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

October 28, 2005

Duke Energy Corporation
ATTN: Mr. G. R. Peterson
Vice President
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2005004 AND 05000370/2005004 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION INSPECTION REPORT 0720038/2005002

Dear Mr. Peterson:

On September 30, 2005, the US Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station. The enclosed report documents the inspection findings which were discussed on October 6, 2005 with you and 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.

Based on the results of this inspection, there was one NRC-identified finding of very low safety significance (Green) identified in the report which was determined to be a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating it as non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. In addition, the NRC identified a Severity Level IV violation of 10 CFR50.71(e) for a failure to update the Updated Final Safety Analysis Report. It was determined that this violation should also be non-cited in accordance with Section VI.A of the NRC's Enforcement Policy. Furthermore, one licensee-identified violation, which was determined to be of very low safety significance (Green), is listed in Section 4OA7 of this report. If you contest and NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States 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 the McGuire facility.

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

Sincerely,

/RA/

Michael E. Ernstes, 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 05000369/2005004 and 05000370/2005004
w/Attachment - Supplemental Information

cc w/encl:
C. J. Thomas
Regulatory Compliance Manager (MNS)
Duke Energy Corporation
Electronic Mail Distribution

R. L. Gill, Jr., Manager
Nuclear Regulatory Issues
and Industry Affairs
Duke Energy Corporation
526 S. Church Street
Charlotte, NC 28201-0006

Lisa Vaughn
Legal Department (PB05E)
Duke Energy Corporation
422 South Church Street
P. O. Box 1244
Charlotte, NC 28201-1244

Anne Cottingham
Winston & Strawn LLP
Electronic Mail Distribution

Beverly Hall, Acting Director
Division of Radiation Protection
N. C. Department of Environmental
Health & Natural Resources
Electronic Mail Distribution

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

Peggy Force
Assistant Attorney General
N. C. Department of Justice
Electronic Mail Distribution

Distribution w/encl:
S. Peters, NRR
R. Martin, NRR
L. Slack, RII EICS
B. Desai, RII DRP
RIDSNRRDIPMLIPB
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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:	05000369/2005004, 05000370/2005004
Licensee:	Duke Energy Corporation
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	12700 Hagers Ferry Road Huntersville, NC 28078
Dates:	July 1, 2005 - September 30, 2005
Inspectors:	J. Brady, Senior Resident Inspector S. Walker, Resident Inspector E. Guthrie, Senior Resident Inspector - Catawba (Section 1R16) A. Hutto, Resident Inspector, Oconee (Sections 1R05, 4OA3, 4OA7) L. Miller, Senior Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1) J. Kreh, Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1) W. Loo, Senior Health Physicist (Section 1EP1) R. Chou, Reactor Inspector (Section 1R08, 4OA5.3)
Approved by:	Michael E. Ernstes Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR05000369/2005004, IR05000370/2005004; 07/01/2005 - 09/30/2005; McGuire Nuclear Station, Units 1 and 2; Identification and Resolution of Problems.

The report covered a three month period of inspection by resident inspectors and announced inspections by regional inspectors. One Green non-cited violation (NCV) and one severity level 4 (SL4) NCV were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A non-cited violation was identified by the inspectors for untimely corrective action to update the Updated Final Safety Evaluation Report (UFSAR) related to the Standby Shutdown Facility (SSF). This issue was originally identified on February 17, 2004, and as of August 3, 2005, no corrective action had been taken to include the SSF in the UFSAR either by revision or approved change package for the next revision, and the corrective action item was closed.

  The issue was determined to be a severity level IV violation in NRC Inspection Report 05000369,370/2004003. The untimely corrective action was considered for being a cited violation in accordance with section VI.A.1 of the NRC Enforcement Policy. However, because the licensee completed and approved a UFSAR change package and adequately determined the cause of the untimely corrective action prior to the end of the inspection period, no additional information would be gained from the licensee providing a written response. This finding involved the crosscutting aspect of Problem Identification and Resolution. (Section 4OA2b.(1))

Cornerstone: Barrier Integrity

- SL4. A non-cited violation was identified by the inspectors for failure to update the UFSAR as required by 10 CFR 50.71(e) related to inclusion of the license amendment request safety analysis information pertaining to the use of alternative instrumentation and procedures in place of seismic qualification for the Containment Atmosphere Particulate Monitors (CAPRMs).

  The issue was greater than minor because the failure to include in the UFSAR the alternative methodology for RCS leakage detection after a seismic event with unqualified CAPRMs, as described in the licensee's safety analysis, was material to the acceptability of the license amendment requests. The inspectors found no subsequent changes made to the facility that were based on the erroneous information in the UFSAR section. Consequently, this issue was considered to

meet the criteria of a severity level IV violation. This finding involved the crosscutting aspect of Problem Identification and Resolution. (Section 4OA2b.(2))

B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective action tracking number is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status:

Unit 1 began the inspection period at approximately 100 % rated thermal power (RTP). On July 7, Unit 1 experienced a turbine runback to approximately 50% RTP due to turbine generator output bus line breaker 1A tripping. The unit returned to 100% RTP on July 9. The unit reduced power and entered a refueling outage on September 17. The unit remained in the refueling outage through the rest of the period.

Unit 2 began the inspection period at approximately 100 % RTP and remained there through the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Tornado watches were declared on July 7 and August 30, and the licensee took actions in accordance with procedure RP/0/A/5700/006, Natural Disasters. Prior to the onset of that weather, the inspectors reviewed the licensee's actions to ensure that the adverse weather conditions would neither initiate a plant event nor prevent any system, structure, or component from performing its design function.

After the licensee completed preparations for seasonal high temperature, the inspectors discussed the licensee's Hot Weather Program and the licensee's hot weather computer spreadsheet for 2004 and 2005 with the licensee's program owner. The inspectors reviewed the completed test results for PT/0/B/4700/039, Warm Weather Equipment Checkout, dated April 17, 2005. In addition to evaluating any safety-related equipment affected by hot weather, the inspectors toured the plant to determine if other equipment not monitored by the program could be affected.

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

- M-05-2408, CF Pump Oil Cooler Outlet Temperature High

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns

During this inspection period, the inspectors performed the following four partial system walkdowns, while the indicated structures, systems, and components (SSCs) were out of service for maintenance and testing:

- Unit 1 and 2 train B Nuclear Service Water with train A out of service on July 5
- Unit 2 train A Component Cooling Water with train B out of service on July 12
- Unit 2 train A Residual Heat Removal with train B out of service on July 12
- Unit 1 train A Boron Injection Flowpath with train B out of service on September 23

To evaluate the operability of the selected trains or systems under these conditions, the inspectors verified correct valve and power alignments by comparing observed positions of valves, switches, and electrical power breakers to the procedures and drawings listed in the Attachment to this report. In addition, the inspectors used the operator aid computer to determine whether system parameters were as expected for the system and plant conditions, and whether equipment status shown for inaccessible equipment supported operability of the system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

For the seven areas identified below, the inspectors reviewed the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures, to verify that those items were consistent with UFSAR Section 9.5.1, Fire Protection System, and the fire protection program as described in the Design Basis Specification for Fire Protection, MCS-1465.00-00-0008. The inspectors walked down accessible portions of each area as well as reviewed results from related surveillance tests, and reviewed the associated pre-fire plan strategy, to verify that conditions in these areas were consistent with descriptions of the areas in the Design Basis Specification. Documents reviewed during this inspection are listed in the Attachment to this report.

