



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
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April 24, 2001

Carolina Power & Light Company  
ATTN: Mr. James Scarola  
Vice President - Harris Plant  
Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Code: Zone 1  
New Hill, North Carolina 27562-0165

**SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INSPECTION REPORT  
50-400/00-06**

Dear Mr. Scarola:

On March 31, 2001, the Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris reactor facility. The enclosed report presents the results of that inspection which were discussed on April 4, 2001, with Mr. C. Burton and other members of your staff.

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

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). The issue 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 Shearon Harris facility.

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) components 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/***

Brian Bonser, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

Docket No.: 50-400  
License No.: NPF-63

Enclosure: Inspection Report

cc w/encl: (See page 3)

cc w/encl:

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-400  
License No: NPF-63

Report No: 50-400/00-06

Licensee: Carolina Power & Light (CP&L)

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road  
New Hill, NC 27562

Dates: December 31, 2000 - March 31, 2001

Inspectors: J. Brady, Senior Resident Inspector  
R. Hagar, Resident Inspector  
M. Miller, Sr. Operations Engineer (Section 1R11)  
R. Baldwin, Sr. Operations Engineer (Section 1R11)  
E. Testa, Sr. Health Physicist (Sections 2OS3 and 4OA1 )  
J. Wallo, Physical Security Inspector (Sections 3PP1, 3PP2, and 4OA1)

Approved by: B. Bonser, Chief  
Reactor Projects Branch 4  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000400-00-06, on 12/31/2000 - 03/31/2001, Carolina Power & Light, Shearon Harris Nuclear Power Plant, Unit 1. Operability evaluations and problem identification and resolution.

The inspection was conducted by resident inspectors, two senior operations engineers, a senior health physicist, and a physical security inspector. The inspection identified one green and one no-color finding, one of which was a non-cited violation. The significance of most findings is indicated by their color (green, white, yellow, red) using IMC 0609 "Significance Determination Process" (SDP) (See Attachment). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

### A. Inspector Identified Findings

#### Cornerstone: Mitigating Systems

- Green. A Non-cited violation of 10 CFR 50, Appendix B, Criterion V was identified for failing to follow procedures in the completion of an operability evaluation for potential clogging of the emergency core cooling system (ECCS) throttle valves. The result was that the operability evaluation failed to establish that hard debris would not cause clogging of the ECCS flow path.

The safety significance was very low because a subsequent operability evaluation demonstrated that although hard debris would enter the containment sump, it would not enter the ECCS piping. (Section 1R15).

#### Cross-cutting Issues: Identification and Resolution of Problems

- No-color. A problem identification and resolution error was identified in the mitigating system cornerstone. The error was associated with the completion of the operability evaluation discussed in Section 1R15, and involved the development of conclusions before enough information had been gathered and adequately analyzed to fully understand the condition. Consequently, some of the licensee's conclusions were inaccurate. This error was determined to be a continuation of the trend discussed in Section 4OA2 of NRC Inspection Report 50-400/00-04. (Section 4OA2).

### B. Licensee Identified Violations

None.

## Report Details

The unit operated at 100 percent of rated thermal power for the entire inspection period.

### 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignment

##### a. Inspection Scope

For the systems identified below, the inspectors reviewed the identified plant documents to determine correct system lineup, and observed equipment to verify that the system was correctly aligned:

- A charging/safety injection pump with B charging/safety injection pump out of service
  - Operating Procedure (OP)-107, "Chemical and Volume Control System," Revision 30
  - OP-110, "Safety Injection System," Revision 15
  - Simplified Drawings 5-S-1305 and 5-S-1308
- B containment spray with A containment spray out of service
  - OP-112, "Containment Spray System," Revision 14
  - Simplified Drawing 5-S-0550
- B charging/safety injection pump with A charging/safety injection pump out of service
  - Operating Procedure (OP)-107, "Chemical and Volume Control System," Revision 30
  - OP-110, "Safety Injection System," Revision 15
  - Simplified Drawings 5-S-1305 and 5-S-1308

##### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### a. Inspection Scope

The inspectors reviewed current Action Requests (ARs), work orders, and impairments associated with the fire suppression system. The inspectors reviewed the status of

ongoing surveillance activities to determine whether they were current to support the operability of the fire protection system. The inspectors observed surveillance test FPT -3207, "Fire Detector Functional Test Local Fire Detector Panel 7, 12 Month Interval," Revision 10, for the main control room. The inspectors observed the fire protection detection and suppression equipment in the following areas:

