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

April 28, 2010

Mr. Regis T. Repko
Vice President
Duke Power Company, LLC
McGuire Nuclear Station
MG01VP/12700 Hagers Ferry Road
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2010002, AND 05000370/2010002, AND NOTICE OF ENFORCEMENT DISCRETION 10-2-001

Dear Mr. Repko:

On March 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on April 1, 2010, with you and other members of your staff.

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

The report documents one NRC-identified finding and one self-revealing finding of very low safety significance (Green), both of which were determined to involve violations of NRC requirements, as well as one Severity Level IV violation. However, because of the very low safety significance and categorization at Severity Level IV, and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a written response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at McGuire. 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 McGuire. 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, its enclosure, and your response (if any) 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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Jonathan H. Bartley, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos.: 50-369, 50-370
License Nos.: NPF-9, NPF-17

Enclosure: NRC Integrated Inspection Report 05000369/2010002, and 05000370/2010002, and Notice of Enforcement Discretion 10-2-001
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

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Letter to Regis T. Repko from Jonathan H. Bartley dated April 28, 2010

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-369, 50-370
License Nos:	NPF-9, NPF-17
Report Nos:	05000369/2010002, 05000370/2010002
Licensee:	Duke Energy Carolinas, LLC
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	Huntersville, NC 28078
Dates:	January 1, 2010, through March 31, 2010
Inspectors:	J. Brady, Senior Resident Inspector J. Heath, Resident Inspector M. Coursey, Reactor Inspector (Section 1R08, 4OA5.3) R. Fanner, Reactor Inspector (Section 1R18) G. Laska, Senior Operations Examiner, (Section 1R11) W. Loo, Senior Health Physicist (Section 4OA5.2) E. Stamm, Project Engineer (Section 4OA3.1)
Approved by:	Jonathan Bartley, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR05000369/2010-002, IR05000370/2010-002; 1/1/2010 – 3/31/2010; McGuire Nuclear Station, Fire Protection, Plant Modifications, Event Follow-up

The report covered a three month period of inspection by two resident inspectors, two reactor inspectors, one senior operations examiner, one senior health physicist and one project engineer. Two Green findings and one Severity Level (SL) IV violation 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). The cross-cutting aspects were determined using IMC 0310, "Components Within The Cross-Cutting Areas." 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."

Cornerstone: Mitigating Systems

- SL-IV. The inspectors identified a non-cited violation (NCV) for the failure to update the Updated Final Safety Analysis Report (UFSAR) as required by 10 CFR 50.71(e) for the Fire Protection Program (FPP) documents that were incorporated by reference. This issue is in the licensee's corrective action program as Problem Investigation Process Report (PIP) M-10-0655. The licensee intends to either provide the required updates to the referenced documents or incorporate the FPP directly into the UFSAR.

  The updated information for the UFSAR was important because it identified the elements of the FPP, fire hazards analysis, and safe shutdown analysis that are a portion of the basis for the FPP. This issue was considered as traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. This issue is not minor because not having an updated portion of the UFSAR hinders the licensee's ability to perform adequate 50.59 evaluations and can impact the NRC's ability to perform adequate regulatory reviews for license amendments and inspections. Consequently, it can have a material impact on licensed activities. This issue was considered to meet the criteria for a severity level IV violation in Supplement I of the NRC Enforcement Policy because the information was not used to make an unacceptable change to the facility or procedures. This violation was not screened for associated cross-cutting aspects because it dealt with traditional enforcement. (Section 1R05)

  Green. The inspectors identified a Green NCV of the FPP required by 10 CFR 50.48 and License Condition 2.C.4 for failing to take adequate design control measures associated with the addition of the standby shutdown system (SSS) for both Units. Specifically, the licensee failed to include a fire hazards analysis (FHA) in the FPP for the SSS, and failed to enter the SSS into the quality assurance program (QAP). The licensee performed a functionality assessment for the area where the SSS is located. The licensee intends to add the SSS to the FHA and the QAP. In addition, any previous modifications made to the SSS will be reviewed and corrective action taken as appropriate.

The performance deficiency was greater than minor because it affected the Mitigating Systems Cornerstone objective of availability, reliability, and capability of the post-fire safe shutdown (SSD) systems and is associated with the design control and protection against external factors (fire) attributes. Specifically, there was no FHA that demonstrated the availability and capability that at least one SSD train would be free of fire and capable of performing safe shutdown as required by 10 CFR 50.48, (a)(2)(iii). The issue was determined to be of very low safety significance (Green) using IMC 0609, Appendix F, Attachment 1, based on the fact that the categories of Fire Prevention and Administrative Controls, and post-fire SSD, were evaluated as having low degradation. There was no cross-cutting aspect associated with this performance deficiency because it was not representative of current licensee performance. (Section 1R18)

- Green. A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, was identified for the licensee's failure to flow test the Nuclear Service Water System (NSWS) "A" Train Standby Nuclear Service Water Pond (SNSWP) unit common supply header at maximum design flow. The licensee entered this issue into their corrective action program as PIP M-09-2216 and has taken corrective actions to increase the minimum required flow velocity, frequency, and duration of the "A" Train SNSWP unit common supply header test procedure.

  The finding was more than minor because it affected the cornerstone attributes of "protection against external events" and "equipment performance" and the Mitigating Systems objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, inadequate flushing of the "A" Train SNSWP unit common supply header led to ineffective flushes and the accumulation of corrosion products which challenged the design function of the NSWS system. This finding was evaluated using IMC 0609, Attachment 4, Phase I - Initial Screening and Characterization of Findings, to determine the safety significance. Since the finding was related to a seismic initiating event, a Phase III was required to be performed by an NRC Senior Risk Analyst. The Phase III analysis calculated the risk increase to be less than 1E-7 for both conditional core damage probability and conditional large early release probability, resulting in a determination of very low risk significance (Green). This performance deficiency was associated with the cross-cutting aspect of complete, accurate and up-to-date design documentation and procedures [H.2(c)] as described in the Resources component of the Human Performance cross-cutting area. (Section 4OA3.1)

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at approximately 100 percent rated thermal power (RTP). On January 13, Unit 1 reduced power to 53 percent RTP to comply with the Technical Specifications (TS) for both trains of control room ventilation being inoperable until a Notice of Enforcement Discretion (NOED) was received. The unit returned to 100 percent RTP on January 14. The unit shut down for a refueling outage on March 13 and remained shut down for the remainder of the period.

Unit 2 began the inspection period at approximately 100 percent RTP. On January 13, Unit 2 reduced power to 47 percent RTP to comply with the TS for both trains of control room ventilation being inoperable until a NOED was received. The unit returned to 100 percent RTP on January 14 and remained there for the rest of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Impending Adverse Weather Conditions: The inspectors reviewed the effectiveness of the licensee's cold weather protection program pertaining to the two cold weather conditions experienced during the periods listed below. This included field walkdowns to assess the risk significant freeze protection equipment which included fueling water storage tank instrumentation, auxiliary feedwater (CA) instrumentation, Steam Generator Outboard doghouses, and the ‘C’ Fire Pump Room. The inspectors discussed specific measures with operations, and maintenance personnel to be taken when low ambient temperatures were experienced. Inspectors verified the performance of PT/0/B/4700/070, On Demand Freeze Protection Verification Checklist. Documents reviewed are listed in the Attachment.

- January 4 - 8, 2010
- January 30 - February 1, 2010

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdowns: The inspectors performed a partial walkdown of the following three systems to assess the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors focused on discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, walked down control systems components, and determined whether selected breakers, valves, and support equipment were in the correct position to support system operation. Documents reviewed are listed in the Attachment.

- 2A diesel generator alignment with 2B diesel generator out of service for planned maintenance on January 19
- 2A diesel generator alignment with 2B diesel generator out of service for control circuit timer calibration on February 16
- 2A diesel generator alignment with 2B diesel generator out of service for control circuit timer calibration on March 16

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Protection Walkdowns: The inspectors walked down accessible portions of the following four plant areas to determine if they were consistent with the Updated Final Safety Analysis Report (UFSAR) and the fire protection program (FPP) for defense in depth features. The features assessed included the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire fighting equipment, and passive fire features such as fire barriers. The inspectors also reviewed the licensee's compensatory measures for fire deficiencies to determine if they were commensurate with the significance of the deficiency. The inspectors reviewed the fire plans for the areas selected to determine if it was consistent with the fire protection program and presented an adequate fire fighting strategy. Documents reviewed are listed in the Attachment.