The inspected Areas included:

- Main Control Room (fire Area 24)
- Unit 1 A Electrical Penetration Room (Fire Area 15)
- Unit 2 A Electrical Penetration Room (Fire Area 16)
- Unit 1 A Switchgear Room (Fire Area 17)

- Unit 2 A Switchgear Room (Fire Area 18)
- Unit 1 Reactor Building Annulus (Fire Area RB1)
- Safe Shutdown Facility (Fire Area SSF)

See Section 40A2 for corrective actions reviewed associated with this area.

Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI)

a. Inspection Scope

The inspectors observed in-process ISI work activities, reviewed ISI procedures, and reviewed selected ISI records associated with risk significant structures, systems, and components during the McGuire Unit 1 refueling outage (1EOC-17). This was the third outage of the first period of the third ISI interval. The observations and records were compared to the requirements specified in the Technical Specifications (TS) and the ASME Boiler and Pressure Vessel Code, Section XI, 1995 Edition, with the 1996 Addenda, to verify compliance and to ensure that examination results were appropriately evaluated and dispositioned. Documents reviewed during this inspection are listed in the Attachment to this report.

The inspectors observed non-destructive examination (NDE) activities and reviewed records and documents. Qualification and certification records for examiners, and equipment and consumables were reviewed. The inspectors observed and/or reviewed following inservice inspections:

- Ultrasonic Exams (UT) for pipe welds R01.011.157/1NV1FW53-51, pipe to tee and R01.011.140/1NV15-2, Chemical and Volume Control System; vessel weld C01.020.090/1RCPSS-SH-3, shell to upper head heat exchanger
- Penetrant Exams (PT) for pipe welds G03.001.007A/1NC-128-1, pipe to elbow and G03.001.008A/1NC-128-2, elbow to pipe, Reactor Cooling System
- Visual inspections performed on seven Unit 1 pressurizer nozzles and manway

The records were compared to the TS, License Amendments and applicable industry established performance criteria to verify compliance.

The inspectors reviewed the McGuire Unit 1 Inservice Inspection report dated June 30, 2004, which documented one recordable indication observed during the Unit 1 1EOC16 refueling outage. The indication was recorded on an integral attachment weld, ISI item number C03-010-005, on the Excess Letdown Heat Exchanger Support. The inspectors reviewed records of the PT exams, Indication Evaluation Report, Work Order, three Problem Investigation Processes, expanded samples, and corrective actions performed on this weld during the last outage.

The inspectors also reviewed two welding activities: Minor Modification MD 100040 and Work Order 9869901 to weld sleeves in stuffing box for valve 1SM0001AB; and Work

Order 98697084 for a socket weld repair for weld number CFIFWLT6010-18 of Feedwater System to determine if the welding process and examinations were performed in accordance with ASME Section XI repair/replacement requirements. The inspectors reviewed drawings, work instructions, weld process sheets, weld travelers, pre-heat requirements and PT records for welding of ASME Class 2 pressure boundary welds.

The inspectors reviewed activities related to inspection of the Unit 1 reactor pressure vessel (RPV) lower head penetrations. The guidelines and criteria for the inspection were provided in NRC Bulletin 2003-02, Leakage From Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity and the licensee's response to the bulletin. The inspectors reviewed the Work Order 98725139, inspection data documented in the procedure dated September 20, 2005, Rx Vessel Bottom Head Bare Metal Inspection, Rev. 2 , and Problem Investigation Process —05-04275.

The inspectors reviewed implementation of the licensee's Boric Acid Corrosion Control program to determine if commitments made in response to Generic Letter 88-05 and Bulletin 2002-01 were being effectively implemented. The inspectors reviewed boric acid leakage screening reports, evaluations, and dispositions. The inspectors selected ten locations where leaks were previously identified inside the containment by the licensee's engineers and performed a walkdown to verify the leaks were properly assessed and corrective actions were implemented. The inspectors also performed an independent walkdown to look for additional indications of leakage, that had not been identified by the licensee. The inspectors reviewed work order 98356351, which was written to address several inactive leaks identified as a result of this walkdown.

A sample of ISI issues in the licensee's corrective action program were reviewed to confirm that problems were being identified and placed in the corrective action program, and appropriate corrective action were being initiated. The inspectors reviewed the following indication evaluation reports from visual exams and disposition:

- Support 1MCA-NS-H36 for a 1/16" gap found around the anchor bolts for two base plates.
- Support 1MCA-CF-H152 for missing a snap ring on pin of a snubber rear bracket to base plate.
- Support 1MCA-KC-1027 for the pipe clamp binding against a 3/4" pipe.
- Support 1MCA-NV-H23 for the pipe clamp and strut rotated more than 4 degrees.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On July 13, the inspectors observed licensed operator performance during requalification simulator training for shift "C", Group 2, to verify that operator

performance was consistent with expected operator performance, as described in Exercise Guide OP-MC-SRT-48. This training tested the operators' ability to perform abnormal and emergency procedures dealing with **plant fire, reactor trip, grid disturbances, loss of ac electrical power, and emergency classification**. 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 verify that the licensee identified any 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 two degraded SSC/function performance problems or conditions listed below, to verify the licensee's appropriate handling of these performance problems or condition in accordance with 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, and 10 CFR 50.65, Maintenance Rule.

- Loose Part Monitoring System alarms
- Failure of Unit 2 Control Rod Cabinet Power Supplies

The inspectors focused on the following:

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

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 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 also verified that any increase in risk was promptly assessed, and that appropriate risk management actions were promptly implemented. The inspectors also reviewed associated PIPs to verify that the licensee identified and implemented appropriate corrective actions.

- Week of July 4, including on July 7, a tornado watch and a Unit 1 turbine runback which resulted in many schedule changes.

- Week of July 24, involving a steam leak on the 1A2 High Pressure Feedwater Heater and subsequent reduction of power for repairs; Orange grid status resulting in rescheduled switchyard work; Red Ozone weather alert resulting in delaying of 2A diesel run; Record high temperatures causing higher temperatures on plant equipment (2A CFPT Oil Cooler Outlet Temp, 2B CFPT Outboard Thrust Bearing Temp, Main Turbine Journal Bearing Temp) and rescheduling work to cooler days; TS LCO 3.0.3 entry for 2 trains of RN inoperable; and Severe Thunderstorm Warning resulting in an increase to the risk management level .

