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

October 27, 2008

Mr. Bruce H. Hamilton
Vice President
Duke Power Company, LLC
d/b/a Duke Energy Carolinas, LLC
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: WILLIAM B. MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2008-004 AND 05000370/2008-004

Dear Mr. Hamilton:

On September 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your William B. McGuire Nuclear Station, Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on October 3, 2008, with Bruce Hamilton 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, no findings of significance were identified.

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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,
/RA/

Steven D. Rose, Acting 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 05000369/2008004 and 05000370/2008004
w/Attachment - Supplemental Information

cc w/encl: (See page 2)

October 27, 2008

Mr. Bruce H. Hamilton
Vice President
Duke Power Company, LLC
d/b/a Duke Energy Carolinas, LLC
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: WILLIAM B. MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2008-004 AND 05000370/2008-004

Dear Mr. Hamilton:

On September 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your William B. McGuire Nuclear Station, Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on October 3, 2008, with Bruce Hamilton 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, no findings of significance were identified.

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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,
/RA/

Steve D. Rose, Acting 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 05000369/2008004 and 05000370/2008004
w/Attachment - Supplemental Information

cc w/encl: (See page 2)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: ☐ Yes ACCESSION NUMBER:_____ X SUNSI REVIEW COMPLETE ***SDR***

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRS	RII:DRS
SIGNATURE	SDR /RA/	JBB /via email/	RCE /via email/	EJS /via email/	RCC /via email/	JBH /via email/	CRK /via email/
NAME	SRose	JBrady	REul	EStamm	RChou	JHamman	CKontz
DATE	10/23/2008	10/24/2008	10/24/2008	10/17/2008	10/16/2008	10/17/2008	10/17/2008
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: I:\RPB1\MCGUIRE\INSPECTION REPORTS\08-04\08-04 REPORTREV1.DOC

cc w/encl:
Steven D. Capps
Engineering Manager
Duke Power Company, LLC d/b/a Duke
Energy Carolinas, LLC
Electronic Mail Distribution

Scotty L. Bradshaw
Training Manager
Duke Power Company, LLC d/b/a Duke
Energy Carolinas, LLC
Electronic Mail Distribution

Kenneth L. Ashe
Regulatory Compliance Manager
Duke Power Company, LLC d/b/a Duke
Energy Carolinas, LLC
Electronic Mail Distribution

R. L. Gill, Jr.
Manager
Nuclear Regulatory Issues & Industry Affairs
Duke Power Company, LLC d/b/a Duke
Energy Carolinas, LLC
Electronic Mail Distribution

Lisa F. Vaughn
Associate General Counsel
Duke Energy Corporation
526 South Church Street-EC07H
Charlotte, NC 28202

Kathryn B. Nolan
Senior Counsel
Duke Energy Corporation
526 South Church Street-EC07H
Charlotte, NC 28202

David A. Repka
Winston Strawn LLP
Electronic Mail Distribution

County Manager of Mecklenburg County
720 East Fourth Street
Charlotte, NC 28202

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

Dhiaa M. Jamil
Group Executive and Chief Nuclear Officer
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Letter to Bruce H. Hamilton from Steven D. Rose dated October 27, 2008

SUBJECT: WILLIAM B. MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2008-004 AND 05000370/2008-004

Distribution w/encl:
C. Evans, RII
L. Slack, RII
OE Mail
RIDSNRRDIRS
PUBLIC
J. Stang, NRR

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-369, 50-370
License Nos:	NPF-9, NPF-17
Report Nos:	05000369/2008004, 05000370/2008004
Licensee:	Duke Power Company, LLC
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	12700 Hagers Ferry Road Huntersville, NC 28078
Dates:	July 1, 2008 through September 30, 2008
Inspectors:	J. Brady, Senior Resident Inspector R. Eul, Resident Inspector R. Chou, Reactor Inspector (Section 4OA5.4) J. Hamman, Reactor Inspector (Section 4OA5.5) C. Kontz, Operations Engineer (Sections 1R04, 1R22) E. Stamm, Project Engineer (Sections 1R01, 1R13, 1EP6)
Approved by:	Steven D. Rose, Acting Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000369/2008-004 and 05000370/2008-004; 07/01/2008 – 09/30/2008; William B. McGuire Nuclear Station, Units 1 and 2; Quarterly Integrated Inspection Report.

The report covered a three month period of inspection by two resident inspectors and announced inspections by four regional inspectors (i.e., two reactor inspectors, one operations engineer, and one project engineer). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process (ROP), Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings were identified during this inspection period.

B. Licensee-Identified Violations

None.

Report Details

Summary of Plant Status:

Unit 1 began the inspection period at approximately 100 percent rated thermal power. It was shut down on September 20, 2008, for the End-of-Cycle (EOC) 19 refueling outage, where it remained for the remainder of the period.

Unit 2 began the inspection period at approximately 100 percent rated thermal power and remained there for the rest of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection

.1 Severe Weather Condition (Actual)

a. Inspection Scope

On August 26, 2008, a tornado watch was experienced on site. The adverse weather condition, in addition to the ongoing 1A diesel generator work, placed the licensee in an elevated plant risk configuration. The inspectors reviewed the plant response to the event. The inspectors toured the plant site and assessed the readiness of risk significant systems. The inspectors interviewed Operations personnel regarding preparations and inspections performed prior to the arrival of the severe weather, adequacy of the operations procedures, and additional actions to be taken following the period of adverse weather.

On September 5, 2008, the licensee made final preparations for a potential hurricane/tropical storm threat. The inspectors reviewed the adequacy of the licensee's procedures and risk management due to the threat. The inspectors also walked down the outside areas of the plant to assess whether potential sources for airborne debris were secured. Finally, the inspectors interviewed Operations personnel regarding potential plant configurations during a postulated hurricane/tropical storm related event. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Seasonal Adverse Weather

a. Inspection Scope

After the licensee completed preparations for seasonal high temperature, the inspectors discussed and reviewed the licensee's Hot Weather Program, Hot Weather Computer Spreadsheet, and Hot Weather Action Item Register for 2008 with the licensee's program owner and on-shift licensed operators. The inspectors reviewed the completed test results for PT/0/B/4700/039, Warm Weather Equipment Checkout, dated April 26, 2008. Because there was no safety-related equipment affected by hot weather, the inspectors toured the plant to determine if other risk significant equipment not monitored by the program could be affected.

b. Findings

No findings of significance were identified.

