



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

October 11, 2000

Duke Energy Corporation  
ATTN: Mr. H. B. Barron  
Vice President  
McGuire Nuclear Station  
12700 Hagers Ferry Road  
Huntersville, NC 28078-8985

SUBJECT: ERRATA LETTER FOR NRC INSPECTION REPORT 50-369/00-05 AND  
50-370/00-05

Dear Mr. Barron:

Your staff identified that the distribution date for our most recent McGuire Inspection Report, 50-369/00-05 and 50-370/00-05, was incorrect. A revised cover letter to reflect the actual October 4, 2000, distribution date for the report is enclosed. Please replace the affected cover letter for the subject inspection report with the one enclosed.

Thank you for pointing out this error. I apologize for any inconvenience it may have caused. If you have any questions about this matter please contact Edwin Lea at (404) 562-4567.

Sincerely,

*/RA/*

Charles R. Ogle, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

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

Enclosure: Cover Letter of NRC Inspection Report  
50-369/00-05 and 50-370/00-05

cc w/encl: (See page 2)

DEC

2

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Distribution w/encl: (See page 3)

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Distribution w/encl:  
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October 4, 2000

Duke Energy Corporation  
ATTN: Mr. H. B. Barron  
Vice President  
McGuire Nuclear Station  
12700 Hagers Ferry Road  
Huntersville, NC 28078-8985

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INSPECTION REPORT 50-369/00-05  
AND 50-370/00-05

Dear Mr. Barron:

On September 16, 2000, the NRC completed an inspection at your McGuire facility. The enclosed report presents the results of this inspection. The results of the inspection were discussed on September 22, 2000, with Mr. Ken Thomas and other members of your staff.

The inspection was an examination of 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, the inspectors identified one issue of very low safety significance (Green) which was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the McGuire facility.



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

November 4, 2000

Duke Energy Corporation  
ATTN: Mr. H. B. Barron  
Vice President  
McGuire Nuclear Station  
12700 Hagers Ferry Road  
Huntersville, NC 28078-8985

**SUBJECT: MCGUIRE NUCLEAR STATION - NRC INSPECTION REPORT 50-369/00-05  
AND 50-370/00-05**

Dear Mr. Barron:

On September 16, 2000, the NRC completed an inspection at your McGuire facility. The enclosed report presents the results of this inspection. The results of the inspection were discussed on September 22, 2000, with Mr. Ken Thomas and other members of your staff.

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In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/***

Charles R. Ogle, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

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

Enclosure: NRC Inspection Report  
w/Attached NRC's Revised Reactor  
Oversight Process

cc w/encl: (See page 3)

DEC

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cc w/encl:  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-369, 50-370

License Nos: NPF-9, NPF-17

Report No: 50-369/00-05, 50-370/00-05

Licensee: Duke Energy Corporation

Facility: McGuire Nuclear Station, Units 1 and 2

Location: 12700 Hagers Ferry Road  
Huntersville, NC 28078

Dates: June 18 - September 16, 2000

Inspectors: S. Shaeffer, Senior Resident Inspector  
M. Franovich, Resident Inspector  
M. Sykes, Operator Licensing Examiner (Section 1R11)  
M. Miller, Senior Operator Licensing Examiner (Section 1R11)  
D. Jones, Senior Radiation Specialist (Section 2OS2)  
D. Thompson, Senior Security Inspector (Sections 3PP3, 4OA2)

Approved by: C. Ogle, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000369-00-05, IR05000370-00-05, on 06/18-09/16/2000, Duke Energy Corporation, McGuire Nuclear Station, Units 1 & 2 - response to contingency events.

The inspection was conducted by resident inspectors, a regional radiation specialist, a regional security inspector, and operator licensing examiners. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using the Significance Determination Process (SDP), found in Inspection Manual Chapter 0609. Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

### **Cornerstone: Physical Protection**

- Green. A non-cited violation of the Physical Security Plan was identified for the failure of the licensee's electronic switching on September 12, 2000, to provide the central alarm station operator with the capability to properly assess potential penetrations at the perimeter prior to individuals gaining access to the protected area (Section 3PP3.2).