- Unit 1 Auxiliary Feedwater Pump Room on 716 elevation (Fire Area 2 and 2A)
- Residual Heat Removal and Containment Spray Pumps Room on 695 elevation (Fire Area 1)
- Unit 1 Spent Fool Pool Area (Fire Area 26)
- Unit 1 Lower Containment (Fire Area 32/RB2 and RB3)

Drill Observation: The inspectors observed the fire drill listed below to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives.

- 1/23/2010, Unit 1 exterior doghouse

b. Findings

Introduction: An NRC-identified Severity Level IV non-cited violation (NCV) of 10 CFR 50.71(e) was identified for the licensee's failure to update the UFSAR for the FPP documents that were incorporated by reference.

Description: While reviewing the UFSAR, the inspectors determined the FPP documents that were incorporated by reference, as a condition for license amendment 98 for Unit 1 and 80 for Unit 2, issued June 6, 1989, had not been provided as updates to the NRC with the 10 CFR 50.71(e) required periodic UFSAR updates. The documents incorporated by reference were identified in a licensee submittal dated May 19, 1989, and included: the FPP description related to Branch Technical Position APCSB 9.5.1, Appendix A; the fire hazards analysis; the Fire Protection functional responsibilities, administrative controls, and Quality Assurance Program; and the description of the Standby Shutdown Facility. The license amendment specifically identified that the FPP was approved and was to be incorporated in the next UFSAR annual update. The safety evaluation for the amendment reiterated that the FPP documents referenced in Attachment 1 of the licensee's May 19, 1989, submittal were incorporated by reference. The inspector reviewed NRC Regulatory Guide (RG) 1.181, Contents of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e), which endorsed Nuclear Energy Institute (NEI) 98-03, Revision 1, Guidelines for Updating Final Safety Analysis Reports. The NEI document specifically addressed incorporation by reference and identified that incorporated documents must be publicly available and were subject to the updating and reporting requirements of 10 CFR 50.71(e). The inspectors found that the documents incorporated by reference associated with the FPP had not been submitted to the NRC since May 23, 1991. There had been eleven revisions to the FPP documents that were incorporated by reference into the UFSAR since 1991. Those revisions included changes in fire areas, including splitting fire areas and combining fire areas, which resulted in changes in the fire hazards analysis and safe shutdown strategies.

Analysis: The failure to provide updated FPP documents incorporated by reference in the UFSAR to the NRC as required by 10 CFR 50.71(e) was a performance deficiency. This violation was considered as traditional enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. This violation is not minor because not having an updated portion of the UFSAR hinders the licensee's ability to perform adequate 50.59 evaluations and can impact the NRC's ability to perform adequate regulatory reviews. Consequently, it can have a material impact on licensed activities. This violation met the criteria for a Severity Level IV violation in Supplement I of the NRC Enforcement Policy because the information was not used to make an unacceptable change to the facility or procedures. This violation was not screened for associated cross-cutting aspects because it dealt with traditional enforcement.

Enforcement: 10 CFR 50.71(e) required that licensees shall periodically update the Final Safety Analysis Report, originally submitted as part of the application for the operating license, to assure that the information included in the report contains the latest information developed. This submittal shall include the effects of all the changes necessary to reflect information and analysis submitted to the Commission by the licensee or prepared by the licensee pursuant to Commission requirement since the submittal of the original Final Safety Analysis Report, or as appropriate, the last update to the Final Safety Analysis Report under this section. Contrary to the above, from 1991 until February 2, 2010, the licensee did not periodically update the UFSAR to include changes to the FPP. Specifically, the licensee had used incorporation by reference but failed to update the FPP documents on the same frequency as the remainder of the UFSAR. Because this issue is characterized as a Severity Level IV violation and is in the licensee's corrective action program as PIP M-10-0655, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy and is identified as NCV 05000369,370/2010002-01: Failure to adequately update the UFSAR for FPP documents incorporated by reference.

1R08 Inservice Inspection Activities

From March 22 through March 26, 2010, the inspector conducted a review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, steam generator tubes, emergency feedwater systems, risk significant piping and components and containment systems.

The inspections described in Sections 1R08.1, 1R08.2, 1R08.3, IR08.4 and 1R08.5 below constituted one inservice inspection sample as defined in Inspection Procedure 71111.08-05.

.1 Piping Systems ISI

a. Inspection Scope

The inspector observed the following non-destructive examination mandated by the American Society of Mechanical Engineers (ASME) Section XI Code to evaluate compliance with the ASME Code Section XI and Section V requirements and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an NRC approved alternative requirement.

- Ultrasonic Testing (UT) of 1NV1F7900 Pipe-to-Elbow weld (ASME Class 1)

The inspector reviewed records of the following non-destructive examinations mandated by the ASME Section XI Code to evaluate compliance with the ASME Code Section XI and Section V requirements and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an NRC approved alternative requirement.

- Magnetic Particle Testing (MT) of 1-MCA-SA-H18 welded attachment (ASME Class 1; non-pressure retaining)
- UT of 1NV1F7900 Pipe-to-Elbow weld (ASME Class 1)

The inspector reviewed the following examination records (volumetric or surface) with recordable indications accepted for continued service to determine if acceptance was in accordance with the ASME Code Section XI or an NRC approved alternative.

- MT of 1-MCA-SA-H18 welded attachment
- UT of 2D Cold leg accumulator relief

b. Findings

No findings of significance were identified.

.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

For the Unit 1 vessel head, a bare metal visual examination was required this outage pursuant to 10 CFR 50.55a(g)(6)(ii)(D).

The inspector reviewed records of the visual examination conducted on the Unit 2 reactor vessel head to determine if the activities were conducted in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). In particular, the inspector confirmed that:

- the required visual examination scope/coverage was achieved and limitations (if applicable) were recorded in accordance with the licensee procedures;
- the licensee criteria for visual examination quality and instructions for resolving interference and masking issues were adequate; and
- if indications of potential through-wall leakage were identified, the licensee entered the condition into the corrective action system and implemented appropriate corrective actions.

The inspector reviewed records of welded repairs on the upper head penetration Control Rod Drive Mechanism (CRDM) F-8 completed during the last refueling outage to determine if the licensee applied the preservice non-destructive examinations and acceptance criteria required by NRC approved Code Case and ASME Code Section XI. Additionally, the inspector reviewed the welding procedure specifications and supporting weld procedure qualification records to determine if the weld procedures used were qualified in accordance with ASME Code Section IX requirements.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC)

a. Inspection Scope

On March 23, 2010, the inspector performed an independent walkdown of the Unit 2 containment, which had received a recent licensee boric acid walkdown and determined whether the licensee's BACC visual examinations emphasized locations where boric acid leaks can cause degradation of safety significant components. The inspector reviewed the following licensee evaluations of reactor coolant system components with boric acid deposits to determine if degraded components were documented in the corrective action system. The inspector also evaluated corrective actions for any degraded reactor coolant system components to determine if they met the ASME Section XI Code and/or NRC approved alternative.

- PIP M-09-03467, Boron discovered on skid prefilters
- PIP M-10-01206, Tubing coming off of 1NV-FE-5630
- PIP M-08-07193, Pipe Plug Leak onto 1FWVA-0028

The inspector reviewed the following corrective actions related to evidence of boric acid leakage to determine if the corrective actions completed were consistent with the requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI.

- PIP M-09-07011, 1NM-VA-0037 has an active packing leak
- PIP M-09-01612, Piping leak

b. Findings

No findings of significance were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

No SG eddy current testing (ECT) or secondary side visual exams were scheduled for this outage. The inspectors reviewed the licensee's "Degradation Assessment and Technical Review and Justification for Not Performing Primary or Secondary Inspections of the Steam Generators SQN Unit 1 Cycle 16 Outage," Revision 0 for compliance with the EPRI Pressurized Water Reactor Steam Generator Examination Guidelines, Rev.7.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspector performed a review of ISI/SG related problems entered into the licensee's corrective action program and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI/SG related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspector performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

Resident Review: On February 11, 2010, the inspectors observed operators in the plant's simulator during licensed operator requalification training to determine the effectiveness of licensed operator requalification training required by 10 CFR 55.59 and the adequacy of operator performance. The inspectors observed the shift crew's response to a scenario which involved a steam generator tube leak and digital control system problems. The inspectors focused on clarity and formality of communication, use of procedures, alarm response, control board manipulations, group dynamics and supervisory oversight. The inspectors observed the post-exercise critique to determine whether the licensee identified deficiencies and discrepancies that occurred during the simulator training.