- Week of July 31, including failure of 1B NF chiller motor; emergent work continued from the previous week with RN/KD instrument snubbers and increased2B CF outboard thrust temperature; OE regarding a particular relay with a manufacturing defect, resulting in removing Unit 1 SR channel N-31 from service; failure of 2A VX H2 Skimmer fan during a surveillance, resulting in a change to the risk profile for the remainder of the week from Green to Yellow.

- Week of August 8, including emergent work for the failure of the 2B diesel generator 2L fuel injection pump and disassembly of the 1CA-10 auxiliary feedwater suction valve, which caused significant schedule changes.

- Week of August 28, including re-evaluating and rescheduling 1A DG and 2A ND maintenance due to impending weather from Hurricane Katrina; Restrictions placed on preplanned maintenance activities as a result of Orange Distribution grid due to Oconee Unit 3 trip;

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

a. Inspection Scope

During the non-routine evolutions identified below, the inspectors observed plant instruments and operator performance to verify that the operators performed in accordance with the associated procedures and training.

- Unit 1 turbine runback to 50% power due to loss of the 1A busline (1 of 2

generator output breakers tripped open). Operators entered procedure AP/1/A/5500/003, Load Rejection.

- Unit 1 shutdown for the refueling outage per OP/1/A/6100/003, Controlling Procedure For Unit Operation and OP/1/A/6100/002, Controlling Procedure for Unit Shutdown

The inspectors reviewed LER 05000370/2005-04, Actuation of Main Steam Isolation Valves Due to Human Error, and associated PIP M05-1882 to determine whether the licensee identified and implemented appropriate corrective actions and whether aspects of human performance contributed to the licensee reported issue.

b. Findings

See Section 4OA3 for enforcement associated with the LER.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the operability determinations the licensee had generated that warranted selection on the basis of risk insights. The selected samples are addressed in the PIPs listed below. The inspectors assessed the accuracy of the evaluations, the use and control of any necessary compensatory measures, and compliance with the TS. The inspectors verified that the operability determinations were made as specified by Nuclear System Directive (NSD) 203, Operability. The inspectors compared the arguments made in the determination to the requirements from the TS, the UFSAR, and associated design-basis documents, to verify that operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred.

- M-05-3137, Auxiliary feedwater suction valve 1CA-15A actuator has a post-78 add-on-pack instead of pre-78 add-on-pack. The valve actuator is subject to the 10 CFR 21 notification from Rotork.
- M-05-3652, 2A Diesel Generator Batteries inadvertently placed in Equalize during weekly PM.
- M-05-3628, Check Valve 1CA-10 partially in open position.
- M-05-3535, Halon cylinders exceeded hydrostatic test interval
- M-05-4310, 1A NV pump seal leak

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed the cumulative McGuire Nuclear Station Operator Workaround List for potential affects on the functionality of mitigating systems. The workarounds were reviewed to determine: (1) if the functional capability of the system or human reliability in responding to an initiating event was affected; (2) the affect on the operator's ability to implement abnormal or emergency procedures; and (3) if operator workaround problems were captured in the licensee's corrective action program. Aggregate impacts of the identified workarounds on each individual operator watch station were also reviewed. Documents reviewed for this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

For the post-maintenance tests listed below, the inspectors witnessed the test and/or reviewed the test data, to verify that test results adequately demonstrated restoration of the affected safety function(s) described in the UFSAR and TS. The tests included the following:

- PT/1/A/4403/002A, RN Train A Valve Stroke Timing-Quarterly (Repair of low level intake valve 0RN-10AC main control room switch)
- PT/1/A/4350/002A, Diesel Generator 1A Operability Test (scheduled maintenance of 1A EDG)
- IP/0/B/3211/001B, Troubleshooting and Replacing Control Rod System Logic and Power Cabinet Power Supplies (Replace power supply for Cabinet SCDE)
- PT/1/A/4255/004A, SV Train A Valve Stroke Timing - Quarterly (scheduled maintenance on Main Steam PORV 1SV-1)
- PT/2/A/4350/002B, Diesel Generator 2B Operability Test (Replace 2L fuel injector pump due to failure during previous performance of test)
- PT/1/A/4252/002B, CA Valve Stroke Timing- Quarterly 1B Motor Driven Pump Flowpath (Lubrication, Reset limit switches on 1CA-42B)

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors evaluated licensee outage activities for Unit 1 to verify that the licensee: considered risk in developing outage schedules; adhered to administrative risk reduction methodologies they developed to control plant configuration, adhered to operating license and TS requirements that maintained defense-in-depth, and developed mitigation strategies for losses of the key safety functions identified below:

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

Prior to the outage, the inspectors reviewed the licensee's outage risk control plan to verify that the licensee had performed adequate risk assessments and had implemented appropriate risk management strategies when required by 10 CFR 50.65(a)(4).

The inspectors observed portions of the cooldown process to verify that TS cooldown restrictions were followed. The inspectors observed the items or activities described below, to verify that 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 reviewed the licensee's responses to emergent work and unexpected conditions, to verify that resulting configuration changes were controlled in accordance with the outage risk control plan. The inspectors also observed fuel handling operations (removal) to verify that those operations and activities were being performed in accordance with technical specifications and procedure PT/0/A/4150/037, Total Core Unloading. Additionally, the inspectors observed refueling activities for core unloading to verify that the location of the fuel assemblies was tracked.

Periodically, the inspectors reviewed the items that had been entered into the licensee's corrective action program, to verify that 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 surveillance tests identified below, the inspectors witnessed testing and/or reviewed the test data, to verify that the systems, structures, and components involved in these tests satisfied the requirements described in the Technical Specifications, the FSAR, and applicable licensee procedures, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions.

- PT/1/A/4350/036A, D/G 1A 24 Hour Run
- *PT/2/A/4208/028A, Slave Start NS Pump 2A
- PT/2/A/4208/002A, NS Train Valve Stroke Timing- Quarterly (2NS-29A; 2NS-32A)
- PT/0/A/4150/041, RCCA Bank Repositioning
- PT/1/A/4255/004A, SV Train A Valve Stroke Timing - Quarterly (Main Steam PORVs 1SV-7; 1SV-13; 1SV-19)
- *PT/1/A/4252/001A, 1A CA Pump Performance Test
- *PT/2/A/4204/001A, 2A ND Pump Performance Test
- **PT/1/A/4255/003 C, SM Valve Timing Test at Full Temperature and Pressure
- PT/0/A/4200/032, Periodic Testing of Ice Condenser Lower Inlet Doors
- PT/1/A/4200/022, ND Suction Swapover Timing Test

*This procedure included inservice testing requirements.
**This procedure included testing of a large containment isolation valve.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modifications described below, to verify that the modifications did not affect the safety functions of important safety systems, and to verify that the modifications satisfied the requirements of 10 CFR 50, Appendix B, Criterion III, Design Control.

