UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

April 30, 2009

Carolina Power and Light Company
ATTN: Mr. Eric McCartney
Vice President - Robinson Plant
H. B. Robinson Steam Electric Plant
Unit 2
3851 West Entrance Road
Hartsville, SC 29550

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION REPORT 05000261/2009002

Dear Mr. McCartney:

On March 31, 2009, the US Nuclear Regulatory Commission (NRC) completed an inspection at your H.B. Robinson reactor facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on April 3, 2009, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). One of the Green issues was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program (CAP), the NRC is treating this issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. The other Green issue is being treated as a finding. If you deny this non-cited violation or the finding, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the H.B. Robinson facility. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the H.B. Robinson Steam Electric Plant. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html http://www.nrc.gov/NRC/ADAMS/index.html.(the Public Electronic Reading Room).

Sincerely,

/RA/

Randall A. Musser, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000261/2009002
w/Attachment: Supplemental Information

cc w\encls: See page 3

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html http://www.nrc.gov/NRC/ADAMS/index.html.(the Public Electronic Reading Room).

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cc w/encl:
Brian C. McCabe
Manager, Nuclear Regulatory Affairs
Brunswick Steam Electric Plant
Progress Energy Carolinas, Inc.
Electronic Mail Distribution

Eric McCartney
Vice President
Carolina Power & Light Company
Electronic Mail Distribution

R. J. Duncan, II
Vice President
Nuclear Operations
Carolina Power & Light Company
Electronic Mail Distribution

Ernest J. Kapopoulos, Jr.
Plant General Manager
Carolina Power & Light Company
Electronic Mail Distribution

Christos Kamilaris
Director
Fleet Support Services
Carolina Power & Light Company
Electronic Mail Distribution

Curt A. Castell
Supervisor
Licensing/Regulatory Programs
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
3581 West Entrance Road
Hartsville, SC 29550

C. T. Baucom
Manager
Support Services - Nuclear
Carolina Power & Light Company
Electronic Mail Distribution

T. D. Walt
Vice President
Nuclear Oversight
Carolina Power and Light Company
Electronic Mail Distribution

David T. Conley
Associate General Counsel
Legal Dept.
Progress Energy Service Company, LLC
Electronic Mail Distribution

S. D. West
Superintendent Security
H. B. Robinson Steam Electric Plant
Progress Energy
Electronic Mail Distribution

Susan E. Jenkins
Director, Division of Waste Management
Bureau of Land and Waste Management
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

R. Mike Gandy
Division of Radioactive Waste Mgmt.
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

Beverly O. Hall
Chief, Radiation Protection Section
Department of Environmental Health
N.C. Department of Environmental
Commerce & Natural Resources
Electronic Mail Distribution

John H. O'Neill, Jr.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, NW
Washington, DC 20037-1128

Chairman
North Carolina Utilities Commission
Electronic Mail Distribution

Robert P. Gruber
Executive Director
Public Staff - NCUC
4326 Mail Service Center
Raleigh, NC 27699-4326

cc w/encl. (continued page 4)

cc w/encl. (continued)
Public Service Commission
State of South Carolina
P.O. Box 11649
Columbia, SC 29211

Senior Resident Inspector
Carolina Power and Light Company
H. B. Robinson Steam Electric Plant
U.S. NRC
2112 Old Camden Rd
Hartsville, SC 29550

Letter to Eric McCartney from Randall Musser dated April 30, 2009

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT - NRC INTEGRATED INSPECTION REPORT 05000261/2009002

Distribution w/encl:
C. Evans, RII EICS (Part 72 Only)
L. Slack, RII EICS (Linda Slack)
OE Mail (email address if applicable)
RIDSNRRDIRS
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	50-261
License No:	DPR-23
Report No:	005000261/2009002
Facility:	H. B. Robinson Steam Electric Plant, Unit 2
Location:	3581 West Entrance Road Hartsville, SC 29550
Dates:	January 1, 2009 – March 31, 2009
Inspectors:	R. Hagar, Senior Resident Inspector E. Morris, Resident Inspector M. Chitty, Resident Inspector G. Kuzo, Senior Health Physicist (Section 2PS3) N. Griffis, Health Physicist (Section 2OS3) A. Nielsen, Health Physicist (Section 2PS1) R. Aiello, Senior Operations Engineer (Sections 1R11, 4OA2) P. Capehart, Operations Engineer (Sections 1R11, 4OA2)
Approved by:	R. Musser, Chief Reactor Projects Branch 4 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000261/2009002, Carolina Power and Light Company; on 01/01-03/31/2009; H.B. Robinson Steam Electric Plant, Unit 2; event follow-up, operability evaluations.

The report covered a three-month period of inspection by resident inspectors and announced inspections by health physicists and operations engineers. One violation and one finding were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Initiating Events

- Green. A self-revealing finding was documented for the licensee's failure to provide adequate procedures for maintenance and installation of the main generator and exciter. As a result, work activities using those procedures produced conditions which led to high turbine vibration, which on November 17, 2008, prompted control-room operators to manually initiate a reactor trip. This failure was a performance deficiency with respect to a self-imposed licensee policy which requires Managers and Supervisors to ensure that procedures are adequate to assure nuclear safety. This finding is addressed in the licensee's corrective action program within Action Request 306903. In that Action Request, one corrective action is to correct the affected procedures.

  This finding is more-than-minor because it affected the Equipment Performance attribute of the Initiating Events cornerstone, and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. When evaluated per Attachment 4 of Manual Chapter 0609, this finding screened to very low safety significance (Green) because it did not contribute to both an initiating event and the likelihood of a loss of mitigating equipment or functions. This finding has a cross-cutting aspect of supervisory and management oversight, as described in the Work Practices component of the Human Performance cross cutting area because the licensee failed to provide adequate oversight to the work activities associated with turbine-generator reassembly (H.4(c)). (Section 4OA3)

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green non-cited violation of Technical Specification 3.8.1, for the licensee's failure to meet the required actions of TS 3.8.1 for one inoperable emergency diesel generator (EDG), which are, in part, that within 24 hours of discovering the inoperable EDG, the licensee must either verify that the other EDG starts from standby conditions and achieves acceptable steady-state conditions, or determine that the other EDG is not inoperable due to a common cause. The licensee has entered this finding into their corrective action program as Action Request 327363, and plans to insert into the appropriate procedure criteria to describe the required attributes of an adequate determination that an EDG is not inoperable due to a common cause.

This finding is more-than-minor because if left uncorrected, this finding would become a more significant safety and regulatory concern, in that following a common-cause inoperability of both EDGs and the discovery of the inoperability of one EDG, if left uncorrected this violation could result in the licensee correcting the discovered inoperability of one EDG without correcting the undiscovered inoperability of the other EDG, such that the other EDG could remain inoperable for longer than its allowed outage time. Using Appendix A of IMC 0609, the significance of this violation was determined to be of very low safety significance (GREEN), because although the violation could degrade the Emergency AC power function in the Mitigating Systems cornerstone, the violation was not a design or qualification deficiency confirmed not to result in loss of operability or functionality, did not represent a loss of system safety function, did not represent actual loss of safety function of a single train, did not represent an actual loss of safety function of one or more non-TS Trains of equipment designated as risk-significant, and did not screen as potentially risk significant due to a seismic, flooding, or severe-weather initiating event. This finding has a cross cutting aspect of procedures, as described in the resources component of the Human Performance cross cutting area because the licensee did not ensure that procedures, and other resources were available and adequate to assure nuclear safety as it relates to the EDG common cause analysis procedure. (H.2(c)) (Section 1R15)

REPORT DETAILS

Summary of Plant Status: The unit began the inspection period operating at rated thermal power, and operated at or near rated power for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

When extreme cold weather was predicted for the site on January 16, the inspectors reviewed actions taken by the licensee in accordance with Procedure AP-008, Cold Weather Preparation, prior to the onset of that weather**,** to ensure that the adverse weather conditions would neither initiate a plant event nor prevent any system, structure, or component from performing its design function. The inspectors reviewed the operator actions described in Procedure AP-008, Cold Weather Preparation, to verify that the desired results could be achieved. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns:

The inspectors performed the following three partial system walkdowns while the indicated structures, systems, and/or components (SSCs) were out-of-service for maintenance and testing:

System Walked Down	SSC Out of Service	Date Inspected
A train of emergency control room ventilation	B train of emergency control room ventilation	January 5
B train containment spray pump	A train containment spray pump	January 13
B train motor-driven auxiliary feedwater pump	steam-driven auxiliary feedwater pump	January 22

To evaluate the operability of the selected trains or systems under these conditions, the inspectors compared observed positions of valves, switches, and electrical power breakers to the procedures and drawings listed in the Attachment.

Complete System Walkdown:

The inspectors conducted a detailed review of the alignment and condition of Component Cooling Water system train A to verify that the existing alignment of the system was consistent with the correct alignment. To determine the correct system alignment, the inspectors reviewed the procedures, drawings, and the Updated Final Safety Analysis Report (UFSAR) section listed in the Attachment. The inspectors also walked down the system. During the walkdown, the inspectors reviewed the following:

- Valves were correctly positioned and did not exhibit leakage that would impact the functions of any given valve.
- Electrical power was available as required.
- Major system components were correctly labeled, lubricated, cooled, ventilated, etc.
- Hangers and supports were correctly installed and functional.
- Essential support systems were operational.
- Ancillary equipment or debris did not interfere with system performance.
- Tagging clearances were appropriate.
- Valves were locked as required by the locked valve program.