Annual Review of Licensee Requalification Examination Results: On May 15, 2009, the licensee completed the annual requalification operating tests required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspectors performed an in-office review during the first quarter of 2010 of the overall pass/fail results of the individual operating tests and the crew simulator operating tests. 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 two samples listed below for items such as: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) adequacy of corrective actions; (4) scoping in accordance with 10 CFR 50.65(b) of the maintenance rule; (4) characterizing reliability issues against performance criteria; (5) trending key parameters for condition monitoring; (6) charging unavailability for performance; (7) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (8) appropriateness of performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2); and/or (9) appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). For each item selected, the inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem. Documents reviewed are listed in the Attachment.

- Nuclear service water strainer fouling
- Unit 1 CRDM cable connector failure resulting in K-2 control rod drop

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments and the risk management actions used to manage risk for the plant configurations associated with the five activities listed below. The inspectors assessed whether 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 verified that any increase in risk was promptly assessed, that appropriate risk management actions were promptly implemented, and that work activities did not place the plant in unacceptable configurations. Documents reviewed are listed in the Attachment.

- Significant emergent schedule changes resulting from TS 3.0.3 entry for both trains of Control Room Area Chilled Water System (CRACWS) inoperable on January 12
- Planned work on 1B nuclear service water strainer causing an orange risk condition
- Planned work on January 23 that involved opening the door to the 1B switchgear room from the Unit 1 turbine building causing an orange risk condition

- Loss of operator aid computer indication for Unit 1 reactor coolant Loop #C hot leg narrow range pressure resulting in unplanned TS limiting condition for operation for inoperability of Low Temperature Overpressure system on March 15
- Emergent work in Unit 2 switchyard that resulted in an emergent defense in depth yellow condition for Unit 1 while Unit 2 was providing power to Unit 1 safety buses on March 19

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the five technical evaluations listed below to determine whether Technical Specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed any compensatory measures taken for degraded SSCs to determine whether the measures were in-place and adequately compensated for the degradation. For the degraded SSCs, or those credited as part of compensatory measures, the inspectors reviewed the UFSAR to determine whether the measures resulted in changes to the licensing basis functions, as described in the UFSAR, and whether a license amendment was required per 10 CFR 50.59. Documents reviewed are listed in the Attachment.

- M-09-7699, B control room chiller weld indication
- M-10-0037, B control room chiller control valve 1RN-460 has a leak
- M-10-0922, Sandbox covers left in place in reactor cavity during power operations
- M-09-2181, Nut on standby nuclear service water pond trash rack will not tighten
- M-10-0423, Cracks on the side of 2EKVA breaker 6 casing

b. Findings

No findings of significance were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the five modifications listed below and the associated 10 CFR 50.59 review to determine whether the modifications satisfied the requirements of 10 CFR 50, Appendix B, and compared each against the UFSAR and TS to determine whether the operability or availability of SSCs were affected by completion of the modification. The inspectors reviewed each modification to ensure that it was installed in accordance with the modification documents and reviewed post-installation (and/or removal testing for temporary modifications) to verify that the actual impact on permanent systems was adequately verified by the tests. In addition, the inspectors determined whether the appropriate procedures, design documents, and licensing documents were updated to reflect the installation of the modification. Documents reviewed are listed in the Attachment.

Permanent Modifications

- MD101869, Disable Auto Open Function for 1CA161C/1CA162C (alternate suction source for Turbine-Driven CA Pump)
- EC99729, Alternate configuration for use of temporary mullion for door PD-1

Temporary Modifications

- EC102726, Temporary Engineering Change to lower 1AD7-F.3 Alarm Setpoint for 1B Reactor Coolant Pump Control Leakage Lo Flow
- EC78241, Unit 1 7300 Control Cabinet Movement and Control Room Breach for 1EOC20
- EC97627, Unit 1 DCS Process Control Mod Installing 11 Residual Heat Removal system temporary indications during Mode 1

b. Findings

Introduction: An NRC-identified Green NCV of the FPP required by 10 CFR 50.48 and License Condition 2.C.4 was identified for failing to take adequate design control measures associated with the addition of the SSS for both units. The licensee failed to include a fire hazards analysis (FHA) in the FPP for the SSS and failed to enter the SSS into the FPP quality assurance program (QAP) even though the FPP relies solely on the SSS for safe shutdown for a fire in 11 fire areas.

Description: During review of modification MD101869, the inspectors found that the SSS was not included in the FPP and associated FPP QAP. The SSS was a 10 CFR 50, Appendix R, III.L alternate shutdown facility, separate from safe shutdown trains A and B. The inspectors found that the SSS was not included in any QAP. The FPP (MCS-1465.00-00-0008, Design Basis Specification for Fire Protection), Appendix A.1, stated that “Only those revisions to the Fire Protection Program negotiated after January 1, 1978, will be under the Duke Power Quality Assurance Program to assure they conform to guidelines of the Branch Technical Position or are controlled deviations.” The concept of the SSS was submitted in May 1978, the detailed design description was submitted in March 1980, and the NRC accepted the SSS in NUREG-0422 Supplement 6 dated February 1983, which concluded that with the addition, McGuire met sections III.G and III.L of Appendix R. The inspectors concluded that the SSS fell within the requirements of the FPP to be included in the FPP QAP because the negotiation dates were after 1978. Consequently it should have been included as part of the FPP QAP.

The SSS power supply was located in a separate building in the Unit 1 yard area called the Safe Shutdown Facility (SSF). The Unit 1 Refueling Water Storage Tank (RWST) was on the other side of a roadway from the SSF and provides a function for safe shutdown trains A and B. Consequently, all three trains of safe shutdown were in the same fire area and were in the vicinity of diesel fuel storage tanks, hydrogen storage, oxygen storage, and two oil filled transformers. An FHA should demonstrate compliance with 10 CFR 50.48, (a)(2)(iii) in that it establishes that one train of post-fire safe shutdown equipment is always free of fire for a fire in any fire area. The inspectors found that the McGuire FHA did not contain an analysis for a fire that would start in the area of the SSF and Unit 1 RWST. The FHA identified 11 fire areas which designated the SSS as the dedicated safe shutdown train for a fire in those areas. Consequently, the licensee should have established that a fire in the area of the SSF/Unit 1 RWST would not prevent safe shutdown.

The licensee wrote PIP M-10-1026 to address the above issues, and performed a functional assessment. The assessment determined that because the SSF was a block wall building with brick veneer, the walls were similar in design to a rated three-hour barrier and contained rated three-hour fire doors. The RWST had a concrete shield wall around the lower half of the tank for missile protection that could also function as a fire barrier. In addition, separation from ignition sources of various sizes and at various distances in the yard would have provided sufficient distance from the SSF exterior walls to establish that safe shutdown capability would have been maintained.

The licensee's planned corrective actions include determining the correct quality assurance classifications for SSS equipment and updating the associated documents. The licensee also plans to revise the FHA to include the SSS. In addition to MD101869, the inspector found an additional example related to this issue (UFSAR change 04-005) where the licensee made a change to the SSF fire confinement system without a revised FHA. The licensee added a corrective action to PIP M-10-1026 to correct this issue as well. The inspectors concluded that these changes to the SSS that were made after initial SSS construction and were inappropriately handled from a QAP and FHA standpoint were the result of the original errors made in the 1980s.

<u>Analysis</u>: The failure to include the SSS in the FPP QAP and FHA was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control and protection against external factors (fire) attributes and affected the Mitigating Systems Cornerstone objective in that there was no FHA that demonstrated the availability and capability that at least one SSD train would be free of fire and capable of performing safe shutdown. The finding was determined to be of very low safety significance (Green) using IMC 0609, Appendix F, Attachment 1, based on the fact that the categories of Fire Prevention and Administrative Controls, and post-fire SSD, were evaluated as having low degradation because the failure to include the SSS in the QAP affects how quality was identified and handled in the administrative control program. There was no evidence that actual quality was jeopardized or that unsafe conditions were created as a result. The licensee's functionality assessment for the SSF/yard area determined that safe shutdown capability was maintained. There was no cross-cutting aspect associated with this performance deficiency because it was not representative of current licensee performance.