- MD200332, Defeat 2ETB1 input to Control Room 2ETB trouble alarm, 2LAM2-1
- MD500533, Temporarily Defeat Low Temperature Cutout Switch TS-1A on Control Room Chiller A

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

Prior to the inspection activity, an in-office review was conducted of the exercise objectives and scenario submitted to the NRC to determine if the exercise would test major elements of the emergency plan as required by 10 CFR 50.47(b)(14).

The onsite inspection consisted of the following review and assessment:

- The adequacy of the licensee's performance in the biennial exercise was reviewed and assessed regarding the implementation of the risk-significant planning standards (RSPS) in 10 CFR 50.47 (b) (4), (5), (9), and (10), which are emergency classification, offsite notification, radiological assessment, and protective action recommendations, respectively.

- The overall adequacy of the emergency response facilities with regard to NUREG-0696, "Functional Criteria for Emergency Response Facilities" and Emergency Plan commitments. The facilities assessed were the control room simulator, Technical Support Center, Operations Support Center, and Emergency Operations Facility.

- Other performance areas besides the RSPS, such as the emergency response organization's (ERO) recognition of abnormal plant conditions, command and control, intra- and inter-facility communications, prioritization of mitigation activities, utilization of repair and field monitoring teams, interface with offsite agencies, and the overall implementation of the emergency plan and its implementing procedures.

- Past performance issues from NRC inspection reports and FEMA exercise reports to determine effectiveness of corrective actions as demonstrated during this exercise to ensure compliance with 10 CFR 50.47(b)(14).

- The post-exercise critique to evaluate the licensee's self-assessment of its ERO performance during the exercise and to ensure compliance with 10 CFR 50 Appendix E.IV.F.2.g.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspectors evaluated the associated 10 CFR 50.54(q) reviews associated with non-administrative emergency plan changes, implementing procedures changes, and EAL changes. The revisions covered the period from August 2004 to June 2005. The current Emergency Plan is revision 04-02.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, "Emergency Action Level and Emergency Plan Changes." The applicable planning standard, 10 CFR 50.47(b)(4) and its related 10 CFR 50, Appendix E requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1 and Regulatory Guide 1.101, Emergency Planning and Preparedness for Nuclear Power Reactors, Revision 4, were also used as references.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed an emergency preparedness drill conducted on July 6, 2005 to verify licensee self-assessment of classification, notification, and protective action recommendation development in accordance with 10 CFR 50, Appendix E.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors reviewed the licensee's procedure for developing the data for the EP PIs which are: (1) Drill and Exercise Performance (DEP); (2) ERO Drill Participation; and (3) Alert and Notification System (ANS) Reliability. The inspectors examined data reported to the NRC for the period July 2004 to June 2005. Procedural guidance for reporting PI information and records used by the licensee to identify potential PI occurrences were

also reviewed. The inspectors verified the accuracy of the PI for DEP through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests.

The inspection was conducted in accordance with NRC Inspection Procedure 71151, "Performance Indicator Verification." The applicable planning standard, 10 CFR 50.9 and NEI 99-02, Revision 3, "Regulatory Assessment Performance Indicator Guidelines," were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Daily Screening of Corrective Action Reports

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 a daily screening of items entered into the licensee's corrective action program. This review was accomplished by reviewing hard copies of condition reports, attending daily screening meetings, and accessing the licensee's computerized database.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected PIP M-04-847 for detailed review. This PIP was initiated for violation 2 identified in NRC Inspection Report 05000369,370/2004003, which was a severity level IV non-cited violation of 10 CFR 50.71e for failing to update the UFSAR as required for a license amendment issued on June 6, 1989, to place the fire protection program including the Standby Shutdown Facility (SSF) in the UFSAR. The inspectors reviewed this report to verify that the licensee identified the full extent of the issue, performed an appropriate evaluation, and specified and prioritized appropriate corrective actions. The inspectors evaluated the report against the requirements of the licensee's corrective action program as delineated in corporate procedure NSD 208, Problem Identification Process; and for fire protection, as required by McGuire operating license condition 2.C.4 and the licensee's fire protection program contained in document MCS-1465.00-0008, Design Basis Specification for Fire Protection. Because this PIP was a category 4 and required no problem evaluation, the inspectors reviewed selected license amendments and other NRC violations that implicated UFSAR accuracy, to determine the extent of condition for the UFSAR accuracy problem, and to determine whether the

licensee's corrective actions were correcting the problem. The selected violations, and their associated PIPs, and the selected license amendments are listed in the Attachment. The inspectors also reviewed associated approved UFSAR change packages and the April 6, 2004 UFSAR Revision in determining the effectiveness of the licensee's corrective actions. In addition, the inspectors reviewed the licensee's submittal of February 28, 2005, and the NRC response of June 8, 2005, related to the licensee's proposed implementation of 10 CFR 50.48(c) (NFPA 805 rule) to determine its effect on the findings identified below.

b. Observations and Findings

(1) Failure to take timely corrective action for previous Failure to Update UFSAR for GL 86-10 license amendment

Introduction: The inspectors identified untimely corrective action to update the UFSAR related to the SSF. This issue was originally identified on February 17, 2004, and on August 3, 2005, no corrective action had been taken to include the SSF in the UFSAR either by revision or approved change package for the next revision.

Description: The inspectors identified, on August 3, that the licensee had not taken any action to revise the UFSAR in response to violation 2 identified in NRC Inspection Report 05000369,370/2004003. The violation was against 10 CFR 50.71(e) for failing to update the UFSAR as required for a license amendment issued on June 6, 1989, to place the fire protection program including the SSF in the UFSAR. The licensee opened PIP M-04-847 to address this issue. However, the assigned corrective action was closed without taking any action with a justification that NFPA 805 actions would update the licensing basis in the future. The inspector found that no action had been taken on this PIP, but that it referenced PIP M-04-4543, initiated for fire protection programmatic health improvement. Although PIP M-04-4543 initiated a review of UFSAR section 9.5.1 and the fire protection program against original license commitments, the inspectors found that the corrective actions to date did not address the violation. The inspectors concluded that no action had been taken based on the fact that the current UFSAR revision (April 6, 2004) did not include the fire protection program or SSF, nor was there an approved change package for the October 2005 revision, and that the corrective action to update the UFSAR had been closed.

Analysis: The issue was determined to be a severity level IV violation in NRC IR 05000369,370/2004003. This issue was considered for being a cited violation in accordance with section VI.A.1 of the NRC Enforcement Policy. However, because the licensee completed adequate corrective action and adequately determined the cause prior to the end of the inspection period, no additional information would be gained from the licensee providing a written response. This finding involved the crosscutting aspect of Problem Identification and Resolution.

