

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

Report Nos.: 50-416/87-12 and 50-417/87-01 Licensee: System Energy Resources, Inc. Jackson, MS 39205 Docket Nos.: 50-416 and 50-417 License Nos.: NPF-29 and CPPR-119 Facility Name: Grand Gulf Nuclear Station Inspection Conducted: April 18, 1987 through May 15, 1987 Inspectors: un7 Senior Resident Inspector Butcher, aned Modenos Smith, Resident Inspector Date Signe Accompanying Inspector: L. P. Modenos, Project Engineer (May 11-15, 1987) Approved by: A.C. Section Chief Date Dance, Signed Division of Reactor Projects

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, Inspector Followup and Unresolved Items, Maintenance Program Implementation, and Review of Quality Assurance for Unit 2 Extended Construction Delay.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Licensee 8	Employees	Contacted
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- *J. E. Cross, GGNS Site Director
- *C. R. Hutchinson, GGNS General Manager
- R. F. Rogers, Manager, Unit 1 Projects
- A. S. McCurdy, Manager, Plant Operations
- *J. D. Bailey, Compliance Coordinator
- M. J. Wright, Manager, Plant Support
- *L. F. Daughtery, Compliance Superintendent
- 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, Licensing Superintendent
- L. G. Temple, I & C Superintendent
- J. H. Mueller, Mechanical Superintendent
- L. B. Moulder, Operations Superintendent
- J. V. Parrish, Chemistry/Radiation Control Superintendent
- S. M. Feith, Director, QA
- *C. H. Koestler, Unit 2 Construction
- *S. F. Tanner, Manager, Nuclear Site QA
- *R. T. Halbach, Administrative Assistant
- *J. F. Hudson, Bechtel QA Manager
- *R. E. Phillips, Bechtel

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 May 15, 1987, 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:

416/87-12-01, Inspector Followup Item. Deficiencies on Standby Service Water System walkdown. (Paragraph 7)

416/87-12-02, Inspector Followup Item. Environmental qualification of wiring in the containment and drywell hydrogen analyzers. (Paragraph 9)

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Deviation 86-26-02. The licensee has issued Equipment Performance Instructions 04-1-03-T46-1, A ESF Switchgear Room Coolers Flow Test and 04-1-03-T46-2, B ESF Switchgear Room Coolers Flow Test, to test the ESF room coolers. Other Standby Service Water (SSW) system discrepancies and licensee actions are addressed in LER 86-029. The flow tests noted above are being conducted every two weeks on the A SSW system and every week on the B SSW system. No further action is required.

(Closed) Violation 416/86-02-01. The licensee conducted a programmatic review of the Updated Final Safety Analysis Report (UFSAR). As a result of that review a summary report of those safety evaluations conducted due to changes made to the initial submittal of the GGNS UFSAR was submitted on February 18, 1987 (AECM-87/0019). The licensee established an overall GGNS Nuclear Production Department requirement for conducting safety evaluations on UFSAR changes. Nuclear Production Department Procedure (NPDP) 5.1, Final Safety Analysis Report (FSAR) Change Request Preparation and Change Notice Review, was issued to control future UFSAR changes. In addition, the licensee accomplished the following tasks:

Screening of all initial UFSAR change notices for need of 10 CFR 50.59 type safety evaluations.

Evaluation of resulting change notices for conducting safety evaluations or addressing the potential commitment deletions for resolution.

Review of all original questions and responses for retention of FSAR commitments.

The QA group conducted a very thorough review of the licensee's change notice review program and found that overall the program was accurate. The inspector reviewed selected UFSAR change notice safety evaluations submitted in the February 18, 1987 report noted above and found no discrepancies. The specific examples noted in this violation have been corrected.

(Closed) Violation 416/86-11-04. The inspectors reviewed the Electrical Superintendent's memorandum to all electrical personnel regarding their responsibilities when lifting a lead or pulling a fuse and verified that the fuse cross reference list was revised to clarify fuse numbers versus system fuse numbers and system valve numbers. The licensed operator training program was verified to include instructions on how to read drawings and fuse location aids to properly determine the correct fuse. Licensed Operator Training (LOT) lesson plan OP-LO-FUN-PR-LP-001-01, Print Reading, adequately addressed the fuse location issue.

(Closed) Violation 416/85-22-03. The licensee conducted a review of open industry documents and NRC documents currently under evaluation by the Operational Analysis Section (OAS) of Nuclear Plant Engineering (NPE) to determine if additional safety significant issues existed and plant staff had not been notified. There were none. A training session on document evaluations was conducted for OAS personnel on September 5, 1985. The inspectors reviewed the attendance list. NPE Administrative Procedure 01-701, Onsite and Offsite Document Review was revised on September 5, 1985 to provide additional instructions on notifications required when a safety significant problem is identified, and the priorities which must be established. No further action is required.