.3 Flood Protection Measures - External

a. Inspection Scope

The inspectors walked down the outside portions of the plant, which are susceptible to flooding from external sources, to determine whether the area configuration, features, and equipment functions were consistent with the descriptions and assumptions used in

Updated Final Safety Analysis Report (UFSAR) Section 2.4.10, Flood Protection Requirements, and in the supporting basis documents listed in the Attachment to this report.

The inspectors reviewed preventative maintenance for manholes that contain cables important to safety and were subject to flooding to determine whether cables and associated support equipment described in the UFSAR were not damaged by submergence and would perform their intended function. In addition, the inspectors assessed whether emergency flooding procedures would achieve the desired actions and evaluated the implementation of preparation procedures.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed a partial walkdown of the systems listed below 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 system components, and determined whether selected breakers, valves, and support equipment were in the correct position to support system operation. The documents reviewed during this inspection are listed in the Attachment to this report.

- 1B emergency diesel generator (EDG) with 1A EDG out of service for maintenance on July 1, 2008
- 2A residual heat removal (RHR) system with 2B RHR system out of service for maintenance on July 16, 2008
- 2B EDG with 2A EDG out of service for maintenance on July 22, 2008
- 1B auxiliary feedwater (CA) system with 1A CA system out of service for maintenance on July 22, 2008

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection Walkdowns

a. Inspection Scope

The inspectors walked down accessible portions of the plant areas listed below to determine if they were consistent with the UFSAR and the fire protection program 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 they were consistent with the fire protection program and presented an adequate fire fighting strategy. The documents reviewed during this inspection are listed in the Attachment to this report.

- Unit 1 and 2 vital batteries (Fire Area 13)
- Unit 1 and 2 component cooling water pumps and RHR heat exchangers (Fire Area 14)
- Unit 1 and 2 component cooling water surge tank and heating, ventilation, and air conditioning equipment (Fire Area 25)
- Unit 1 spent fuel pool (Fire Area 26)
- Unit 2 spent fuel pool (Fire Area 27)

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On July 16, 2008, the inspectors observed licensed-operator performance during requalification simulator training to determine whether operator performance was consistent with expected operator performance, as described in Exercise Guide OP-MC-SRT-14. This training tested the operators' ability to perform abnormal and emergency procedures dealing with the loss of one essential electrical bus, a loss of coolant event, and loss of all feedwater. 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.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the 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 (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. The documents reviewed during this inspection are listed in the Attachment to this report.

- Thermal barrier outlet isolation valves
- Component cooling water discharge check valves

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

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 activities listed below. The inspectors assessed whether the licensee performed adequate risk assessments, and implemented appropriate risk management actions when required by 10CFR50.65(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. The documents reviewed during this inspection are listed in the Attachment to this report.

- Rescheduling performance of 2B nuclear service water (RN) maintenance (originally an Outage Risk Assessment Model (ORAM) Orange risk activity) due to potential for additional risk from seasonal macro-fouling on August 5, 2008.
- Emergent issue associated with 1A makeup water pump being out of service during period of time that Unit 1 chemical and volume control system makeup water was supplying both units through a cross-connect lineup on August 11, 2008.
- Emergent issue associated with 2A diesel generator start failure and subsequent troubleshooting on August 19, 2008.
- Emergent issue associated with 1A diesel generator being unavailable during a Tornado Watch on August 26, 2008.
- Planned performance of 2B RN maintenance, which was evaluated as an ORAM Orange risk activity on September 12, 2008.
- Emergent issue associated with the loss of the 1B busline auto runback feature due to a "Supervisory System B Trouble" alarm on September 14, 2008.
- Planned installation of a rail track for removal of the 1B RN pump suction strainer located in the Unit 2 CA pump room resulting in an ORAM Orange risk condition on Unit 2 beginning September 25, 2008.

The inspectors also reviewed associated corrective action documents to determine whether the licensee identified and implemented appropriate corrective actions.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

For the operability evaluations listed by their respective Problem Investigation Process reports (PIPs) below, the inspectors evaluated the technical adequacy of the evaluations to determine whether Technical Specification (TS) 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, such that operability was justified. 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 10CFR 50.59. The documents reviewed during this inspection are listed in the Attachment to this report.

- M-08-4098, Class C and F piping on top of the diesel fuel fill pad not protected against the effects of a tornado as specified in the UFSAR
- M-08-3473, Foreign material found in 1A chemical and volume control system pump gearbox heat exchanger with the potential for fouling the gearbox oil pump strainer
- M-08-3884, 1NI-65B 1B nitrogen accumulator outlet isolation valve actuator oil leak
- M-08-3600, Discrepancies in Integrated Leak Rate Testing computer program inputs for Unit 2
- M-08-3899, 1C steam generator turbine driven CA flow slightly higher than the other steam generators

b. Findings

No findings of significance were identified.

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 tests listed below and/or reviewed the test data, to determine whether the test results adequately demonstrated restoration of the affected safety function(s). The documents reviewed during this inspection are listed in the Attachment to this report.

- PT/1/A/4350/0002A, Diesel Generator 1A Operability Test, after various minor maintenance on July 1, 2008.
- PT/2/A/4350/002A, Diesel Generator 2A Operability Test, after various minor maintenance on July 22, 2008.
- PT/1/A/4403/002, Nuclear Service Water Train A Valve Stroke Timing, after adjustment of the closing stops on valve 1RN-89A on July 30, 2008.
- PT/1/A/4350/002B, Diesel Generator 1B Operability Test, after various minor maintenance on August 12, 2008.
- PT/2/A/4350/002A, Diesel Generator 2A Operability Test, after emergent maintenance completed on failed instrumentation on August 20, 2008.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

Unit 1 began a refueling outage on September 20.

Prior to the outage, the inspectors reviewed the licensee's outage risk control plan to determine whether the licensee had adequately considered risk in developing the outage schedule. The inspectors reviewed the licensee procedures listed in the Attachment to this report in order to determine whether they contained mitigation/response strategies for losses of key safety functions identified below:

- Decay heat removal
- Inventory control
- Power availability
- Containment

The inspectors observed portions of the cooldown process to determine whether TS cooldown restrictions were followed. The inspectors walked down containment shortly after the shutdown to determine whether there was indication of previously unidentified leakage from components containing reactor coolant.

The inspectors reviewed the licensee's responses to emergent work and unexpected conditions, to determine whether resulting configuration changes were controlled in accordance with the outage risk control plan. The inspectors observed outage activities and/or the items described below, to determine whether the licensee maintained defense-in-depth commensurate with the outage risk control plan for the key safety functions identified above and applicable TS when taking equipment out of service.

- Clearance activities
- Reactor coolant system instrumentation
- Electrical power
- Decay heat removal
- Spent fuel pool cooling
- Inventory control
- Reactivity control

- Containment closure

The inspectors also assessed outage activities that were conducted during short time-to-boil periods.

