

SNC Answer Opposing BREDL Petition to  
Intervene and Request for Hearing

Docket Nos. 52-025-LA-2; 52-026-LA-2

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Exhibit No. 4

AP1000 SER (NUREG-1793), Supp. 2, Section 6.2.5

accordance with regulatory guidance, consistent with DCD commitments, and are acceptable to the staff.

The editorial changes are acceptable.

### **6.2.5 Containment Hydrogen Control System**

The containment hydrogen control system is provided to limit the hydrogen concentration in the containment so that containment integrity is not endangered.

On September 2004, the staff provided its assessment of the AP1000 hydrogen ignition subsystem design in Section 6.2.5.1 of NUREG-1793. As stated in paragraphs 3 and 9 of Section 6.2.5.1, adequate igniter coverage was provided based on implementation of the igniter location criteria in DCD Table 6.2.4-6.

DCD Tier 2, Table 6.2.4-6, provides the criteria used in the evaluation and the application of the criteria to specific compartments. On the basis of the staff's review and the applicant's implementation of the igniter location criteria as listed in DCD Tier 2, Table 6.2.4-6, the staff concluded that adequate igniter coverage had been provided.

#### **6.2.5.1 Summary of Technical Information**

In APP-GW-GLN-003 (TR-37), "Hydrogen Igniter Locations," Revision 1, the applicant modified the elevations or locations of certain hydrogen igniters within the AP1000 hydrogen control system. The applicant stated that the modifications were necessary because either the polar crane elevation or the pressurizer height had been changed, or in order to place the igniters in more easily accessible locations or to avoid trip hazards.

In Revision 16 of the DCD, Figures 6.2.4-5 through 6.2.4-13 show the proposed locations of the hydrogen igniters, and Tables 6.2.4-6 and 6.2.4-7 identify the proposed hydrogen igniter locations. The number of igniters is unchanged at 64.

#### **6.2.5.2 Evaluation**

Revision 16 of the DCD, Table 6.2.4-6, provides the criteria used in the evaluation and the application of the criteria to specific compartments. The changes to igniter locations as a result of the continuing COL and detailed design activities for the AP1000 satisfy the igniter location criteria identified in DCD Table 6.2.4-6 (Sheet 1 of 3) that were used for the DC review of the hydrogen igniter subsystem and referenced in the AP1000 SER. Therefore, changes in the placement of the hydrogen igniters that are consistent with the criteria in Table 6.2.4-6 do not alter the design function of the igniters, have no effect on any analysis or analysis method, and do not affect the performance or controls of hydrogen control functions.

On the basis of the staff's review and the applicant's implementation of the igniter location criteria as listed in DCD Tier 2, Table 6.2.4-6, the staff concludes that adequate igniter coverage has been provided.

### **6.2.5.3 Conclusion**

The staff finds that the applicant's proposed modification to the AP1000 hydrogen control system design with respect to the change in hydrogen igniter locations, as described in TR-37, is consistent with the previously approved criteria and, therefore, acceptable.

### **6.2.6 Containment Leak Rate Test System**

The containment leak rate test system is designed to verify that leakage from the containment remains within limits established in the TS.

#### **6.2.6.1 Summary of Technical Information**

The containment penetrations, including electrical penetrations, subject to Type B testing appear in Figure 6.2.5-1, "Containment Leak Rate Test System Piping and Instrumentation Diagram." The applicant has added the test connection assembly for the newly added electrical penetration, P03, to the list of electrical penetrations test connections in Figure 6.2.5-1.

#### **6.2.6.2 Evaluation**

The design commitment to provide a test assembly for Type B leak rate testing for the newly added electrical penetration, P03, is acceptable.

#### **6.2.6.3 Conclusion**

Based on its review, the staff finds the proposed addition of a Type B leak rate test assembly for the new electrical penetration, P03, acceptable.

### **6.2.8 Tier 1, Chapter 2.2.1, Containment System**

#### **6.2.8.1 Summary of Technical Information**

In TR-97, APP-GW-GLN-022, Revision 1, "DAS Platform Technology and Remote Indication Change" dated May 2007, the applicant identifies and justifies standard changes to Revision 15 of the DCD. These changes include relocating the diverse actuation system (DAS) squib valve control cabinet (DAS-J3-003) and adding the DAS instrumentation cabinet (DAS-JD-004) to the southern section of the auxiliary building. The DAS is a nonsafety-related system. These changes necessitate the addition of a containment electrical penetration, P03. In a letter dated May 14, 2007, the applicant submitted responses to all the NRC RAIs on TR-97.

#### **6.2.8.2 Evaluation**

The staff's assessment of the CIS design was provided in Section 6.2.4 of NUREG-1793. As stated in the NUREG-1793 section, the containment penetration design of isolation barriers met the following acceptance criteria of NUREG-0800 Section 6.2.4.

Containment isolation equipment may be subject to potentially harsh conditions resulting from pressure, temperature, flooding, jet impingement, radiation, missile impact, and seismic response. The staff's review confirmed that the CIS had been properly classified to ensure that protection from these environmental hazards is encompassed by the mechanical and electrical design bases and quality standards of the isolation system.