



10 CFR 70.5

April 6, 2009

EREF-09-0009

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-001

AREVA Enrichment Services LLC  
Eagle Rock Enrichment Facility  
NRC Docket No. 70-7015

Subject: Identification of Potential Impacts to Eagle Rock Enrichment Facility License  
Application to Reflect Expansion in Capacity

On March 31, 2009, AREVA Enrichment Services LLC (AES) notified the United States Nuclear Regulatory Commission (NRC) of its intent to revise the License Application for the Eagle Rock Enrichment Facility (EREF) by expanding the capacity of the facility from 3.3 million separative work units (SWU) per year to 6.6 million SWU per year. In the letter, AES stated that it would submit a roadmap to define the anticipated changes to the License Application by April 6, 2009.

Accordingly, Attachments 1 through 4 of this letter provide the roadmaps to define the potential impacts to the Environmental Report, the Safety Analysis Report, the Integrated Safety Assessment Summary, the Physical Security Plan, the Emergency Plan, the Fundamental Nuclear Material Control Plan, and the Standard Practice Procedure Plan, associated with the expansion of the capacity of the facility. In addition to the changes associated with the expansion of the facility, the roadmaps define the impact of other changes that will be included in the revision, including the addition of socioeconomic information regarding Jefferson County and changes to the assumptions made in estimating the decommissioning costs.

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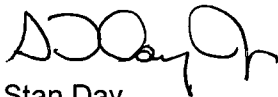
**AREVA ENRICHMENT SERVICES LLC**

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The attachments identify the major impacts that are anticipated, they do not identify every change that will be made in the submittal. In addition, in the process of revising the EREF License Application, additional changes may be identified or the anticipated impacts identified in the roadmaps may be modified.

These roadmaps are intended to facilitate the NRC Staff's understanding of the impacts of the intended revision to minimize the impact on the review of the current application. If you have any questions or require additional information, please contact me at (860) 917-7590.

Sincerely,



Stan Day  
Acting Licensing Manager, AES

- Attachment 1 – Anticipated Changes to the Environmental Report
- Attachment 2 – Anticipated Changes to the Safety Analysis Report
- Attachment 3 – Anticipated Changes to the Integrated Safety Analysis Summary
- Attachment 4 – Anticipated Changes to the Physical Security Plan, Emergency Plan, Fundamental Nuclear Material Control Plan, and Standard Practice Procedure Plan

References:

- 1) Letter from Sam Shakir (AES) to the NRC, "Notice of Intent to Submit Revision to Eagle Rock Enrichment Facility License Application to Expand Capacity," dated March 31, 2008.

cc: Thomas Hiltz, NRC Branch Chief  
Andrea Koch, NRC Branch Chief  
Breeda Reilly, NRC Project Manager  
Gloria Kulesa, NRC Project Manager

**ATTACHMENT 1 TO EREF-09-0009**

**ROADMAP OF ANTICIPATED CHANGES TO THE**

**EREF ENVIRONMENTAL REPORT**

**ATTACHMENT 1 – EREF-09-0009**  
**Anticipated Changes to the Environmental Report**

Section/Feature		3.3 Million SWU/Year	6.6 Million SWU/Year
Facility Layout		Electrical Services Building (ESB)	Increased size of ESB
		Mechanical Services Building (MSB)	Added second MSB
		Cylinder Receipt and Shipping Building (CRSB)	Enlarged the CRSB providing an additional truck bay
		Separations Building Module (SBM) 1 and 2	Added SBM 3 and SBM 4. Identical to SBM 1 and 2 (UF <sub>6</sub> Handling Area and two cascade halls in each SBM)
		Blending, Sampling, and Preparation Building (BSPB)	Expanded the Blending, Sampling, and Preparation Building (BSPB) to accommodate additional equipment (e.g., additional sampling autoclaves)
		Centrifuge Assembly Building (CAB)	Expanded the CAB
		Full Product Cylinder Storage Pad	Doubled Full Product Cylinder Storage Pad size by expanding
		Cylinder Overpack Storage Pad	Doubled Cylinder Overpack Storage Pad size by expanding
		Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads	Provided mirror image expansion for the Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads
		Cylinder Storage Pads Stormwater Retention Basin	Added second Cylinder Storage Pads Stormwater Retention Basin
	Double Security Fence/Radiologically Controlled Area (RC) Boundary	Because of expansion of SBM 3 and SBM 4, the Double Security Fence/Radiologically Controlled Area (RC) Boundary is expanded to the west-southwest to maintain safe standoff distance to process buildings.	
1.0 Introduction to the Environmental Report		Requested license approval in 2011 and complete construction in 2018 (full production achieved)	Complete construction in early 2022 (full production achieved)
1.1 Purpose and Need for the Proposed Action		3.3 million SWU/year	6.6 million SWU/year
	1.1.1 Need for the Proposed Action	Period of needs analysis through 2025	Period of needs analysis through 2030
	1.1.2 Market Analysis of Enriched Uranium Supply and Requirements	Period of needs analysis through 2025 Base scenario did not include LES expansion	Period of needs analysis through 2030 Base Scenario to include LES expansion
	1.1.2.1 Forecast of Installed Nuclear Power Generating Capacity	---	Updated installed nuclear power generating capacity
	1.1.2.2 Uranium Enrichment Requirements Forecast	---	Updated uranium enrichment requirements forecasts
	1.1.2.3 Current and Potential Future Sources of Uranium Enrichment Services	---	Updated current and potential future sources of uranium enrichment services
	1.1.2.4 Market Analysis of Supply and Requirements	---	Updated market analysis of supply and requirements

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	1.1.3 Conclusion		7 alternative supply scenarios	Revised to reflect Base Scenario that includes LES expansion, and to include a scenario that has both EREF and GLE.
<b>1.2 Proposed Action</b>				
	1.2.1 The Proposed Site		3.3 million SWU/year 7-year construction period Cost of the facility	6.6 million SWU/year 11-year construction period Updated for expanded facility
	1.2.2 Description of EREF Operations and Systems		---	Updated to reflect expanded facility layout
	1.2.3 Comparison of the EREF Design to the LES Claiborne Enrichment Center Design and the LES National Enrichment Facility Design		Differences between EREF and the Claiborne and LES NEF facilities Full Feed, Full Product, and Empty Cylinder Storage Pads Full Tails Cylinder Storage Pad to accommodate 15,330 cylinders	Updated based upon expanded facility. Refer to Facility Layout. Doubled in size to accommodate twice as many cylinders Full Tails Cylinder Storage Pad to accommodate 25,718 cylinders
	1.2.4 Schedule of Major Steps Associated with the Proposed Action		7-year construction period	11-year construction period
<b>1.3 Applicable Regulatory Requirements, Permits And Required Consultations</b>				
	1.3.2 State Agencies		Four diesel generators Daily water consumption, peak water consumption, normal annual water usage	Six diesel engines; added two standby diesel generators Updated for expanded facility
<b>2.0 Alternatives</b>				
<b>2.1 Detailed Description Of The Alternatives</b>				
	2.1.1 No-Action Alternative		---	Updated consistent with the revised needs analysis
<b>2.1.2 Proposed Action</b>				
		2.1.2.3 Facility Description	3.3 million SWU/year Feed, Product, and Tails production in MT (tons) at full capacity Two SBM Two Standby Diesel Generators Full Feed, Full Product, Full Tails, and Empty Cylinder Storage and Pads	6.6 million SWU/year Updated for expanded facility Four SBM Four Standby Diesel Generators Updated for expanded facility
		2.1.2.5 Site and Nearby Utilities	Water consumption Electrical consumption	Updated for expanded facility
		2.1.2.6 Chemicals Used at EREF	Chemical Inventory	Updated Chemical Inventory Tables
		2.1.2.8 Summary of Potential Environmental Impacts	Stormwater runoff to retention and detention basins Site domestic sanitary sewage treatment effluent to retention basin Average and peak potable water requirements Low-level waste, hazardous waste, and mixed waste generation	Updated for expanded facility