4. Operational Safety Verification (71707)

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, radiation protection controls, physical security, problem identification systems, and containment isolation. At least monthly, the licensee's onsite emergency response facilities were toured to determine facility readiness.

The following comments were noted:

While attending a GGNS Radiation Worker Training course the inspectors learned that health physics personnel were instructing employees that when entering an area that requires the use of Protective Clothing (PC) and a Security Officer is not posted to collect key cards, the key card should be clipped to the outermost garment except when the Health Physics technician at the work station determines that radiological conditions warrant wearing the key card in the chest pocket of the outer PCs. This would allow personnel to be in areas requiring PCs without a key card being visible. After discussing the issue with NRC Region II Security, the inspector informed the licensee that the above instructions did not comply with their Security Plan. A memorandum dated April 23, 1987 from the Security Superintendent to all GGNS employees clarified that the key card must be visible and displayed on the outermost garment at all times while inside radiologically controlled areas except when a security officer is posted to collect and control key cards.

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 work 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 ME3559, 3560 and 3561. General Maintenance Instruction 07-S-14-302, Revision 1, Removal of Water from Diesel Generator Fuel Oil Storage Tank.

MWO M71431. Replacement of Secondary Containment Access Door 1A401 (Auxiliary Building to Turbine Building, 166 ft. elevation).

MWO E72125. Replace and Retest Standby Gas Treatment System B Time Delay Relay T48 62-18.

MWO M72055. Acid Flush of ESF Equipment Room Cooler Q1T46B003B-B (Standby Service Water System).

MWO M72142. Rework Residual Heat Removal C Jockey Pump. Following the removal and rework of the Residual Heat Removal (RHR) C jockey pump and while the licensee was in the process of reinstalling the jockey pump, the inspectors reviewed the work instructions attached to Maintenance Work Order (MWO) M72142 and noted the following discrepancies:

Step 20 of the Work Instruction and Inspection Record (WI&IR), which stated to replace mechanical seals and rework the deflector shield, had been accomplished but was not signed off as completed.

Step 30 of the WI&IR stated to reassemble the jockey pump. This work had been accomplished but was not signed off as completed.

Step 40 of the WI&IR stated to align the pump using General Maintenance Instruction 07-S-14-308, Reverse Indicator Alignment for Rotating Equipment. This step requires a QA witness but the WI&IR was not marked to indicate a QA witness point. Data Sheet II and paragraph 4.4 of this procedure require QA to witness and sign off for safety related components. Maintenance Section Procedure 07-S-01-226, Preparation, Control and Use of Work Instruction and Inspection Records, paragraph 6.4.2 states that following the philosophy that a qualified craftsman builds quality into the product, the Discipline Maintenance Supervisors are responsible for the first line of inspection, and are required to sign/initial and date each line item signifying the completion and acceptance of the item. These discrepancies, although minor, indicate closer attention to detail is needed when performing maintenance activities.

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-ME-1M61-V-0001, Revision 29, TCN 26, Local Leak Rate Test Containment Isolation Valves per MWO ME3053.

06-IC-1C51-Q-0001, Revision 22, APRM Neutron Flux Upscale (Startup) and Recirculation Flow Upscale Calibration (Channel A).

06-RE-1B33-D-0001, Revision 28, Jetpump Functional Test.

06-EL-1B21-M-0001, Revision 26, ADS Timers Functional Test and Calibration.

O6-ME-1M61-V-0001, Revision 29, TCN 26,27 and 28, Local Leak Rate Test. While witnessing the semiannual local leak rate test of the upper containment air lock, the inspectors noted the test rig was not in accordance with Appendix A, Figure A-1 of the above surveillance procedure. Upon questioning the maintenance supervisor, The inspectors found the procedure to be ambiguous enough to permit an interpretation that allows deviation from the required test method. For example, step 5.4.6 requires the air flow test to be performed using the test method described in Appendix A, which in turn implements Figure A-1 for the testing configuration. At the same time, step 5.4.6.a requires pressurization of the air lock using full instrument air pressure, which is not possible when using the test rig per figure A-1. Thus the mechanics disconnected a tubing joint in the test rig and connected instrument air directly to the airlock. The test pressure gauge had to be isolated, however, while pressurizing the air lock because instrument air pressure was higher than the gauge range. The mechanics used the installed airlock pressure gauge as a backup. This ambiguity and others were discussed with the licensee's representatives and a commitment was made to amend the procedure to clearly state how the test is to be conducted prior to the next containment airlock 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 Division 3 Standby Service Water (SSW) System, and the Divisions 1 and 2 SSW Basin and Pump Room complex. 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:

Piping and Instrument Diagram (P & ID) M-0030A, Legend, indicates that valves on P & IDs which are normally closed are annotated with a "C", and those which are normally open are not annotated. On P & ID M-1061B, Revision 25, SSW System Unit 1, valves FX070, FX069, FX073, FX074, FX075, FX061, FX062, and FX058 are not annotated, thus indicating a normally open position, when according to the System Operating Instruction, SOI 04-1-01-P41-1, Revision 29, SSW System, Attachment I, these valves are required to be closed. Thus the P & ID should have a "C" annotation for the valves. Also, the P & ID shows manual valve F013 "F0" (fails open) when the SOI requires "L0" (locked open).

The 2 1/2 inch HBC-158 section of HPCS pump roomcooler return piping, in the HPCS pump room before it exits through the wall, has a plugged penetration (similar to a reducing tee) which does not appear on P & ID M-1061B.

According to the local valve position indicator on SSW A Recirculation Isolation Valve FO02A, the valve is locked shut. The valve lineup, Attachment I to SOI 04-1-01-P41-1, requires the valve to be locked in a 48 percent open position. The Control Room was notified, and they stated that there is a Maintenance Work Order 66994 that was issued on October 11, 1986 to repair the position indicator, and surveillance test results indicate the valve is in the proper throttled position.

The local position indicators on valves F015A, F016A, F007B, F006A, and F006B cannot be read, i.e.,the plastic cover is damaged, the indicator plate was removed, etc.

The actuator gear boxes on FO15A and B are leaking oil.

Check valves F008A, F008B, F012, and F216A are not labelled.

On Page 2 of SOI 04-1-01-P41-1 Attachment II, F005A handswitch panel number P807-1C should be P870-1C. F160B handswitch panel number P870 should be P870-7C. On page 4 of the same attachment, the F068B handswitch number HS-M008A should be HS-M008B.

On Page 7 of SOI 04-1-01-P41-1 Attachment III, Panel Number 1521 should be 15P21. On Page 8 of the same attachment, Panel Number 17D01 should be 17B01.

Correction of the above deficiencies shall be tracked under Inspector Followup Item 416/87-12-01.

No violations or deviations were identified.

8. Reportable Occurrences (90712 & 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.

LER No	Event Date	Event
86-006	February 14, 1986	Fire rated seals in control room envelope found violated.
*87-003	February 25, 1987	Both trains of Standby gas treatment system inoperable due to personnel error.
*87-004	February 27, 1987	Valve operability surveillance delinquent due to personnel error.

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 May 1, 1987 at 10:40 p.m., Reactor Core Isolation Cooling (RCIC) turbine steam supply inboard isolation valve E51F063 inadvertently isolated. An Instrumentation and Controls (I & C) technician was in the process of filling, venting and returning to service the Residual Heat Removal (RHR)/RCIC steam line flow transmitter per Maintenance Work Order (MWO) IN5744. An Impact Statement to General Maintenance Instruction 07-S-13-48, Filling, Venting and Equalizing Sensing Lines, cautions the technician to ensure that the trip unit is in an untripped condition prior to placing the trip unit back in service, or an RCIC isolation will occur. The technician's digital voltmeter was incorrectly selected to read current instead of voltage, and when plugged into the test jacks on the trip unit caused a trip and resulting isolation. The technician recognized the problem, removed the test equipment and RCIC was returned to operable status. Incident Report 87-5-2 was written to document this event.

On May 7, 1987 the licensee notified the NRC of a potential deficiency in the environmental qualification of wiring used in the containment and drywell hydrogen analyzers. The licensee became aware that the wire in question (14 AWG (UL) AWM, Rockbestos, CSA, SFW-2, 200 C) was not purchased as environmentally qualified panel wiring but was subsequently installed in all four post-LOCA hydrogen analyzer panels. The licensee initiated Material Non-Conformance Report (MNCR) 00166-87 to document the finding. A telecon was held on May 7, 1987 with the Licensee, NRR, Region II and the Resident Inspectors to discuss the licensee's planned actions. Based on engineering evaluations made up to that time, the licensee explained why they felt they could justify continued operation and committed to have the written Justification for Continued Operation (JCO) available by that evening. The residents reviewed the JCO with Nuclear Plant Engineering representatives and had no comments. The actions taken by the licensee appear to meet the guidance of Generic Letter 86-15 for when a licensee discovers a potential deficiency in the environmental qualification of equipment. The final resolution of the qualification of the subject wiring will be tracked under Inspector Followup Item 416/87-12-02.

