UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report No.: 50-416/95-14

Licensee: Entergy Operations, Inc.
Jackson, MS 39205

Docket No.: 50-416 Licensee No.: NPF-29

Facility Name: Grand Gulf Nuclear Station

Inspection Conducted: August 13 - September 9, 1995

Inspectors: VIA Phone 9/29/95
J. Tedrow, Senior Resident Inspector Date Signed

VIA Phone 9/29/95
C. Hughey, Resident Inspector Date Signed

Approved by: 9/29/95
H. Christensen, Chief Date Signed
Reactor Projects Branch 1B
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors in the areas of plant operations, review of nonconformance reports, maintenance observation, surveillance observation, onsite engineering, plant housekeeping, radiological controls, security, fire protection, emergency preparedness, and review of licensee event reports. Numerous facility tours were conducted and facility operations observed. The inspectors conducted backshift inspections on August 21, September 4 and 5.

Results:

Operations

The licensee named a new Manager of Operations and Operations Superintendent, paragraph 2. Two non-cited violations were identified: Failure to control equipment vendor manuals, paragraph 3.a(2)(a); and Improper use of tie wraps to secure locked valves, paragraph 3.a(2)(b).

Maintenance

The licensee created a new group called Outage Management and Work Control, paragraph 2.

The material condition of the emergency core cooling system pumps was observed to be excellent. Several oil leaks were observed on the standby diesel generators and in the hydraulic power units for the recirculation system flow control valves, paragraph 4.a.

The non-outage corrective maintenance backlog continued to be maintained relatively low, paragraph 4.a.

Due to unreliable temperature switches, operators and technicians routinely bypass entire divisional isolation logic while performing surveillance testing on component trains, paragraph 4.b.

Engineering

The licensee named a new Manager of Performance and System Engineering, paragraph 2. Engineering involvement in auxiliary building roof leakage was evident, paragraphs 3.b(1) and 5.

Plant Support

A non-cited violation was identified in the radiological protection area: Failure to provide a flashing light for a locked high radiation area, paragraph 6.b.

REPORT DETAILS

1. PERSONS CONTACTED

Licensee Employees

*D. Bost, Director, Nuclear Plant Engineering
*C. Bottemiller, Superintendent, Plant Licensing
*D. Cupstid, Acting Manager, Performance & System Engineering
*L. Dale, Director, Plant Projects and Support
W. Deck, Security Superintendent
*M. Dietrich, Manager, Training
*J. Dimmette, Manager, Operations
C. Dugger, Manager, Outage Management and Work Control
C. Ellsaesser, Technical Coordinator
*C. Hayes, Director, Quality Assurance
C. Hutchinson, Vice President, Nuclear Operations
*M. Meisner, Director, Nuclear Safety and Regulatory Affairs
*R. Moomaw, Manager, Plant Maintenance
A. Morgan, Manager, Emergency Preparedness
*D. Pace, General Manager, Operations
S. Saunders, System Engineering Superintendent
T. Tankersley, Radiation Control Superintendent

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry, health physics, and corporate personnel.

NRC Personnel

*H. Christensen, Branch Chief, Division of Reactor Projects, Region II

*Attended exit interview

Acronyms used in this report are defined in paragraph 10.

2. PLANT STATUS and ACTIVITIES

The plant continued in power operation (Mode 1) for the duration of this inspection period.

The licensee announced several management changes effective September 6, 1995. Joel Dimmette, previously Manager of Performance and System Engineering, was named as Manager of Operations. Chuck Dugger, previously Manager of Operations, was named as Manager of a newly created group called Outage Management and Work Control. Charles Hicks, previously Operations Superintendent, was named as the onsite representative for the Corporate Assessment Group. Dykes Cupstid was named as Acting Manager of Performance and System Engineering until a permanent replacement is selected. Mike McDowell was named as Acting Operations Superintendent until a permanent replacement is selected.

3. OPERATIONS

a. Plant Operations (71707)

(1) Shift Logs and Facility Records

The inspectors reviewed records and discussed various entries with operations personnel to verify compliance with the TS and the licensee's administrative procedures. The following records were reviewed: shift superintendent's log, control room operator's log, shift technical advisor's log, night order book, limiting condition for operation log, clearance log, temporary alterations log, and selected radwaste logs. In addition, the inspectors independently verified selected clearance order tagouts.

The inspectors found that the logs provided sufficient information on plant status and events. Clearance tagouts were found to be properly implemented.

