

ISSUE RESOLUTION STRATEGY

| Title of Issue | Lead | Current Date | Anticipated Closure Date |
|---|--------------|--------------|--------------------------|
| Description of the 10 CFR 20.1406 Design Features into the GEH ABWR DCD | Ed Stutzcage | 1/4/12 | TBD |
| <p>Issue Description:</p> <p>The ABWR standard design is the only certified new reactor design under review that does not include the requirements of 10 CFR 20.1406(b).</p> <p>Staff believes that the applicant should address 10 CFR 20.1406(b) as part of their DCD renewal application. In doing so, the applicant should describe in the application how facility design will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.</p> <p>Some examples of measures that might be taken to address the requirements of 10 CFR 20.1406 include:</p> <ol style="list-style-type: none"> 1) Minimize leaks and spills and provide containment in areas where such events may occur, 2) Provide for adequate leak detection capability to provide prompt detection of leakage for any structure, system, or component which has the potential for leakage, 3) Use leak detection methods (e.g., instrumentation, automated samplers) capable of early detection of leaks in areas where it is difficult or impossible to conduct regular inspections (such as for spent fuel pools, tanks that are in contact with the ground, and buried, embedded, or subterranean piping) to avoid release of contamination from undetected leaks and to minimize contamination of the environment, 4) Reduce the need to decontaminate equipment and structures by decreasing the probability of any release, reducing any amounts released, and decreasing the spread of the contaminant from the source, 5) Periodically review operational practices to ensure that, operating procedures are revised to reflect the installation of new or modified equipment, personnel qualification and training are kept current, and facility personnel are following the operating procedures, 6) Facilitate decommissioning by a) maintenance of records relating to facility design and construction, facility design changes, site conditions before and after construction, onsite waste disposal and contamination and results of radiological surveys, b) minimizing embedded and buried piping, and c) designing the facility to facilitate the removal of any equipment and/or components that may require removal and/or replacement during facility operation or decommissioning, 7) Minimize the generation and volume of radioactive waste both during operation and during decommissioning (by minimizing the volume of components and structures that become contaminated during plant operation) 8) Develop a conceptual site model (based on site characterization and facility design and construction) which will aid in the understanding of the interface with environmental systems and the features that will control the movement of contamination in the environment, 9) Evaluate the final site configuration after construction to assist in preventing the migration of radio-nuclides offsite via unmonitored pathways. <p>The applicant should describe specific design features which are incorporated into the ABWR design to comply with the requirements of 10 CFR 20.1406, for each of the following systems:</p> <ul style="list-style-type: none"> • Nuclear Steam Supply • Isolation Condenser System • Fuel Storage and Handling • Condensate Storage and Transfer System • Process Sampling System • Equipment, Floor, Chemical, and Detergent Drain Systems • Standby Liquid Control System • Building heating, ventilating and air conditioning systems used to process radioactive process and effluent streams • Turbine Main Steam System • Other Features of Steam and Power Conversion System <p>For each of the above systems the applicant should list the specific design features and/or COL action items in the DCD.</p> | | | |

Safety Concern:

The applicant should include the requirements of 10 CFR 20.1406(b) in their DCD renewal application in order to ensure doses to workers, the public, and the environment are kept ALARA during normal plant operation and eventual decommissioning.

Regulatory Basis:

10 CFR 20.1406(b), requires that "Applicants for standard design certifications, standard design approvals, and manufacturing licenses under part 52 of this chapter, whose applications are submitted after August 20, 1997, shall describe in the application how facility design will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste."

Staff Position:

The ABWR design is the only certified new reactor design under review that does not include the requirements of 10 CFR 20.1406. Significant industry and regulatory resources have been spent on groundwater contamination review, remediation, and inspection. The GEH ABWR DCD renewal should be revised to include the 10 CFR 20.1406 requirements

Applicant Position:

The current GEH ABWR renewal application does not address the requirements of 10 CFR 20.1406. The applicant position is not known at this time. As a result, anticipated closure date above is TBD.

Impact of Staff Position on Applicant (Technical, Cost, Schedule):

The applicant shall describe in the application how facility design will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste, as described above.

To do this, the applicant will have to evaluate the ABWR design features and determine if they need to make design changes to meet the requirements of 10 CFR 20.1406. Design changes may include the addition of berms around tanks, use of guard pipes, and rerouting of underground pipes. There may be little or no need for physical design changes, and that the applicant will only need to better organize and describe features that are already in place in the DCD. The ABWR DCD should also reference 10 CFR 20.1406, and also list any guidance used in meeting the requirement, including Regulatory Guide 4.21 and DC/COL-ISG-6.

COL applicants will have to describe in their application how the facility design and their operational procedures will meet the requirements of 10 CFR 20.1406.

Plan to Close Issue (What, Who, When):

Request that the applicant incorporate the requirements of 10 CFR 20.1406(b) into their design.

Decision:

The staff met with the division director who determined that the staff position was valid.

Basis:

The applicant should incorporate the requirements of 10 CFR 20.1406 into their ABWR renewal application.