



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION 1
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report No.: 50-416/88-07

Licensee: System Energy Resources, Inc.
 Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf Nuclear Station

Inspection Conducted: March 19 thru April 15, 1988

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| Inspectors: | <i>H.C. Dance / Sr</i> | 5/3/88 |
| | R.C. Butcher, Senior Resident Inspector | Date Signed |
| | <i>H.C. Dance / Sr</i> | 5/3/88 |
| | J.L. Mathis, Resident Inspector | Date Signed |
| Approved by: | <i>H.C. Dance</i> | 5/3/88 |
| | H.C. Dance, Section Chief, Division of Reactor Projects | Date Signed |

SUMMARY

Scope: This routine inspection was conducted by the resident inspectors at the site in the areas of Licensee Action on Previous Enforcement Matters, Operational Safety Verification, Maintenance Observation, Surveillance Observation, ESF System Walkdown, Reportable Occurrences, Operating Reactor Events, and Inspector Followup and Unresolved Items.

Results: Two violations were identified: failure to perform a written safety evaluation and failure to follow procedures for procurement.

REPORT DETAILS

1. Licensee Employees Contacted

O. D. Kingsley, Jr, Vice President, Nuclear Operation
T. H. Cloninger, Vice President, Nuclear Engineering and Support
*J. G. Cesare, Director, Nuclear Licensing
*S. M. Feith, Director, Quality Programs
J. E. Cross, GGNS Site Director
C. R. Hutchinson, GGNS General Manager
R. F. Rogers, Manager, Special Projects
A. S. McCurdy, Manager, Plant Operations
*J. Summers, Compliance Coordinator
M. J. Wright, Manager, Plant Support
L. F. Daughtery, Compliance Supervisor
D. G. Cupstid, Start-up Supervisor
R. H. McAnulty, Electrical Superintendent
J. P. Dimmette, Manager, Plant Maintenance
W. P. Harris, Compliance Coordinator
J. L. Robertson, Superintendent, Plant Licensing
L. G. Temple, I & C Superintendent
J. H. Mueller, Mechanical Superintendent
L. B. Moulder, Operations Superintendent
J. V. Parrish, Chemistry/Radiation Control Superintendent
*J. W. Yelverton, Technical Asst. Plant Operations Manager
*C. V. Hicks, Operations Asst.
S. F. Tanner, Manager, Quality Services

Other licensee employees contacted included technicians, operators, security force members, and office personnel.

*Attended exit interview

2. Exit Interview (30703)

The inspection scope and findings were summarized on April 15, 1988, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. The licensee had no comment on the following inspection findings:

416/88-07-01 Inspector Followup Item. Discrepancies noted during walkdown of the combustible gas control system. (paragraph 7)

416/88-07-02 Violation. Failure to perform a written safety evaluation regarding the tagging shut of pot drain valves in the RCIC steam supply line. (paragraph 9)

416/88-07-03 Violation. Failure to follow procedures for the procurement of materials. (paragraph 9)

3. Licensee Action on Previous Enforcement Matters (92702)

Not inspected this report period.

4. Operational Safety, Radiological Protection and Physical Security Verification (71707, 71709 and 71881)

The inspectors kept themselves informed on a daily basis of the overall plant status and any significant safety matters related to plant operations. Daily discussions were held with plant management and various members of the plant operating staff. The inspectors made frequent visits to the control room such that it was visited at least daily when an inspector was on site. Observations included instrument readings, setpoints and recordings, status of operating systems, tags and clearances on equipment controls and switches, annunciator alarms, adherence to limiting conditions for operation, temporary alterations in effect, daily journals and data sheet entries, control room manning, and access controls. This inspection activity included numerous informal discussions with operators and their supervisors.

Weekly, when the inspectors were onsite, selected Engineered Safety Feature (ESF) systems were confirmed operable. The confirmation is made by verifying the following: Accessible valve flow path alignment, power supply breaker and fuse status, major component leakage, lubrication, cooling and general condition, and instrumentation.

General plant tours were conducted on at least a biweekly basis. Portions of the control building, turbine building, auxiliary building and outside areas were visited. Observations included safety related tagout verifications, shift turnover, sampling program, housekeeping and general plant conditions, fire protection equipment, control of activities in progress, problem identification systems, and containment isolation. The licensee's onsite emergency response facilities were toured to determine facility readiness.