- A switchgear room
- B switchgear room
- cable spreading room
- A chiller area
- B chiller area
- control room

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Quarterly Inspection

a. Inspection Scope

The inspectors reviewed licensed operator requalification simulator exams for crew A on January 17. This observation included emergency operating procedure (EOP) and abnormal operating procedure (AOP) scenarios. The scenarios tested the operators' ability to respond to a steam generator tube rupture and to a small break loss of coolant accident. The inspectors verified clarity and formality of communication, use of procedures, alarm response, control board manipulations, group dynamics and supervisory oversight. The training used Simulator Exam Scenarios DSS-001, Revision 9, and DSS-005, Revision 13.

b. Findings

No findings of significance were identified.

.2 Biennial Review

a. Inspection Scope

The inspectors reviewed facility operating history since the last requalification program inspection for indications of operator weaknesses. The inspectors also reviewed a segment of the licensee's annual written examination, including question development, and evaluated its effectiveness in providing a basis for assessing operator knowledge of subjects covered in the requalification program. Examination quality, licensee effectiveness in incorporating plant, industry and student feedback into the training



program, and examination development methodology were evaluated for compliance with guidelines contained in Training Administrative Procedures. The inspectors observed the annual dynamic simulator examination for two shifts of operators to evaluate the adequacy of licensee evaluations of operator knowledge and abilities. During these observations, the inspectors assessed licensee evaluator effectiveness in identifying operator performance deficiencies requiring supplemental training. The inspectors also evaluated and observed a portion of the walkthrough examination administered during this requalification segment.

The inspectors reviewed and evaluated the licensee's remedial training program for selected operator deficiencies identified during the previous year. The inspectors also reviewed a sample of on-shift licensed operator qualification records, watchstanding records and medical records to ensure compliance with 10 CFR 55.59, "Requalification" and 10CFR 55.53, "Conditions of License."

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

To verify the effectiveness of the licensee's maintenance activities, the inspectors selected the equipment reliability issues identified in the table below. For those issues, the inspectors reviewed the licensee's characterization of the failures, the appropriateness of the associated 10 CFR 50.65 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>AR Number</u>	<u>Subject/Description.</u>
20142	1MS-266, steam line isolation to auxiliary steam, dual position
22417	Failure of isolation relay CR1-3177 for reactor auxiliary building exhaust damper
26929	Rod insertion limit functional failure
26607	T-hot channel functional failure
27810	Control room ventilation damper fail to stroke (CZ-D1SA-1)
26323	A sequencer relays exceed limits for load blocks 6-7

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluationa. Inspection Scope

To verify that the licensee managed risk and preserved key safety functions in accordance with 10 CFR 50.65(a)(4), the inspectors reviewed the licensee's risk assessments for each work week during the inspection period.

The inspectors also reviewed the licensee's risk assessments and the work controls and/or risk management actions used by the licensee to manage risk for the plant configurations associated with the following activities:

- Remove A train residual heat removal (RHR) from service on January 17
- Replace B emergency diesel generator (EDG) turbocharger on January 24 and 25
- Troubleshoot air handler 11B on February 5
- Replace seal on B normal service water pump from March 1 to 5

The inspectors reviewed the emergent work activities listed below, as described in the referenced Work Requests/Job Orders (WR/JOs) and/or ARs, to verify that the activities were adequately planned and controlled to avoid initiating events, and to verify that the licensee took appropriate actions to minimize the probability of initiating events, maintain the functional capability of mitigating systems, and maintain barrier integrity.