Enforcement: McGuire operating license condition 2.C.4 states that the licensee shall maintain in effect and fully implement all provisions of the approved fire protection program 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. McGuire UFSAR section 9.5.1 states that the fire protection plan

is contained in document MCS-1465.00-0008, Design Basis Specification for Fire Protection. The Fire Protection Plan states, in Appendix A, Section C, Quality Assurance, that the station directives will implement the fire protection quality assurance program. The quality assurance topical report, Duke-1-A, incorporates fire protection into the plant corrective action program and states that problems will be identified and corrected. Procedure NSD 208, Problem Investigation Process, implements that requirement. Contrary to the above, from February 17, 2004 to August 3, 2005, the licensee did not take any action to revise the UFSAR to include a description of the SSF as originally required for a June 6, 1989, license amendment. This issue is in the licensee's corrective action program as PIP M-05-3645. Licensee corrective actions to prepare and approve a UFSAR change and determine the cause of this failure were complete by the end of the inspection period and were determined to be adequate. Therefore, the failure to take corrective action to update the UFSAR for the SSF is characterized as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000369,370/2005004-01, Failure to Take Timely Corrective Action to Update the UFSAR for the SSF.

(2) Failure to update UFSAR for license amendment 169/151 on RCS leak detection instrumentation

Introduction: A non-cited violation was identified for failure to update the UFSAR as required by 10 CFR 50.71(e) related to inclusion of the license amendment request safety analysis information pertaining to the use of alternative instrumentation and procedures, instead of seismic qualification, for the Containment Atmosphere Particulate Monitors.

Description: The inspectors discovered, on July 29, 2005 that the licensee's UFSAR did not contain key information from its March 4, 1996 license amendment request that the NRC used for approval, on July 30, 1996, of license amendment 169 for Unit 1 and license amendment 151 for Unit 2. The licensee requested that an alternative to regulatory position C.6 of Regulatory Guide 1.45 be granted in relation to the requirement for seismic qualification of the Containment Atmosphere Particulate Radiation Monitors (CAPRMs). The NRC approved the request based on the licensee showing that adequate instrumentation and procedures will be available to assess conditions inside containment following a seismic event comparable to a Safe Shutdown Earthquake. The licensee's UFSAR section 5.2.7.1 identified that "Regulatory Guide 1.45, Position C.6 is interpreted as follows: The Leakage Detection System is capable of performing its function following seismic events that do not require plant shut down. The airborne particulate radioactivity monitoring equipment is not seismically qualified to function through the safe shutdown earthquake." The UFSAR makes no mention of the alternative instrumentation and procedures that were provided as the basis for the license amendment request approval.

Analysis: The inspectors found that the issue was greater than minor because the failure to include in the UFSAR the alternative methodology for RCS leakage detection after a seismic event with unqualified CAPRMs, as described in the licensee's safety analysis, was material to the acceptability of the license amendment requests. The inspectors found no subsequent changes made to the facility that were based on the erroneous information in the UFSAR section. Consequently, this issue was considered to meet the

criteria of a severity level IV violation. This finding involved the crosscutting aspect of Problem Identification and Resolution.

Enforcement: 10 CFR 50.71(e) requires that licensees shall update periodically the FSAR 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 FSAR, or as appropriate the last update of to the FSAR under this section. Contrary to this requirement, prior to July 29, the licensee had not updated the UFSAR to include the latest information developed in relation to the containment air particulate monitors. The licensee did not include the alternative methodology for RCS leakage detection related to the CAPRMs after a seismic event, as described in the licensee's safety analysis, which was the basis for acceptability of the license amendment requests. The failure to update the UFSAR for the CAPRMs as required by 10 CFR 50.71(e) is characterized as a severity level IV violation and is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000369,370/2005004-02, Failure to Update the UFSAR for CAPRMs. This issue is in the licensee's corrective action program as PIP M-05-3541.

4OA3 Event Follow-up

.1 (Closed) Licensee Event Report (LER) 05000370/2005-06, Failure of Containment Floor and Equipment (CFAE) Sump Discharge Outside Containment Isolation Valve.

On July 28, 2005, the licensee determined that valve 2WL-65B had likely been inoperable during the previous operating cycle due to the valve not being fully closed. This valve is a motor operated diaphragm valve and is one of two redundant containment isolation valves for the CFAE discharge line. The period of inoperability exceeds that allowed by TS. This condition was also reported as a condition that reasonably could have prevented the fulfillment of a safety function as there were short periods of inoperability of the redundant isolation valve 2WL-64A during unavailability of its emergency power source. This 2WL-65B inoperability was caused by manual handwheel operation of the valve on September 29, 2003 when the valve was opened to pump down the CFAE sump during 2EOC14. Due to inadequate procedural guidance and a lack of understanding of the unique design limitations of motor operated diaphragm valves, the manual opening affected the Rotork actuator limit switch adjustment so that when the valve was subsequently electrically closed, it did not fully close.

The inspectors reviewed the licensee's apparent cause evaluation and corrective actions which included operations training for the design limitations of manual operation of diaphragm motor operated valves and providing procedural guidance for the proper operation of these valves. The licensee is also evaluating the need for local leak rate testing following manual operation of these valves. The inspectors determined that the licensee's corrective actions were appropriate. The enforcement aspects of this licensee-identified violation are discussed in Section 4OA7 of this report. This LER is closed.

.2 (Closed) LER 05000370/2005-04, Actuation of Main Steam Isolation Valves Due to Human Error. This event resulted from a failure to follow procedure OP/2/A/6100/SU-19, Heatup to 557° F. The result was an unplanned ESF actuation in Mode 3 during startup with essentially no steam flow. Since the safety function of the actuation is to mitigate a steam line break and is based on steam line pressures, the unplanned ESF actuation provided no safety significant mitigating action because an operator human performance error caused the actuation pressure parameters to exist when a steam line break had not occurred. Consequently, the inspectors concluded that the ESF actuation was of minor safety significance. This LER is closed.

4OA5 Other Activities

.1 Initial Cask Loading and Storage Observation

a. Inspection Scope

The inspectors reviewed the Unit 2 documentation package for the Casks listed below that were 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 to verify that the selected fuel assemblies and burnable poison inserts met the requirements for insertion in dry cask storage.