Periodically, the inspectors reviewed the items that had been entered into the licensee's corrective action program to determine whether the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the corrective action program. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the 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 TSs, UFSAR, and applicable licensee procedures. In addition, the inspectors assessed whether the tests demonstrated that the SSCs were capable of performing their intended safety functions.

Surveillance Tests
- PT/2/A/4600/001, Unit 2 Rod Cluster Control Assembly Movement Test
- PT/2/A/4601/004, Unit 2 7300 Protection Cabinet #4

In-Service Tests
- PT/2/A/4252/001C, Unit 2 Turbine Driven CA Pump Performance Test Opening 2SA-49 First
- PT/1/A/4252/028, Unit 1 Train A Slave Start CA Pump
- PT/1/A/4252/002, Unit 1 Train A CA Valve Stroke Timing – Quarterly
- PT/1/A/4350/036B, Diesel Generator 1B 24 Hour Run

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

Resident inspectors evaluated the conduct of two routine licensee emergency drills on August 27, 2008, and September 10, 2008, to identify any weaknesses and deficiencies in classification, notification, dose assessment, and protective action recommendation development activities in accordance with 10CFR50, Appendix E. The inspectors observed emergency response operations in the simulated control room to determine whether event classification and notifications were done in accordance with Emergency

Plan Implementing Procedure (EPIP)-1, Emergency Plan Classification Matrix. The inspectors also attended the licensee's critique of the drill to compare any inspector-observed weakness with those identified by the licensee in order to determine whether the licensee was properly identifying failures. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported performance indicator (PI) data for the indicators during periods listed below. 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 NEI 99-02, Regulatory Assessment Indicator Guideline, Rev. 5.
Barrier Integrity Cornerstone

- Reactor Coolant System Specific Activity (Units 1 and 2) [from 3rd Quarter 2007 through 2nd Quarter 2008]

The inspectors observed licensee sampling and analysis of reactor coolant system samples, and compared the licensee-reported performance indicator data with records developed by the licensee while analyzing previous samples. The inspectors also reviewed the corrective action documents associated with this area to determine whether the licensee identified and implemented appropriate corrective actions.

- Reactor Coolant System Leak Rate Performance Indicator (Units 1 and 2) [from 3rd Quarter 2007 through 2nd Quarter 2008]

The inspectors reviewed surveillance test records of measured reactor coolant system identified leakage and compared these calculations with TS limiting values.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Routine Review

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," 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.

.2 Selected Issue Follow-Up Inspection

a. Inspection Scope

The inspectors selected PIP M-08-3862, PIP M-08-3870, and PIP M-08-3873 for detailed review. These PIPs were associated with the Unit 1 reactor trip that occurred on June 26, 2008. The inspectors reviewed these PIPs to determine whether the licensee identified the full extent of the issue, performed an appropriate evaluation, and specified and prioritized appropriate corrective actions. The inspectors evaluated the PIPs against the requirements of the licensee's corrective action program procedures and 10 CFR 50, Appendix B. The associated documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) Licensee Event Report (LER) 05000369/2008-002-00, Automatic Reactor Trip And Auxiliary Feedwater System Actuation Due to 1B Reactor Coolant Pump Motor Failure

On June 26, 2008, the Unit 1B reactor coolant pump motor tripped when the 6900-volt feeder and safety breaker over-current protective relays sensed a ground fault, which in turn caused an automatic Unit 1 reactor trip due to low reactor coolant system flow sensed by the reactor protection system. The reactor trip resulted in an automatic turbine trip and auxiliary feedwater system actuation. The licensee's root cause determination determined the event was caused by a reactor coolant pump motor surge capacitor that had shorted to ground due to a reduced service life from improper design. Additionally, their cause determination did not eliminate a potential additional cause of manufacturing defect/deficiency. The corrective actions identified in the root cause adequately addressed the root cause. The licensee documented the failed equipment in PIP M-08-3862. The LER was reviewed by the inspectors. No findings of significance were identified and no violation of NRC requirements occurred. Accordingly, this LER is considered closed.

.2 Unit 1 Reactor Shutdown

a. Inspection Scope

On September 20, 2008, the inspectors reviewed the Unit 1 shutdown for refueling outage 1EOC19 from the control room to determine whether the licensee appropriately implemented procedures, and whether operator performance was as expected. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

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 Independent Spent Fuel Storage Installation (ISFSI)

a. Inspection Scope

The inspectors toured the McGuire ISFSI and reviewed radiological access controls and environmental dosimetry placement. The inspectors compared dose rates to documented survey results. The inspectors reviewed thermo-luminescent dosimeter and surveillance data associated with the installation.

The inspectors reviewed the Unit 1 documentation package for the casks listed below, in order to determine if the selected fuel assemblies and burnable poison inserts met the requirements for insertion in dry cask storage. This documentation had been created using procedure XSM-006, Workplace Procedure for Selecting Spent Fuel for Use of NAC-UMS System at McGuire, and Regulatory Guide 3.54, Spent Fuel Heat Generation.

- NAC-UMS TSC-MNZ-018 (Document Control NO MCEI 0400-171)
- NAC-UMS TSC-MNZ-019 (Document Control NO MCEI 0400-172)
- NAC-UMS TSC-MNZ-020 (Document Control NO MCEI 0400-173)

The inspectors reviewed the cask loading verification video tapes for each of the above casks to verify that the alpha-numeric identification numbers stamped on the loaded fuel assemblies and burnable poison assemblies matched the identification numbers used in the documentation package, as required by procedure OP/0/A/6550/028, NAC UMS Fuel Assembly Loading/Unloading Procedure. The casks were loaded on June 23, July 14, and July 28, 2008, respectively. The inspectors reviewed selected licensee activities as specified in procedure MP/0/A/7650/212, Loading Spent Fuel Assemblies Into NAC-UMS Casks, to verify that activities were being accomplished in accordance

with procedural requirements. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified

.3 (Open) Temporary Instruction (TI) 2515/176, Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

The objective of this TI was to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed by plant-specific TS. The inspector interfaced with the appropriate station staff to obtain the information specified in Attachment 1 (Worksheet) of the TI. The TI applies to all operating nuclear power reactor licensees that use EDGs as the onsite standby power supply. The inspectors assessed the accuracy of the information by review of TS, EDG Design Basis Event (DBE) loading calculations, EDG endurance run test procedures, test data from the last three endurance tests performed on each EDG, EDG ratings, and EDG operating history. The information gathered will be forwarded to Nuclear Reactor Regulation/ Division of Engineering/Electrical Engineering Branch (NRR/DE/EEEB) for further review to assess the adequacy and consistency of EDG testing at nuclear stations. The documents reviewed during this inspection are listed in the Attachment to this report.

a. Findings

The TI is presently scheduled to be open until August 31, 2009, pending completion of the NRR/DE/EEEB review.

