

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION.NBR:9212020009 DOC.DATE: 92/11/20 NOTARIZED: YES DOCKET #  
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261  
AUTH.NAME AUTHOR AFFILIATION  
WATSON,R.A. Carolina Power & Light Co.  
RECIP.NAME RECIPIENT AFFILIATION  
Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC ltr re violations noted in insp rept  
50-261/92-24 on 920808 to 920904. Corrective actions: Actions  
implemented to help ensure that future foreign matl entry  
problems will not occur.

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**Carolina Power & Light Company**

P. O. Box 1551 • Raleigh, N. C. 27602

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SERIAL: NLS-92-324

R. A. WATSON  
Senior Vice President  
Nuclear Generation

Director, Office of Enforcement  
United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

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

NRC INSPECTION REPORT NO. 50-261/92-24 - REPLY TO A NOTICE OF VIOLATION

Gentlemen:

Carolina Power & Light Company (CP&L) hereby provides this Reply to the Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$50,000 associated with NRC Inspection Report No. 50-261/92-24.

This violation involved a failure to ensure the implementation of foreign material exclusion requirements during modification activities associated with the Residual Heat Removal (RHR) System. Specifically, during Refueling Outage 14 (RFO14), while implementing Modification M-1087, "Residual Heat Removal (RHR) Minimum Flow Recirculation Line Modification," foreign material entered the RHR System. During various system testing and operating sequences that followed, this foreign material was subsequently deposited in the Safety Injection (SI) Pump "B" recirculation piping. This material ultimately resulted in SI Pump "B" being declared inoperable on July 8 and August 24, 1992 due to blockage of the pump's recirculation line flow orifice.

A reply to the Notice of Violation is provided within Enclosure 1. Please note that CP&L acknowledges the violation, and has accordingly enclosed a check in the amount of \$50,000 in payment of the Civil Penalty.

Although CP&L has elected not to protest the amount of the imposed Civil Penalty, we believe that further clarification is warranted regarding the mitigating factors discussed within your October 23, 1992 cover letter which transmitted the Notice of Violation. Our specific concerns relate to the characterization of actions which were associated with the "Identification" factor as described within 10 CFR Part 2, Appendix C, Section VI.B.2.(a). Although prior corrective actions taken during the July occurrence were believed to have eliminated the foreign material concern, site management was proactive following the August 22, 1992 unit shutdown by directing the performance of SI Pump surveillance testing on August 23, 1992. It is acknowledged that testing performed in response to NRC Resident Inspector concerns ultimately resulted in the identification of the remaining piece of

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foreign material which caused the inoperability of SI Pump "B" on August 23, 1992. However, the discovery of this singular piece of foreign material was only coincidentally related to the apparent trend in pump recirculation flow and, therefore, was not actually self-disclosing. In fact, as confirmed by subsequent recirculation flow tests, blockage occurred suddenly, with flow dropping from greater than 30 gpm to essentially zero gpm. There had been no observed trend of gradual recirculation flow reduction or incremental flow blockage. Additionally, the probability of detecting this singular piece of foreign material during performance of the August 23 test was no different than the probability of detection during the performance of numerous prior tests, since detection was dependent only upon the random movement of the material within the system.

Should you have any questions regarding this matter, please contact Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,



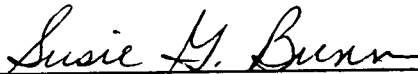
R. A. Watson

JSK/jbw

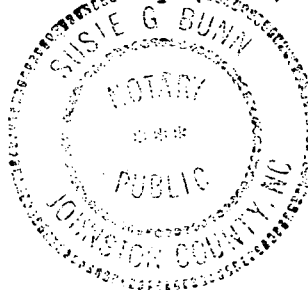
Enclosures

cc: Mr. S. D. Ebnetter  
Mr. L. W. Garner  
Ms. B. L. Mozafari  
Institute of Nuclear Power Operations

R. A. Watson, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.



Notary (Seal)



My commission expires:

4/20/97

Reply to a Notice of ViolationSeverity Level III Violation (RII-92-24-01)

During an NRC inspection conducted on August 8 to September 4, 1992, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (57 FR 5791, February 18, 1992), the NRC proposes to impose a Civil Penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violation and associated Civil Penalty are set forth below:

10 CFR 50, Appendix B, Criterion V requires 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.

Modification M-1087, "Residual Heat Removal (RHR) Minimum Flow Recirculation Line Modification," provides installation instructions for an activity affecting quality. Step 5.6.4.1.1 requires, in part, that Modification Implementation (MI) shall maintain Group A cleanliness in accordance with MMM-010, "Cleanliness and Flushing Requirements," and that Quality Control (QC) shall verify cleanliness in accordance with MMM-010.