The inspectors reviewed at least one Radiation Work Permit (RWP), observed health physics management involvement and awareness of significant plant activities, and observed plant radiation controls. The inspectors verified licensee compliance with physical security manning and access control requirements. Periodically the inspectors verified the adequacy of physical security detection and assessment aids.

No violations or deviations were identified.

5. Maintenance Observation (62703)

During the report period, the inspectors observed portions of the maintenance activities listed below. The observations included a review of the Maintenance Work Orders (MWOs) and other related documents for adequacy, adherence to procedure, proper tagouts, adherence to technical specifications, radiological controls, observation of all or part of the actual work and/or retesting in progress, specified retest requirements, and adherence to the appropriate quality controls.

MWO E81313, Replace Oil in Upper and Lower Motor Bearings for SSW B Pump Motor

MWO M81625, Replace Diaphragms for Scram Inlet and Outlet Valves F126 and F127 Actuator

MWO M81858, Disassemble and Clean RFP Seal Water Strainers

MWO I81930, Replace and Rework flow Transmitter for Recirculation Flow Bias APRM Channel A&E

No violations or deviations were identified.

6. Surveillance Observation (61726)

The inspectors observed the performance of portions of the surveillances listed below. The observation included a review of the procedure for technical adequacy, conformance to technical specifications, verification of test instrument calibration, observation of all or part of the actual surveillances, removal from service and return to service of the system or components affected, and review of the data for acceptability based upon the acceptance criteria.

06-IC-1C11-M-003, Revision 23, Scram Discharge Volume High Water Level Float Switches Calibration

06-IC-1E22-M0003, Revision 23, Suppression Pool High Water Level

06-IC-1C51-W-0006, Revision 25, APRM Calibration

06-IC-1C71-M-1003, Revision 23, Turbine Control Valve Fast Closure (RPS/EOC RPT) Functional Test

06-OP-1E21-Q-0002, Revision 25, LPCS MOV Functional Test

06-OP-1P75-M-0001, Revision 33, Standby Diesel Generator II Functional Test

No violations or deviations were identified.

7. Engineered Safety Features System Walkdown (71710)

A complete walkdown was conducted on the accessible portions of the Combustible Gas Control System. The walkdown consisted of an inspection and verification, where possible, of the required system valve alignment, including valve power available and valve locking where required, instrumentation valved in and functioning; electrical and instrumentation cabinets free from debris, loose materials, jumpers and evidence of rodents, and system free from other degrading conditions.

The following minor deficiencies were noted:

- a. System Operating Instruction 04-1-01-E61-1, Revision 20, Combustible Gas Control System, Attachment 1, page 2 of 2, requires the position of valves FX100 and FX101 (PDIS-N001 Isolation) be open in the manual valve lineup. The actual valve numbers out in the plant and shown on P&ID M-1091 is FX026 and FX027 for PDIS-N001 isolation.
- b. Domestic water to containment purge compressor valve (F031) was not labeled.
- c. Instrument PDIS-N001 is denoted PDS on P&ID M-1091.

Correction of the above deficiencies shall be tracked under Inspector Followup Item 416/88-07-01.

No violations or deviations were identified.

8. Reportable Occurrences (90712 and 92700)

The below listed event reports were reviewed to determine if the information provided met the NRC reporting requirements. The determination included adequacy of event description and corrective action taken or planned, existence of potential generic problems and the relative safety significance of each event. Additional inplant reviews and discussions with plant personnel as appropriate were conducted for the reports indicated by an asterisk. The event reports were reviewed using the guidance of the general policy and procedure for NRC enforcement actions, regarding licensee identified violations.

The following License Event Reports (LERs) are closed.

| <u>LER No.</u> | <u>Event Date</u> | <u>Event</u> |
|----------------|-------------------|--|
| *86-029-09 | August 26, 1986 | Pipe Fouling Results in Low Flows to ESF Room Coolers. |

The event of LER 86-029 was discussed in several inspection reports and enforcement conference was held in NRC Region II office as documented in Inspection Report 416/87-03. A Standby Service Water (SSW)/High Pressure Core Spray (HPCS) design review was accomplished as committed in Section E.3.f of the LER. This design review was reported in a SSW/HPCS Design Review-Summary Report dated May 8, 1987 (AECM-87/0095). Also, the inspectors reviewed the SSW/HPCS report (OA-87-010). The report concluded that no significant discrepancies with either the SSW or HPCS system designs were identified that could have prevented these systems from performing their required safety functions. The report did identify a number of recommendations and observations and section 2.2 of the report listed each recommendation, SERI's response and what further action (if any) would be taken. The followup actions are being tracked by the Independent Safety Engineering Group (ISEG) until completion.