The inspectors reviewed the documents listed in the Attachment to verify that the ability of the system to perform its functions could not be affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, and other system-related issues tracked by the engineering department.

The inspectors reviewed the following action requests (ARs) associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- 300234, rework of valve FCV-626
- 302037, component cooler water activity

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

For the five areas identified below, the inspectors reviewed the control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures to verify that those items were consistent with UFSAR Section 9.5.1, Fire Protection System, and UFSAR Appendix 9.5.A, Fire Hazards Analysis. The inspectors walked down accessible portions of each area and reviewed results from related surveillance tests to verify that conditions in

these areas were consistent with descriptions of the areas in the UFSAR. Documents reviewed are listed in the Attachment.

The following areas were inspected:

Fire Zone	Description
26	Yard transformers
20	E-1/E-2 Electrical Switchgear Room
19	Unit 2 Cable Spreading Room
5	Component Cooling Pump Room
7	Auxiliary Building Hallway

Also, to evaluate the readiness of personnel to prevent and fight fires, the inspectors observed fire brigade performance during the unannounced fire drill in the component cooling water pump room on March 2. This drill simulated an electrical fire associated with the C component cooling water pump. Documents are listed in the Attachment.

The inspectors reviewed the following work requests associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- 280021, Replace mercury check valve FP-615 main transformer deluge
- 287003, OST-630 completed unsatisfactorily
- 348599, Manual pull station 3B3 does not alarm

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed the inspection of the B motor-driven auxiliary feedwater pump bearing oil heat exchanger to verify that the inspection results were appropriately categorized against the pre-established acceptance criteria described in Procedure CM-201, Safety Related and Non-Safety Related Heat Exchanger Maintenance. The inspectors reviewed the frequency of the B motor-driven auxiliary feedwater pump bearing oil heat exchanger inspection to determine that the inspection frequency was sufficient to detect degradation prior to loss of heat removal capability below design basis values. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified

1R11 Licensed Operator Requalification

.1 Requalification Simulator Training

a. Inspection Scope

The inspectors observed licensed-operator performance during requalification simulator training for crew one to verify that actual operator performance was consistent with expected operator performance, as described in Dynamic Simulator Scenario Exam, Week 1, Scenario 1. This training tested the operators' ability to operate components from the control room, direct auxiliary operator actions, and determine the appropriate emergency action level classifications while responding to failure of a pressurizer pressure transmitter, failure of a heater drain pump, a rod control urgent failure, and a steam generator tube leak that escalated into a steam generator tube rupture. The inspectors focused on clarity and formality of communication, the use of procedures, alarm response, control board manipulations, group dynamics, and supervisory oversight.

The inspectors observed the post-exercise critique to verify that the licensee identified deficiencies and discrepancies that occurred during the simulator training.

Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Licensed Operator Requalification Program

a. Inspection Scope

The inspectors reviewed the facility operating history and documents associated with the licensed operator requalification program in preparation for this inspection. During the week of March 2 - 5, 2009, the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests and written examinations associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998. The inspectors observed one shift crew during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, licensed operator qualification records, watchstanding, medical records, simulator modification request records, performance test records,

feedback forms, and remediation plans. Documents reviewed during the inspection are listed in the Attachment to the report.

Following the completion of the biennial operating tests and written examinations, which ended on March 12, 2009, the inspectors reviewed the overall pass/fail results of the individual JPM operating tests, the simulator operating tests and the written examinations administered by the licensee during the operator licensing requalification cycle. These results were compared to the thresholds established in Manual Chapter 609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the three degraded SSC/function performance problems or conditions listed below to verify the appropriate handling of these performance problems or conditions in accordance with 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, and 10 CFR 50.65, Maintenance Rule. Documents reviewed are listed in the Attachment.

The problems/conditions and their corresponding ARs were:

Performance Problem/Condition	AR
C charging pump flow oscillation	287003
C service water pump increased vibrations	269315
Repetitive failures of main steam dump valves	158740

During the reviews, the inspectors focused on the following:

- Appropriate work practices,
- Identifying and addressing common cause failures,
- Scoping in accordance with 10 CFR 50.65(b),
- Characterizing reliability issues (performance),
- Charging unavailability (performance),
- Trending key parameters (condition monitoring),
- 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification, and
- Appropriateness of performance criteria for SSCs/functions classified (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified (a)(1).

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- 287286, Charging pump C valve stop pin found broken
- 158738, Repetitive functional failures

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

For the five time periods listed below, the inspectors reviewed risk assessments and related activities to verify that the licensee performed adequate risk assessments and implemented appropriate risk-management actions when required by 10 CFR 50.65(a)(4). For emergent work, the inspectors also verified that any increase in risk was promptly assessed, and that appropriate risk-management actions were promptly implemented. Documents reviewed are listed in the Attachment. Those periods included the following:

- January 17 - January 23, including rescheduling maintenance on the steam-driven auxiliary feedwater pump out of the period due to increased risk of a loss-of-offsite-power event associated with freezing temperatures

- January 24 - January 30, including a yellow-risk period due to maintenance on a reactor coolant system pressure indicator

- February 17 - February 20, including a yellow-risk period due to maintenance on the A motor-driven auxiliary feedwater pump

- February 23 - February 27, including a yellow-risk period due to maintenance on the B motor-driven auxiliary feedwater pump

- March 7 - March 13, including an emergent failure of the A emergency diesel generator that prompted rescheduling risk-significant tasks

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the five operability determinations associated with the ARs listed below. The inspectors assessed the accuracy of the evaluations, the use and

control of any necessary compensatory measures, and compliance with the Technical Specification (TS). The inspectors verified that the operability determinations were made as specified by procedure OPS-NGGC-1305, Operability Determinations. The inspectors compared the justifications provided in the determinations to the requirements from the TS, the UFSAR, and associated design-basis documents, to verify that operability was properly justified and the subject components or systems remained available, such that no unrecognized increase in risk occurred. The reviewed ARs were:

- 314228, load swings which occurred on the A emergency diesel generator during performance of slow speed start
- 319105, component cooling water pump B relay BX1/CCW-PMP-B failed to actuate when low pressure alarm received
- 321755, active boric acid leak on the excess letdown heat exchanger
- 324105, common cause failure determination for B emergency diesel generator due to fuel oil fitting leak on A emergency diesel generator
- 321257, more than half of the B motor-driven auxiliary feedwater pump bearing oil cooler tubes were found blocked during routine inspection

Documents reviewed are listed in the Attachment.

Also, to verify that the licensee identified and implemented appropriate corrective actions, the inspectors reviewed work request 365420, power fluctuations during a slow-speed start of the A emergency diesel generator.

b. Findings

.1 Failure to Follow Procedures

Introduction: The inspectors identified an unresolved item associated with two events in which maintenance technicians performed maintenance on the A emergency diesel generator (EDG) without pre-planning and performing the activity in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. This item is unresolved pending further inspection to determine whether those events rendered the A emergency diesel generator inoperable.

Description: On February 9, after the licensee started the A EDG for a routine surveillance test, operators noted a fuel oil leak of approximately 5 drops/minute from the inboard fitting on the fuel oil line from the duplex filter to the fuel injector for the #1 cylinder. After the control-room staff determined that a leak of that magnitude did not render the EDG inoperable, they completed the surveillance test and then initiated work request 369565 to repair the leaking fitting. After the test was complete, as directed by a maintenance supervisor, without any written instructions, and without the knowledge of the control-room staff, a maintenance technician tightened the leaking fitting with a wrench and reported to his supervisor “some nut movement”. The next day, work order

1496721 was first initiated in response to the subject work request and then cancelled with the following annotation; “per the system engineer, there is no concern at this time.”

On March 9, after the licensee started the A EDG for another surveillance test, operators noted a fuel oil leak of approximately 100 drops/minute from the same fitting that had leaked during the February 9 test. While the March 9 test was underway, after Operations asked Maintenance to investigate the leak, and as directed by a maintenance supervisor, a maintenance technician used a wrench to check the fitting for tightness. Although the technician reported no nut movement, as a result of this activity the leak flow rate increased to what the licensee characterized as “a steady stream.” Following this increase in the leak rate, the control-room staff shut down the EDG and declared it inoperable. The licensee initiated a work request to repair the leak, converted that work request to a corresponding work order, and then under that work order replaced the leaking fitting on March 10. After removal, visual examination of the subject fitting revealed that it was cracked. After reviewing the related circumstances, the licensee determined that the February 9 maintenance activity had probably cracked the fitting.

Because the February 9 maintenance activity and the March 9 maintenance activity both involved maintenance on a safety-related component without any documented instructions, both were performance deficiencies with respect to TS 5.4.1. This TS requires the licensee to establish, implement, and maintain written procedures covering the applicable procedures in Regulatory Guide 1.33. Regulatory Guide 1.33, Appendix A, section 9, Procedures for Performing Maintenance, states that maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. These performance deficiencies are in the licensee’s corrective action program as AR 325384. Planned corrective actions are unknown because the licensee had not completed their investigation of this event before the end of the inspection period.

Further inspection is required to determine whether the A EDG was operable during the period from February 9 through March 10. Specifically, further inspection should review any analyses produced by the licensee and/or evidence gathered by the licensee that relates to the operability of the A EDG during the subject period, and subsequently determine whether those results demonstrate that the A EDG was operable during that period. Pending completion of that review and determination, this issue is being treated as an unresolved item, and has been designated URI 05000261/2009002-01, “Operability of the A emergency diesel generator from February 9 to March 10, 2009.”