.4 (Open) TI 2515/172, Reactor Coolant System Dissimilar Metal Butt Welds (DMBWs)

a. Inspection Scope

From August 25 – 29, 2008, the inspectors reviewed the licensee's activities related to the inspection and mitigation of dissimilar metal butt welds (DMBWs) in the reactor coolant system (RCS) to ensure that the licensee activities were consistent with the industry requirements established in the Materials Reliability Program (MRP) document MRP-139, Primary System Piping Butt Weld Inspection and Evaluation Guidelines, July 2005. The inspections covered the following: (a) implementation of actions required by the relief request authorizations and safety evaluation reports (SERs); (b) documentation review of the volumetric examinations and full structural weld overlays (FSWOLs) on pressurizer nozzle DMBWs during the April 2007 outage for Unit 1 and the October 2006 outage for Unit 2; (c) documentation review of the volumetric examinations for the first inservice inspection after the FSWOLs on the pressurizer DMBWs during the March 2008 outage for Unit 2; and (d) review of the MRP-139 program. For the observations of welding activities for the FSWOLs for the inservice inspections during the outages, please refer to Section 1R08, Inservice Inspection (ISI) Activities (71111.08P) documented in NRC Integrated Inspection Reports 05000369/2007002 and

05000370/2007002 for Unit 1, and 05000369/2006005, 05000370/2006005, and 072000038/2006002 for Unit 2.

b. Findings and Observations

No findings of significance were identified.

TI 2515/172 REPORTING REQUIREMENTS FOR MCGUIRE UNITS 1 AND 2

A. MRP-139 Baseline Inspections

(1) Have the baseline inspections been performed or are they scheduled to be performed in accordance with MRP-139 guidance? Were the baseline inspections of the pressurizer temperature DMBWs of the nine plants listed in TI 2515/172, 03.01.b completed during the spring 2008 outages?
Yes. The licensee performed baseline volumetric inspection activities after the completion of the FSWOLs for the six DMBWs on the pressurizer for both units, required to be completed per MRP-139 Section 1.2. The licensee performed profile measurements of the weld and pipe surfaces in preparation for the baseline volumetric examination by Ultrasonic Examination (UT). However, the licensee concluded that the surfaces were too difficult to prepare for the UT and the examination coverage would be less than 90 percent. The licensee decided to perform the FSWOLs for mitigation and conduct phased array UTs after the completion of the FSWOL on all six pressurizer DMBWs during refueling outages in April 2007 for Unit 1, and October 2006 for Unit 2, based on the crack assumption of Section 6.6 Category F, MRP-139 and NRC relief request authorizations and SERs. Therefore, the licensee met the implementation deadline requirement of December 31, 2007, for the MRP-139 for the baseline volumetric examination on pressurizer DMBWs for both units by performing the FSWOL and conducting UT after the weld overlay.

The licensee used a visual examination on one DMBW 1" diameter reactor head vent line to complete the baseline visual examinations for both units during the Spring 2007 Unit 1 outage and Fall 2006 Unit 2 outage. Therefore, these DMBWs met the deadline of December 31, 2007.

There are no Alloy 82/182 DMBWs greater than or equal to 4" nominal pipe size (NPS) and less than or equal to 14" NPS exposed to temperatures equivalent to the hot leg for both units.

There are no Alloy 82/182 DMBWs greater than 14" NPS exposed to temperatures equivalent to the hot or cold legs connected to the steam generators for Unit 1 and connected to the reactor vessel or the steam generators for Unit 2 because of the use of stainless steel or corrosion resistant Alloy 52M welds.

Alloy 82/182 DMBWs greater than 14" NPS exposed to temperatures equivalent to those of the hot and cold legs for Unit 1 will be inspected by UTs in September 2008 and April 2010. This will meet the MRP-139 implementation deadline of December 31, 2009 for the hot leg temperature and December 31, 2010, for the cold leg temperature.

The inspectors reviewed documents for volumetric examinations which covered the following: examination plan, UT examination procedure and documentation to support its qualification for the intended use, assessment of personnel training and qualification, equipment certification and calibration records, and final examination report.

(2) Is the licensee planning to take any deviations from MRP-139 requirements?

No. The licensee has not taken any deviations or submitted any requests for deviations from MRP-139 requirements.

B. Examinations and Weld Overlays Mitigations Performed

For each examination inspected, was the activity:

(1) Performed in accordance with the examination guidelines in MRP-139, Section 5.1 for unmitigated welds and consistent with NRC staff relief request authorization for weld overlaid welds?

Yes. The licensee performed the FSWOLs on the six DMBWs; specifically, one surge, one spray, three safety, and one relief line on Units 1 and 2 pressurizer nozzle welds, and conducted phased array UTs for all of the welds upon completion of the FSWOLs based on requirements of the relief request authorizations, SERs, and the crack assumption of Section 6.6, Category F of MRP-139. The UT prior to the FSWOL was not required per MRP-139, the relief request authorizations, or SERs. The phased array UT used to examine the DMBWs after the completion of the FSWOL met the examination guidelines in MRP-139, Section 5.1.

The phased array UT procedure was qualified in accordance with ASME Section XI, Appendix VIII, as implemented through the EPRI Performance Demonstration Initiative (PDI) Program. Prior to each examination after the weld overlays were completed, the licensee verified the FSWOL surface flatness as well as the surface roughness to ensure that it met the requirements to allow a volumetric examination. The licensee utilized phased array UT technology to perform the examination using procedure PDI SI-UT-126, “Procedure for the Phased Array Ultrasonic Examination of the Weld Overlaid Similar and Dissimilar Metal Welds,” Revisions 0 and 3. The UT examiners scanned the FSWOL to the maximum extent practicable in two axial and two circumferential directions. The licensee was able to obtain 100% coverage with the UT examination performed to detect fabrication flaws in the FSWOL. No indications were identified in the circumferential and axial beam directions. For the pre-service examination of the new volume of the weld overlays above the dissimilar metal weld, the licensee obtained 100% coverage in the circumferential and axial beam directions.

The inspectors reviewed the procedures, work orders, work packages, examination reports, equipment qualification records, and personnel qualification and certificates.

The inspectors verified that the examination was in accordance with the relief request authorizations and SERs.