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			Non-hazardous and industrial waste generation Construction duration 7 years Operations number of employees, payroll, and benefits Radiological release to the atmosphere Annual dose equivalents from discharged gaseous effluent Annual nominal production of depleted UF <sub>6</sub> Annual dose equivalents from cylinder storage pads	Construction duration 11 years Updated based upon revised socioeconomic analysis Updated for expanded facility
2.1.3 Reasonable Alternatives				
		2.1.3.1 Alternative Technologies	GE-Hitachi (GEH) Global Laser Enrichment (GLE)	Update to status of GEH GLE. On January 30, 2009, GLE delivered its environmental report to the NRC with the rest of the license application to be submitted by June 2009. If GEH ultimately makes the decision to deploy GLE commercially, following results of testing that is scheduled to occur during 2009, GEH then expects to have a commercial Lead Cascade operational by 2012 or 2013.
		2.1.3.2 Alternative Designs	Product Blending, Sampling, Preparation	Blending, Sampling, and Preparation Building (BSPB) expanded to accommodate additional Blending, Sampling, and Preparation equipment
		2.1.3.3 Alternate Sites	---	An expansion of the EREF from 3.3 SWU/year to 6.6 million SWU/year would not alter any of the site selection criteria values that are used in the original site selection study for the proposed site in Idaho. Some adjustments would occur for alternate sites, specifically related to operational workforce for the Texas sites and peak water use for the South Carolina site. An increase in operational workforce would lower this scoring for the two Texas sites, and an increase in peak water use would lower this scoring for the South Carolina site. However, these adjustments do not alter the overall ranking of sites or conclusions of the site selection study.
2.2 Alternatives Considered But Eliminated			---	An expansion of the EREF from 3.3 SWU/year to 6.6 million SWU/year would not alter any of the site selection criteria values that are used in the original site selection study for the proposed site in Idaho. Some adjustments would occur for alternate sites, specifically related to operational workforce for the Texas sites and peak water use for the South Carolina site. An increase in operational workforce would lower this scoring for the two Texas sites, and an increase in peak water use would lower this scoring for the South Carolina site. However, these adjustments do not alter the overall ranking of sites or conclusions of the site selection study.
2.3 Cumulative Effects				
2.4 Comparison Of The Predicted Environmental Impacts			---	Updated consistent with the revised needs analysis. One of three alternate scenarios (LES Expansion) deleted – LES expansion will be included in the Base Scenario. No changes to the comparison of environmental impacts for the proposed action and the no-action alternative scenarios.
3.0 Description Of Affected Environment				
3.1 Land Use				
3.2 Transportation				
	3.2.2 Transportation Routes			

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**Anticipated Changes to the Environmental Report**

		3.2.2.2 Plant Operation Phase	Radioactive shipments of Feed, Product, low-level radioactive waste, Tails, Empty Cylinders	Updated for expanded facility
<b>3.3 Geology And Soils</b>				
<b>3.4 Water Resources</b>				
	<b>3.4.1 Surface Hydrology</b>			
		3.4.1.1 Facility Withdrawals and/or Discharges to Hydrologic Systems	Annual water use in support of plant operations for plant processes and potable water, anticipated normal facility water consumption, anticipated peak facility water consumption Potentially Contaminated Liquid Wastes, total annual liquid effluent discharge to atmosphere by evaporation from liquid effluent system evaporator and uranic input, evaporator slurry, annual atmospheric distillate release (total uranium) Cylinder Storage Pads Stormwater Retention Basin Annual treated sanitary effluent discharge to the retention basin, annual stormwater runoff discharge from cylinder pads and site, and water balances	Updated for expanded facility  Two Cylinder Storage Pads Stormwater Retention Basins Updated for expanded facility
	<b>3.4.6 Water Rights and Resources</b>			
		3.4.6.1 Public Water Supply and Water Rights	Daily water consumption, peak water consumption, annual water usage rate and percentage of water appropriation value	Updated for expanded facility
	<b>3.4.14 Water Impoundments</b>			
		3.4.14.1 Elevation-Area-Capacity Curves	Cylinder Storage Pads Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins . Updates retention basin characteristics based upon expanded facility stormwater runoff calculations and water balance, updated area served by the retention basins based upon the expanded cylinder storage pads
		3.4.14.5 Net Loss, Including Evaporation and Seepage	Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
<b>3.5 Ecological Resources</b>				
<b>3.6 Climatology, Meteorology, And Air Quality</b>				
	<b>3.6.2 Extreme Weather</b>			
		3.6.2.6 Lightning	Lightning strike total attractive area calculation	Updated for expanded facility
<b>3.7 Noise</b>				
			Figure 3.7-1	Updated to show expanded facility layout.
<b>3.8 Historic And Cultural Resources</b>				
<b>3.9 Visual/Scenic Resources</b>				
3.10 Socioeconomics			Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
	3.10.1 Population Characteristics	3.10.1.1 Population and Projected Growth	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
		3.10.1.2 Minority Populations	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)

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	3.10.2 Economic Characteristics	3.10.2.1 Employment, Jobs, and Occupational Patterns	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
		3.10.2.2 Income	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
		3.10.2.3 Tax Structure	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
	3.10.3 Community Characteristics	3.10.3.1 Housing	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
		3.10.3.2 Education	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
		3.10.3.3 Health Care, Public Safety, and Transportation Services	Two-county ROI (Bonneville and Bingham)	Three-County ROI (Bonneville, Bingham, and Jefferson)
3.11 Public And Occupational Health			Annual amount of uranium in routine gaseous effluent released to the environment	Updated for expanded facility
	3.11.4 Public and Occupational Exposure Limits		Annual expected average HF concentration emission	Updated for expanded facility
<b>3.12 Waste Management</b>				
	<b>3.12.1 Effluent Systems</b>			
		3.12.1.1 Gaseous Effluent Vent Systems	Annual amount of uranium in routine gaseous effluent released to the environment	Updated for expanded facility
		3.12.1.3 Liquid Effluent Collection and Treatment System	Design basis annual input of uranium for the liquid effluent treatment system Annual Gaseous Effluent, Annual Liquid Effluent, Annual atmospheric distillate related of uranium Stormwater runoff to retention and detention basins Domestic sewage treatment annual effluent to retention basin	Updated for expanded facility
	3.12.2 Solid Waste Management		Annual industrial waste, annual radioactive waste, annual hazardous waste	Updated for expanded facility
		3.12.2.1 Radioactive and Mixed Wastes	PFPE oil, depleted UF <sub>6</sub> (MT and cylinders produced per year) Full tails cylinder assumption for dose calculation	Updated for expanded facility
		3.12.2.2 Construction Wastes	Non-hazardous construction waste per year, hazardous construction waster per year	Updated for expanded facility
	3.12.3 Effluent and Solid Waste Quantities		Annual Radiological and Mixed Wastes, Annual Non-Radiological Wastes, Annual Gaseous Effluent, Annual Liquid Effluent	Updated for expanded facility
	3.12.4 Resources and Materials Used, Consumed or Stored During Construction and Operation		Commodities used, consumed, or stored at the eagle rock enrichment facility during construction, and during operation	Updated for expanded facility
<b>3.12.8 Climate Change</b>				
		3.12.8.2 EREF Carbon Dioxide Equivalent Footprint	Indirect emmissions of carbon dioxide	Updated for expanded facility



