lines 23 and 24 of page 2-30 to state "Negligible impacts to wetlands, aquatic habitat, and threatened/endangered species would be expected." Specifically, that discussion does identify certain potential impacts: For aquatic habitat - "Construction of the facilities would eliminate a small storm-water basin... This basin is shallow with little vegetation...providing minimal value to wildlife (H-8/20-22)...Indirect aquatic impacts could occur if unprotected soils eroded into the unnamed tributary of Upper Three Runs Creek..."(H-8/27) For wetlands - "Negligible direct impacts...to wetlands would occur from facility construction. Indirect impacts could occur if unprotected soils eroded into wetlands adjacent to the construction site and adversely affected hydrological and ecological conditions there." (H-8/39-41) For protected species - "Indirect impacts could occur to listed wildlife species from disturbance...Also, clearing would eliminate habitat that could provide support to some of the species." (H-9/5-7) The woodland habitat loss description under the proposed action column is awkward. Suggest it be reworded for clarity as follows: "Up to 14.7 ha (36.4 ac) of woodlands would be cleared for the proposed facilities. This would represent <1 % of the annual timber harvest at SRS."
2.4	Page 2-30, lines 23 and 24	
2.4	Page 2-30, lines 26 and 27	

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DEIS Section	Page/Line	Comment	
2.4	Page 2-31, line 21	Percent of electric power capacity for operation (38.5%) does not agree with the percentage presented in section H.6.2 (p. H-13/6), 36.4%. The statement "No impacts would occur to endangered or threatened species, wetlands, or aquatic or terrestrial habitats at the SRS and the F-Area vicinity" needs to be corrected to reflect the two previous comments for page 2-30, lines 23-24 and 26-27.	89-28
2.4	Page 2-34, lines 2-4	In addition, the loss of 14.7 ha (36.4 ac) of woodland habitat should probably be characterized as a "minor," rather than "negligible," impact.	89-29
2.4	Page 2-34, line 19	"distrusted" should be "distrusts."	89-30
3.2	Page 3-1, line 32	The statement that "Prime farmland is protected by the U.S. Department of Agriculture" is an oversimplification and technically inaccurate. Although it is a moot point at SRS, the Farmland Protection Policy Act offers no absolute protection to important farmlands (i.e., prime, unique, or other statewide or locally important farmlands). Suggest restating as follows: "Certain soils are classified by the U.S. Department of Agriculture, Natural Resources Conservation Service as prime farmland or other important farmlands. The Farmland Protection Policy Act (7 U.S.C. 4201 et seq.) and its implementing regulations (7 CFR 658) requires Federal agencies as part of the NEPA process to consider the extent to which Federal projects and programs contribute to the unnecessary conversion of important farmlands to nonagricultural uses."	89-31
3.2.2	Page 3-4, line 22	Suggest providing a citation for the estimated PGA produced at SRS from the Charleston earthquake. If the citation for the information in the preceding paragraph is USGS 2001, then this citation should be included at the end of the paragraph.	89-32
3.2.2	Page 3-5, line 1	The sentence referencing the UBC should be deleted, as this Code was rendered obsolete with regard to seismic design provisions with publication of the <i>International Building Code</i> in 2000. The IBC replaces all national model building codes previously in use. Instead of seismic zone designations, the IBC's seismic design provisions are based on the USGS' National Earthquake Hazard Reduction Program maps that depict maximum considered earthquake ground motions for the United States based on spectral response acceleration.	89-33
3.3.1	Page 3-7, line 24	The correct spelling is Hardenville (South Carolina), not Hardeville .	89-34
3.5.4	Page 3-33, line 18	The bat species <i>Myotis lucifugus</i> and <i>Myotis austroriparius</i> are discussed in this section but are not included in the companion list of protected species presented in Appendix A, Table A.1. Please reconcile this inconsistency. Also, to be consistent with the balance of the Ecology discussion, the	89-35

DEIS Section	Page/Line	Comment	
		common name of these two species of bats should be presented in the text, followed by the Latin name in parentheses.	89-36
3.5.4	Page 3-33, lines 20-27	The common ground dove, loggerhead shrike, and American sandbunting mayfly are presented in this discussion of protected species but are not included in the companion list of protected species presented in Appendix A, Table A.1. Please reconcile this inconsistency.	89-37
3.5.4	Page 3-33, line 40 and Page 3-34, line 9	The majority of plant species discussed here are either not listed in Appendix A, Table A.1, or are listed under a different common name. Please reconcile this inconsistency.	89-38
3.7.1	Page 3-37, lines 1-3	Provide general location of site 38AK546/547 (as done for sites 38AK757, 38AK330, and 38AK548). The DEIS states that a rate of 3.3 fatalities/1000 FTEs and 4.6 injuries/100 FTEs is used based on Bureau of Labor Statistics/National Safety Council data. National safety statistics are not appropriate to represent baseline risks for estimating SRS operations. There have been no fatalities for over 200,000 FTEs of operations or construction since 1989. The lost workday injury rate for SRS operations during the past 6 years (1997-2002) has averaged 0.38 cases per 200,000 hours (100 FTEs), less than 10% of the value cited in the DEIS.	89-39
3.10.5	Page 3-56, lines 1-8	Text states housing units are expected to reach 35,400 in 2001. However, this is not consistent with Table 3.16 on page 3-60, which states this estimate is for 2002.	89-40
3.11.4	Page 3-58, line 38		89-42
3.11.4	Page 3-59, lines 33 and 35	These two sentences refer to housing units in the "country" when it should be housing units in the "ROI."	89-43
3.11.4	Page 3-60	The 2002 column of the table does not have a source footnoted (as do the 1990 and 2000 columns). State Route 781 is not shown in either Figure 3.1 or 3.8, as indicated in the text. Also, the text refers to State Routes (SRs), while the Figure 3.8 refers to "SC."	89-44
3.11.6	Page 3-61, line 18		89-45
4.3.1.1.1	Page 4-8, line 37	The number of facility workers at MOX FFF should be stated as done for the PDCF and WSB. Mixing and blanketing are not the same. A blanket of nitrogen above the hydrazine does not mix with the liquid hydrazine that is forwarded to the process.	89-46
4.3.1.2.2	Page 4-13, line 15		89-46
4.3.1.2.2	Page 4-13, line 24	The reference should be to plutonium oxide, not just plutonium	89-47
4.3.4.2	Page 4-29, line 2	The text states: "...produce a solid TRU waste matrix similar to that accepted for disposal at WIPP." The waste will need to be acceptable for disposal at WIPP, i.e., meet WIPP waste acceptance criteria, not be similar to that accepted. The EIS should state that the waste will be acceptable for disposal at WIPP.	89-47
4.3.5.2	Page 4-38, Table 4.13	It appears that the heading for the sixth column should be "Number of LCFs," not "Chance of LCF."	89-48

DEIS Section	Page/Line	Comment
4.3.5.3	Page 4-45, Table 4.16, line 8	Hydrazine hydrate –This material has been identified as hydrazine monohydrate (Chemical Consequences for Potential Chemical Hazard Events DCS01-KKJ-DS-CAL-H-35604-B, Table 6-8), for which TEELs-1, -2, and -3 are 0.0075, 0.06, and 50 mg/m ³ , respectively.
4.3.5.3	Page 4-45, Table 4.16, line 29	It is not appropriate to assume in the DEIS that 240 gal of chlorine would be stored at the PDCF since the SPD EIS indicates that the quantities of hazardous chemicals are generally small, and does not indicate that chlorine is an exception to that statement. The SPD EIS, Table E-7 indicates that chlorine will be used in the pit conversion facility, and the discussion of the accident analysis on Page K-7 indicates that “On an industrial scale, the quantities of hazardous chemicals are generally small – No substantial hazardous chemical releases are expected.”
4.4.1.2.1	Page 4-63, lines 31+	The values in the paragraph don’t agree with the values presented in Table 4.20. Please reconcile the inconsistency.
4.4.1.3	Page 4-66, line 12	Suggest that the phrase “from the PDCF” be added after “recovered HEU” (so as not to confuse it with waste U from the MFFF).
4.5.1.1	Page 4-79, lines 13–14	The table provides no way to judge the significance of these numbers – the portion of the total cumulative impact attributable to the MOX action isn’t really pertinent to judging whether the totals are significant – it would be helpful to reader to include capacities of treatment facilities.
4.5.1.2	Page 4-82, line 13	It does not seem reasonable to assume such high LCFs from ‘general transportation’ when the historical results are so low. The DEIS references the Yucca Mountain EIS for these numbers, but we have been unable to find them in the referenced EIS. Please verify the numbers used.
4.5.2	Page 4-82, line 16	Presuming the MOX shipments in line 16 of Table 4.27 are supposed to be the same as the totals presented in Table 4.20, the numbers for the population dose do not agree. If the information is supposed to be the same, it is suggested that the category be relabeled to more accurately reflect the nature of the information (e.g., All shipments for the MOX program).
4.6.1	Page 4-82, line 32	The sentence states that the benefits to national security are substantial but not quantifiable. The costs associated with continued storage of this material are quantifiable; avoiding these costs should be mentioned as a benefit here. Also, see comment Page 4-83, line 23 for adding these avoided costs to Section 4.6.2.
4.6.2	Page 4-83	Section 4.6.3.2 discusses regional benefits in terms of money entering the local economy for labor associated with the construction and operation of the proposed facilities, and the multiplier effect this money has on the regional economy. The same is true for the national economy but no mention is made of these effects in this section.
4.6.2	Page 4-83	The discount rate used to normalize the costs to 2001 dollars should be specified in the DEIS.

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DEIS Section	Page/Line	Comment
4.6.2	Page 4-83, line 23	The statement is made that the costs and benefits of continued storage of plutonium are discussed in the SPD EIS. Monetary costs were not included in the SPD EIS. However, according to the MOX ER, NNSA 2002 estimated the costs associated with continued storage to be approximately \$246 million/year for as long as the material continued to be stored. One of the national benefits associated with this program should be these avoided safeguard and storage costs. If the no action alternative were to store the plutonium for 50 years, the estimated storage costs would exceed \$12 billion while the cost of disposition is estimated to be \$3.85 billion as discussed in this section.
4.6.3.2	Page 4-87, line 36	It is not clear from the reference where in the SPD EIS the data that is being referred to came from. For the MOX facility, employment estimates would most likely have come from the MOX ER since this included more recent information.
4.7.1	Pages 4-89-4-94	This section reads as a summary of potential unavoidable impacts, many of which are then dismissed if mitigation or good engineering practices implemented. Recommend that discussion be limited to only those areas where unavoidable adverse impacts are certain to occur.
4.7.1	Page 4-94, lines 10 and 11	Statement regarding proportionate increase in amount of TRU waste (9%) is inconsistent with Section 4.5.1.2 (24%) – see previous comment on page 4-76, line 23.
5.2	Pages 5-2-5-6, Table 5.1	The table identifies the proponent of each mitigation measure but does not specify who is responsible for taking action or assuring that action is taken. Clarifying language should precede the table, or additional columns should be added to the table, to indicate which entity is responsible for 1) implementation and 2) verification of completion, of the mitigation.
5.2	Page 5-4, lines 21-22	Not consistent with Section 5.2.7. Table 5-1 says that no mitigation measures are required but Section 5.2.7 describes mitigation measures for each waste type.
5.2.2	Page 5-8, lines 7-9	Suggest rewording as follows for clarity: "Direct impacts to groundwater could occur if there were a failure in the underground pipeline carrying the liquid high-alpha activity waste stream from the proposed MOX facility's ..."
5.2.7	Pages 5-10, 5-11	Text states: "Impacts of hazardous wastes would be mitigated by managing them in accordance with the hazardous waste management practices in place at the SRS." This is not the proper use of the term "mitigated." Doing what is required by law or common practice is not mitigation. Mitigation occurs when, if there are significant impacts, an action is taken to lower those impacts to a more acceptable level. By this definition, (as described in Table 5-1) no mitigation measures are required for waste management.

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Attachment 2
 U.S. Department of Energy
 Page 7 of 7

DEIS Section	Page/Line	Comment
5.2	Page 5-5, lines 6-10 (bullet 2)	It is not clear that this measure is within the jurisdiction of the NRC.
Appendix D.3	Page D-7, line 26	A reference should be provided for U.S. Census Bureau data used in calculations in Appendix D, as well as for the sources provided in the appendix tables.
Appendix F	Page F-11, line 10	Typo? Should "1900" be "1990?"
Appendix H.7.1	Page H-15, lines 7 and 8	The text states that four additional local public service employees would be required, while Table H.1 (p H-14) shows five additional employees. Please reconcile this inconsistency.

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May 14, 2003 00091

Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

Comments on Environmental Impact Statement for MOX Facility at SRS

Dear Sir:

The limited alternatives presented and evaluated in the Draft EIS result in misleading conclusions, and are structured in an artificially truncated way. As set forth in the DEIS, the only two alternatives are the MOX processing project and the no-project alternative, in which enormous amount of water would be required to store plutonium at the SRS site. By failing to include a third alternative, namely stabilization of plutonium in a ceramic medium, known as "immobilization," the approach reduces the assessment to an undesirable choice between two fundamentally flawed options. Structuring the assessment in this way is little more than a veiled leap from preconceived notions to foregone conclusions. The lengthy technical analysis of MOX in the DEIS clouds the essence of more elementary questions, which are both unasked and unanswered, or if addressed, done so in an incomplete way.

- o According to the DEIS, MOX processing would use far less water in the process itself. But by producing radioactive fuel for continued production of electricity at nuclear power plants, the project would extend use of water-intensive and toxic technology that imposes major long-term social, environmental, and economic costs. Furthermore, nuclear power plants consume huge volumes of water in cooling processes. Neary Plant Hatch on the Altamaha River withdraws 57 million gallons a day and returns only 24 million gallons a day. The difference, 33 million gallons daily, is not returned to the river, presumably due to losses to steam. With ever-increasing demands for water supply in this rapidly growing state, particularly during extended drought, such water-intensive practices are increasingly unjustifiable, imposing avoidable burdens on many other sectors.
- o Fresh water flow in Georgia's five coastal rivers is essential to highly productive inter-tidal estuaries. Though Georgia's Atlantic coastline is relatively small (~100 miles), one-third of the remaining tidal marshes on the nation's eastern seaboard are within this state. Relative to our shoreline, Georgia has six times the area of tidal marsh compared the average ratio in the Atlantic States. These marshes are vital habitat for a diverse variety of species that compose the food web for marine ecosystems, so much so that the National Marine Fisheries Service designated Georgia's estuaries as Essential Fish Habitat under federal law. Biologists estimate that at least 75% of marine species depend on this ecosystem. Processing nuclear fuels seriously threatens these vital resources, yet assessments such as this DEIS undervalue these risks and their potential irreversibility.
- o Further loss of fresh water, or contamination of it, could have devastating adverse impacts on remaining ecosystem functions in the lower reaches of Georgia's five coastal rivers and the vast estuaries and nature-based economy they support. The latter includes some 40,000 jobs in coastal Georgia alone, about one out of five jobs here, generating more than \$1 billion a year in revenue annually. Risks such as those linked to nuclear fuel processing, storage, handlings, transport, use, and conversion to electricity, each of which pose serious threats to these resources and the businesses they support.
- o Further, nuclear fuel itself presents an elevated risk due to terrorism, as well as the 'conventional' risks of transport, handling, and storage, each of which introduce unjustifiable threats to largely unwitting third parties (namely, the public). While the DEIS acknowledges the potential for risk, the basis for concluding that this risk is acceptable is derived from highly subjective assessment of the probability of accidental or subversive (terrorist) events that could cause major threats to public health and the natural environment, both short-term and long-term. Even if it is assumed that assessment of accident probability is reasonably accurate, recent simulations of terrorist attacks strongly suggest that conventional methods for defending nuclear facilities are inadequate, and therefore it is reasonable to conclude that risk assessment strategies are woefully insufficient as a basis for making decisions such as those inherent to the proposed MOX facility.

For the above reasons, the Center for a Sustainable Coast opposes the proposed MOX facility at SRS, in large part because we believe that the DEIS is flawed in both its assumptions and in various critical aspects of analysis. Unless assessment of plutonium immobilization is considered as a legitimate alternative to the project, we feel strongly that the whole approach is fundamentally flawed and fiscally irresponsible. With this finding, we conclude that the MOX facility assessment to date in the DEIS is unacceptable, and certainly insufficient to support a decision having such enormous federal financing burdens and long-term implications for the public welfare.

Sincerely,

David Kyler, Executive Director

Congressman Max Burns
Congressman James Clyburn
Congressman Sanford Bishop, Jr.
Governor Sonny Perdue
Governor Mark Sanford

Congressman Max Burns
Congressman Nathan Deal
Congressman Charlie Norwood
Congressman John Lewis

Senator Saxby Chambliss
Senator Zell Miller
Congressmen Jack Kingston

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CENTER FOR A SUSTAINABLE COAST

00090

From: Rachel Western [rachelw@oe.co.uk]
Sent: Wednesday, May 14, 2003 10:59 AM
To: rwh@nc.gov
Subject: MOX

Dear Mr Harris,

I would like to object to the MOX proposal and provide some brief comments for the MOX Construction Draft EIS.

Plutonium should be treated to minimise the risk that it presents and seen in this light the MOX option is counter-productive.

Nuclear reactors present an intrinsic risk of accident and the use of plutonium in the fuel only serves to increase this risk.

In addition the processing of plutonium through the manufacture of MOX fuel is very messy and creates plutonium contaminated wastes that are problematic to handle, as well as causing radiation risks.

Yours sincerely,

Dr Rachel Western BA(Oxon) PhD
Nuclear Researcher
Friends of the Earth England, Wales and Northern Ireland
26-28 Underwood St
London
N1 7JQ

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Nuclear Information and Resource Service
 Southeast Office
 P.O. Box 7586
 Asheville, North Carolina 28802
 828-675-1792

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 Cont.

airborne or other vectors) that spontaneous plutonium combustion occurred. Since NRC gives no basis for their assumption that this sort of event will not happen at the new MOX Fuel Factory (NMF) we find it impossible to accept the idea that the current document can encompass all the environmental impacts of the MOX factory.

B. We further reflect in reading this document that it will provide a substrate for any future MOX fuel factory that NRC might license. As such, it is important to note that the plutonium under consideration is from dismantled warheads that were once from reprocessed irradiated fuel. The current proposal is not representative of any other MOX fuel factory that might be licensed in the future under Part 70 where waste reprocessing would be an integral part of the proposal and need to be considered. In this case, the Pit Disassembly and Conversion radiation doses and other impacts must be considered a part of the current process.

May 13, 2003

Michael T. Lesar, Chief Rules and Directives Branch
 Division of Administrative Services
 Office of Administration
 Mail Stop T-6D59
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

**Comments of Nuclear Information and Resource Service (NIRS)
 on the Nuclear Regulatory Commission (NRC)
 Draft Environmental Impact Statement (DEIS) for the
 MOX Construction Authorization Request**

Comments are not in order of importance.