## Report Details

### Summary of Plant Status:

Unit 1 operated at or near 100 percent power for the entire inspection period. Unit 2 operated at 100 percent power until July 23, when Unit 2 began a planned coastdown in preparation for the Unit 2 End of Cycle 13 (2EOC13) refueling outage. On September 1, 2000, Unit 2 shutdown for the refueling outage from approximately 73 percent power. At the end of the inspection period, the unit was defueled and progressing with planned outage activities.

## **1. REACTOR SAFETY**

### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignment

##### a. Inspection Scope

For the systems identified below, the inspectors completed full or partial walkdowns to verify that the systems were correctly aligned and capable of performing their safety function:

- Unit 2 residual heat removal (ND) system
- Unit 1 A train auxiliary feedwater (CA) during B train CA testing
- Unit 2 component cooling water (KC) system
- Unit 1 A train emergency diesel generator (EDG) full system walkdown with 1B charging pump inoperable

The inspectors assessed conditions such as equipment alignment (i.e., valve positions and breaker alignment) and system operational readiness (i.e., fuel tank levels, water tank levels, and temperature) that could affect operability of these systems.

##### b. Issues and Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### a. Inspection Scope

To assess the adequacy of the fire protection program implementation, the inspectors conducted numerous tours of a variety of risk significant areas, including: emergency diesel generator rooms, battery rooms, vital instrumentation power equipment rooms, and cable spreading rooms. The inspectors checked for the control of transient combustibles and the condition of the fire detection and fire suppression systems.

##### b. Issues and Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Quarterly Review

a. Inspection Scope

The inspectors reviewed operator performance since the last requalification program inspection to verify that performance deficiencies had been addressed through the requalification training program. The inspectors reviewed selected plant shutdown procedures and abnormal operating procedures. The inspectors also observed the associated just-in-time-training for the Unit 2 refueling outage including training on previous human performance and plant experience issues.

b. Issues and Findings

No findings of significance were identified.

.2 Biennial Review

a. Inspection Scope

The inspectors observed two of four operating crews during active simulator evaluations and selected operator job performance measures in the simulator and plant areas to assess the quality of the licensee developed examination and evaluator effectiveness in identifying deficiencies. The inspectors also reviewed and evaluated the licensee's remedial training and feedback programs, and operator license maintenance practices for compliance with licensee procedures and the guidance of NUREG 1021, Operator Licensing Examination Standards for Power Reactors.

b. Issues and Findings

There were no findings of significance identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

For the equipment issues described in the Problem Investigation Process reports (PIPs) listed below, the inspectors reviewed the licensee's implementation of the Maintenance Rule (10 CFR 50.65) with respect to the characterization of failures, the appropriateness of the associated a(1) or a(2) classification, and the appropriateness of either the associated a(2) performance criteria or the associated a(1) goals and corrective actions:

<u>PIP Number</u>	<u>Title/Description.</u>
-------------------	---------------------------

M-00-2297	Failure of service water valve 0RN-15B
M-99-2492	Radiation monitors (EMF) failures, maintenance rule A1 monitoring goals
M-00-2206	Motor control center 2EMXH de-energized greater than 8 hours
M-00-1899	Vital inverter 1EVIA AC output switch failure
M-99-5719	Reactor coolant system sampling valve NM-22 (containment isolation valve) failure to close during quarterly testing
M-00-2115	Unit 1 1B generator output breaker 1B pilot air valve leak and subsequent unplanned load reduced to 67%

b. Issues and Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's control of plant risk and configuration through the review of selected structures, systems, and components (SSCs), listed below, within the scope of the maintenance rule or which were otherwise risk-significant. Emphasizing potential high risk configurations and high priority work items, the inspectors evaluated the following: (1) effectiveness of the work prioritization and control; (2) level of maintenance support; (3) assessment of integrated risk of the work backlog; and (4) safety assessments and/or management activities performed when SSCs are taken out of service.