<u>Enforcement</u>: 10 CFR 50.48 stated that each operating nuclear power plant must have a FPP that satisfies Criterion 3 of Appendix A of this part. 10 CFR 50.48, (a)(2)(iii) required that the FPP describe the means to limit fire damage to SSCs important to safety so that the capability to shut down the plant safely is ensured. McGuire License

Condition 2.C.4, for Units 1 and 2, stated that the licensee shall implement and maintain in effect all provisions of the approved FPP as described in the Final Safety Analysis Report, as updated, for the facility and as approved in the NRC Staff's McGuire Safety Evaluation Report (NUREG-0422) and its supplements, and the safety evaluation report dated May 15, 1989. McGuire UFSAR section 9.5.1 states that the FPP is contained in MCS-1465.00-00-0008, Design Basis Specification for Fire Protection. The FHA and QAP are contained in the FPP. MCS-1465.00-00-0008, Section C.1, in the Quality Assurance section, addresses measures for Design Control and stated that "Only those revisions to the fire Protection Program negotiated after January 1, 1978, will be under the Duke Power QAP to assure they conform to guidelines of the Branch Technical Position or are controlled deviations." Contrary to the above, between initial operation of the SSS and February 17, 2010, the licensee did not adequately maintain and implement the FPP as required by License Condition 2.C.4 in that the addition of the SSS was not included in the FPP FHA and was not added to the QAP. Because the failure to include the SSS in the FHA and QAP is of very low safety significance and was entered into the licensee's corrective action program as PIPs M-10-0888 and M-10-1026, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy and is identified as NCV 05000369,370/2010002-02: Failure to adequately implement the FPP for the SSS.

1R19 Post Maintenance Testing

a. Inspection Scope

For the five maintenance tests listed below, the inspectors determined the safety functions described in the UFSAR and TS that were affected by the maintenance activity. The inspectors witnessed the post-maintenance test listed and/or reviewed the test data to determine whether the test results adequately demonstrated restoration of the affected safety functions. Documents reviewed are listed in the Attachment.

- IP/1/A/3250/074A, Diesel Generator 1A Control Circuit Timer Calibration
- PT/2/A/4350/002B, 2B Diesel Generator Operability Test following exhaust leak on cylinder 7R
- IP/0/A/3061/012, Charging Site Lead-Acid batteries, following Vital Battery EVCB Performance Testing
- PT/2/A/4350/002B, 2B Diesel Generator Operability Test following diesel generator control circuit timer testing on February 16
- PT/2/A/4450/008C, Outside Air Performance Test Train 2 Performance Test following restoration of Control Room Envelope on March 17

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

Unit 2 began a refueling outage on March 13. Prior to the refueling outage, the inspectors reviewed the licensee's outage risk control plan to determine if the licensee had adequately considered risk in developing the outage schedule. The inspectors reviewed the licensee procedures listed in the attachment to determine if they contained mitigation/response strategies for losses of decay heat removal, inventory control, power availability, and containment. During the refueling outage, the inspectors observed portions of the following activities when Unit 1 entered the refueling outage. Documents reviewed are listed in the Attachment.

- Observed cool down process to determine if TS cooldown restrictions were followed
- Walked down containment shortly after the shutdown to determine if there was indication of previously unidentified leakage from components containing reactor coolant
- Reviewed the licensee's responses to emergent work and unexpected conditions, to determine if configuration changes were controlled in accordance with the outage risk control plan
- Observed outage activities to determine if the licensee maintained defense-in-depth commensurate with the outage risk control plan for the key safety functions and applicable TS
- Assessed outage activities that were conducted during short time-to-boil periods.
- Observed fuel handling operations (removal) and other ongoing activities, to determine if those operations and activities were being performed in accordance with technical specifications and licensee procedures
- Reviewed the items that had been entered into the licensee's corrective action program, to determine if the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the five surveillance tests identified below, the inspectors witnessed testing and/or reviewed the test data, to determine if the SSCs involved in these tests satisfied the requirements described in the Technical Specifications, the Updated Final Safety Analysis Report, 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.

Surveillance Tests

- PT/1/A/4350/036A, Diesel Generator 1A 24 Hour Run
- PT/2/A/4350/002A, 2A Diesel Generator Operability Test
- PT/1/A/4350/036B, Diesel Generator 1B 24 Hour Run

In-Service Tests

- PT/1/A/4250/001C, #1 Turbine Driven CA Pump Performance Test Opening 1SA-49 First

Ice Condenser Systems Testing

- PT/0/A/4200/032, Periodic Inspection of lower inlet doors

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill, conducted on February 18, to identify any weaknesses or deficiencies in classification, notification, dose assessment and protective action recommendation development activities in accordance with 10 CFR 50, Appendix E. The inspectors also attended the licensee critique of the drill to compare any inspector-observed weakness with those identified by the licensee in order to verify whether the licensee was properly identifying failures. The inspectors reviewed the licensee's performance indicator determinations for this drill to determine whether they were in conformance with the criteria contained in Nuclear Energy Institute 99-02.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported PI data for the following six indicators during the four quarters of 2009. To determine the accuracy of the PI data reported during that period, the inspectors compared the licensee's basis in reporting each data element to the PI definitions and guidance contained in Nuclear Energy Institute 99-02, Regulatory Assessment Indicator Guideline, Rev. 4.

Initiating Events Cornerstone

- Unplanned Scrams per 7000 Critical Hours (Units 1 and 2)
- Unplanned Scrams with Complications (Units 1 and 2)
- Unplanned Power Changes per 7000 Critical Hours (Units 1 and 2)

The inspector reviewed a selection of licensee event reports, operator log entries, daily reports, monthly operating reports, and PI data sheets for to determine whether the licensee had adequately identified the number of scrams and unplanned power changes greater than 20 percent that occurred during the previous four quarters. The inspectors compared this number to the number reported for the PI during the current quarter. The inspectors also reviewed the accuracy of the number of critical hours reported and the licensee's basis for determining that there were not complications for each of the reported reactor scrams.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

a. Inspection Scope

Routine Review: As required by Inspection Procedure 71152, "Problem Identification and Resolution," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed screening of items entered into the licensee's corrective action program. This was accomplished by reviewing copies of condition reports, attending some daily screening meetings, and accessing the licensee's computerized database. Documents reviewed are listed in the Attachment.

Selected Issue Follow-Up Inspection: The inspectors selected operator workarounds as the sample for selected issue follow-up. The inspector reviewed the four category one and two operator workarounds (OWAs) listed in the licensee's January 2010 OWA report to determine whether the OWAs were identified in the corrective action program and whether corrective actions have been properly identified and dates established for completion. In some cases the review included the PIPs associated with the OWA and a review of the system health report for the associated system. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion

.1 (Closed) Licensee Event Report (LER) 05000369,370/2009-001-00: Nuclear Service Water System (NSWS) “A” Trains Past Inoperable when aligned to the Standby Nuclear Service Water Pond (SNSWP) due to corrosion.

A subsequent evaluation of this condition by the licensee determined operator actions specified for strainer fouling were not considered time critical and would not have assured previous “A” Train NSWS pump operability for loss of Instrument Air (VI) events when the “A” Train NSWS pump suction was manually realigned to the SNSWP. The licensee identified that there were two periods during the past three years (April 27, 2006, through August 16, 2007, and November 25, 2008, through April 29, 2009) when fouling could have impacted operability of the A train of NSWS, rendering the A train inoperable for longer than its prescribed TS 3.7.7, Condition A Action Statement time of 72 hours. During these periods there were also multiple instances (totaling 54.77 hours) where the B train of NSWS was removed from service and unavailable for a time period exceeding the TS 3.7.7, Condition B Action Statement times of placing the unit in Mode 3 within 6 hours and Mode 5 within 36 hours.

a. Inspection Scope

The LER and supporting documents were reviewed by the inspector to ensure adequacy. The inspector also walked down portions the affected “A” Train of NSWS, evaluated the appropriateness of corrective actions, and reviewed the licensee’s cause analysis that had been performed in response to the event. Documents reviewed are listed in the Attachment.

b. Findings

Introduction: A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion XI, Test Control, was identified for the licensee’s failure to flow test the NSWS “A” Train SNSWP supply header at maximum design flow.