- NAC-UMS TSC-MNZ-003 (Document Control NO MCEI 0400-153),
- NAC-UMS TSC-MNZ-004 (Document Control NO MCEI 0400-154),
- NAC-UMS-TSC-MNZ-005 (Document Control No. MCEI 0400-155)

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 7/12/05, 7/26/05, and 8/9/05, 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.

b. Observations and Findings

No findings were identified. Overall, the licensee established and maintained adequate oversight for the dry cask storage evolution. Technical Specifications requirements and acceptance criteria as outlined in the FSAR for the NAC-UMS casks and the procedures were followed appropriately. The licensee encountered a recurring problem in completing the vacuum drying process of the spent fuel storage cask within the NAC-UMS technical specification allowed time of 52 hours, 40 hours, and 40 hours respectively, following fuel loading for each cask. The previous occurrences were discussed in IR 05000370/2004009 and 05000370/2005002. After returning the cask to in-pool cooling for 24 hours, the licensee reestablished vacuum drying and was able to

meet the TS requirements.

.2 Operational Readiness of Offsite Power (Temporary Instruction (TI) 2515/163)

This TI was completed in Inspection Report 05000369,370/2005003. However, after NRC headquarters review of the information provided, additional information related to the TI was requested. The inspectors collected this information from licensee discussions, site procedures, and other licensee documentation. The inspection results was provided to the headquarters staff for further analysis.

.3 (Closed) TI 2515/160, Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (NRC Bulletin 2004-01) - Unit 1

a. Inspection Scope

The inspectors reviewed procedures and records documenting activities relative to inspection of the Unit 1 pressurizer penetrations to verify that the licensee complied with commitments made in the licensee's response on July 27, 2004 and supplement response on September 21, 2004 to NRC Bulletin 2004-01, Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors. The inspectors reviewed the records documenting the results of visual inspections performed on the welds including one surge nozzle, one spray nozzle, one relief nozzle, three safety nozzles, and one manway insert. The inspectors also independently performed a bare metal visual examination of surge nozzle to determine the effectiveness of the inspection. The surge nozzle on the bottom of the pressurizer was included in the licensee inspection, but not required by the bulletin. The guidelines for the inspection were provided in NRC temporary instruction (TI) procedure TI 2515/160.

b. Findings

There were no indications of boron leakage or penetration degradation in any pressurizer connections examined by the licensee during their inspections.

TI 2515/160 Reporting Requirements:

a. For each of the examination methods used during the outage, was the examination:

1. Performed by qualified and knowledgeable personnel?

Yes. The "bare-metal" visual examinations of the pressurizer penetrations were conducted by licensee NDE inspection personnel certified as ISI VT-1, 2, and 3 Level II who had been trained and qualified in accordance with applicable visual inspection procedures for VT - 1, 2, and 3, and were certified in accordance with ASME Code requirements.

2. Performed in accordance with demonstrated procedures?

Yes. The visual inspections were conducted in accordance with Duke Procedure QAL-14, Rev. 25, Inservice Inspection (ISI) Visual Examination, VT-3, VT-3C, and VT-3MC and Supplements of the Work Order 98683511 and Procedure MP/0/A/7700/80, Rev. 008, Inspection, Evaluation, and Cleanup of Boric Acid on Plant Materials. The inspectors reviewed the inspection procedure and verified that it had been reviewed and approved in accordance with the licensee's procedure review process and NRC requirements.

3. Able to identify, disposition, and resolve deficiencies?

   The inspectors reviewed the licensee's procedures controlling the visual examination and determined that the procedure provided adequate guidance to identify, disposition and resolve identified deficiencies in the pressurizer penetrations. The licensee's examiner was a qualified ISI VT-1, 2, and 3 Level II Examiner.

4. Capable of identifying the leakage in pressurizer penetration nozzle or steam space piping components, as discussed in NRC Bulletin 2004-01?

   The visual examination method was capable of identifying leakage through and around areas adjacent to the pressurizer penetrations.

b. What was the physical condition of the penetration nozzle and steam space piping components in the pressurizer system?

   Prior to the visual inspections, insulation was removed from the pressurizer head and penetrations. The areas were free of debris, dirt, boron from other sources. The physical layout of the area was congested, however, with the insulation removed, NDE inspection personnel were able to perform visual inspections around 360E of the circumference of each penetration. There were no viewing obstructions.

c. How was the visual inspection conducted?

   Inspections were conducted by direct visual by NDE inspection personnel.

d. How complete was the coverage?

   360E around the circumference of all the nozzles.

e. Could small boron deposits, as described in the Bulletin 2004-01, be identified and characterized?

   With the lighting available, boron deposits, as described in the bulletin, could have been readily identified and characterized. No boron deposits were found.

f. What material deficiencies were identified that required repair?

   No material deficiencies were identified that required repair.

g. What, if any, impediments to effective examinations, for each of the applied methods, were identified?

No significant items were encountered that impeded the bare metal examinations of the pressurizer penetrations.

h. If volumetric or surface examination techniques were used for the augmented inspections examinations, what process did the licensee use to evaluate and dispose any indications that may have been detected as a result of the examinations?

No indications were identified. The licensee stated that Problem Investigation Process would be used to evaluate and dispose any indications if found.

i. Did the licensee perform appropriate follow-on examinations for indications of boric acid leaks from pressure-retaining components in the pressurizer system?

No indications of leakage were identified during the current outage

4OA6 Meetings, Including Exit

On October 6, 2005, the resident inspectors presented the inspection results to Mr. G. Peterson and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

The following finding of very low significance was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as a NCV.

- TS 3.6.3 specifies that each containment isolation valve be operable in Modes 1, 2, 3, and 4 and TS 3.6.3, Condition A specifies if one containment isolation valve is inoperable, the affected penetration flow path shall be isolated within 4 hours and verified to be isolated once per 31 days. On September 29, 2003, containment isolation valve 2WL-65B was manually opened by operations using the handwheel of the actuator to allow pumping down the Containment Floor or Equipment Sump (CFAE) during a period when power was removed from the actuator. The valve was rendered inoperable as the valve was improperly opened too many turns which affected its Rotork actuator limit switch settings, so that when it was subsequently electrically stroked on October 6, 2003, it did not fully close. The licensee did not discover this condition until July 2005 during their investigation of the valve failing a local leak rate test during 2EOC15. Contrary to TS 3.6.3, Condition A, the licensee failed to initially isolate the flow path and did not verify isolation every 31 days during the period of inoperability. This issue was determined to be of very low safety significance based on the screening criteria found in MC 0609, Appendix H, Containment Integrity Significance Determination Process, approach for assessing Type B findings at power. The issue was screened as having very low safety significance (Green)

as the failure of 2WL-65B to fully close did not affect the likelihood of core damage and did not represent a contributor to the large early release frequency (LERF). This issue was documented in the licensee's corrective action program as PIP M-05-1794.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
Black, D., Security Manager
Bradshaw, S., Superintendent, Plant Operations
Bramblett J., Outage Manager
Brown, S., Manager, Engineering
Crane, K., Licensing Specialist
Evans, K., Manager, Mechanical and Civil Engineering (MCE)
Harrall, T., Station Manager, McGuire Nuclear Station
Kammer, J., Manager, Safety Assurance
Kuhr, T., Nuclear Emergency Planning Coordinator
Loucks L., Radiation Protection Manager
Murray, K., Emergency Planning Manager
Nolin, J., Chemistry Manager
Parker, R., Superintendent, Maintenance
Peterson, G., Site Vice President, McGuire Nuclear Station
Thomas, J., Manager, Regulatory Compliance
Thomas, K., Manager, RES Engineering
Travis, B., Superintendent, Work Control

