

W3F1-2022-0044

10 CFR 50.4

July 6, 2022

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Special Report SR-22-004-00
Radiation Monitor Inoperable Greater Than 7 Days

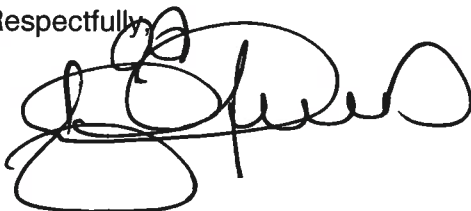
Waterford Steam Electric Station, Unit 3
NRC Docket No. 50-382
Renewed Facility Operating License No. NPF-38

Entergy Operations, Inc. (Entergy) is submitting Special Report SR-22-004-00 for Waterford Steam Electric Station, Unit 3 (Waterford 3). This Special Report is submitted as required by Waterford 3 Technical Specification (TS) 3.3.3.1, "Radiation Monitoring Instrumentation," which requires the minimum number of Effluent Accident Monitor channels shown in TS Table 3.3-6 to be operable. If the monitor is not restored to operable status within 7 days after the failure, a Special Report is required to be submitted in accordance with TS 6.9.2 within 14 days after the failure outlining the actions taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

This letter contains no new commitments.

Should you have any questions concerning this issue, please contact John D. Lewis, Manager, Regulatory Assurance, at 504-739-6028.

Respectfully,



John D. Lewis

JDL/cdm

Enclosure: Waterford 3 Special Report SR-2022-004-00

cc: NRC Region IV Regional Administrator
NRC Senior Resident Inspector – Waterford Steam Electric Station, Unit 3
NRC Project Manager – Waterford Steam Electric Station, Unit 3
Louisiana Department of Environmental Quality

Enclosure

W3F1-2022-0044

Special Report SR-2022-004-00

SPECIAL REPORT

SR-22-004-00

Radiation Monitor Inoperable Greater Than 7 Days

SUMMARY

The Waterford Steam Electric Station, Unit 3 (Waterford 3) Condenser Vacuum Pump wide range gas monitor (WRGM) was inoperable on June 22, 2022. Operability was not restored within the required 7-day period as specified in Waterford 3 Technical Specification (TS) 3.3.3.1, "Radiation Monitoring Instrumentation," Table 3.3-6, due to the condition affecting the operability of the Condenser Vacuum Pump WRGM not being initially recognized. This Special Report is submitted to the Nuclear Regulatory Commission (NRC) in accordance with TS 6.9.2, "Special Reports," and 10 CFR 50.4, "Written communications," within 14 days after the failure outlining the actions taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status, because the WRGM was not restored to operable status within 7 days after the failure.

NARRATIVE

The Condenser Vacuum Pump WRGM monitors condenser vacuum pump discharge continuously to detect steam generator tube leakage and to quantify the radioactivity release rate. On June 22, 2022, Condition Report CR-WF3-2022-04865 was initiated describing the condition that the Condenser Vacuum Pump WRGM was indicating a pressure below 0 inches of Mercury (Hg) on the condenser vacuum pump radiation monitor dryer outlet pressure indicator. There should have been a positive pressure indication at the point in the sample flow path where the dryer output pressure indicator is located. A negative pressure is evidence of ambient air being drawn into the sample line, which would dilute the radioactivity sensed by the radiation monitor and result in lower than actual radiation level readings. The purpose of the Condenser Vacuum Pump WRGM dryer is to remove moisture from the sample flow. A failure to dry the sample could result in moisture buildup in the WRGM charcoal filters, and becoming clogged, thereby reducing the sample flow rate. A reduction in the sample flow rate will alarm in the Control Room.

The condition reported on June 22, 2022 in Condition Report CR-WF3-2022-04865 was investigated and it was verified that the Condenser Vacuum Pump WRGM sample flow was 1.7 standard cubic feet per minute (scfm), which was satisfactory per the TS Surveillance Logs. As documented in the operability evaluation for the Condition Report, Operations concluded that based on the potential causes of the reported condition, subsequent observations, and that there was adequate sample flow, the Condenser Vacuum Pump WRGM remained capable of providing monitoring of the condenser vacuum pump discharge radiation levels as required, and the WRGM was classified as operable.

Later, on June 28, 2022, the system engineer initiated Condition Report CR-WF3-2022-05005 suggesting that the operability evaluation for Condition Report CR-WF3-2022-04865 be re-evaluated. The system engineer asserted that the condenser vacuum pump

diaphragm may be ruptured and the Condenser Vacuum Pump WRGM sample was being diluted. There was a low likelihood of detecting a diluted sample trend because of the very low level of radiation available for detection. Considering the additional information provided by the system engineer, Operations declared the Condenser Vacuum Pump WRGM inoperable on June 28, 2022 based on its operability not being previously analyzed with an actual vacuum at the radiation monitor dryer outlet. In addition, the actual date of discovery of the failure of the Condenser Vacuum Pump WRGM was determined to be June 22, 2022, because this condition was first identified in Condition Report CR-WF3-2022-04865.

Table 3.3-6 of TS 3.3.3.1 requires that the Condenser Vacuum Pump WRGM be operable in Modes 1 through 4. Action 27 of TS Table 3.3-6 requires that, with the number of operable channels less than required by the minimum channels operable requirement, either restore the inoperable channel(s) to operable status within 72 hours, or initiate the preplanned alternate method of monitoring the appropriate parameter(s), and if the monitor is not restored to operable status within 7 days after the failure, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days after the failure outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

Waterford 3 Administrative Controls TS 6.9.2, "Special Reports," states:

Special reports shall be submitted in accordance with 10 CFR 50.4 within the time period specified for each report.

At 2100 Central Daylight Time (CDT) on June 28, 2022, Waterford 3 Operations declared the Condenser Vacuum Pump WRGM inoperable due to indicating below 0 inches of Hg on the condenser vacuum pump radiation monitor dryer outlet pressure indicator, and that this condition had not been previously analyzed to provide reasonable assurance that the Condenser Vacuum Pump WRGM could perform its specified function. The required actions were taken in accordance with TS 3.3.3.1, Table 3.3-6, and an entry in the Equipment Out of Service log was initiated to track the condition. The Chemistry Department established the pre-planned alternate method of monitoring as required.

The condenser vacuum pump was replaced and a functional test of the Condenser Vacuum Pump WRGM was completed on June 30, 2022. The condenser vacuum pump radiation monitor dryer outlet pressure reading at the indicator was verified on July 1, 2022 to be 7 pounds per square inch gauge (psig), which was satisfactory. The Condenser Vacuum WRGM was declared operable and restored to service at 1235 CDT on July 1, 2022. As described above, the original date of discovery of the failure of the Condenser Vacuum Pump WRGM, as identified in Condition Report CR-WF3-2022-04865, was on June 22, 2022. It was not recognized at the time that Condenser Vacuum Pump WRGM was inoperable because an actual vacuum at the radiation monitor dryer outlet had not been previously analyzed to provide reasonable assurance that the Condenser Vacuum Pump WRGM could perform its specified function. Consequently, the restoration of the Condenser Vacuum Pump WRGM to operable status on July 1, 2022 was not within 7 days of the failure and this Special Report is being submitted to the NRC pursuant to TS 6.9.2 and 10 CFR 50.4 within 14 days after the failure.