Procedure MMM-010, Step 5.1, requires, in part, that tools and materials being used shall be monitored by personnel performing the work to ensure they do not inadvertently enter the system. Attachment 6.2, "Fluid System Cleaning Verification Record," documents the QC verification.

Contrary to the above, during the refueling outage of March 27 to June 24, 1992, activities affecting quality were not accomplished in accordance with prescribed instructions, procedures, or drawings appropriate to the circumstances during Modification M-1087. Specifically, although M-1087, Step 5.6.4.1.1 was signed off as complete by MI and QC, and Attachment 6.2 was signed off by QC, plastic material used as a welding purge block was not adequately monitored to preclude its inadvertent entry into the RHR system.

This is a Severity Level III violation (Supplement I).  
Civil Penalty - \$50,000

Reply

## 1. Admission or Denial of the Alleged Violation

Carolina Power & Light Company acknowledges the violation and has accordingly enclosed a check in the amount of \$50,000 in payment of the Civil Penalty.

## 2. Reasons for the Violation

The events and circumstances related to the introduction of the foreign material (Delrin-AF, hereinafter referred to as "plastic") have been previously discussed and well documented through meetings with the NRC on September 8 and 30, 1992, NRC Inspection Report No. 50-261/92-24 dated September 18, 1992, and the associated Notice of Violation and Proposed Imposition of Civil Penalty (EA 92-167) dated October 23, 1992. In summary, this plastic material is believed to have been introduced into the RHR System piping as a result of work activities associated with plant modification, M-1087, "RHR Pumps Minimum Flow Recirculation Lines," which was performed during RFO14. The plastic material had originally been fabricated into disks which were to serve as weld gas purge dams during the installation of RHR check valves, RHR-782 and RHR-783. This application had ultimately proven unsuccessful, and two of these disks were later used for protection of the check valve seats during grinding work. Although the mechanism for entry of this plastic into the RHR System could not be positively determined, it is believed that some portion of one or more of these disks entered the system due to breakage. During subsequent post-modification testing and system startup activities, this material was transported to and deposited in the area of the SI Pump "B" piping, and was discovered when blockage of the pump recirculation flow orifice occurred during routine surveillance testing.

A thorough review of this occurrence has been performed by site personnel under Adverse Condition Report (ACR) No. 92-249 and by an independent investigation team composed of CP&L corporate personnel. The details of these reviews are incorporated into this reply; however, two primary root causes of the foreign material entry into the RHR System have been identified: 1) inadequate control of the purge dam material and 2) failure to perform an adequate QC inspection following completion of the check valve installation performed under M-1087. These root causes are discussed in detail as follows:

- a) Review of this occurrence by site personnel under ACR No. 92-249 has established that there was inadequate sensitivity to foreign material exclusion. This was evidenced by the failure of craft personnel to maintain work area cleanliness and housekeeping in accordance with the requirements provided within Section 5.0 of MMM-010, "Cleanliness and Flushing Requirements." In addition, MMM-010 was found to be inadequate in that the instructions for use of work area daily entry log sheets were not well-defined for situations where a plant modification was controlling work activities. Further, plant modification, M-1087, did not invoke the use of MMM-010, and did not reference this procedure as an adequate method for cleanliness control. It was also identified that training for CP&L and Contractor personnel in the area of MMM-010 and foreign material exclusion had

not been adequate to facilitate proper sensitivity for and implementation of the requirements provided within MMM-010.

Additional factors associated with the inadequate control of purge dam material included the use and control of the material. The use of this material was not specified within the modification installation instructions, and was not evaluated for use by engineering or technical support personnel. Only the lead craft personnel were involved with and aware of the plans to utilize this material as a weld gas purge dam. A contributing factor in this area was the lack of procedural guidance for the use of non-soluble purge dam material.