A. NIRS agrees with Georgians Against Nuclear Energy on the wrong-headed and contradictory process that NRC has offered DCS and DOE in the two-part license, but one-part NEPA (National Environmental Policy Act) process. We submit their text verbatim:

1. The most profound flaw of the NRC's DEIS process is that it splits the MOX application into two parts - construction and operation - but the operations data is not subject to review. Environmental aspects of both must be considered. Most alarmingly, the NRC plans to sign off on its environmental review before operational plans are developed to safeguard 34 tons of plutonium during MOX processing. To separate construction and operation, and to not review critical design aspects of the basic program premise to contain the highly dangerous plutonium, is irresponsible and blatantly wrong (and is being legally challenged by GANE).

We add to this the point of view that the DEIS assumes throughout the analysis that the new MOX factory will not be subject to any of the problems seen at other plutonium handling facilities in the United States, with no apparent justification for this assumption.

At Rocky Flats where this same plutonium was handled to make the plutonium pits that will be disassembled and converted to MOX at SRS there was significant problems with materials accounting. Indeed, plutonium scrap was so concentrated in some parts of the facility (via

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C. NIRS also finds that the entire NEPA and plutonium disposition process are flawed by the specious claim that MOX is the only alternative that would meet the specious Russian demand that the plutonium be isotopically degraded. This claim must be seen as specious since the agreements signed in the 1990's allow for immobilization of plutonium as an acceptable mode of disposition without qualification. Secondly, any isotopic degradation is will only persist for a relatively short time in the long time that plutonium will have to be safeguarded. The fact is that as time goes on a higher and higher percentage of plutonium will meet the definition of "weapon grade" which is: less than 7 % plutonium 240 with its 14.4 year half life. In little more than 140 years of any isotopic "degradation" the stuff will be weapons grade again!

The proposal to reduce nuclear dangers by doubling the humanicidal properties of a nuclear reactor completely abrogates the legal responsibility of the NRC to protect public health, safety and the environment. The fact that NRC finds the risks associated with plutonium transport, processing, fuel fabrication and fuel use to be "acceptable" suggests that once again NRC is dismissing real danger in favor of reliance on computer simulation. In an era when we are told by major media sources that US reactor diagrams were found in alleged terrorist caves in Afghanistan leads this organization to ask NRC which bed it is hiding under.

NIRS humbly suggests to NRC that should reply to DCS and DOE that the Precautionary Principle dictates that no further nuclear activities should be undertaken at the Savannah River site due to the fact that it already meets or exceeds safety limits on a number of important parameters, and all federal activity should be devoted to clean-up, restoration, mitigation, free health and preventative care.

D. MIX not MOX -- NRC could further point out to DOE that it could facilitate the isotopic degradation with no reactor use and also reduce a proliferation threat by acquiring reactor grade plutonium from other countries and mix US and Russian surplus plutonium with these stocks. At that point it would be possible to immobilize or make off-spec MOX with this plutonium. Irradiated fuel could be used as the radiation barrier for this waste form.

E. NRC's DEIS does not problem solve. Instead it invokes a mandate from the State Department about what is diplomatic with the Russians. This means that environmental protection in the United States is being dictated by Moscow. This is not acceptable. If the plutonium disposition

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Degradation with no reactor use and also reduce a proliferation threat by acquiring reactor grade plutonium from other countries and mix US and Russian surplus plutonium with these stocks. At that point it would be possible to immobilize or make off-spec MOX with this plutonium. Irradiated fuel could be used as the radiation barrier for this waste form.

93-10 Cont.	<p>environmental impact statement on the use of MOX in Catawba 1 & 2 and McGuire 1 & 2 and any other nuclear power stations that apply to use this fuel elsewhere or in the future.</p>	93-8 Cont.	<p>process had been conducted "above boards" and in an open manner, instead of in secret meetings of US and Russian technocrats at Harvard hosted by John Holdren, there might have been some hope of a real solution. These secret meetings may have prevented the matter from being elevated to the level of concern it deserved within both the Clinton and Putin Administrations. Had this plutonium received the attention it deserved, it might have served as a real initiation into substantial nuclear disarmament. Instead this process has been used by the same career technocrats in the US as a cover for their real objective: a return to nuclear weapons production.</p>
93-11	<p>G. It is not acceptable to sign off on the environmental impacts of construction of the MFF without a more detailed explication of the impact of bull dozer activity on this contaminated site. The movement of soil that is contaminated will have an impact not only on workers, but also those off site as particulate is lofted into the atmosphere. NRC states on page 4-8 of the DEIS that any doses to workers from such contamination would be assessed. By whom? Why no assessment of off-site folks?</p>	93-9	<p>On what basis does NRC assume that there WILL be ANY surplus plutonium?</p> <p>If MOX is, instead the waste management method for new nuclear weapons production should not the NEPA process include both these actions?</p> <p>If production of new, usable nuclear weapons is the real outcome of the plutonium processing at the PCDF and the waste solidification building also serves this process, is it not necessary under NEPA to consider the environmental impacts of USING the usable nuclear weapons?</p> <p>F. At this point in time it is somewhat likely that the current DEIS may be the only EIS for MOX use in reactors, unless the NRC is forced to do an environmental impact statement for the use of MOX in Duke reactors by intervenors. As such, the reference reactor approach is completely unacceptable. For one thing, the Duke reactors were already under a signed DOE/DCS contract at the time that the CAR was submitted to NRC. There is no basis for not considering the specifics of the Duke reactors, including the unique features and lack of features in the Ice Condenser design.</p>
93-12	<p>NRC also states that water would be used to limit the amount of fugitive dust (page 4-18). This water will however interact with any radionuclides or other contamination in the soil and contribute to the already acknowledged plume of contamination under the site (page 4-7). No characterization of this plume is provided. How will it be possible to determine in the future whether or not the MFF has contributed to this problem unless the current analysis includes a detailed characterization of what is currently in the soil, in the vadose zone, in the ground water, in the plume, and the direction and speed of this plume's movement.</p>	93-10	<p>Further, it is vital that the intersection of reactor aging and MOX use be fully analyzed, including the environmental impacts of large component replacement post MOX use.</p> <p>Thermal impacts of MOX must also be assessed, and should be done so in the context of the Duke reactors specifically since persistent drought has already jeopardized the capacity of Lake Wylie to cool Catawba 1 & 2. MOX fuel may boost the thermal requirements of the reactor and thermal discharges to Lake Wylie high enough to puncture this envelope, causing Catawba to be taken off-line until Catawba River water levels rise and Lake Wylie water temperatures fall.</p> <p>NIRS protests the fact that NRC has decided to exclude nuclear security issues from the NEPA process for the MFF and other nuclear licensing decisions. From our perspective, this is evidence that the NRC assumes that the decision to license is "yes" unless someone can stop them, and then systematically colludes with industry to remove all handles that might constitute a means to stop them. In other words there is no external decision-making. The United States is a Nuclear State and there is no recourse except in the courts, where NRC is unfairly given the advantage of large staffs, large federal budgets and the high ground of being the "accredited technical expert."</p> <p>These are only some of NIRS concerns about the environmental impacts of nuclear reactor use of MOX fuel. We offer them as examples of the types of issues that cannot be addressed in a generic analysis, but which must be addressed. We sincerely hope that NRC will do a full</p>
93-13	<p>Further, since the movement of contaminated particulate off-site and movement of contamination from soil into ground water are both cumulative, and construction of all three facilities will result in one or both of these events, it is not correct to assume that MFF and WSB construction are "bounding." It is necessary to assess the impacts of all three and look at them cumulatively, even though the PCDF construction may lag behind the other two.</p>	93-11	<p>Further, the assumption that simply transferring this waste to SRS and the Department of Energy is an end-point when it comes to environmental impact is specious. For instance, stating that the MFF associated "low-level" wastes is some percentage of the SRS "low-level" waste implies to the unschooled reader that in fact MFF is cleaning up SRS. ANY incremental addition to the radioactive burden on the banks of the Savannah River is an unacceptable impact for the future generations that will, hopefully persist during the interminable period of hazard that plutonium</p>
93-14	<p>H. NRC fails to consider radiological impacts on children, elders, women and anyone else who is not the "Standard Man." This is inexcusable in the 21st century. What percentage of NRC employees have had difficulty conceiving a child? How many NRC parents have children with cancer? The general public is having an epidemic. Shame on NRC for not considering these factors when moving to approve a facility that is inherently a hazard to public health and safety.</p>	93-12	<p>I. It is not clear which entity is responsible for plutonium security.</p> <p>J. NIRS agrees with GANE's analysis of NRC's nonsensically disappearing waste inventory:</p> <p>5. (GANE) The DEIS analysis of the large volume of liquid radioactive wastes to be generated in the MOX program is incomplete. The NRC's estimates are baseless and therefore not verifiable. The public must be shown how the NRC arrives at its waste estimates.</p>
93-15	<p>I. It is not clear which entity is responsible for plutonium security.</p>	93-13	<p>Further, the assumption that simply transferring this waste to SRS and the Department of Energy is an end-point when it comes to environmental impact is specious. For instance, stating that the MFF associated "low-level" wastes is some percentage of the SRS "low-level" waste implies to the unschooled reader that in fact MFF is cleaning up SRS. ANY incremental addition to the radioactive burden on the banks of the Savannah River is an unacceptable impact for the future generations that will, hopefully persist during the interminable period of hazard that plutonium</p>
93-16	<p>J. NIRS agrees with GANE's analysis of NRC's nonsensically disappearing waste inventory:</p>	93-14	<p>Further, the assumption that simply transferring this waste to SRS and the Department of Energy is an end-point when it comes to environmental impact is specious. For instance, stating that the MFF associated "low-level" wastes is some percentage of the SRS "low-level" waste implies to the unschooled reader that in fact MFF is cleaning up SRS. ANY incremental addition to the radioactive burden on the banks of the Savannah River is an unacceptable impact for the future generations that will, hopefully persist during the interminable period of hazard that plutonium</p>

93-16
Cont.

poses. The claim that this program will reduce nuclear dangers does not apply to the workers and the people of the area surrounding Savannah River Site.

K. Environmental Justice and Mitigation. The very fact that NRC has found that there will be a disproportionate impact from an accident – and we believe from routine operations at Savannah River Site as well – on low income and minority populations is a reason to deny DCS and DOE the privilege of poisoning or irradiating one more person of any color or any income!

The very fact that mitigation is being offered is admission that there is an adverse environmental impact. We do not care how many people NRC projects will suffer from an accident since we question NRC's basis for calculating radiological impact. The fact that one individual is projected to die and that mitigation is being suggested is the reason to deny this license.

In terms of mitigation, NRC falls short of anything that could possibly off-set the destructive impact of plutonium jobs and potential accidents on the present and future of these communities.

This writer finds it somewhat puzzling that page 7-18 gives as part of the glossary the following definition:

mitigation: a series of actions implemented to ensure that projected impacts will result in no net loss of habitat value or wildlife populations. The purpose of mitigative actions is to avoid, minimize, rectify or otherwise compensate for any adverse environmental impact.

If we construe the words "habitat value" to mean the homes and public areas of the communities that would be most impacted by operations and accidents at the MFF, then clearly we can see that the best mitigation is to avoid the hazard and the risk. Deny the license.

It is not possible to rectify or compensate for loss of functioning health, loss of life, loss of ability to procreate, loss of healthy normal children. The only cure is prevention.

That NRC staff are advocating an information campaign is not only not enough, it is mildly offensive. We are going to let them threaten your home with the leftovers of weapons of mass destruction, but all we are going to offer you is the information that you should use some of the money you need for your children's shoes and education or your own prescriptions for duct tape! This is not acceptable. Nor is it plausible. This program is projected to last 1 – 2 decades. Will the information officers go out and re-instruct people periodically. Remind them that they are in the path of such danger, paid for by their own hard earned tax dollars? We think not. What about the environmental impact of cutting down all those trees for that one-time "mitigation" with its glossy pictures? THIS is supposed to "rectify" the deaths that would come from a plutonium accident? Not good enough!

We in no way suggest that the following are mitigations – but any dangerous operation should at the very least provide clean water for everyone in the area – there is currently tritium in the rain that falls within 25 miles of SRS, and there will be more due to the new programs that have been sited there, in part due to the MOX program.

93-17

The folks who are being disproportionately placed at risk and who are already daily subjected to hazard from living near SRS should have free health care, including education about ways to reduce the inventory of radioactivity and other "bodies" that their bodies are exposed to thanks to living near SRS.

There should be sirens that sound when any event occurs at SRS that warrants either sheltering or evacuation and the sound of the siren should signal which action is recommended.

There should be funding for summer programs for children to leave the area for months when they are out of school and this should favor low income and minority individuals. They should be sent to places, such as there are, where the food and water are less likely to contain radioactivity.

All of these things should be done now. None of them justify further nuclear production at Savannah River Site.

This writer challenges NRC to at the very least define the term "mitigation" in terms of the human populations they claim to be considering. If, however this is all the agency sees fit to do in the face of admitting that the MFF has the potential to sever families and lives in irreparable and inmitigable ways, this will be one more example for the public of just how devalued our safety and health are when compared to the billions of dollars that Duke, COGEMA, Stone and DOE will see, not to mention the money NRC will get to "regulate" this killer. Prevention is the only cure. Now is the time to end this proposal and save the tax dollars so they can still be used to address the plutonium problem in a safer way.

L. NIRS affirms the following points made by GANE:

6. The DEIS assumes a 10-year MOX program but DCS plans to apply for a 20-year license. The DEIS must analyze MOX production over 20-year duration.

7. Sabotage and terrorism have become increasingly common in recent years. The DEIS must analyze environmental risks from sabotage, malevolent acts, or terrorist attacks to: the MOX facility; reactors using MOX; transports of fresh fuel to reactors; or transports of plutonium to SRS. MOX, by involving weapons-grade plutonium, is an intrinsic security risk, and must be considered to have a strong attraction to terrorists. Absence of analysis of this environmental risk hampers efforts of public health authorities to respond to emergencies posed by potential security breaches.

Respectfully Submitted (via e-mail 05-14-03, hard copy in the mail)

---signed---

Mary Fox Olson
Director, Southeast Office

93-18

93-19

00094



NUCLEAR ENERGY INSTITUTE

Ralph L. Anderson
 CHIEF, ENVIRONMENTAL ANALYSIS
 PLANT SUPPORT
 NUCLEAR GENERATION DIVISION

May 14, 2003

Mr. Michael T. Lesar, Chief
 Rules & Directives Branch
 Division of Administrative Services
 Office of Administration, Mail Stop T-6D59
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555-0001

SUBJECT: U.S. NRC Request for Public Comments on the *Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina* (68 Fed. Reg. 3728, February 28, 2003)

Dear Mr. Lesar:

This letter provides comments of the Nuclear Energy Institute (NEI) on the subject Draft Environmental Impact Statement (DEIS). These comments are focused on the DEIS analysis of radiological consequences for postulated accidents and its application in regard to the Nuclear Regulatory Commission (NRC) policy on environmental justice.

The DEIS does not provide an assessment of reasonably foreseeable impacts as required by the National Environmental Policy Act. The DEIS only provides a bounding analysis of accident consequences and associated potential impacts. NRC implies that the analysis represents a "worst-case" assessment, which is contrary to NEPA requirements.

The bounding analysis provided in the DEIS is unnecessarily conservative, employs unreasonable assumptions, and applies inconsistent and inappropriate methodology.

Mr. Michael T. Lesar, Chief
 May 14, 2003
 Page 2

1. The analysis utilizes the GENII computer code, rather than the MACCS2 code that was used in the applicant's environmental statement (ES) and is consistently utilized by the NRC in other accident consequence analyses. The NRC does not offer a rationale for the selection and use of this atypical model in this application. This is of particular concern because the GENII model has been found to be not appropriate for application to accident analysis, specifically in regard to the types of accidents, releases, and population dose assessments considered in the DEIS.¹

2. The DEIS accident consequence analysis consistently employs the most conservative assumptions, in some cases to the extent that the assumptions are not reasonable. For example, the assumption is made that following a postulated accident and radiological release, no protective actions would be taken by authorities over the next year to quarantine contaminated food supplies.

3. In calculating latent cancer fatalities that hypothetically might occur as a result of the analyzed accident consequences, the DEIS multiplies the collective radiation doses (determined using ICRP 26/30 dose methodology) by the Federal Guidance Report (FGR) 13 health risk conversion factor (roughly determined using ICRP 60 dose methodology). The two dose methodologies are not compatible. Further, the NRC provides no rationale for the *ad hoc* use of the FGR 13 health risk conversion factor that is not consistent with the scientific basis underlying current NRC guidance and regulation.

Finally, the DEIS inappropriately applies these results under the rubric of environmental justice. As NEI brought to the Commission's attention in a letter dated December 20, 2002, the NRC's evaluation of environmental impacts in licensing actions are not consistent with the terms of Executive Order 12898. By letter dated February 10, 2003, the Commission advised NEI that it intended to reconsider its policy concerning the application of Executive Order 12898.

In summary, we are concerned that the DEIS approach to assessing environmental impacts sets an undesirable and inappropriate precedent that does not conform to NEPA requirements or NRC policy.

¹ See, for example, the Review of the ORIA's Use and Adaptation of the GENII Version 2 Environmental Radiation System by the EPA Science Advisory Board, EPA-SAB-RAC-ADV-01-002, dated June 26, 2001.

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cont.

94-2

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Mr. Michael T. Lesar, Chief
 May 14, 2003
 Page 3

We would like to discuss our comments and generic concerns with NRC staff responsible for conducting environmental impact assessments. In that regard, please contact me at (202) 739-8111.

Sincerely,



Ralph L. Andersen

From: Tom Mott [vspartners@earthlink.net]
Sent: Wednesday, May 14, 2003 7:51 PM
To: mh@nrc.gov
Subject: Comments about the MOX proposal at Savannah River Site

(Note: I would appreciate it if this note could be forwarded by the NRC to the appropriate official(s) in the Department of Energy, inasmuch as some of the issues are more logically in their sphere)

Today is the due date for registering concerns with the NRC over the controversial, dangerous plutonium bomb fuel (MOX) experiment that is slated for our upstream neighbor, the Dept. of Energy's Savannah River Site nuclear facility.

I have attended meetings in Savannah where NRC's role was discussed, and their impact statement drafts reviewed. Throughout, I have had these reactions: (1) The NRC representatives seemed eager to get community input and were sincere in their attempts to deal with questions and concerns; (2) The meetings were sparsely attended and not particularly well covered in the local media; (3) A good many of the issues raised by citizens were essentially outside the purview of the NRC --- these are issues raised by citizens of the selection of Savannah River Site (which comes with a legacy of neighborhood environmental and public safety problems), and the even larger issue of why this is a good public policy proposal at all, no matter where it is done.

I will defer to others having stronger technical backgrounds to challenge the environment impact work done by the NRC. Frankly, as well intentioned as the review meetings were, a great deal of the content in the report proper is hard for a layman to form impressions about. But people whose judgement and expertise I trust are not satisfied the research is adequate

--- and there seems enough uncertainty (and changed direction) about what the actual process, parameters, and scope will be, that the NRC analysis might need to be redone as future decisions unfold if the report is to be fully responsive to the proposed actions.

