

SUMMARY OF CONFERENCE CALL WITH AREVA-RICHLAND REGARDING
CLARIFICATION OF TWO RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION
ON THE SUPERCRITICAL CARBON DIOXIDE LICENSE AMENDMENT APPLICATION
(August 20, 2009)

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AREVA Representatives: Calvin D. Manning, Konrad Kulesza

On August 20, 2009, staff from the U.S. Nuclear Regulatory Commission (NRC) and AREVA-Richland (AREVA) held a conference call to clarify two responses to a request for additional information (RAI) concerning the proposed carbon dioxide license amendment application. Specifically, the NRC staff requested clarification with respect to Questions 5.b and 7 in the area of nuclear criticality safety. The following items were discussed during the conference call:

The NRC staff questioned AREVA's RAI response to Question 5.b. AREVA states that the only failure mechanism for the hoods is loss of configuration control (e.g., unauthorized removal of the hood or some portion thereof, combined with concurrent operation of the extraction equipment). The license amendment application states that there is adequate spacing between the hoods and the process columns where the fissile material is being processed. The license amendment application also states that "there is no reason or motive for transporting containers of uranium-bearing material" near the hoods. Therefore, the transport of material in the subject area is at least "highly unlikely." However, the NRC staff stated that such scenario is credible, and items relied on for safety (IROFS) may be required to render the transport of material in the area as "highly unlikely." AREVA proposed submitting a revised interaction analysis which would illustrate where the fissile material would go through, and would stress AREVA's conclusion that the transport of material is "highly unlikely." AREVA also proposed modeling the transport of fissile material assuming that a uranyl nitrate container from the Engineering Laboratory Operations building was inadvertently transferred to the subject area.

The NRC staff also questioned AREVA's RAI response to Question 7. AREVA described the activities in the process area, and how IROFS 6910 and 6911 are implemented. The NRC staff questioned whether the amount of ash being processed could present a criticality hazard. AREVA clarified that the amount of material upstream in the process area is below the minimum amount necessary to create a criticality event. According to AREVA, credible mass holdup inside the process units will not present a criticality hazard. However, NRC staff stated that double batching is usually considered a credible upset and that in this scenario more than a critically mass of material could be available under conditions of optimum moderation. AREVA stated that the ash is essentially dry when it comes out of the incinerator and would only absorb modest amounts of water out of the air. However, AREVA also indicated that the ash buckets have not been kept in a moderator controlled area so they could not provide complete assurance that water had not entered the buckets while being stored. With respect to the criticality analysis for the process area, AREVA stated that they assume that the uranium-bearing ash to be processed is homogeneous. AREVA suggested that they could re-evaluate the criticality analysis, assuming that the ash is heterogeneous.

Enclosure