



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

January 31, 2011

EA-10-257

Mr. Robert J. Duncan, II
Vice President
Carolina Power and Light Company
H.B. Robinson Steam Electric Plant Unit 2
3581 West Entrance Road
Hartsville, SC 29550

SUBJECT: FINAL SIGNIFICANCE DETERMINATION OF WHITE FINDINGS AND NOTICE OF VIOLATION (NRC INSPECTION REPORT NO. 05000261/2011008; H. B. ROBINSON STEAM ELECTRIC PLANT) AND ASSESSMENT FOLLOW-UP LETTER

Dear Mr. Duncan:

The purpose of this letter is to provide you with the Nuclear Regulatory Commission's (NRC) final significance determination for two preliminary White findings discussed in H. B. Robinson Steam Electric Plant - NRC Inspection Report No. 05000261/2010013, dated December 27, 2010. The findings involved: (1) the failure to adequately implement requirements of multiple procedures required by Technical Specification 5.4.1, during a cooldown of the Reactor Coolant System and subsequent safety injection after a reactor trip on March 28, 2010; and (2) the failure to adequately design and implement operator training based on learning objectives as required by 10 CFR 55.59(c), in that training lesson material failed to identify the basis of a procedural action involving reactor coolant pump seal cooling in licensee procedure PATH-1, as required by the definition of systems approach to training, Element 3 in 10 CFR 55.4. This finding also included examples, deemed not to be violations of regulatory requirements, in which the licensee's operator training program did not meet a self-imposed licensee standard, as discussed in NRC Inspection Report Nos. 05000261/2010013 and 05000261/2010004.

During a telephone conversation on January 6, 2011, between Mr. Randy Musser, Chief, Division of Reactor Projects Branch 4, NRC Region II and Mr. Brian C. McCabe, Nuclear Regulatory Affairs Manager, your staff indicated that Robinson did not contest the characterization of the risk significance of the findings and that you declined the opportunity to discuss this issue in a Regulatory Conference or to provide a written response.

After considering the information developed during the inspection, the NRC has concluded that the findings are appropriately characterized as White (i.e. low to moderate safety significance) in the mitigating systems cornerstone, as discussed in NRC Inspection Report No. 05000261/2010013.

An appeal of the staff's determination of significance for the identified White findings will not be considered as it would not meet the criteria given in NRC Inspection Manual Chapter 0609, Attachment 2; that is, since you declined to request a Regulatory Conference or submit a written response, you relinquished your right to appeal the final Significance Determination Process (SDP) determination.

The NRC also determined that two violations occurred, as cited in the attached Notice of Violation (Notice). The circumstances surrounding the violations were described in detail in NRC Inspection Report No. 05000261/2010013. The first violation involves a failure to adhere to Technical Specification 5.4.1, "Procedures," which requires, in part, that procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Rev. 2, Quality Assurance Program Requirements, Appendix A. In this case, multiple procedural violations occurred during the March 28, 2010, reactor trip event. The second violation involves the failure to adequately design and implement operator training based on learning objectives as required by 10 CFR 55.59(c).

In accordance with the NRC Enforcement Policy, the Notice is considered escalated enforcement because it is associated with White findings. You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response.

In addition, as a result of our review of plant performance, which was completed on January 28, 2011, the NRC updated its assessment of H. B. Robinson Steam Electric Plant. The NRC's evaluation consisted of a review of performance indicators and inspection results. This letter informs you of the NRC's assessment of your facility. This letter supplements, but does not supersede, the assessment follow-up letter issued on November 12, 2010. The November 12 letter assessed your performance to be in the Regulatory Response Column of the NRC's Action Matrix due to the Unplanned Scrams per 7000 Critical Hours Performance Indicator crossing the Green to White threshold.

