



L-2013-215  
10 CFR 50.36

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555

Re: St. Lucie Unit 2  
Docket No. 50-389  
Date of Event: June 4, 2013  
Technical Specification Special Report  
Failure of Channel "A" Reactor Vessel Level Monitoring System (RVLMS)

The attached special report is being submitted pursuant to the requirements of St. Lucie Unit 2 Technical Specification 3.3.3.6, Action d.2, Table 3.3-10, and Technical Specification 6.9.2. This report provides notification that one channel of the Reactor Vessel Level Monitoring System (RVLMS) is out of service for greater than 30 days. This report includes the cause and what the corrective actions will be to restore the inoperative channel.

Please contact us if there any questions on this information.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Katzman'.

Eric S. Katzman  
Licensing Manager  
St. Lucie Plant

ESK/dlc

ADD  
NRK

## I. TITLE

Failure of the Unit # 2 Channel "A" Reactor Vessel Level Monitoring System (RVLMS) probe.

## II. EVENT DESCRIPTION

On June 4, 2013, St. Lucie Unit # 2 was in Mode 1 at 100% power. Operations reported that the RVLMS "A" Channel, Sensor #1 Heated Junction Thermocouple (HJTC) failed due to inconsistent readings. The degraded condition of Sensor # 1 on the "A" Channel forced the site into T.S. 3.3.3.6. (See Below)

Each RVLMS channel consists of a probe that uses eight heated junction thermocouple sensors and reactor vessel level is calculated from the HJTC temperature outputs at the eight sensor levels in the reactor vessel. The requirement of T.S. 3.3.3.6 requires a minimum of four out of the eight sensors per channel operable for Modes 1, 2 and 3. Four sensors were out of service, when the fifth HJTC sensor failed on June 4<sup>th</sup> 2013.

## III. CAUSE OF THE EVENT

The cause of the failed HJTC sensors was determined to be poor connections on the reactor vessel head area. The cause was identified by the performance of Time Domain Testing and CHAR testing.

## IV. ACTIONS TAKEN

The repairs efforts included trying to electrically weld the connections by electrical "Zapping". This method has proven effective at Turkey Point Station but failed to provide the results needed to place the RVLMS system in service and exit Tech. Spec. 3.3.3.6 Table 3.3-10.

Long Term:

Troubleshooting and repair of the RVLMS cables and connections are scheduled to be performed in the next Unit # 2 refueling outage. (SL2-21)

## V. SCHEDULE FOR RESTORING SYSTEM

The RVLMS "A" Channel HJTC will be restored after Post Maintenance Testing performed at the end of the refueling SL2-21 outage.

Attachment # 1 Tech. Spec.

*Technical Specification 3.3.3.6*

*The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.*

**APPLICABILITY:** MODES 1, 2 and 3.

**ACTION:**

a. \* With the number of OPERABLE accident monitoring channels less than the Required Number of Channels shown in Table 3.3-10, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT STANDBY in 6 hours and HOT SHUTDOWN in 12 hours.

b. \* With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirements of Table 3.3-10, either restore the inoperable channels to OPERABLE status within 48 hours or be in HOT STANDBY in 6 hours and HOT SHUTDOWN in 12 hours.

c. \*\* With the number of OPERABLE Channels one less than the Total Number of Channels shown in Table 3.3-10, either restore the inoperable channel to OPERABLE status within 7 days if repairs are feasible without shutting down or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

d. \*\* With the number of OPERABLE Channels less than the Minimum Channels OPERABLE requirements of Table 3.3-10, either restore the inoperable channel(s) to OPERABLE status within 48 hours if repairs are feasible without shutting down or:

1. Initiate an alternate method of monitoring the reactor vessel inventory;

And

2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status,

and

3. Restore the Channel to OPERABLE status at the next scheduled refueling.

e. The provisions of Specification 3.0.4 are not applicable.