Frankly, I believe public hearings would have been more useful if conducted by the DOE and those private consortiums working with the DOE on the plutonium conversion proposals. In such a case, the frustrated concerned citizens (and most were definitely that) could have presented the questions that are at their hearts and at the heart of the matter. It seemed like were debating the cart, and not being able to evaluate the horse pulling it.

Important questions the NRC is not in a position to answer include: Why is this process a good idea? --- and, what are the alternatives and why did this emerge as the preferred one? Further, are we being targeted for this development because there are some political and/or socioeconomic and demographic characteristics of our area? Why is it that one of the collaborators in this is a French company with a very shaky record on environmental matters in Europe -- couldn't we do better that that? And, finally: why would anyone be so presumptuous and have such blinders on as to choose the Savannah River Site for this work without simultaneously addressing the question of why that particular site has been neglected in terms of cleaning up the mess we already have there?

If it is to be that we will have a MOX plant at Savannah River Site, like it or not (and right now I have reasons to feel pretty good about it), then is this not the time to hold "feet to the fire" about making that facility what they call "an all respects, the NRC can say, with some justification, "that's not what we are charged to study and run on." But that doesn't change the fact that we have a radioactive time bomb as our neighbor, and we don't see any urgency about addressing THAT very very nasty fact.

I urge the NRC to use its influence on others in policy-making roles to look carefully at what is being proposed, and redirect it in a way that addresses the legitimate concerns, and indeed fears, of those of us living downstream from the Savannah River nuclear site. Thank you.

Sincerely,

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Thomas R. Mott
 402 E. Bryan St.
 Savannah, GA 31401-2803

To: The Nuclear Regulatory Commission
 From: Citizens For Environmental Justice
 Date: May 14, 2003

Re: Report No. NUREG-1767

Comments to the Nuclear Regulatory Commission on the Draft Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site South Carolina.

This letter represents a collective response by African American communities and residents living in South Carolina and Georgia to the Draft Report for Comment Environmental Impact Statement on Proposed MOX Nuclear Facility issued February 2003. The comments, concerns and recommendations were gathered at four community meetings held in Aiken and Blackville, South Carolina and Augusta and Savannah, Georgia. Citizens For Environmental Justice (CFEJ) is serving as the lead organization working with these Environmental Justice communities in providing formal public comment to the Nuclear Regulatory Commission (NRC) and Department of Energy (DOE). The enclosed letter was sent to Secretary of Energy, Mr. Spencer Abraham on April 3, 2003. We have not received a response to date.

We, the environmental justice communities do not support the construction and operation of a MOX facility at Savannah River Site (SRS). We believe this mission is highly inappropriate, particularly because of the current legacy of waste at SRS.

96-1

Comments

- While we certainly applaud the inclusion of the Environmental Justice Analysis contained in the Draft Environmental Impact Statement (DEIS), we feel it is inadequate and did not provide sufficient details and explanation.

96-2

<ul style="list-style-type: none"> • We are appalled at the mistakes published in the DEIS and feel it was unfair to ask communities to respond to inaccurate data. The new information regarding the number of latent cancers that could be expected has still not reached our communities and no mechanism has been provided to make comment on this new information. 	96-3	<ul style="list-style-type: none"> • There is a clear violation of the National Environmental Policy Act (NEPA) requirements • Because of the Native American's position on the final repository issue, debate must continue that includes all communities, particularly those on transportation routes 	96-9 96-10
<ul style="list-style-type: none"> • According to the Executive Order 12898 on Environmental Justice extra measures must be taken to inform Environmental Justice Communities of proposed Federal actions. Although there were public meetings held, there was no outreach made to disadvantaged or vulnerable communities. 	96-4	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Major Concerns</div> <ul style="list-style-type: none"> • Potential health impacts to the Environmental Justice community as a result of an accident 	96-11
<ul style="list-style-type: none"> • The mitigation measures section addressing the disproportionate impact to minority communities is totally unacceptable. The proposal measures place yet another unfair burden on communities and local government. Education will not address impacts described in the Draft Environmental Impact Statement. Local governments and citizens should not bear the responsibility of emergency preparedness and associated costs. 	96-5	<ul style="list-style-type: none"> • Lack of Emergency Preparedness of local government, health, fire and police departments • Environmental Justice communities lack of understanding of the proposed actions 	96-12 96-13
<ul style="list-style-type: none"> • The Draft EIS does not provide opportunity for stakeholders to comment on immobilization as a viable and cost effective option 	96-6	<ul style="list-style-type: none"> • Lack of respect for Environmental Justice communities involvement and input 	96-14
<ul style="list-style-type: none"> • Operation of the MOX facility at SRS will in our opinion generate more and new radioactive waste – and enough waste is being handled at the site already 	96-7	<ul style="list-style-type: none"> • Lack of Duke Cogema Stone and Webster's willingness to meet with Environmental Justice stakeholders for dialogue and collaborative problem solving 	96-15
<ul style="list-style-type: none"> • The length and complexity of language and science in the DEIS precludes many residents and Environmental Justice stakeholders from reading and commenting on the document. The comment period is too short and resources must be given to communities to develop their capacity to respond to such documents 	96-8	<ul style="list-style-type: none"> • Generation of new radioactive waste by the MOX facility and funds to address this waste management • Computer errors miscalculating the number of deaths in low income, African American communities as a result of a severe MOX accident 	96-16 96-17

<ul style="list-style-type: none"> No public announcement on how communities will comment on new data that has been corrected – N. Augusta in South Carolina and Augusta in Georgia should have every opportunity to make comment because they will be highly affected by the proposed MOX activity 	96-18	6. Improved and enhanced communication with environmental communities must be instituted	96-28
<ul style="list-style-type: none"> The environmental risks associated with insufficient reactors in the MOX program to keep up with the proposed MOX production rate 	96-19	7. Documents must not be published for comment by the public with incorrect calculations – when this occurs the process for commenting must be extended	96-29
<ul style="list-style-type: none"> Adding to SRS materials that are attractive as targets for sabotage or attack 	96-20	8. Duke Cogema, Stone and Webster must be made to work with potentially impacted communities	96-30
<ul style="list-style-type: none"> Security risk of weapons grade plutonium at SRS 	96-21	9. Provide a “community user friendly” document that clearly tells people what is proposed, why and potential real impacts on the environment, health, economy and ecology of the operation of the MOX facility (EIS) on the immobilization option	96-31
<ul style="list-style-type: none"> Another plutonium mission for SRS: a new plutonium pit disassembly facility 	96-22	10. DOE must conduct a supplemental Environmental Impact Statement	96-32
		11. A programmatic EIS must be conducted that considers and addresses all parts of the MOX program of activity which includes the current EIS on the MOX fuel facility, supplemental EIS for the license renewal for the 4 Duke nuclear power reactors, Lead Test Assembly, MOX use in reactors and new plutonium processing	96-33
		12. The disproportionate impact on minority and disadvantaged communities must be addressed and mitigated	96-34
		13. There must be no acceptance of any number of potential deaths	96-35
		14. DCS must provide an off site emergency plan for a critical accident in the MOX facility	96-36
Recommendations			
<ol style="list-style-type: none"> Place a moratorium on the proposed MOX activity until environmental justice stakeholders can be integrated into the decision making process 	96-23		
<ol style="list-style-type: none"> NRC must insure that the input from environmental justice communities is heard, considered and factored in the final record of decision 	96-24		
<ol style="list-style-type: none"> Resources must be provided by Duke Cogema, Stone and Webster to local communities infrastructure for emergency preparation 	96-25		
<ol style="list-style-type: none"> Duke Cogema, Stone and Webster must work collaboratively with environmental justice communities in planning and implementing mitigation strategies. New mitigation measures must be developed with the involvement of communities and integrated into the EIS 	96-26		
<ol style="list-style-type: none"> Immobilization must be presented to potentially impacted communities as a possible option for plutonium disposition 	96-27		

<p style="text-align: center;">Supplemental Recommendations</p> <ul style="list-style-type: none"> • Encourage authors and agencies developing the EIS to refer to the NEPA for opportunities to implement comprehensive review and analysis of all new policy proposals, rule revisions, permit applications and construction projects • Improve NRC's (and other developers of the EIS) capacity to analyze and address environmental justice issues • Establish better environmental justice guidelines for analysis and mitigation measures (involve the community in the development process) • Ensure that NRC and its staff understand that "meaningful involvement" of all people (including Environmental Justice advocates and communities) in government processes is at the very center of addressing many of the issues brought forth by the environmental justice community • Address the cumulative impacts of the proposed actions. The cumulative impacts should be evaluated with respect to increasing or decreasing existing inequities 	<p>This proposed federal action must ensure the Environmental Justice in minority and low income communities as it relates to the MOX Fuel Fabrication Facility at SRS.</p> <p>In conclusion, we the members of the environmental justice communities in the South Carolina and Georgia call for a reversal of the Department of Energy's decision to construct and operate a MOX facility at Savannah River Site. Questions from community meetings are available upon request.</p> <p>Working for Environmental Justice,</p> <p>Dr. Mildred McClain Executive Director</p> <p>Enclosures: Letter to DOE Secretary Community Questions</p>	<p>96-38 cont.</p> <p>96-39</p>
<p>If in planning for an environment action, NRC and DOE find that such action will place an unequitable burden on groups, individuals or communities, and further find that they are unable to avoid placing such a burden, then consideration should be given to providing compensation or incentives</p> <p>Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.</p>		<p>96-37</p> <p>96-38</p>

April 3, 2003

Mr. Spencer Abraham, Secretary
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Secretary Abraham:

This is a letter to formally call your attention to a grave concern of African American residents living near the Savannah River Site. On Monday, March 3, 2003 we received the Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina. In the Environmental Impact Statement (EIS) an environmental justice analysis was conducted and the results are quite disturbing. The findings report that if an accident or explosion occurred the greatest impact would be to minority communities because of their geographical proximity to the site. The EIS states under Section 4.3.7.3.3 Accidents:

"A tritium release at the proposed PDCF facility has the potential for causing up to 400 latent cancer fatalities in the area surrounding SRS. However, it is highly unlikely that such an accident would occur. There, the risk to any population, including low-income and minority communities, is considered to be low. In the unlikely event of a tritium release at the PDCF or an explosion at the proposed MOX facility, the communities most likely affected would be minority and low income, given the demographics within 80 km (50 mi) of the proposed MOX facility." (Pg. 4-57)

The Mitigation Measures Section we feel is very weak, lacks sufficient details, and puts an unfair burden on minority communities to prepare themselves for any emergency or accident. (Section 5 Pg.5-6)

This raises several major concerns because of the already existing vulnerabilities within this population. Current DOE policy and the Executive Order 12989 on Environmental Justice require that measures be put in place to address any disproportionate impact relating to communities of color.

Our major concerns fall into five categories:

- 1) Emergency response preparedness for communities and local officials (with community involvement)
- 2) Information dissemination
- 3) Monitoring
- 4) Long term strategic planning to address potential impacts in collaboration with communities
- 5) Role of Duke/Cogema relating to community involvement and preparedness

We are asking for your assistance in having our concerns addressed. We want our communities involved in all the contractor's activities including planning and training related to insuring the safety and protection of the health of our people.

Working for Environmental Justice,

Dr. Mildred McClain
Executive Director

00097

24305 Clematis Drive,
Gaithersburg, MD 20882,
May 13th, 2003.

Tim Harris,
TWFN 7F-21
U.S. Nuclear Regulatory Commission,
Washington, DC 20555-0001,
Telephone: (301) 415-6613,
E-mail: TEH@nrc.gov.

Subject: Comments on the Draft Report, Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility (MFFF) at the Savannah River Site, South Carolina, NUREG-1767, dated February 2003.

Dear Mr. Harris,

Thank-you for the opportunity to read and comment on the subject Draft Environmental Impact Statement (DEIS). I have read the DEIS and associated public documents, such as the NRC staff Draft Safety Evaluation Report (DSER - April 2002), with great interest. Personally, I am impartial towards the proposed action in the DEIS - I am neither for nor against the construction of the proposed facility (MFFF). From the information in the DEIS and DSER, I understand that the proposed MFFF is part of a national strategy and international agreements related to the disposition of excess plutonium. Thus, I conclude it is very important that this disposition is performed correctly, with appropriate NRC regulatory oversight and reasonable assurances of safety. Consequently, I have taken the time to briefly review the DEIS and provide you with feedback that I hope your agency will consider and use to improve the DEIS and safety at the proposed facility.

As noted under Item 5 below, the DEIS is one of several documents in the MOX review at the NRC, and a revised DSER is due out shortly. I recommend that the DEIS comment period is extended to allow the public to compare the DEIS and revised DSER together, and comment appropriately.

I have the following overall comments and recommendations on the DEIS:

1. **Adequate Assurances of Safety:** I am concerned about adequate safety and protection of the workers, the public, and the environment. As written, the DEIS indicates the proposed action (to build and operate the MFFF) has some impacts - it pushes the proverbial "envelope" in a number of areas - but the conclusion of acceptability is the same. This comes across as a non-sequitur. The DEIS should be extremely firm in its conclusions on the requirement of adequate safety and protection, as this is the primary mission of the Nuclear Regulatory Commission (NRC). For example, Table ES-1 of the DEIS should explicitly acknowledge which mitigation measures are required by the NRC,

Page 1 of 5

<p>with clear and objective criteria. The DEIS should explain how DCS can add revisions to the SRS Emergency Response Plan (DCS does not run the SRS) to address NRC concerns, and the process by which NRC would review and approve a plan that is essentially outside its regulatory jurisdiction (radiological safety at the SRS is regulated by the U.S. Department of Energy (DOE)). Also, per the DSER, the plan is not yet designed. However, as the DEIS is written, it is not clear if reasonable conservatism has been incorporated into the analyses due to the lack of design information or if ALARA (As Low As Reasonably Achievable) considerations are included.</p>	97-2 cont.
<p>2. Inadequate Mitigation or Prevention of Impacts and Events: The DEIS indicates there are a large number of potential hazards and potential events at the proposed facility, particularly from chemicals. However, the DEIS appears to focus on programmatic and administrative controls for many of these hazards and concerns, with mitigation by evacuation or other worker actions. Some of the potential events would seem to have the capability of producing numerous serious injuries and/or fatalities with relatively high likelihoods. This appears to be less than adequate and potentially inconsistent with NRC regulations, which, for example, endorse passive controls as preferred to active controls, and engineered controls as preferred to administrative controls. In addition, the DEIS does not appear to emphasize actual mitigation and/or prevention of the hazardous phenomena itself. Also, there is a brief discussion on sand and HEPA filters that reaches a conclusion of no difference - but the conclusion does not seem to be supported by the discussion, which implies better performance from sand filters, particularly during accidents. It is recommended that approaches more consistent with NRC and nuclear industry practices in these areas, with reasonable mitigation, prevention, and/or conservatism, are endorsed by the DEIS.</p>	97-3
<p>3. Uncertainty and Sensitivity: The analyses in the DEIS do not appear to address uncertainties - including uncertainties in design, uncertainties and inaccuracies in models, uncertainties in input parameters, and excluded or overlooked effects. In addition, the sensitivity of the results to changes in assumptions and parameters is unclear. It is recommended that uncertainty and sensitivity are addressed and included in the DEIS.</p>	97-18
<p>4. NRC Risk Goals: The NRC has risk goals and metrics regarding the safety of regulated facilities. The DEIS does not indicate if the proposed facility meets these risk goals. It is recommended that the DEIS does include such a risk comparison and indicate if they are met or indicate the requirements the NRC will impose on the proposed facility in order to meet these goals.</p>	97-4
<p>5. Congruence and Compatibility of the DEIS with Other MOX Documents: There are several other documents on the MOX program, including the MOX DSER and public meeting summaries. There appear to be some disconnects between the DEIS and the licensing documents, such as the applicant's Construction Authorization Request (CAR) and the revised CAR, and the NRC licensing documents (e.g., the DSER). I understand that a revised DSER will be issued shortly to the public by the NRC. It is important that this revised DSER, other licensing documents, and the DEIS are consistent. The public should be given the opportunity to compare the DEIS and the revised DSER together.</p>	97-5
<p>97-1</p>	97-6

Page 2 of 5

<p>and comment on both. Consequently, the DEIS should be compared to the planned revised DSER and the public should be allowed a 30-day or so overlapping period for comparing the documents.</p>	97-11
<p>6. Quality Assurance and Control (QA/QC): The NRC letter of March 6, 2003 on this DEIS identified a concern with one of the computer codes used in the analyses. This concern was caught and corrected. However, it is not clear if the DEIS and supporting information have been adequately reviewed for other potential errors. Also, it is not clear if the assumptions and bases used for the calculations and conclusions, such as material at risk, release fractions, applicable computer codes and requirements etc., have been adequately reviewed for applicability, appropriateness, and validity. Such QA/QC should be explicitly done and/or acknowledged, using NRC guidance and requirements on QA/QC (including software quality) and such industry standards as NQA-1.</p>	97-12
<p>In addition, I have the following specific comments from my brief review:</p>	
<p>7. Use of TEELs: Section 4.3.5.3 on page 4-42 et seq discusses the potential effects from chemical releases and accidents. The DEIS uses temporary emergency exposure limits (TEELs) which are adopted by the DOE Subcommittee on Consequence Assessment and Protective Action (SCAPA). These are not values used in NRC regulations or regulatory guidance and are explicitly identified as not to be used when values exist from regulatory agencies, such as AEGLs, IDLHs, and NIOSH/OSHA ceiling values. TEEL values also change frequently. The use of TEELs may underestimate potential concerns and required mitigative or preventative methods. It is recommended that more conservative and regulator-endorsed values are used. This may involve a methodology to select the lowest values from AEGLs, IDLHs, MAGs, and NIOSH/OSHA.</p>	97-13
<p>8. Ambient Temperatures: A temperature of 25.8 C (78.5 F) is stated as an average. This is not a reasonable average nor does it provide any margin. Temperatures in excess of this would be anticipated to occur many times each year (i.e., an anticipated, annual event). Usually the SRS area experiences at least once every year a heat wave with temperatures of around 100 F or more. There is another NRC licensed facility in the area that uses 106 F as the design basis for maximum ambient temperature (i.e., in the shade). In addition, solar heating effects on the structure (the Reagent Storage Building is a metal structure), other buildings and storage areas, and during deliveries could push local ambient temperatures in excess of 120 F. Thus, the assumed average temperature does not address anticipated conditions that occur annually nor do they provide any margin or conservatism. A higher temperature should be used for vapor pressures and release calculations.</p>	97-14
<p>9. Process Temperatures: The chemicals are used in processes within the facility. Process temperatures will likely exceed ambient temperatures considerably. For example, solvent extraction processes routinely can exceed 50 C, while evaporators can exceed 100 C. These higher temperatures should be used as appropriate for modeling the evaporation of process spills and may necessitate the use of other models (e.g., flashing and bulk convection) for estimating release rates.</p>	97-15
<p>10. Uranium Dioxide: The basis for uranium dioxide release estimates in Table 4.16 of the DEIS needs to be explained. The NRC staff's DSER of April 2002 identified this as an open issue and implied higher potential concentrations.</p>	97-11
<p>11. Nitrogen Tetroxide (Nitrogen Tetraoxide): This is a chemical that requires great care during handling and use, as found out from the space and missile programs. It boils at near ambient conditions and significantly dissociates into nitrogen dioxide at temperatures slightly above ambient, which greatly increases the effect of releases. It can also cause common mode failures. In the space/missile programs, it is usually cooled below its boiling point during storage and a large water quench is maintained ready for use - are these features planned for this facility, and, if not, is that acceptable? In addition, the tetroxide would be pressurized with instrument air (say, 50-100 psig) in the proposed facility - has this been accounted for in the analyses? The DEIS indicates an estimated concentration of 1,600 mg/m³ at 100 meters - this is a potentially lethal concentration and would likely result in large numbers of serious injuries and fatalities if the release occurred at the proposed facility, and could negatively impact adequate safeguarding of nuclear materials. The DEIS does not discuss adequate mitigation and/or prevention of such events. The DEIS should acknowledge and address these concerns.</p>	97-12
<p>12. Consideration of Likelihoods versus Averages: The DEIS appears to use averages. Frequencies and likelihoods do not appear to be incorporated. This DEIS pertains to a proposed facility that would be licensed under 10 CFR 70, which includes consequence and likelihood bins (e.g., see the CAR and DSER). The DEIS should explicitly consider consequences and likelihoods.</p>	97-13
<p>13. Inventories and Quantities of Materials Released: The DEIS appears to use single tank or container quantities for a large number of analyses. This does not seem reasonably prudent and conservative given that the facility is still being designed and common mode failures cannot be discounted (e.g., multiple tanks failed by the same event or leaks via common piping and valves). It is recommended that larger inventories (up to and including the site inventory, as necessary) are used for releases of chemicals from fluids.</p>	97-14
<p>14. Use of Computer Codes: It is not clear if the computer codes are endorsed by NRC regulations and/or guidance, and if they meet NRC QA requirements, including verification and validation for the specific site and application. This should be explicitly verified, stated, and referenced.</p>	97-15
<p>15. Waste Management: The DEIS discusses waste management in a top-level manner. Most of the waste will be transported to the DOE/SRS and dispositioned using existing or planned facilities. The DEIS does not provide assurance that this can and will occur in a reasonable manner due to available and planned capacity, utilization, obligations, priorities, and acceptance criteria. It is recommended that such assurance is provided, particularly for planned facilities that do not currently exist and do not appear to have</p>	97-16

