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Records Management Branch (Document Control Desk)

SUBJECT: Responds to NRC 990301 ltr re violations noted in insp rept 50-400/98-11.Corrective actions:PTSAR for 981023,RT was corrected,required reviews completed & approval obtained on 990219.

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NOTES:Application for permit renewal filed. 05000400

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CP&L

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James Scarola
Vice President
Harris Nuclear Plant

MAR 3 1 1999

SERIAL: HNP-99-051

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
REPLY TO NOTICE OF VIOLATION (NRC INSPECTION REPORT NO. 50-400/98-11)

Dear Sir or Madam:

Attached is Carolina Power & Light Company's reply to the Notice of Violation described in Enclosure 1 of your letter dated March 1, 1999.

Questions regarding this matter may be referred to Mr. J. H. Eads at (919) 362-2646.

Sincerely,

James Scarola

For

MGW

Attachment:

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)
Mr. Rich Laufer (NRR Project Manager, HNP)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)

REPLY TO NOTICE OF VIOLATION
NRC INSPECTION REPORT NO. 50-400/98-11

Reported Violation A:
Technical Specification 6.8.1 requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in appendix A of Regulatory Guide 1.33, Revision 2, 1978. That appendix specifically lists a procedure for "Authorities and Responsibilities for Safe Operation and Shutdown."

Regulatory Guide 1.33, Revision 2, 1978, specifically endorses ANSI N18.7-1972/ANS-3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants." In section 5.2.1, that standard states, in part, that the responsibilities and authorities of plant operating personnel include "the responsibility to determine the circumstances, analyze the cause, and determine that operations can proceed safely before the reactor is returned to power after a trip."

Procedure OMM-004, "Post-trip/Safeguards Actuation Review," Revision 10, implements those requirements. Section 5.2 requires, in part, that the direct cause of the event be determined, that proper plant response be verified, and that the results be documented in the Post Trip/Safeguards Actuation Report. It further requires that the Post Trip/Safeguards Actuation Report be thoroughly reviewed to ensure that any indications of improper plant response are clearly documented.

1. Contrary to the above, as of November 20, 1998, the licensee had not verified proper plant response for the October 23, 1998, reactor trip, in that the Post Trip/Safeguards Actuation Report incorrectly indicated that the steam-dump valves had closed when reactor coolant system average temperature reached 544°F.

2. Contrary to the above, as of November 20, 1998, the Post Trip/Safeguards Actuation Report for the October 23, 1998, reactor trip had not been thoroughly reviewed, in that the required reviews failed to identify that numerous indications of plant response required to be included by procedure OMM-004, had not been included in the report.

This is a Severity Level IV violation (Supplement I).

Denial or Admission of Violation:
The violation is admitted.

Reason for the Violation:
As stated in example 1 above, there was an error in the Post Trip/Safeguards Actuation Report (PTSAR) for the October 23, 1998, reactor trip regarding the relationship between steam dumps and RCS temperature. The error occurred because the individual analyzing the data misinterpreted the post trip computer generated reports.

As stated in example 2 above, the PTSAR had not been thoroughly reviewed, in that the required reviews failed to identify the error mentioned in example 1 and the failure to meet other requirements of OMM-004 including the untimely completion of a follow up review. The

inadequate reviews occurred due to inadequate focus by involved personnel and station management..

Corrective Steps Taken and Results Achieved:
The PTSAR for the October 23, 1998, reactor trip was corrected, required reviews completed and approval obtained on February 19, 1999. The follow up review was completed on February 18, 1999.

The Plant General Manager has discussed the importance of complying with the requirements of OMM-004 with appropriate operations personnel. Also, during an HNP Manager/Supervisor meeting held on March 11, 1999, the Plant General Manager counseled the management staff regarding his expectations for procedure compliance and attention to detail.

Corrective Steps That Will Be Taken to Avoid Further Violations:
A revision will be made to procedure OMM-004 to better focus Management's expectations for data collection, data analysis, and review. This revision will be completed by April 30, 1999.

Date When Full Compliance Was Achieved:
Full compliance was achieved on February 19, 1999, based on completion of corrections, required reviews and approvals and the follow up review of the PTSAR for the October 23, 1998 reactor trip.

Reported Violation B:
10 CFR 50, Appendix B Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings.

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The Quality Assurance Program Manual (NGGM-PM-0007) and procedure CAP-NGGC-0001, "Corrective Action Management," Revision 1 implement that requirement.

Procedure CAP-NGGC-001 requires a person who identifies an adverse condition to initiate a Condition Report. It also requires that a Condition Report (CR) which involves a significant change outside normal plant variances in a key plant parameter (including water levels) be classified as a "Significant Adverse Condition."

Contrary to the above:

1. As of November 18, 1998, the licensee had failed to properly classify as significant a condition where all valid reactor vessel water level indications were disabled while the reactor coolant system was in a reduced-inventory condition, and failed to determine the cause of the condition, in that the Condition Report that described the condition was classified as an Adverse Condition, and the associated evaluation failed to identify that the cause was an inadequate design.