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		3.12.8.3 Carbon Dioxide Emission Avoided	MT of UF <sub>6</sub> shipped annually	Updated for expanded facility
<b>4.0 Environmental Impacts</b>				
<b>4.1 Land Use Impacts</b>				
	4.1.1 Construction Impacts		Construction activities, including permanent plant structures, disturbed area. Temporary construction facilities, parking areas, material storage, and excavated areas for underground utilities, disturbed area. Graded area.	Updated for expanded facility
	4.1.3 Comparative Land Use Impacts of Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.2 Transportation Impacts</b>				
	4.2.4 Traffic Impacts		---	Updated traffic impacts for increase in operational workforce, and increase in operational deliveries, uranium feed and product, depleted uranium and empty cylinder shipments to and from the facility, and waste removal
<b>4.2.7 Radioactive Material Transportation</b>				
		4.2.7.1 Radioactive Material Annual Quantities	Feed, product, tails, and empty cylinders and shipments Radioactive waste drums and shipments	Updated for expanded facility
		4.2.7.4 Incident-Free Dose Radiological Impact	Total radiological shipments and product shipments per year	Updated for expanded facility
	4.2.8 Cumulative Impacts		Vehicle trips per day for current traffic and EREF operations traffic, and current traffic levels and EREF construction and EREF operations traffic.	Updated for expanded facility
	4.2.9 Comparative Transportation Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.3 Geology And Soils Impacts</b>				
<b>4.3.1 Potential Mitigation Measures</b>				
<b>4.3.2 Cumulative Impacts to Geologic Resources</b>				
	4.3.3 Comparative Geology and Soils Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
4.4 Water Resources Impacts			Cylinder Storage Pads Stormwater Retention Basin Annual treated sanitary effluent discharge to the retention basin Annual stormwater runoff discharge from cylinder pads and site, and	Two Cylinder Storage Pads Stormwater Retention Basins Updated for expanded facility Updated for expanded facility

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			water balances	
	4.4.1 Receiving Waters		Site runoff area (acreage) from cylinder storage pads Cylinder Storage Pads Stormwater Retention Basin	Updated for expanded facility Two Cylinder Storage Pads Stormwater Retention Basins
	4.4.2 Impacts on Surface Water and Groundwater Quality		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
<b>4.4.3 Hydrological System Alterations</b>				
	4.4.4 Hydrological System Impacts		Normal and peak potable water requirements	Updated for expanded facility
	4.4.5 Ground and Surface Water Use		Daily water consumption, peak water consumption, normal annual water usage rate	Updated for expanded facility
<b>4.4.6 Identification of Impacted Ground and Surface Water Users</b>				
	4.4.7 Control of Impacts to Water Quality		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
		<b>4.4.7.1 Mitigations</b>		
	4.4.8 Identification of Predicted Cumulative Effects on Water Resources		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
	4.4.9 Comparative Water Resources Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.5 Ecological Resources Impacts</b>				
	4.5.2 Proposed Schedule of Activities		Construction period (duration)	Updated for expanded facility
	4.5.4 Activities Expected to Impact Communities or Habitats		Increased traffic volume over existing levels during operations, and during construction	Updated for expanded facility
	4.5.12 Comparative Ecological Resource Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.6 Air Quality Impacts</b>				
	4.6.2 Air Quality Impacts from Operation		Vehicles per workday and emission rates from passenger vehicles Vehicles per workday emission rates from trucks and distance traveled Offsite Vehicle Air Emissions During Operations	Updated for expanded facility
		4.6.2.1 Description of Gaseous Effluents	Average source term releases to the atmosphere per year for the purposes of bounding routine operational impacts, uranium discharges	Updated for expanded facility

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**Anticipated Changes to the Environmental Report**

			HF release each year Ethanol and methylene chloride released each year Two standby diesel generators	Four standby diesel generators
		4.6.2.2 Description of Gaseous Effluent Ventilation Systems and Exhaust Filtration Systems	Gaseous Effluent Ventilation Systems (GEVS) for the plant	Updated for expanded facility; added two SBMs and four GEVS (two SBM Safe-by-Design GEVS and two SBM Local Extraction GEVS)
		4.6.2.3 Calculation of Atmospheric Dispersion and Deposition Factors	Highest $\chi/Q$ on the site boundary, and distance and sector Sector Average Concentration, Undepleted, Undecayed $\chi/Q$ Values for Special Receptors Sector Average Concentration, Depleted, Decayed $\chi/Q$ Values for Special Receptors Highest deposition factor on the site boundary, and distance and sector Sector Average D/Q Values for Special Receptors Summary of Maximum Annual Average Atmospheric Dispersion and Deposition Factors	Updated for expanded facility
	4.6.6 Comparative Air Quality Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.7 Noise Impacts</b>				
	<b>4.7.1 Predicted Noise Levels</b>			
		4.7.1.1 Construction Impacts	Closest site boundary (north) from the proposed EREF footprint	The distance to the closest site boundary (north) is reduced.
		4.7.1.3 Decommissioning Impacts	Closest site boundary (north) from the proposed EREF footprint	The distance to the closest site boundary (north) is reduced.
	4.7.7 Comparative Noise Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.8 Historic And Cultural Resource Impacts</b>				
	4.8.8 Comparative Historic and Cultural Resource Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion; LES expansion deleted as an alternative scenario for comparison
<b>4.9 Visual/Scenic Resources Impact</b>				
	<b>4.9.3 Significant Visual Impacts</b>			
		4.9.3.1 Potential Impacts from Construction	7-year construction period	11-year construction period
	4.9.8 Comparative Visual/Scenic Resources Impacts of the No Action Alternative		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.10 Socioeconomic Impacts</b>				

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	4.10.1 Facility Construction	4.10.1.1 Jobs, Income, and Worker Population	7-year construction period Cost of the facility Dollars spent within an 80-km (50-mi) radius, dollars spent elsewhere in the United States, and dollars spent internationally. Of the total cost, dollars spent for buildings, dollars spent for equipment, and dollars spent for other construction costs. Of the dollars spent for building construction alone, dollars spent locally on craft labor, dollars spent locally on construction materials, and dollars spent on craft worker benefits and management salaries. Estimated Number of Construction Craft Workers by Annual Pay Ranges	11-year construction period Cost of the facility – updated for expanded facility Updated for expanded facility
		4.10.1.2 Community Characteristic Impacts	Peak construction workforce, percentage of construction worker who would bring families. Increase in area population due to workers without families and workers with families during peak construction period, and percentage of county population. Two-county area. Housing using needs and percentages of vacant units. Two-county area. Police needs. School age children increase, classroom needs, teacher needs, bus needs Annual property tax, annual sales and use tax	Updated for expanded facility  Updated for expanded facility, and to reflect the Three-county area, including Jefferson County.  Three-county area Three-county area Updated for expanded facility.
	4.10.2 Facility Operation	4.10.2.1 Jobs, Income, and Worker Population	Operational workforce, annual operating payroll, related percentages of employed labor workforce.	Updated for expanded facility and three-county area.
		4.10.2.2 Community Characteristic Impacts	Operational workforce, percentage of need for housing units, classroom needs	Updated for expanded facility and three-county area.
	4.10.3 Regional Impact Due to Construction and Operation		Construction workforce and construction phase population increase, operational workforce. Two-county area. Annual income tax, annual property tax, annual sales and use tax, taxes over the life of the facility	Updated for expanded facility and three-county area.  Updated for expanded facility
	4.10.5 Cumulative Impacts		Two-county area.	Three-county area.
	4.10.6 Comparative Socioeconomic Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.11 Environmental Justice</b>				
	4.11.3 Comparative Environmental Justice Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
<b>4.12 Public And Occupational Health Impacts</b>				
	4.12.1 Nonradiological Impacts			

