

ISSUE RESOLUTION STRATEGY

Title of Issue	Lead	Current Date	Anticipated Closure Date
Inclusion of the Condensate Storage Tank (CST), as a Radioactive Source, into the GEH ABWR DCD	Ed Stutzcage	1/4/12	TBD
<p>Issue Description:</p> <p>The GEH ABWR design uses a CST that is a 500,000-gallon tank containing low levels of radioactivity and is located external to the Power Block structures. Radiological information described in SRP section 12.2, Radioactive Sources for the CST was not included in the ABWR DCD.</p> <p>Section 12.2 of Regulatory Guides 1.70 and 1.206 states in part that “the sources of radiation that are the bases for the radiation protection design should be described in the manner needed as input to the shield design calculation” and that the models and parameters used to calculate the source magnitudes should be provided. As a result, staff requests that the applicant provide the following information in Chapter 12 of the GEH ABWR DCD:</p> <ol style="list-style-type: none"> 1. Revise Chapter 12, Tables 12.2-5a, 12.2-5b, and 12.2-5c of the DCD identifying the CST as a radiation source and include source geometry and shielding information. 2. Revise the Chapter 12 text in the DCD to include the CST radioactive source term information. 3. Revise the Chapter 12 text in the DCD to include the CST design feature information about CST piping being routed in trenches or tunnels, listing any available methods of leak collection and return to the LWMS. 4. Revise the applicable Chapter 12 DCD drawings to identify the location of the CST, including identifying the tank as a radiation source. 5. Provide additional information in the DCD concerning the design features of the CST. For example, describe any barriers that are located around the CST to prevent runoff. 6. Provide additional information in the DCD concerning any planned additional radiation protection control requirements, or provisions, for control and monitoring of radioactive materials or radioactive tanks located outdoors. 			
<p>Safety Concern:</p> <p>The CST is located outdoors with no radiological controls or barriers described, and the expected radiological conditions of the area around the CST are not included in the GEH ABWR DCD. Therefore, access requirements for the area around the CST are not defined and individual workers or members of the public could potentially receive in excess of the 10 CFR 20 standards.</p>			
<p>Regulatory Basis:</p> <ul style="list-style-type: none"> • 10 CFR 20.1301(a)(2) requires that the dose to any unrestricted area to members of the public does not exceed 2 mrem in any one hour period. • 10 CFR 20.1101(b), requires licensees to use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA). • 10 CFR Part 50 Appendix A, “General Design Criteria for Nuclear Power Plants”, Criteria 61, requires that systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions, and that the systems shall be designed with a capability to permit appropriate periodic inspection and testing of components important to safety and with suitable shielding for radiation protection. 			

- 10 CFR 52.59(b)(2), states that the Commission may impose other requirements on a renewal applicant, if it determines that, they are necessary for compliance with the commissions regulations and orders applicable and in effect at the time the design certification was issued. All of the above regulations (10 CFR 20.1301(a)(2), 10 CFR 20.1101(b), and 10 CFR Part 50 Appendix A) were in effect at the time of original ABWR certification. In addition, 10 CFR 50(a)(3)(i), which was also in effect at the time of original certification, states that the requirements of 10 CFR Part 50 Appendix A shall be included in the safety analysis report.
- Regulatory Guide 1.70, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants, which is referenced by the original ABWR design, states in section 12.2.1, that the sources of radiation that are the bases for the radiation protection design should be described in the manner needed as input to the shield design calculation and that the description should tabulate sources by isotopic composition or gamma ray strength, and geometry, as well as provide the basis for these values. It also states that sources should be located on a plant layout drawing.
- Chapter 12.3.1.3 of the ABWR DCD states that radiation zones are established in all areas of the plant as a function of both the access requirements of that area and the radiation sources in that area.
- Chapter 12.3.1.3 of the ABWR DCD states that maintenance activities and abnormal operating conditions are considered in making the appropriate zoning designations.

Staff Position:

Staff believes that in order to reasonably ensure that exposure rates from the CST are kept ALARA; the revised information should be included in the ABWR DCD renewal.

Applicant Position:

The current GEH ABWR Renewal DCD does not include the information concerning the CST. 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 will have to develop source term information for the CST during normal and abnormal conditions and provide the information requested above. This information should be provided in the GEH ABWR Renewal DCD, and should be consistent with information provided for other radiation sources.

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

Request that the applicant incorporate the requested CST source term information and design features, as described above, or establish a new COL Information Item, requesting the information from COL applicants.

Decision:

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

Basis:

The basis is the same as in the regulatory basis section discussed above.