<u>PIP Number or Work Order (WO)</u>	<u>Title/Description</u>
WO#98249958	Unit 1 B train auxiliary shutdown panel test (ORAM orange condition)
M-00-2594	2D switchgear air handling unit discharge damper failure
M-00-2596	1B annulus ventilation heater troubleshoot
M-00-2624	Reactor coolant pumps 2C and 2D increased seal leakage
WO#98231859	Check valve 1NV-231 repair (1A NV train back leakage into 1B train)

M-00-2115            Unit 1 1B generator output breaker 1B pilot air valve leak and subsequent unplanned load reduced to 67%

b. Issues and Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events

a. Inspection Scope

Personnel performance in coping with nonroutine evolutions and/or transients was reviewed concerning the following:

<u>PIP Number</u>	<u>Title/Description</u>
M-00-3229	2B CA pump ran for approximately 3 hours following a power supply swap on 2EKVD before being discovered and secured

b. Issues and Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant SSCs listed below, to assess the technical adequacy of the evaluations. Where compensatory measures were involved, the inspectors also determined whether the compensatory measures were in place, would work as intended, and were appropriately controlled.

<u>PIP Number</u>	<u>Title/Description</u>
M-00-2133	CA material differences
M-00-2216	Potential missed Technical Specification surveillance due to deficiencies in PT/1&2/A/4350/003A
M-00-1842	Deleted safety injection on low steam line pressure low signal
M-00-2189	Potential for inadvertent closure of main feedwater isolation valves

M-00-2131	Pressure rating for primary power-operated relief valves (PORVs) actuators
M-00-2874	1A NV charging train backleakage into 1B NV train header

b. Issues and Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors evaluated the selected risk-significant operator workarounds listed below, 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 effect on the ability of operators to implement abnormal or emergency procedures; and (3) if operator workaround problems were captured in the licensee's corrective action program.

- Operator workaround 99-05 concerning a need to periodically vent the emergency diesel generator cooling water system to maintain adequate levels
- Operator workaround 96-09 concerning the ability of safety injection system valve 2NI-9 to close

In addition, the inspectors also reviewed the cumulative affects of all identified operator workarounds on the reliability, availability, and potential for misoperation of the identified systems; the potential for increasing an initiating event frequency; and impact on the ability of operators to respond in a correct and timely manner to a plant transient and accident. Aggregate impacts of the identified workarounds on each individual operator watchstation were also reviewed.

b. Issues and Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modifications to: (1) verify that the design bases, licensing bases, and performance capability of risk significant SSCs have not been degraded through the modifications and (2) verify that the modifications performed during risk-significant configurations did not place the plant in an unsafe condition.



<u>Modification Number</u>	<u>Title/Description</u>
MGMM-10285	Fire detection computer replacement
MGMM-11510	Replace emergency diesel generator (EDG) pressure switches 2LDPS5133 and 2LDPS5130, 2B lube oil to engine pressure

b. Issues and Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (PMT)

a. Inspection Scope

The inspectors reviewed PMT procedures for the equipment below to ensure the equipment was returned to service satisfactorily. The inspectors evaluated the PMT to ensure it properly addressed the work performed.

- WO#98231859, 1NV-231 check valve repair and leak test
- TT/2/A/1510/00/1E, Temporary Test for Diesel Generator 2B Lube Oil System Loop 2 LDLP5130
- PT/2/A/4350/002B 2B Diesel Generator Operability Test
- WO#98243358, Maintenance preparation for refueling cavity floodup
- PMT for EFA computer replacement
- PT/2/A/4206/16 ND Closure Verification

b. Issues and Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The 2EOC13 refueling outage was initiated on September 1, 2000. During this inspection period, the inspectors verified pre-outage shutdown risk plans, reviewed performance data concerning plant shutdown parameters including reactor coolant system cooldown rates and residual heat removal capabilities, defueling and other outage-related activities:

Prior to the outage, to verify that the licensee had appropriately considered risk, industry experience, and previous site-specific problems, the inspectors reviewed the licensee's outage risk control plan. The inspectors also confirmed through review of various plant operating manual procedures that the licensee had developed mitigation/response strategies for losses of the following key safety functions:

- Decay heat removal
- Electrical power distribution
- Inventory control
- Reactivity control
- Pressure control
- Containment

The inspectors reviewed the following procedures related to the shutdown of the unit:

- |                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| • OP/2/A/6100/SO-10 | Controlling Procedure for Low-Temperature Overpressure Protection (LTOP) Operation |
| • OP/2/A/6100/SD-9  | Bypass/Restoration of P-12 Interlock                                               |
| • OP/2/A/6100/SD-4  | Cooldown to 240°F                                                                  |
| • OP/2/A/6100/SD-3  | Shutdown CF/CA                                                                     |
| • OP/2/A/6100/SD-2  | Cooldown to 400°F (Fahrenheit)                                                     |
| • OP/2/A/6100/SD-1  | Prepare for Cooldown                                                               |
| • OP/2/A/6100/003   | Controlling Procedure for Unit Operation                                           |
| • OP/2/A/6100/SD-8  | Water Solid Operations                                                             |
| • OP/2/A/6100/SD-12 | Cooldown to 100°F                                                                  |
| • OP/2/A/6100/SD-5  | Recirc ND                                                                          |
| • OP/2/A/6100/SD-6A | Placing Train A ND in Service                                                      |
| • OP/2/A/6100/SD-6B | Placing Train B ND in Service                                                      |

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors witnessed surveillance tests and/or reviewed test data of the selected risk-significant SSCs listed below, to assess, as appropriate, whether the SSCs met Technical Specification (TS), Updated Final Safety Analysis Report, and licensee procedure requirements. The inspectors also determined if the testing effectively demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions.

- PT/1/A/4350/026E B Train Auxiliary Shutdown Panel Verification
- PT/1/A/4350/025, Essential Auxiliary Power Source Ventilation (during 1B EDG inoperability)
- PT/2/A/4208/001B, 2B containment spray (NS) Pump Performance Test
- PT/2/A/4208/002B, NS Train B Valve Stroke Timing for 2NS-12 and 15, Containment Isolation Valves
- PT/2/A/4601/001, Channel I Functional Protection System Test
- PT/2/A/4350/036A, EDG-2A 24 Hour Run

b. Issues and Findings

No findings of significance were identified.

.2 Inservice Surveillance Testing

a. Inspection Scope

The inspectors also evaluated inservice testing of the Unit 2 B NS pump and associated system valves to determine the effectiveness of the licensee's American Society of Mechanical Engineers (ASME) Section XI testing program. The inspectors evaluated compliance with ASME code requirements, reviewed test methods, acceptance criteria, test instrument range/accuracy, and compliance with TS action statements/reporting requirements. The inspectors also verified that corrective actions were taken as applicable.

b. Issues and Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications to determine whether system operability and availability were affected, that configuration control was maintained, and that post-installation testing was performed:

<u>Modification Number</u>	<u>Title/Description</u>
MGTM 137, MGTM 138	Raising pressurizer safety/PORV Hi discharge alarms

b. Issues and Findings

No findings of significance were identified.

