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SUBJECT: Special rept:on 970921,discovered that several heated juction thermocouple inputs to Channel B of RVLM sys deviating from normal temps.RVLM sys will be restored to operability before end of next Unit 2 refueling outage.

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CATEGORY 1 DOCUMENT

Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

October 17, 1997

L-97-264
10 CFR 50.4
10 CFR 50.36

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

Re: St. Lucie Unit 2
Docket No. 50-389
Technical Specification Special Report
Date of Event: September 21, 1997
Failure of Channel B of the 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 c, and Technical Specification 6.9.2. This report provides notification that one channel of the Reactor Vessel Level Monitoring System (RVLMS) was out of service for greater than seven days. The report also addresses the plan for restoring the channel to service.

Should there be any questions on this information, please contact us.

Very truly yours,

J. Scarola for

J. A. Stall
Vice President
St. Lucie Plant

IE22

JAS/jwr

Attachment

cc: Luis A. Reyes, Regional Administrator, USNRC Region II
Senior Resident Inspector, USNRC, St. Lucie Plant

SPECIAL REPORT

I. TITLE

Failure of Channel B of the Reactor Vessel Level Monitoring System (RVLMS)

II. EVENT DESCRIPTION

On 9/21/97, with St. Lucie Unit 2 at 100% power, plant operators discovered that several Heated Junction Thermocouple (HJTC) inputs to Channel B of the RVLMS were deviating from their normal temperatures. A work order was written and maintenance technicians investigated the condition. The investigation revealed low resistance to ground on multiple cable inputs from the HJTC probe. Resistance measurements from the HJTC heaters to ground were found to be less than 1000 ohms, and resistance measurements from the thermocouples to ground were found to be less than 700 ohms. The expected resistance, in both cases, was several orders of magnitude greater than measured. Additional testing indicated that the RVLMS cabinet electronics, Sub-Cooling Margin Monitor and Core Exit Thermocouples were operable. Further assessment of the probe assembly and cable connections inside containment is precluded due to high radiation in the area of the probe and cable connections.

III. CAUSE OF THE EVENT

Because access to the probe and cable connections inside containment is precluded during power operations, the cause of the inoperability has not been determined with certainty. The cause is believed to be either a) structural failure of the HJTC probe causing shorting, or b) a connector failure in the signal path between the probe and the RVLMS electronic cabinet.

IV. ACTIONS TAKEN

A. The HJTC temperature deviations were investigated by maintenance technicians.

B. The entire HJTC input to Channel B of the RVLMS was declared out of service. (Technical Specification 3.3.3.6 allows continued operation with one channel of the RVLMS inoperable.)

C. A condition report (#97-1790) was issued to document the failure, assess root cause and determine corrective actions.

V. SCHEDULE FOR RESTORING SYSTEM

The Channel B HJTC inputs to the RVLMS will be restored to operability before the end of the next Unit 2 refueling outage (SL2-11), which is currently scheduled for the Fall of 1998. After completion of repairs, root cause will be determined and generic concerns will be addressed.

Also, FPL is reviewing industry experience on alternate means to monitor vessel level in case the second channel of RVLMS becomes inoperable.