CP&L
A Progress Energy Company

James Scarola
Vice President
Harris Nuclear Plant

SERIAL: HNP-01-154
10CFR2.201

DEC 1 0 2001

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REVISED REPLY TO NOTICE OF VIOLATION (NRC INSPECTION REPORT NOS. 50-400/00-03, 50-400/00-10)

Dear Sir or Madam:

By letter dated March 2, 2001, Carolina Power & Light Company (CP&L) responded to the Notice of Violation (NOV) described in Enclosure 1 of your letter dated February 2, 2001 concerning operability of the 'C' Charging/Safety Injection Pump (CSIP) at the Harris Nuclear Plant (HNP). Two potential root causes were identified: partial loss of lubricant flow and improper fill and vent. Subsequent to our previous response, an additional procedure change has been implemented to further enhance the fill and vent process for the CSIPs, and the planned design modification to address loss of lubricant flow has been revised.

Included in HNP's March 2, 2001 letter under "Corrective Steps That Have Been/Will Be Taken to Avoid Further Violations" was the following action:

4. Implement a design modification to install temperature and proximity probes on the CSIPs which will allow for improved monitoring and failure detection of the CSIPs.

HNP's initial plan to implement this corrective action was to install temperature probes on the CSIP thrust bearing as the primary means of detecting bearing failure, and proximity probes as a secondary indication. Further investigation revealed that enhanced detection of bearing failure could be accomplished by increasing the scope of temperature instrumentation to include additional bearings, which negates the need for proximity probes. Therefore, CP&L's reply to the NOV is being revised to remove the corrective action to install proximity probes.

The revised reply to the NOV is attached. It reflects the change to the design modification for improved monitoring and failure detection of the CSIPs, and also the completion of the maintenance procedure revision associated with CSIP reassembly.

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IE01

Questions regarding this matter may be referred to Mr. J. Caves at (919) 362-3137.

Sincerely,

James Scarola

ONW/onw

Attachment

c: Mr. J. B. Brady, NRC Sr. Resident Inspector
Mr. J. M. Goshen, NRC-NRR Project Manager
Mr. B. A. Mallett, NRC Regional Administrator, Region II (Acting)

REVISED REPLY TO NOTICE OF VIOLATION
NRC INSPECTION REPORT NOS. 50-400/00-03, 50-400/00-10

Reported Violation:

Technical Specification Limiting Condition for Operation (LCO) 3.5.2 requires that two independent Emergency Core Cooling System (ECCS) subsystems shall be operable with each subsystem comprised of one operable charging/safety injection pump (CSIP), one operable RHR heat exchanger, one operable RHR pump, and an operable flow path capable of taking suction from the RWST on a safety injection signal and, upon being manually aligned, transferring suction to the containment sump during the recirculation phase of operation.

LCO action 3.5.2.a requires that with one ECCS subsystem inoperable, restore the inoperable subsystem to operable status within 72 hours or be in at least hot standby within the next six hours and in hot shutdown within the following 6 hours.

Contrary to the above, from May 15 to June 4, 1999, November 13 to December 18, 1999, and from January 3 to January 7, 2000, the licensee failed to have an operable charging/safety injection pump in each ECCS subsystem and failed to comply with LCO action statement (a), in that the C CSIP was inoperable due to a failed outboard thrust bearing and action was not taken within 72 hours to restore the inoperable charging/safety injection pump to service or to shutdown to hot standby.

This violation is associated with a White SDP finding.

Reason for the Violation:

The "C" charging/safety injection pump (CSIP) had performed successfully during normal operation and surveillance testing. Oil samples were taken which indicated an increased particulate count. Harris Nuclear Plant (HNP) did not pursue additional analysis for substantial changes in particulate count. In addition, the change in particulate count could indicate any number of abnormal conditions, including normal component wear. Normal surveillance testing, including vibration data, did not detect the failure. Increase in axial vibration measurements indicative of bearing damage was not observed because of the air space between the bearing housing, where the measurement is taken, and the bearings at the flow conditions required by the in-service testing program. Therefore, HNP personnel did not recognize that the "C" CSIP was inoperable during the time periods stated above.

The reason for the "C" CSIP inoperability is discussed in HNP Licensee Event Report (LER) 2000-007-00, dated October 4, 2000. Two potential root causes for the "C" CSIP inoperability were determined: partial loss of lubricant flow to the outboard thrust bearing and improper fill and vent of the "C" CSIP. Of the two root causes, loss of lubricant is considered the more probable.

Corrective Steps Taken and Results Achieved:

The following corrective actions have been completed:

1. Reinforced expectations to Operations personnel that describe the consequences of an improper fill and vent with regard to the CSIP.
2. Established oil analysis criteria for components that would result in further analysis for increased particle count and actions as appropriate.

3. Reinforced expectations to individuals involved for timely disposition of abnormal indications.
4. Increased CSIP lube oil sampling frequency to a quarterly interval.

Corrective Steps That Have Been/Will Be Taken to Avoid Further Violations:

The following corrective actions to prevent recurrence have been completed:

1. Repaired the "C" CSIP with vendor support using the vendor manual in conjunction with plant procedures.
2. Reviewed the system configuration for venting, and revised the operating procedure (OP-107) to specify the minimum volume of water to be collected to ensure proper fill and vent.
3. Revised the maintenance procedure associated with CSIP reassembly (CM-M0019) with lessons learned from vendor guidance. Specifically, to identify critical activities necessary to ensure the lube oil system will function as expected and to include the use of the appropriate verifications of these activities.

The following additional corrective action will be taken to prevent recurrence:

4. Implement a design modification to install temperature probes on the CSIPs which will allow for improved monitoring and failure detection of the CSIPs.

Date When Full Compliance Was Achieved:

Full compliance was achieved on January 7, 2000, when "B" CSIP was declared operable replacing "C" CSIP.