<u>Reference</u>	<u>Description</u>
WO 116791 AR 29875	Troubleshoot B EDG jacket water heater ground
WR 12238 AR 29875	Troubleshoot B EDG lube oil inlet temperature indication problem
WR12323 AR 29949	Replace B EDG shutdown cylinder

The inspectors reviewed the following ARs associated with this area to determine if corrective actions were identified and implemented:

<u>AR Number</u>	<u>Title/Description</u>
24995	Inadequate risk assessment for B startup transformer

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations.1 Operability Evaluation Reviewa. Inspection Scope

For the operability evaluations described in the Action Requests/Engineering Service Requests (ESRs) listed below, the inspectors assessed the technical adequacy of the evaluations, to ensure that operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred:

<u>AR/ESR No.</u>	<u>Rev. No.</u>	<u>Title</u>
ESR 00-00442	2	[Emergency Core Cooling System] Throttle Valve Evaluation For Clogging and Erosion During Recirculation
AR 27506	0	[Residual Heat Removal] A Pump MOC Breaker MOC (52S) is not Actuating
ESR 00-00416	0	[Turbine Driven Auxiliary Feedwater] Pump T&T Valve DC Bus Alarm
ESR 00-00435	0	Operability of 1A-SA Main Reservoir Traveling Screens
ESR 00-00436	0	Evaluation of 1ED-121 for Maximum Allowable Correlated Leakrate
ESR 01-00022	0	[Residual Heat Removal] OST-1092 Functional Evaluation

b. Findings

No findings of significance were identified.

- .2 (Closed) URI 50-400/00-04-02. Potential clogging of the Emergency Core Cooling System (ECCS) throttle valves. A violation of 10 CFR 50, Appendix B, Criterion V was identified for failing to follow procedure while performing the operability evaluation documented in ESR 00-00442, ECCS Throttle Valve Evaluation for Clogging & Erosion, Revision 0. The operability determination failed to consider the effects of operational debris in the containment on the containment sump design function, and failed to identify and justify two key assumptions. During this period the licensee completed Revision 2 of the ESR which demonstrated that although some hard operational debris may pass through the containment sump screen, none will enter the ECCS piping. Consequently, this violation was determined to be of very low safety significance (Green).

In NRC Inspection Report (IR) 50-400/00-04, this unresolved item was opened because the inspectors identified inadequacies in the subject operability evaluation. The licensee determined that the ECCS throttle valves were throttled such that the gap between each valve's plug and seat was significantly less than the ECCS sump screen openings (0.054 inches vs 0.125 inches). Engineering judgements were used to determine whether the ECCS flow path was operable. Those judgements were based on underlying assumptions that were not identified and justified in the operability evaluation.

In addition, the inspectors determined that the underlying assumptions were not valid for hard operational debris. This was significant because just prior to plant startup from the last refueling outage, the inspectors had observed steel grit in the area above the containment sumps, and had noted that the grit was small enough to pass through the containment sump inner screen. When the licensee made a containment entry to confirm this observation, they found the grit, including some on top of the containment sump, and documented this finding in AR 27180. Some of the grit was in the size range of concern. Because the licensee's underlying assumptions for the operability evaluation, identified in NRC IR 50-400/00-04, were not valid for hard operational debris, and because hard operational debris existed in the area directly above the containment sump, the inspectors concluded that the operability determination did not adequately demonstrate operability of the ECCS flow path.

The finding was more than minor and had a credible impact on safety because the possibility of clogging of the ECCS flow path became credible due to two factors. The first factor was that the inspectors had observed hard debris above the containment sump that could be washed down by containment spray, and the second was that the inspectors had determined that some of the hard debris would impinge on the containment sump screen. The inadequate operability determination failed to establish that this debris would not cause clogging of the ECCS flow path. However, because the evaluation described in Revision 2 of the ESR showed that the debris that passes through the screen would not enter the ECCS piping and, therefore, would not clog the ECCS flow path, the issue was determined to be of very low safety significance (Green).

10CFR50, Appendix B, Criterion V required that activities affecting quality shall be accomplished in accordance with instructions, procedures, and drawings. Operability determinations for nonconforming conditions were governed by the licensee's corrective action procedure, CAP-NGGC-0200, "Corrective Action Program," Revision 2, sections 9.2.2 and 9.2.3. In addition, when engineering assistance was necessary for operability determinations, that assistance was governed by procedures TMM-408, "Operability Determinations," Revision 5, Section 3.2, and EGR-NGGC-005, "Engineering Service Requests," Revision 14. For an adverse condition, procedure TMM-408, Section 5.4.2 required the licensee to evaluate the effects of the condition on the ability of the system, structure, or component to perform its intended function and to describe why each effect will or will not prevent the SSC from performing its intended safety function. Procedure EGR-NGGC-0005, "Engineering Service Requests," Revision 13, Section 9.6.4, required the licensee to identify and justify assumptions. Contrary to the above, in ESR 00-00442, Revision 0, the licensee failed to perform an adequate operability determination, in that the licensee failed to evaluate the effect of hard operational debris on the containment sump design function, and failed to identify and justify two key assumptions. This violation is in the licensee's corrective action program as ARs 27038