(2) Performed in accordance with ASME Code welding requirements and consistent with NRC staff relief requests authorizations? Has the licensee submitted a relief request and obtained NRR staff authorization to install the weld overlays?

Yes. The licensee applied the FSWOLs and performed the volumetric examinations on the six DMBWs on the pressurizer nozzles for both units in accordance with the ASME Code welding requirements and consistent with NRC staff relief request authorizations.

The licensee submitted the relief requests for the FSWOLs and alternative examinations for the pressurizer nozzle DMBWs for both units and obtained NRR staff authorizations. Relief Requests 07-GO-001, for Unit 1, and 06-GO-001, for Unit 2, for use of full structural weld overlay and alternative examination techniques on various pressurizer nozzle to safe end welds were submitted and NRR staff authorizations for installations were obtained on November 27, 2007, for Unit 1 and July 25, 2007, for Unit 2. The licensee received an oral authorization to perform the FSWOL at the six DMBWs on the pressurizer in advance, before the September 2006 outage for Unit 2.

The inspectors reviewed welding procedure specifications, procedure qualification records, weld wire certifications, and the welding process control sheets for compliance with ASME Section IX welding requirements and adherence to the relief requests and safety evaluations. The inspectors observed the implementation of the weld overlays during the March 2007 outage for Unit 1 and the September 2006 outage for Unit 2, and documented the details in Section 1R08 Inservice Inspection (ISI) Activities of the NRC Integrated Inspection Reports 05000369/2007002 and 05000370/2007002 for Unit 1 and 05000369/2006005, 05000370/2006005, and 072000038/2006002 for Unit 2.

(3) Performed by qualified and knowledgeable personnel?

Yes. The personnel such as welders and phased array UT examiners involved in the DMBWs at the pressurizer nozzles for both units for the mitigation using FSWOL were qualified and knowledgeable in accordance with the requirements of the MRP-139, the ASME Code, and the relief request authorizations. The examiners were qualified Level II or Level III in the UT methods, as required by the UT procedures and in accordance with the vendor's written practice for NDE personnel. The UT examiners were also PDI qualified for the specific UT procedure they implemented. The final examination reports were reviewed by vendor and/or licensee Level III UT examiners.

The welding personnel were qualified in accordance with the requirements identified in ASME Code Section IX. The inspectors reviewed the welder performance qualification test records and compared them with the requirements of the ASME Code. The welding process control sheets were reviewed for compliance with the proposed alternative approved on the relief requests and ASME Code Section IX requirements.

(4) Performed such that deficiencies were identified, dispositioned, and resolved?

Yes. However, no indications were identified by the phased array ultrasonic examinations for the weld overlays on the six DMBWs on the pressurizer for either unit.

C. Mechanical Stress Improvement (Not Applicable)

The licensee has not implemented Mechanical Stress Improvement as a mitigation method for DMBWs.

D. In-service Inspection Program

(1) Has licensee prepared an MRP-139 in-service inspection program?

No. The licensee did not have a stand-alone MRP-139 in-service inspection program document. However, the licensee's MRP-139 inservice inspection program is included in the ASME Section XI ISI Program, and is also attached as augmented inspections to the ISI program. The inspectors reviewed McGuire Third Interval ISI Plans for both units. The licensee will revise Third Interval ISI Plans to add more details on the examination methods and frequencies for the MRP-139 ISI requirements.

(2) Are welds appropriately categorized?

Yes. The welds were appropriately categorized by the licensee's responsible engineer. However, the licensee is in the process of integrating the requirements of the examination methods and frequencies for all DMBWs into the Third Interval ISI Plans for both units to meet the MRP-139 ISI requirements. The licensee has enough time to perform this task. The inspectors reviewed all DMBWs categorized at the time of the inspection for appropriate categorization.

The pressurizer nozzle welds were correctly categorized as Category F welds in the NDE after mitigation of the FSWOLs and ISI program.

(3) Are inspection frequencies consistent with the requirements of MRP-139?

Yes. The licensee plans inspection frequencies for welds in the MRP-139 ISI program to be consistent with the requirements of MRP-139. The licensee completed the volumetric examinations for the six DMBWs on the pressurizer nozzles for Unit 2 during the Spring 2008 outage.

(4) What is the licensees' basis for categorizing welds as H or I and plans for addressing potential PWSCC?

No DMBWs are categorized as H or I.

(5) What deviations has the licensee incorporated and what approval process was used?

No deviations to MRP-139 ISI inspection program requirements have been planned by the licensee.

.5 (Closed) Temporary Instruction (TI) 2515/174, Hydrogen Igniter Backup Power Verification

a. Inspection Scope

The inspector reviewed the Unit 2 implementation of the licensee's actions in response to TI 2515/174, Hydrogen Igniter Backup Power Verification. The inspector reviewed the licensee's modification to provide backup power to the Unit 2 hydrogen igniters to determine if the licensee had adequately implemented commitments related to the provision of backup power to containment hydrogen igniters.

The plant modification was designed to switch power from the normal power supply to the Station Shutdown Facility diesel in the case of a severe core damage event with station blackout or other event affecting AC power distribution. Program changes, which included changes to procedures, design documents and calculations, were reviewed to determine whether licensee commitments were complete and implemented consistent with regulatory requirements, including 10 CFR 50.59. The documents reviewed during this inspection are listed in the Attachment to this report. A field observation was performed to verify the modifications were complete, to verify time critical actions could be completed within the allowable time limits, and to verify the changes were consistent with design documentation. The Unit 2 modification related to TI 2515/174 actions included:

- Installation of pushbutton and selector switch to terminal box of igniters
- Change from HFB to HFD breaker in 2EMXA-4 breaker panel
- Cable re-pulled from 2EMXA to 7.5 KVA transformer

b. Findings and Observations

No findings of significance were identified. The Unit 2 modifications and program changes related to TI 2515/174 actions were complete and implemented in accordance with design control and 10 CFR 50.59 regulatory requirements. The licensee's hydrogen igniter backup power modification was complete and implemented consistent with the station design control program. McGuire is a two unit reactor site; however, inspection activities were completed on Unit 2 only, as this was the first unit to complete the modification. Temporary Instruction 2515/174 specifically notes that because planned modifications and the configurations of the two units at affected dual unit sites are similar, the inspection of the physical modifications should only be performed for one unit. As such, TI 2515/174 is considered closed for Units 1 and 2.

4OA6 Meetings, Including Exit

On October 3, 2008, the resident inspectors presented the inspection results to Mr. B. Hamilton and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection. No proprietary information is included in this report.