00098



Michael T. Lesar
 Chief, Rules & Directives Branch
 Division of Administrative Services, Office of Administration
 Mail Stop T-6D59
 U.S. Nuclear Regulatory Commission
 Washington, DC 20555

May 14, 2003

RE: NUREG-1767, Draft Environmental Impact Statement of the Mixed Oxide Fuel Fabrication Facility at the Savannah River Site Nuclear Facility

Mr. Lesar:

These comments are in addition to oral comments presented by Southern Alliance for Clean Energy (SACE) at the Savannah, GA public meeting on March 25, 2003. The oral comments were also submitted in hard copy form since the 5-minute speaking allotment was not sufficient to cover what we had prepared. If those comments have not been entered to the record in their entirety, we have attached them again to this document.

We are disappointed that an additional extension to the public comment period was not granted, as we had formally requested in our comments. SACE again requests an extension. We are also concerned that many of the important objections to the plutonium bomb fuel, or mixed-oxide fuel "MOX," program have been entirely dismissed by the U.S. Nuclear Regulatory Commission (NRC).

Plutonium Disposition Program General Concerns

Southern Alliance for Clean Energy believes that the NRC has only one option that would truly protect the public health: deny the license application request for the MOX fuel fabrication facility (or plutonium fuel factory) at the Department of Energy's Savannah River Site nuclear facility (SRS). We urge that the pursuit of developing a plutonium fuel economy be ceased in all sectors of government and private enterprise, as it will allow plutonium, a dangerous material, to enter civilian commerce and the international marketplace.

98-1

We thoroughly disagree with the NRC staff's preliminary decision in this report that the "overall benefits of the proposed MOX facility outweigh its disadvantages and costs." The NRC states on P. 2-37 four main points of consideration that brought them to this flawed decision and we will again touch upon several of them.

Significant Changes in Plutonium Disposition Program

At the public meeting in Savannah this March, the audience was told that "the national policy decision between Russia and the US to reduce surplus weapons plutonium" was a leading reason for the NRC staff's initial support of this plutonium bomb fuel program. This was used as a reason why the immobilization alternative, which is generally preferred as a cheaper, safer option that will result in less nuclear waste and potentially less impacts to the community, was not considered as an option to study

98-2

sufficient design information, acceptance criteria, or programmatic commitment published for public review.

16. **HEPA and Sand Filters:** The DEIS briefly discusses the relative attributes of sand and HEPA filters (e.g., Section 4.3.6). This section concludes the use of sand filters would not clearly result in lower net environmental impacts as compared to the use of HEPA filters at the proposed facility. This seems counter-intuitive and may include potential reliance on administrative controls. However, the preceding text mentions periodic HEPA filter replacement and damage to the HEPA filters during potential accidents (fires and explosions) that would increase or potentially significantly increase the impacts from HEPA filter use. In contrast, sand filters would maintain their efficiency during these accident scenarios. The text further states that DCS is committed to making explosions highly unlikely and to mitigate potential effects of fires, thus allowing the HEPA filters to continue functioning. Fundamentally, is a commitment good enough or should actual controls be discussed? It is recommended that more references and supporting information are included in this section as to what the DCS measures actually are, as it is currently insufficient to support the DEIS conclusion, appears inconsistent with DOE practices and experiences at SRS (most of the SRS facilities have sand filters), and given the DOE Rocky Flats experience, appears less than adequate. Also, the text mentions that neither HEPA nor sand filters mitigate chemicals. The text should note, however, that HEPA filters are impacted by chemical emissions and releases that lead to premature and unanticipated failures (part of the DOE Rocky Flats experience). Sand filters are essentially unaffected by chemical releases and continue to function. The DEIS should include this type of discussion and the measures that DCS is using to protect the HEPAs from chemical events.

97-17

Once again, I thank-you for the opportunity to comment on this DEIS.

Sincerely,

Alex Murray
 Alexander P. Murray,
 Engineer and Private Citizen.

Southern Alliance for Clean Energy/DEIS MOX FFF Written Comments Continued

by the NRC. Yet, in the Department of Energy's Amended Record of Decision regarding the Surplus Plutonium Disposition Program that was released on April 17, 2003 [6450-01-P], *AFTER the public meetings on the plutonium fuel factory were OVER*, they state that the cancellation of the immobilization program was due to "budget constraints" – not conflicts with Russian/US policy.

The DOE statement goes on to say that the "program will dispose of 34 metric tons (MT) of surplus plutonium, including approximately 6.5 MT of the 17 MT of surplus plutonium originally intended for immobilization." This leaves us logically wondering, what will happen to the rest of the plutonium? Apparently it is destined for SRS but for what purpose and what assurances can the NRC provide that those many extra tons of plutonium will be safely stored, given that there are currently only plans to refurbish existing, old nuclear reactors to store one of the most highly sought after materials for use in modern nuclear weapons, a material with a hazardous radioactive life of over 240,000 years? We urge the NRC to demand that the DOE do a thorough supplemental environmental impact statement of this major change in policy BEFORE the NRC issues a final EIS on the plutonium fuel factory. The 13-page amended record of decision by the DOE is insufficient and the NRC deems to be obligated to protect the public interest, not another federal agency, nor domestic and foreign contractors.

Attached is a brochure from a recent event in Savannah, where staff from SRS addressed business leaders on various future missions, including the "Modern Pit Facility," which is essentially a new nuclear bomb factory. SRS is believed to be the preferred site for this plutonium trigger plant that will cost billions of dollars. Yet budgetary constraints within DOE were cited for canceling immobilization? The draft EIS on this new bomb-making facility is scheduled to be due out within the next month. Given this pursuit of a mission in complete contrast to our nation's supposed "disposition" of surplus weapons plutonium in a supposed parallel venture with Russia to reduce our nuclear weapons stockpiles, we question why the NRC cannot state the conflict within national policy and request that the issue be resolved prior to issuing a determination on the MOX plant? Also, the "unaccounted" plutonium that is coming to SRS but will not be used for MOX could very easily become feed material for the new Modern Pit Facility. The NRC needs to take this into account. SACE also requests the NRC to delay issuing a decision until the Modern Pit Facility draft EIS is issued and commented on—there is likely to be much overlap in the programs, along with several policy conflicts.

SACE still has not received answers to our concerns raised over the DOE's February 2002 *Report to Congress: Disposition of Surplus Defense Plutonium at Savannah River Site*, that essentially recommends the need to add at least two additional, unnamed nuclear reactors for plutonium bomb fuel (MOX) use. Our nearby Southern Nuclear Plant Vogtle expressed interest in the plutonium fuel program back in 1996 and we are concerned about the implications of the need for more nuclear reactors. How will the NRC address this need for more nuclear power plants in the final EIS for the MOX fuel facility?

Water Concerns

The NRC concluded that there are minimal environmental impacts if plutonium fuel is produced at SRS. We disagree and will highlight our water concerns, which were raised in our oral comments. Water resources are limited and debates on how this precious resource should be protected is under heated debate currently in the Southeast. The link between energy and water resources is profound. At the national level, the electric industry follows closely on the heels of irrigation as the largest water user in the U.S. Yet, there is no discussion in the draft EIS on the impacts of nuclear power production, which the MOX program will support the possible advancement of, on the region's water supply.

2 of 3

Southern Alliance for Clean Energy/DEIS MOX FFF Written Comments Continued

Nor does the draft EIS clearly account for how much ground and surface waters will be used additionally by the MOX plant. Currently, SRS requires enormous amounts of surface and ground water, in the tens of billions of gallons, *just to support currently established operations*. The draft EIS was nearly impossible to decipher what the rates of consumption (actual water loss) are now on site for various operations and in the future, for the MOX plant. This accounting needs to occur before deciding that water impacts by the proposed facilities are "negligible."

Accidents

The original draft included significant errors in the calculation of latent cancer fatalities if there were an explosion at the MOX facility—estimating nearly 400 deaths; the new calculations result in less fatalities, but we still consider 100 deaths to be significant and important enough to warrant denying approval.

Summary

Southern Alliance for Clean Energy believes that the NRC must address the full impacts of the plutonium bomb fuel program—how this scheme is likely contributing to the eventual production of nuclear weapons components at SRS and the use of the site for permanent nuclear waste burial. A full accounting of what and how much plutonium is coming from where and being used for what project when it arrives should be done and made public.

We have included copies of petitions. SACE recently collected and would like to at least alert people to the fact that many people do not want this project and though they may not be capable of making formal, written comments, that their opposition should be noticed and considered. Though the NRC staff said that general comments and claims of basic opposition are not helpful to them, we believe that these names are helpful to policy makers, who ultimately have the power to make a positive difference by working to protect the region, and these very citizens, from further exploitation.

We suggest that after the NRC has reviewed all of the comments on the draft and does more research, they should deny the license request or at least recommend that the "no action alternative" is more advantageous to health and safety than the MOX program. Instead, other programs that appear to be more environmentally sound, safer to workers, less expensive, and could prevent the circulation of nuclear weapons materials, such as immobilization of surplus plutonium, should be funded and supported through further research and development. Though not a perfect technology, it is far cheaper than other options and appears to have less risks overall than the currently encouraged technologies.

Sincerely,

Sara Banczak
Safe Energy Director, Southern Alliance for Clean Energy
3025 Bull Street, Suite 101
Savannah, GA 31405
(912) 201-0354

cc: U.S. NRC Commissioners, Governor Sonny Perdue, Governor Mark Sanford, U.S. Senator Zell Miller, U.S. Senator Saxby Chambliss, U.S. Rep. Max Burns, U.S. Rep. Jack Kingston, U.S. Rep. Sanford Bishop, Jr., U.S. Rep. James C. Clyburn, GA Senator Regina Thomas, GA Rep. Nan Orrock

3 of 3

00099

From: Bev Baker [cosmicblue@dolphin@yahoo.com]
Sent: Friday, May 16, 2003 4:02 PM
To: left@nrc.gov
Subject: Just Please Read the Most Important Email of your Life Just SAY YES TO READING MY EMAIL

May, 2003

Dear NRC:

Just say yes to life and solar and wind energy.!!!!

Just say no to Mox and all things nuclear..In fact..I think we should also ban microwave ovens and all nuclear weapons and power plants while we are at it....

99-1

I am the great-great granddaughter of a Cherokee Indian.....She married one of the first European settlers of the North Georgia Mountains...So in respect for Native American tradition Let us Love Mother Earth and Father Sky. One of the primary ways we can Love and Respect Mother Earth and Father Sky is to develop solar wind and geothermal technologies..It can be done....Visit Hopland California at the Solar Energy Center and the geothermal energy produced naturally for the town of Pagosa Springs Colorado. Also, if some men and women have to fight, lets go back to the days of the bow and arrow and tomahawk...At least the entire sacred environment wont be wiped out when the world gets a testosterone surge every now and then.....

Also, every action we take as an individual or as a government must be done so that present and future generations of people, plants, animals and also inanimate objects will have their health and environment protected. Lets look out for the Seventh Generation as Chief Seattle would want us to do....

We still have yet to do clean up of all the stuff produced during the Cold War and World War II and Vietnam....So lets not produce any more of this toxic stuff...seems the best way to handle stuff is absolute containment (Environmentalists, Inc c/o Ruth Thomas of Columbia SC and Blue Ridge Environmental Defense League www.bredl.org have the documents about this..its so dangerous for this stuff from Rocky Flats and possible elsewhere to be travelling down our highways...the new Trail of Tears?)

I will forward these documents on containment and dangers of nuke transportation on to you as soon as I am able....I am on vacation in Southwestern United States and this is first day I have had access to computer....Spending nights in Apache National Forests in Central Arizona near Mt Baldy..

99-2

Also, what on earth do we want a French Company like Duke COGEMA and Stone Webster dealing with our most dangerous stuff? A little bit of common sense would be much appreciated. One of the largest and most beautiful aquifers in North America is located around SRS and that part of Georgia and South Carolina....So lets not produce anymore toxic stuff there... clean up in accord with recommendations from NRDG and IER and NCI and Physicians for Social Responsibility is what is needed. That will provide plenty of jobs in a positive way.

I am trying to make this short and sweet as possible....I will send more stuff I have to you as soon as I

05/19/2003

05/19/2003

regroup and reorganize...I am on vacation so I dont want to think about anything nuclear....Also the uranium and coal mining is devastating the health and environment of the Navajo and Hopi Nations. So this is where the devastating cycle of nuclear industry begins in beautiful Southwest...hope to the great Dine and sacred Hopis, the People of Peace.

Solar and Wind are the Answer My Friend...Please visit Solar Energy Center in Hopland California ASAP

Love and Peace and Solar is Clean and Forever

Bev Baker,
 Earth Hugger Extraordinaire
 65 Heritage Drive Condo 5
 Cleveland, GA 30528
 email: cosmicblue@dolphin@yahoo.com

Do you Yahoo!?
 The New Yahoo! Search - Faster. Easier. Bingo.

May 14 2003 03:55PM P1

00100

00101

TO: Mr. Lawrence E. Kokaljko, Acting Chief
Env. and Performance Assessment Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards
Attention: Tim Harris

From: Meira Warshauer [meira2@sc.rr.com]
Sent: Friday, May 16, 2003 7:06 PM
To: teh@nrc.gov
Subject: MOX Construction Draft EIS comments

Gentlemen:
With 2 computer errors admitted so early in the project how can I possibly feel safe with MOX fuel energy at all? These mistakes may seem insignificant, but, what if a more serious error had occurred and lives were in jeopardy?

Dear Tim,
I hope you are still accepting comments re the MOX Construction Draft EIS. The EIS does not sufficiently address the need for absolute containment of plutonium throughout the process and how that will be achieved.

Respectfully submitted,
Meira M. Warshauer
3526 Roundbrook Lane
Columbia, SC 29206

101-1

This entire idea of MOX fuel is too risky, and I am afraid of it. You need to figure out how to neutralize the spent substance in a safe way, and not experiment with nuclear materials.

The fact that "cumulative collective dose to workers at the SRS would increase approximately 11% as a result of MOX, PDCJ and MSB facility operations" is significant, not to mention the groundwater contamination increase.

101-2

Sorry, but this project is entirely ludicrous. Go back to the drawing board.

101-3

Sincerely,

Judy Ponder
214 Charlie Mountain Road
Clayton GA 30525
706/782-2380

00102

00103

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services, Office of Administration
Mail Stop T-6D59, U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: NUREG 1767
Dear Mr. Lesar,

I am writing in response to the Nuclear Regulatory Commission's Draft Environmental Impact Statement (DEIS) on the proposed plutonium fuel factory (MOX) at the Department of Energy's Savannah River Site nuclear facility. There are several areas in which I think the DEIS is inadequate:

The DEIS only addresses the construction of the MOX facility and not the operation of the facility. Environmental aspects of both must be considered.

The DEIS must address the reasonable alternative to MOX-plutonium immobilization. Immobilization would effectively achieve the MOX program's stated goal to safeguard weapons-grade plutonium. The DEIS only provided continued storage, as an alternative to the construction of the MOX factory for disposition of the plutonium. This would be an unacceptable security risk. Like the MOX factory, immobilization would also provide a large number of jobs. Its waste stream is negligible compared to MCIX, and it is cheaper than MOX. The DEIS should have addressed ALL alternatives, including immobilization.

The DEIS should produce verifiable projections of waste volumes as well as discuss the environmental risks and consequences of DOE failure to implement MOX waste management.

The issue of a possible terrorist attack on the proposed MOX factory was not at all adequately addressed. We know that since September 11, 2001, what used to be unlikely incidents are more likely than ever. The environmental and public health impacts of an attack on this facility are unacceptable to the people of the Southeast.

Please address these problems with the DEIS.

Sincerely,

Ann Megan Glave
(Signature) 11-13-2002
(Date)
Ann Megan Glave
(Print Name)
1000 Peach Blinn
(Address)
Atlanta, GA 30050

U.S. NUCLEAR REGULATORY COMMISSION
Mr. Lawrence E. Kokatjko, Acting Chief
Mr. Tim Harris 301/415-6613

Dear Sirs:

As members of the OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS, you must be shocked at the 2 computer errors in need of correction, and how these 2 errors ripple through the many pages of the document accompanying your letter of April 8, 2003. A computer error when MOX is in full manufacture would be disastrous, deadly, and perhaps even irreversible where nuclear fission is involved. You must not approve any further progress toward the MOX fuel program until such time as the spent fuel rods can be safely neutralized.

The fact that an 11% increase in the cumulative and collective dose to workers at SRS as a result of MOX, PCH and WSB facility operations, is alarming. 11% is huge. You must stop these kinds of projects now, before it's too late.