In summary, the lack of adequate procedural guidance, combined with inappropriate actions and decisions by craft personnel, resulted in inadequate control of the purge dam material and its introduction into the RHR piping.

- b) The second causal factor for this occurrence was the failure to perform an adequate QC inspection following completion of the check valve installation performed under M-1087. Due to the configuration of the RHR piping and the newly installed check valves, the plastic debris fell into an area that was generally inaccessible and where this foreign material was not within the line of sight. Although a camera was utilized for the QC inspection, this camera was not lowered to the horizontal run of piping where the material is believed to have fallen.

Overall, the failure of the QC inspection to identify the presence of the foreign material has been attributed to inadequate procedural guidance. The inspection was performed in accordance with the guidance provided within MMM-010, however, this procedure did not provide adequate instructions for the performance of inspections which involved inaccessible areas. Therefore, although the QC inspection was performed in accordance with the guidance provided within MMM-010, this inspection was inadequate in that it did not identify the presence of the plastic debris.

### 3. The Corrective Steps That Have Been Taken and the Results Achieved

A number of action were promptly implemented to help ensure that future foreign material entry problems would not occur. These actions are described below, and were effective in preventing the entry of foreign material during extensive system flushing and inspection activities which occurred in August and September, 1992, following the identification of the remaining piece of plastic in the SI Pump "B" recirculation flow orifice.

Following the first identification of foreign material in the SI Pump "B" recirculation flow orifice in July, 1992, it was recognized that the Corporate Welding Manual did not contain proper instructions for the use of non-soluble weld gas purge dams. In response to this finding, Corporate Welding Manual, Section NW-06, step 4.3.3, "Purging Gas," was revised to include direction for the installation, removal, and documentation of non-soluble purge dams. This change includes a requirement for non-soluble purge dams to be logged in and out of the affected piping on the Weld Data

Report. These changes were accomplished by Revision 4 to the Corporate Welding Manual which was completed on July 22, 1992.

Following the second identification of foreign material in the SI Pump "B" recirculation flow orifice on August 25, 1992, an extensive recovery effort was initiated which included the SI, RHR, and Containment Spray Systems. This recovery effort included visual inspection of certain piping runs, high velocity flushing of piping and pumps using a temporarily installed strainer, the installation of a permanent recirculation line strainer, and a technical evaluation of piping and components that could not feasibly be inspected or flushed. During this effort, the requirements of PLP-047, "Foreign Material Exclusion Area Program," were implemented. This procedure provided an effective mechanism for preventing the entry of foreign materials into work areas surrounding open systems.

In order to address the deficiencies described within the Reasons for the Violation above, a number of enhancements have been made to MMM-010. On July 17, 1992, Revision 8 to MMM-010 was made effective which was intended to clarify the intent of instructions provided within Section 5.0, "Work Area Criteria." Further, on September 30, 1992, Revision 9 was made effective which addressed a number of the identified deficiencies. This revision included clarification of the use of daily entry logs when a modification is the controlling work document, improved guidance for the performance of remote camera inspections on inaccessible areas of piping, and guidance for the evaluation of plastics and similar materials by the technical support group.

To ensure proper understanding, application, and sensitivity with regard to foreign material exclusion requirements, Modification Implementation Unit (MIU) personnel have been trained on plant procedure MMM-010 and the revised Corporate Welding Manual. This training was completed on September 28, 1992.

Although not discussed above, review of this occurrence called into question the adequacy of craft supervision in the area immediate to the M-1087 work activities. To address this concern, MIU Work Instruction 2.04 was revised to ensure the presence of craft supervision at all times during work activities which invoke the Material Entry Control Log requirements provided within MMM-010. This revision to MIU Work Instruction 2.04 was implemented on October 22, 1992.

4. The Corrective Steps That Will Be Taken to Avoid Further Violations

The corrective actions discussed above are believed to address the root causes and causal factors that resulted in the entry of foreign material into the RHR and SI Systems. In aggregate, these actions represent sufficient corrective actions to preclude future violations, and no additional corrective actions are planned.

5. Date When Full Compliance Will be Achieved

All corrective actions to address this occurrence have been completed.