4OA7 Licensee-Identified Violations

None.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

Ashe, K., Manager, Regulatory Compliance
Black, D., Security Manager
Bradshaw, S., Training Manager
Brewer, D., Manager, Safety Assurance
Capps, S., Manager, Engineering
Crane, K., Regulatory Compliance
Eastridge, A., I&C Engineering
Hamilton, B. Site Vice President, McGuire Nuclear Station
Hicks, J., Superintendent, Maintenance
Hull, P., Chemistry Manager
Mooneyhan, S., Radiation Protection Manager
Nolin, J., Manager, Mechanical and Civil Engineering
Parker, R., Superintendent, Work Control
Repko, R., Station Manager, McGuire Nuclear Station
Shuping, J., Corporate Program Manager for Alloy 600 and MRP-139
Simril, T., Superintendent, Plant Operations
Snider, S., Manager, Reactor and Electrical Systems Engineering
Wilkinson, E., Nuclear Shift Supervision
Zimmerman, D., Corporate UT Level III

NRC personnel

J. Stang, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Discussed

2515/176	TI	Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing (Section 4OA5.3)
2515/172	TI	Reactor Coolant System Dissimilar Metal Butt Welds (Section 4OA5.4)

Closed

05000369/2008-002-00	LER	Automatic Reactor Trip and Auxiliary Feedwater System Actuation Due To 1B Reactor Coolant Pump Motor Failure (Section 4OA3.1)
2515/174	TI	Hydrogen Igniter Backup Power Verification (Section 4OA5.5)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
RP/0/A/5700/006, Natural Disasters, Rev. 18
RP/0/B/5700/027, High Winds or Hurricane Preparation, Rev. 4

UFSAR Sections
2.4.10, Flooding Protection Requirements
2.4.13.5, Design Bases for Subsurface Hydrostatic Loading
3.4, Water Level (Flood) Design

Design Basis Documents
MCS-1465.00-00-0012, Design Basis Specification for Flooding From External Sources, Rev 1
MCS-1154.00-00-004, Design Basis Specification for the Auxiliary Building Structures, section 2.3.13 and 3.2.1.3.3.4, external flooding
MCS-1581.WZ-00-0001, Design Basis Specification for the WZ System

Section 1R04: Equipment Alignment

1B Emergency Diesel Generator
Drawing MCFD-1609-04.00, Flow Diagram of the Diesel Generator Starting Air System
Drawing MCFD-1609-03.01, Flow Diagram of the Diesel Generator Engine 1B Fuel Oil System
Drawing MCFD-1609-02.00, Flow Diagram of the Diesel Generator Engine Lube Oil System
Drawing MCFD-1609-01.00, Flow Diagram of the Diesel Generator Engine Cooling Water System
MCFD-2561-01.00, Flow Diagram of Residual Heat Removal System (ND)

2B Emergency Diesel Generator
Drawing MCFD-2609-04.00, Flow Diagram of the Diesel Generator Starting Air System
Drawing MCFD-2609-03.01, Flow Diagram of the Diesel Generator Engine 2B Fuel Oil System
Drawing MCFD-2609-02.01, Flow Diagram of the Diesel Generator Engine Lube Oil System
Drawing MCFD-2609-01.01, Flow Diagram of the Diesel Generator Engine Cooling Water System

2A Residual Heat Removal System
Drawing MCFD-2561-01.00, Flow Diagram of Residual Heat Removal System

1B Auxiliary Feedwater System
Drawing MCFD-1592-01.00, Flow Diagram of Auxiliary Feedwater System
Drawing MCFD-1592-01.01, Flow Diagram of Auxiliary Feedwater System
Drawing MCFD-1592-02.00, Flow Diagram of Auxiliary Feedwater System

Section 1R05: Fire Protection

McGuire Nuclear Station IPEEE Submittal Report dated June 1, 1994
McGuire Nuclear Station Supplemental IPEEE Fire Analysis Report dated August 1, 1996
MCS-1465.00-00-0008, R4, Design Basis Specification for Fire Protection

Section 1R12: Maintenance Effectiveness

UFSAR Chapters 1, 5.5, 6.3, 7.4, 9.2
PIP M-07-3461
PIP M-07-3680
PIP M-07-3686
PIP M-07-3851
PIP M-07-4083
PIP M-07-4062
PIP M-07-4306
PIP M-07-4953
PIP M-07-4957
PIP M-07-4990
PIP M-07-5437

Section1R13: Maintenance Risk Assessments and Emergent Work Evaluation

Nuclear System Directive 415, Operational Risk Management (MODES 1-3) per 10 CFR 50.65(a)(4), Rev. 5, 6/24/08
PIP M-08-4492, 2B RN Critical Plan was Cancelled Less Than 24 Hours Prior to Execution

Section1R15: Operability Evaluations

RIS 2008-14, Use of Tormis computer code for assessment of tornado missile protection
UFSAR Table 3-4
PT/2/A/4200/001 A, Containment Integrated Leak Rate Test
TS 5.5.2, Containment Leakage Rate Testing Program
PIP M-08-2744
UFSAR Section 10.4.10
MCS-1592.CA-00-0001, Design Basis Specification for the CA System
TS 3.7.5, Auxiliary Feedwater

Section1R20: Refueling and Outage Activities

AP/1/A/5500/007, Loss of Electrical Power
AP/1/A/5500/012, Loss of Letdown, Charging, or Seal Injection
AP/1/A/5500/014, Rod Control Malfunction
AP/1/A/5500/019, Loss of ND or ND System Leakage
AP/1/A/5500/020, Loss of RN
AP/1/A/5500/021, Loss of KC or KC System Leakage
AP/1/A/5500/025, Spent Fuel Damage
AP/1/A/5500/034, Shutdown LOCA
AP/1/A/5500/035, ECCS Actuation during Plant Shutdown
AP/1/A/5500/038, Emergency Boration
AP/1/A/5500/040, Loss of Refueling Cavity Level
AP/1/A/5500/041, Loss of Spent Fuel Cooling or Level
M-08-5311, 1EOC19 IRT Assessment

NSD 403, Shutdown Risk Management (Modes 4, 5, 6, and no-Mode) per 10CFR50.65 (a)(4)
OP/1/A/6100/SD-1, Prepare for Cooldown
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-10, Controlling Procedure for LTOP Operation
OP/1/A/6100/SD-6B, Placing Train B ND in Service
OP/1/A/6100/SO-6, Placing the Second ND Train in Service
OP/1/A/6100/SD-7, Cooldown to 200 Degrees F
OP/1/A/6100/SO-2, Filling the Refueling Canal
OP/1/A/6100/SD-22, Removal of Reactor Vessel Head
MP/1/A//7150/042A, Reactor Vessel Head Removal

