

EagleRockCEm Resource

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STATE OF IDAHO
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ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
Toni Hardesty, Director

September 13, 2010

Chief, Rules and Directives Branch
Division of Administrative Services, Office of Administration
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Dear Sir:

Thank you for the opportunity to comment on the Regulatory Commission's Draft Environmental Impact Statement for the proposed AREVA Enrichment Services LLC Eagle Rock uranium enrichment facility in Bonneville County, Idaho. Attached are our comments on Draft EIS. In addition to comments on the EIS, if the AREVA facility is granted a license by the NRC we requested the following conditions be included in the license.

- (1) The state requests the NRC require AES to submit a yearly report to the Director of the Idaho DEQ on or before January 15th of each year that identifies the number of cylinders of DUF6 stored on site and the date of the longest stored container.
- (2) The state requests the NRC require AES to provide the state the same access to documents and materials relating to the AES radiation protection program that is required to be provided to the NRC.
- (3) The state requests the NRC require AES to allow Idaho DEQ to accompany NRC staff on any of its inspections of the AES facility. In this regard, the state requests the NRC require AES to allow Idaho DEQ staff the same access to its facilities, documents, materials and personnel to which NRC is entitled. Idaho DEQ shall execute any confidentiality agreement necessary to participate in such inspections and shall comply with all appropriate AES plant rules (e.g., safety, security) and any applicable NRC requirements when participating in such inspections.
- (4) The state requests the NRC require AES to provide the Idaho DEQ the physical security plan for the AES facility.

Chief, Rules and Directives Branch
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- (5) The state requests that NRC require AES to provide periodic training to local emergency responders for both transportation and plant operation incidents, and that the Idaho DEQ be sent a copy of the training plan and notified when such training occurs.
- (6) It is common for facilities of this nature to fund monitoring programs run by a separate party, in addition to their own program. The state requests that NRC require AES to fund an independent third party Environmental Monitoring program for the Eagle Rock Facility.

If you have any questions, please feel free to contact the State of Idaho NRC liaison, Mr. Mark Dietrich, at 208-373-0204 or mdietrich@deq.idaho.gov.

Sincerely,



Toni Hardesty
Director

TH:ra

Idaho Department of Environmental Quality's (IDEQ) comments regarding the Nuclear Regulatory Commission's Draft Environmental Impact Statement for the proposed AREVA Enrichment Services LLC Eagle Rock uranium enrichment facility in Bonneville County, Idaho.

1. Financial Assurance –

a. Section 2.1.4.3. states:

Decontamination and decommissioning of the proposed EREF would be funded in accordance with the Decommissioning Funding Plan (DFP) for the proposed EREF (AES, 2010b). The DFP, prepared by AES in accordance with 10 CFR 70.25(a) and the guidance in NUREG-1757 (NRC, 2006), would provide information required by 10 CFR 70.25(e) regarding AES's plans for funding the decommissioning of the proposed EREF and the disposal of depleted uranium tails generated as a result of plant operations. Funding would be provided by AES by means of a Letter of Credit in accordance with NRC regulations in 10 CFR Part 70 and guidance in NUREG-1757 (NRC, 2006).

However, Section 2.1.4.3 further states:

A complete estimate of the wastes and effluent to be produced during decommissioning would be provided in the Decommissioning Plan that AES would submit prior to the start of the decommissioning.

Please explain how an adequate cost estimate for the Decommission Funding Plan can be prepared in the absence of a complete inventory/estimate of decommissioning wastes.

b. Due to NRC's approval of pre licensing construction activities at the site, DEQ requests NRC explain in this EIS whether Financial Assurance Mechanisms similar to a "Decommissioning Funding Plan" and associated financial assurance mechanisms have been required of the Applicant concerning decommissioning and restoration to unrestricted use should the facility not receive a license or initiate a business based withdrawal of the license application.

2. Depleted Uranium Hexafluoride (DUF₆) Waste Disposal Path Section 2.1.5.

Section 2.1.5 acknowledges that long term storage of DUF₆ presents a chemical hazard and that direct disposal is likewise prohibited because of this hazard.

The Defense Nuclear Facilities Safety Board (DNFSB) has reported that long-term storage of depleted UF₆ in the UF₆ form represents a potential chemical hazard if not properly managed (DNFSB, 1995). For this reason, the strategic management of depleted uranium includes the conversion of depleted UF₆ stock to a more stable uranium oxide (e.g., triuranium octaoxide [U₃O₈]) form for long-term management (OECD, 2001). Also, the DOE evaluated multiple disposition options for depleted UF₆ and agreed that conversion to U₃O₈ was preferable for long term storage and disposal of the depleted uranium in its oxide form, due to the chemical stability of U₃O₈ (DOE,

2000). Therefore, the disposal option considered in the EIS is the conversion of the depleted UF₆ to U₃O₈ at either a DOE-owned or commercial conversion facility followed by disposal as U₃O₈. Direct disposal of depleted UF₆ was ruled out because of its chemical reactivity (DOE, 1999b).