Description: On April 27, 2009, the Unit 1 “A” and Unit 2 “A” NSWS Trains suctions were realigned to the SNSWP, the automatic backwash function of the strainers upstream of the pumps was disabled, and the pumps were declared inoperable as prerequisites to perform testing. The purpose of the test was to collect NSWS pump suction and discharge pressure data at various flows while aligned to the SNSWP. During the test, unexpected fouling of the 2A NSWS Strainer was caused by corrosion products which collected on the strainer and resulted in a reduced 2A NSWS Train flow rate. The licensee took immediate actions by removing the pump from service to avoid possible damage, performing manual backwash of the 1A and 2A NSWS pump strainers, performing a flush of the “A” Train NSWS header, and restoring a dedicated operator to perform manual backwash of the NSWS strainers to assure “A” Train NSWS operability. This finding is self-revealing because the detectable degradation in the capability of the NSWS became readily apparent during the April 27, 2009, test which was an information gathering temporary test procedure, not the Generic Letter (GL) 89-13 recommended test procedure.

NRC GL 89-13 NRC requested that licensees and applicants perform recommended or equally effective actions to ensure that their service water systems were in compliance and will be maintained in compliance with 10 CFR Part 50, Appendix A, General Design Criteria 44, 45, and 46 and Appendix B, Section XI. One recommendation stated that the licensee should periodically flush and flow test redundant (stagnant) and infrequently used cooling loops at maximum design flow to ensure no fouling or clogging. The term infrequently used cooling loop was intended to apply to those normally in a standby mode under stagnant flow conditions. The GL stated that alternate methods could be used to demonstrate the service water system complies with the regulations listed above, however the licensee chose to implement the recommendations of GL 89-13. McGuire's response to GL 89-13, dated September 30, 1996, stated that "A periodic flushing or visual inspection program has been implemented for stagnant and infrequently used cooling loops served by the Nuclear Service Water System."

A licensee review of past flow testing data revealed that from 1995 until 2001, the "A" Train SNSWP supply header was not flow tested at all. PT/0/A/4200/047, Train 'A' SNSWP Supply and Return Header Flush, was created and implemented in 2001. Although flushing was conducted between 2001 and 2009, the flow rates were not conducted at maximum design flows.

The licensee's root cause evaluation for this event determined that the flow rates achieved during performance of PT/0/A/4200/047 were inadequate to provide a successful flush of the corrosion products in the "A" Train SNSWP header and did not meet the GL 89-13 recommendation of flushing at the 'maximum design flow' for loss of VI events. The evaluation also determined the annual frequency of the flush and the one hour duration of the flush were not in line with industry practices. The licensee's LER stated that "Specifically, inadequate flushing of the 'A' Train SNSWP supply header at less than design flow rates, at less than optimum frequency, and for insufficient duration led to ineffective flushes and the accumulation of corrosion products which challenged the design function of the NSWS system."

Analysis: The failure of the licensee to flow test the NSWS "A" Train SNSWP supply header at maximum design flow was a performance deficiency. The finding was more than minor because it affected the cornerstone attributes of "protection against external events" and "equipment performance" and the Mitigating Systems objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, inadequate flushing of the "A" Train SNSWP supply header at less than design flow rates, at less than optimum frequency, and for insufficient duration led to ineffective flushes and the accumulation of corrosion products which challenged the design function of the NSWS system. This finding was evaluated using IMC 0609, Attachment 4, Phase I - Initial Screening and Characterization of Findings, to determine the safety significance. Since the finding was related to a seismic initiating event, a Phase III was required to be performed by an NRC Senior Risk Analyst. The Phase III analysis calculated the risk increase to be less than 1E-7 for both conditional core damage probability and conditional large early release probability, resulting in a determination of very low risk significance (Green). The dominant factors were the low initiating event frequency for an earthquake large enough to fail the Cowan's Ford Dam, and the high availability of the "B" Train of NSWS for mitigation. This performance deficiency was associated with the cross-cutting aspect of complete, accurate and up-to-date design documentation and procedures [H.2(c)] as described in the Resources component of the Human Performance cross-cutting area, due to the licensee's failure to update design documentation and associated procedures once it was recognized that current test program criteria were not bounded by the higher flow rates associated with a loss of VI.

Enforcement: 10 CFR 50, Appendix B, Criterion XI, Test Control, stated in part, that a test program shall be established and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. UFSAR section 3.1 identified that the service water system meets the design criteria specified in General Design Criteria (GDC) 44, 45 and 46. NRC GL 89-13 provided guidance that an adequate test program for safety-related service water systems that are designed to meet GDC 44, 45 and 46 includes flush and flow testing of redundant (stagnant) and infrequently used cooling loops at maximum design flow. Contrary to the above, from initial operation until April 29, 2009, McGuire's test program for nuclear service water did not incorporate the requirements and acceptance limits contained in design documents by failing to ensure the "A" Train SNSWP supply header was tested at maximum design flows related to a loss of VI. As a result, the licensee reported in LER 05000369/2009-01 that TS 3.7.7 had been violated for various specific time periods when nuclear service water backwash was not available to compensate for the lack of adequate flushing at maximum flow conditions. This issue is documented in the licensee's corrective action program as PIP M-09-2216. The failure to have an adequate test program for nuclear service water flushing of the common "A" Train SNSWP supply header is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy and is identified as NCV 05000369,370/2010002-03, Failure To Flow Test Nuclear Service Water "A" Train SNSWP Supply Header at Maximum Design Flow.

.2 (Closed) LER 05000369/2008-003: Unit 1 Manual Reactor Trip taken to mitigate control rod drop caused by shorted control rod drive mechanism (CRDM) cable connector

On October 31, 2008, operators manually tripped Unit 1 while in Mode 2 during Zero Power Physics Testing when control rod K-2 unexpectedly dropped to the fully inserted position. The licensee recovered from the event by entering procedure AP-14, Rod Control Malfunction, and subsequently manually tripped the reactor and completed their emergency response actions in accordance with procedure. The licensee's root cause evaluation determined that the cause of the dropped control rod was a failure of the CRDM head connector for K-2 control rod, and concluded that the CRDM head connector (Pyle National P206955) design was inadequate for the application.

The inspectors reviewed the licensee's root cause evaluation and corrective actions which included replacing the Unit 1 CRDM connectors at the reactor head and a plan to replace the Unit 2 CRDM head connectors. The inspectors determined that the licensee's corrective actions were appropriate. The LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. The licensee documented the event in PIP M-08-07057. No further findings of significance were identified.

.3 Personnel Performance

a. Inspection Scope

Operator performance was evaluated during the Unit 1 shutdown for a refueling outage on March 13, 2010. The inspectors reviewed the plan for the evolution, procedures, briefings, and contingency plans and verified that the operators' response during shutdown was appropriate and performed in accordance with procedures and training.

b. Findings

No findings of significance were identified.

.4 NOED Review

a. Inspection Scope

On January 12, 2010, with the CRACWS Train "A" inoperable due to scheduled maintenance on the CRACWS "A" chiller, a refrigerant leak was identified on the CRACWS "B" chiller. The CRACWS "B" Train was declared inoperable. This resulted in both trains of CRACWS being inoperable which required immediate entry into TS limiting condition for operation 3.0.3.

The licensee commenced shutdown of Unit 1 and Unit 2 in accordance with the TS action statements. On January 13 the licensee requested enforcement discretion for 36 hours, in order to allow time to restore at least one CRACWS train to an operable status and preclude a plant shutdown of both units.

The NRC verbally granted NOED 10-2-001 at 4:30 a.m. on January 13, 2010. The licensee subsequently returned CRACWS "A" chiller to an operable status, which was within the completion time approved in the NOED.

b. Findings

Introduction: The inspectors identified an unresolved item (URI) regarding NOED 10-2-001 granted on January 13.

Description: The inspectors reviewed NOED 10-2-001 granted on January 13 and related documents to determine the accuracy and consistency with the licensee's assertions and implementation of the licensee's compensatory measures and commitments, those of which included protecting the "B" CRACWS chiller, nuclear service water (RN), and power availability, and verifying mitigating equipment in the accordance with licensee procedure AP-39, Control Room Hi Temperature. The licensee issued LER 05000369/2010-001 on March 11, 2010. Additional inspection is required to conduct a review of the LER, root cause, and planned corrective actions. This URI is identified as: URI 05000369,370/2010002-04 Power Reduction on both operating units due to entry into TS Limiting Condition for Operation 3.0.3 caused by the inoperability of both trains of the Control Room Area Chilled Water System.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities:

a. Inspection Scope

During the inspection period, the inspectors conducted observations of 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 identified.