Section 1EP6: Drill Evaluation

Emergency Plan Implementing Procedure Volume 1, Rev 088, 6/30/2008
RP/0/A/5700/000, Classification of Emergency, Rev. 013, 2/15/2006
RP/0/A/5700/004, General Emergency, Rev. 024, 8/23/2007
PIP M-08-5002, Areas of Concern from 8/27/08 ERO Drill, Dated 8/27/08
PIP M-08-5003, Missed Performance Indicator on PARS Notification, Dated 9/2/08

Section 4OA2.2: Selected Issue Follow-up Inspection

Licensee Event Report 05000369/1987-04
Licensee Event Report 05000369/1995-06
Licensee Event Report 05000369/2008-02
PT/0/A/4700/045 Rev. 25, Reactor Trip Investigation

Section 4OA3.2: Event Follow-up

OP/1/A/6100/003, Shutdown Via Reactor Trip
EP/1/A/5000/E-1, Reactor Trip or Safety Injection
EP/1/A/5000/ES-0/1, Reactor Trip Response

Section 4OA5.2: ISFSI

COC No. 1015, Amendment 3, For the NAC International UMS Universal Storage System, Effective 3/31/04, including Appendix A, TS for the NAC-UMS System
Final Safety Analysis Report for the UMS Universal Storage System, May 2004, Revision 3C
MP/0/A/7650/212, R1, Loading Spent Fuel Assemblies into NAC-UMS Casks
MP/0/A/7650/212, R4, Loading Spent Fuel Assemblies into NAC-UMS Casks
OP/0/A/6550/028, R 00, NAC-UMS Fuel Assembly Loading/Unloading
MP/0/A/7700/119, R 00, Cask-NAC-UMS Transportable Storage Canister Welding
Fuel Management Workplace Procedure XSFM-006, R2, Selecting Spent Fuel for Use of NACUMS System at McGuire
MP/0/A/7650/212, R7, Loading Spent Fuel Assemblies into NAC-UMS Casks
MP/0/A/7650/212, R8, Loading Spent Fuel Assemblies into NAC-UMS Casks
MP/0/A/7650/212, R9, Loading Spent Fuel Assemblies into NAC-UMS Casks

MP/0/A/7650/212, R12, Loading Spent Fuel Assemblies into NAC-UMS Casks
MP/0/A/7650/204, R4, Spent Fuel Dry Storage Cask Troubleshooting
MP/0/A/7650/188, R14, Operation of Dry Cask Transporter

Section 4OA5.3: TI 2515/176

PT/1/A/4350/036A, EDG 1A 24 Hour Run
PT/1/A/4350/036B, EDG 1B 24 Hour Run
PT/2/A/4350/036A, EDG 2A 24 Hour Run
PT/2/A/4350/036B, EDG 2B 24 Hour Run
UFSAR 8.3.1.1.7 Standby Power Supplies
MCC-1381.05-00-0260 rev. 3 U1, 4.16KV Essential Auxiliary Power System (EPC) Diesel Generator Dynamic Loading Analysis, Using ETAP
MCC-1381.05-00.0266 rev. 1 McGuire Unit 2 ETAP EDG Dynamic Analysis Calculation"
MCS-0115.00-EPC-001 rev. 9 "Design Basis Specification for the 4.16DV Essential Auxiliary Power System

Section 4OA5.4: TI 2515/172

Procedures and Specifications

Duke Engineering Support Document for Alloy 600 Aging Management of Oconee, McGuire, and Catawba Nuclear Stations, Rev. 3
Specification No.DPS-1201.01-00-004, Procurement Specification for the Repair of Pressurizer Locations Containing Alloy 600 Materials for McGuire 1 &2 and Catawba 1 & 2, Rev. 0 & 1
Procedure TM/1/A/8140/002, Pressurizer Spray Nozzle Repair Using Weld Overlay (WOL) Method, Rev. 000, Welding Service Inc. (WSI) Traveler 104043-002
Procedure TM/2/A/8140/002, Pressurizer Spray Nozzle Repair WOL Method, Rev. 000, Welding Service Inc. (WSI) Traveler 102840-002
Procedure TM/2/A/8140/003, Pressurizer Safety/Relief Nozzle Repair Using WOL Method, Rev. 000, WSI Traveler 102840-003
Procedure TM/2/A/8140/004, Pressurizer Surge Nozzle Repair Using WOL Method, Rev. 000, WSI Traveler 102840-004
Procedure TM/2/A/8140/020, Pressurizer Nozzle Repair WOL Indication Removal, Rev. 000, WSI Traveler 102840-020
WSI Welding Procedure Specification (WPS) for Weld Overlays WPS 03-08-T-801-102840, Rev. 0 & 2; WPS 03-08-T-802-102840, Rev. 0 & 1; and WPS 43-43-T-001, Rev. 3
WSI QAP 8.0, Control and Issue of Weld Metal, Rev. 9
WSI QAP 9.3, Workmanship and Visual Inspection Criteria for ASME Welding, Rev. 17
WSI QAP 9.6, Liquid Penetrant Inspection Procedure, Rev. 10
Procedure PDI SI-UT-126, Procedure for the Phased Array Ultrasonic Examination of the Weld Overlaid Similar and Dissimilar Metal Welds, Rev. 0 & 3
SI-NDE-08, Qualification and Certification of NDE Personnel for Nuclear Application, Rev. 1
PDI-UT-8, Generic Procedure for the Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds, Rev. F
SI-UT-123, Ultrasonic Wall Thickness Measurement of Components, Rev. 2
NDE-35, Liquid Penetrant Examination, Rev. 021

Corrective Action Documents

PIP M-07-02094, Vessel Head Bare Metal Visual (1EOC18) for All Penetration on March 31, 2007
PIP M-06-04611, Vessel Head Bare Metal Visual Inspection for 1" Diameter Vent Line, October 4, 2006 (2EOC17)
PIP G-08-00802, the ISI Plan McGuire Unit 1 for 3rd Interval Needs to Revise to Reflect the Vessel Inlet and Outlet Nozzle Weld Inspection Status
Nonconformance Report (NCR) 06-0108, the Heat Input on the First Layer Exceeded the Maximum Allowable on Surge Line Weld Overlay
NCR 06-0109, Heat Input on the First Layer Weld Overlay Exceeded the Maximum Allowable on the Stainless Steel Safe End to the Stainless Steel 41/2" Diameter Spray Line Pipe
NCR 07-112, Unit 1 Pressurizer Nozzle Welds NW1 to 5 Temperbead Repairs

