

## RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

### APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 444-8530  
SRP Section: 16 – Technical Specifications  
Application Section: 16.3.7, 16.3.3.8, 16.3.3.9, 16.3.3.10  
Date of RAI Issue: 03/16/2016

### **Question No. 16-132**

On Deviation Report page 90, generic TS SR 3.6.2 1 includes the following:

The acceptance criteria for air lock testing are:

- a. Overall air lock leakage rate is  $\leq 0.05 L_a$  when tested at  $\leq P_a$  [ $3.77 \text{ kg/cm}^2$  (53.6 psig)].
- b. For each door seal leak rate is  $\leq 0.01 L_a$  when tested at  $\leq P_a$  [ $3.77 \text{ kg/cm}^2$  (53.6 psig)].

This information is not included in STS SR 3.6.2.1, but is included in STS 5.5.16.d.2. It is also included in generic TS 5.5.16.d.2, but the individual door leak rate criterion is:

- d. Leakage rate acceptance criteria are:
  2. Air lock testing acceptance criteria are:
    - ii. For each door, leakage rate is  $\leq 0.01 L_a$  when pressurized to  $\geq 10$  psig.

In addition, generic TS 5.5.16.b states:

- b. The calculated peak containment internal pressure for the design basis loss of coolant accident,  $P_a$  is 51.77 psig. The containment design pressure is 60 psig.

The program specification values for  $P_a$  and the airlock door test pressure differ from the values stated in the Deviation Report and generic TS SR 3.6.2.1.

The applicant is requested to remove the criteria from SR 3.6.2.1 and verify the airlock leak test acceptance criteria values are consistent with DCD Tier 2 Chapter 6 values. Also make any necessary conforming changes to the Bases for SR 3.6.2.1.

**Response**

The Deviation Report has some incorrect information on page 90. The acceptance criteria for air lock testing specified in TS SR 3.6.2.1 will be removed to coincide with TS 5.5.16.d acceptance criteria and NUREG-1432 format. Also, the Pa value (51.77 psig) in TS 5.5.16.b will be changed to 3.59 kg/cm<sup>2</sup>G (51.09 psig).

---

**Impact on DCD**

Same as changes described in the Impact on Technical Specifications section.

**Impact on PRA**

There is no impact on the PRA.

**Impact on Technical Specifications**

TS Subsection 3.6.2, page 3.6.2-4 and Subsection 5.5.16, page 5.5-15 will be revised as indicated in the Attachment.

**Impact on Technical/Topical/Environmental Reports**

There is no impact on any Technical, Topical, or Environmental Report.

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.2.1</p> <p>----- NOTE -----</p> <ol style="list-style-type: none"> <li>1. An inoperable air lock door does not invalidate previous successful performance of an overall air lock leakage test.</li> <li>2. Results shall be evaluated against acceptance criteria of SR 3.6.1.1.</li> </ol> <p>-----</p> <p>Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.</p> <p><del>The acceptance criteria for air lock testing are:</del></p> <ol style="list-style-type: none"> <li><del>a. Overall air lock leakage rate is <math>\leq 0.05 L_a</math> when tested at <math>\geq P_a</math> [3.592 kg/cm<sup>2</sup>G (51.09 psig)].</del></li> <li><del>b. For each door seal, leak rate is <math>\leq 0.01 L_a</math> when tested at <math>\geq P_a</math> [3.592 kg/cm<sup>2</sup>G (51.09 psig)].</del></li> </ol>	<p>In accordance with Containment Leakage Rate Testing Program</p>
<p>SR 3.6.2.2</p> <p>Verify only one door in the air lock can be opened at a time.</p>	<p>24 months</p>

## 5.5 Programs and Manuals

---

### 5.5.15 Safety Function Determination Program (SFDP) (continued)

- a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable, or
- b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable, or
- c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

### 5.5.16 Containment Leakage Rate Testing Program

- a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in NRC RG 1.163, "Performance- Based Containment Leak-Test Program," dated September, 1995, as modified by the following exceptions:
  - 1. The visual examination of containment concrete surfaces intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI Code, Subsection IWL, except where relief has been authorized by the NRC.
  - 2. The visual examination of the steel liner plate inside containment intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B, will be performed in accordance with the requirements of and frequency specified by the ASME Section XI Code, Subsection IWE, except where relief has been authorized by the NRC.
- b. The calculated peak containment internal pressure for the design basis loss of coolant accident,  $P_a$  is ~~51.77 psig~~. The containment design pressure is 60 psig.
 

3.59 kg/cm<sup>2</sup>G (51.09 psig)
- c. The maximum allowable containment leakage rate,  $L_a$  at  $P_a$ , shall be 0.1 % of containment air weight per day.