Sincerely,

Bart Patton
214 Charlie Mountain Drive
Clayton GA 30525
706/782-2380

103-1

103-2

103-3

103-4

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services, Office of Administration
Mail Stop T-6D59, U.S. Nuclear Regulatory Commission
Washington, DC 20555

109 Fawn Run
Alto, GA 30510
May 8, 2003

Michael T. Lesar, Chief
Rules & Directives Branch
Div. of Administrative Services, Off. of Administration
Mail Stop T-6D59 U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: NUREG 1767

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The issue of a possible terrorist attack on the proposed MOX factory was not adequately addressed. We know that since September 11, 2001, what used to be unlikely incidents are more likely than ever. The environmental and public health impacts of an attack on this facility are unacceptable to the people of the Southeast.

The issue of a possible terrorist attack on the proposed MOX FACTORY was not adequately addressed. We know that, since the attack on the World Trade Center, what used to be unlikely incidents are real possibilities. The environmental and public health effects of an attack on this facility are unacceptable to the people of the Southeast.

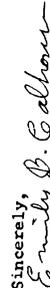
Please address these problems with the DEIS.

Please address these problems with the DEIS.

Sincerely,

Sincerely,


(Signature)


Emily B. Calhoun

5/13/03
(Date)

Marguerite Sweet
(Print Name)

250 Elizabeth St NW
(Address)

Atlanta, GA 30307
(Address)

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services, Office of Administration
Mail Stop F-6D59, U.S. Nuclear Regulatory Commission
Washington, DC 20555

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The DEIS only addresses the construction of the MOX facility and not the operation of the facility. Environmental aspects of both must be considered.

The DEIS must address the reasonable alternative to MOX: plutonium immobilization. Immobilization would effectively achieve the MOX program's stated goal to safeguard weapons-grade plutonium. The DEIS only provided container storage as an alternative to the construction of the MOX factory for disposition of the plutonium. This would be an unacceptable security risk. Like the MOX factory, immobilization would also provide a large number of jobs. Its waste stream is negligible compared to MOX, and it is cheaper than MOX. The DEIS should have addressed ALL alternatives, including immobilization.

The DEIS should produce verifiable projections of waste volumes as well as discuss the environmental risks and consequences of DOE failure to implement MOX waste management.

The issue of a possible terrorist attack on the proposed MOX factory was not at all adequately addressed. We know that since September 11, 2001, what used to be unlikely incidents are more likely than ever. The environmental and public health impacts of an attack on this facility are unacceptable to the people of the Southeast.

Please address these problems with the DEIS.

Sincerely,

*Steve McKay-Clegg
1324 Westmore Lane
Atlanta, GA 30327*

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services, Office of Administration
Mail Stop F-6D59, U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: NUREG 1767

Dear Mr. Lesar,

I am writing in response to the Nuclear Regulatory Commission's Draft Environmental Impact Statement (DEIS) on the proposed plutonium fuel factory (MOX) at the Department of Energy's Savannah River Site nuclear facility. There are several areas in which I think the DEIS is inadequate:

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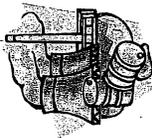
Please address these problems with the DEIS.

Sincerely,

*Edward S. Richardson
755 Park Lane
29208, S.C. 29037*

00104

**DON'T brand the Southeast
"PLUTONIUM ALLEY":
We don't want plutonium fuel!**



Chairman Richard Meserve
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Meserve:

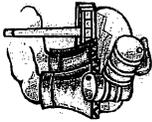
The proposed plutonium bomb fuel factory puts our nation, and especially this region at great risk. From the transport of plutonium across the country to the need to safely secure it upon arrival, we are also burdened with an unacceptable scheme that will increase contamination at the already extremely polluted Savannah River Nuclear Site. This proposal, also known as "MOX," is not safe, affordable, or sustainable. We again urge the Nuclear Regulatory Commission to deny the license request.

104-1

Sincerely,

Name	Address	Zip Code
Rowland Woodson	419 Woodland St. Nashville, TN	37206
Archie Kuehn	3124 Maple Lake Circle NW	30510
Dirkinda Trout	382 Montford Asheville NC	28804
Lyndea Chapman	401 Pinnacle Point Asheville NC	28805
Ben Akar	215 S. Monroe Lexington, KY	40508
Elizabeth Etc	120 Elm Dr. Asheville NC	28805
Amundson, Anne	909 Single Crane Ridge TN	37410
Debra Jacobs	POB 2664 Asheville NC	28802
John C. Baker	266 Merriman Av. Asheville, NC	28801
Anna Gaffney	1140 White Bluff Rd. (E) Savannah GA	31419
CRISTINA NEGREA	704 E 4TH ST SAVANNAH GA	31405
Jane Milk	114 Hesperian Ave. Ga.	31406
Elizabeth Langworthy	4641 Springhill Rd. Suwanee GA	30086
ANN F. COUNTEY	F 11801 Bradford St. Star GA.	31406
Harriet C. Gaudry	Baron Park Dr., Suwanee GA.	31406

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United States Nuclear Regulatory Commission
Honorable Commissioners
Washington, D.C. 20555
Re: NUREG-1767

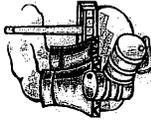
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Sincerely,

Name	Address	Zip Code
Ann Jackson	1406 East 53rd St	30140
Ann M Hill	313 W. Hall St. Apt B	30107
Archie Kuehn	3124 Maple Lake Circle NW	30510
BERTREN TUBENGER	217 E 8TH ST	31401
YOLAN WADSWORTH	178 E. LIBERTY ST.	31401
Alan Jacobs	225 E. Taylor St. Apt C	31401
ZACHARY LAYB	415 E. Jones St.	31401
John F. Baker	400 Kentucky Ave.	31404
John Cooper	103 Decker Rd.	31416
John Smith	608 Quindlan	31418
John Smith	608 Park H.	31410
John Smith	608 Park W.	31410
John Smith	52 E. Park Ave.	31401
John Smith	711 E 40th	31401

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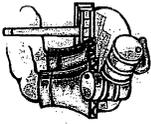
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Sincerely,

Name	Address	Zip Code
E. VICTOR MARESKI	1132 MERIDIAN DRIVE, SAV, GA	31406
ZANA BISHARA	317 EB WILSON AVE	31401
Whitney Earl Lamb	406 W. Duff St. Sav. GA	31401
Robert Paul	227 Kirkland St. NE #11	30257
Kelli Pearson	703 E. Main St. No	31401
Heather Flosie	2008 Whitaker St.	31401
Katherine Vosler	524 B. E. St	SAV, GA 31401
Miriam Akers	C/O GARDNER RD. ST. HELENA SC	29920
CHARLES E. FAVIELL	P.O. BOX 1804 TYBEE ISLAND GA	31328
Melvin A. Powell	PO BOX 1804 Tybee Island, GA	31328
Loisel Cordeus	723 East Henry St Savannah, GA	31401
Gregory M. Geller	723 East Henry St Savannah, GA	31401
Kelli G	549 E. Huntington St., Sav GA	31401

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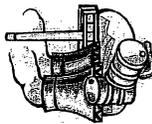
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Sincerely,

Name	Address	Zip Code
EILEEN AXLEN	707 MONTGOMERY ST #1 SAVANNAH GA	31401
Diane Polgar	Chambers Ave #15	Sav. GA 31401
Louis Ciampi	655 E. Henry St	" " 31401
Peter Grogg	636 16th Ave. S.W. Ga	30525
Frank Johnson	23170 Peachtree	Atlanta, Ga 30329
Caroline Parker	108 Drew St	SAV GA 31410
DAVID	SPRINGS, MASSACHUSETTS	SAV GA 31410
John	1326 Hwy 20 W. Rt 100	Rockledge GA 31405
Michael M. Bell	1720 Shampus Ave	Sav GA 31401
Robert Mitchell	341 AVENUE BLVD	Birmingham GA 35202
Teri Schell	14 So. Pitt St	Tybee Island, GA 31328
William	1100 1025th Ave	Sav GA 31410
William	1100 1025th Ave	31410

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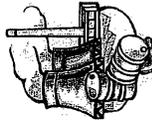
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Sincerely,

Name	Address	Zip Code
Tom Hightower	309 E. Hwy 7 St. Savannah, GA	31401
Tom Hightower	306 E. Hwy 7 St. Savannah, GA	31401
Tom Hightower	172 S. Mulberry St. Savannah, GA	31405
Tom Hightower	77 W. 5th St. Savannah, GA	31405
Scott Justice	408 E. 66th St. Savannah, GA	31405
Scott Justice	400 E. 66th St. Savannah, GA	31405
Pamela Mandy	102 E. Liberty St. Savannah, GA	31402-1007
Miss Ben	406 E. 66th St. Savannah, GA	31401
Mr. James S. ...	415 Hummingbird Springfield GA	31729

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Name	Address	Zip Code
Laurie Fausley	8 Lightstone Ct Savannah GA	31411
Wendy Lamb	408 W. Bay St Savannah GA	31401
Wendy Lamb	203 W. 11th St Savannah GA	31401
Wendy Lamb	408 E. 5th St Savannah GA	31405
Randy Leonard	708 E. 5th St Savannah GA	31405
ALL KREBS	418 E. JONES ST Savannah GA	31401
Janis ...	222 E. ... Savannah GA	31401
Janis ...	15 C. ... Savannah GA	31401
Janis ...	508 E. 5th St Savannah GA	31405
Janis ...	401 W. ... Savannah GA	31401
Janis ...	411 W. ... Savannah GA	31401
Janis ...	416 E. ... Savannah GA	31401
Kenny Willis	140 East 24th Savannah GA	31401
Ally Spinney	110 1/2 W. ... Savannah GA	31401

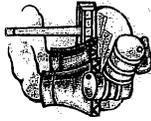
P.13

SIC-ZUI-U034

DATE

MAY 14 10 47:46P

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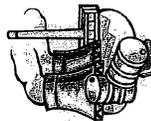
Name	Address	Zip Code
ALAN SANDA	1022 W. DUFF ST	31401
Abby Schenker	17 B West Duff St	31401
Jiffany Johnson	409 E. Waldenwood	31401
DAVID ZALESKI	515 E. HARRIS ST	31401
H.M. [unclear]	109 E. Park Ave. Apt C	31401
[unclear]	440 Bldg	31401

P.13

SIC-ZUI-U034

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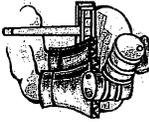
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Name	Address	Zip Code
Christie Spahr	305 Lavigne Dr. Roswell, GA	30072
William Miller	275 W. Ridgeway Ave. Ridgewood, NJ	07070
Paul Shover	201 W. O'Brien Ave. Roswell, GA	30401
Andy Entenman	111 Brookville Sq., GA	31419
Stenhouse Wood	1321 Yellow Pine Dr	30401
S. Pennington Bullen	3707 Hawthornier Ave. Richmond, VA	23224
WILLIE COLEMAN	174 W. GARDEN SAU GA	31401
REBECCA SALTMAN	201 WEST O-HOUSTON	31401
SARAH WILSON	617 E. 409 ST. SOUTH, GA.	31401
BOBA	900 W. PARK AVE	SAV. GA 31407
PAULINA [unclear]	600 PARK ST	SAV GA 31419
WILLIAM MOUNTAIN	1575 E. 54th St. Savannah, GA	31409
A. Calvert	11 E. LeVernet	GA 31401
JOSHUA Colwell	PO BOX 1496 Brunswick	GA 31501
KOA Linn's Park	Eric Leardoff	

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Sincerely,

Name Address Zip Code

Anna Bliss	534 E 50th St	31415
Andrew Scherber	637 SMCrest Blvd.	31416
S. Lopez	304 N. Green Dr	31404
Nicole Gamble-Hawthorn	2316 52nd St	31405

4/18/03
608 FL 9228
38
RECEIVED
9 May 2003
MAY 13 AM 8:46

Dear Nuclear Regulatory Commissioners,
Concerning: NUREG 1767, MOX Fuel Fabrication Facility, PDCF and WSPF and Directives.

I formally request that you deny the construction and operating license for the mixed oxide fuel fabrication facility and its supporting facilities, that has been requested by the Duke-Cogema-Stone & Webster Consortium. I request this action for the following five enumerated reasons which can be summarized as Cost, Safety, Speed, Nuclear Proliferation and NEPA Intellectual Honesty.

Reason # 1. Cost. If there is a cheaper disposition method, should you not choose it?

American taxpayers want to know why:

- Immobilization \$ 2.1 Billion
- MOX Fuel \$ 3.8 Billion (after fuel rebates)

DOE admitted to greater cost certainty in the immobilization plan, because it was a simpler and more straightforward plan.

MOX Plan \$ 3.8 Billion approx. = \$ 38. Per taxpayer
100 Million U.S. Taxpayers approx.

By the above calculations, the average taxpayer will shell out an average approximate thirty-eight dollars for the MOX fuel program. If you Nuclear Regulatory

Commissioners went into a store and bought an item for \$ 38., would you not examine that item to make sure you were getting your moneys worth? Of course you would.

Actually (page 2-25, line 8 of the DEIS) the cost is \$ 48. Per taxpayer with a mail in rebate from DCS coming later. Actually that \$ 4.8 Billion is just an estimate, which is way too low. DOE has never brought in any project for less than twice the initial estimate. The REAL REASON immobilization was killed, DCS and DOE needed to set

Memphis - ADH-013
F-EDS = ADH-03
Call = T. Harris (EH)
H. Kester (CAUL)

105-1

105-2

the hook on Uncle Sam's wallet. Immobilization provided Uncle Sam a means of slipping that hook if costs went stratospheric. So immobilization was killed off for the laughable reason that they couldn't afford it (page 1-2, line 22).

Ultimately it all comes down to money. Kussia is blamed for killing immobilization, which is unfair because they just want the money. The lack of isotopic degradation is not credible because the plutonium could have been mixed with a.) spent nuclear fuel, b.) reactor grade plutonium, c.) mixed nuclear waste, or d.) all of the above, and the result would have been immobilization with isotopic degradation and a radioactive proliferation resistant barrier. What is the difference if we end up with plutonium in glass (or ceramic) logs or in spent fuel rods? Billions \$. Nobody cares about the poor U.S. taxpayer.

Please note that the cost-benefit analysis totally ignores those taxpayers!

The Russians would have accepted immobilization if we had stuck to our convictions. Instead we offered them a choice: \$ 2 Billion for immobilization or \$ 5 Billion for MOX fuel. The Russians don't care about U.S. taxpayers; they chose the choice with the more money. They aren't stupid.

There is a cost versus safety trade-off. The \$ 4.8 Billion estimate is the minimum estimated to accomplish the task. For \$ 10 Billion we could have gotten robotic glove-boxes instead of manual and three foot thick concrete walls throughout instead of the metal shafts described on page 2-7, line 40. Cost is a safety issue. More money can buy better equipment, facilities and personnel. More money can also strongly motivate greed.

Nuclear Regulatory Commissioners, presumably well paid enough to be above this greed, should say NO right now. This MOX plan will end up costing not less than \$ 20 Billion (my estimate) by the time decommissioning is completed, and that assumes no

major accidents. Please save U.S. taxpayers those billions and many sleepless nights worrying about loose plutonium processing, and reject the license now.

Reason # 2. Safety. On page 2-36, line 39, NRC staff say, "... unless safety issues mandate otherwise," they recommend approval for the license. Please understand how difficult it is to say something is unsafe when plans are still changing (sand filters, silver recycling, etc.), much of the information needed to prove the unsafeness is classified and unavailable, and the facility is a one of a kind with no precedent for guidance.

You probably already know this, but repetition can't hurt. Blair and Thompson induced cancer in beagle dogs with plutonium inhalers, to estimate what the toxicity of plutonium really is. At .049 micrograms per gram of lung tissue, the smallest amount tested, all the dogs got cancer and died.

.049 micrograms = 20 million lethal doses per gram = 606 million lethal doses/ounce

The exact number could be argued, but really the true toxicity is not known because we've never done controlled tests on humans. Very small amounts, when inhaled, are lethal, which is an honest description of what we know. Safety in dealing with this stuff is imperative!

NRC staff recommends approving the license unless it can be proven that the proposed action is not safe. I ask, can you prove it will be safe? This is not the first plant in the U.S. to try to make plutonium fuel. There have been four others, and that track record does not give me any confidence that it can be done safely by anyone at any price.

Karen Silkwood worked at the Kerr-McGee plant near Cimarron, Oklahoma. Staff we rehash those events? Plutonium was found in her refrigerator at her home. Gloves in the glove boxes were tearing. Detectors were turned off because they kept going off.

105-2
cont.

105-2
cont.

105-3

Nuclear Fuel Services in West Valley, New York operated from 1966 to 1975. It reprocessed 625 tons of spent fuel to make plutonium fuel. There were leaks and spills, including into Cattaraugus Creek, which threatened Buffalo's water supply. The laundry room was a mess, with numerous incidents and even the employee lunchroom had contamination (11 June 1968). The owners cut and ran, leaving a mess of nuclear waste behind for the taxpayers to clean up.

There was also the Midwest Fuel Recovery Plant near Morris, Illinois that never opened due to cost overruns. Then there was the Alfred General Nuclear Services plant at the Savannah River Site (called Agnes). After \$ 300 million spent, it fell apart after Jimmy Carter ordered a halt to U.S. reprocessing.

The U.S. nuclear industry has tried reprocessing and plutonium fuel, and their track record is not encouraging. So, instead of using one of the U.S. experiences as a comparable example, DCS uses the MELOX plant near Marcoule, France (page E-16, line 30). Neither LaHague nor Sellafield can be used, because their track records are terrible too. The record of these facilities is awful, yet DCS claims a ridiculously small chance of accident and/or contamination to workers and public. A real and true assessment of the risk from this proposed project would include every facility worldwide that has processed plutonium, instead of the cherry-picked best.

The radiation exposure pathways fail to identify the Homer Simpson pathway (page 3-46 & 47). In the TV show The Simpsons, Homer works at the local nuclear facility. The show opens with his apparently working with some lime-green radioactive material in a glove box. The end of shift whistle blows and Homer drops what he is doing and yells "Yoo-Hoo". The radioactive chunk bounces out of the glove box and lands on

Homer's back/shoulder. Homer is next seen driving home with the glowing radioactive chunk on his back/shoulder. He brushes off his shoulder knocking the material out of his car window, where it bounces and lands on Bart Simpson skateboard as he rides home from school. What happens to it next is unclear. What is clear, is that workers with radioactive materials on their shoes, clothing, hair or skin can take it with them when they leave work, thus contaminating bars, restaurants, stores, cars and homes.

The Homer Simpson pathway is the dominant means of public exposure during routine operations. I therefore must insist that showers be specified in both MOX FFF and PDCF as they are not mentioned in the DEIS (page 2-4, lines 6-11 and 2-7, lines 1&2). This is a standard safety precaution. Why is it not mentioned in the DEIS?

As I already mentioned, plutonium was found in Karen Silkwood's refrigerator. Please specify that the necessary precautions are being taken to prevent a public relation disaster reoccurrence.