For this reason the Draft EIS further acknowledges that DUF₆ must be converted at one of two facilities currently under construction.

DOE is currently constructing two conversion plants to convert the depleted UF₆ now in storage at Portsmouth, Ohio, and Paducah, Kentucky, to U₃O₈ and hydrofluoric acid. AES would transport the depleted UF₆ generated by the proposed EREF to either of these new facilities and pay DOE to convert and dispose of the material. The proposed EREF would generate approximately 321,235 metric tons (354,101 tons) in total over its operating lifetime (AES, 2010a). The depleted UF₆ would be processed in a DOE-operated conversion facility and then shipped offsite for disposal.

Based on estimated capacity for depleted UF₆ (DUF₆) conversion at the Department of Energy (DOE) facilities in Paducah, Kentucky, and Portsmouth, Ohio, DEQ understands that it may take DOE approximately 25 years to address the current backlog of DUF₆ stored at these facilities. Based on this timetable, it will take additional time to convert the 25,718 cylinders (345,000 tons) of DUF₆ projected to be generated during the licensed life of the Eagle Rock enrichment facility (EREF). Accordingly, it can be expected that DUF₆ will be stored at the Eagle Rock enrichment facility for a period significantly in excess of the operating life of the facility and potentially for a period of time which creates the “long term storage hazard” identified by DNFSB.

Moreover, the PEIS assumes that once converted the low-level radioactive waste would be disposed of at a commercial low level waste disposal facility:

The Commission has stated that depleted uranium in any form (e.g., UF₆, U₃O₈) is considered a form of low-level radioactive waste (NRC, 2005a). However, the chemical reactivity of depleted UF₆ precludes it from being a stable waste form, and thus makes it unsuitable for direct disposal without conversion (DOE, 1999b). As discussed in Section 2.1.5.1, AES has requested the DOE to accept all depleted UF₆ generated at the proposed EREF for conversion to the oxide form for disposal (AES, 2010a). After conversion of depleted uranium tails (depleted UF₆) to U₃O₈, disposal of this U₃O₈ at a commercial low-level waste disposal facility would be a viable option if the disposal facility meets the requirements of 10 CFR Part 61.

However, because this waste will be generated in Idaho it must be shipped to the Northwest Compact facility at Hanford Washington. It is Idaho understands that the Hanford facility is nearing its source term limit and would need an expansion license to accept the ERAES waste. It is possible that this license might not be granted or that the facility might otherwise be unavailable at the time waste is ready for disposal. Moreover Idaho understands that the Energy Solutions facility in Clive Utah, which might otherwise accept the waste, currently will not do so.

In light of the current situation at DOE facilities and the potential unavailability of licensed low-level radioactive waste disposal facilities, DEQ requests NRC provide more clarity on the environmental risks associated with long term storage and further explain in detail how AES/NRC plans to meet this commitment for DUF₆ off site treatment/disposal.

3. Wildfires on the Snake River Plain and specifically the Idaho National Laboratory (INL) occur with surprising regularity and typically burn tens of thousands of acres before being extinguished (two such fires in 2010). Wildfires have threatened DOE facilities and caused facility shutdowns due to particulate clogged air exchange filters; low visibility and destruction of overhead power lines. The EIS should discuss the risk, potential environmental impacts from wildfires, and safety procedures to be implemented to guard against potential releases as they relate to the enrichment facility and the depleted UF₆ storage cylinders.

4. Several places in the draft EIS reference NRC reg guide 4.15 revision 1 (1979). Please explain why the NRC does not reference revision 2 (2007).

5. The DEQ INL Oversight program works in conjunction with the INL (DOE and contractors) to monitor soils, air quality, ground water and surface water through a complex monitoring system. DEQ requests clarification in the EIS concerning how AES will tie into the appropriate monitoring networks to the maximum extent possible in order to better delineate INL impacts from AES impacts as well as understanding the broader regional impacts.

6. Several places in the draft EIS reference the 100 millirem per year dose limit to any member of the public. The draft EIS does not discuss the ALARA constraint on air emissions of radioactive material to the environment of 10 millirem per year as stated in 10CFR20.1101(d). Please explain why this is not addressed.