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		4.12.1.1 Routine Gaseous Effluent	Annual expected average HF concentration emission, calculated concentrations to receptors	Updated for expanded facility
		4.12.1.2 Routine Liquid Effluent	Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
	4.12.2 Radiological Impacts		Total amount of uranium released to the environment via airborne effluent discharges from the EREF per year. Number of Gaseous Effluent Ventilation Systems Number of SBM	Updated for expanded facility
		4.12.2.1 Pathway Assessment	3.3 million SWU/year Annual discharge of uranium in routine gaseous effluent discharged from the EREF Uranium source term used in the assessment of radiological impacts for routine gaseous effluent releases from the EREF, for assessment of potential radiological impacts to the general public Annual distillate released to the atmosphere from the evaporator generated from liquid effluent discharged to the evaporator Inputs (full feed, full tails, full product, empty cylinders) to MCNPS computer code used to calculate the direct dose equivalent from the full cylinder storage pads Dose equivalent at the maximum impacted EREF site boundary, dose equivalent at the nearest actual off-site work location, dose equivalent at the nearest real residence Cylinder Storage Pads Stormwater Retention Basin	6.6 million SWU/year Updated for expanded facility capacity          Two Cylinder Storage Pads Stormwater Retention Basins
		4.12.2.2 Public and Occupational Exposure Impacts	Transient individuals - limiting boundary based on maximum sector annual average depleted X/Q <i>Transient individuals – maximum annual effective dose equivalent, maximum annual organ (lung) committed dose</i> Nearest resident - maximum annual effective dose equivalent, maximum annual organ (lung) committed dose Nearest business - maximum annual effective dose equivalent, maximum annual organ (lung) committed dose Members of the public - maximum annual effective dose equivalent, maximum annual organ (lung) committed dose Maximum annual dose equivalent from fixed sources of radiation at site boundary Effective dose equivalent for the total population	Updated for expanded facility
	4.12.4 Comparative Public and Occupational Exposure Impacts of No Action Alternative Scenarios		Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
4.13 Waste Management Impacts			Industrial waste, hazardous waste, mixed waste volumes per year	Updated for expanded facility

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4.13.3 Waste Disposal Plans			
	4.13.3.2 DUF6 Cylinder Temporary Storage	Full Tails Cylinder Storage Pad Cylinder Storage Pad Stormwater Retention Basin	Two Full Tails Cylinder Storage Pads Two Cylinder Storage Pad Stormwater Retention Basins
	4.13.3.3 Mitigation for Depleted UF6 Temporary Storage	Full Tails Cylinder Storage Pad Full Feed Cylinder Storage Pad Empty Cylinder Storage Pad Cylinder Storage Pad Stormwater Retention Basin	Two Full Tails Cylinder Storage Pads Two Full Feed Cylinder Storage Pads Two Empty Cylinder Storage Pads Two Cylinder Storage Pad Stormwater Retention Basins
	4.13.3.4 Depleted UF6 Disposition	DOE cost estimate for deconversion and disposal of DUF <sub>6</sub>	AES confirmed the DOE cost estimate for deconversion and disposal of DUF <sub>6</sub> for EREF (3.3 million SWU/year) would be applicable to disposal of DUF <sub>6</sub> for an expanded EREF (6.6 million SWU/year). AES will utilize this DOE cost estimate for calculating the cost to dispose of DUF <sub>6</sub> for a 6.6 million SWU/year facility.
	4.13.3.6 Costs Associated with Depleted UF6 Deconversion and Disposal	DOE cost estimate for deconversion and disposal of DUF <sub>6</sub>  MT (tons) of uranium and equivalent MT (tons) DUF <sub>6</sub> over the operating life of the facility Approximate tails cylinders for the 30 year operation case from EREF to the DOE facility Total estimated costs for deconversion and disposal of DUF <sub>6</sub>	AES confirmed the DOE cost estimate for deconversion and disposal of DUF <sub>6</sub> for EREF (3.3 million SWU/year) would be applicable to disposal of DUF <sub>6</sub> for an expanded EREF (6.6 million SWU/year). AES will utilize this DOE cost estimate for calculating the cost to dispose of DUF <sub>6</sub> for a 6.6 million SWU/year facility.  Updated for expanded facility Updated for expanded facility Updated for expanded facility
	4.13.4 Water Quality Limits	Cylinder Storage Pad Stormwater Retention Basin	Two Cylinder Storage Pad Stormwater Retention Basins
	4.13.8 Comparative Waste Management Impacts of No Action Alternative Scenarios	Base scenario did not include LES expansion; LES expansion included as an alternative scenario for comparison	Base Scenario to include LES expansion. As a result, LES expansion deleted as an alternative scenario for comparison
5.0 Mitigation Measures			
5.1 Impact Summary			
	5.1.4 Water Resources	Daily water consumption, peak water consumption, normal annual water usage rate Cylinder Storage Pads Stormwater Retention Basin	Updated for expanded facility Two Cylinder Storage Pads Stormwater Retention Basins
5.2 Mitigations			
	5.2.4 Water Resources	Cylinder Storage Pad Stormwater Retention Basin	Two Cylinder Storage Pad Stormwater Retention Basins
	5.2.13 Waste Management	Full Tails Cylinder Storage Pad Full Feed Cylinder Storage Pad Empty Cylinder Storage Pad Cylinder Storage Pad Stormwater Retention Basin	Two Full Tails Cylinder Storage Pads Two Full Feed Cylinder Storage Pads Two Empty Cylinder Storage Pads Two Cylinder Storage Pad Stormwater Retention Basins

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**6.0 Environmental Measurements And Monitoring Programs**

**6.1 Radiological Monitoring**

**6.1.1 Effluent Monitoring Program**

		6.1.1.1 Gaseous Effluent Monitoring	Annual uranium source term for routine gaseous effluent releases from EREF Two SBM	Updated for expanded facility  Four SBM
		6.1.1.2 Stormwater and Sewage Treatment Plant Liquid Effluent Monitoring	Cylinder Storage Pads Stormwater Retention Basin Annual volume of amount of domestic sanitary sewage treatment plant effluent discharged to the Retention Basin; stormwater to be collected each year (mean annual) by the Detention and Retention basins combined	Two Cylinder Storage Pads Stormwater Retention Basins Updated for expanded facility
	6.1.2 Radiological Environmental Monitoring Program		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins

**6.2 Physiochemical Monitoring**

	6.2.4 Stormwater Monitoring Program		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
	6.2.5 Environmental Monitoring		Cylinder Storage Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins

**6.3 Ecological Monitoring**

**7.0 Cost-Benefit Analyses**

**7.1 Economic Cost-Benefits, Facility Construction And Operation**

	7.1.1 Introduction		Two-county region	Three-county region. Added Jefferson County. Added discussion why Lemhi county not included in 11-county area: Only a very small part of southeast Lemhi County is included within the 50-mile radius of the proposed Eagle Rock Enrichment Facility.
	<b>7.1.3 Regional Economic Outlook</b>			
		7.1.3.1 Recent Trends in Economic Growth and Employment	Two-county region	Three-county region. Added Jefferson County.
		7.1.3.2 Recent Trends in Income	Two-county region	Three-county region. Added Jefferson County.
		7.1.3.3 Regional Industry Analysis	Two-county region	Three-county region. Added Jefferson County.
	7.1.4 Direct Economic Impact	7.1.4.1 Introduction	Dollars spent within an 80-km (50-mi) radius, dollars spent elsewhere in the United States, and dollars spent internationally.	Updated for expanded facility