Cancer is not the only risk from radiation and plutonium. (page 3-51, line 36) Birth defects and mental retardation (genetic damages) are more prevalent than cancer, but because they occur in the children of the workers they are often overlooked. Please correct this oversight.

The radiation from plutonium is rather low due to long half life (24,600 years) and it being primarily an alpha emitter. Thus, when we compare radiation from plutonium with expected latent cancer fatalities (pages 4-7 to 4-11) we end up with .00002 annual LCF at the MOX FFF (page 4-10, line 45). However, a lethal dose to your lung is about a millionth of an ounce, which is a speck of dust floating around in the air so small you can't see it. Considering that you are planning to process 38 tons, which must be:

105-3
cont.

105-3
cont.

105-4

105-5

a.) weighed b.) inspected c.) hydrated d.) nitrated e.) oxidated f.) welded (caution!)
 g.) Leak-tested h.) weighed again i.) dissolved in nitric acid with silver catalyst j.)
 electrified k.) organic solvent separated l.) nitric acid washed m.) hydroxylamine
 nitrated n.) hydrazine nitrated o.) uranium separation stripping column p.) nitrous
 fumed in columns q.) reacted with oxalate acid r.) collected on filters s.) Calciner-
 dried t.) blended u.) stored v.) master blended w.) mixed with depleted uranium
 x.) ground y.) mixed again z.) homogenized and lubricated aa.) pressed bb.)
 sintered at 3100 F cc.) ground again dd.) loaded into rods ee.) welded again and
 ff.) finally inspected, and that you expect one latent cancer fatality every 50,000
 years (.00002) from an amount so small you can't see it when you are dealing
 with some 38 tons total, which all stretches credibility a bit.

I only mention these 30+ process steps, many of which involve high temperatures,
 dangerous acids, grinding producing many small particles, powders which are
 dangerously pyrophoric and can become explosively supercritical around neutron
 reflectors and in confined spaces, because I don't believe it can be done as safely as you
 describe doing it in this DEIS.

Plutonium is not the same as uranium. No mention in this DEIS is made for control of
 humidity, despite plutonium being much more reactive in a humid environment.
 Plutonium metal is also a concern in the PDCF. From 6-1.3 of the Plutonium Handbook,
 "When a container is opened spontaneous ignition may then occur, usually resulting in
 destruction of the container and the scattering of metallic oxide (Pu) through the glove-
 box train and the exhaust system." The DEIS mentions no precautions to prevent this.

6

DOE has sworn up and down that when the weapons plutonium disposition mission is
 completed, that the MOX FFF will be decommissioned. This promise is easily broken
 fifteen years from now. Then, proximity to the recently refurbished H canyon
 reprocessing facility will be convenient for the nuclear industry. The MOX FFF will then
 be perfect for making reactor grade plutonium fuel from reprocessed spent nuclear fuel. I
 ask what guarantees the public has that this is not true?

DOE promised the citizens of Amarillo and of Panhandle County that the storage
 bunkers holding most of this weapons grade plutonium would be upgraded from the
 decrepit old unsafe facilities they are now in. I see (page 4-2, line 27) that the promise
 has been broken. How can we trust your word when you break your promises so often?

It is no secret that the nuclear industry has wanted to implement the same
 reprocessing that has been going on in Britain and France, here in the U.S. The weapons
 plutonium disposition program is a means to that end, and has been part of their plan all
 along. They want to overturn Jimmy Carter's ban on fuel reprocessing. President Carter,
 being a navy nuke like myself, banned reprocessing for good reasons, including cost,
 reducing nuclear waste production, and lessening nuclear proliferation pressures.

There are those who believe that plutonium fuel use is more risky (pages 4-67 to 69).
 The DEIS glosses over the problems, so please allow me to explain why MOX use is not
 safe.

a.) Delayed neutron fraction of plutonium is .2% compared to .65% for uranium.

Delayed neutrons are necessary, and the value of the reactivity "dollar" is
 determined by the difference between exactly critical and prompt critical. By

reducing the fraction of delayed neutrons, the distance the control rods must move

105-5
 cont.

105-6

105-15

105-7

to reach prompt critical is reduced. This is a significant safety reduction, totally unmentioned in the DEIS, and a valid reason to reject the whole MOX idea, in my opinion. Even with a 40% MOX core, the average delayed neutron fraction starts out around .45% and declines from there as uranium in the regular (non-MOX) rods is converted to plutonium through capture. This is a 30% reduction. Please explain in the final EIS why this is not of concern to you.

b.) Control rod effectiveness is reduced as the average neutron speed is increased. The higher capture cross section of plutonium, 269 barns, of the thermal neutrons leaves faster neutrons in the core. The control rods are best at absorbing neutrons at the slower energy. I have heard that there is a plan to add more control rods to the MOX use reactors, however this should be stated and specified in the EIS, and it isn't. These faster average neutrons have other attributes. Faster neutrons go through more shielding, causing slightly higher neutron embitterment and worker exposures. Faster neutrons also mean more generations per second, which can increase the slope and severity in power transients. Again, the literature is clear about this, and it should be incumbent on you to explain to us why these are not safety concerns. Put another way, I shouldn't have to point these facts out to you. Please explain your analysis and planned countermeasures.

c.) Moderator (delayed) Temperature Coefficient of Reactivity is positive, as stated in Nuclear Reactor Engineering, Gladstone & Sesonske, section 5.103. It gives a large positive change in fission per change in temperature. NRC rules specifically state that no reactor can operate with a combined positive temperature coefficient. The risk is clear. If a rise in temperature causes more reactivity (fissions) then a

positive feedback loop occurs leading to rapid reactor disassembly. The literature also says that reactor grade plutonium, due to Pu-240, is less of a concern. Thus, this is an instance where European MOX fuel experience doesn't apply. I request that the NRC reveal its' analysis of this important safety concern in the final EIS, with, if possible, prompt and delayed coefficients, graphed, formulas and explanations and countermeasures.

While few citizens might understand such an analysis, it is important to us to know for sure that you have looked at this very carefully. To further underscore my concern on this point, I must take us back to the Chernobyl accident, at 1:23 AM on April 26, 1986.

Grigori Medvedev in his book, "The Truth About Chernobyl", 1989, page 59, "...the RBMK reactor, which has a positive reactivity void coefficient of 2 beta and a positive reactivity temperature coefficient..." and page 70, "However...3 factors inimical to the reactor core all came together at the same time:"-Those three were the positive void coefficient which caused an increase in power when water became steam creating voids, a positive reactivity temperature coefficient, and the tips of the control rods which when the scram button was pushed actually added reactivity to the core momentarily. In addition, Medvedev mentions that the core was near the end of its burnup, which meant that the concentration of plutonium had reached its maximum amount, adding to the positive coefficients.

Those three factors look suspiciously similar to the three I have just mentioned, namely fewer delayed neutrons, reduced control rod worth and positive moderator temperature coefficient of reactivity.

<p>d.) The synergy between the three just mentioned factors significantly reduces safety of the nuclear power plant operation, to a degree such that the Nuclear Regulatory Commissioners have just cause to reject the application for construction and operation of the MOX fuel Fabrication facility and its attendant support facilities.</p> <p>Isn't it up to you guys to prove this is not true?</p> <p>e.) Plutonium fission increases fission product gas production threatening fuel rod ruptures and increased radioactive gas releases to the environment, including twice the level of tritium production when compared to uranium.</p> <p>f.) Plutonium fuel melts at a lower temperature, reducing safety margins.</p> <p>E.) Reactor cores will not be homogenous threatening to create dangerous hot spots in the core or seriously complicating core-loading strategies.</p> <p>Reason # 3 Speed of Disposition is greater compared to Immobilization</p> <p>Faster disposition leaves less time for diversions, thefts or accidents. DOE did mention this as being an advantage for immobilization as compared to MOX fuel.</p> <p>However, immobilization is no longer a choice. Left on the table are only MOX fuel and No Action. As such, MOX fuel is faster than doing nothing! I still say MOX is not safe, and favor immobilization as being faster, safer and cheaper.</p> <p>If I were given the choice (as a Nuclear Regulatory Commissioner) between No Action and MOX fuel, I would have to choose No Action. Contaminating people and land with plutonium, as I believe MOX will do, is not worth the disposition benefits.</p>	<p>Reason # 4 Nuclear Proliferation risk is greater with MOX fuel.</p> <p>Britain, France, Russia, India, Japan and North Korea all have reprocessing programs. The current issue of Bulletin of the Atomic Scientists details Iran's current attempts to join the club. The U.S. MOX program will a.) set an example for civilian plutonium use b.) advance the technology and c.) undercut arguments against reprocessing. The current trend is towards a future with many countries separating plutonium and using it for fuel, weapons or both.</p> <p>Such a future is dangerous due to terrorism, diversions, accidents and nuclear weapons brinkmanship. At the same time, there is an alternative for this plutonium, which is faster, safer and cheaper which does not promote proliferation and plutonium use. That the United States has not chosen this alternative sends a strong signal to other countries and can only be attributed to greed among the nuclear industry. The Russians, U.S. nuclear industry, DOE, nuclear scientists and others are all competing for money.</p> <p>Who is going to stand up and speak some common sense? I ask the Nuclear Regulatory Commissioners to be that somebody, and say no to the constructor and operating license for the MOX FFF, PDCF and WSF, please.</p> <p>Reason # 5 Dishonest NEPA Analysis</p> <p>On page 4-83, line 30 & 31, of the MOX DEIS it is stated that, "Therefore, continued storage would result in higher annual impacts." Storing the plutonium in hardened bunkers without touching or processing it would result in MORE damage than all that plutonium transportation, processing, reactor use and removal to Yucca Mountain? This is not intellectually honest, a farce reply.</p>
<p>105-7 cont.</p>	<p>105-10</p>
<p>105-8</p>	<p>105-11</p>

On page 1-2, lines 12 & 13 and lines 21 & 22 the DOE stated the purpose of the stated action, "To better insure that weapons usable material does not fall into the hands of rogue states or terrorist groups." And the reason for killing immobilization, "The DOE determined that in order to make progress with available funds, that only one approach could be supported." Another intellectually dishonest bait and switch routine. Not only would immobilization have accomplished the goal faster, safer and cheaper without promoting nuclear proliferation, but their blame the Russians reason vanishes when you realize that it would have been fine for the U.S. to immobilize its' plutonium while the Russians did MOX with theirs. There is no valid reason both countries must use the same path towards plutonium disposition. These statements fail to accurately and honestly fulfill NEPA requirements.

On page 4-8, lines 44 & 45 DCS uses data from the MELOX plant in Marcoule, France to estimate worker radiation dose at .009 LCF per year. Besides the cherry picking of sites to use, there is no way to confirm the data. Cogema promised to make the relevant data available when I attended the scoping hearing in Charlotte, N.C. back in 2001. They broke their promise. People who oppose the proposed action have no resort to substantiate their claims. The reading room near Pantex was stripped of all relevant documents, as were other sources nationwide following the events of September 11, 2001. The .009 estimated latent cancer fatality rate is dishonest, but opponents have been unfairly denied the means to prove it.

Those who are concerned (alarmed!) by the proposed actions are supposed to be protected by an impartial, unbiased and fair assessment performed by our government protectors (DOE, NRC, etc.). That this DEIS fails to do so in many more ways than I can

12

briefly mention is very clear. There is clear bias in favor of the proposed action at every turn. This is illegal, and fails the spirit of the laws meant to protect the citizens of this United States of America. In my opinion, the Nuclear Regulatory Commissioners have good reasons to reject the requested license.

Sincerely,



Robert B. Mills IVth (aka Robin Mills)

Maplerock Box 80

Rio, West Virginia 26755

Robinmillsd@yahoo.com

9 May 2003

Disclaimer: I am employed by no organization, entity or persons who have or will compensate me for this DEIS response. The above stated opinions are my own and may be plagiarized by anyone who wishes to copy them.

13

00106

5/1/03

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(57)

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Rules and Directives
Branch
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MAY 13 PM 3:09

I am deeply concerned about

the possibility of a plutonium MOX fuel factory at the Savannah River site nuclear facility. As a resident of the general area (Georgia) I am concerned about the safety of this facility, particularly in light of possible terrorist actions at the site. Also, I'm concerned about the safety of transportation of plutonium to the site and wastes from the site. I urge you to consider safety and cleanup options and not allow this dangerous scheme to go forth. I would certainly not travel to the area.

5/1/03
F-EDDS-ADM-03
4/28/03 (TEH)
4/28/03 (CRA)

would consider moving out of Georgia if it is implemented. Thank you for consideration of my concerns.

Sincerely,
Diane F. Matesic

Diane F. Matesic
2443 Willow Wood Ct
Atlanta, GA 30335

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2003 MAY 13 PM 3:09
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USNRC

106-1

106-1

00107



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8990

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MAY 20 AM 9:20
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LBN/PC

May 14, 2003
4/28/03
CR 228726
03

Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, D.C. 20555-0001

RE: EPA Review and Comments on
Construction and Operation of a Mixed Oxide Fuel Fabrication (MOX) Facility
NUREG-1767, at the Savannah River Site, South Carolina
Draft Supplemental General Management Plan and
Draft Environmental Impact Statement (DEIS)
CEQ No. 030070

Dear Chief:

The U.S. Environmental Protection Agency (EPA) reviewed the subject *Draft Environmental Impact Statement* (DEIS), pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act. The document provides information to educate the public regarding general and project-specific environmental impacts and analysis procedures, and follows the public review and disclosure aspects of the NEPA process. The purpose of this letter is to inform you of the results of our review.

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment

Attachment

Overall, the DEIS is well-written and clearly explains the proposed action and the alternatives. We particularly appreciate the discussion of mitigation plans which was included in the DEIS. Based on EPA's review of the document, the document received an "EC-1" rating; that is, environmental concerns exist regarding some aspects of the proposed project. Specifically, hazardous and radioactive wastes generated from the proposed facility will require specialized waste management procedures, as well as safety and emergency response plans, in order to prevent impacts.

Transuranic (TRU), low-level radioactive waste (LLW), and hazardous and non-hazardous (both liquid and solid) wastes are expected to be generated during operation of the proposed facility, and will require specialized handling, storage, transportation and disposition measures in order to safeguard human health and the environment.

Exhausts from the proposed facility will be treated to remove radioactive materials before the exhaust is discharged to the atmosphere. Monitoring is planned during the operation and decommissioning phases of the project. Groundwater quality impacts are not anticipated, since there would be no discharges to underlying aquifers; regular monitoring of the double-walled liquid high-alpha waste pipeline is planned.

Thank you for the opportunity to comment on this DEIS. If you have any questions or require technical assistance, you may contact Ramona McConney of my staff at (404) 562-9615.

The stated goal of the project is to ensure that plutonium produced for nuclear weapons and declared excess to national security is converted to proliferation-resistant forms. DOE proposes to design, construct, and operate a proposed Mixed Oxide (MOX) Fuel Fabrication Facility that would convert depleted uranium and surplus weapons-grade plutonium into MOX fuel. The proposed MOX facility would be located at the Savannah River Site in South Carolina, and would be part of DOE's surplus plutonium disposition program. Because Congress gave the NRC licensing and related regulatory authority over the proposed MOX facility, its construction and operation will require NRC approvals, issued pursuant to the *Code of Federal Regulations*, Title 10, Part 70 (10 CFR Part 70).

Support facilities are part of the proposed action: an associated Pit Disassembly and Conversion Facility (PDCF) would be constructed, along with a Waste Solidification Building (WSB). The PDCF would provide for the recovery of plutonium from disassembled weapons, converting it to plutonium dioxide powder for feedstock. The WSB would be used for processing liquid waste streams and converting them to solid transuranic waste (TRU) or low-level waste (LLW). A pipeline would also be constructed between the support facilities and the MOX facility.

K-EPDS = ADAM-03
CALL = H. HARRIS (TEH)
H. KESTER (KAD)

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5. d. d. - 03.11.03

00108

Monday, 12 May 2003
3265 Mulberry Dr.
Tucker, GA 30084

2/28/03
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(52)

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MAY 20 AM 9:20

Rules and Directives
Mr. Lester
USDOE

EPA Review and Comments on
Construction and Operation of a Mixed Oxide Fuel Fabrication (MOX) Facility
NUREG-1767, at the Savannah River Site, South Carolina
Draft Supplemental General Management Plan and
Draft Environmental Impact Statement (DEIS)

General: The DEIS clearly describes the proposed action and the anticipated environmental impacts of the project. We appreciate the tables which summarize the data in the DEIS.

Endangered Species: The DEIS discusses the presence of endangered species in the vicinity of the Savannah River Site. The document states that the facility construction and operation would have no effect on threatened and endangered species under USFWS and SCDNR jurisdictions.

Air Quality: The DEIS states that transuranic, (TRU), and low-level radioactive wastes, (LLW), will be generated during operation of the proposed facility. Exhausts from the proposed facility will be treated to remove radioactive materials before the exhaust is discharged to the atmosphere. Please provide further information in the FEIS regarding frequency and duration of air quality monitoring measures and monitoring of the facility's emissions to the atmosphere.

The DEIS discusses the need to demonstrate that the offgas treatment system will limit hydrazene, (listed as a hazardous air pollutant under the Clean Air Act), to very low levels. The DEIS states that these levels would not cause adverse health impacts to members of the public or employees. Information about plans for monitoring the offgas treatment system for hydrazene should be included in the FEIS.

Radiological Impacts: The DEIS states that annual radiological impacts to SRS employees and the public from exposure to radioactive air pollutants are expected to be small. The DEIS also cites plans for emergency preparedness. Plans for regular monitoring of the double-walled liquid high-alpha waste pipeline are discussed in the document.

Hazardous Waste Management: Hazardous waste from the proposed MOX facility would be shipped off-site to commercial RCRA permitted facilities. Estimated volumes for TRU, low-level, and hazardous waste would represent approximately 3% and 20% of Waste Isolation Pilot Plant (WIPP) and SRS storage capacities.

107-1

104-2

Having attended the public hearing in Savannah GA on Monday I was totally unconvinced that the situation had been careful in considering all the aspects of the processing of MOX materials. The highly radioactive slurry that would be produced was pretty much not addressed as an issue. As a member of the public in this general area, I am angry that such a serious issue should not address the entire life of the nuclear waste.

A secondary issue is the cost of the process. The federal government thinks there is a endless source of tax income but as a taxpayer, I am outraged at how our tax money is spent.

Nuclear waste should be immobilized not processed into MOX.

Sincerely,
Carolyn Chin

FEIS-ADU-013
Case-17-14115 (Open)
#142861 (ADU)

Template=ADU-013

00109

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2003 MAY 20 AM 9:20

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

April 12, 2003
Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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2003 MAY 20 AM 9:20

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Branch
USNRC

00110

2/28/03
68 FR 9728
57

109-1

I am writing to express my concerns about using plutonium bomb fuel as an energy source. Currently, I strongly believe this is a dangerous idea that should not come to fruition. It is imperative to not only protect, but also enhance the quality of life for the citizens and the environment. Safer and cheaper options need to be investigated before using MOX as an energy source.

