

Performance Materials and Technologies

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December 11, 2015

UPS/Next Day Air

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Docket No. 40-3392
License No. SUB-526

RE: REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION REPORT 40-3392/2015-008 AND NOTICE OF VIOLATION

This letter is Honeywell Metropolis Works' response to the NRC Inspection Report 40-3392/2015-008 and Notice of Violation dated November 16, 2015.

During NRC inspections conducted on August 2-14, 2015, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

License Condition 18 of NRC License No. SUB-526, Amendment No. 11, states, in part, that the licensee shall conduct authorized activities at the Honeywell Metropolis Works Facility in accordance with the statements, representations and conditions in the license application dated May 12, 2006, as supplemented by letters dated March 20, 2007, May 12, 2008, July 12, 2010, and February 15, 2011.

Section 2.6.1 of the license application requires the licensee to establish a process to identify those process operations that require procedural guidance to ensure proper execution and require that these process operations be conducted in accordance with approved procedures.

Step 6.4 of Licensee procedure MTW-SAF-LS-0007, Line Breaking/Equipment Opening, requires, in part, personnel ensure hazards are controlled if a system is to be left unattended after it is opened. Furthermore, it requires that where line breaking is followed by a period of down time, such as the replacement of equipment, properly cap the breaks in the system with blind flanges for the duration of the out-of-service period.

Contrary to the above, on July 31, 2015, the No.4 Low Boiler Condenser (LBC) was left unattended after it was opened, and hazards were not properly controlled. Specifically, the breaking on the No.4 LBC was followed by a period of down time, and the blind flanges used to cap the breaks in the system were not properly secured. This provided a release pathway for uranium hexafluoride and contributed to the event on August 1, 2015.

IEU7
- RGM II

This is a Severity Level IV violation. (Section 6.2)

Reason for the Violation:

The Root Cause Analysis, initiated on August 2, 2015, identified the following reasons for the violation:

Immediate Causes:

- Leaking PP-6 Inboard Valve on No 4 LBC – At the time the PP-6 header was charged to 45 psig, the PP-6 inboard valve was closed and apparently leaked UF₆ through to the No 4 LBC. Post-incident inspection of the valve showed a considerable amount of uranyl fluoride (UO₂F₂) and vanadium oxy-trifluoride (VOF₃) build-up on the valve preventing it from seating properly.
- Leaking Air-drying Adapter Valve Used on No 4 LBC – Post-incident inspection revealed that the Apollo ball valve on the PP-4 vessel-side blind flange air-drying adapter could hold pressure if oriented exactly in the closed position. However, the nut that connected the handle to the stem was loose, and the valve could “free-wheel” past the stop points. Slightly over-rotating the handle would open the valve.
- Leaking Flanges on Reinstalled Blinds on No 4 LBC – Post-incident inspection revealed that both blind flanges that were reattached to the vessel, the PP-4 and the PP-9, and the blind flange on PP-4 process side exhibited signs of leaking. This is likely due to only being “four-bolted” and snug tight, as opposed to being eight-bolted and torque tight. The flange connections could not withstand a 45 psig charge to the PP-6 line and No 4 LBC.

Primary Root Causes:

- Inadequate Vacuum on PP-6 – The PP-6 header on the 6th Floor in Distillation is the primary means to evacuate the low-boiler condensers. It has two vacuum sources, the A Side (to the “A” cold traps) and the B Side (to the “B” cold traps). Distillation had been having vacuum problems on the PP-6 header for the last several months, resulting in the header finally becoming plugged on both the A Side and the B Side. After removing the restriction on the A Side Distillation operators performed a test on the line on 7/31/2015, right before the No 4 LBC return-to-service, and it seemed to have adequate vacuum from the A Side, but it may not have had adequate capacity. The next day, cracking open the PP-6 valve on No 2 LBC overwhelmed the PP-6 line, allowing the line to charge up to 45 psig initially.
- Line Breaking Activities Were Left Incomplete – The UF₆ line break flanges were left “four-bolted” on Friday afternoon, 7/31/2015. The job was left in a sort of “holding pattern” pending establishing better vacuum on the PP-4 and PP-9 lines. There were no follow-up inspections by Operations or Maintenance on whether the “four-bolted” flanges had been fully bolted and torqued.

- Lack of Recognition by Operations That No 4 LBC Was Not in a Safe Configuration – Prior to cracking the PP-6 inboard valve on the No 2 LBC, someone in Operations should have questioned whether the No 4 LBC job had been completed.

Contributing Cause:

- Operations Distrust of Pressure Indicators/Gauges on Low Boiler Condenser Lines – There was a general distrust by the operators of the pressure indicators and gauges on the 6th Floor Distillation. In particular, for the No 4 LBC, the gauge and a pressure indicator on the DCS read different values, making the operator not sure which one to believe. Also, the pressure indicator on the No 2 LBC has been stuck at constant high reading for several weeks.