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			<p>Cost of the facility Dollars spent on local purchases over the entire construction and operational periods; amount to households in the form of employee salaries and benefits, amount to local businesses from the purchase of goods and services. Annual income tax, annual property tax, annual sales and use tax, taxes over the life of the facility 7-year construction period</p>	11-year construction period
		7.1.4.2 Construction Expenditures	<p>Dollars spent locally on construction expenditures Local payroll for craft workers and management. Benefits paid to construction craft employees and management New construction craft jobs, annual salary ranges Dollars spent locally on construction goods and services Two-county region</p>	<p>Updated for expanded facility  Three-county region</p>
		7.1.4.3 Operation Expenditures	<p>Dollars spent for payroll and benefits Permanent full-time jobs created Dollars spent locally per year on goods and services Two-county region</p>	<p>Updated for expanded facility  Three-county region</p>
		7.1.4.4 Other Expenditures	<p>Tax revenue to the state and counties resulting from the construction and operation of the EREF over the life of the facility Personnel income tax Annual sales and use tax</p>	Updated for expanded facility
<b>7.1.5 Total Economic Impact Using RIMS II</b>				
		<b>7.1.5.1 Introduction</b>		
		7.1.5.2 Construction Impacts	<p>Dollars spent on payroll (excluding benefits) over the eleven-year construction, testing, and assemblage periods for construction craft workers and management. Annual payroll, household earnings direct and indirect impacts within the 11-county region Annual average direct jobs, total employment increase Dollars spent on construction goods and services in the local economy; total annual output amount, total annual earnings amount, new jobs per year, and new jobs. Construction phase total impact in output for local businesses, household earnings, and new jobs.</p>	Updated for expanded facility
		7.1.5.3 Operations Impact	<p>Dollars spent annually for facility operations payroll and benefits; total additional earnings produced (direct impacts and indirect impacts) New jobs created during the operational period Annual purchases by for goods and services; annual impact on local businesses, household income, increase in employment</p>	Updated for expanded facility



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Dollars in output for local businesses, household earnings, and new jobs

**7.2 Environmental Cost – Benefit, Plant Construction And Operation**

**7.2.1 Site Preparation and Plant Construction**

7.2.1.9 Socioeconomic

Anticipated annual impact of increased economic activity for local businesses, increased earnings by households, and new jobs  
Dollars spent in local expenditures (e.g., buildings, equipment, and other materials)

Updated for expanded facility

**7.2.2 Plant Operation**

7.2.2.1 Surface and Groundwater Quality

Cylinder Pads Stormwater Retention Basin  
Site stormwater runoff from the cylinder storage pads to the Cylinder Pads Stormwater Retention Basin; domestic sanitary sewage treatment effluent discharge to the Cylinder Pads Stormwater Retention Basin; general site stormwater runoff to the Site Stormwater Detention Basin

Two Cylinder Storage Pads Stormwater Retention Basins  
Updated for expanded facility

7.2.2.3 Air Quality

Two standby diesel generators

Four standby diesel generators

7.2.2.5 Socioeconomics

Number of employees expected of employed in operations workforce; operation's payroll generation in annually in earnings for households and additional household earnings due to indirect impacts; impact of annual purchases for goods and services in household income; total increase in household earnings; annual increase of indirect new jobs during operation

Updated for expanded facility

7.2.2.6 Radiological Impacts

Annual discharge of uranium in routine gaseous effluent discharged from the EREF  
Maximum annual effective dose equivalents, maximum annual organ (lung) committed doses for transient individuals; ground plane, cloud immersion, inhalation exposure, and all airborne exposure pathways  
Maximum annual effective dose equivalents due to external radiation (direct and sky shine); site boundary, nearest business, nearest resident

Updated for expanded facility

7.2.2.7 Other Impacts of Plant Operation

Anticipated normal water usage rate; peak water usage requirement; annual water usage rate; percentage of the water appropriation value  
Annual non-hazardous and non-radioactive solid waste volume  
Annual low-level waste, hazardous waste, and mixed waste volumes

Updated for expanded facility

**7.3 No-Action Alternative Cost-Benefit**

Fiscal impacts (i.e., % of total present value impacts) derived from construction; construction period (duration)  
Dollars spent on construction payroll and employee benefits; dollars spent on goods and services in direct benefits; construction period (duration)  
Dollars spent annually on annual operating payroll and employee benefits; dollars spent annually on local goods and services required for operation of the EREF  
Tax revenue to the state and counties from the construction and operation of the EREF over the life of the facility.  
Over the anticipated 30-year license period of the EREF, total annual

Updated for expanded facility

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			impact for local businesses, in household earnings, and new direct and indirect jobs	
<b>8.0 Summary Of Environmental Consequences</b>				
<b>8.1 Introduction</b>				
8.2 Proposed Action			Facility capacity of nominal 3 million SWU per year Construction schedule and duration Total cost of the facility	Facility capacity of nominal 6 million SWU per year Updated for expanded facility
<b>8.3 Need For The Proposed Action</b>				
8.4 No-Action Alternative			Greatest fiscal impacts – when derived Construction payroll Construction goods and services purchased from third party firms within the region Operating payroll and benefits Amount spent annually on local goods and services required for operation of the EREF	Updated for expanded facility
<b>8.5 Environmental Impacts Of Construction</b>				
8.6 Environmental Impacts Of Operation			Annual routine airborne uranium gaseous releases to atmosphere Exhausts vents from gaseous effluent discharges Annual volume of low-level waste generated Annual volume of hazardous and mixed wastes generated Annual volume of non-hazardous waste generated Annual amount of depleted UF6 generated All liquid effluents are discharged to one of two basins	Updated for expanded facility      Two Cylinder Storage Pads Stormwater Retention Basins
8.7 Radiological Impacts			Annual normal operational release rates to the atmosphere from both gaseous and liquid effluent streams Annual maximum annual effective dose equivalent and maximum annual organ (lung) committed dose equivalents to transient individuals at the maximum site boundary for the ground plane, cloud immersion, and inhalation exposure Maximum annual effective dose equivalent and maximum annual organ (lung) committed dose equivalents from discharged atmospheric effluent (gaseous and liquid waste streams combined and released as airborne effluent) to a hypothetical resident (teen) located at the site boundary Maximum effective dose equivalent and maximum annual organ (lung) dose equivalent from gaseous effluent to the nearest resident (teenager) located at least 8 km (5 mi) in any sector Annual dose equivalent due to external radiation (skyshine and direct) from the Full Tails, Full Feed, and Empty Cylinder Storage Pads and direct dose from product cylinders on the Full Product Cylinder Storage Pad to the maximally exposed person at the nearest point on the site boundary, and to the maximally exposed resident located at least 8 km	Updated for expanded facility

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			(5 mi) in any direction from EREF Annual cumulative dose equivalent to the general public (persons living near a highway route) from the combination of all transport material categories combined Annual dose equivalent to the onlooker (persons driving the highway routes, plus rest-stops and inspections) and transport workers	
8.8 Nonradiological Impacts			Water resources: annual normal water usage rate, peak water usage requirement, annual water usage rate Socioeconomics: construction payroll including that for construction craft workers and for management workers, construction services purchased from local businesses direct benefits to the local economy Socioeconomics: operations payroll and benefits, amount spent annually on local goods and services Socioeconomics: tax revenue to state and counties, annual property taxes, annual sales and use tax Socioeconomics: indirect impacts - increased economic activity, increased earnings by households, and new jobs during construction Socioeconomics: operational impacts - increased economic activity for local businesses, increased earnings by households, and new jobs directly or indirectly Socioeconomics: construction impacts on labor workforce into the area, housing and school needs Public Health Impacts: estimated HF concentration at the nearest site boundary, nearest site business, and at 8 km (5 mi)	Updated for expanded facility
<b>8.9 Decontamination And Decommissioning</b>				
8.10 Depleted Uranium Disposition			Amount of depleted UF <sub>6</sub> (DUF <sub>6</sub> ) generated per year at full production	Updated for expanded facility
<b>8.11 Environmental Justice</b>				
<b>8.12 Conclusion</b>				
<b>9.0 List of References</b>				
			List of ER References	Updated for expanded facility
<b>10.0 List of Preparers</b>				