.2 Failure to meet required actions for TS 3.8.1 condition B

Introduction: In the circumstances associated with the March 9 inoperability of the A EDG (described above), the inspectors identified a Green non-cited violation of TS 3.8.1 for the licensee’s failure to meet the required actions for one inoperable EDG. Within 24 hours of discovering the inoperable A EDG, the licensee failed to either verify that the other EDG started from standby conditions and achieved acceptable steady-state conditions, or determine that the other EDG is not inoperable due to a common cause.

Description: On March 9, after control-room operators declared the A EDG inoperable as described above and as required by procedure OP-604, Diesel Generators A & B, Rev. 76, Operations personnel asked Engineering to determine whether the B EDG was also inoperable due to the same cause. In response, Engineering personnel produced a document that concluded that the B EDG was not inoperable due to a common cause, and Operations personnel accepted that document as an adequate determination of B EDG operability. However, the inspectors noted that the document produced by Engineering identified the cause of the A EDG inoperability as a worn fitting due to normal wear, but did not discuss and evaluate whether similarly-normal wear had not produced a corresponding similarly-worn fitting on the B EDG. The inspectors therefore determined that the document produced by Engineering and accepted by Operations did not constitute an adequate determination that the B EDG was not inoperable due to a common cause. As a result of Operations accepting that document as an adequate determination that the B EDG was not inoperable due to a common cause, Operations did not verify that the B EDG started from standby conditions and achieved acceptable steady-state conditions. Consequently, at 13:30 on March 10, Operations failed to meet the required actions of TS 3.8.1 for one inoperable EDG.

Analysis: The performance deficiency was the licensee's failure after declaring the A EDG inoperable to either verify that the B EDG started from standby conditions and achieved acceptable steady-state conditions, or determine that the B EDG was not inoperable due to a common cause, within 24 hours. This finding is more-than-minor because if left uncorrected, this finding would become a more significant safety and regulatory concern, in that following a common-cause inoperability of both EDGs and the discovery of the inoperability of one EDG, if left uncorrected this violation could result in the licensee correcting the discovered inoperability of one EDG without correcting the undiscovered inoperability of the other EDG, such that the other EDG could remain inoperable for longer than its allowed outage time. Using Appendix A of IMC 0609, the significance of this violation was determined to be of very low safety significance (GREEN), because although the violation could degrade the Emergency AC power function in the Mitigating Systems cornerstone, the violation:

- was not a design or qualification deficiency confirmed not to result in loss of operability or functionality,
- did not represent a loss of system safety function,
- did not represent actual loss of safety function of a single Train, for longer than its TS Allowed Outage Time,
- did not represent an actual loss of safety function of one or more non-TS Trains of equipment designated as risk-significant per 10CFR50.65, for >24 hrs, and
- did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event, using the criteria on page 5 of the Phase 1 Worksheet.

This finding has a cross cutting aspect of procedures, as described in the resources component of the Human Performance cross cutting area because the licensee did not ensure that procedures, and other resources were available and adequate to assure nuclear safety as it relates to the EDG common cause analysis procedure. (H.2(c))

Enforcement: TS 3.02 requires, in part, that upon discovery of a failure to meet a limiting condition for operation, the required actions of the associated conditions shall be met.

For TS 3.8.1 condition B (one inoperable EDG), the required actions, in part, are that within 24 hours of discovering the inoperable EDG, the licensee must either verify that the other EDG starts from standby conditions and achieves acceptable steady-state conditions, or determine that the other EDG is not inoperable due to a common cause.

Contrary to the above, upon discovery of their failure to meet TS 3.8.1 due to the A EDG being inoperable, the licensee failed to meet the required actions for that condition, in that within 24 hours of discovering that the A EDG was inoperable, the licensee failed to either verify that the B EDG started from standby conditions and achieved acceptable steady-state conditions, or determine that the B EDG was not inoperable due to a common cause. The licensee entered this violation into their corrective action program as AR 327363, and thereby initiated action to insert into procedure OP-604 appropriate criteria to describe the required attributes of an adequate determination that an EDG is not inoperable due to a common cause. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as a non-cited violation, consistent with the NRC Enforcement Policy. It has been designated NCV 05000261/2009002-02, "Failure to meet the required actions of TS 3.8.1 for condition B".

1R19 Post Maintenance Testing

a. Inspection Scope

For the six post-maintenance tests listed below, the inspectors witnessed the test and/or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety functions described in the UFSAR and TS. Documents reviewed are listed in the Attachment.

The following tests were witnessed/reviewed:

Test Procedure	Title	Related Maintenance Activity	Date Inspected
OST-101-1	[Chemical & Volume Control System] Component Test Charging Pump A	replace pump suction relief valve	January 5
OST-202	Steam Driven Auxiliary Feedwater System Component Test	Calibrate discharge pressure switches, change pump motor oil, and other miscellaneous tasks	January 22
OST-101-2	[Chemical & Volume Control System] Component Test Charging Pump B	replace the speed controller	February 12
OST-201-1	[Motor-driven auxiliary feedwater] System Component Test – Train A	calibrate discharge pressure switches, reset the suction relief valve	February 17
PM-439	Station Battery Charger A Capacity Test	calibrate gauges, replacement of diodes, replacement of potentiometers	February 19
OST-201-2	Motor-driven Auxiliary Feedwater System Component Test – Train B	clean and inspect bearing oil cooler	February 24

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the six surveillance tests listed below, the inspectors witnessed testing and/or reviewed the test data to verify that the systems, structures, and components involved in these tests satisfied the requirements described in the TS, the UFSAR, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of

performing their intended safety functions. Documents reviewed are listed in the Attachment.

Test Procedure	Title	Date Inspected
EST-082*	Inservice Inspection Pressure Testing of Auxiliary Feedwater System	January 8
OST-401-1	Emergency Diesel Generator A Slow Speed Start	January 12
OST-051**	Reactor Coolant System Leakage	January 28
OST-751	Control Room HVAC R-1 Initiation and ERFIS Point Test (Quarterly)	February 12
OST-101-7	Comprehensive Flow Test for Charging Pump B	March 11
OST-108-1	Boric Acid Pump A Inservice Test	March 12

*This procedure included inservice testing requirements.
**This procedure was a reactor coolant system leakage detection surveillance.
The inspectors reviewed the following items associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- Work request 364893, [valve] AFW-41 body-to-bonnet leak
- AR 314228, Extended [limiting condition for operation] time due to A Emergency Diesel Generator load swings

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation During tours of the reactor auxiliary building (RAB) and Spent Fuel Pool (SFP) areas, the inspectors observed installed radiation detection equipment including the following instrument types: Area Radiation Monitors (ARMs), Continuous Air Monitors (CAMs), Personnel Contamination Monitors (PCMs), and Portal Monitors (PMs) at the Radiologically Controlled Area (RCA) and Protected Area (PA) exits. The inspectors observed the physical location of the components, noted the

material condition, and compared sensitivity ranges with Updated Final Safety Analysis Report (UFSAR) details.

In addition to equipment walk-downs, the inspectors observed functional checks and alarm set-point testing of various fixed and portable detection instruments, including portable ion chambers, teletectors, PCMs, and PMs. The most recent 10 CFR Part 61 analysis for Dry Active Waste (DAW) was reviewed to determine if calibration and check sources were representative of the plant source term. The inspectors reviewed calibration records for selected PCMs, PMs, and Small Article Monitors (SAMs) located at the RCA exit. Historical calibration records were also reviewed for ARM channels R-32A and R-32B (Containment High-Range detectors), R-4 (Charging Pump Room Area Monitor), and R-5 (SFP Area Monitor). Calibration stickers on portable survey instruments were noted during inspection of storage areas for "ready-to-use" equipment. This inspection did not evaluate the completion and adequacy of radiation survey instrument calibrations performed by the licensee's central calibration facility located at the Harris Environmental Monitoring Laboratory. These activities are reviewed during the biennial Harris inspection of Inspection Procedure (IP) 71121.03.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; Technical Specification (TS) Sections 3 and 5; UFSAR Chapter 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report Attachment.

Self-Contained Breathing Apparatus (SCBA) and Protective Equipment Selected SCBA units staged for emergency use in the Control Room, Emergency Operations/Training Facility, and the Operations Support Center were inspected for material condition, air pressure, and number of units available. The inspectors also reviewed maintenance records for selected SCBA regulators for the past five years and certification records associated with supplied air quality.

Qualifications for individuals responsible for testing and repairing SCBA vital components were evaluated through review of training records. In addition, Control Room operators were interviewed to determine their knowledge of available SCBA equipment locations, including corrective lens inserts if needed, and their training on bottle change-out during a period of extended SCBA use. Respirator qualification records were reviewed for several Control Room operators and emergency responder personnel. Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report Attachment.

Problem Identification and Resolution Selected licensee Nuclear Condition Report (NCR) documents associated with instrumentation and protective equipment were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure CAP-NGGC-0200, Corrective Action Program, Revision (Rev.) 26. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Documents reviewed are listed in Section 2OS3 of the report Attachment.