and 29357 and has been designated as a Non-cited Violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. It is identified as NCV 50-400/00-06-01, inadequate operability evaluation for ECCS throttle valve.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed an operator work-around associated with the containment purge system not maintaining containment pressure while in the automatic mode (no. 269, WO 105816), to determine whether the workaround affected the functional capability of the related system or affected human reliability in responding to an initiating event. The inspectors specifically considered whether the workaround affected the operators' ability to implement abnormal or emergency operating procedures.

On February 15 the inspectors reviewed the cumulative effect of all the active operator workarounds on reliability, availability, or potential for misoperation of the systems; whether they could collectively increase initiating event frequency or effect multiple mitigating systems; and whether they affect the ability of operators to respond in a correct or timely manner to plant transients or accidents. The inspectors also reviewed a licensee cumulative assessment of operator workarounds dated February 7, 2001.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

For the post-maintenance tests listed below, the inspectors reviewed the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable:

<u>Test Procedure</u>		
<u>Number</u>	<u>Title</u>	<u>Related maintenance task</u>
OST-1073	"1B-SB Emergency Diesel Generator Operability Test Monthly Interval," Revision 13	Replacement of the B emergency diesel generator turbocharger.

OST-1848*	“Safety Injection Actuation: Control Room Ventilation Isolation Train B 18 Month Interval Modes 1-6,” Revision 7	Preventive maintenance on control room ventilation isolation and recirculation dampers 1CZ-2, 1CZ-10, 1CZ-18
and		
OST-1131*	“Control Room Area HVAC ISI Test Quarterly Interval All Modes,” Revision 9	
EPT-33	“Emergency Safeguards Sequencer System Test,” Revision 25	Calibrate sequencer relays 2-20 and 2-30
OST-1038	“Sampling, Chemical Addition and Main Steam Drain Systems ISI Valve Test,” Revision 11	Adjust packing on 1FW-223, hydrazine addition containment isolation valve
OST-1040	“Essential Services Chilled Water Systems Operability Quarterly Interval,” Revision 19	Torque packing follower on 1SW-1055, service water return from 1A-SA Chiller
OST-1073	“1B-SB Emergency Diesel Generator Operability Test Monthly Interval,” Revision 13	Replacement of failed shutdown cylinder

\* Both OST-1848 and OST-1131 were required to complete an adequate post-maintenance test of the related maintenance task.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

<u>Number</u>	<u>Rev.</u>	<u>Title</u>
OST-1013	16	“1A-SA Emergency Diesel Generator Operability Test Monthly Interval”
MST-I0012	5	“Main Steam Line Pressure, Loop 2 (P-0486) Channel Calibration”

OST-1092*	9	“1B-SB [Residual Heat Removal] Pump Operability Quarterly Interval”
OST-1118	14	“Containment Spray Operability Train A Quarterly Interval”
OST- 1076	11	“Auxiliary Feedwater Pump 1B-SB Operability Test Quarterly Interval”
OST-1095	10	“Sequencer Block Circuit and Containment Fan Cooler Testing Train B Quarterly Interval”

\*This procedure included inservice testing requirements.

The inspectors reviewed AR 27848, “Technical Specification (TS) 3.0.3 Entry During OST-1092,” to determine whether corrective actions to revise the procedure were effective in eliminating the TS 3.0.3 entry.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications to determine whether the modification was properly installed, drawings were appropriately updated, and post-modification testing was performed:

- Removal of ESR 00-00386, Revision 0, Temporary Modification for 1RH-25
- ESR 01-00017, Revision 0, Diesel Generator Jacket Water Keep Warm System Heater Element

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors evaluated radiological procedures, problem evaluation reports, calibration data files, interviewed health physics technicians, health physics shift supervisors, health physics section supervisors and managers to evaluate compliance

with the Radioactive Material Control Program, Updated Final Safety Analysis Report (UFSAR), Technical Specifications, and 10 CFR Part 20 requirements. In addition the inspectors accompanied and observed a technician performing operational checks on tool monitors, personnel contamination monitors, portal monitors and portable survey instruments. The inspectors observed the calibration of portable survey instruments and electronic dosimeters. The inspectors observed a boiling water reactor (BWR) fuel basket transfer for the IF 300 fuel shipping cask from the fuel pool transfer canal to the decon pit and the use of portable survey instruments, teledosimetry, electronic dosimeters, area radiation monitors, continuous air monitors, HEPA filters, remote video cameras and monitors, and extremity dosimetry placement.