7. Chapter 3: pp. 3-83 Line 12 discusses an average HPIC exposure rate in units of curie per kilogram with micro roentgen per hour in parenthesis and cites IDEQ INL Oversight Program (2008). The IDEQ INL Oversight Program only reports HPIC results in units of exposure per hour (micro roentgen per hour). Activity per unit mass is typical of a soil concentration measurement. If NRC has somehow used the HPIC exposure in air measurement to derive a hypothetical soil concentration, they need to subtract the contribution from cosmic sources from this measurement. Either way, the reference to IDEQ INL Oversight Program should only include the micro roentgen per hour units and any inferences should be clearly stated.

8. Chapter 6: pp. 6-3, Figure 6-1. Many of the deep groundwater sampling locations are too close to the facility to ensure detection at depth. Additionally, it is generally accepted that the groundwater flows in a southwesterly direction. Please explain why there are not groundwater sampling wells in the SW or SSW sectors of the monitoring locations map.

9. Chapter 6: pp. 6-4, Table 6-2 states "Isotopic analyses for uranium isotopes (238U, 236U, 235U, and 234U) would commence whenever gross alpha and gross beta activities indicate that an individual radionuclide could be present in a concentration >10 percent of the specified concentrations in Table 2 of Appendix B to 10 CFR Part 20." Please clarify whether any gross

alpha or beta measurement over 10% of the listed U value will be analyzed further, or if there are specific criteria based on a gross alpha beta screening that will trigger the analysis.

10. Chapter 6: pp. 6-6, Lines 42-46, & Fig 6-1, pp. 6-3 describes the environmental monitoring sites. DEQ has the following recommendations and questions:

- There should be an air sampling site on the west side of the property which is nearest the INL.
- There should be an air sampling site between the facility and Hwy 20 to the south.
- The air sampling site on the southern fence of the facility is off-set to the SW and is approximately 2 km from the road. This may not be a good indicator of off-site public dose impact at the road and should be relocated.
- The wind rose for the nearest meteorological tower at MFC on pp. C-9 shows winds from the SW and SSW to the NE are the predominate direction and magnitude, yet the only sampling planned in the NE and ENE sectors are one TLD and two groundwater samples collectively. Please explain why are there no air, soil, or vegetation samples in the sectors where impacts are most likely to be observed.

11. Chapter 6: pp. 6-9, Line 40 states "Samples would be collected quarterly from each sector at locations near the Owner Controlled Area fence line." Please define the "sectors".

12. Chapter 6: pp. 6-10, Lines 6-8 states "The environmental TLDs would be placed at the Owner Controlled Area fence line near the UF6 storage cylinders. In addition, two TLDs would be placed at offsite locations for control purposes". This implies that TLDs are only placed near the storage pads, but Fig 6-1 shows a network of 15 TLDs at the fence on all sides of the facility. Please explain which description is correct.

13. Chapter 6: pp. 6-10, Lines 11-12 states "The TLD along the fence line would provide a combined reading of background as well as above background readings associated with the UF6 cylinders." DEQ recommends this statement be changed to read " *...provide a combined reading of background as well as any above background readings associated with plant operations and cylinder handling and storage.*"

14. Appendix D: pp. D-9, Lines 6-14. Under input parameters and route selection, HRCQ routing was used. Again on pp. D-30, Lines 14-15, "*the NRC staff used HRCQ routing for the transportation impact assessment in this EIS*". DEQ would like to see this requirement written into the license as a condition of transportation operations since it was used in the risk analysis.

15. Appendix D: pp. D-21, Lines 15-16. The transport index (TI) is incorrectly defined as the dose rate at 1 meter from the lateral sides of the transport vehicle. The correct definition is the highest measured dose rate at 1 meter from any side of the package surface.

16. Appendix D: pp. D-23, Line 11 states "... assumed population density of one person per square kilometer (2.6 persons per square mile)." DEQ is not sure where this density number comes from and it is not in agreement with Table D-2 on pp. D-11, where the rural density is listed as 9.5 persons per km².

17. Appendix E: pp. E-7, Line 45 through pp. E-8 Line 3 states "Since the exact height layout of the release points was not available and the CAP88-PC computer code does not account for building wake effects, releases were assumed to take place at ground level. Ground-level releases result in larger concentrations of radionuclides in air for receptors near the source than do elevated releases." This statement is true and is more conservative for hypothetical public at the fence, but underestimates the dose to the nearest actual resident which is 8 km (5 mi) away. Additionally, pp. 6-16 lines 14-17 state an approximate elevation of 40 meters (132 feet) for the effluent emission points. This approximation could be used to run the CAP88-PC code. DEQ requests clarification in the EIS and evaluation of this potential impact.