**ATTACHMENT 2 TO EREF-09-0009**

**ROADMAP OF ANTICIPATED CHANGES TO THE**

**EREF SAFETY ANALYSIS REPORT**

**ATTACHMENT 2 – EREF-09-0009  
Anticipated Changes to Safety Analysis Report**

Section/Feature		3.3 Million SWU/Year	6.6 Million SWU/Year
Facility Layout		Electrical Services Building (ESB)	Increased size of ESB
		Mechanical Services Building (MSB)	Added second MSB
		Cylinder Receipt and Shipping Building (CRSB)	Enlarged the CRSB providing an additional truck bay
		Separations Building Module (SBM) 1 and 2	Added SBM 3 and SBM 4. Identical to SBM 1 and 2 (UF <sub>6</sub> Handling Area and two cascade halls in each SBM)
		Blending, Sampling, and Preparation Building (BSPB)	Expanded the Blending, Sampling, and Preparation Building (BSPB) to accommodate additional equipment (e.g., additional sampling autoclaves)
		Centrifuge Assembly Building (CAB)	Expanded the CAB
		Full Product Cylinder Storage Pad	Doubled Full Product Cylinder Storage Pad size
		Cylinder Overpack Storage Pad	Doubled Cylinder Overpack Storage Pad size
		Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads	Provided mirror image expansion for the Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads
		Cylinder Storage Pads Stormwater Retention Basin	Added second Cylinder Storage Pad Stormwater Retention Basin
		Double Security Fence/Radiologically Controlled Area (RC) Boundary	Because of expansion of SBM 3 and SBM 4, the Double Security Fence/Radiologically Controlled Area (RC) Boundary is expanded to the west-southwest to maintain safe standoff distance to process buildings.
1.0 General Information		3.3 million SWU/year Quantity of licensed material Two SBM	6.6 million SWU/year Updated for expanded facility capacity Four SBM
1.1 Facility And Process Description		3.3 million SWU/year Two SBM, 48 cascades, four different assays can be produced at one time	6.6 million SWU/year Four SBM, 96 cascades, eight different assays can be produced at one time
	<b>1.1.1 Facility Location, Site Layout, and Surrounding Characteristics</b>		
	1.1.2 Facilities Description	Two SBM Cylinder Storage Pads (full feed, full product, full tails, empty cylinders) sizing Electrical Services Building (two standby diesel generators) Mechanical Services Building	Four SBM Updated for expanded facility capacity  Electrical Services Building (four standby diesel generators) Added a second building with equipment updated to support expanded facility
	<b>1.1.3 Process Descriptions</b>		
	1.1.3.3 Materials, By-Products, Wastes, and Finished Products	Feed cylinders, product cylinders, full tails cylinders processed at full capacity	The number of feed cylinders, product cylinders, and full tails cylinders that are processed per year were updated to reflect expanded facility capacity
<b>1.2 Institutional Information</b>			

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Anticipated Changes to Safety Analysis Report**

	1.2.2 Financial Information		Facility cost	Updated for expanded facility capacity
<b>1.3 Site Description</b>				
<b>1.3.2 Demographics</b>				
		1.3.2.1 Latest Census Results	Provided information for Bonneville and Bingham Counties	Added information for Jefferson County
		1.3.2.3 Proximity to Public Facilities – Schools, Hospitals, Parks	Provided information for Bonneville and Bingham Counties	Added information for Jefferson County
<b>1.3.3 Meteorology</b>				
		1.3.3.3 Severe Weather	Lightning: Attractive area of the facility structures, flashes to earth per year	Updated for expanded facility
<b>SAR 1 Tables</b>				
			Tables 1.1-1, 1.1-2, 1.1-3, 1.1-4, and 1.2-1	Updated for expanded facility capacity
<b>SAR 1 Figures</b>				
			Figures 1.1-3, 1.1-4, and 1.1-8 through 1.1-13	Updated to reflect expanded facility layout
<b>2.0 Organization and Administration</b>				
<b>3.0 Safety Program</b>				
<b>3.1 Integrated Safety Analysis Methods</b>				
	3.1.1 Hazard Identification		Closest approach of a process structure to the controlled area boundary	Increased. With the addition of SBM3 and SBM4, controlled area boundary/RCA fence moved west-southwest
<b>3.3 Compliance Item Commitments</b>				
	3.3.3 Building Requirements		Mechanical Services Building	Added a second building with equipment updated to support expanded facility
	3.3.4 Structural Design Criteria		Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad	Updated number of pads for expanded facility (two each for Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad)
<b>4.0 Radiation Protection</b>				
	Figure 4.7-2		Shows facility layout	Revised to reflect expanded facility layout
<b>5.0 Nuclear Criticality Safety</b>				
<b>6.0 Chemical Process Safety</b>				
<b>SAR 6 Tables</b>				
			Table 6.1.2 Chemical Inventory - SBM and BSPB Table 6.1.3 Chemical Inventory - Centrifuge Assembly Building Table 6.1.4 Chemical Inventory - Technical Support Building and Operation Support Building Table 6.1.5 Chemical Inventory - Mechanical Services Building and Electrical Services Building Table 6.1.6 Chemical Inventory – Exterior Areas	Updated to reflect expanded facility capacity

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**Anticipated Changes to Safety Analysis Report**

<b>7.0 Fire Safety</b>				
<b>7.3 Facility Design</b>				
	7.3.11 Environmental Concerns		Cylinder Pads Stormwater Retention Basin	Two Cylinder Storage Pads Stormwater Retention Basins
<b>7.5 Fire Protection and Emergency Response</b>				
<b>SAR 7 Figures</b>				
			Figures 7.3-1, 7.3-2, 7.3-3, 7.3-4, 7.3-5, 7.5-1 (Sheet 1 of 2), 7.5-1 (Sheet 2 of 2), 7.5-2	Updated figures to reflect expanded facility
<b>10.0 Decommissioning</b>				
<b>10.1 Site Specific Cost Estimate</b>				
<b>10.1.3 Decommissioning Cost Estimate</b>				
		10.1.3.1 Summary of Costs	Decommissioning Cost Estimate	Updated to reflect expanded facility
	10.1.4 Decommissioning Strategy		Decommissioning Cost Estimate	Updated to reflect changes in costs associated with Low Level Radioactive Waste Shipping and Decommissioning Operations Contractor, and Expanded Facility
<b>10.1.6</b>				
		10.1.6.1 Overview	Discussing the decommissioning of two SBMs Estimate time to complete decommissioning	The discussion is updated to reflect four SBMs Updated to reflect expanded facility
		10.1.6.8 Disposal	Volume of radioactive waste	Increased volume of radioactive waste
<b>10.1.7 Decontamination Facilities</b>				
		10.1.7.5 Decommissioning Impact on Integrated Safety Analysis (ISA)	Discusses the decommissioning of two SBMs Estimates time to complete decommissioning	Updated to reflect four SBMs Updated to reflect expanded facility
<b>10.2 Financial Assurance Mechanism</b>				
	10.2.2 Adjusting Decommissioning Costs and Funding		For the first three year period of operations, decommissioning funding assurance for the entire facility, including the two Separations Building Modules, and the amount of DUF <sub>6</sub> that would be produced by the end of that period	Updated to reflect incremental approach to funding assurance for decommissioning the four SBMs
10.3 Tails Disposition			Tails generation and DUF <sub>6</sub> disposition based on 3.3 million SWU capacity per year	Updated to reflect the increased mass of tails generated and the increased cost of disposal due to the expansion of the facility capacity.
<b>SAR 10 Tables</b>				
			Tables 10.1-A through 10.1-1F Tables 10.1-2, 10.1-3, 10.1-7, 10.1-8, 10.1-9, 10.1-10, 10.1-11, 10.1-12, 10.1-13, 10.1-14, 10.1-15 Table 10.3-1 Decommissioning Schedule	Updated to reflect expanded facility capacity and changes in assumptions. Added Table to address cost estimate for the first SBM.
<b>SAR 10 Figures</b>				
			Figure 10.1-1	Revised to reflect decommissioning of four SBMs

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Anticipated Changes to Safety Analysis Report