The inspectors completed all nine of the required line-item samples detailed in IP 71121.03.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment During inspector walk-downs, accessible sections of the liquid and gaseous radioactive waste (radwaste) and effluent systems were assessed for material condition and conformance with system design diagrams. The inspection included floor drain tanks, liquid waste system piping, waste gas decay tanks, monitor tanks, liquid radwaste monitors, plant stack effluent monitors, and associated airborne effluent sample lines. The inspectors interviewed licensee staff regarding radwaste equipment configuration and effluent monitor operation.

The inspectors reviewed performance records and calibration results for selected radiation monitors, flowmeters, and air filtration systems. For effluent monitors R-14 (plant stack), R-18 (liquid waste), and R-19A (steam generator [S/G] train 'A' blowdown) the inspectors reviewed the last two calibration records. The last two surveillances on the RAB High Efficiency Particulate Air (HEPA) and containment purge HEPA/Charcoal air treatment systems also were reviewed. The inspectors evaluated out-of-service effluent monitors and compensatory action data for the period January 2007 - December 2008. In addition, isokinetic sample line flow rates were reviewed and discussed with chemistry staff to evaluate the adequacy of representative sampling.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plants; American Nuclear Standards Institute (ANSI)-N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities; TS Section 5; the Offsite Dose Calculation Manual (ODCM); and UFSAR, Chapter 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Effluent Release Processing and Quality Control Activities The inspectors observed the weekly collection of airborne effluent samples from the Lower Fuel Handling Building and liquid effluent samples from the turbine building (condensate polisher discharge). Chemistry technician proficiency in collecting, processing, and counting the samples, as well as preparing the applicable release permits were evaluated. The inspectors reviewed recent liquid and gaseous release permits including pre-release sampling results, effluent monitor set-points, and resultant doses to the public. The inspectors also reviewed the 2006 and 2007 annual effluent reports to evaluate reported doses to the public and to review ODCM changes. The inspectors reviewed daily Quality Control (QC) data logs and calibration records for instruments used to quantify effluent sample activity including High Purity Germanium (HPGe) detectors and liquid scintillation counters. In addition, results of the 2007 and 2008 inter-laboratory cross-check program were reviewed.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; and TS Section 5. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Problem Identification and Resolution Selected NCRs associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with procedure CAP-NGGC-0200, Corrective Action Program, Rev. 26. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Reviewed documents are listed in Section 2PS1 of the report Attachment.

The inspectors completed all three specified line-item samples detailed in IP 71122.01.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

a. Inspection Scope

REMP Implementation The inspectors observed routine sample collection and surveillance activities as required by the licensee's environmental monitoring program. The inspectors noted the material condition and operability of air sampling equipment and observed the weekly airborne particulate filter and iodine cartridge change-outs at the ten sample stations specified by the current ODCM. The inspectors directly observed collection and initial preparation of surface water samples at four sampling locations. Also, the inspectors verified location and material condition of 14 environmental thermoluminescent dosimeters. Land use census results, changes to the

ODCM, and sample collection/processing activities, including missed environmental samples were discussed with environmental technicians and licensee staff.

The inspectors reviewed the last two air flow calibration records for selected environmental air samplers. The inspectors also reviewed calendar year (CY) 2006 and CY 2007 Radiological Environmental Operating Reports, results of CY 2006 and CY 2007 inter-laboratory cross-check program, and current procedural guidance for environmental sample collection and processing. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

Procedural guidance, program implementation, and environmental monitoring results were reviewed against: 10 CFR Part 20; Appendix I to 10 CFR Part 50; TS Section 5.4.1, 5.5.1, and 5.6.2; ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and the Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program - 1979. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Meteorological Monitoring Program During tours of the meteorological tower and local data collection equipment, the inspectors observed the physical condition of the tower and its instruments and discussed equipment operability and maintenance history with the system engineer. The inspectors evaluated transmission of locally generated meteorological data to other licensee groups such as main control room operators. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed calibration records for applicable tower instrumentation and evaluated measurement data recovery for calendar years 2006, 2007, and 2008.

Licensee procedures and activities related to meteorological monitoring were evaluated against: ODCM; UFSAR; ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites; and Safety Guide 23, Onsite Meteorological Programs. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) The inspectors observed surveys of material and personnel being released from the RCA using small article monitor, personnel contamination monitor, and portal monitor instruments. The inspectors also observed source check testing of these instruments and discussed equipment sensitivity, alarm set-points, and release program guidance with licensee staff. The inspectors compared recent 10 CFR Part 61 results for the DAW waste stream with radionuclides used in calibration and check sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed the last two calibration records for selected release point survey instruments.

Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in Sections 2OS3 and 2PS3 of the report Attachment.

Problem Identification and Resolution The inspectors reviewed selected NCRs in the areas of environmental monitoring, meteorological monitoring, and release of materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with CAP-NGGC-0200, Corrective Action Program, Rev. 26. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Documents reviewed are listed in section 2PS3 in the Attachment to this report.

The inspectors completed all ten specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors verified the PIs identified below. For each PI, the inspectors verified the accuracy of the PI data that had been previously reported to the NRC by comparing those data to the actual data, as described below. The inspectors also compared the licensee's basis in reporting each data element to the PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 5. In addition, the inspectors interviewed licensee personnel associated with collecting, evaluating, and distributing these data.

Mitigating Systems Cornerstone

- Mitigating Systems, Cooling Water Systems

For the period from the first quarter of 2008 through the fourth quarter of 2008, the inspectors reviewed Licensee Event Reports, records of inoperable equipment, and Maintenance Rule records to verify that the licensee had accurately accounted for unavailability hours that the subject system had experienced during the subject period. The inspectors also reviewed the number of hours those systems were required to be available and the licensee's basis for identifying unavailability hours.

Barrier Integrity Cornerstone

- For the Reactor Coolant System Specific Activity PI, the inspectors observed sampling and analysis of reactor coolant system samples, and compared the reported performance indicator data with records developed by the licensee while analyzing previous samples, for the period from the first quarter of 2008 through the fourth quarter of 2008.

- For the Reactor Coolant System Leak Rate PI, the inspectors reviewed records of daily measures of reactor coolant system identified leakage, for the period from the first quarter of 2008 through the fourth quarter of 2008.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Routine Review of ARs

a. Inspection Scope

To aid in the identification of repetitive equipment failures or specific human performance issues for followup, the inspectors performed frequent screenings of items entered into the Corrective Action Program (CAP). The review was accomplished by reviewing daily AR reports.

b. Findings

No findings of significance were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected AR 272388, Significant Condition Not Evaluated, for detailed review. The subject condition was the adequacy of the foreign-material exclusion program. The inspectors selected this AR because it relates generally to the Initiating Events and Mitigating Systems Cornerstones.

The inspectors also selected AR 237010 for detailed review. The subject of this adverse condition was that some maintenance activities had been performed without using the required procedure or with inadequate procedural compliance. The inspectors selected this AR because it relates generally to the Initiating Events and Mitigating Systems Cornerstones.

The inspectors reviewed these reports to verify:

- complete and accurate identification of the problem in a timely manner;
- evaluation and disposition of performance issues;
- evaluation and disposition of operability and reportability issues;
- consideration of extent of condition, generic implications, common cause, and previous occurrences;
- appropriate classification and prioritization of the problem;
- identification of root and contributing causes of the problem;

- identification of corrective actions which were appropriately focused to correct the problem; and
- completion of corrective actions in a timely manner.

The inspectors also reviewed these AR's to verify compliance with the requirements of the CAP as delineated in Procedure CAP-NGGC-0200, Corrective Action Program, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

b. Observations and Findings

No findings of significance were identified.

4OA3 Event Follow-up

(Closed) LER 2009-008-02, Manual Reactor Trip Due to High Turbine Vibrations.

a. Inspection Scope

This Licensee Event Report (LER) describes the reactor trip that was previously documented in section 4OA3 of NRC inspection report 05000261/2008005. The inspectors reviewed this LER and related documents to assess the LER's accuracy, appropriateness of the corrective actions, potential violation of NRC requirements, and generic issues. Documents reviewed are listed in the attachment.

b. Findings

Introduction: The inspectors identified a Green finding for the licensee's failure to provide adequate procedures for maintenance and installation of the main generator and exciter. Consequently, while completing associated maintenance and installation work, licensee personnel incorrectly installed shims under the exciter base and incorrectly installed a refurbished seal on the generator. As a result, the exciter experienced high vibrations on November 17, 2008, which required the insertion of a manual turbine and reactor trip. Although a violation of regulatory requirements was not identified, this failure was a performance deficiency with respect to the licensee's corporate policy NGGD-0010, "Nuclear Generation Group Policy for a Strong Safety Culture", Revision 0.

Description: The licensee's failure to provide adequate procedures for maintenance and installation of the main generator and exciter was a performance deficiency that allowed maintenance technicians to create conditions that allowed high turbine vibration, which in turn prompted control-room operators on November 17, 2008, to initiate a manual reactor trip. Specifically, the subject procedures did not adequately describe proper installation of shims under the exciter base, and that inadequacy allowed maintenance technicians to improperly install shims in at least two locations, such that the exciter frame under the #9 bearing was inadequately supported. Also, the procedures did not require independent verification of critical dimensions associated with hydrogen seal clearances, and that inadequacy allowed maintenance technicians to incorrectly install a hydrogen seal and for their error to not be discovered before that seal was placed into service. Consequently, a hydrogen seal rub contributed to high turbine vibration.