(2) Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe activities in progress. Licensee meetings were attended by the inspectors to observe planning and management activities. The facility tours and observations encompassed the following areas: security perimeter fence, control building, diesel generator building, auxiliary building, radwaste building, turbine building, containment building, battery rooms, electrical switchgear rooms, technical support center, standby service water building, and outside areas.

During these tours, observations were made regarding monitoring instrumentation which included equipment operating status, electrical system lineup, reactor operating parameters, and auxiliary equipment operating parameters. Indicated parameters were verified to be in accordance with the TS for the current operational mode. The inspectors also verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspectors observed shift turnovers on various occasions to verify that the continuity of plant status, operational problems, and other pertinent plant information were discussed during these turnovers. The licensee's performance in these areas was satisfactory.

(a) During a general plant tour on August 25, 1995, the inspectors observed a vendor manual for the Emergency Diesel Generators (No. 460000149) located in an

operations department storage locker by the Division I SDG. Further followup revealed this manual to be a lost copy that had been eliminated by Document Control from their controlled copy listing about a year earlier. Although no one was observed directly using this uncontrolled and out of date manual, the inspectors were concerned that it was readily accessible. Administrative Procedure 01-S-05-4, Control of Vendor/Technical Manuals, Rev. 14, requires that any individual using a vendor manual must verify with Document Control or the vendor manual register that the manual is current. After being notified, operations management removed the manual from the locker and turned it over to Document Control. The inspectors considered the failure to follow the requirements of the administrative procedure for controlling vendor manuals to be of minor safety significance. This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy.

Non-Cited Violation (416/95-14-01): Failure to properly control equipment vendor manuals.

(b) During a general plant tour on August 30, 1995, the inspectors observed blue tie wraps being used to hold up a temporary light fixture on the 93 foot elevation of the 'B' RHR pump room. Administrative Procedure, Conduct of Operations, paragraph 6.10.3.d states that blue or red tie wraps will not be used for any other purpose except for locking components. Blue tie wraps are specifically used for locking components in a fully opened or closed position. The inspectors also observed previously used tie wraps on the floor below several other components in the area. The inspectors notified operations management of the condition. The tie wraps were subsequently removed and the area cleared of loose ones. The inspectors considered the failure to follow the requirements of the administrative procedure for conduct of operations to be of minor safety significance. This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy.

Non-Cited Violation (416/95-14-02): Improper use of tie wraps.

b. Review of Nonconformance Reports (71707)

Quality Deficiency Reports and Material Nonconformance Reports were reviewed to verify that TS were complied with, corrective actions and generic items were identified, and items were reported as required by 10 CFR 50.73.

(1) MNCR 94-1226, While investigating moisture that was causing rust to form on a secondary containment structural I-beam, the licensee found that rain water had been seeping through cracks in the concrete above the exposed portion of the beam. This beam helps support the 185 foot elevation roof of the auxiliary building that is also part of the secondary containment boundary. The inspectors conducted an extensive walkdown of the areas to verify that no immediate structural concerns existed. In addition, recent testing indicated that the leakage of air into the secondary containment boundary was not excessive. Extensive discussions were held with licensee engineering personnel. The inspectors considered the licensee's short term corrective actions to be appropriate. Long term corrective actions will be determined at a later date.

(2) MNCR 95-0245, During the replacement of the 'B' RHR jockey pump, maintenance personnel observed that one of four pump hold down bolts had stripped threads and two other bolts had less than 1/4 inch thread engagement. This condition was properly documented by maintenance personnel and longer bolts were used to secure the pump to its base. The inspectors reviewed the operability determination for the as-found condition and determined that the licensee's actions were appropriate.

Two NCVs were identified.

4. MAINTENANCE

a. Maintenance Observation (62703)

The inspectors observed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits were issued and TS requirements were being followed. The following maintenance activities were observed and work packages reviewed:

- MWO 150827, "B" RHR Jockey Pump replacement and alignment
- MWO 149804, Retorquing of Head and Flange bolts on Division II SDG motor driven air compressor

In general, the performance of work was satisfactory with proper documentation of removed components and independent verification

of the reinstallation. The inspectors noted that the material condition of the SDGs and hydraulic power unit for the recirculation system flow control valves could be improved. Several oil leaks were observed on these components. The material condition of ECCS pumps was excellent with no evidence of oil leaks or excessive shaft seal leakage.