2. As of January 22, 1999, the licensee had not initiated a Condition Report for an identified adverse condition, in that, after becoming aware that the Post Trip/Safeguards Actuation Report for the October 23, 1998, reactor trip and associated reviews were inadequate, the licensee did not initiate a Condition Report.

This is a repeat Severity Level IV violation (Supplement I).

Denial or Admission of Violation:
The violation is admitted.

Reason for the Violation:
This violation occurred due to ineffective communication and reinforcement of expectations regarding documentation of Adverse Conditions. In addition, there was inadequate monitoring of the Corrective Action Program (CAP) implementation by Harris Nuclear Plant (HNP) Management.

Specifically, the condition referenced in example 1 (CR 98-03025) did not receive an event classification by management or personnel more knowledgeable of the event to ensure the appropriate level of attention was applied. Additionally, the CR did not have sufficient detail in the event description to communicate that all valid reactor vessel water level indications were disabled while the reactor coolant system was in a reduced-inventory condition. Without consideration of this aspect of failure, this condition did not meet the significance criteria specified in the applicable procedure CAP-NGGC-0001. It is the expectation of HNP Management that a loss of all valid reactor vessel water level indications while the reactor coolant system was in a reduced-inventory condition would result in a documentation of that specific element to ensure proper evaluation of operability and reportability.

The condition referenced in example 2 meets the threshold of initiating a Condition Report in accordance with procedure CAP-NGGC-0001. The inadequacy of the Post Trip/Safeguards Actuation Report for the October 23, 1998, reactor trip and subsequent reviews was realized by HNP Management, but this realization failed to result in documentation in the form of a Condition Report. This failure to document the recognized Adverse Condition was due to inadequate performance monitoring of the Corrective Action Program implementation by HNP Management.

Corrective Steps Taken and Results Achieved:
The event referenced in example 1 (CR 98-03025) was re-classified as Significant Adverse. A Root Cause Investigation was performed and resulted in identification of inadequate design as the cause.

Condition Reports 98-03314 and 99-00414 were written to document the conditions referenced in example 2. The investigation for CR 98-03314 evaluated the inadequate performance of OMM-004 Post Trip/Safeguards Actuation Report. CR 99-00414 documents inadequate review and approval by HNP Management. Actions taken by that CR were completed on March 11, 1999, by the Plant General Manager by providing a presentation to Management/Supervision on the role of Management/Supervision related to the Corrective Action Program.

Additionally, Condition Report 98-03264 was written to document the HNP's failure to document adverse conditions in a timely manner. This CR was classified as Significant Adverse and a Root

Cause Investigation was performed. The following are significant corrective actions which have been completed as a result of the investigation:

1. Expectations were developed regarding timeliness, responsibility of documentation, monitoring and shift review of activities associated with Adverse Conditions with the focus of this guidance being to ensure documentation of events prior to the end of the shift by knowledgeable personnel when practical. These expectations were communicated via a site memorandum from the Plant General Manager.

2. Select membership of the station management team (including Plant General Manager and Section Heads) have initiated a periodic review of Condition Reports. This review is for the purpose of:
   - Gaining knowledge of plant activities necessitating the initiation of a Condition Report.
   - Ensuring that known problems have been appropriately captured within the condition reporting process.
   - Specifying or highlighting those CR's that warrant additional or a higher level of management involvement or follow through to ensure that the proper level of sensitivity is provided to the problem, it's analysis, strategy to correct and it's remediation.
   - Identifying those CR's which require immediate interim corrective actions to be devised and implemented while the detailed investigation is completed and corrective actions to prevent recurrence can be developed and implemented.
3. Established a periodic Unit Evaluator meeting for assignment and classification of condition reports, using a multi-disciplined team.
4. Reinforced the expectation for full compliance with the CAP procedures; this was performed by the Plant General Manager at an HNP Manager/Supervisor meeting on March 11, 1999.

Corrective Steps That Will Be Taken to Avoid Further Violations:
The corrective actions listed above are sufficient to avoid further violations.

Date When Full Compliance Was Achieved:
Full compliance was achieved on February 11, 1999.

Reported Violation C:
10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements are correctly translated into specifications, drawings, procedures, and instructions, and that design changes shall be subject to measures which provide for verifying or checking the adequacy of design.

EGR-NGGC-0005, "Engineering Service Requests," Revision 9, implements Criterion III, and requires, in part, that the Responsible Engineer provide testing requirements which verify that the modified system/component functions/performs as intended, the design change has been correctly implemented, and the revised design is correct.

Contrary to the above, as of December 8, 1998, Engineering Service Request (ESR) 94-00099, "RCS vacuum fill," Revision 10, had not translated applicable regulatory requirements that would provide instrumentation to adequately monitor and control reactor vessel water level into specifications, drawings, procedures, and instructions, and had not verified or checked the adequacy of the design, in that the design described in that ESR did not provide instrumentation that accurately monitored reactor vessel water level, testing to verify that design was not performed, and reviews of the design were not adequate to determine that the design was not correct.