18. The Proposed Eagle Rock Enrichment Facility potable water system will be classified as a non-transient non-community public water system and subject to the requirements of the Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08). DEQ expects that AES will comply with all applicable regulations of the DEQ concerning the design, construction and operation of the water system (Refer to IDAPA 58.01.08 for official rule language).

19. Clean Water Act/surface water issues and requirements

We expect that AES will comply with all applicable DEQ regulations concerning surface and ground water quality protection including but not limited to the requirements of IDAPA 58.01.02 and IDAPA 58.01.11. In that regard, DEQ would identify the following issues that this EIS should consider and that AES in preconstruction, construction and operation should note:

- There are a number of intermittent or ephemeral streams on the property. AES will need to obtain a Clean Water Act Section 404 dredge and fill permit from the US Army Corps of Engineers (USACOE) if these are deemed waters of the U.S. and AES plans to place dredge or fill material in the streams. The USACOE and EPA make the determination if a stream is considered waters of the U.S.
- Construction projects larger than 1 acre are required to get coverage under the construction storm water general permit from EPA if the storm water discharges to waters of the U.S.
- If storm water discharges to waters of the U.S., then AES should determine whether this facility is regulated under EPA's Multi-sector General Permit (MSGP) for storm water.

20. Wastewater System Requirements

The Proposed Eagle Rock Enrichment Facility wastewater system consists of a collection system, private municipal wastewater treatment plant, and two (2) total containment lined wastewater lagoons. The system will be classified as a **Public Wastewater System** and subject to the requirements of the Wastewater Rules (IDAPA 58.01.16). DEQ expects that AES will comply with all applicable requirements.

21. Subsurface Sewage Disposal Requirements

The wastewater system for the Visitor Center was not discussed in the draft EIS. The Visitor Center will be located adjacent to Highway 20 approximately 1.5 miles from the enrichment facility. The exact site location has not been determined. The wastewater system for the Visitor Center will be an onsite subsurface disposal system with a projected flow of approximately 1500 gallons per day (gpd). Subsurface sewage disposal is governed by the subsurface sewage rules

(58.01.03) and permitting has been delegated to the local Health District. DEQ participates in plan and specification review for collection systems with more than 2 connections and large soil absorption systems. We expect that AES will comply with all applicable regulations, licensing and operating requirements of both DEQ and the local Health District related to this facility.

22. Chapter 1: pp 1-17, Table 1-2. This table summarizes that an air quality permit to construct is not required for this project because the exemption criteria of IDAPA are satisfied. Toxic air pollutant emissions are discussed on pages 4-24 through 4-27. In these pages it is concluded that emissions of fluoride, ethanol, methylene chloride, and uranium from normal operations meet the exemption criteria for toxic air pollutants in IDAPA 58.01.01 Section 223. In order to meet the Section 223 exemption criteria for toxic air pollutants, uncontrolled emissions must meet the exemption criteria as opposed to emissions from “normal” operations as discussed in the Draft EIS.

In accordance with IDAPA 58.01.01 Section 210 an uncontrolled emissions rate of a toxic air pollutant from a source or modification is calculated using the maximum capacity of the source or modification under its physical and operational design without the effect of any physical or operational limitations. Examples of physical and operational design include but are not limited to: the amount of time equipment operates during batch operations and the quantity of raw materials utilized in a batch process. Examples of physical or operational limitations include but are not limited to: shortened hours of operation, use of control equipment, and restrictions on production which are less than design capacity. It is not clear from the information provided in the draft EIS whether uncontrolled emissions of fluoride, ethanol, methylene chloride, and uranium were compared to the exemption thresholds, but the use of the term “normal emissions” on page 4-27, line 37 does imply that air pollution mitigation measures were inappropriately considered in the toxic air pollutant exemption determination. DEQ requests that AES/NRC reevaluate the need for an air permit using uncontrolled emission rates of toxic air pollutants.

23. Chapter 4: pp 4-20, Table 4-5. This table shows that the National Ambient Air Quality Standards will be exceeded for particulate matter during preconstruction and construction. Mitigation measures are discussed in Section 4.2.4.3, pp-4-28. The opening paragraph of this section states, “Impacts from the release of criteria pollutants from the operation of vehicles and equipment during preconstruction, construction, and operation are not expected to result in exceedances of ambient air quality standards...” This statement contradicts with the estimated ambient impacts presented in Table 4-5 (which shows violations of the particulate matter standards). It appears that the predicted ambient impacts shown in Table 4-5 should be updated to reflect the ambient impacts that would occur when operating using the listed mitigation measures which are expected to result in lower emissions that do not cause an exceedance.