The non-outage corrective maintenance backlog continued to be maintained relatively low. As of August 21, 1995, there were 424 items. The number of items in the backlog has been slowly decreasing since the end of the last refueling outage. The largest portion, 236 items, belonged to the mechanical maintenance group. The electrical and I&C groups had 162 items with the rest belonging to various other groups.

b. Surveillance Observation (61726)

The inspectors observed surveillance tests to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed. The following tests were observed or data reviewed:

- 06-IC-1E31-A-0001, Rev. 100, RWCU Pump Room 2 Differential Temperature Calibration-Channel A (Riley Temperature Switch E31-N614A dT)

- 06-IC-1M71-R-0003. Rev. 100, Suppression Pool Monitoring Instrument Calibration (Channel 21) (Trip Unit M71-N626A, Temperature for azimuth 318 degrees).

The performance of these procedures was found to be satisfactory with the proper use of calibrated test equipment, necessary communications were established, notification/authorization of control room personnel was performed, and knowledgeable personnel performed the tasks.

During the performance of the RWCU pump room temperature calibration procedure, the inspectors noted that the Division A isolation logic for RWCU had been bypassed to prevent an isolation since this is a 1 out of 1 logic. In addition, it was noted that the isolation logics for Division A of RHR and RCIC had also been bypassed. Further investigation revealed that this was normal practice due to previous inductive spikes associated with Riley temperature switches. Electrical spikes which occurred during previous testing and calibrations had caused inadvertent RWCU isolations. RWCU, RHR and RCIC isolation logics share some common circuitry. These switches are also simultaneously placed in bypass, per procedure, at least twice a day for short periods when operators record temperature readings during daily rounds. The inspectors verified that TS allow these switches to be placed in

bypass for short periods of time. The licensee has initiated long term corrective actions to replace the temperature switches and is developing methods to dampen the electrical spikes.

Inspector Followup Item (416/95-14-03): Follow the licensee's corrective actions to eliminate the operator workaround to bypass divisional isolation logic during surveillance testing.

No violations or deviations were observed.

5. ONSITE ENGINEERING (37551)

Engineering involvement during the auxiliary building leak problem was evident. The inspector determined that appropriate evaluations had been performed to address secondary containment operability and structural integrity.

No violations or deviations were identified.

6. PLANT SUPPORT

a. Plant Housekeeping Conditions (71707) - Storage of material and components, and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed. During tours, the inspectors noted poor housekeeping in several contaminated areas. Personnel protective clothing was not properly disposed of in one contaminated area. The housekeeping in the 'B" RHR pump room contaminated area was particularly poor with tools, tie-wraps, and general dirt. These deficiencies were identified to licensee management and were corrected.

b. Radiological Protection Program (71750) - Radiation protection control activities were observed to verify that these activities were in conformance with the facility policies and procedures, and in compliance with regulatory requirements. The inspectors also verified that selected doors which controlled access to very high radiation areas were appropriately locked. Radiological postings were likewise spot checked for adequacy.

During a plant tour on the morning of September 6, 1995, the inspectors noted that the light, used as a warning device for a locked high radiation area near the RCIC pump, was not flashing. The licensee used a flashing light in accordance with the requirements of TS 5.7.3 to warn personnel of the locked high radiation area which access could not be prohibited by a physical barrier. The inspectors noted that the area was otherwise properly posted and informed licensee health physics personnel. The licensee determined that the light bulb was blown and replaced the light. The previous day the inspectors had observed the light to be functioning properly. Licensee management showed the inspectors that a routine daily check for the locked high

radiation area flashing lights, had been completed satisfactory during the previous night shift. Due to the licensee's controls for checking these lights and the short period of time the light was not working, the inspectors concluded that this matter had minor safety significance. This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy.

Non-Cited Violation (416/95-14-04): Failure to provide a flashing light for a locked high radiation area.

c. Security Control (71750) - The performance of various shifts of the security force was observed in the conduct of daily activities which included: protected and vital area access controls; searching of personnel, packages, and vehicles; badge issuance and retrieval; escorting of visitors; patrols; and compensatory posts. In addition, the inspectors observed the operational status of closed circuit television monitors, the intrusion detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

d. Fire Protection (71750) - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable. During plant tours, areas were inspected to detect potential fire hazards. No fire hazards were noted.

e. Emergency Preparedness (71750) - Emergency response facilities were toured to verify availability for emergency operation. Duty rosters were reviewed to verify appropriate staffing levels were maintained.

Except as noted above, the inspectors found plant housekeeping and material condition of components to be satisfactory. The licensee's adherence to radiological controls, security controls, fire protection requirements, emergency preparedness requirements and TS requirements in these areas was satisfactory.

One NCV was identified.