On December 7, 2010, the NRC forwarded a letter that stated the final significance determination of a White inspection finding in the Mitigating Systems Cornerstone. The finding involved the failure to promptly correct a condition adverse to quality involving the malfunction of the "B" Emergency Diesel Generator (EDG) output breaker 52/27B in October 2008, as required by 10 CFR 50, Appendix B, Criterion XVI. As a result of the finding involving the EDG output breaker and the incorporation of the two White inspection findings discussed in this report, we have assessed H.B. Robinson Steam Electric Plant's performance to be in the Degraded Cornerstone Column of the NRC's Action Matrix, effective the third quarter of calendar year 2010. We will conduct a supplemental inspection (Inspection Procedure 95002) when you notify us of your readiness to review the actions taken to address the White inspection findings and the White performance indicator.

For administrative purposes, this letter is issued as NRC Inspection Report No. 05000261/2011008. Accordingly, AV 05000261/2010013-01 is updated as VIO 05000261/2010013-01, Failure to Comply with Conduct of Operations Procedure. This violation is associated with a finding with a cross-cutting aspect of supervisory and management oversight of work activities such that nuclear safety is supported, in the Work Practices component of the Human Performance cross-cutting area, because plant supervisors failed to

enforce proper communication methods at the job site and failed to properly supervise workers executing procedure steps (H.4(c)). In addition, AV 05000261/2010004-05 is updated as VIO 05000261/2010004-05, Failure to Correctly Implement a Systems Approach to Training for the Licensed Operator Requalification Program. This violation is associated with a finding with a cross cutting aspect of Personnel Training and Qualifications in the Resources component of the Human Performance area, in that the licensee failed to ensure the adequacy of the training provided to operators to assure nuclear safety (H.2(b)).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doccollections/enforcement/actions>.

Should you have any questions concerning this letter, please contact Mr. Randy Musser at (404) 997-4603.

Sincerely,



Victor M. McCree
Regional Administrator

Docket No.: 50-261
License No.: DPR-23

Enclosure: Notice of Violation

cc w/encl: (See page 4)

cc w/encl:
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Electronic Mail Distribution

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(cc w/encl continued next page)

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(cc w/encl continued)

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NOTICE OF VIOLATION

Carolina Power and Light Company
H. B. Robinson Steam Electric Plant
Unit 1

Docket No.: 50-261
License No.: DPR-23
EA-10-257

During an inspection completed by the NRC on December 27, 2010, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the two violations are set forth below:

1. Technical Specification 5.4.1, "Procedures," requires, in part, that procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Rev. 2, Quality Assurance Program Requirements, Appendix A.
 - A. RG 1.33, Appendix A, Item 1.b, Authorities and Responsibilities for Safe Operation and Shutdown, is implemented by OPS-NGGC-1000, "Fleet Conduct of Operations."

OPS-NGGC-1000 contains responsibility requirements for the Shift Manager (SM), Control Room Supervisor (CRS), Shift Technical Advisor (STA), and Reactor Operator (RO) to provide monitoring and oversight for plant operations. Specifically:

Section 4.3, Shift Manager, requires the Shift Manager to be responsible for:

- Ensuring the command and control protocols/functions are maintained in the control room. (Section 4.3.4.f)
- Not becoming so involved with a single operation to an extent that the ability to oversee the safety of the plant is lost. (Section 4.3.4.g)
- Ensuring plant operations are conducted in accordance with the requirements of the plant operating license, Technical Specifications, and plant procedures. (Section 4.3.4.p)
- Maintaining a broad perspective of operational conditions affecting plant safety. (Section 4.3.4.s)
- Maintaining an overview of plant conditions during the initial phases of any emergency, including oversight of the actions being taken by the CRS and operating crew in resolving the casualty. (Section 4.3.4.u)

Section 4.4, Control Room Supervisor, requires the Control Room Supervisor to:

- Supervise, direct and oversee all unit activities during the shift. (Section 4.4.1)
- Maintain a broad perspective of operational conditions affecting the safety of the plant at all times when on control room duty, such that his involvement in any single operation does not distract from required overall operation of the control room during plant transients or an emergency. (Section 4.4.3)
- Directly supervise control room watchstanders in the manipulation of reactor and plant controls. (Section 4.4.10)

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- Ensure that the plant is rigorously monitored and operating activities are conducted in accordance with applicable procedures. (Section 4.4.12)
- Monitor plant instrumentation and make sound, logical decisions involving the safe, efficient and dependable operation of power plant equipment. (Section 4.4.30)

