

TALKING POINTS
V.C. Summer LAR 14-02
“Wall 11/11.2 MSIV Compartment Vents & Penetration Rebar Design”
Revision 1/25/2016

The staff’s ongoing review requires a discussion of the availability of information on this LAR.

Point 1: The Auxiliary building is located on the Nuclear Island and houses some of the systems and components that are required to perform safety functions during different plant states. These safety related systems and components are protected from external hazards generated missiles by the exterior walls and roof of the Auxiliary building. The North wall of the Auxiliary Building is on grid line 11 and henceforth is identified as “Wall 11”. The License Amendment Request (LAR) LAR-14-02 in Section 2, para 3, describing the protective functions of Wall 11 identifies a series of loads that were considered in the structural design of Wall 11. Wall 11 also serves as the south wall of the Turbine Building located outside the nuclear island adjacent to the Auxiliary Building. The first bay of the Turbine building is between Wall 11 and the wall North of Wall 11. This wall is located on grid 11.2 and henceforth identified as “Wall 11.2.” The first bay of the Turbine building including Wall 11.2 and Wall R is designed as Seismic Category II. Both are designed to the same codes and load combinations as used for the design of Wall 11 which is designated as Seismic Category I. The design codes are specified in UFSAR section 3.8 and conform to relevant regulatory requirements.

The staff review requires a summary, using the format of Table 3.8.4-2, with the values of loads (lbs. / sq. ft.) used in each load combination case that was used in the design of Wall 11 and Wall 11.2

Point 2: The LAR states that Wall 11, Wall 11.2 and Wall R are also evaluated to resist all design basis tornado missiles.

The staff review requires a summary of the missile impact evaluations that consider both two way and one way wall load dispersion per ACI 349 and show that the demand “wall thickness” was determined for the worst load combination, meeting ACI 349 requirements.

Point 3: To provide protection from missile entry through the openings on Wall 11 the applicant has used a number of barriers to prevent such an event. The doors on Wall 11 provide protection against all but the tumbling automobile missile.

The staff review requires a summary of the methodology used and the results of the calculations performed to establish that the doors provide acceptable protection against the design basis missiles.

Point 4: In addition for protections against tornado generated missiles the applicant has used missile barriers to prevent the influence of any potential missile impact beyond Wall 11.2 and Wall R.

The staff review requires the location of each of these barriers in the FSAR and a description of the critical characteristics of the barrier showing their location with respect to column lines. In addition, the review requires that the applicant should provide a summary of the barrier evaluation and resulting design details.

Point 5: On page 40, Part 1C of Updated Enclosure 1 – Supplement to License Amendment Request: Wall 11 Design Related Changes (LAR 14-02 S1), it states that, “In accordance with the pipe break criteria in UFSAR subsection 3.6.2.5, breaks are postulated at every fitting for piping that has not been seismically analyzed. For breaks in high energy piping postulated to occur in the nonseismic portion of the turbine building (north of Wall 11.2) with the potential for impacting Wall 11, bounding pipe whip and jet impingement loads are applied to Wall 11.2 as a result of the bounding postulated breaks.” The staff noted that Subsection 3.6.2.1.1.3 of AP1000 DCD states that terminal ends and intermediate fittings are postulated for piping that has been seismically analyzed.

The staff review requires clarification on whether terminal ends, if any, are considered in the determination of the bounding postulated breaks for those nonseismic piping. If not, clarification is necessary to justify why terminal ends are excluded from the consideration.

The staff review also requires the detailed information regarding how the bounding dynamic effects (i.e., pipe whip and jet impingement loads) resulting from the bounding postulated breaks are determined, demonstration that the pertinent DCD methodologies are appropriately implemented in determining the resulting bounding dynamic loads on the Wall 11.2.

Point 6: On page 15, Part 1D of Updated Enclosure 2 – Supplement to Proposed Changes to Licensing Basis Documents (LAR 14-02 S1), there are proposed changes to UFSAR Subsection 3.6.1.1 and 3.6.1.3.2 discussing pipe whip effects resulting from postulated ruptures in main steam and main feedwater piping, but no mention of jet impingement loads. What is the basis for excluding jet impingement loads?