7. REVIEW OF LERs (92700)

a. (Closed) LER 416/93-14: This LER reported RCS pressure boundary leakage from a thermowell failure. Licensee personnel discovered a leak from the thermowell associated with the temperature element for the "B" recirculation pump suction piping. The thermowell was replaced with similar components and retested satisfactory. The licensee issued a supplemental report dated April 15, 1994.

Licensee personnel have reviewed the design of the thermowell and have concluded that the failure was caused by flow induced vibration. A thermowell with a shorter insertion length had been authorized for future use if deficiencies are identified on another thermowell. Licensee personnel will perform inspections and ultrasonic testing of the thermowells during refueling outages to monitor the condition of the thermowells.

b. (Open) LER 416/95-08: This LER reported a reactor scram which occurred on July 12, 1995, due to a turbine trip on low condenser vacuum. This event was previously discussed in NRC Inspection Report 50-416/95-12. The cause of the scram was the failure of the high pressure condenser expansion joint between the turbine and the condenser. The licensee has replaced the failed expansion joint. The licensee plans to review and revise the maintenance and inspection program for these expansion joints and to evaluate potential modifications to the expansion joint area. Differences between vacuum indications in the control room and that sensed by the turbine trip system will also be evaluated. In addition, a review of lube oil controls and response to oil spills will be performed to identify areas for improvement. This LER will remain open pending completion of these actions.

c. (Open) LER 416/95-09: This LER reported the inadvertent actuation of the HPCS system. This event was previously discussed in NRC Inspection Report 50-416/95-12. From a review of transmitter response data, licensee personnel believe that this event was caused by a mechanical impact on the wide range transmitters variable sensing leg. Although work was in progress in the drywell in the vicinity of the variable leg at the time of the event, it could not be conclusively determined that this was the cause. The licensee is evaluating potential modifications to the transmitters to make them less susceptible to spurious initiations of this sort. In addition, this event will be included in required reading for applicable personnel. This LER will remain open pending completion of these corrective actions.

d. (Closed) LER 416/95-10: This LER reported a reactor scram which occurred on July 30, 1995, due to a generator loss of load signal. This event was previously discussed in NRC Inspection Report 50-416/95-12. Licensee personnel determined the cause for the generator loss of load to be a faulty current transformer for the "A" phase differential relay of breaker J5228. The faulty current transformer was replaced. The licensee sent the current transformer to the vendor for a failure analysis.

No violations or deviations were identified.

8. OTHER NRC PERSONNEL ON SITE

H. Christensen, NRC, Branch Chief, Region II, Division of Reactor Projects, was on site September 7 and 8, 1995, to meet with licensee management and the resident inspectors.

R. Bernhard, Senior Project Engineer, Region II, was onsite August 15 - 17, 1995, to assist in the inspection effort.

9. EXIT INTERVIEW

The inspection scope and findings were summarized on September 8, 1995, by J. Tedrow with those persons indicated by an asterisk in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. A listing of inspection findings is provided below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

Type	Item Number	Status	Description and Reference
NCV	416/95-14-01	Closed	Failure to properly control equipment vendor manuals, paragraph 3.a(2)(a).
NCV	416/95-14-02	Closed	Improper use of tie wraps, paragraph 3.a(2)(b).
IFI	416/95-14-03	Open	Bypass of isolation logics during surveillances, paragraph 4.b.
NCV	416/95-14-04	Closed	Failure to provide a flashing light for a locked high radiation area, paragraph 6.b.
LER	416/93-14	Closed	RCS pressure boundary leakage due to thermowell failure, paragraph 7.a.
LER	416/95-08	Open	Reactor scram from turbine trip on low condenser vacuum, paragraph 7.b.
LER	416/95-09	Open	Inadvertent actuation of HPCS due to impact, paragraph 7.c.
LER	416/95-10	Closed	Reactor scram due to generator trip on loss of load, paragraph 7.d.

10. ACRONYMS

CFR - Code of Federal Regulations
ECCS - Emergency Core Cooling System
HPCS - High Pressure Core Spray
I&C - Instrumentation and Controls

IFI	-	Inspector Followup Item
LER	-	Licensee Event Report
MNCR	-	Material Nonconformance Report
MWO	-	Maintenance Work Order
NCV	-	Non-cited Violation
NRC	-	Nuclear Regulatory Commission
RCIC	-	Reactor Core Isolation Cooling
RCS	-	Reactor Coolant System
RHR	-	Residual Heat Removal
RWCU	-	Reactor Water Cleanup
SDG	-	Standby Diesel Generator
TS	-	Technical Specifications