This failure was a performance deficiency with respect to the licensee's corporate policy NGGD-0010, Nuclear Generation Group Policy for a Strong Safety Culture, Revision 0, in that policy NGGD-0010 requires managers and supervisors to ensure that procedures are adequate to assure nuclear safety. However, the procedures for maintenance and installation of the main generator and exciter were not adequate to assure nuclear safety, in that inadequacies in those procedures allowed maintenance and installation activities to produce conditions which resulted in a reactor trip.

Analysis: The performance deficiency was the licensee's failure to provide adequate procedures for maintenance and installation of the main generator and exciter. This finding is more-than-minor because it affected the Equipment Performance attribute of the Initiating Events cornerstone, and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations. When evaluated per Attachment 4 of Manual Chapter 0609, this finding screened to very low safety significance (Green) because it did not contribute to both an initiating event and the likelihood of a loss of mitigating equipment or functions. This finding is in the licensee's corrective action program as a contributing cause identified in AR 306903. This finding has a cross-cutting aspect of supervisory and management oversight, as described in the Work Practices component of the Human Performance cross cutting area because the licensee failed to provide adequate oversight to the work activities associated with turbine-generator reassembly (H.4(c)).

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of regulatory requirements. Because this finding does not involve a violation of regulatory requirements and has a very low safety significance, it is characterized as a finding and is designated FIN 05000261/2009002-03, "Inadequate procedures produced conditions which caused a reactor trip".

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors observed Security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were indentified.

.2 (Closed) Temporary Instruction (TI) 2515/176, EDG TS Surveillance Requirements Regarding Endurance and Margin Testing

Inspection activities for TI 2515/176 were previously completed and documented in inspection report 05000261/2008004 and this TI is considered closed at H.B. Robinson Steam Electric Plant; however, TI 2515/176 will not expire until August 31, 2009. The information gathered while completing this temporary instruction was forwarded to the Office of Nuclear Reactor Regulation for review and evaluation.

4OA6 Meetings, Including Exit

On January 16, 2009, the inspectors discussed results of the onsite radiation protection inspection with Mr. E. McCartney, Site Vice President, and other responsible staff. The inspectors noted that proprietary information was reviewed during the course of the inspection but would not be included in the documented report.

An exit meeting was conducted on March 5, 2009, to discuss the findings of the Licensed Operator Requalification program inspection. The inspectors confirmed that no proprietary information was retained during this inspection.

On April 3, 2009, the resident inspectors presented the inspection results to Mr. Eric McCartney and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

C. Baucom, Manager, Support Services - Nuclear
S. Brown, Outage & Scheduling Manager
W. Farmer, Engineering Manager
K. Hatchell, Supervisor, Environmental and Chemistry
J. Huegel, Maintenance Manager
K. Jones, Operations Manager
E. Kapopoulos, Plant General Manager
J. Lucas, Nuclear Assurance Manager
E. McCartney, Vice President
B. Peavyhouse, Design Engineering Superintendent
J. Rhodes, Radiation Protection Superintendent
E. Roberts, Operations Training Superintendent
G. Sanders, Licensing
K. Smith, Training Manager
S. Wheeler, Supervisor, Operations Support
B. White, Environmental & Chemistry Superintendent
G. Worley, Supervisor, Radiation Control

NRC personnel

R. Musser, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000261/2009002-01	URI	Operability of the A emergency diesel generator from February 9 to March 10, 2009 (Section 1R15.1)

Closed

05000261/2008002-00	LER	Manual Reactor Trip due to High Turbine Vibrations (Section 4OA3)
2515/176	TI	EDG TS Surveillance Requirements Regarding Endurance and Margin Testing (Section 4OA5)

Opened & Closed

05000261/2009002-02	NCV	Failure to meet the required actions of TS 3.8.1 for condition B (Section 1R15.2)
05000261/2009002-03	FIN	Inadequate procedures produced conditions which caused a reactor trip (Section 4OA3)

Previous Items Closed

None

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

For cold weather:

Procedures
AP-008, Cold Weather Preparation, Rev. 17
AP-015, Portable Heaters/Heating Devices, Rev. 15

Work Orders
Work order 55890 which implemented cold weather protection – plant equipment
Work order 1146809 which implemented freeze protection – plant equipment
Results of AP-015, Attachment 6.4, Heater/Heating Devise Location Checklist, various locations
Results of AP-015, Attachment 6.2, Weekly Heater Device Inspection, dated 01/09/09, 01/04/09
Results of AP-015, Attachment 6.2, Monthly Heater Device Inspection, dated 12/27/08
Results of AP-015, attachment 6.1, request for portable heater device for turbine 1st stage pressure transmitter, dated 10/28/08
Results of AP-015, attachment 6.1, request for portable heater device for main steam pressure transmitter enclosure, dated 10/28/08
NRC-261475, heater (HBR#9) did not comply with AP-015 as required

Section 1R04: Equipment Alignment

Partial System Walkdown
Control room [heating, ventilation, & air conditioning] system:
System Description SD-036, [Heating, Ventilation, & Air Conditioning], Rev. 11
Procedure OP-906, "[Heating, Ventilation, & Air Conditioning]", Rev. 51
Drawing G-190311, "[Heating, Ventilation, & Air Conditioning] – Control Diagrams, Rev. 17

Containment spray system:
System Description SD-024, [Containment Spray System], Rev. 9
Drawing 5379-1082, Safety Injection System Flow Diagram, sheet 3, Rev. 26
Drawing B-190628, Control Wiring Diagram, sheet 287, Rev. 15.
Operator logs for January 13, 2009
Clearance order checklist: 00185033

Auxiliary feedwater system:
SD-042, AFW system, Rev. 12
Operator logs for January 22, 2009
Drawing G-190197, Feedwater Condensate & Air Evacuation System Flow Diagram, sheet 4, Rev. 55
Drawing G-190199, Service & Cooling Water System Flow diagram, sheet 9, Rev. 55
OMM-077, Equipment Inoperable Record, Rev. 77, attachment 10.12
Clearance order 185331, SDAFW pump

Complete System Walkdown
Procedure OP-306, Component Cooling Water System, Attachment 10.1, Component Cooling System Checklist, Rev. 57
Procedure OMM-009, Licked Valve List, Attachment 10.1, Locked Valve List, Rev. 85. This is a consolidated list of all locked valves throughout the plant
System Description 4080, "Component Cooling Water System", Rev. 9
Design Basis Document –R87038/SD13, "Component Cooling Water System", Rev. 8
Drawing 5379-00376 SH00001, Component Cooling Water System Flow diagram, Rev. 37
UFSAR section 9.2.2, "Component Cooling System"
Active clearance orders on 01/26/09

Work Orders:
830777, Replace tubes 'A' CCW heat exchanger
1104728, Replace CCW 'C' motor with rewound spare motor

Action Requests (ARs) and Action Item Assignments (AIAs):
List of approved and completed ARs for the CCW system from 02/02/07 to 01/15/09
Expert Panel Meeting Minutes for the CCW system through 01/26/09

Section 1R05: Fire Protection

Procedures
OMM-003, Fire Protection Pre-Plans/Unit No. 2, Rev. 53
AOP-041, Response to Fire Event, Rev. 1
AOP-014, Component Cooling Water System Malfunction, Rev. 25

UFSAR Sections of Appendix 9.5.1A
3.7.8, Fire Zone 26 – Yard Transformers
3.1.3.1, Fire Zone 7 – Auxiliary Building Hallway
3.1.5.5, Fire Zone 20 – Emergency Switchgear Room and Electrical Equipment Area
3.1.5.4, Fire Zone 19 – Unit 2 Cable Spreading Room
3.3, Fire Zone 5 – Component Cooling Pump Room

Results from Completed Procedures
OST-611-2, Low Voltage Fire Detection and Actuation Systems Zones 3, 4, & 5 (Semi-Annual), Rev. 3, dated 09/03/08
OST-611-3, Low Voltage Fire Detection and Actuation Systems Zones 6 & 7, Rev. 3, dated 09/08/08
OST-611-6, Low Voltage Fire Detection and Actuation Systems Zones 11 & 13, Rev. 3, dated 01/30/09
OST-611-7, Low Voltage Fire Detection and Actuation Systems Zones 12, Rev. 3, dated 12/08/08
OST-611-11, Low Voltage Fire Detection And Actuation System Zones 19 & 20, Rev. 6, dated 12/14/08
OST-620, Carbon Dioxide Suppression System Weight Test, Rev. 27, dated 12/29/08
OST-623, Fire Barrier Penetration Seal Inspection (18 Month), Rev. 24, dated 11/04/08, 10/31/08
OST-624, Fire Damper Inspection (18 Month), Rev. 21, dated 11/12/08

OST-625, Fire Door Inspection (Semi-Annually), Rev. 30, dated 01/13/09
OST-628, Function Test Of The Halon 1302 System, Rev. 21, dated 09/17/08
OST-630, Halon 1301 Suppression System Weight Test, Rev. 29, dated 12/31/08
OST-648, CCW Room One-Hour Rated Fire Barrier Wrap Inspection (18 Months), Rev. 5, dated 05/30/07
OST-656, CCW Pump Room Sprinkler System Drain and Alarm Test (Semi-Annual), Rev. 4, dated 08/31/08
OST-642, Main Transformer Deluge System Flow Test, Rev.16, dated 06/03/08
OST-843, Startup/Auxiliary Transformer Deluge System Flow Test, Rev. 19, dated 04/07/08