## 2. **RADIATION SAFETY** **Cornerstone: Occupational Radiation Safety**

### 2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls

#### a. Inspection Scope

The plant collective exposure history for the years 1997, 1998, and 1999, based on the data available from NUREG-0713, was reviewed and discussed with the licensee. The inspectors observed job site implementation of ALARA controls and radiation worker performance during preparations for the 2EOC13 refueling outage. Specific tasks observed included radiation surveys of the Unit 2 upper containment building and the 1A mixed bed demineralizer room. Selected elements of the licensee's source term reduction program, which was described in Section 5.2 of the System ALARA Manual, were reviewed by the inspectors. Specific areas reviewed included hot spot identification and removal, primary chemistry shutdown controls, radiation field monitoring and trending, and temporary shielding. The inspectors also reviewed radiation field monitoring survey results performed during the last three refueling outages. The inspectors reviewed the radiological work planning and dose estimates for the five major jobs listed on the 2EOC13 ALARA Plan. Those major jobs, which were projected to incur the highest radiation exposure, included steam generator work, valve maintenance, reactor coolant pump maintenance, reactor head removal and replacement, and installation and removal of temporary shielding. Exposure records for declared pregnant workers year-to-date 2000 were also reviewed by the inspectors. The effectiveness of problem identification and resolution for selected radiation protection related issues identified during May through August, 2000 was evaluated by the inspectors. Through the above reviews and observations, the licensee's ALARA program implementation and practices were evaluated by the inspectors for consistency with Technical Specifications and 10 CFR Part 20 requirements.

#### b. Issues and Findings

No findings of significance were identified.

## 3. **SAFEGUARDS** **Cornerstone: Physical Protection**

### 3PP3 Response to Contingency Events

#### .1 Intrusion and Detection

#### a. Inspection Scope

The protected area intrusion detection system and assessment system required by the Physical Security Plan (PSP) were evaluated to determine if vulnerabilities could be identified. Identified potential vulnerabilities were tested by three NRC contractors to determine if they were exploitable.

b. Issues and Findings

No findings of significance were identified.

.2 Assessment Aids

a. Inspection Scope

The inspection team conducted an evaluation of the licensee's assessment capability. The quality of the assessment aids was evaluated against the PSP to determine if the alarm station operators could clearly recognize a threat in the intrusion detection zones. The team assessed whether the licensee's camera assessment system was capable of automated call-up of fixed closed circuit television cameras to assess alarms emanating from the protected area perimeter. The capability to assess alarms by a video capture system was evaluated.

b. Issues and Findings

On September 12, 2000, while conducting tests of the assessment systems, the inspection team noted the following system failures in the Central Alarm Station (CAS). At microwave zone 12, the video capture system failed to call-up a picture and the CAS operator failed to detect the team member in the zone of detection on the primary video monitor provided for alarm assessment. During the first test of microwave zone 15, there was video call-up on the primary video monitor and video capture system; however, the CAS operator stated that he saw two individuals in the zone of detection and only one individual was in the zone. During the second test of microwave zone 15, the primary video monitor failed to display a picture in the CAS. Microwave zones 11, 12, 20, 41, 49 and 54 failed to display a video assessment picture on the primary monitor in the CAS. Additionally, cameras 37, 38, 39 and 40 failed to call-up on the primary video monitors or on the video capture system in the CAS. There were no malfunctions of the assessment system noted in the Secondary Alarm Station. Compensatory measures were immediately implemented.

License Amendment No. 195, Paragraph E, dated September 22, 2000, states that Duke Energy/Corporation shall fully implement and maintain in effect all provisions of the Commission approved nuclear security and contingency, and guard training and qualification plans.

Paragraph 2.0, of the Physical Security Plan (PSP), dated April 3, 2000, Revision 12, states that "Station security procedures are established and maintained which provide detailed information to the security force on implementation of plan performance objectives and specific plan commitments." Paragraph 8.2, of the PSP, dated April 3, 2000, Revision 12, Closed Circuit Television (CCTV) states: "Fixed CCTV is installed in accordance with manufacturer specifications for alarm assessment and shall be maintained operable for observation of a potential adversary prior to penetration of exterior protected area barriers. Electronic switching is provided to direct the alarm station operators attention to the scene of interest." Procedure EXAO-12, CAS/SAS Operations, dated September 11, 2000, Revision 58, states that "The CAS shall be the primary controlling point for alarm acknowledgment and response." On September 12,

2000, the fixed CCTV failed to provide the central alarm station (the primary controlling point) operator with the capability to observe an adversary prior to penetrations of exterior protected area barriers. This violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. It is identified as NCV 50-369,370/00-05-01: Failure of the Electronic Switching to Provide the Central Alarm Station Operator with the Capability to Properly Assess Potential Penetrations at the Perimeter Prior to Individuals Gaining Access to the Protected Area. This violation is in the licensee's corrective action program as PIP M-00-03462. This issue was determined to have very little safety significance (Green), given the non-predictable basis of the single equipment failures and the fact that there was no evidence that the vulnerabilities had been exploited.