NRC personnel
M. Ernstes, Chief, Reactor Projects Branch 1
S. Peters, Project Manager, NRR

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000369,370/2005004-01	NCV	Failure to Take Timely Correction to Update the USFAR for the SSF (Section 4OA2b.(1))
05000369,370/2005004-02	NCV	Failure to Update the UFSAR for CAPRMs (Section 4OA2b.(2))

Closed

05000370/2005-06	LER	Failure of Containment Floor and Equipment Sump Discharge Outside Containment Isolation Valve (Section 4OA3.1)
05000370/2005-04	LER	Actuation of Main Stem Isolation Valves Due to Human Error (Section 4OA3.2)

2515/160	TI	Pressurizer Penetration Nozzles and Steam Space Piping Connections in U.S. Pressurized Water Reactors (NRC Bulletin 2004-01) - Unit 1 only (Section 4OA5.3)
Discussed		
2515/163	TI	Operational Readiness of Offsite Power (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

For hot weather:
licensee's hot weather computer spreadsheet for 2004 and 2005 with the licensee's program owner. The inspectors reviewed the completed test results for PT/0/B/4700/039, Warm Weather Equipment Checkout, dated 4/17/05

Section 1R04: Equipment Alignment

Partial System Walkdown

RN system:
OP/1/A/6400/006, "Nuclear Service Water System," Revision 167
OP/2/A/6400/006A, "Nuclear Service Water System Valve Checklists," Revision 22
MCFD-1574-01.00, "Flow Diagram Nuclear Service Water System," Revision 6
MCFD-1574-01.01, "Flow Diagram Nuclear Service Water System," Revision 10

KC system:
OP/2/A/6400/005A, Component Cooling Water System Valve and Power Supply Checklists, Rev. 14

ND system:
OP/2/A/6200/004, Residual Heat Removal System, Rev. 74

Boric Acid W/D
PT/1/A/4200/006 B, Boron Injection Valve Lineup Verification, Rev. 22
McGuire 1EOC17 Defense in Depth Assessment Sheet

Section 1R05: Fire Protection

Procedures:
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 1R08: Inservice Inspection

Procedures
NDE-35, Liquid Penetrant Examination, Rev. 20
NDE-600, Ultrasonic Examination of Similar Metal Welds in Ferritic and Austenitic Piping, Rev. 16
NDE-640, Ultrasonic Examination Using Longitudinal Wave and Shear Wave, Straight Beam Techniques, Rev. 2
NDE-3630, Nondestructive Examination Program Manual, Rev. 0
MP/0/A/7700/080, Inspection, Evaluation, and Cleanup of Boric Acid on Plant Materials, Rev. 008
Directive 413, Fluid Leak Management Program, Rev. 3
Duke Boric Acid Corrosion Program, Rev. 2
PT/0/A/4150/046, Containment Walkdown, Rev.002
MP/0/A/7150/165, Rx Vessel Bottom Head Bare Metal Inspection, Rev. 002

Other Documents
Ultrasonic Examination (UT) Reports UT-05-283, UT-05-284, UT-05-245, and UT-05-257
Liquid Penetrant Examination Reports PT-05-159 and PT-05-160
Inservice Inspection Report for Unit 1 Refueling Outage 1EOC16, dated June 30, 2004
Indication Evaluation Report for ISI Item Number C03-010-005, 1ELDHX support, dated March 14, 2004
Magnetic Particle (MP) Examination Report MT-04-005 and PT reports PT-04-032 and -034 for the indication for ISI Item Number C03-010-005
Problem Investigation Processes (PIP) —04-01342 and —03-02452 and Work Order (WO) 98577988 for ISI Item Number C03-010-005
WO 98697084, Weld Process Control for Weld Nos. CFIFWLT6010-18 & -19
WO 98699001, Detailed Process Control, Weld Process Control, and Minor Modification Package MD 100040 for Stuffing Box Sleeve Weld for Valve 1SM0001AB
ISI Visual Examination VT-3 Reports, Evaluation, Disposition, WOs, and Drawings for corrective actions of Supports 1MCA-NS-H36, 1MCA-CF-H152, 1MCA-KC-1027, and 1MCA-NV-H23
Boric Acid Corrosion Program Health Report, 2005T1
Work Request 98356351 for additional boric acid leaks found
PIP M-05-02465 & M-04-01758 for boric acid leak evaluation
WO 987251397 & Inspection Data Performed on Procedure MP/0/A/7150/165 Dated September 20, 2005
PIP M-05-04275 for Results of 1EOC17 Rx Vessel Bottom Head Bare Metal Inspection

Section1R12: Maintenance Effectiveness

PIP M-05-3543, Maintenance Rule function IRE.3 should be evaluated for potential changes. The current limit may be too high.
PIP M-05-3300, Power supply PS4 in SCDE is starting to fail due to AC high ripple.
PIP M-05-1835, U2 Rod control 1AC power cabinet PS3 failed functional test.
PIP M-05-0458, Rod Control Non-Urgent Alarm received
Engineering Support Document, Rod Control System, Rev.1, dated 12/8/04
IRE- Rod Control Health Report
PT/0/B/4600/107, Loose Parts Monitoring System Baseline Measurement and Functional Test, Rev. 2
IP/0/B/3050/012B, EUC Calculations and Computer Programming for Loose Parts Monitoring System, Rev. 1
PT/1/B/4600/098, Loose Parts Monitoring System Functional Test, Rev. 6
OP/1/B/6150/016, Loose Parts Monitoring System, Rev. 13
SLC 16.7.4 Loose Parts Detection System
UFSAR Chapter 7.7.1.12, Loose Parts Monitoring System
PIP M-05-2040, Evaluate of LPMS sensor work during outage
PIP M-04-5225, Received annunciator alarm, Loose Parts Panel trouble.
WO9865261-02, U2 Vibration/ Loose Parts Monitor Channel Cal, date 4/4/05
WO98580930-02, U1 Vibration/ Loose Parts Monitor Channel Cal, date 3/29/04
WO98727853,WO98732322, WO98729072,WO98733575- Analog Channel Tests
Reg Guide 1.133, Loose-Part Detection Program for the Primary System of Light Water Cooled Reactors, Rev. 1

Section1R16: Operator Work-Arounds

McGuire Operator Workarounds List

Work-arounds reviewed for cumulative affect
PIP M-96–02198, Operator Action Is Required In Emergency Procedures To Place Control Switches In Safe Positions
PIP M-03-05668, Operators Are Required To Isolate NS pump Suction Instruments When Starting ND Pumps
PIP M-04-03067, ‘A’ Train Alignment of RN to Standby Nuclear Service Water Pond And The Effect On CA Operability