The inspectors evaluated the following procedures:

- HPS-NGGC-0005, "Calibration of Portable Radiation/Contamination/Air Sampling Survey Instruments," Revision 1
- DOS-NGGC-0020, "Whole Body Counter (WBC) System Calibration," Revision 6
- NGGS-DOS-0117, "Electronic Personal Dosimeter (EPD) Calibration,"
- Revision 5
- NGGS-DOS-0016, "Electronic Personal Dosimeter (EPD) Inventory Management," Revision 3
- MST-I0391, "Spent Fuel Pool South Area Radiation Monitor," Revision 7
- HPP-725, "Operation of Whole Body Contamination and Portal Monitors,"
- Revision 5
- SIC-715, "Calibration of Portable Air Sampling Equipment," Revision 5
- SIC-710, "Calibration of Semi-Portable Radiation Detection Equipment,"
- Revision 3
- SIC-705, "Calibration of Radiation/Contamination Survey Instruments,"
- Revision 7
- SIC-725, "Calibration of Whole Body Friskers or Portal Monitors," Revision 4
- SIC-700, "Operation and Certification of Calibration Standards," Revision 5

The inspectors evaluated the Respiratory Protection Program and evaluated the licensee's actions taken with regards to NRC Information Notices (IN) 98-20 and 99-05. The inspectors observed the availability of corrective lenses for use in respirators of control room operators.

b. Findings

No findings of significance were identified.



### 3. SAFEGUARDS

#### Cornerstone: Physical Protection

##### 3PP1 Access Authorization (Behavior Observation Program)

###### a. Inspection Scope

The inspector reviewed licensee procedures, Fitness For Duty (FFD) reports, and licensee audits. Additionally, the inspector interviewed five representatives of licensee management and five escort personnel concerning their understanding of the behavior observation portion of the personnel screening and FFD program. In interviewing these personnel, the inspector reviewed the effectiveness of their training and abilities to recognize aberrant behavioral traits, physiological indications of narcotic and alcohol use, and work call-out reporting procedures. Licensee compliance was evaluated against requirements in the Harris Nuclear Plant Physical Security Plan and associated procedures, and 10 CFR Part 26, "Fitness For Duty Programs."

###### b. Issues and Findings

No findings of significance were identified.

##### 3PP2 Access Control

###### a. Inspection Scope

The inspector observed access control activities on February 21 and February 22, and search/access control equipment testing was observed on February 21. In observing the access control activities, the inspector assessed whether officers could detect contraband prior to it being introduced into the protected area. The protective barriers for the Final Access Control facility were inspected to ensure compliance with protection standards in the Physical Security Plan. Additionally, the inspector assessed whether the officers were conducting access control equipment testing in accordance with regulatory requirements through observation, review of procedures, and log entries. Preventative and post maintenance procedures were reviewed and observed as performed. Lock, combination, and key control procedures were reviewed, as well as, aspects of the site access authorization program. Licensee compliance was evaluated against requirements in the Harris Nuclear Plant Physical Security Plan and associated procedures, and 10 CFR Part 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage," and 10 CFR Part 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants."

###### b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification

Licensee procedures and records were evaluated to determine whether submitted Performance Indicator (PI) statistics were calculated in accordance with the guidance contained in NEI 99-02, Revision 0, Regulatory Assessment Performance Indicator Guideline, as implemented by procedure REG-NGGC-0009, "NRC Performance Indicators," Revision 0.

##### .1 Occupational Radiation Safety

###### a. Inspection Scope

For the Occupational Exposure Control Effectiveness PI, the inspectors interviewed cognizant personnel, and evaluated shift logs and ARs between April 1, 2000, and March 6, 2001, to support the PI verification. AR Nos: 28463, 28824, 25833, 26083, 24591, 23621, 22649, 23038, 21328, 20564, 20872 and 21249 were evaluated for assignment of responsibility, licensee evaluation, timely closure, and applicability for PI reporting screening criteria.