.3 Weapons Demonstration

a. Inspection Scope

The inspection team in accordance with the Tactical Response Plan evaluated the firearms proficiency by observing a range demonstration by three individuals selected by the inspection team demonstrating the licensee's tactical course of fire on September 14, 2000. The inspectors determined during observation of the weapons demonstration whether each of the three selected individuals were capable of effectively engaging the targets using the hand gun, rifle, and shotgun, from each type plant defensive position used as part of the defensive strategy. The firing demonstration consisted of firing from elevated positions, from behind barricades, barrels, and at fixed, moving and pop-up targets.

b. Issues and Findings

No findings of significance were identified.

.4 Table-Top Exercises

a. Inspection Scope

The inspection team conducted five table-top exercises which focused on evaluating the response strategy to protect against an armed attack as defined in the Tactical Response Plan. The inspectors determined during observation of the table-top exercises that the licensee's armed response force defensive strategy demonstrated the ability to quickly focus responders on the adversaries' location, interdict the adversaries, and provide defense-in-depth. The protection strategy appeared designed to protect target sets against attack from the locations used during the table-top drills.

b. Issues and Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

40A1 Performance Indicator Verification

.1 Quarterly Performance Indicator Verification

a. Inspection Scope

The inspectors verified the following three reactor safety performance indicators (PIs) for accuracy:

<u>Cornerstone</u>	<u>Performance Indicator</u>
Initiating Events	Scrams With Loss of Normal Heat Removal
Mitigating Systems	Safety System Unavailability, AFW System
Barrier Integrity	Reactor Coolant System Specific Activity

To verify the PI data, the inspectors reviewed plant chemistry records, control room logs, TS action item log entries, and maintenance rule data. In accordance with Inspection Procedure (IP) 71111.22, the inspectors also observed portions of the chemistry surveillance procedure that collects and analyzes reactor coolant samples for determining specific activity.

b. Issues and Findings

No findings of significance were identified.

.2 PI Collecting and Reporting Verification Using Temporary Instruction (TI) 2515/144

a. Inspection Scope

The inspectors reviewed the licensee's PI data collecting and reporting process to determine whether the NRC/Industry guidance was being implemented properly. The inspectors reviewed indicator definitions, calculation methods, clarifying notes, and frequently asked questions (FAQs) contained in NEI 99-02 for the following six indicators:

<u>Cornerstone</u>	<u>Performance Indicators</u>
Initiating Events	Unplanned Power Changes per 7,000 Critical Hours
Mitigating Systems	Safety System Unavailability, AFW System
Mitigating Systems	Safety System Functional Failures
Emergency Preparedness	Emergency Response Organization Drill Participation
Occupational Radiation Safety	Occupational Exposure Control Effectiveness
Public Radiation Safety	Protected Area Security Equipment Performance Index

b. Issues and Findings

TI 2515/144 was completed and no findings of significance were identified.

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors randomly selected and screened licensee records for the period of July 1999 through September 2000, relating to security loggable events, maintenance work requests and problem evaluation reports to determine if the licensee is identifying problems related to these areas, and entering them into the corrective action program.

b. Observations and Findings

No findings of significance were identified.

4OA3 Event Followup

(Closed) Licensee Event Report (LER) 50-369/00-004-00: McGuire Unit 1 Reactor Trip Resulting in an Unplanned Valid Actuation of an Engineered Safety Feature (ESF) and the Reactor Protection System (RPS). The event described in this LER was previously reviewed in NRC Special Inspection Report 50-369/00-08. No new issues were revealed by the LER.