.2 (Closed) Temporary Instruction (TI) 2515/173, Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative

a. Inspection Scope

The inspectors reviewed elements of the licensee’s environmental monitoring program to evaluate compliance with the voluntary Groundwater Protection Initiative as described in NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document, August 2007 (ADAMS Accession Number ML072610036). Inspectors interviewed personnel, performed walk-downs of selected areas, and reviewed the following items:

- Site characterization of geology and hydrology as described in the licensee’s groundwater flow study report
- Evaluations of SSCs that contain or could contain licensed material and evaluations of work practices that involved licensed material for which there is a credible mechanism for the licensed material to reach the groundwater
- Implementation of the onsite groundwater monitoring program to monitor for potential licensed radioactive leakage into groundwater
- Locations of groundwater monitoring wells installed as a result of implementation of the Groundwater Protection Initiative
- Procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long term decommissioning impacts
- Records of leaks and spills recorded in the licensee’s decommissioning files in accordance with 10 CFR 50.75(g)
- Licensee briefings of local and state officials on the licensee’s groundwater protection initiative
- Procedures for notification to the local and state officials and to the NRC regarding detection of leaks and spills

- Procedures for external notifications and reports if an onsite groundwater sample exceeds the criteria in the radiological environmental monitoring program
- Groundwater monitoring results as reported in the annual radiological environmental operating report
- Licensee and industry assessments of implementation of the groundwater protection initiative

b. Findings

No findings of significance were identified with the licensee's implementation of NEI 07-07. This completes the Region II inspection requirements.

.3 (Discussed) TI 2515/172, Rev. 1, Reactor Coolant System Dissimilar Metal Butt Welds

a. Inspection Scope

The inspector conducted a review of the licensee's activities regarding licensee dissimilar metal butt weld (DMBW) mitigation and inspection implemented in accordance with the industry self-imposed mandatory requirements of Materials Reliability Program (MRP) -139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines." TI 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds" was issued February 21, 2008, to support the evaluation of the licensees' implementation of MRP-139.

Based on the schedule of dissimilar metal butt weld examinations under MRP-139, no examinations were required for the current Unit 2 refueling outage (EOC 19) and hence none were performed. Additionally, the licensee had not made any changes to the MRP-139 inspection program since the NRC had reviewed previously reviewed this program. Therefore, the specific questions identified in TI 2515/172 were not applicable.

b. Observations

In accordance with requirements of TI 2515/172, Revision 0, the inspector evaluated and answered the following questions:

(1) Implementation of the MRP-139 Baseline Inspections

1. a. Have the baseline inspections been performed or are they scheduled to be performed in accordance with MRP-139 guidance?

Yes. The licensee has performed all required baseline inspections at the time of this review.

b. Were the baseline inspections of the pressurizer temperature DMBWs completed?

Yes. The licensee has performed all required baseline inspections at the time of this review. This reporting requirement was addressed previously in inspection report 2009003; no new information was noted during this inspection.

2. Is the licensee planning to take any deviations from the MRP-139 baseline inspection requirements of MRP-139? If so, what deviations are planned, what is the general basis for the deviation, and was the NEI-03-08 process for filing a deviation followed?

   No. The licensee has not submitted any requests for deviation from MRP-139 requirements.

(2) Volumetric Examinations

Follow-on inspections of all previously overlaid welds were performed in October 2008 for Unit 1 and March 2008 for Unit 2. The answers to the following three questions apply to those follow-on inspections.

1. Were the examinations performed in accordance with the MRP-139, Section 5.1 guidelines and consistent with NRC staff relief request authorization for weld overlaid welds?

   Yes. All examinations were performed in accordance with applicable guidelines.

2. Were examinations performed by qualified personnel? (Briefly describe the personnel training/qualification process used by the licensee for this activity.)

   Yes. All examinations were performed by personnel qualified under the Performance Demonstration Initiative program to PDI-UT-8 requirements.

3. Were examinations performed such that deficiencies were identified, dispositioned, and resolved?

   Yes. There were no deficiencies identified.

(3) Weld Overlays

This portion of the TI was not inspected during the period of this report. All overlay activities were addressed previously in inspection report 2009003; no new information was noted during this inspection.

(4) Mechanical Stress Improvement (SI)

There were no stress improvement activities performed or planned by this licensee to comply with their MRP-139 commitments.

(5) Application of Weld Cladding and Inlays

There were no weld cladding or inlay activities performed or planned by this licensee to comply with their MRP-139 commitments.

(6) Inservice Inspection Program

This portion of the TI was not inspected during the period of this report. All overlay activities were addressed previously in inspection report 2009003; no new information was noted during this inspection.

c. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Quarterly Exit Meeting Summary

On April 1, 2009, the resident inspectors presented the inspection results to Mr. Regis T. Repko and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

.2 Regulatory Performance Meeting Summary

On March 9, the NRC's Chief of Reactor Projects Branch 1 and the resident inspectors met with Mr. Steven D. Capps and other members of the licensee staff to discuss the corrective actions associated with a third quarter 2008 Mitigating Systems Cornerstone finding of low to moderate safety significance (White) which involved a failure to take adequate corrective action related to implementation of a safety-related RN strainer backwash system. The purpose of the meeting was to provide a forum in which to develop a shared understanding of the performance issues, underlying causes, and planned licensee actions related to this issue.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

Ashe, K., Manager, Regulatory Compliance
Black, D., Security Manager
Bradshaw, S., Training Manager
Branch, R., Inspection Services Manager (ISI/Welding/MRP-139)
Brewer, D., Manager, Safety Assurance
Bryant, J., Regulatory Compliance
Capps, S., Plant Manager
Crane, K., Regulatory Compliance
Curry, C., Engineering Manager
Cutri, G., BACCP Program Owner
Gallman, W., BACCP Program Owner
Hicks, J., Superintendent, Maintenance
Kunkel, N., Superintendent, Work Control
Moore, T., RPVH Inspection Program Owner
Nolin, J., Manager, Mechanical and Civil Engineering
Repko, R., Site Vice President, McGuire Nuclear Station
Scott, W., Chemistry Manager
Shuping, J., Materials and NDE Services Manager
Simril, T., Superintendent, Plant Operations
Sloan, H., Radiation Protection (RP) General Supervisor
Smith, J., Radiation Protection Manager
Snider, S., Manager, Reactor and Electrical Systems Engineering
Spencer, B., RP Scientist
Underwood, G., Section XI Inspection Program
Zimmerman, D., NDE Supervisor

NRC personnel

J. Thompson, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open

05000369,370/2010002-04	URI	Power Reduction on both operating units due to entry into TS Limiting Condition for Operation 3.0.3 caused by the inoperability of both trains of the Control Room Area Chilled Water System (Section 4OA3.4)

Opened and Closed

05000369,370/2010002-01	SL-IV	Failure to adequately update the UFSAR for FPP documents incorporated by reference (Section 1R05)
05000369,370/2010002-02	NCV	Failure to adequately implement the Fire Protection Program (FPP) for the Standby Shutdown System (SSS) (Section 1R18)
05000369,370/2010002-03	NCV	Failure To Flow Test Nuclear Service Water "A" Train Standby Nuclear Service Water Pond (SNSWP) Supply Header at Maximum Design Flow (Section 4OA3.1)

Closed

05000369,370/2009-001-00	LER	Nuclear Service Water System (NSWS) “A” Trains Past Inoperable when aligned to the Standby Nuclear Service Water Pond (SNSWP) due to corrosion (Section 4OA3.1)
05000369/2008-003	LER	Unit 1 Manual Reactor Trip taken to mitigate control rod drop caused by shorted control rod drive mechanism (CRDM) cable connector (Section 4OA3.2)
TI 2515/173	TI	Review of the Implementation of the Industry Ground Water Protection Voluntary Initiative (Section 4OA5.2)

Discussed

TI 2515/172	TI	Reactor Coolant System Dissimilar Metal Butt Welds (Section 4OA5.3)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection
Site Specific Actual
RP/0/A/5700/006, Natural Disasters