Drawings
HBR2-9717, fire area/zone locations, Rev. 5
HBR2-9717, fire area/zone locations, sheet 1, Rev. 3

Work Orders
1032900-01, replace mercury check valve FP-615
1101989-01, provide assistance for accomplishment of OST-628
1307438, Manual pull station 3B3 does not alarm
1038820, PST-611-2 (SN) perform low voltage fire detection and actuation
1063157, OST-623 visually inspect CP-2653.00-FB-06/25, CP-2674.00-FB
1284327, Damper 22A9 closed trouble alarm reflashing
1478482, locking mechanism working improperly
1471694, FDR-30 closing mechanism is leaking oil
1463850, FDR-13 will not latch closed
834682, EC 63687 replace HEMYC fire wrap on A & C CCW pump conduits

Section 1R07: Heat Sink Performance

Procedures
CM-201, Safety Related and Non-Safety Related Heat Exchanger Maintenance, Rev. 42
OST-201-2, MDAFW System Component Test – Train B, Rev. 25
MNT-NGGC-0007, Foreign Material Exclusion Program, Rev. 8
MMM-010, Cleanliness and Flushing Requirements, Rev. 26

Other Documents
Work Order 1119481, clean and test auxiliary feedwater pump B lube oil cooler
Updated Final Safety Analysis Report section 10.4.8, Auxiliary Feedwater System
Technical Manual 728-653-06, Ingersoll Dresser Pacific Pumps
Updated Final Safety Analysis Report section 9.2.1, Service Water
EPRI-NP7552, Heat Exchanger Performance Monitoring Guidelines, December 1991
AR 321257, B MDAFW pump bearing oil cooler was found with over 50% of its tubes blocked
AR 252688, Change PM frequency for clean/inspect MDAFW HX's from 12 Mo to 18 Mo

Section 1R11: Licensed Operator Requalification

AR 322910, Reactivation documentation not meeting OMM-1-5
AR 323224, Psychometric Flaws Found on Written Exams
Two written and four operating remedial action plans

OMM-001-5, Training and Qualification, Rev. 39
TAP-001, Training Conduct and Expectations, Rev. 11
TPP-200, Licensed Operator/Shift Technical Advisor Continuing Training Program, Rev. 13
TPP-206, Simulator Program, Rev. 16
TAP-303, Operations Examination Review and Validation, Rev. 12
TAP-403, Examination and Testing, Rev.31
TAP-404, Training Documentation and Records, Rev.19
TAP-409, Conduct of Simulator Training and Evaluation, Rev.23
TAP-413, Simulator Scenario Based Testing, Rev.3
EPCLA-01, Emergency Control, Rev.27

Simulator Availability Statistics 2001-2008
Simulator Discrepancy Statistics 2001-2008
Four reactivation records

Simulator Performance Test 4.1, Manual Reactor Trip, Rev.13
Simulator Performance Test 4.3, Simultaneous Closure of MSIV's Transient test, Rev.13
Scenario Based test LOCT 07-2, Rev. 3
Scenario Based test LOCT 07-6, Rev. 2
Plant Transient (Automatic Reactor Trip Caused by a Turbine Trip) May 15, 2007

Self Assessment Report 00253922

2007 biennial week 3 LOCT written examination
2009 biennial week 2 LOCT written examination
2009 biennial scenarios
2009 biennial JPMs

18 Medical records

Section 1R12: Maintenance Effectiveness

Action Requests
287982, Charging pump C low flow following emergent maintenance
270408, Charging pump A minor flow oscillations
269332, Charging pump C noises and flow oscillations
260663, Charging pump B fractured internal valve
260133, Charging pump B unusual noise
206640, Charging pump B valves/crankcase unusual noise and discharge pressure fluctuation
251335, Replacement of C service water pump
242522, Review CCW and service water recent operation
225463, Service water pump bases need improvement/correction
212321, Service water pump C vibration readings
193717, Abnormal noise coming from C service water pump
184243, Unanticipated ITS 3.7.7 entry
168981, Service water pump A vibration levels are approaching the alert threshold
126344, Steam dump PRV-1324B-1 failed to open

Procedures
ADM-NGGC-0101, Maintenance Rule Program, Rev. 20
CAP-NGGC-0200, Corrective Action Program, Rev. 27

Maintenance Rule Documents
For system 2060, Chemical and Volume Control:
- Event Log Report for 01/06/06 – 01/06/09
- Scoping and Performance Criteria

For system 4060, Service Water:
- Scoping and Performance Criteria
- Maintenance Rule Event List
- Maintenance Rule Monitoring Status
- Performance Monitoring Trend data
- Expert Panel Meeting Minutes

For system 3020, Main Steam:
- Maintenance Rule Scoping and Performance Criteria
- Maintenance Rule Event List/Log
- Performance Summary (Maintenance Rule Monitoring Status)
- Expert Panel Meeting Minutes
- ARs, both approved and completed, from 01/17/2002 to present
- Engineering Change Log
- Open work orders

Other
ARs associated with the Chemical and Volume Control system for 01/06/06 – 01/06/09
ARs associated with the Service Water system for 01/21/06 – 01/21/09
Engineering Change 63783, Steam dump solenoid replacement
Engineering Change 69858, SW pump base design change for pump removal/reinstallation
Work order 1120905, Replace steam dump supply solenoids per EC 63783 during R-25
Work order 1312878, remove grout to check shim blocks on SW-PMP-C
Work order 342215, Charging pump C flow oscillations
Work order 345567, Replace charging pump B fluid cylinder
Work request 325153, Service water pump C high vibration

Section 1R13: Maintenance Risk Assessment and Emergent Work Control

Procedure OMM-048, Work Coordination and Risk Assessment, Rev. 40
Clearance Order Checklist 187318, motor-driven auxiliary feedwater pump A
Robinson Nuclear Plant Plan of the Week Report for Feb 13 through Feb 20

Section 1R15: Operability Evaluations

Procedures
OST-909, Component Cooling System Component Test, Rev. 66
OP-306, Component Cooling Water System, Rev. 57
APP-001, Miscellaneous NSSS, Rev. 44
CM-201, Safety Related Heat Exchanger Maintenance, Rev. 42
MNT-NGGC-0007, Foreign Material Exclusion Program, Rev. 8

MMM-010, Cleanliness and Flushing Requirements, Rev. 26
OST-201-2, [Motor-Driven Auxiliary Feedwater] System Component Test – Train B, Rev. 25

Other Documents
Emergency Diesel Generator system engineer's Five Step Problem Solving Tool describing the rationale used in recommending that the EDG be declared operable
DBD/R87038/SD13, Design Basis Document Component Cooling Water System, Rev. 8
EPRI-NP7552, Heat Exchanger Performance Monitoring Guidelines, December 1991
Work Order 1119481, Clean and Test B MDAFW Oil Cooler
AR 321257, B MDAFW pump bearing oil cooler was found with over 50% of its tubes blocked
AR 252688, Change PM frequency for clean/inspect MDAFW HX's from 12 Mo to 18 Mo
Work request 365420, KW Fluctuations During OST-401-1
UFSAR 9.2.2, Component Cooling System
TS 3.8.1.3, [Diesel Generator] loading
UFSAR 8.3.1.1.5.4, Test and Inspection Capabilities [of onsite AC power sources]
UFSAR 9.3.4, Chemical and Volume Control System
Operator logs from 1249 on 01/12 to 0250 on 01/13 containing entries related to load swing conditions observed on the A Emergency Diesel Generator during the performance of OST-401-1

Drawings
5379-685, Chemical & Volume Control System Purification and Make-up Flow Diagram, sheet 1 of 3, Rev. 52

Section 1R19: Post Maintenance Testing

Procedures
OP-601, [Direct Current] Supply System, Rev 41
OST-101-1, [Chemical & Volume Control System] Component Test Charging Pump A, Rev. 43
OST-101-2, [Chemical & Volume Control System] Component Test Charging Pump B, Rev. 37
OST-201-1, [Motor-Driven Auxiliary Feedwater] System Component Test – Train A, Rev. 28
OST-201-2, Motor-driven Auxiliary Feedwater System Component Test – Train B, Rev. 25
OST-202, Steam Driven Auxiliary Feedwater System Component Test, Rev. 72
OST-206, Comprehensive Flow Test for the Steam Driven Auxiliary Feedwater Pump, Rev. 50
PM-439, Station Battery Charger A Capacity Test, Rev. 9

Other Documents
Operator logs dated 01/22/09
TS 3.7.4, Auxiliary Feedwater (AFW) System
Updated Final Safety Analysis Report Section 10.4.8, Auxiliary Feedwater System
Work Order 1041790, auxiliary feedwater pump B coupling inspection and grease change
Work Order 1059887, replace float and equalizing potentiometers on A battery charger
Work Order 1119481, clean and test auxiliary feedwater pump B lube oil cooler
Work Request 1024762, replace D3 power diodes on A battery charger
Work Request 1328851, inspect and clean A battery charger
Work Request 367188, PI-3003 appears to have leaked into internals