4OA6 Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Ken Thomas, Acting Plant Manager, as well as other members of licensee management and staff, at the conclusion of the inspection on September 22, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.



.2 Public Meeting Summary

On July 18, 2000, Mr. C. Ogle (Chief, Branch 1, Division of Reactor Projects, Region II, NRC) and Mr. S. Shaeffer (Senior Resident Inspector at McGuire), conducted a public presentation at the North County Regional Library in Huntersville, North Carolina, explaining the NRC's Revised Reactor Oversight Process.

**PARTIAL LIST OF PERSONS CONTACTED**

Licensee

- Barron, B., Vice President, McGuire Nuclear Station
- Bradshaw, S., Superintendent, Plant Operations
- Byrum, W., Manager, Radiation Protection
- Cash, M., Manager, Regulatory Compliance
- Dolan, B., Manager, Safety Assurance
- Evans W., Security Manager
- Geer, T., Manager, Civil/Electrical/Nuclear Systems Engineering
- Jamil, D., Station Manager, McGuire Nuclear Station
- Patrick, M., Superintendent, Maintenance
- Peele, J., Manager, Engineering
- Loucks, L., Chemistry Manager
- Thomas, K., Superintendent, Work Control
- Travis, B., Manager, Mechanical Systems Engineering

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Opened and Closed During this Inspection

50-369,370/00-05-01	NCV	Failure of the Electronic Switching to Provide the Central Alarm Station Operator with the Capability to Properly Assess Potential Penetrations at the Perimeter Prior to Individuals Gaining Access to the Protected Area (Section 3PP2.2)
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Closed

2515/144	TI	Performance Indicator Data Collecting and Reporting Process Reviews (Section 4OA1.1)
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50-369/00-004-00

LER

McGuire Unit 1 Reactor Trip Resulting in an  
Unplanned Valid Actuation of an Engineered Safety  
Feature and the Reactor Protection System  
(Section 40A3)

Discussed

None

**LIST OF ACRONYMS USED**

ASME	-	American Society of Mechanical Engineering
ALARA	-	As Low As Reasonably Achievable
CA	-	Auxiliary Feedwater
CAS	-	Central Alarm Station
CCTV	-	Closed Circuit Television
EDG	-	Emergency Diesel Generator
EMF	-	Radiation Monitor
EOC	-	End of Cycle
ESF	-	Engineered Safeguards Feature
F	-	Fahrenheit
FAQ	-	Frequently Asked Questions
IP	-	Inspection Procedure
KC	-	Component Cooling Water
LER	-	Licensee Event Report
LTOP	-	Low Temperature Overpressure Protection
NCV	-	Non-cited Violation
ND	-	Residual Heat Removal
NEI	-	Nuclear Energy Institute
NI	-	Intermediate Head Safety Injection
NS	-	Containment Spray
NV	-	High Head Charging
ORAM	-	Operational Risk Assessment Matrix
PI	-	Performance Indicator
PIP	-	Problem Investigation Process
PMT	-	Post Maintenance Testing
PORV	-	Power-Operated Relief Valve
PMT	-	Post-Maintenance Testing
PSP	-	Physical Security Plan
RCS	-	Reactor Coolant System
RPS	-	Reactor Protection System
SDP	-	Significance Determination Process
SSC	-	Structures, Systems, and Components
TI	-	Temporary Instruction
TSAIL	-	Technical Specifications Action Item Log
TS	-	Technical Specifications
U2EOC13	-	Unit 2 End of Cycle 13
WO	-	Work Order

# NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"><li>● Initiating Events</li><li>● Mitigating Systems</li><li>● Barrier Integrity</li><li>● Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>● Occupational</li><li>● Public</li></ul>	<ul style="list-style-type: none"><li>● Physical Protection</li></ul>

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and

increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.