Section 4.5, Shift Technical Advisor, requires the Shift Technical Advisor to:

- Provide a primary function of independent assessment of plant and crew response, and provide engineering based technical information and recommendations to assist the crew in safe operation of the plant. (Section 4.5.1)
- Act as an advisor to the SM and CRS by assessing plant conditions and response during normal and off-normal plant operating conditions and make recommendations on mitigating actions to ensure the protection of the reactor core. (Section 4.5.2)
- Provide the following crew support during event procedures:
 - Prioritize focus and support on activities that ensure reactor core protection and accident mitigation strategies. (Section 4.5.13.a)
 - Provide the operating crew with real time evaluation of plant status, direction, and recommended actions. (Section 4.5.13.b)
 - Report to the operating crew any abnormalities or plant parameters that may represent a challenge to the critical safety functions or that could result in a degradation of the safety level and assist in formulating a plan for appropriate corrective action. (Section 4.5.13.c)
 - Assess the effectiveness of mitigating actions. (Section 4.5.13.f)
 - Provide an independent backup diagnosis of the event. (Section 4.5.13.g)

Section 4.6, Reactor Operator, requires the Reactor Operator to:

- Believe and respond conservatively to instrument indications, and use multiple indications to verify them to be incorrect in order to ensure public, plant and personnel safety. (Section 4.6.2.b)
- Monitor and manipulate the control board. (Section 4.6.4.a)
- Monitor operation of the reactor and associated controls for proper response and expected behavior when standing in the Operator at the Controls (OATC) position. (Section 4.6.1.1.a)
- Remain alert for changing critical parameters, alarms, and trends when standing in the OATC position. (Section 4.6.1.1.g)

Contrary to the above, on March 28, 2010, the licensee/operators failed to adequately implement the monitoring and oversight responsibility requirements listed in OPS-NGGC-1000, Sections 4.3, 4.4, 4.5, and 4.6 when:

- Operators failed to monitor and respond to the closure of flow control valve (FCV) FCV-626 and to the failure of the charging pump automatic swap over to the Refueling Water Storage Tank (RWST). This resulted in a condition where Component Cooling Water (CCW) flow was lost to the thermal barrier heat exchanger coincident with inadequate seal injection flow. (Section 4.6)

- The CRS and reactor operators did not effectively monitor control board indications, including RCS temperature, for the excess steam demand and also failed to maintain a broad perspective for degrading conditions that resulted in a safety injection. (Section 4.4 and 4.6)
 - The control room staff failed to implement their position responsibilities for addressing annunciator procedure APP-009-B6, "AUX TRANSF FAULT TRP," prior to performing GP-004, "Post Trip Stabilization," Step 8.26. Specifically, the 86P relay was reset with an auxiliary transformer fault present, even though APP-009-B6 required that the Load Dispatcher be contacted to repair the fault. Resetting the 86P relay caused a fast transfer of 4 kV bus 4 from the unit auxiliary transformer to the startup transformer and caused a fault at breaker 52/24. The associated arc damaged surrounding equipment. Subsequently, alarms in the control room indicated grounds on both safety-related 125 volt DC battery buses, which required an Alert emergency declaration. (Sections 4.3, 4.4, 4.5, and 4.6)
 - The control room staff failed to implement their position responsibilities for implementing procedure OP-601, "DC Supply System," in a timely manner which resulted in the "B" battery charger remaining de-energized for 38 minutes. (Sections 4.3, 4.4, 4.5, and 4.6)
- B. RG 1.33, Appendix A, Item 5, Procedures for Abnormal, Offnormal, or Alarm Conditions, is implemented by procedure APP-003-E3, "VCT HI/LO LEVEL, Step 5 of procedure APP-003-E3, states, "If VCT level reaches 12.4 inches, then verify LCV-115B, EMERG MU TO CHG SUCT, opens and LCV-115C, VCT OUTLET, closes".

Contrary to the above, on March 28, 2010, the licensee/operators failed to adequately implement the required actions of procedure APP-003-E3 because they failed to ensure the charging pump suction was re-aligned to the RWST at the time when the automatic swap over feature had failed.