11.0 Management Measures



**ATTACHMENT 3 TO EREF-09-0009**

**ROADMAP OF ANTICIPATED CHANGES TO THE  
EREF INTEGRATED SAFETY ANALYSIS SUMMARY**

**ATTACHMENT 3 – EREF-09-0009**  
**Anticipated Changes to Integrated Safety Analysis Summary**

Section/Feature		3.3 Million SWU/Year	6.6 Million SWU/Year
Facility Layout		Electrical Services Building (ESB)	Increased size of ESB
		Mechanical Services Building (MSB)	Added second MSB
		Cylinder Receipt and Shipping Building (CRSB)	Enlarged the CRSB providing an additional truck bay
		Separations Building Module (SBM) 1 and 2	Added SBM 3 and SBM 4. Identical to SBM 1 and 2 (UF <sub>6</sub> Handling Area and two cascade halls in each SBM)
		Blending, Sampling, and Preparation Building (BSPB)	Expanded the Blending, Sampling, and Preparation Building (BSPB) to accommodate additional equipment (e.g., additional sampling autoclaves)
		Centrifuge Assembly Building (CAB)	Expanded the CAB to the south
		Full Product Cylinder Storage Pad	Doubled Full Product Cylinder Storage Pad size by expanding to the east.
		Cylinder Overpack Storage Pad	Doubled Cylinder Overpack Storage Pad size by expanding to the east.
		Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads	Provided mirror image expansion to the north side for the Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad, Empty Cylinder Storage Pads
		Cylinder Storage Pads Stormwater Retention Basin	Added second Cylinder Storage Pads Stormwater Retention Basin
		Double Security Fence/Radiologically Controlled Area (RC) Boundary	Because of expansion of SBM 3 and SBM 4 to the west of SBM 2, the Double Security Fence/Radiologically Controlled Area (RC) Boundary is expanded to the west-southwest to maintain safe standoff distance to process buildings.
<b>1.0 Purpose</b>			
<b>2.0 Scope</b>			
<b>3.0 Applicable Regulatory Requirements/Guidance</b>			
<b>3.1 General Integrated Safety Analysis (ISA) Information</b>			
	<b>3.1.1 ISA Methods</b>		
	3.1.1.1 Hazard Identification	Empty Cylinder Storage Pad, Full Tails Cylinder Storage Pad Closest approach of a process structure to the controlled area boundary	Updated for expanded facility capacity Distance increased because of the movement of the controlled area boundary fence to the west and southwest due to expansion of the SBM to the west (added SBM3 and SBM4 to the west of SBM2)
	3.1.5 Criticality Monitoring and Alarms	Criticality alarm locations	Updated for expanded facility capacity
<b>3.2 Site Description</b>			
	<b>3.2.1 Site Geography</b>		
		3.2.1.1 Site Location	
		3.2.1.2 Public Roads and Transportation	Aircraft hazard analysis Update the aircraft hazard analysis for the enlarged site and use of updated aircraft crash data.

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**Anticipated Changes to Integrated Safety Analysis Summary**

<b>3.2.2 Demographics and Land Use</b>			
	3.2.2.1 Population Information	Need to update for Jefferson County (three-county area)	Added information for Jefferson County (three-county area)
	3.2.2.3 Public Service Facilities	Need to update for Jefferson County (three-county area)	Added information for Jefferson County (three-county area)
	3.2.2.6 Water Use	Daily water consumption	Updated for the expanded facility
<b>3.2.3 Meteorology</b>			
	3.2.3.4 Type, Frequency, and Magnitude of Severe Weather	Lightning: total attractive area and lightning strike frequency	Updated for the expanded facility
<b>3.2.4 Hydrogeology</b>			
<b>3.2.5 Geology</b>			
<b>3.2.6 Seismology</b>			
<b>3.2.7 Stability of Subsurface Materials</b>			
<b>3.2.8 Site-Specific Volcanic Hazard Analysis</b>			
3.3 Facility Description		Facility capacity	Added larger capacity as a difference
	3.3.1 Buildings and Major Components		
	3.3.1.1 Separations Building Modules	Two SBM	Four SBM
	3.3.1.4 Cylinder Receipt and Shipping Building	Building dimensions Two shipping and truck bays Two overhead cranes	Updated for expanded facility capacity Three shipping and truck bays Three overhead cranes
	3.3.1.5 Centrifuge Assembly Building	Building dimensions	Updated for expanded facility capacity
	3.3.1.6 Blending, Sampling, and Preparation Building	Building dimensions, autoclaves, blending donor and receiver stations	Updated for expanded facility capacity
	3.3.1.7 Cylinder Storage Pads	Sizing, storage, and acreage occupied for Full Tails, Full Feed, Full Product, and Empty Cylinder Storage Pads	Updated for expanded facility capacity
	3.3.1.8 Electrical Service Building	Building dimensions Two standby diesel generators	Updated for expanded facility capacity Four standby diesel generators
	3.3.1.9 Mechanical Service Building (MSB)	Building	Updated for expanded facility capacity, added second building
	3.3.1.14 Electrical Services Building for CAB	NA	Added section, and description for added electrical services building for the CAB
<b>3.3.2 Structural Design Criteria</b>			
	3.3.2.2 Environmental Loads for Structural Design	Full Feed Cylinder Storage Pad, Full Tails Cylinder Storage Pad	Updated for expanded facility capacity
3.4 Process Descriptions		Nominal 3 million SWU/year	Nominal 6 million SWU/year

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**Anticipated Changes to Integrated Safety Analysis Summary**

	3.4.1 Overview of Gas Centrifuge Enrichment Process		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
	3.4.2 UF6 Feed System		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
	3.4.3 Cascade System		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
	3.4.4 Product Take-off System		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
	3.4.5 Tails Take-off System		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
<b>3.4.6 Product Blending System</b>				
		3.4.6.3 Design Description	Blending donor stations, blending receiver stations	Updated for expanded facility capacity
	3.4.7 Product Liquid Sampling System		Autoclaves	Updated for expanded facility capacity
		3.4.7.3 Design Description	Autoclaves	Updated for expanded facility capacity
		3.4.7.6 Operating Limits	Sampling capability of product cylinders per week	Updated for expanded facility capacity
	3.4.8 Dump System		ECI: Equipment requirements – number of components	Updated for expanded facility capacity
<b>3.4.9 Gaseous Effluent Ventilation Systems</b>				
		3.4.9.2 Technical Support Building GEVS	Number of carbon traps replaced per year	Updated for expanded facility capacity
<b>3.4.10 Centrifuge Test and Centrifuge Post Mortem Processes</b>				
<b>3.4.11 Material Handling Processes</b>				
		3.4.11.1 Cylinder Receipt and Shipping Building (CRSB)	Number of weigh scales in the CRSB Number of overhead cranes in the CRSB and parallel gantry cranes  Number of empty and full feed, product, tails cylinders moved Number of feed, tails, and product cylinders received or delivered	Increased number of weigh scales in the CRSB Increased number of overhead cranes in the CRSB and the gantry cranes on the Full Tails, Full Feed, Empty Cylinder Storage Pads Increased number of cylinders to be moved per year Increased number of cylinders to be received or delivered
		3.4.11.2 Cylinder Transport within the Facility	Number of overhead cranes in the CRSB	Increased number of overhead cranes in the CRSB
		3.4.11.3 Cylinder Storage	Storage and area requirements for: Empty Product Cylinder Storage, Full Product Cylinder Storage, Full Feed Cylinder Storage, Empty Feed Cylinder Storage, Full Tails Cylinder Storage, Empty Tails Cylinder Storage CRSB overhead cranes Parallel gantry cranes Cylinder storage pads summary: cylinder types (full product, empty product, full feed, full tails, empty tails, empty feed) and minimum area required	Updated for expanded facility capacity.
3.5 Utility And Support			Two SBM	Four SBM