Management System Causes:

- Lack of Communication between Operations and Maintenance – Normally, there is an Operations/Maintenance meeting held at 6:30pm to give updates for on-going or upcoming maintenance jobs. This meeting was cancelled by the Shift Superintendent. As a result, communication to Operations supervision was not made that the UF₆ flanges on the No 4 LBC still needed to be bolted and torqued.
- “Four-bolt” Practice by Maintenance Not Standardized – For this particular job, the mechanics “four-bolted” all the flanges, then performed the individual line breaks and reinstallations, and then inserted four bolts, snug tight. Being a departure from the way UF₆ line break flanges were performed in the past, this process is not a safe practice.

Corrective Steps that Have Been Taken and the Results Achieved:

The Root Cause Investigation of the August 1, 2015, incident was completed on 8/14/2015. The Incident Investigation Report was presented to the Management Review Committee on 8/17/2015. The following actions recommended by the Incident Investigation have been taken and the results achieved:

1. The cross-functional Operations/Maintenance meetings were documented via Operations shift reports and Maintenance eLog. Completed on 9/29/2015.
2. The line breaking procedure MTW-SAF-LS-0007 was modified to include information related to secure line openings. This revision eliminates the “four –bolt” practice. The procedure adequately covers the starting and stopping of line breaks and establishes standards for installed/reinstalled blinds. The workforce training was complete and the procedure was made effective on 8/24/2015.
3. Ensured that Maintenance work instructions align with the Operations in-hand procedure for performing line breaks on the LBC systems. Completed 11/16/2015.
4. Fluorination and Distillation areas were surveyed for additional “four-bolt” flanges with no findings. Completed on 8/19/2015.

5. PP-6 line (both A and B sides) was washed, dried, and reassembled. Completed on 8/26/2015.
6. The inboard and outboard PP-6 valves on No.4 LBC were removed and inspected. The inboard PP-6 valve was replaced. Completed on 9/15/2015.
7. Non-functioning pressure indicators in the LBC system were replaced on 9/10/2015.
8. Standard blind flange adapters suitable for UF₆ service on LBC were developed by 9/29/2015.
9. Checklist MTW-CHK-DIS-0710B was updated to include identification of the LBC, acceptance criteria for returning a LBC to service by the operator, supervisor's signature for concurrence, a subject matter expert's review, and retention for one year. Completed on 9/21/2015.
10. Established practice of post job briefings following UF₆ line breaks. Completed on 12/7/2015.
11. Updated Life Safety procedure to include practice of issuing work permits between Operations and Maintenance in the field, not in an office. Completed on 12/7/2015.

Corrective Steps that Will Be Taken to Avoid Further Violations:

- Install valve handle on soft-seat valves to prevent valve wrench use. Install sign on soft-seat valve assemblies indicating "Do not wrench." Target date: 7/1/2016.
- Verify if training covers not using a wrench on soft-seat valves. Include "why" this is not done. Target date: 7/1/2016.
- Establish inspection frequency for LBC valves to check for fouling. Target date: 12/1/2016.
- Install multiple measured purges as a check for replenishable vacuum on the PP-6, if not, line break is not allowed. Target date: 10/1/2016.
- Based on results of measured purges, establish or increase PM frequency on PP-6 line. Target date: 12/1/2016.
- Develop and document instructions/training for Tier 1 (frontline supervisor/worker plant status meetings) to reinforce practice for tagging non-functioning instrumentation. Target date: 7/1/2016.
- Review adequacy of heat tracing and insulation on instrumentation around LBCs. Target date: 7/1/2016.
- Develop means to validate/escalate two conflicting pressure readings. Target date: 7/1/2016.

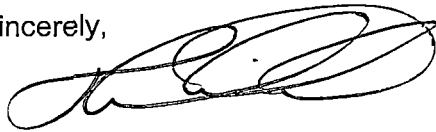
- Develop joint Operations and Maintenance shift turnover communication meeting. Target date: 4/1/2016.
- Update Shift Turnover procedure to include cross-functional Operations/Maintenance meetings documentation. Target date: 4/1/2016.

Date When Full Compliance Will Be Achieved:

Honeywell is currently in full compliance with License Condition 18 of NRC License No. SUB-526, Section 2.6.1 of the license application, and procedure MTW-SAF-LS-0007, Line Breaking/Equipment Opening, requirements.

If you have questions, need additional information, or wish to discuss this matter, please contact Mark Wolf, Nuclear Compliance Director, at (618) 309-5013.

Sincerely,



John Albritton
Plant Manager

cc: Regional Administrator
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