SUMMARY OF CONFERENCE CALL WITH AREVA REGARDING RESPONSES TO THE U.S. NUCLEAR REQULATORY COMMISSION's REQUESTS FOR ADDITIONAL INFORMATION ON THE CO_2 LICENSE AMENDMENT APPLICATION (JUNE 18, 2009)

NRC Representatives: Rafael L. Rodriguez, Matthew Bartlett, Blake Purnell, and Alex Murray

AREVA Representatives: Calvin D. Manning, Loren J. Maas, Murphy Carmichael, and Sydney Koegler

On June 18, 2009, staff from the U.S. Nuclear Regulatory Commission (NRC) and AREVA-Richland (AREVA) held a conference call to discuss the responses provided by AREVA on June 5 regarding NRC's Request for Additional Information (RAI) concerning the proposed carbon dioxide (CO_2) license amendment application. The following items were discussed during the conference call:

a) Radiation Protection

The reviewer requested clarification on the response to RAI #2 where AREVA indicated that "loss of configuration control" is the only failure mechanism of the system. AREVA indicated that the configuration management program approved for the entire facility in the renewed license will ensure that the equipment and vessels used in the CO_2 process receive proper maintenance and that parts will be replaced with identical components. AREVA indicated that once the system is installed in accordance with the codes and standards in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section VIII, Division 1, the site-wide configuration management program will ensure the system is maintained in accordance with those standards. The last sentence in AREVA's response to RAI #2 indicates that "a small leak in a high-pressure system has potential safety significance." AREVA clarified that such leaks have been determined to be below intermediate consequence because the vessels and piping will be contained within a hood with ventilation via the building exhaust.

The NRC staff also inquired if AREVA had committed to use the construction and inspection standards in the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 in their license amendment application. AREVA indicated they have not.

b) Chemical Safety

The responses to the chemical safety RAIs were discussed. AREVA clarified several aspects of the proposed process, such as:

a) all high pressure vessels will be new;

b) all high pressure piping and tubing will be new;

c) all fittings and nozzles will be new;

d) the design minimizes the number of welds in the system;

e) the extractor vessels will be machined from monolithic pieces of stainless steel;

f) a certified inspector from the State of Washington will conduct biannual inspections to ensure conformance with the ASME Code, Section VIII, Division 1. The inspections will focus on external attributes, such as visual appearance and indications of leakage. No dye penetrants or other non-destructive examinations are planned. According to AREVA, these inspections are not necessary to render the events "highly unlikely."

AREVA stated that there is no recommended maintenance by the manufacturer on any equipment and vessels used to support the proposed process. AREVA will rely on the biannual state inspections to ensure the integrity of the process units. Any changes to specific parts or components of the proposed process will be made in accordance with AREVA's configuration management program, as approved during the license renewal review.

AREVA stated that they will conduct routine visual inspections of the extractor vessel internal surfaces and lids for any signs of additional corrosion and wear. This will be a gross inspection due to the limited accessibility and visibility of the vessels in the ventilation enclosure. These inspections will be described in written procedures. AREVA further stated that maintenance errors that could result in a high-consequence event would be "highly unlikely."

AREVA re-stated that construction and periodic inspection to applicable codes and standards is judged to render catastrophic failure events as "highly unlikely," and no items relied on for safety (IROFS) are needed to meet the requirements on Title 10 of the *Code of Federal Regulations*, § 70.61. The safety analysis is based upon the installed components and the assumption that these components would "leak" before they break. In this discussion, the NRC staff noted that pressure vessel design, fabrication, installation, operation within design parameters, and periodic inspections in accordance with the ASME Code are all needed to render catastrophic failures as "highly unlikely." Relief valves are also considered to contribute to safety. In other words, without application of the ASME code requirements, catastrophic failures are either not "unlikely" or not "highly unlikely" events. Hence, some IROFS would need to be identified. AREVA acknowledged that the application of the ASME Code to this process gives them "a lot of mileage" (i.e., increase reliability/reduced failure rate). There was no resolution of this issue of using "design features" that are not declared IROFS.

c) Nuclear Criticality Safety

The NRC staff inquired about the hood mentioned in AREVA's response to RAI #5. AREVA stated that the hood is not removable. Maintenance staff may only remove panels from the hood during maintenance activities. AREVA clarified that its Integrated Safety Analysis (ISA) process assumes that all components are properly designed, implemented, and that they will be returned to this state following any maintenance activities. Therefore, failure of a component due to improper design, implementation, or maintenance is not considered. The NRC staff noted that when AREVA determines that an accident sequence is "not credible" based upon physical laws or engineering principles, "the validity of the argument must not be dependant on any feature of the design." AREVA had stated that there is no physical mechanism that could credibly cause favorable geometry columns to fail. NRC staff noted that the fact a column is favorable geometry is a design feature, and questioned how AREVA could make this claim and still meet its requirement for concluding that something is "not credible." AREVA did not provide a response to address this question. The NRC staff noted that the failure of some favorable geometry equipment used in the process is not listed as a credible sequence in the ISA Summary.