

Vogle PEmails

From: Hoellman, Jordan
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Subject: Pre-Submittal Presentation for 2/15/2018 Public Meeting re: MCR Vestibule Vent Penetration - PUBLIC
Attachments: 2018-02-15_Tech Exch_LAR 192 - MCR Vestibule Pene_Public version.pdf

The attached presentation is provided for the technical exchange meeting scheduled for Thursday, February 15, 2018, regarding a proposed License Amendment Request (LAR) for changes to Main Control Room (MCR) Vestibule Vent Penetrations.

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Technical Exchange: Main Control Room (MCR) Vestibule Vent Penetrations

February 15, 2018

Meeting Objective and Agenda

Meeting Objective

- Inform the NRC of the upcoming License Amendment Request (LAR) re: MCR Vestibule Penetrations
- Receive and address Staff feedback

Agenda

- Background
- Technical Discussion
- Licensing Impact
- Schedule
- Conclusion



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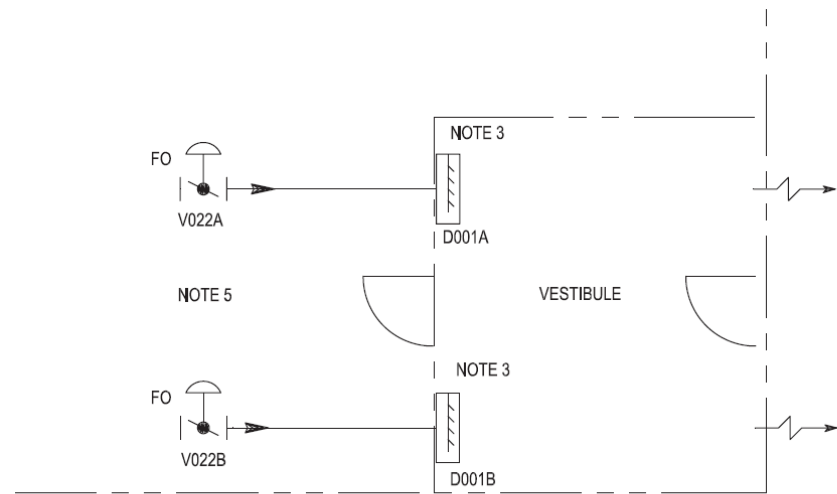
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Background

- As described in UFSAR 6.4, two open pipe penetrations penetrate the MCR Vestibule to provide a passive ventilation through open piping in case of a VES (MCR Emergency Habitability System) Actuation.

6.4.2.3 Component Description...

The pressure relief dampers discharge through the MCR vestibule in order to reduce the amount of radioactivity that can be transported into the MCR when operators enter. Two vestibule discharge openings provide a purge flow path from the vestibule to the corridor.



Excerpt of Figure 6.4-2 (Sheet 2 of 2)

Background

- These penetrations, which are outside of the MCR pressure boundary and pass through the 3-hour fire rated barrier, are described in UFSAR Chapter 6 but are not detailed in Appendix 9A.
- These penetrations must meet safety-related function of maintaining MCR at positive pressure relative to surrounding areas, as well as security safeguards and fire protection requirements for the wall
- The concrete wall separating Rooms 12400 and 12412 is 24” thick. The concrete Vestibule ceiling is 7’-6” in height, while the Electrical Penetration Division A Room ceiling slab is 17’-0” above the floor. The dual inverted pipe inlets that penetrate the 24” thick concrete MCR vestibule wall terminate 6” above the concrete floor.

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Proposed License Amendment Request

- **Additional testing is planned to demonstrate that the use of the dual inverted inlet piping configuration provides an adequate mitigation of the transfer of flame, smoke, and hot air, and gases from passing to the adjacent side of the fire barrier, thereby ensuring that an adequate level of protection is provided.**
- **LAR submittal is planned to obtain approval of the evaluation demonstrating the effectiveness of the wall and penetration configuration.**



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Technical Discussion

- There are no combustibles within the immediate vicinity of the penetrations that could be a combustion source on the adjacent side.
- Both sides will be a zero-transient combustible areas. Compensatory measures will be taken in accordance with the site's fire protection program for combustibles left in these areas.
- The use of the dual inverted inlet piping configuration provides an airflow purge path to allow the VES to meet its safety-related function and security safeguard requirements.



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Licensing Impact

- Update to UFSAR Subsections 9A.3.1.2.1.2 (1242 AF 02) and 9A.3.1.2.5.1 (1242 AF 01) to add descriptive text of the penetrations.

Example - Proposed UFSAR Subsection 9A.3.1.2.1.2 text addition:

Two discharge openings penetrate the 24-inch thick concrete wall between room 12412 and the main control room vestibule in fire area 1242 AF 01 to provide a purge flow path for the main control room habitability system, as discussed in subsection 6.4.2.3. The 5-inch (nominal) diameter openings are provided with downturned pipe elbows on each side terminating approximately 6 inches above the floor. The inverted inlets provide an entrapment to mitigate the transfer of flame, smoke, and hot gases from either side of the wall.



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Schedule

- **March 2018 - Test wall/penetration configuration in accordance with ASTM E814 -- test with internal and external video**
- **April 2018 – Submit LAR**
- **August 2018 – Place concrete wall**



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Conclusion

- The use of the dual inverted inlet piping configuration provides an airflow purge path to allow the VES system to meet its safety-related function and security safeguard requirements.
- Testing is underway to confirm that the configuration and location of the dual inverted inlets limit the transfer of flame, smoke, and hot gases from passing to the adjacent side of the fire barrier ensuring that an equivalent level of protection is provided, consistent with the licensing requirements.
- Compensatory measures will be taken in accordance with the site's fire protection program for combustibles in the areas adjacent to the 3-hour fire-rated wall between rooms 12400 and 12412.



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Comments?



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