Section 1R22: Surveillance Testing

Procedures
EST-082, Inservice Inspection Pressure Testing of Auxiliary Feedwater System, Rev. 22
TMM-020, Inservice Pressure Testing Program, Rev. 17
OST-101-7, Comprehensive Flow Test for Charging Pump B, Rev. 13
OST-401-1, Emergency Diesel Generator A Slow Speed Start, Rev. 37 and Rev. 36
Results from OST-401-1, Emergency Diesel Generator A Slow Speed Start, dated 11/22/08, 10/22/08, and 08/25/08
Results from EST-082, Inservice Inspection Pressure Testing of Auxiliary Feedwater System: Rev. 22, dated 06/30/08, 09/05/07; Rev. 21, dated 01/19/05; Rev. 20 dated 11/10/04
OPS-NGGC-1305, Operability Determinations, Rev. 1
OST-108-1, Boric Acid Pump A Inservice Test, Rev. 21

Other Documents
Drawing G-190197, Feedwater Condensate and Air Evacuation System Flow Diagram, Sheet 4 of 4, Rev. 55
UFSAR Section 10.4.8.4, Tests and Inspections
Technical Specification 3.7.4, Auxiliary Feedwater System
UFSAR 8.3.1.1.5.4, Test and Inspection Capabilities [of onsite AC power sources]
TS 3.8.1, AC Sources – Operating
TSR 3.8.1.2, Modified DG start
TSR 3.8.1.3, DG loading
TS 3.8.3, Diesel Fuel Oil and Starting Air
TSR 3.8.3.2, Verify fuel oil properties of stored fuel oil are tested
TSR 3.8.3.3, Verify each DG air start receiver pressure is $\geq$ 210 psig
Operations Training for SD-005, Emergency Diesel Generators, section 9 for related references and past problems, Rev. 13
FP-304, Area Fire Watch Inspection Log, dated 01/12/09
FRM-SUBS-01086, PPE Waiver Form, dated 01/12/09
WR-1382322-01, Record Emergency Diesel Generator A jacket water pressure
WR-1444623, MST-931 testing of Emergency Diesel Generator A protective bypasses
UFSAR Section 5.2.5, Detection of Leakage Prevention Through RCS Boundary
TS 1.1, Definitions – Leakage
TS 3.4.13, RCS Operational Leakage
TSR 3.4.13.1, 72 Hour Leakage Surveillance
PRO-NGGC-0200, Procedure Use and Adherence, Rev. 9

Section 2OS3: Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Guidance Documents and Manuals
Abnormal Operating Procedure (AOP) – 004, Control Room Inaccessibility, Rev. 18
CAL-LP-256, Containment High Range Radiation Monitor (Area), Rev. 12
DOS-NGGC-0020, Whole Body Counter (WBC) System Calibration, Rev. 8
DOS-NGGC-0021, Whole Body Counter (WBC) System Operation, Rev. 17
HPP-104, Verification and Operation of Breathing Air Supplies, Rev. 28
HPP-110, Inspection and Maintenance of Respiratory Equipment, Rev. 31
HPP-111, Control and Use of Respiratory Protection Equipment, Rev. 34

HPS-NGGC-0005, Calibration of Portable Radiation/Contamination Survey Instruments, Rev. 9
HPS-NGGC-0020, Calibration and Use of the Eberline AMS-4 Air Monitor, Rev. 0
RST-008, Calibration of Radiation Monitor System Monitors R-1Through R-8, Rev. 29
RST-009, Calibration of Radiation Monitor System Monitors R-9, R-30, R-31A, B, C, and R-33, Rev. 30
RST-020, Verification of Electronic Calibration of Radiation Monitoring System Monitors R-32A & B, Rev. 19
SIC-001, Administrative Controls for Survey Instruments, Portable Air Samplers, and CAMS, Rev. 39
SIC-008, Calibration and Operation of the SAM9 Small Articles Monitor, Rev. 15
SIC-037, Calibration and Operation of the APTEC PMW-3 Personnel Monitor, Rev. 17
SIC-041, Calibration and Operation of Canberra Personnel Monitors, Rev. 8
Lesson Plan GN6C10G, Respiratory Protection Training, Rev. 18
RCR0004R, Technical Training – Changing our SCBA Cylinders, Rev. 0

Records and Data Reviewed

Work Order (WO) 01039507, Perform L-256 as Necessary to support RST-20 on R-32, 10/3/08
RNP Maintenance Rule Monitoring Status printout for Process/Area Radiation Monitors, 1/14/09
HPS-NGGC-0005-8-5, Eberline 6112B Calibration Record (S/N 19719), 8/29/08
HPS-NGGC-0005-8-5, Eberline 6112B Calibration Record (S/N 19719), 10/20/07
HPS-NGGC-0005-9-6, Eberline RO-2, RO-2A, & RO-20 Calibration Record (S/N 2819), 2/08/07
HPS-NGGC-0005-9-6, Eberline RO-2, RO-2A, & RO-20 Calibration Record (S/N 2819), 8/16/08
Calibration Package for Eberline AMS-4 (S/N 1650), 2/20/07
Calibration Package for Eberline AMS-4 (S/N 1650), 2/04/08
Calibration Verification Package for R-32A (RST-020 Attachments), 4/13/07
Calibration Verification Package for R-32A (RST-020 Attachments), 9/29/08
Calibration Verification Package for R-32B (RST-020 Attachments), 4/13/07
Calibration Verification Package for R-32B (RST-020 Attachments), 9/29/08
Calibration Package for R-4 (RST-008 Attachments), 3/07/06
Calibration Package for R-4 (RST-008 Attachments), 8/22/07
Calibration Package for R-5 (RST-008 Attachments), 8/13/06
Calibration Package for R-5 (RST-008 Attachments), 12/03/07
Canberra Personnel Monitor Calibration Data Package (S/N 0507-007), 2/14/08
Canberra Personnel Monitor Calibration Data Package (S/N 0507-007), 2/20/07
DAW Sample Analysis (Sample ID 253380_1018), 11/14/07
SAM9 Calibration Data Package (S/N 148), 1/02/08
SAM9 Calibration Data Package (S/N 148), 12/31/08
Compressed Air Quality Test Lab Reports for SCBA Compressor 11/01/06 – 7/28/08
Compressed Air Quality Test Lab Reports for “D” Instrument Air Compressor 12/08/06 – 6/02/08
Compressed Air Quality Test Lab Reports for Compressed Air System 12/05/06 – 5/29/08
Scott PosiChek3 Visual/Functional Test Results for Regulator 1820007, 8/29/03, 3/08/05, and 3/13/07
Scott PosiChek3 Visual/Functional Test Results for Regulator 4820041, 3/08/05 and 2/02/07
Scott PosiChek3 Visual/Functional Test Results for Regulator 4821145, 8/27/03, 6/30/05, and 2/19/08
SIC-013 Technical Review of Model 6112B Teletector Serial Number 25435, 11/11/08
WBC Calibration, Report No. 02-07-08-27, 8/27/07
WBC Calibration, Report No. 02-08-09-09, 9/09/08

Corrective Action Program (CAP) Documents
RP Self Assessment No. 214486, Radiation Control Remote Monitoring, 6/11/07 – 6/14/07
CAP-NGGC-0201-4-11 Assessment No. 257272, Respiratory Protection Program 12/01/08 – 12/05/08
Nuclear Condition Report (NCR) No. 00244511, SAM-9 failed two consecutive response checks, 8/28/07
NCR No. 00255085, Greater than factor-of-ten shift in scaling factors, 11/16/07
NCR No. 00262176, Radiation control instrumentation data out of tolerance, 1/15/08
NCR No. 00290195, Emergency Kit SRPDs past calibration due date, 8/04/08
NCR No. 00300891, Problems with divers electronic dosimeters, 10/12/08
NCR No. 00306027, Instrument failed source check greater than 20 percent, 11/11/08
NCR No. 00315174, Deficiency in Respiratory Training for SCBA, 1/20/09

Section: 2PS1 Radioactive Gases and Liquid Effluent Treatment and Monitoring Systems

Procedures, Guidance Documents, and Manuals
EMP-023, Liquid Waste Release and Sampling, Rev. 46
EMP-022, Gaseous Waste Release Permits, Rev. 48
RCP-142, Calibration of the Genie Gamma Spectroscopy System, Rev. 12
RST-012, Calibration of Radiation Monitoring System, Monitor R-14, Rev. 24, 25, and 26
RST-016, Calibration of Radiation Monitoring System, Monitor R-18, Rev. 21 and 23
RST-017, Calibration of Radiation Monitoring System, Monitors R-37 and R-19A, B, and C, Rev. 8 and Rev. 10
RST-026, Plant Vent Flow Monitor Calibration, Rev. 12
CAP-NGGC-0200, Corrective Action Program, Rev. 26

Records and Data Reviewed
Annual Radioactive Effluent Release Report, 2006 and 2007
Radiation Monitor R-14 Calibrations, 11/26/05, 8/2/07, and 10/30/07
Radiation Monitor R-19A Calibrations, 4/21/06 and 10/24/07
Radiation Monitor R-18 Calibrations, 2/15/07 and 4/16/08
Plant Vent Flow Monitor F-14 Calibrations, 11/22/05 and 8/6/07
Radioactive Source Certificate Sheet, Source Nos. 90CS2203850, 90CS2203851, and 90CS2203849
HPGe Detector 1, Charcoal Cartridge Geometry Calibrations, 9/17/07 and 8/1/08
HPGe Detectors 1, 2, 3, 4, Daily Source Check Logs, 12/1/08 – 12/31/08
Packard 2750TR/LL Liquid Scintillation Detector Calibrations, 9/15/08 (tritium) and 9/21/08 (alpha)
Packard 2750TR/LL Liquid Scintillation Detector Daily Source Check Logs, 1/1/08 – 12/31/08
Gaseous Waste Release Permits, 08-275G (11/12/08), 08-274G (11/12/08 – 11/19/08), and 09-013G (1/7/09 – 1/14/09)
Liquid Waste Release Permits, 08-272L (11/13/08 – 11/20/08), 08-269L (11/12/08), and 09-009L (1/7/09 – 1/14/09)
LLD Requirements Analysis Reports, 9/27/07, 10/25/07, 11/1/07, and 11/2/07
Results of Radiochemistry Cross-Check Program, 1st quarter 2007, 2nd quarter 2007, 3rd quarter 2007, 4th quarter 2007, and 1st quarter 2008