This is a Severity Level IV violation (Supplement I).

Denial or Admission of Violation:

The violation is admitted.

Reason for the Violation:
The reason for the violation is personnel error on the part of the Responsible Engineer (RE) and inadequate independent reviews performed of the modification package due to the lack of diversity in the review process.

ESR 94-00099 provided a design which improperly located the reference tap connections on the vacuum fill cart manifold for the Reactor Coolant System (RCS) level instrumentation used during the vacuum fill process. The connection design configuration for the vacuum fill cart, hoses and adapter plate for the connection to the pressurizer, when placed in service, caused a local vacuum to be sensed by level instrumentation which effectively disabled all RCS level instrumentation. The current ESR process as described by procedure EGR-NGGC-0005, Revision 9 provides adequate guidance to qualified REs to ensure that applicable design inputs are identified, documented and evaluated. However, in this case, the RE failed to ensure that the design configuration met the requirements of Generic Letter 88-17, which requires two independent indications of RCS level or the requirements of 10 CFR 50 Appendix A, Criterion 13, as committed to in FSAR Section 3.1.9 which requires, in part, that instrumentation be provided to adequately monitor reactor vessel water level.

The RE did not perform an adequate plant/system design analysis or failure modes and effects evaluation. The differences between the HNP vacuum fill configuration and the South Texas and Wolf Creek configurations, from which the HNP modification was modeled were not properly evaluated to determine the effects on indicated RCS level. Having a proven vacuum fill design from Wolf Creek in hand, gave a comfort level to the RE and independent reviewers which minimized their perceived need to perform an in-depth review of possible failure modes. Consequently, the RE and independent reviewers did not identify the unanticipated interactions between the vacuum fill cart configuration and RCS level indication.

Neither the RE or independent reviewers recognized a practical approach to testing the overall system for possible effects. The RE did not specify design parameters to be tested and acceptance criteria. Therefore, no testing was performed to determine the effect of the configuration on RCS level indication prior to using the vacuum fill equipment. The lack of post modification testing or acceptance testing was not challenged by the independent reviewers. The absence of testing and acceptance criteria to verify the modified system performs as intended is not in compliance with EGR-NGGC-0005 section 9.4.7.

The RE for design of the Vacuum Fill modification also performed the mechanical engineering discipline review, Residual Heat Removal (RHR) plant system review and first safety review. The design verifier was the ESR initiator as well as the RCS plant system engineer reviewer and second safety reviewer. The initiator/design verifier also provided a copy of the Wolf Creek design, which was the primary input to the HNP design, to the RE. Although the reviews/involvement by the two individuals were procedurally acceptable, the diversity of the review process is believed to have been diminished. In this high risk first time evolution there was a lack of management oversight of the design and implementation process. The supervisor did not recognize the lack of reviewer independence.

Corrective Steps Taken and Results Achieved:
This event has been reviewed with the involved RE, involved reviewers and other engineering personnel involved in the design and review process for ESRs. This was accomplished through the Engineering Support Personnel (ESP) Training Program. The training discussion emphasized the following points:

- Consider possible effects of the design on instrumentation and other system components.
- Provide testing that adequately covers design parameters to validate assumptions.
- Emphasis must be placed on system testing following installation (post modification testing) in the ESR process. The testing must be looked at for complete system testing or individual component testing.
- Utilize industry design experience.
- The need to initiate a Condition Report to identify a deficiency of a design assumption.
- In potential high risks modifications, minimize situations where one ESR reviewer performs multiple reviews.
- Provide clear assumptions in the ESR design. Provide clear procedure and document changes in the ESR by either markups, separate descriptive lists, or write ups. These will define the impact of the design change and provide a document trail for design package reviewers and customers.

Engineering management's expectation that the design verifiers for ESRs maintain independence has been reemphasized to engineering supervision.

A review was performed of EGR-NGGC-0011 (Conduct of Engineering Products Review) to verify that the procedure provides for the necessary oversight of ESRs that are risk significant or involve high risk evolutions. This review concluded that EGR-NGGC-0011 does provide the necessary oversight of ESRs that are risk significant or involve high risk evolutions. It should be noted that EGR-NGGC-0011 was effective on January 5, 1998 and was not in affect at the time ESR 94-00099 was initially approved.

Corrective Steps That Will Be Taken to Avoid Further Violations:
Procedure EGR-NGGC-0005 will be revised to expand guidance regarding post modification testing to include that the RE consider mockup testing if implementation testing is not practical. This change will be completed by July 15, 1999.

Date When Full Compliance Was Achieved:
Full compliance was achieved on January 27, 1999, when the plant procedure (GP-001), which utilizes vacuum fill, was placed on hold pending resolution of the vacuum fill modification.