###### b. Findings

No findings of significance were identified.

##### .2 Public Radiation Safety

###### a. Inspection Scope

For the Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual PI, the inspectors interviewed cognizant personnel and evaluated AR reports between April 1, 2000, and March 6, 2001, to support the PI verification. Selected AR Nos: 28531, 19140, and 18988 were evaluated for assignment of responsibility, licensee evaluation, timely closure, and applicability for PI reporting screening criteria.

###### b. Findings

No findings of significance were identified.

##### .3 Physical Protection

###### a. Inspection Scope

The inspectors reviewed Progress Energy and Shearon Harris Nuclear Plant programs for gathering and submitting data for the Fitness-For-Duty, Personnel Screening, and Protected Area Equipment PI. The review included Progress Energy's tracking and

trending reports and security event reports for the PI data submitted from the first quarter 2000 to the fourth quarter of 2000. Licensee performance was evaluated against requirements in NEI 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline."

b. Findings

No findings of significance were identified.

40A2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors compared the ECCS throttle valve issue identified in Section 1R15 to the problem identification and resolution trend identified in NRC Inspection Report 50-400/00-04, Section 40A2, to determine whether the subject issue was a continuation of that trend. Examples were identified where the licensee had developed conclusions before they had gathered and adequately analyzed enough information to fully understand the condition/event. Consequently, some of the licensee's conclusions had been inaccurate, and some of the associated corrective actions had been ineffective and/or inappropriate.

b. Findings

The inspectors found that the licensee's completion of ESR 00-00442, Revision 0, as described in Section 1R15, is another example of the subject trend. The table below summarizes the differences between the licensee's conclusions as documented in Revision 0 and their conclusions documented in Revision 2.

The Licensee's Conclusions

<u>Reference Number</u>	<u>Initial Conclusions</u> (as documented in Revision 0)	<u>Conclusions after obtaining additional information</u> (as documented in Revision 2)
ESR 00-00442 (AR 26202)	Following a loss-of-coolant accident (LOCA), only post-LOCA debris would be present in containment.	Some hard operational debris exists in containment.
	No hard debris would impinge on the containment sump screens.	Some hard operational debris would not only impinge on the sump screens, but would also pass through the screens.

The ECCS flow path is operable because no hard debris will pass through the screen.

The ECCS flow path is operable because hard debris which would pass through the screen would be retained in the sump by other design features.

The link between this issue and the previously identified trend is that in this case, as in the cases initially associated with the trend, the licensee developed conclusions before they had gathered and adequately analyzed enough information to fully understand the condition/event. Consequently, some of the licensee's conclusions were inaccurate.

#### 4OA6 Meetings, including Exit

##### .1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. Burton, Director Site Operations, and other members of licensee management at the conclusion of the inspection on April 4, 2001. 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.

**PARTIAL LIST OF PERSONS CONTACTED**

**Licensee**

D. Alexander, Nuclear Assessment Manager  
G. Attarian, Harris Engineering Support Services Manager  
C. Burton, Director Site Operations  
R. Duncan, Harris Plant General Manager  
J. Eads, Emergency Preparedness Supervisor  
R. Field, Regulatory Affairs Manager  
T. Hobbs, Operations Manager  
J. Holt, Major Projects Manager  
K. Neushaeffer, Outage and Scheduling Manager  
T. Natale, Training Manager  
J. Scarola, Harris Plant Vice President  
P. Summers, Environmental & Radiation Control Manager  
B. Waldrep, Maintenance Manager

**NRC**

B. Bonser, Chief, Reactor Projects Branch 4  
R. Laufer, Harris Project Manager, NRR

**ITEMS OPENED, CLOSED, AND DISCUSSED**Opened and Closed

50-400/00-06-01	NCV	Inadequate operability evaluation for ECCS throttle valve (Section 1R15)
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Previous Items Closed

50-400/00-04-02	URI	Potential clogging of ECCS throttle valves (Section 1R15)
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## 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:

### Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

### Radiation Safety

- Occupational
- Public

### Safeguards

- Physical Protection

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>.