Cold Weather Preps
IP/2/B/3250/059B, Monthly Check of Freeze Protection, Rev. 3
IP/0/B/3250/059C, Preventative Maintenance and Operational Check of Freeze Protection for Intake, Rev. 4
PT/0/B/4700/038, Verification of Freeze Protection Equipment and Systems, Rev. 21
PT/0/B/4700/070, On Demand Freeze Protection Verification Checklist, Rev. 17

Section 1R04: Equipment Alignment

Partial System Walkdown

Drawing MCFD-2609-04.00, Flow Diagram of the 2ADiesel Generator Starting Air System
Drawing MCFD-2609-03.00, Flow Diagram of the 2A Diesel Generator Engine Fuel Oil System
Drawing MCFD-2609-02.00, Flow Diagram of the 2A Diesel Generator Engine Lube Oil System
Drawing MCFD-2609-01.00, Flow Diagram of the 2A Diesel Generator Engine Cooling Water System

Section 1R05: Fire Protection

MCS-1465.00-00-0008, Design Basis Specification for Fire Protection

Fire Drill 1/23/2010

FS/1/B/9000/030, Unit 1 Exterior Doghouse Fire Strategy #30
PT/0/B/4600/121, Fire Drill
AP/0/A/5500/045, Plant Fire

PIPs generated from this inspection:

M-09-03661, Documentation of removal of Self-contained Breathing Apparatus
M-10-00833, Responsibilities of Firewatches for SMXA Complex Plan
M-10-00849, Scaffolding concerns on Auxiliary Building 695' level
M-10-02455, Guidance for Unit shut down for fire in lower containment

Section 1R08: Inservice Inspection Activities

Procedures

22164-9, Revision 004, Eddy Current Guidelines for Duke Energy Company's CFR-80 Steam Generators
McGuire Engineering Support Document: Boric Acid Corrosion Program, Rev. 4
MP-0-A-7150-153, Rx Vessel Head Bare Metal Inspection, Rev. 007
MP-0-A-7700-080, Inspection and Cleanup of Boric Acid on Plant Materials, Rev. 012
NDE-35A, Liquid Penetrant Examination Report for F-8 Canopy Seal Weld, dated 10-5-08
NDE-35A, Liquid Penetrant Examination Report for F-8 Canopy Seal Weld, dated 10/08/08
NDEMAN-NDE-25, Magnetic Particle Examination, Rev. 024
NDEMAN-NDE-35, Liquid Penetrant Examination, Rev. 022
NDEMAN-NDE-600, Ultrasonic Examination of Similar Metal Welds in Ferritic and Austenitic Piping, Rev. 017
NDEMAN-NDE-62, Visual Examination (VT-1 and VT-3) of Bolting, Rev. 001
NDEMAN-NDE-66, Visual Examination (VT-3) of Hangers, Restraints, Supports and Snubbers, Rev. 002
NDEMAN-NDE-66-FC08-06, Visual Examination (VT-3) of Hangers, Restraints, Supports and Snubbers, Rev. 000
NDEMAN-NDE-68, Visual Examination for Leakage and Boric Acid Corrosion Control, Rev. 2
NDEMAN-PDI-UT-1-FC08-05, Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds PDI-UT-1 Revision D Field Change 08-05, Rev. 0
NDEMAN-PDI-UT-2-FC08-04, Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds PDI-UT-1 Revision C Field Change 08-04, Rev. 0
NSD-322, Duke Energy Boric Acid Corrosion Program, Rev. 2
PT-0-A-4150-046, Containment Walkdown, Rev. 003

QAP 9.6, Welding Services, Inc. Liquid Penetrant Inspection Procedure, Rev. 11
PT/0/A/4150/046 McGuire Nuclear Station Containment Walkdown Procedure, Rev. 3

Corrective Action Documents
PIP M-09-03467 Boron discovered on skid prefilters dated 07/01/2009
PIP M-09-07011 1 NM-VA-0037 has an active packing leak dated 11/16/2009
PIP M-09-01612 piping leak dated 03/25/2009
PIP M-10-01206 tubing coming off of 1NV-FE-5630 dated 02/24/2010
PIP M-10-01835 findings of 1EOC20 Mode 5 walkdown by primary engineering dated 3/17/2010
PIP M-10-02096 results of 1EOC20 Reactor Vessel Head VT-2 bare metal inspection dated 3/22/2010

Other
1EOC20 Mode 5 Containment Walkdown dated 03/17/2010
Boric Acid Corrosion Control Program Assessment Rev. 11
1EOC20 Made 3 Containment Walkdown dated 03/13/2010
1-MCA-SA-H18 Magnetic Particle Examination sheet
Instrument Certification for MCNDE32829 light meter
Certification of Method Qualification Magnetic Particle for Leeper, Winfred C. dated 1/19/2009
Magnetic Particle System Performance Report for Magnaflux NDE-UT-6 dated 2/24/2010

Section 1R12: Maintenance Effectiveness
Nuclear Service Water (RN) strainer fouling
PIPs: M-08-0514, M-08-4670, M-09-2216, M-09-2341
UFSAR change 09-033
LER 05000369/2009001
PT/0/A/4200/047, Train A SNSWP Supply and Return Header Flush

CRDM cable connector failure
PIP M-08-07057

Section1R13: Maintenance Risk Assessments and Emergent Work Control
TN/1/A/EC99729/M1 EC99729 Replace 1A Strainer, Install, and Remove PD-1 Door Temporary Mullion and Control of PD-1 Door.
NSD 403, Shutdown Risk Management (Mode 4,5,6,and No-Mode) per 10 CFR 50.65(a)4
NSD 213, Risk Management Process
Critical Activity Plan for installation of temporary mullion on Door PD-1
PIPs generated from this inspections: M-10-0431, Lack of adequate test/inspection criteria for flood seals on door PD-1 after installation of a temporary mullion; M-10-0467, Questions concerning whether temporary mullion should have been installed as temporary modification; M-10-0584, Question on the protection scheme for the 1A RN Strainer movement; M-10-0539, SSF Diesel generator vendor manual does not contain information on hoses
PIP M-10-1682 for loss of operator aid computer indication for Unit 1 Reactor Coolant Loop #C HOT LEG NARROW RANGE PRESSURE.
PIP M-10-1936, Emergent Yellow defense in depth due to unit 2 switchyard issue
PIP M-10-1962, Defense in depth change due to schedule change associated with valve 1NI-118A

Section1R15: Operability Evaluations
NSD 203, Operability/Functionality
UFSAR 3.9.3, 6.4, 9.4.1, B Control Room Chiller
Drawing MCTC-1574-RN.V045-01
Calculation MCC-1503.13-00-0009, Safety Review for USQ on leaving sandbox covers installed
Calculation MCC-1150.00-00-0002, SNSWP Intake Structure

Section1R18: Plant Modifications
EC 98743, Remove auto open feature for CA 161 and CA 162
MCC-1223.42-00-0055, Design Calculations and Bases for1/2CA-161C and 1/2CA-162C Automatic Open
WO# 01830298

TT/1/A/9100/623, Functional Verification for EC98743 Remove Auto Open Function of 1CA-161C and 1CA-162C

EC 99729, Alternate configuration for use of temporary mullion on door PD-1
TN/1/A/EC99729/M1, Replace 1A RN Strainer, Install and Remove PD-1 Door Temporary Mullion and Control of PD-1 Door
PIPs generated from this inspection:
M-10-00431, Concerns regarding WZ sump protection scheme and associated risk mitigation applications.
M-10-00586, Issues regarding Engineering Change and procedures associated with the use of a temporary support for door PD-1 (EC-99729);

EC102726, TEMP EC to lower 1AD7-F.3 Alarm Setpoint for 1B NCP CTRL LEAKAGE LO FLOW
MCC 1399.03-00-0001, EIA System Scaling
IP/1/B/3000/002G, NCP Seal Leakoff Flow LO Range Loop
AP/1/A/5500/008, Malfunction of NC Pump

EC78241, Unit 1 7300 Control Cabinet Movement and Control Room Breach for 1EOC20
TN\1/A/EC78241/C1, Remove Existing DCS Cabinets, Install New DCS Cabinets
PT/1/A/4450/008C, OAPFT-1 Performance Test
MP/0/A/7650/064, Installation and Repair of Penetration Seals and Fire Barriers