Special Report 88-001 dated March 29, 1988 was submitted in regard to an automatic Diesel Generator 12 (Division 2) trip that occurred on March 2, 1988. A second automatic Diesel Generator 12 trip, similar to the March 2, 1988 trip, occurred on March 30, 1988. A telecon was held between the Resident Inspectors, NRC Region II diesel specialist and the licensee on March 31, 1988, to discuss the Special Report and the event of March 30, 1988. During the telecon it was noted that the Special Report made several erroneous statements. These statements were:

- a. Diesel Generator 12 tripped on low lube oil pressure.

It was discovered that although the diesel generator local panel has a first in alarm capability, this feature was not utilized on the March 2 event. The diesel was assumed to have tripped on the low lube oil pressure. The diesel is now assumed to have tripped on a low turbocharger lube oil pressure trip which is bypassed during an emergency run.

- b. Although the low lube oil pressure trip is not bypassed during the emergency operating mode, the auxiliary lube oil pump power supply is sned by the load shedding and sequencing system in the emergency operating mode and requires operator action to return it to service.

The auxiliary lube oil pump is available whenever the diesel generator is operating.

- c. The automatic start function of the auxiliary lube oil pump is not operative in the emergency operating mode.

The automatic start function of the auxiliary lube oil pump is operable in the emergency operating mode.

Based on the discrepancies noted above the licensee was requested to revise Special Report 88-001 to correct the description of the cause of the diesel generator trip and to correct any erroneous statements regarding operation. Special Report 88-001/1 dated April 5, 1988, was submitted correcting the previous submittal.

No violations or deviations were identified.

9. Operating Reactor Events (93702)

The inspectors reviewed activities associated with the below listed reactor events. The review included determination of cause, safety significance, performance of personnel and systems, and corrective action. The inspectors examined instrument recordings, computer printouts, operations journal entries, scram reports and had discussions with operations, maintenance and engineering support personnel as appropriate.

On March 18, 1988, during the performance of Surveillance Procedure 06-OP-1E21-Q-0002, Revision 25, LPCS MOV Functional Test, for the quarterly valve operability check on valve Q1E21F001, the valve would not stroke closed manually or electrically. Limiting Condition of Operation (LCO) 88-250 was written against Technical Specification (TS) requirement 3.6.4. TS 3.6.4 requires that with one or more of the containment or drywell isolation valves inoperable, maintain at least one isolation valve operable in each affected penetration that is open and within four hours restore the inoperable valve to operable status. Maintenance Work Order (MWO) M81584 was initiated on March 18, 1988, to close the valve (F001) and replace the actuator with an actuator from Unit 2. Discrepant Material Report (DMR) 0073-88 was written to remove electrical portions of the actuator from the Unit 2 actuator. The valve actuator was replaced in accordance with the Work Instruction and Inspection Record (WI&IR) associated with MWO M81584 package. The valve (F001) was retested per 06-OP-1E21-Q-0002. Procedure 06-OP-1E21-Q-0002 encompasses the stroke time of the valve and verification of the valve remote position indication and was performed satisfactorily. Material Nonconformance Report (MNCR) 0080-88 was issued on March 21, 1988, to evaluate the probable cause of how the stem protector on valve (1QE21F001) could extend into the path of the actuator locking nut. The pipe which formed the valve stem protector was screwed so deep into the housing cover that it interfered with the lock nut and prevented the limiter torque from turning and prevented closing the valve. It appears the stem protector pipe threads were fabricated incorrectly. The pipe threads on the end of the stem protector were deformed indicating a history of interference when operating the valve. The licensee has no record of ever removing/disassembling the actuator and it appears the interference has existed from the time of initial installation. A deep burr on the end of the stem protector indicates the locking nut ultimately cut into the protector resulting in the locked up condition leading to the failure of the actuator to move the valve. The licensee

conducted a sample inspection of limitorque valve actuators which were of a similar type as the LPCS suction valve. The review was conducted by maintenance personnel. Seventy (70) accessible limitorque valve actuators used in safety related applications were visually inspected per MWO 81621. The results of the inspection revealed that only two limitorque applications were noted as requiring further evaluation. Twenty valves did not have valve stem protectors because of valve design. MWO 81630 and 81631 were written to partially disassemble and inspect the two valves in question. No nonconformances were observed. Based on the inspection results, i.e. one nonconformance out of fifty-one valves inspected, the licensee does not consider this to be a generic problem.