- C. RG 1.33, Appendix A, Item 6.u, Reactor Trip, is implemented by procedure EPP-4, "Reactor Trip Response." Procedure EPP-4, Step 8, requires the operators to control RCS temperature and stop dumping steam if RCS temperature is less than 547 °F.

Contrary to the above, on March 28, 2010, the licensee/operators failed to adequately implement the required actions of procedure EPP-4, step 8.b, "Stop Dumping Steam", when RCS temperature was below 547°F and the operators did not close the main steam isolation valves. This failure resulted in an automatic safety injection on low pressurizer pressure.

- D. RG 1.33, Appendix A, Item 5, Procedures for Abnormal, Off-normal, or Alarm Conditions, is implemented by procedure APP-009-B6, "AUX TRANSF FAULT TRIP."
Procedure APP-009-B6, Action Step 3, required the crew to contact the Load Dispatcher to repair the condition causing the fault on the auxiliary transformer.

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Contrary to the above, on March 28, 2010, the licensee/operators failed to adequately implement Action Step 3 of procedure APP-009-B6 because they did not contact the Load Dispatcher to repair the conditions causing the fault on the auxiliary transformer before the relay was reset, which resulted in a second electrical transient and associated arc that damaged the surrounding equipment.

- E. RG 1.33, Appendix A, Item 6, Procedures for Combating Emergencies and Other Significant Events, is implemented by emergency operating procedure PATH-1. Emergency operating procedure PATH-1, states, "RESTART BATTERY CHARGERS WITHIN 30 MIN OF POWER LOSS USING OP-601."

Contrary to the above, on March 28, 2010, the licensee/operators failed to adequately implement the required actions of Emergency Operating Procedure PATH-1 because the crew re-energized the "B" battery charger 38 minutes after power was lost to the battery charger.

This violation is associated with a White Significance Determination Process finding.

2. 10 CFR 55.59(c), Requalification program requirements, states that a facility licensee shall have a requalification program reviewed and approved by the Commission and shall, upon request consistent with the Commission's inspection program needs, submit to the Commission a copy of its comprehensive requalification written examinations or annual operating tests. The requalification program must meet the requirements of paragraphs (c) (1) through (7) of this section. In lieu of paragraphs (c) (2), (3), and (4) of this section, the Commission may approve a program developed by using a systems approach to training.

On March 20, 1985, the Commission endorsed the Institute of Nuclear Power Operations (INPO)-managed Training Accreditation Program. Final Safety Analysis Report (FSAR) section 13.2.1, Accredited Training Programs, states that H.B. Robinson's continuing training program (requalification program) for licensed personnel was developed in accordance with the systems approach to training and is accredited by the National Academy for Nuclear Training.

10 CFR 55.4 defines a systems approach to training as a training program that includes the following five elements: (1) Systematic analysis of the jobs to be performed; (2) Learning objectives derived from the analysis which describe desired performance after training; (3) Training design and implementation based on the learning objectives; (4) Evaluation of trainee mastery of the objectives during training; and (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

Contrary to the above, prior to March 28, 2010, the licensee failed to adequately implement Element 3 of the systems approach to training in accordance with 10 CFR 55.59(c), Requalification program requirements. The licensee derived a learning objective from the task analysis for emergency operating procedure PATH-1 (Path-1-005), that required the operators to be able to explain the basis of steps, cautions, and notes of the PATH-1 procedure. However, the licensee's training was not adequately designed and implemented based on the learning objective for procedure PATH-1

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(Element 3 of the systems approach to training). Specifically, the associated lesson material failed to identify the basis of a procedural action involving reactor coolant pump (RCP) seal cooling in PATH-1. As a result, following a reactor trip on March 28, 2010, licensed operators and other main control room staff failed to recognize the loss of adequate RCP seal cooling, and inappropriately re-established seal cooling via thermal barrier heat exchanger flow, thereby increasing the risk of an RCP seal failure.

This violation is associated with a White Significance Determination Process finding.

Pursuant to the provisions of 10 CFR 2.201, the H. B. Robinson Steam Electric Plant is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-10-257" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 31st of January 2011

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