EC97627, Unit 1 DCS Process Control Mod Installing 11 Residual Heat Removal system temporary indications during Mode 1
MD101569, Temporary Loop System for DCS modification
TT/1/B/MD101569/001, Temporary Monitoring System
IP/0/A/3090/004, Changes on Systems and Components
MCS-1465.00-00-0008, Design Basis Specification for Fire Protection
NSD 307, Quality Standards Manual
NRC Staff's McGuire Safety Evaluation Report (NUREG-0422)
NRC's Station Blackout (SBO) SER for implementation of 10CFR50.63, dated February 19, 1992

PIP M-10-0539
PIP M-10-0888
PIP M-10-1026

Section 1R19: Post Maintenance Testing
OP/0/A/6350/001A, 125 VDC/120 VAC Vital Instrument and Control Power System
PT /0/A/4350/040/E, 125 VDC Vital Instrument and Control Battery Modified Performance Test using BCT-2000
PT/2/A/4450/008C, OAPFT-2 Performance Test
TS 3.4.8

Section1R20: Refueling and Other Outage Activities
PT/0/A/4150/035, Inspection and Storage of New Fuel
OP/1/A/6100/SD-2, Cooldown to 400 degrees F
OP/1/A/6100/SD-4, Cooldown to 240 degrees F
OP/1/A/6100/SO-1, Maintaining NC System Level
OP/1/A/6100/SO-2, Filling the Refueling Cavity
PT/0/A/4150/037, Total Core Unloading
OP/1/A/6100/SD-22, Removal of Reactor Vessel Head
MP/1/A//7150/057A, Reactor Vessel Head Removal
UFSAR 9.1.5
MP/1/A//7150/057B, Reactor Vessel Head Installation
OP/1/A/6100/003, Controlling Procedure for Unit Operation
MC-INOS-09-011, Independent Review Team review of 1EOC20 outage schedule.
NSD 403, Shutdown Risk Management
OP/1/A/6100/SO-1, Maintaining NC System Level
AP/1/A/5500/019, Loss of ND or ND System Leakage
AP/1/A/5500/041, Loss of Spent Fuel Cooling or Level
PIPs generated from this inspection: M-10-2152, No special instructions on the fatigue assessment screen to note that face to face fatigue assessment is required for waiver.

Section1R22: Surveillance Testing
Routine Surveillance Tests
TS 3.8.1, 3.8.3
SR 3.8.1.14

In-Service Tests
TS 3.7.5

Section 4OA2: Problem Identification and Resolution
NSD 208, Problem Investigation Process (PIP)
NSD 201, Reporting Requirements
NSD 202, Reportability
PIPs generated from this inspection: G-10-0010, Organizational changes do not always consider impact on QA Topical; M-10-0637, Evaluate the aggregate of the 25 PIPs that have been written since 12/1/2009 on Unit 2 alarms for common issue or trend;

Operator Workarounds (OWA)
OWA Y09-08: PIP M-08-5394
OWA Y04-12: MD 100242
OWA Y09-09: PIP M-09-6765
OWA Y08-14: PIP M-08-2639
AP/1(2)/A/5500/007, Loss of Electrical Power
AP/1(2)/A/5500/012, Loss of Letdown, Charging, or Seal Injection

Section 4OA3: Followup of Events and Notices of Enforcement Discretion
U1 Shutdown
OP/1/A/6100/003, Controlling Procedure for Unit Operation
EP/1/A/5000/E-0, Reactor Trip or Safety Injection
EP/1/A/5000/ES-0.1, Reactor Trip Response
AP/1/A/5500/012, Loss of Letdown, Charging or Seal Injection

LER
AP/1/A/5500/014, Rod Control Malfunction
PIP M-08-7057
PIP M-95-1628
PIP M-00-0522
PIP M-09-2216
Time Critical Operator Actions Study, dated 11/2/09
OP/1/A/6400/006, Encl. 4.17, RN Strainer Operation during Loss of VI Event, Rev. 20
PT/0/A/4200/047, Train A SNSWP Supply and Return Header Flush, Rev. 11
PT/0/A/4200/057, Train B SNSWP Supply and Return Header Flush, Rev. 2
MNS Unit 1B RN Train Inoperability for MNS LER 2009-001-00, dated 1/12/2010
MNS Unit 2B RN Train Inoperability for MNS LER 2009-001-00, dated 1/12/2010
UFSAR 9.2.2, Nuclear Service Water System and Ultimate Heat Sink
UFSAR Table 9-8, Nuclear Service Water Flow Requirements
MCS-1574.RN-00-0001, Design Basis Specification for the RN System, Rev. 28

Section 4OA5: Other Activities

Procedures, Manuals, and Guidance Documents
Nuclear Generation (NG), Procedure No. (No.) Standard Radiation Protection Management Procedure (SRPMP) 8-2, Investigation of Unusual Radiological Occurrence, Revision (Rev.) No. 003
NG, Procedure No. SRPMP 9-1, Groundwater Well Sampling Protocol, Rev. No. 002
Nuclear Groundwater Protection Initiative Communication Plan, Rev. 2009
Nuclear Policy Manual (NPM), Nuclear System Directive (NSD) 516, Tritium Management Program, Rev. No. 0
NPM, NSD 517, Radiological Ground Water Protection Program, Rev. No. 001

Records and Data Reviewed
McGuire Nuclear Station Annual Radiological Effluent Release Report 2008
Site Characterization Report for Groundwater Protection Initiative at Duke Energy McGuire Nuclear Station, Huntersville, North Carolina, June 2008

Corrective Action Program Documents
Assessment No. RP-SA09-02, Evaluation of Ground Water Protection Well Sampling Data
NEI 07-07, NEI Groundwater Protection Initiative, NEI Peer Assessment Report, Dated 10/01/09
PIP G-08-00419, Implementation requirements for the new NSD 517, Radiological Ground Water Protection Program
PIP M-08-00585, Suspect Final Holdup Pond level is dropping
PIP M-08-06732, Documenting ANI Nuclear Liability Insurance Inspection conducted at MNS on June 25-26, 2008
PIP M-08-07316, Self Assessment of NEI 07-07 Groundwater Protection Initiative Implementation
PIP M-09-00548, Final Holdup Pond Post Lining integrity test indicates the pond is still leaking at an unacceptable rate
PIP M-09-02594, Documenting Radiation Protection Quick-Hitter Assessment RP-SA09-02, Evaluation of Ground Water Protection Well Sampling Data
PIP M-09-04696, Tritium concentration at groundwater level instrument (2WZLP-5100) continues to trend upward after the 1202 Decon Sump and Laundry Sump were cleaned out and lined (July 2008)
PIP M-09-05373, Pool Liner Replacement
PIP M-10-01045, Documenting summary results of recent testing of Unit 1 and Unit 2 Spent Fuel Pool Liner Plate leak Chase System

LIST OF ACRONYMS

ASME	-	American Society of Mechanical Engineers
BACC	-	Boric Acid Corrosion Control
CA	-	Auxiliary Feedwater
CRACWS	-	Control Room Area Chilled Water System
CRDM	-	Control Rod Drive Mechanism
DMBW	-	Dissimilar Metal Butt Weld
ECT	-	Eddy Current Testing
FHA	-	Fire Hazard Analysis
FPP	-	Fire Protection Program
GDC	-	General Design Criteria
GL	-	Generic Letter
ISI	-	Inservice Inspection
LER	-	Licensee Event Report
MRP	-	Materials Reliability Program
MT	-	Magnetic Particle Testing
NCV	-	Non-Cited Violation
NEI	-	Nuclear Energy Institute
NG	-	Nuclear Generation
NOED	-	Notice of Enforcement Discretion
NPM	-	Nuclear Policy Manual
NRC	-	Nuclear Regulatory Commission
NSWS	-	Nuclear Service Water System
OWA	-	Operator Workaround
PI	-	Performance Indicator
PIP	-	Problem Investigation Process Report
QAP	-	Quality Assurance Program
RN	-	Nuclear Service Water
RP	-	Radiation Protection
RWST	-	Refueling Water Storage Tank
SG	-	Steam Generator
SI	-	Stress Improvement
SNSWP	-	Standby Nuclear Service Water Pond
SRPMP	-	Standard Radiation Protection Management Procedure
SSC	-	Structures, Systems and Components
SSD	-	Safe Shutdown
SSF	-	Safe Shutdown Facility
SSS	-	Standby Shutdown System
TI	-	Temporary Instruction
TS	-	Technical Specifications
UFSAR	-	Updated Final Safety Analysis Report
UT	-	Ultrasonic Testing
VI	-	Instrument Air