Section1R20: Refueling and Outage Activities

PT/0/A/4150/033, “Core Verification,” Rev. 15
PT/0/A/4150/033, “Total Core Reloading,” Rev. 43
OP/1/A/6100/003, “Controlling Procedure For Unit Operation,” Rev. 123

PIPs generated from this inspection:

M-05-4358, Process for documenting availability of equipment credited for shutdown risk management is not adequate

M-05-4393, Potential need to validate assumptions made for the element "Long Term Injection Source" of the shutdown Risk Key Safety Function "Decay Heat Removal"

M-05-4445, U1 Defense In Depth credited 1B NI pump as "One additional Boration flow path available" after 1B RN system (support system for 1B NI) was made unavailable

M-05-4453 NSD 403 requires two boration flowpaths when fuel is in the reactor. The current plant configuration has only one boration flow path.

M-05-4680 NSD 403 is insufficiently specific with respect to requirements that should be met in order to credit a Spent Fuel Cooling Pump for Defense In Depth purposes

Section 1R23: Temporary Plant Modifications

WO 98726162 01 and WO 98726164 01

Section 1EP1: Exercise Evaluation

Plans and Procedures

RP/0/A/5700/000, Classification of Emergency, Rev. 011
RP/0/A/5700/002, Alert, Rev. 021
RP/0/A/5700/003, Site Area Emergency, Rev. 021
RP/0/A/5700/004, General Emergency, Rev. 021
RP/0/A/5700/012, Activation of the Technical Support Center (TSC), Rev. 025
RP/0/A/5700/011, Conducting a Site Assembly, Site Evacuation or Containment Evacuation, Rev. 006
RP/0/B/5700/029, Notifications to Offsite Agencies from the Control Room, Rev. 002
SH/0/B/2005/001, Emergency Response Offsite Dose Projections, Rev. 004

Records and Data from 08/09/2005 Exercise

Nuclear Power Plant Emergency Notification Form (Messages 1-8) for State and local agencies

Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

Procedures, Records, and Data
SH/0/B/2005/001, Emergency Response Offsite Dose Projections, Rev. 004
PIP M-05-03631, Failure to update the Emergency Plan, 08/09/2005
Emergency Plan, Rev. 04-02

Section 4OA1: Performance Indicator Verification

Procedures, Records, and Data

Documentation (scenario, time line, event notification forms, critique report) of ERO drill on 02/23/2005
Selected training records of drill/exercise participation by ERO personnel during 2003-2005
Siren system test records for July 2004-June 2005

Corrective Action Items (PIPs)

M-04-05221, Failure of all McGuire sirens (34) in Mecklenburg County on 10/28/2004 silent test, 10/29/2004

Section 4OA2: Identification and Resolution of Problems

License amendments reviewed for Unit1/Unit 2:
134/116, 148/130, 169/151, 197/178,
Renewed Facility Operating License dated December 5, 2003 and associated Safety Evaluation Report (NUREG 1772)

NRC violations and associated PIPs related to UFSAR accuracy:
NCV 05000369,370/2004003-02: PIP M-04-5292
NCV 05000369,370/2004005-01 and 02:PIPs M-04-3803, M-05-3064
NCV 05000369,370/2004005-03: PIPs m-04-3803 and M-05-3065
NCV 05000369,370/2005002-02 and 03: PIPs M-05-857, M-05-902, M-05-813

Section 4OA5: Other Activities

ISFSI
MCEI 0400-153, McGuire Nuclear Station UMS-TSC-MNZ-003 2-10 (13)
COC No. 1015, Amendment 3, For The NAC International UMS Universal Storage System, Effective 3/31/04, including Appendix A, Technical Specification for the NAC-UMS System
Final Safety Analysis Report for the UMS Universal Storage System, May 2004, Revision 3C
PIP 05-3274, First Fuel assembly being verified in Cask 0FCTKN012 was not videotaped.

TI 2515/160
QAL-14, Inservice Inspection (ISI) Visual Examination, VT-3, VT-3C, and VT-3MC, Rev.
25MP/0/A/7700/080, Inspection, Evaluation, and Cleanup of Boric Acid on Plant Materials, Rev. 008
WO 986835117 ISI Visual Exam VT-3 Pumps, Valves, and Welds Dated September 27, 2005
Inspector Certification & Visual Acuity Examination Records for VT-1, 2, & 3 Level II
Westinghouse Drawing No. 1099J0.9 Sheet 1 of 2, Pressurizer General Assembly

LIST OF ACRONYMS

ANS	-	Alert and Notification System
CA	-	Auxiliary Feedwater
CAPRM	-	Containment Air Particulate Radiation Monitors
CAST	-	Auxiliary Feelwater Storage Tanks
CF	-	Feedwater
CFAE	-	Containment Floor or Equipment Sump
CFR	-	Code of Federal Regulations
CFPT	-	Turbine Driven Fuel Pump
DEP	-	Drill and Exercise Performance
D/G	-	Diesel Generator
EAL	-	Emergency Action Level
EDG	-	Emergency Diesel Generator
EP	-	Emergency Plan
EPIP	-	Emergency Plan Implementing Procedures
ERO	-	Emergency Response Organization
ESF	-	Engineer Safety Feature
FEMA	-	Federal Emergency Management Agency
LERF	-	Large Early Release Frequency
PARs	-	Protective Action Recommendations
FSAR	-	Final Safety Analysis Report
INPO	-	Institute of Nuclear Power Operations
IR	-	Inspection Report
ISFSI	-	Independent Spent Fuel Storage Installation
ISI	-	In Service Inspection
LCO	-	Limiting Condition of Operation
LER	-	Licensee Event Report
NCV	-	Non-Cited Violation
ND	-	Residual Heat Removal
NF	-	Ice Condenser Refrigeration
NS	-	Containment Spray
NSD	-	Nuclear System Directive
OE	-	Operating Experience
PI	-	Performance Indicator
PIP	-	Problem Investigation Process Report
PORV	-	Power Operated Relief Valve
RCCA	-	Rod Cluster Control Assembly
RCS	-	Reactor Coolant System
RIS	-	Regulatory Issue Summary
RN	-	Nuclear Service Water
RSPS	-	Risk Significant Planning Standard
RTP	-	Rated Thermal Power
SDP	-	Significance Determination Process
SM	-	Main Steam
SR	-	Source Range
SSC	-	Structures, Systems, Components

SSF	-	Standby Shutdown Facility
SM	-	Main Steam
TS	-	Technical Specifications
UFSAR	-	Updated Final Safety Analysis Report
VX	-	Hydrogen Shimmer and Containment Air Return