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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/RENEWED LICENSE NO. DPR-23

TECHNICAL SPECIFICATIONS (TS) SECTION 5.6.6, POST ACCIDENT MONITORING (PAM) INSTRUMENTATION REPORT, 14-DAY REPORT FOR THE INOPERABILITY OF THE POWER RANGE NEUTRON FLUX CHANNEL

Ladies and Gentlemen:

Duke Energy Progress, Inc. hereby submits a report in accordance with H. B. Robinson Steam Electric Plant, Unit No. 2, Technical Specifications (TS) Section 3.3.3, Post Accident Monitoring Instrumentation, and TS 5.6.6, Post Accident Monitoring Instrumentation Report.

The report, which is provided as an attachment to this letter, is based on the inoperability of the Power Range Neutron Flux Channel.

The Power Range Neutron Flux Channel (N-51B) will be post maintenance tested and returned to OPERABLE status prior to restart from the next refueling outage, which is currently scheduled to begin on May, 9, 2015, or during the first outage of sufficient duration.

If you should have any questions concerning this matter, please contact Richard Hightower, Manager – Nuclear Regulatory Affairs at (843) 857-1329.

Sincerely,

Sharon W. Peavyhouse
Director – Nuclear Organization Effectiveness

Attachment

SWP/cc

cc: Mr. V. M. McCree, NRC, Region II
Ms. Martha Barillas, NRC, NRC Project Manager, NRR
NRC Resident Inspector

A001
NRR

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
TECHNICAL SPECIFICATIONS SECTION 5.6.6
POST ACCIDENT MONITORING INSTRUMENTATION 14-DAY
REPORT FOR THE POWER RANGE NEUTRON FLUX CHANNEL

Event Description

On January 19, 2015, Power Range Neutron Flux Channel (N-51B) was noted to have decreased to 53% Power indication. During maintenance activities the decrease in power indication was initially attributed to a degraded pre-amplifier. Multiple pre-amplifier replacements were performed with a subsequent signal decrease following maintenance.

It is believed that the pre-amplifier degradations are being caused by an intermittent connection issue in the field cables; however, a degradation of the detector has not been completely ruled out. Because the field connections are at the containment electrical penetrations in close proximity with other cables, it is preferred that the intermittent connection repair be scheduled to be completed during the Refueling Outage currently scheduled to start on May 09, 2015. If a detector replacement is required then it can only be performed during an outage since the detector is in the vicinity of the reactor vessel.

The actions for Technical Specifications (TS) Section 3.3.3, Post Accident Monitoring (PAM) Instrumentation, Table 3.3.3-1, Function 1, requires an inoperable Power Range Neutron Flux channel to be restored to OPERABLE status within 30 days. If this indication is not restored within 30 days, a report in accordance with TS 5.6.6 is required within the following 14 days. TS 5.6.6 states that the report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the channel to operable status.

Preplanned Alternate Method of Monitoring

Standing Instruction 15-001, effective 02/19/2015 for N-51B, Power Range Neutron Flux Channel, outlines the alternate method of monitoring excore neutron flux level until N-51B is returned to service:

Continuous monitoring capability:

- Excore Instrumentation power range channels N-41, N-42, N-43, N-44 are available on the Reactor Turbine Gauge Board (RTGB) as well as the Emergency Response Facility Information System (ERFIS)

Event Based Monitoring Capability (Post Accident Monitoring):

- Power Range Neutron Flux N-52B
- Source Range Neutron Flux N-51A, and N-52A

These indications are trended on the RTGB, and are triggered by an event by the control room operators. Annunciators are also available to alert the Control Room to adverse-reactor power or source range conditions. Should any of these indications fail, a work order will be initiated and worked on an emergent basis to ensure that the back-up methods for monitoring remain in place.

The TS Bases for TS 3.3.3, as it pertains to the power range and source range neutron flux channels, states:

“Power Range and Source Range Neutron Flux indication is provided to verify reactor shutdown. The two ranges are necessary to cover the full range of flux that may occur post-accident.

Neutron flux is used for accident diagnosis, verification of subcriticality, and diagnosis of positive reactivity insertion.”

As stated in the TS Bases for TS 3.3.3, the Power Range Neutron Flux channels provide a verification indication. This monitoring capability does not directly impact safety systems or the ability to mitigate the consequences of an accident.

Cause of the Inoperability

This event has been entered into the H. B. Robinson Steam Electric Plant, Unit No. 2, Corrective Action Program. The cause of the N-51B inoperability was attributed to pre-amplifier degradation, which is believed to be caused by an intermittent field cable connection or detector degradation. Troubleshooting is ongoing in an effort to better determine the cause of the inoperability as well as alternate actions to restore the operability of the Power Range Neutron Flux indication.

Plans and Schedule for Restoring the Channel

The N-51B channel intermittent connection may require repairs in close proximity to the electrical penetrations or a detector replacement, hence, it is preferable that this deficiency is resolved while the unit is offline for refueling. Therefore, N-51B will be repaired and tested prior to restart from the next refueling outage, which is currently scheduled to begin on May 09, 2015, or during the first outage of sufficient duration.