

Guzman, Richard

From: Wanda D Craft (Generation - 6) <wanda.d.craft@dom.com>
Sent: Thursday, May 26, 2016 4:50 PM
To: Guzman, Richard
Subject: [External_Sender] RE: SBLOCA LAR - SG Secondary Side Mass Issue

Rich,
The following information is provided to address your question related to Figure 4-14 of the LAR. If you need additional information, we can support a call next week. Thanks.

The response in Figure 4-14 is consistent with model expectations. AFW flow is stopped to both SGs at 1200 seconds. During the period from ~1200-1600 seconds, there is mass exchange from Loop 2 SG (broken) to Loop 1 SG (intact) through the main steam header. The non-return valves are not modeled, so the steam generators are not isolated. As shown in Figure 4-3, pressure is increasing in both SGs after 1200 seconds due to primary-to-secondary heat transfer. The mass exchange occurs due to small pressure differences between the SGs that is a result of the broken loop (Loop 2) having a larger energy removal rate than the intact loop (Loop 1). The pressure difference between the loops is not evident in Figure 4-3 due to the scale, but a small mass exchange is occurring. The total mass in the two SGs is constant from 1200-1600 seconds. After ~1600 seconds, the SG pressure on the broken loop is high enough to open the MSSV #1. There are three rapid openings that causes the large SG total mass reduction between 1600 and 2000 seconds.

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From: Guzman, Richard [mailto:Richard.Guzman@nrc.gov]
Sent: Thursday, May 26, 2016 10:26 AM
To: Wanda D Craft (Generation - 6)
Subject: SBLOCA LAR - SG Secondary Side Mass Issue

Wanda,

As we discussed, please let me know when your folks can support a call to discuss:

- In Figure 4-14 of the LAR, the Loop 2 steam generator shows a mass decrease between ~1200-2000s
- During this period, AFW is off for both SGs and heat transfer should be from secondary side to primary side.

- Secondary side pressure during the majority of this time period is less than the MSSV min setpoint. If an MSSV were open, it would be understood where the mass is going, but since it's shut, and with both SGs essentially at the same pressure, the technical staff does not understand why the mass in one (Loop 1 SG) is increasing and the other decreasing (Loop 2 SG).

Rich Guzman

Sr. Project Manager

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