I am a 28 years old and quite concerned with the plutonium issue. Simply put, I am concerned with the effects it will have on our environment and the quality of our lives based on the draft report by the US Nuclear Regulatory Commission.
Please consider that there are options. I want to live to be 128 years old and see my great grandchildren.

Sincerely,

Jennifer Zanck
Po box 3105
Savannah, GA 31402

Thank you for your time.

Sincerely,

Mai Dang
2430 East 38th Street
Savannah, Georgia 31404

110-1

April 12, 2003

Michael T. Lesar
Chief, Rules & Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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2003 MAY 20 AM 9:20

Rules and Directives
Branch
USNRC

2/28/03
68 FR 9728
52

RE: NUREG-1767

Dear Mr. Lesar,

I am a 28 years old and quite concerned with the plutonium issue. Simply put, I am concerned with the effects it will have on our environment and the quality of our lives based on the draft report by the US Nuclear Regulatory Commission.
Please consider that there are options. I want to live to be 128 years old and see my great grandchildren.

Thank you for your time.

Sincerely,

Mai Dang
2430 East 38th Street
Savannah, Georgia 31404

E-EDDS = ADM-03
Call - A. Lester (TEH)
A. Lester (MOX)

Temple - ADM-013

E-EDDS = ADM-03
Call - A. Lester (TEH)
A. Lester (MOX)

00111

Environmentalists, Inc.

FOUNDED 1972
1339 SINKLER ROAD
COLUMBIA, SC 29206
803-782-3000

May 22, 2003

Tim Harris
US Nuclear Regulatory Commission
Washington, DC 20555
teh@NRC.gov

Dear Mr. Harris:

These comments are being submitted by Environmentalists, Inc. (E.I.) for consideration by the Nuclear Regulatory Commission (NRC) in regard to the Draft Environmental Impact Statement (NUREG-1767 draft) for the MOX Fuel Fabrication Facility (MOXFFF) at Savannah River Site (SRS), one of the alternatives which the Department of Energy (DOE) described in its plan for Surplus Plutonium Disposition (SPD).

Comment No. 1

NUREG-1767, draft, is very clear about the NRC's role as an independent judge of the plan to build and operate a Mixed Oxide Fuel Fabricating Facility in South Carolina. The Department of Energy has chosen this MOX plant and other related activities as a way of addressing the countries excess plutonium problem. It is the NRC's responsibility to decide whether the overall MOX proposal could be carried out in a "safe and environmentally acceptable manner." (Page XVII, Executive Summary)

Comment No. 2

There are numerous process steps in the DOE's MOX plan. Figure 2.2, for example, identifies 13 steps in the Fuel Fabricating Process. The Aqueous Polishing Process has almost as many steps, according to Figure 2.1, however, less than half of them appear to involve plutonium. The PIT Disassembly and Conversion Facility (PDCF) and the Waste Solidification Building (WSB) both have a variety of operations which would take place. Added to all of these processing steps and related activities are those associated with transport between facilities, unloading, loading, and storage as well as the long-distance shipments of uranium and plutonium from seven different locations throughout the country.

It is imperative that a containment chapter be added to NUREG-1767, one which is devoted exclusively to addressing the need for preventing the release of plutonium "under all conceivable conditions."¹ This new chapter would identify all the containment measures being proposed for maintaining a plutonium management approach of "absolute containment,"² with diagrams and written text explaining where containment design features are located, description of procedures for routine and off-normal conditions of operation, release levels expected under routine and accident situations, back-up systems such as those that are designed to prevent non-routine releases in the event of failure of glove box ventilation, maintenance requirements, frequency at which monitors are checked and read, etc.

¹ Both quotes are from the transcript of the NRC Proceeding, in the matter of Allied General Nuclear Services, Docket No. 50-332 (pages 4277 and 4321) November 4, 1974. (The choice of these is based on both statements being clear and concise.)

Thank you for the opportunity to comment on this draft EIS, the process provided by the National Environmental Policy Act to insure that all possible alternatives are considered when a proposed facility will impact the environment.

Sincerely,

Ruth Thomas, President
Environmentalists, Inc.

111-1

00112

Michael T. Jeter
 Chief, Rules and Regulations Branch
 Division of Administrative Services, Office
 of Management and Administration
 Mail Stop T-6059, U.S. Nuclear Regulatory
 Commission
 Washington, DC 20555
 Re: MTR 1767 May 21, 2003

Dear Mr. Jeter
 In response to the Nuclear Regulatory
 Commission's Draft Environmental Impact
 Statement (DEIS) on the proposed plutonium
 fuel factory (MOX) at the Dept of Energy's
 Savannah River site nuclear facility,
 I must respond strongly that the con-
 struction of the MOX facility, and more
 importantly, the operation of that facility
 is environmentally unsound.

The DEIS must address the ma-
 jor alternative to MOX-plutonium
 immobilization.
 Immobilization would achieve the
 MOX program's stated goal "to safe-
 guard weapons-grade plutonium."
 Continued storage of the weapons
 grade plutonium is an unacceptable
 security risk. The DEIS should pro-
 vide a responsible projection of what

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112-2

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 cont.

valuable assets as discussed the en-
 vironmental risks and consequences
 of DOE failure to implement MOX
 waste program. In addition, the
 possible environmental and public health
 impacts of an attack on this facility
 are unacceptable to the people of the
 Southeast.

113-4

These problems should promptly
 be addressed with the DEIS.
 Thank you for your prompt
 attention to these concerns.
 Sincerely,
 Ruth Sanford

May 21, 2003
 H300 NARRIMORE RD #204
 Decatur GA 30033
 E-MAIL RUTHSANFORD@HOTMAIL.COM

JUN-15-2003 16:33



SIERRA CLUB
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South Carolina Chapter
P. O. Box 2388
Columbia, SC 29202
803-256-8487 • Fax 803-256-8448

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66

May 30, 2003

Michael T. Lesar, Chief
Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mail Stop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re.: DEIS on MOX

Dear Mr. Lesar:

The following comment is being submitted by The South Carolina Chapter of the Sierra Club for consideration by the Nuclear Regulatory Commission in regard to the Draft Environmental Impact Statement (NUREG-1767, draft) for the MOX Fuel Fabrication Facility at the Savannah River Site, one of the alternatives which the Department of Energy described in its plan for Surplus Plutonium Disposition.

It is imperative that a containment chapter be added to NUREG-1767, one which is devoted exclusively to addressing the need for preventing the release of plutonium under all conceivable conditions. This new chapter would identify all the containment measures being proposed for maintaining a plutonium management approach of "absolute containment," with diagrams and written text explaining where containment design features are located, description of procedures for routine and off-normal conditions of operation, release levels expected under routine and accident situations, back-up systems such as those that are designed to prevent non-routine releases in the event of failure of glove box ventilation, maintenance requirements, and frequency at which monitors are checked and read.

Thank you for the opportunity to comment on this draft EIS.

Sincerely,

Doreen Isola
Doreen Isola
Chapter Director
SC Sierra Club

cc: SC Chapter Steering Committee

*FUEIDS = ADM-03
Code = T-4411.5 (FSA)
A. Keister (ADM)*

TOTAL P. 02

00114

From: Louis Zeller [BREDL@skybest.com]
Sent: Sunday, June 15, 2003 4:23 AM
To: Tim Harris
Subject: February 2003 Draft EIS for the Mixed Oxide Fuel Fabrication Facility at SRS

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

www.BREDL.org - PO Box 88 Glendale Springs, North Carolina 28629 - Phone: (336) 952-2891 - Fax: (336) 952-2954 - BREDL@skybest.com

May 14, 2003

US Nuclear Regulatory Commission

Michael T. Lesar, Chief

Rules & Directives Branch

Division of Administrative Services

Office of Administration, Mail Stop T-6D59

Washington, DC 20555-0001

Re: February 2003 Draft EIS for the Mixed Oxide Fuel Fabrication Facility at SRS

Dear Sir:

On behalf of the Board of Directors of the Blue Ridge Environmental Defense League and our members in South Carolina, I write to provide additional comments on the draft *Environmental Impact Statement on the Construction and Operation of a Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina prepared by Argonne National Laboratory for the U.S. Nuclear Regulatory Commission* (DEIS).

In accord with the federal *Code of Federal Regulations*, Title 10, Part 70 (10 CFR 70), 10 CFR 51, and 40 CFR 1500, the NRC is to address the direct, indirect, and cumulative impacts related to building, operating, and decommissioning the proposed plutonium fuel (MOX) facility at SRS. However, the DEIS fails to address several major environmental impact at the proposed facility.

According to the DEIS, the purpose of the proposed 41-acre plutonium fuel factory located in the F-Area of SRS would be to convert 37.5 tons of weapons-grade plutonium into a mixed oxide fuel of uranium and plutonium. However, the declaration "surplus plutonium" is not a technical term; it is a political phrase with no scientific basis. For example, the January 2000 DOE Record of Decision (ROD) stated 36.4 tons of surplus plutonium would be converted into MOX fuel and another 19 tons was to be immobilized. Total "surplus plutonium" was then 55.4 tons. Nine months later Russia and the United States designated 37.5 tons of weapons grade plutonium as surplus, a difference of 47% (*Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation*, September 2000).

The proposed plant would actually be licensed to handle up to 3.9 tons of plutonium dioxide annually for a period of 20 years. Therefore, the plant envisioned by NRC has the potential to handle a total of 78 tons of plutonium. The DOE is on record stating that it has a stockpile of 123 tons of plutonium (111.4 MIT), of which 84 tons (85.1

06/17/2003

114-2
cont.

MT) is weapons-grade plutonium (*Plutonium: The First 50 Years*, DOE, 1996). During the next two decades, treaty obligations could conceivably result in 78 tons of surplus plutonium being declared. However, the February 2003 draft states, "This DEIS is based on a total of 34 MT (37.5 tons) of surplus plutonium. Neither standards, nor secondary and capricious estimates, the potential to emit air pollutants (PTE) for this facility should be based on the maximum throughput for the licensing period. This is the standard methodology utilized by federal and state agencies to evaluate major sources of pollution. To be valid, the EIS must be based on the maximum throughput of 78 tons of plutonium in its estimates of both criteria pollutants and hazardous air pollutants, including radionuclides.

The DEIS omits a critical component of plutonium disposition. The plutonium-MOX fuel would be fabricated for the sole purpose of irradiating it in nuclear reactors. In order to irradiate all the weapons-grade plutonium produced by the proposed fuel factory as outlined by DOE and NRC, additional and as yet unknown commercial nuclear power reactors must be designated. Originally, DOE had contracted with two electric utilities to provide this service: Duke Energy and Virginia Power. But Virginia Power has withdrawn its reactors from the program, leaving Duke as the sole provider of plutonium irradiation reactors. Duke's Catawba and McGuire reactors cannot provide sufficient capacity to irradiate 37.5 tons of plutonium. The DEIS acknowledges this deficiency but offers no remedy.

The DOE had earlier identified Duke Power Company's four reactors at the Catawba and McGuire stations (two at each station) as potential candidates to irradiate MOX fuel. The potential candidate reactors can accommodate up to 25.5 MT (28.2 tons) of surplus plutonium in MOX fuel. The DOE has not yet identified the additional candidate reactors necessary to accommodate the additional MOX fuel (8.5 MT [9.4 tons]) to be irradiated under the amended ROD. [February 2003 DEIS, 1.1.1 Surplus Plutonium Disposition Program]

In order to address the direct, indirect, and cumulative impacts related to the proposed plutonium fuel factory, NRC should include impacts of the maximum throughput to its analysis of impacts on mission reactors including fuel transportation and irradiation, and dumping in a waste repository in DEIS Section 4.4.3.

The February 2003 draft states, "For purposes of this DEIS, a period of operation of 10 years is assumed to bound impacts." Again, there is no rational basis to delimit environmental impacts to a period less than the expected licensing period. In order to be truly conservative, NRC should utilize a twenty-year basis for all its analyses.

Hazardous and radioactive wastes are permitted to be burned in the H-Area Consolidated Incinerator Facility (Unit ID # H-010). Although South Carolina DHEC has stated that the CIF is not currently in operation, it recently granted DOE-Westinghouse Savannah River Company a new permit to operate the waste incinerator. The DEIS states that the Waste Solidification Building will send waste to other facilities at SRS:

The WSB would process liquid waste streams from the PDCF and proposed MOX facility. Other waste from the proposed MOX facility, not sent to the WSB, would be transferred to and managed by the SRB. . . [February 2003 DEIS, Executive Summary]

The CIF is required to comply with 40 CFR 61 Subpart H, *National Emission Standards of Radionuclides Other Than Radon From Department of Energy Facilities*. Although radionuclide emission rates from the stacks of the CIF and other sources are measured, the millirem standard for maximum allowable dosage to the public is an ambient standard, not an emission limit. Without ambient measurements, neither DOE nor Westinghouse Savannah River Company can assure that emissions of radionuclides are below 10 millirem per year to any member of the public. Likewise, the NRC fails to cite any direct ambient measurement a basis for estimates of radioactive dose to the public in the DEIS. The DEIS states:

The annual collective dose to members of the public (i.e., those living and working within 80 km [50 mi] of the SRS) produced by routine operation of the proposed MOX facility would be expected to result in a latent cancer fatality (LCF) rate of approximately 0.0004/yr or less. Routine operation of the proposed MOX facility, the PDCF, and the WSB is expected to produce insignificant air quality impacts, and would not cause exceedance of any ambient air quality standards for criteria pollutants at the SRS. However, maximum levels of $PM_{2.5}$ in the vicinity of the SRS already exceed the annual standard of 15 $\mu\text{g}/\text{m}^3$. Facility construction would contribute temporarily less than 0.1% of this $PM_{2.5}$

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cont.

standard level, and facility operation would contribute less than 0.01% of this level. [February 2003 DEIS, Executive Summary]

About a year ago the DOE jettisoned the immobilization option which had been posited by Secretary O'Leary in 1996. [Amended Record of Decision for the Surplus Plutonium Disposition Program, Federal Register 67:19432, April 19] Secretary Abraham cited cost-savings and pressure from the Russian Federation as reasons for ending the two-track, or hybrid, approach. The February 2003 draft states:

[I]n April 2002, the DOE issued an amended ROD (DOE 2002), in which it decided not to pursue its hybrid approach. The DOE determined that in order to make progress with available funds that only one approach could be supported. Russia does not consider immobilization alone to be an acceptable approach because immobilization, unlike the irradiation of MOX fuel, fails to degrade the isotopic composition of the plutonium. Russia further contends that the United States could easily retrieve plutonium from the immobilized waste at a later date and reuse that plutonium in nuclear weapons (DOE 2002). Because an immobilization-only approach would jeopardize Russia's continued involvement in the joint effort to reduce supplies of weapons grade plutonium, the DOE decided that if only one disposition approach is to be pursued, the MOX fuel approach is the preferred one. [February 2003 DEIS, 1.1.1 Surplus Plutonium Disposition Program]

But the record reveals quite a different picture. From the beginning both the American and the Russian plutonium programs have been bankrolled by the U. S. Treasury. The decision by the DOE to utilize the more expensive plutonium fuel option was not made in the interest of either the American or the Russian people. Experts in both countries have lambasted the decision. The Washington-based Nuclear Control Institute condemned the amended ROD:

Moreover, the Bush Administration continues to cave in to Russia's insistence that plutonium from dismantled warheads be recycled as mixed-oxide ("MOX") fuel for commercial nuclear power plants. "The Energy Department's own studies document that the MOX approach is far more expensive and dangerous than directly disposing of plutonium by immobilizing it as waste," noted Dr. Edwin Lyman, NCI scientific director. "The Bush Administration reportedly pressured President Putin to accept U.S. terms in the draft nuclear arms agreement, but has never been willing to resist Russia's ambitions to pursue a MOX-only plutonium disposal strategy. Russia cannot afford to pursue any plutonium disposition strategy on its own. If the U.S. Government made it a priority, an immobilization approach could be up and running in a relatively short period of time." May 14, 2002 NCI press release, <http://www.nci.org>.

Ten time zones away Russian experts who support dismantlement of nuclear weapons continually call for abolition of the plutonium fuel program and advocate immobilization of weapons-grade plutonium. Opposition to plutonium fuel programs based on the negative health and safety aspects continues unabated in cities across the Russian Federation. A Russian group's recent press release (Appendix A) stated:

"Using plutonium as a fuel for NPPs [nuclear power plants] may lead to nuclear accidents and plutonium pollution of the Russian territories. It also gives the possibility of nuclear material theft and proliferation," said Vladimir Shiyak, Ecodense co-chair. "Plutonium must be immobilized and never used again," he added. In 2000, Russian and US governments agreed on disposing 66 t of weapons-grade plutonium (16 t each). Cost of Russian part of the program is nearly \$2 billion while the US part exceeds \$4 billion. According to this approved scheme, weapons-grade plutonium must be used first in an effort to fabricate MOX fuel (Mixed Oxides of uranium and plutonium) which then will be used in civil reactors. This plan includes the construction of new facilities in Savannah River Site (US) and Seversk (near Tomsk city, SiberianRussia) to produce weapons grade MOX and then bringing the life in civil reactors. In 1993, an explosion at the Seversk facility, where plutonium is burned, led to the release of plutonium fuel elements, caused plutonium contamination around facility. Involving plutonium into the civil nuclear industry may lead to new nuclear reactor accidents, plutonium contamination of Russian and US territories, and nuclear proliferation. <http://www.antiatom.ru/eng/030528arc.htm> Antiatom.ru, May 28, 2003

The NRC has arbitrarily determined that immobilization of plutonium does not require an in-depth evaluation because it is not a "reasonable alternative" and because the agency seeks to avoid foreign policy issues. One of the most dumbfounding statements in the DEIS:

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The second reason that immobilization is no longer a reasonable alternative to the proposed action is its connection with the conduct of United States foreign policy. Evaluating the immobilization alternative now would involve the NRC in foreign policy matters that the DOE has been conducting on behalf of the United States. In the NRC's view, an alternative that would block the implementation of an agreement with another country involves foreign policy matters that are outside NEPA's scope. Therefore, the NRC concludes that immobilization is not a reasonable alternative requiring detailed analysis in this DEIS. (February 2003 DEIS, 2.3.3 Immobilization of Surplus Plutonium)

Despite numerous requests to evaluate the technical aspects of immobilization by people at public meetings in North Augusta, South Carolina, Savannah, Georgia, and Charlotte, the NRC steadfastly refuses to accede to the wishes of the citizens most directly affected by the proposed plutonium dismantlement operations at SRS. The possibility that environmental impacts may affect policy considerations foreign or domestic most certainly does not negate the requirements of NEPA. The NRC simply cannot recede the mendacity of the DOE and its contractors. A comprehensive analysis of the impacts of the plutonium-MOX facility must needs include a side-by-side comparison with immobilization.