Other Records

Approved Letter Including Safety Evaluation from NRC for Relief Request 06-GO-001, for Use of Full Structural Weld Overlay and Alternative Examination Techniques on Various Pressurizer Nozzle-to-Safe End Welds for Catawba Unit 1 and McGuire Unit 2, July 25, 2007
Approved Letter Including Safety Evaluation from NRC for Relief Request 07-GO-001, for Use of Full Structural Weld Overlay and Alternative Examination Techniques on Various Pressurizer Nozzle-to-Safe End Welds for Catawba Unit 2 and McGuire Unit 1, November 27, 2007
Procedure MP/0/A/7150/153, Reactor Vessel Head Bare Metal Inspection Performed on March 31, 2007 (Unit 1) and October 4, 2006 (Unit 2)
Calculation MCG-1206.02-63-2014, Weld Overlay Sizing for Pressurizer Surge Nozzle for McGuire 1 & 2, Rev. 0
Calculation MCG-1206.02-63-2015, Weld Overlay Sizing for Pressurizer Spray Nozzle for McGuire 1 & 2, Rev. 0
Calculation MCG-1206.02-63-2016, Weld Overlay Sizing for Pressurizer Safety/Relief Nozzle for McGuire 1 & 2, Rev. 0
Structural Integrity Associates (SIA) Inc., Phased Array Ultrasonic Examination Records on Surge, Spray, Safety, and Relief Nozzle Weld Overlays: 2PZR-W1SE (Surge); 2PZR-W3SE (Relief); 2PZR-W4ASE (Safety); 2PZR-W4BSE (Safety); 2PZR-W4CSE (Safety); and 2PZR-W2SE (Spray)
Welder Qualification and Vision Examination Records
Welder Performance Qualification (WPQ) Records
Minor Modification MD100733, Unit 1 Pressurizer Alloy 600 Weld Overlay, rev. 0, January 15, 2007
Work Order 00588116, Implementing MD 100733 Unit 1 Pressurizer Alloy 600 Weld Overlay
Work Traveler 104043-002, Pressurizer Spray Nozzle repair Using Weld Overlay (WOL) Method, Rev. 0
Drawing DUKE-42Q-01, Pressurizer Surge Nozzle Weld Overlay Design for McGuire 1 & 2, Rev. 1
Drawing DUKE-42Q-05, Pressurizer Safety/Relief Nozzle Weld Overlay Design for McGuire 1 & 2, Rev. 1
Work Traveler for Pressurizer Nozzle Weld Overlay Common Prerequisites and Closures
WSI Certificates of Conformance

Liquid Penetrant Reports for Preparation and Final Examinations of Weld Overlays on Pressurizer Surge, Spray, and Safety/Relief Nozzles
Weld Operator Travel Log for Spray Nozzle Weld Overlay for Unit 1
Equipment Certification or Qualification Reports
Ultrasonic Examinations (UT) Calibration and Examination Reports for Unit 1: UT-08-001 for Surge Nozzle; UT-08-002 for Spray Nozzle; and UT-08-009, -010, -011, and -012 for Safety/ Relief Nozzles
UT examiner Qualification and Certification Records
McGuire Units 1 & 2 ISI Third Interval Schedule
Inservice Inspection Plan Examination Request Forms

Section 4OA5.5: TI 2515/174

Correspondence

Letter, Duke Energy to USNRC, McGuire Nuclear Station Units 1 and 2, Docket Nos. 50-369 and 50-370, Hydrogen Igniter Backup Power Supply, dated 3/08/07

Calculations

MCC-1381.05-00-0257, U1/2 AC Auxiliary Power System ETAP Model Base File, ICCF No. 13A
MCC-1381.06-00-0054, Summary of Analysis of Current SSF Diesel Generator Loads, ICCF No. 05A
MCC-1381.05-00-0265, U2, 6.9KV, 4.16KV & 600V Short Circuit Analysis
MCC-1381.05-00-0301, U1, 6.9KV, 4.16KV & 600V Short Circuit Analysis, ICCF No. 6A

Modifications

Modification MD201347, Alternate Power from SSF to Hydrogen Igniters

Procedures

MNS EP/2/A/5000/ECA-0.1, Unit 2, Loss of All AC Power Recovery Without S/I Required, Rev. 7
MNS EP/2/A/5000/ECA-0.2, Unit 2, Loss of All AC Power Recovery With S/I, Rev. 8
MNS AP/2/A/5500/24, Unit 2, Loss of Plant Control Due To Fire Or Sabotage, Rev. 25
MNS EP/2/A/5000/ECA-0.0, Unit 2, Loss of All AC Power, Rev. 29
OP-MC-JPM-CP-AD:087T, Transfer of 2EMXA-4 To SSF During a Loss of All AC on Unit 2, Rev. 13/04-25-03
PT/0/A/4600/113, Operator Time Critical Task Verification, Rev. 11

Drawings

MCEE-265-02.02, McGuire Nuclear Station Unit 2 Elementary Diagram Hydrogen Mitigation System (EHM), Rev. 1A

Miscellaneous Documents

NRC Issue 189: Susceptibility of Ice Condenser and Mark III Containments to Early Failure From Hydrogen Combustion During A Sever Accident Description
McGuire Nuclear Station UFSAR Updates, Section 6.2, Section 7.6, Section 9.4
PIP M-07-00905, Evaluation of EDG Loading While at Technical Specification Limits for Frequency and Voltage, 2/14/07

LIST OF ACRONYMS

CA	-	Auxiliary Feedwater
DBE	-	Design Basis Event
DMBWs	-	Dissimilar Metal Butt Welds
EDG	-	Emergency Diesel Generator
EOC	-	End-of-Cycle
EPIP	-	Emergency Plan Implementing Procedure
FSWOL	-	Full Structural Weld Overlay
ISFSI	-	Independent Spent Fuel Storage Installation
ISI	-	Inservice Inspection
LER	-	Licensee Event Report
MRP	-	Material Reliability Program
NPS	-	Nominal Pipe Size
ORAM	-	Outage Risk Assessment Model
PDI	-	Performance Demonstration Initiative
PI	-	Performance Indicator
PIP	-	Problem Investigation Process report
PT	-	Performance Test
RCS	-	Reactor Coolant System
RHR	-	Residual Heat Removal
RN	-	Nuclear Service Water
SER	-	Safety Evaluation Report
SSC	-	Structures, Systems and Components
TI	-	Temporary Instruction
TS	-	Technical Specifications
UFSAR	-	Updated Final Safety Analysis Report
UT	-	Ultrasonic Examination