On March 23 1988, the Main Steam line to Reactor Core Isolation Cooling (RCIC) turbine inlet drain pot drain valves, E51F025 and E51F026, failed to operate. The licensee discovered that solenoid operated valves E51F025 and E51F026 were replaced during refueling outage number 2 which ended on January 6, 1988. MWO E76072 had replaced the existing valves due to the end of their environmentally qualified life. The existing solenoid operated valves were ASCO HTX-832-A108V and were replaced with equivalent valves ASCO NP-83200A186V. The replacement valves failed because they were 120 Vac valves and the power supply to E51F025 and E51F026 is 125 Vdc power. It appears that ASCO uses the same valve part number for AC or DC applications and the buyer must specifically request what power source is to be used. Quality Deficiency Report (QDR) 118-88 was written to document this problem. The licensee tagged valves E51F025 and E51F026 closed until replacement valves can be procured. On April 5, 1988 the residents questioned the licensee on why a Limiting Condition for Operation (LCO) had not been issued for the RCIC system. The licensee had made the decision that closing the pot drain valves did not make the RCIC system inoperable because the licensee could open manual drain valves when required. The residents were also informed by the licensee that they had not performed a written 10 CFR 50.59 evaluation. Final Safety Analysis Report (FSAR) 7.4.1.1.3.4 states that to prevent the RCIC steam supply pipeline from filling up with water and cooling it excessively a condensate drain pot, steam line drain and appropriate valves are provided. The water level in the steam line drain condensate pot is controlled by a level switch and a direct acting solenoid valve which energizes to allow condensate to flow out of the drain pot. tagging shut valves E51-F025 and E51-F026 isolates the drain line from the pot to the automatic opening (on high level) solenoid valve. 10 CFR 50.59 states in part that the licensee may make changes in the facility as described in the FSAR unless the change involves an unreviewed safety question. The licensee shall maintain records of changes in the facility made pursuant to 10 CFR 50.59 and these records must include a written safety evaluation which provides the basis for the determination that the change does not involve an unreviewed safety question. The failure to perform a written safety evaluation to determine that operation of manual drain valves in lieu of the automatic drain feature does not constitute an unreviewed safety question is a violation (416/88-07-02).

10 CFR Part 50, Appendix B, Criterion IV, as implemented by Operational Quality Assurance Manual, MPL-Topical-1, section 4.5.2.2. states that procedures shall assure that procurement documents issued at all levels of procurement include provision for identification of the design basis technical requirements by reference to specific drawings, specifications, codes, regulations, industrial standards or other documentation, including revisions thereto, that describes the items or services to be furnished. Administrative Procedure, 01-S-09-1 Revision 22, entitled Procurement of Materials and Services, paragraph 1.1 states that this procedure provides instructions to assure that the necessary design bases and other technical requirements are included in requisitions. Contrary to above, a procurement sheet was issued requesting ASCO solenoid valves NP83200A186V using 120 Vac in lieu of 125 Vdc solenoid valves as called for by design documents. The failure to follow procedures and procure the correct voltage solenoid valves is a violation (416/88-07-03).

10. Inspector Followup and Unresolved Items (92701)

(Closed) Inspector Followup Item 416/86-32-16. A loose parts analysis by GE indicated the missing pin was not a safety concern and the licensee has operated one fuel cycle and subsequent refueling since the pin was discovered missing with no apparent detrimental effect. This item is closed.

(Closed) Inspector Followup Item 416/87-10-02. The licensee investigated the various potential sources of water on the SSW basin floor and sealed some access plugs in the roof, modified SSW pump operation procedures to minimize foaming of basin water, etc. The inspector toured the SSW basin pump rooms following recent heavy rains and noticed only minimal moisture on the floor near the open gratings to the SSW basin. This item is closed.

(Closed) Inspector Followup Item 416/87-35-02. The licensee's evaluation of the Turbo charger exhaust manifold cracks indicated there was not a structural problem due to the identified cracks. NRC Region II reviewed the licensee's data and concurred with their findings. This item is closed.