Reactor Auxiliary Building Ventilation HEPA Surveillances, 8/30/06 and 1/9/08
Containment Purge HEPA and Charcoal Bed Surveillances, 4/6/07 and 9/25/08
Effluent monitor out-of-service log, 1/1/07 – 12/31/08
E&C ODCM Supplemental Surveillance Log, 1/1/07 – 12/31/08

CAP Documents
R-EC-08-01, Environmental and Chemistry Assessment Report, 3/27/08
NCR No. 00314850, Evaluate use of the reporting of typical LLDs in the Annual Effluent Report
NCR No. 00298367, Gas decay tank release halted due to alarm on condenser air ejector Radmonitor (R-15)
NCR No. 00268513, Waste Condensate Tank composite results show increase in Fe-55
NCR No. 00230435, Chemistry KPI for gaseous particulate and iodine releases has been exceeded. No regulatory limits exceeded
NCR No. 00228852, Effluent software is double-counting gas decay tank releases
NCR No. 00227011, Incorrect tritium data entered on two release permits

Section 2PS3: Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

Procedures and Guidance Documents
Environmental Monitoring Procedure (EMP)-001, Environmental Sampling, Rev. 46
EMP-002, Air Flow Acceptance, Rev. 14
EMP-003, Meteorological Tower Inspection, Rev. 6
EMP-004, Environmental Air Sampler Calibration, Rev. 16
EMP-016, Automatic Water Sampler, Rev. 5
Off-site Dose Calculation Manual (ODCM) H.B. Robinson Steam Electric Plant Unit No. 2, Rev. 28
Preventative Maintenance (PM) Procedure, Meteorological Tower Equipment Calibration, Rev. 6

Records and Data Reviewed
Environmental Weekly Sampling Work Sheet, 01/13/09
Air Sampler Calibration Work Sheet, APAC Sampler Number (No.) 01, No. 02, No. 03, No. 04, No. 05, No. 06, No. 07, No. 55, No. 60,and No. 61: 02/07/08
Met Tower Site Inspection Checklist Data, 01/12/09
Work Order (WO) 01122302 01, Calibration of Met Tower Equipment, 03/17/08
WO 01315844 01, Calibration of Met Tower Equipment, 09/08/08
Screening Criteria Checklist; Process Control Program (PCP) and the Off-site Dose Calculation Manual Evaluation, Rev 19; and Unreviewed Safety Question Determination, Identification Number 01-0148, February 2001
2001 Annual Radioactive Effluent Release Report, H. B. Robinson Steam Electric Plant, Unit No. 2,
2006 Annual Radioactive Effluent Release Report, H. B. Robinson Steam Electric Plant, Unit No. 2
2007 Annual Radioactive Effluent Release Report, H. B. Robinson Steam Electric Plant, Unit No. 2,
2008 Robinson Nuclear Plant Land Use Census, 09/03/2008
Operability Concern Review (OCR) for NCR 00251953, GW-1, Ground Wind Sensor

Engineering Change 0000069828R0, Impact of the Unit 1 Silo on Unit 2 Met Tower,
Environmental Monitoring Program Laboratory Cross-Check Program Results Fourth Quarter 2007 through Third Quarter 2008
Meteorological Data Recovery Details Calendar Year (CY) 2006, CY 2007, and CY 2008

CAP Documents
Robinson Nuclear Assessment (08-017), Robinson Nuclear Plant Environmental and Chemistry Assessment Report, 03/27/2008
NCR No. 00218932, Broadleaf vegetation samples were not available
NCR No. 00222671, Broadleaf vegetation samples were not available for February 2007
NCR No. 00226124, Broadleaf vegetation samples were not available for March 2007
NCR No. 00228930, Environmental TLD #26 is missing
NCR No. 00229470, Broadleaf vegetation samples were not available for the month April 2007
NCR No. 00232234, APAC-55 found not running
NCR No. 00236028, SA214485, Release of material deficiency #1
NCR No. 00239619, APAC-06 found not running
NCR No. 00249867, Missing environmental TLD # 11 and #18
NCR No. 00251829, Two types of broadleaf samples not available in all four sectors
NCR No. 00251953, Potential impact on wind measurements – Unit 1 Fly Ash Silo
NCR No. 00254026, Adverse trend on RCA exit practices
NCR No. 00255614, Broadleaf vegetation samples were not available for the month of November
NCR No. 00259247, Broadleaf samples unavailable for all four sectors
NCR No. 00262713, Broadleaf samples not available for January 2008
NCR No. 00266680, Broadleaf samples not available for February 2008
NCR No. 00270549, APAC-60 lost during thunderstorms
NCR No. 00271081, Broadleaf samples not available
NCR No. 00271436, Missed sample for APAC-05
NCR No. 00272898, SW-40 autosampler not working properly
NCR No. 00276002, Broadleaf samples not available
NCR No. 00278786, Brief power outage at APAC-05 and APAC-60
NCR No. 00290152, Missed environmental sample
NCR No. 00294760, Control of Radiation Control supplemental personnel
NCR No. 00305432, Broadleaf samples for November
NCR No. 00307942, Environmental TLD #03 found badly damaged
NCR No. 00309139, APAC-03 found not running, missed sample hours – 48.0
NCR No. 00310643, Broadleaf samples not available for month of December 2008

Section 4OA1: Performance Indicator Verification

Procedures
REG-NGGC-0009, NRC Performance Indicators and Monthly Operating Report Data, Rev. 5
ADM-NGGC-0101, Maintenance Rule Program, Rev. 20

Other Documents
USAR 5.2.5, Detection of Leakage Through Reactor Coolant Pressure Boundary
REG-NGG-0009, NRC Performance Indicators And Monthly Operating Report Data, Rev. 9
OST-051, Reactor Coolant System Leakage Evaluation, Rev. 40

Results of REG-NGGC-0009, attachment 9, Reactor Coolant System Leakage, for each month in 2008
Operator logs, leakage entry data entered for the months of 08/08, 07/08, 04/08, 03/08, 02/08
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 5
Maintenance Rule event reports that cover the previous 18 months, for system 4080 (Component Cooling Water)
Consolidated Date Entry 3.0 MSPI Derivation Report, MSPI Cooling Water System Unavailability Index, generated 1/7/2009
RNP-F/PSA-0057, NRC Mitigating System Performance Index (MSPI) Basis Document, Rev. 8

Section 4OA2: Identification and Resolution of Problems

AR 272388, Significant condition not evaluated
AR 247492, [Nuclear Condition Report] Investigation Reports are not Consistently Meeting Procedure Expectations for Content and Thoroughness.

Section 4OA3: Event Follow-up

Action Requests
10544, This [Condition Report] Documents [Nuclear Assessment Section] Issue R-9801062
18165, Additional Clarifications To [Condition Report] 98-01062 ([Refueling Outage 18 Turbine Work)
20027, Procedure for Disassembly and Re-Assembly of the Generator
238280, CM-024 New Procedure for Exciter Maintenance and Inspection
306903, [Reactor] Trip Due to Turbine Vibrations
307120, Elevated Turbine Generator Vibration

Procedures
CAP-NGGC-0200, Corrective Action Program, Revision 27
CAP-NGGC-0205, Significant Adverse Condition Investigations and Adverse Condition Investigations-Increased Rigor, Revision 9
CM-024, Exciter Maintenance and Inspection, Rev. 0 & Rev. 3
CM-042, Generator Maintenance and Inspection, Rev. 0

Other Documents
Condition Report 98-01325, Turbine Outage Assessment, Issue #1
Engineering Change 61087, “Replacement Exciter”, Section E, Testing
Project Plan for Generator/Exciter Upgrades, Rev. 0
Work order 894036-08, Assemble new exciter per CM-024 per EC 61087

LIST OF ACRONYMS

ANS	American Nuclear Society
ANSI	American National Standards Institute
ARM	area radiation monitor
CAM	continuous airborne monitor
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CY	calendar year
DAW	dry active waste
HEPA	High Efficiency Particulate Air
HPGe	high purity germanium
IP	Inspection Procedure
NCR	Nuclear Condition Report
ODCM	Offsite Dose Calculation Manual
OS	Occupation Radiation Safety
PA	protected area
PCM	personnel contamination monitor
PI	Performance Indicator
PM	Portal Monitor
PS	Public Radiation Safety
QC	quality control
RAB	reactor auxiliary building
radwaste	radioactive waste
RCA	radiologically controlled area
REMP	Radiological Environmental Monitoring Program
RG	Regulatory Guide
R	radiation monitor
Rev.	revision
SAM	small article monitor
SCBA	self-contained breathing apparatus
SFP	spent fuel pool
TLD	thermoluminescent dosimeter
TMI	Three Mile Island
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	work order

Attachment