Perhaps the most stunning flaw in the DEIS is the failure to even consider possible environmental consequences of terrorist acts on plutonium-MOX fuel fabrication and transportation. The February 2003 draft states:

Many commenters raised a number of different issues concerning terrorism. The Scoping Summary Report stated that the EIS would not address the impacts of terrorism because these impacts are not considered to be reasonably foreseeable as a result of the proposed action. However, following the events of September 11, 2001, the Commission decided to consider the question of whether NEPA requires the evaluation of such impacts. By order dated December 18, 2002 (CLI-02-24), the Commission ruled that NRC has no obligation under NEPA to consider intentional malevolent acts in conjunction with the licensing of the proposed MOX facility. (February 2003 DEIS, 1.4.1 Scoping Process)

Because the plutonium-MOX fuel plan necessitates shipping nuclear weapons-usable plutonium over enormous distances, it might well increase the likelihood that such material could fall into the hands of terrorists. The U.S. National Academy of Sciences stated that shipments of plutonium fuel will require security measures equivalent to those needed for transport of nuclear weapons. Harvard Law School and the United Kingdom Royal Commission on Environmental Pollution have also raised concerns about the security measures needed for plutonium as an article of commerce.

A report prepared by a special commission of International Physicians for the Prevention of Nuclear War and the Institute for Energy and Environmental Research states:

Using plutonium as fuel on a large scale would be difficult to safeguard and would involve a high risk of diversion. In the case of plutonium from weapons, there would be a regular traffic of plutonium oxide from dismantlement and storage sites to fabrication facilities and reactors, with the risk of attack along transportation routes. [International Physicians for the Prevention of Nuclear War and The Institute for Energy and Environmental Research, Plutonium: Deadly Gold of the Nuclear Age, International Physicians Press, Cambridge Massachusetts, 1982, p.133-134]

MOX fuel has a greater quantities of plutonium and other hazardous radioactive isotopes such as Americium 241 and Curium 242--actinide elements which would cause additional harmful radiation exposure to the public.

Public attention has been drawn to the higher actinide inventories available for release from MOX than from conventional fuels. Significant releases of actinides during reactor accidents would dominate the accident consequences. Models of actinide release now available to the NRC staff indicate very small releases of actinides from conventional fuels under severe accident conditions (emphasis added) (Letter from Advisory Committee on Reactor Safeguards to Nuclear Regulatory Commission Chairman, May 17, 1999)

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cont.

The plutonium oxide fuel would be valuable target. The Department of Energy's program would transport plutonium from Defense Department sites to South Carolina for fuel fabrication. From Savannah River tons of plutonium in mixed oxide fuel would be transported across hundreds of miles of isolated countryside to utility reactors in North Carolina and South Carolina. This over- and transport link presents a unique opportunity to those who might intercept and divert the fuel for weapons use. The freshly fabricated fuel rod assemblies would be the most desirable form for groups who would go after the plutonium for unlawful use in their own explosive devices. DOE admits this vulnerability.

[The unirradiated fuel contains large quantities of plutonium and is not sufficiently radioactive to create a self-protecting barrier to deter the material from theft....

Revised Conceptual Designs for the FMDP Fresh MOX Fuel Transport Package, Ludwig et al, ORNL/TM-13574, March 1998

The risks of deliberate diversion and/or destruction of a fresh nuclear fuel or irradiated waste transport cask are increased by plutonium fuel. Higher actinide inventories increase the public health risks. The strategic value of plutonium oxide for new weapons increases the threat of diversion.

On October 9, 1995, a ten car Amtrak train with 248 passengers and twenty crew was derailed near Hyder, Arizona. Spokes had been removed from the rail bed, a metal bar connecting the rails had been removed, and the missing section wired to circumvent the electronic warning system. A terrorist group, Sons of the Gestapo, left a note at the scene claiming credit and criticizing law enforcement agencies, citing the Waco and Ruby Ridge incidents.

On October 1, 1995 a jury convicted Sheik Omar Rahman of conspiracy to use diesel-fertilizer bombs which would have been used to blow up United Nations headquarters, the Lincoln and Holland tunnels, the George Washington Bridge, and the New York federal building. The George Washington Bridge has been used for shipments of irradiated fuel and plutonium from Brookhaven National Laboratory to the Savannah River Site.

Incidents of rail and highway sabotage reveal that: 1) terrorist attacks would likely be designed to inflict maximum human injury, 2) electronic warning systems designed to alert officials and prevent accidents can be defeated by technical countermeasures, 3) effective attacks using home made explosives are possible, avoiding the need for exotic military weapons to breach transport containers, and 4) saboteurs have the ability to create damage which exceeds the containment standards of NRC certified shipping containers.

The willingness of terrorists to kill or injure large numbers of Americans, demonstrated in the World Trade Center and Oklahoma City bombings, compels any current assessment to focus on incidents that are clearly intended to cause, or could cause, radiological sabotage. "The FBI's Terrorism in the United States, 1995 reported: 'In the past year, the country witnessed the re-emergence of spectacular terrorism with the Oklahoma City bombing. Large-scale attacks designed to inflict mass casualties appear to be a new terrorist method in the United States. [Nuclear Waste Transportation Security and Safety Issues: The Risk of Terrorism and Sabotage Against Repository Shipments, Halstead and Ballard, December 1998]

Halstead and Ballard state that risk assessments must consider direct attacks on transport casks using high energy explosive devices with or without capture of the shipments. Capture and control of the cask by terrorist agents would allow the cask to be breached with a variety of devices including commercially available conical shaped charges and cutting charges, or a massive diesel fuel-fertilizer truck bomb. Attackers may use transport personnel as hostages to retain control of the cask for hours. With the time gained, attackers could increase the effect of explosives by removing barriers and applying them to the most vulnerable part of the cask.

Full scale tests by Sandia National Laboratory published in 1983 utilized a military shaped charge (US Army M3A1) on a GE F-200 truck cask containing unirradiated fuel. Even this outdated test demonstrated that the cask could be breached and that radioactive materials would be released.

Current weapons, such as the Superdragon anti-tank missile, are more powerful and can penetrate 18 inches of armor plate. This weapon was used by the U.S. in Operation Desert Storm, and is used by at least ten other

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nations. The release of even more toxic radioactive elements would cause more fatalities immediately following an accident. Lindsay Audin's analysis of fuel rod behavior during incidents involving sabotage explains how much greater amounts of fine particles and vapors would be released from a conventional irradiated fuel cask.

An attempt to disperse the fuel would likely involve a high explosive device that must first penetrate a transport cask. Such a device would penetrate one or both sides of the cask, shatter the fuel rods and pellets in its path, and heat the area along that path. The shock and heat involved would...initiate several processes not normally experienced by uranium dioxide and zirconium alloy. At high temperatures in the presence of oxygen, both materials will change form. Uranium dioxide UO2 will "reoxidize" and become U3O8...expanding and forming a very fine powder in the process. Zirconium will literally ignite, vaporizing itself.... The fuel pellets may also shatter back to the consistency of the uranium powder involved in their manufacture. Ruthenium will vaporize and combine with oxygen to form minute particles, while other elements, such as iodine, will be released as gases. [Analyses of Cask Sabotage Involving Portable Explosives: A Critique, Lindsay Audin, 1985]

Emergency response to rail or highway accidents must be well-prepared and rapid. Delays in response to accidents which involve the release of radioactive material would expose unknown numbers of people to negative health effects. In 1996, a DOE Transport and Safeguards Division Safe Secure Transport (SST) trailer carrying nuclear weapons slid off the road and rolled over in rural Nebraska. Four hours elapsed before DOE headquarters were notified, and it was 20 hours before a Radiological Assistance Program team determined there was no release. A similar delay in response to a plutonium-MOX fuel accident could make effective emergency response dangerous and clean-up impossible. The following comment by the Georgia Environmental Protection Division cites vehicular tests of powdered materials deposited on roadways and takes issue with the DOE's approach to emergency response to accidental plutonium fuel releases.

After passage of about 100 cars only a small fraction of the original contamination remained on the road surface. Unless emergency officials promptly close the accident scene to vehicle traffic (an unlikely situation), emergency responders may face an incident scene that is, unknown to them, extremely hazardous due to respirable plutonium. Post emergency actions may also be complicated due to the enhanced spread of contamination by vehicle traffic. [Georgia Environmental Protection Division comments on DOE SPD DEIS]

The NRC must go back to the drawing board and include a full-scale environmental impact analysis of potential terrorist acts on plutonium-MOX fuel shipments. The Commission's order of December 18, 2002 (CLI-02-24) which found that the NRC has no obligation under NEPA to consider intentional malevolent acts in conjunction with the licensing of the proposed MOX facility is so wrong it beggars description. Even if CLI-02-24 does not find an obligation to investigate potential terrorist acts, you have an obligation as Americans in the 21st Century to use due diligence in this matter.

Respectfully,

Louis Zeller
Southern Anti-plutonium Campaign Director

Cc: Tim Harris

Attachment

06/17/2003

00115

From: Mary Olson <nrls.se@mindspring.com>
To: <teh@nrc.gov>
Date: 6/13/03 6:15PM
Subject: Additional MFFF comment / [Fwd: BREDL's EPA petition on SRS]

Nuclear Information and Resource Service
Southeast Office
PO BOX 7566
Asheville, NC 28802
May 30, 2003

Michael T. Lessar, c/o Tim Harris -- via e-mail
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr's Lessar and Harris,

I would like to submit the following as an additional comment for Nuclear Information and Resource Service.

We are forwarding the attached (on this message) from Louis Zeller of the Blue Ridge Environmental Defense League which includes 2 documents: their submission to the US Environmental Protection Agency in objection to the Title V permit issued to the DOE for the Savannah River Site, and particularly the second document: their reply to the South Carolina Department of Health and Environmental Control (DHEC) after the permit was awarded. Blue Ridge Environmental Defense League's work, summarized in these submissions to DHEC and EPA, clearly establishes that the Savannah River Site does not currently meet five Title V emission standards with the existing operations at the Site. The addition of the Pit Disassembly and Conversion, waste processing, MOX Fuel Factory, and Modern Pit Facility may, in fact, cause additional violations. The most troubling non-compliance in terms of these new plutonium factories is the fact that SRS exceeds NESHAPS -- National Emission Standards for Hazardous Air Pollutants standard of 10 milligrams to the public under the currently permitted activities. The incinerator is clearly part of what is at issue in this determination, but there is nothing to ensure that it, or a similar operation will not be utilized during the term of operation of the MFFF, since it is included in the currently permitted activities.

The EIS must show that any ADDITIONAL activities and cumulative and additive activities would not result in exceeding the NESHAP limit when combined with current operations. Further, the NESHAP is written in milligrams per day. There is no current monitoring done by DOE, or reported in the DEIS that can, in fact confirm public doses from all current sources of radiation exposure to the public at SRS.

The Blue Ridge Environmental Defense League (BREDL) documents also include abundant information about the use of HEPA filters that is not included in the DEIS on the MFFF. HEPA filters clearly can contribute to additional radioactive air emissions.

While BREDL may have submitted this information in their comments on the

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00116

DZLS Comments
for MOXFFF ad SRS

May 14, 2003
from Peter James Murray

FAX to: 301-415-5398

MFFF, the purpose of this submission is to reinforce our own earlier comments about how additional construction, operation and waste generation at SRS might cause the Site to exceed current regulations. We find that the BREDL submission, and the supporting documents referenced offer additional substance to our assertion, and ask that you consider it in detail.

It is clear to us that the accident analysis NRC did for the MFFF and PDCF likely apply to many other accident scenarios --and actual accidents that have occurred -- from current and past operations at SRS. If this is the case, then the environmental justice concerns that apply to any future accident apply to the impacts associated with violating emission limits and other standards. We believe that it is a violation of the principles of equal protection under the law for NRC to grant additional licenses to additional activities at SRS that will exacerbate an existing problem of environmental discrimination and injustice.

Finally, we would like to bring to the Commission's attention the issues being considered at Erwin, Tennessee's Nuclear Fuel Services (see: <http://fnwebgate5.access.gpo.gov/cgi-bin/waisgate.cgi?WAI:SiteID=442311280+10+0+0&WAI:Section=eriv>)

NFS is applying for a license amendment to reduce the source term at their site, since they are digging up soil that no longer meets applicable standards, and sending it to Utah. NFS is cleaning up waste burial grounds because they are not licensed to be a nuclear waste dump. NIRS would like to submit to NRC that there is no reason to think that sending waste over the fence line into an unlicensed burial ground at Savannah River Site is any different than Nuclear Fuel Services burying waste on their own site. In both cases it is wrong, it is bad for ground water, surface water, workers, wild life and any other living thing you want to mention. It is a disgrace....and yet, that is the answer that DOE and Duke COGENA Stone offer us....just dump it next door, out of NRC's regulatory space. This is not adequate or acceptable....and the environmental impacts of doing so should be explicated in detail in this document, not merely stated that the SRS has waste capacity to take it.

Respectfully Submitted,

Mary Olson
nfs.se@mindspring.com

CC: Lou & Janet Zeller <BREDL@SkyBest.Com>

115-3

115-4

116-1

116-2

Dear T. Harris:

Please accept these draft comments on the SRS for MOX. Only recently became re-involved with MOX & have had insufficient time to properly review the various EP's, CAR's, DSER's & DELS to put forth a properly presented set of comments by the latest 5/14/03 deadline

1. Arbitrary deadline appears to be the managing force behind the MOX safety review. I suggest that whenever possible, deadline should take a back seat to safety, so that the public develops confidence that NRC is protecting them. ~~Janet~~

2. DELS, ~~pg 1-18~~; pg 1-18. The NRC commission order of 12-18-2002 (CLL-02-04) ruled that "NRC has no obligation under NSPA to consider intentional malverious acts in conjunction with the licensing of the proposed MOX facility." I suggest that public health & welfare require NRC to be reasonably and consider malverious external man-made events as a bounding security issue. The design of the MOXFFF should glean insights from technology

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acts as the design phase so that important anti-terrorist design features are included in the construction of the facility. The environmental impact of a large fully fueled aircraft crash with explosive crashing into MOXFFF is necessary so that the public knows about the danger. Plant design features could be a significant preventive/mitigative safety measure if included in facility design before construction begins. I suggest that NRC re-consider the environmental impact of facility destruction by a well planned terrorist act.

116-2 cont.

3. The terrorist act - The U.S.A. is at war, we have color codes (red, orange, yellow, etc) for varying security levels of threatened terrorist acts. An any war construction involving potent radioactive materials, threatening terrorist acts require NRC consideration of the necessary preventive/mitigative features to protect public health & safety. It is suggested that NRC review the probability of happening of previous "incredible" events - Three mile Island #2 in 1979, Chernobyl in 1986, the N.Y. City twin towers in 1993 & again in 2001. The probability that these events would

116-3

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happen in the manner in which they occurred (before they occurred) is very, very small - incredibly small. Yet, the incredibly happened. NRC should awaken to the reality of today's environment & work to vigorously protect public health & safety. Worst case events from incredibly happenings require NRC review & consideration in determining nuclear safety. Accordingly, it is suggested that the worst case scenarios be evaluated for all possible events and accidents.

116-3 cont.

4. The MOXFFF appears to be an engineering experiment. Usually, prototype models of their designs precede a final design. The MOXFFF as it is proposed has no fusion predecessor in this country. While there are similar fuel fabrication designs in this country & experience with recycling in other countries, the proposed MOXFFF in this country is a trial with the local population placed at risk. While I am not suggesting that our engineers cannot safety design & operate such a facility, the NRC is suggested should proceed with caution and not paper abandon. Caution requires consideration of every measure needed

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to protect public health & safety. Safety should take precedence over arbitrary deadlines.

5. The NRC is licensing MOX and is not licensing WSB or PDC F. MOX is generating chemical & radioactive waste, which is then transported to unlicensed facilities for disposal. I suggest that the polluting history of SRS requires that an independent NRC get involved with the proper disposal of the wastes generated by MOX. Incineration, burial and transport of chemical and radioactive wastes ~~is~~ require NRC to become involved through the EIS in a proper outcome. NRC should reconsider the bounds of its EIS.

6. NRC should alternatively consider a self-sufficient MOXFFF with a WSB & PDCs totally separate & independent of SRS. The necessary design changes should be included and reviewed at this time with a revised EIS.

7. Natural phenomenon - the earthquake. It is not obvious that the worst case earthquake would not devastate the current MOX design of PSSC's survival the earthquake, non-PSSC equipment & structures might not

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survive and their destruction could have an adverse impact on the PSSC's, assuming the PSSC's themselves survive. So the worst case earthquake could also cause explosions, spills, criticality accidents, fires and leakage of radioactive material. NRC should review this worst case scenario and its environmental impact.

8. Why are not accidents also viewed simultaneously with a hurricane, when the winds are forecast.

9. Transportation - Did NRC consider both fatal & non-fatal truck accidents? Why are "neutral weather" conditions not the "worst case" weather conditions considered in an xport accident? What are the transportation risks on site at SRS?

10. Nuclear accountability - How are MOX pellets accounted for? How many pellets are produced? What is the probability of theft? How are waste streams accounted for?

11. Is there an emergency response plan at SRS, where is the offsite emergency planning for the public. How is the public made

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116-4 cont.

116-5

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116-7

116-7 cont.

116-8

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116-11

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aware of an incident at SES? An emergency evacuation planned & practiced?

12. Pipes between facilities - what is the chance of a criticality event in a pipe? Does NRC have complete jurisdiction to review the scenario to ensure that enriched U & Pu are at safe levels in the pipes?

13. Why not ensure public protection from fuel & smoke by using both sand & HEPA filters? Series or parallel connections could be considered

14. DCS plans to use both preventive and mitigative measures in accident evaluations. A more conservative approach is to allow for the accident and mitigate the consequences while simultaneously designing to prevent the accident. Why is not this philosophy applied? the E/S consequences considered

15. For airborne releases of radionuclides, in an accident the MZI is at the north SES boundary. What the 1-year maximum dose is at the 5-SN boundary. Why? For most of the year there are no prevailing winds at SES. It appears there is no real "off" direction

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to evacuate in the event of an accident. Emergency planning (EP) takes on a new meaning. As high alpha particle waste currently planned to be treated as HLW, LLW, mixed or what?

17. I was informed that the ECRP has published a 2003 set of recommendations on health effects of chronic radiation exposure at low doses for radiation protection purposes.

Regulator's Editor; Bravetto, Jan. 2003. How does this information compare with what NRC uses? Which is valid?

18. It would probably help if some standard is used to quantify the terms "likely", "highly unlikely" & "credible". Is NRC planning to associate quantitative criteria with these terms that meet some standard?

19. I have questions concerning the environmental impact that the worst case H₂ explosion could cause. What is its impact?

20. Are offsite radiation monitors planned to be on site? Please identify the capability to actually measure alpha, beta, gamma & neutron

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116-15 cont.

116-16

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116-19

116-20

116-11 cont.

116-12

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116-15

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continually in & around SRS. What types of detectors are used; how frequently are they calibrated? Is the system automatic or manual? Where is this info maintained?

116-20
cont.

Mr. Harris, these 20 comments are all I have time for by this date. I hope that this helps "make your day!" Seriously though, there are issues that need NRC attention.

Thanks,



Peter James Atherton
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Planned copy: UCS, NIRS, GAWE, BREDL, Sierra Club of Ga.,
Greenspan, Public Citizen

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