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Systems				
	3.5.1 Building Ventilation		Two SBM	Four SBM
		3.5.1.1 System Descriptions	Assembled Centrifuge Storage Area HVAC System Centrifuge Assembly Area HVAC System Electrical Services Building HVAC System Mechanical Services Building HVAC System	Updated for expanded facility  Added second MSB; one HVAC System in each MSB
<b>3.5.2 Electric System</b>				
		3.5.2.1 System Descriptions	Two transformers are used in the switchyard to transform the 161 kV to 13.8 kV Average power requirements and the peak power requirements of the facility	Updated for expanded facility capacity
		3.5.2.2 Major Components	161 kV – 13.8 kV Electrical Switchyard 13.8 kV Switchgear 480 V Switchgear 440 V Switchgear Standby Diesel Generators Process UPS (No Break) System	Updated for expanded facility capacity
		3.5.2.4 Operating Characteristics	Normal load power distribution equipment Routine Operations, 161 kV – 13.8 kV Electrical Switchyard Routine Operations, 13.8 kV Distribution System Routine Operations, Plant 480/440 V Distribution System	Updated for expanded facility capacity
<b>3.5.3 Compressed Air System</b>				
		3.5.3.1 System Description	Compressed air system	Updated for expanded facility capacity, added second Mechanical Services Building with compressed air system for added SBM 3 and 4
		3.5.3.2 Major Components	Two air compressor units, two air filter/dryer units, instrument air receivers	Updated for expanded facility capacity
		3.5.3.4 Operational Characteristics	Compressed air system	Added second Mechanical Services Building with compressed air system for added SBM 3 and 4
<b>3.5.4 Water Supply</b>				
<b>3.5.5 Cooling Water Systems</b>				
		3.5.5.2 Centrifuge Cooling Water System	Each SBM has its own Centrifuge Cooling Water System	Updated for expanded facility capacity
		3.5.5.3 Centrifuge Cooling Water Distribution System	Primary pumping system	Updated for expanded facility capacity
<b>3.5.6 Sanitary System</b>				
		3.5.6.1 System Description	System capacity	Updated for expanded facility capacity

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<b>3.5.7 Communication and Alarm Annunciation Systems</b>			
<b>3.5.8 This Section Not Used</b>			
<b>3.5.9 Control Systems</b>			
<b>3.5.10 Standby Diesel Generator System</b>			
	3.5.10.1 System Description	Two standby diesel generators	Four standby diesel generators
3.5.11 Nitrogen System	3.5.11.1 System Description	Three vendor-supplied packaged liquid nitrogen storage units, and locations Liquid nitrogen dispensing units and locations	Four vendor-supplied packaged liquid nitrogen storage units, Updated for expanded facility capacity Updated for expanded facility capacity
	3.5.11.1.2 Major Components	Three vendor-supplied packaged liquid nitrogen storage units, and locations	Four vendor-supplied packaged liquid nitrogen storage units, Updated for expanded facility capacity
<b>3.5.12 Liquid Effluent Collection and Treatment System</b>			
<b>3.5.13 Solid Waste Collection System</b>			
	3.5.13.1 Wet Solid Wastes	Perfluoropolyether (PFPE) oil used annually	Updated for expanded facility capacity
<b>3.5.14 Decontamination Workshop</b>			
<b>3.5.15 Fomblin Oil Recovery System</b>			
<b>3.5.16 Laundry System</b>			
	3.5.16.4 Operating Characteristics	Amount of clothing and miscellaneous items sorted daily	Updated for expanded facility capacity
<b>3.5.17 Ventilated Room Systems</b>			
<b>3.5.18 Chemical Laboratory</b>			
<b>3.5.19 Cylinder Preparation Processes</b>			
<b>3.6 Process Hazard</b>			
<b>3.7 General Types Of Accident Sequences</b>			
<b>3.7.3 Selected Consequence Analysis</b>			
	3.7.3.2 Blending Donor Station Heater Controller Failure and Heater Run Away (No IROFS Credited)	Analysis assumptions regarding the Blending, Sampling, and Preparation Building (BSPB)	Updated to reflect changes in BSPB assumptions
Tables		Table 3.7.1, 3.7.2 3.7-3, 3.7-4, and 3.75	Impacts to be determined. ISA Team to evaluate the sequences for potential impact due to expansion. (e.g., increase in building volumes, change in ventilation rates, addition of new buildings, and increase in Material at Risk in the BSPB). The changes are not expected to negatively impact the risk indices.
Figures		Figures 3.7-2 through 3.7-5	Updated to reflect changes in BSPB assumptions
<b>3.8 Items Relied On For Safety (IROFS)</b>			
<b>Appendix A Guidelines for Development of Boundary Definitions for IROFS and Attributes of Safe-by-Design Components</b>			
Appendix B ETC Scope – Safe-by-Design			The expansion of the facility capacity increases the number of systems and components that are safe-by-design. However, these systems and components are the same as those in the original application, and have the same safe-by-design attributes.

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Appendix C AREVA Scope – Safe-by-Design				The expansion of the facility capacity increases the number of systems and components that are safe-by-design. However, these systems and components are the same as those in the original application, and have the same safe-by-design attributes.
<b>Appendix D Volcano Hazard Analysis</b>				
Appendix E Summary of the Consequence Methodology for the AREVA Eagle Rock Enrichment Facility			Table 2-12, 2-13, 2-14	Values changed to reflect increases in building sizes, change in ventilation rates, addition of new buildings (e.g., SBM 3 and SBM 4), increase in Material at Risk in the BSPB)
<b>Appendix F Probabilistic Seismic Hazard Assessment</b>				

**ATTACHMENT 4 TO EREF-09-0009**

**ROADMAP OF ANTICIPATED CHANGES TO THE  
EREF PHYSICAL SECURITY PLAN, EMERGENCY PLAN,  
FUNDAMENTAL NUCLEAR MATERIAL CONTROL PLAN, AND  
STANDARD PRACTICE AND PROCEDURE PLAN**



## Attachment 4 - EREF-09-0009

### Anticipated Changes to the Physical Security Plan, Emergency Plan, Fundamental Nuclear Material Control Plan, and Standard Practice Procedure Plan

#### Physical Security Plan

Figures 1.0-1 and 1.1-1 will be modified to reflect changes to plant layout.

#### Emergency Plan

Section 1.2 will be modified to reflect the changes associated with adding two Separations Building Modules, an additional Full Tails Cylinder Storage Pad, an additional Full Feed Cylinder Storage Pad, and an additional Empty Cylinder Storage Pad.

Tables 1.1-1 through 1.1-7 and 1.2-1 will be modified to reflect the increase wastes associated with the expanded facility.

Figures 1.2-1 and 1.3-1 through 1.3-4 will be modified to reflect the revised facility layout.

#### Fundamental Nuclear Material Control Plan

Section 1.0 and Tables 6.2-1, 6.2-2, 6.2-3, 6.2-4, and 6.2-5 will be modified to reflect the increased quantity of UF<sub>6</sub> that will be processed, including the increase in the number of feed cylinders, product cylinders, depleted uranium tails cylinders, 1S sample cylinders, and P10 bottles that are expected to be onsite, generated per year, or consumed per year.

Table 6.2-6 will be modified to reflect the increase in the number of waste shipping drums that are expected to be generated each year.

Table D-1 will be modified to reflect the increase in the nominal capacity of the facility, the increase in the number of Separations Building Modules, and changes to the feed flow, product flow, and tail flow.

Figures 5.1-1, 5.1-2, 5.1-3, D-3, D-4, D-5A, D-5B, D-6, D-7, and D-9 will be modified to reflect the changes to the plant layout.

#### Standard Practice Procedure Plan

Section 3.3.1 will be modified to increase the number of Separations Building Modules.

Section 3.3.2.1 will be modified to increase the size of the Centrifuge Assembly Building, change the roof elevation, and change the building code classifications.

Figures 3.2-1, 3.2-2, 3.3-2A, 3.3-2B, 3.3-3A, 3.3-3B, and 3.3-3C will be modified to reflect changes to plant layout, including the addition of Separations Building Modules 3 and 4, and increasing the size of the Centrifuge Assembly Building.