On May 11, 1987 the licensee notified the residents of a potential problem with the reactor vessel water level instruments. A channel check had shown a 4 inch level differential between the reactor vessel water level instruments which was the licensee's limit thus requiring initiating an

investigation. The licensee's investigation indicated that the level instruments with detectors connected to the A condensing pot were slowly trending in the higher level direction. After analyzing the condition the licensee decided that the A reference leg should be filled. This could purtebate all the reactor level detectors connected to the A condensing pot, therefore the licensee considered it prudent to bypass all of the trips associated with those instruments. The Technical Specification (TS) did not facilitate this for the ATWS Recirculating Pump Trips. On May 13, 1987 the licensee contacted NRR and Region II for possible discretionary enforcement. TS 3.3.4.1, ATWS Recirculation Pump Trip System Instrumentation, has a Limiting Condition for Operation (LCO), action statement b, that permits one inoperable channel per trip system for up to 14 days. To make both channels in one trip system inoperable would require entry into the TS 3.0.3 statement which permits operation for only one hour before shutdown actions are required. The licensee's Technical Support Instruction, 09-S-06-1, Technical Specification Instrumentation Loop Logic, for TS table 3.3.4.1-3 stated that reactor vessel water level trip units N699A and N699B comprised one trip system and level trip units N699E and N699F comprised the redundant trip system. Trip units N699A and N699B both use the reference leg connected to condensing pot A.

While the NRC was considering the licensee's request for discretionary enforcement, the licensee discovered a letter to the NRC dated June, 1984 (AECM 84/0319) that revised the definition of these trip systems such that level instruments N699A and N699E comprised one trip system and N699B and N699F comprised the second trip system. Based on the revised definition, the licensee could bypass the level trips associated with the A reference leg condensing pot and meet TS 3.3.4.1 action statement b. On May 13, 1987 the licensee bypassed the necessary reactor vessel level instrumentation as allowed by TS, and filled the A reference leg condensing pot. The level discrepancy was eliminated, however the reason for the loss of level in the A reference leg has not been identified. The licensee is monitoring water levels to determine if the condition reappears. Three Material Non-Conformance Reports (MNCRs) were written (MNCRs 0168-87,0169-87 and 0170-87) to document the level instrumentation discrepancies. A Quality Deficiency Report (QDR) 225-87 was written to document the incorrect channel/trip system arrangement defined in procedure 09-S-06-1.

No violations or deviations were identified.

10. Inspector Followup and Unresolved Items (92701)

(Closed) Unresolved Item 416/85-06-03. The licensee has revised Administrative Procedure 01-S-06-26 to provide more guidance on performing a post trip analysis.

(Closed) Inspector Followup Item 416/86-02-04. During the first refueling outage the licensee incorporated Design Change Package (DCP) 85/3100 to install additional 8 hour emergency lighting units to all areas essential to safe shutdown. DCP 85/3100 was reviewed and closed in Inspection Report 416/86-37.

(Closed) Inspector Followup Item 416/86-20-01. The updated Final Safety Analysis Report, paragraph 4.6.1.1.2.4.2.4 has been updated to reflect the correct location of the control rod drive temperature recorder.

(Closed) Inspector Followup Item 416/87-10-01. Inadequacy of Standby Diesel Generator fuel oil valve pit covers. The licensee redesigned, fabricated and installed valve pit covers which appear to be adequate to prevent rain water from entering the pits and at the same time provide the necessary security.

NRC Inspection Report 416/86-03 discussed an inspection of the GGNS Design Program which included a review of the dispositioning of Material Non-Conformance Reports (MNCRs), 10 CFR 50.59 Safety Evaluations, and plant staff interface. It was noted that escalation for resolution of differences that could occur at the interface between plant staff and Nuclear Plant Engineering (NPE) was not addressed in any procedures. The licensee committed to review and update the NPE procedure manual appropriately. On June 2, 1986, NPE Administrative Procedure 01-204, Revision 0, Escalation, was implemented. The inspectors reviewed the procedure and noted that it provides guidance for the process to be followed in the resolution of disputes or disagreements.

(Open) Inspector Followup Item 416/86-17-04. Paragraphs 6.2.1.1.5.8, 6.2.2.2 and 6.5.2.2 of the Updated Final Safety Analysis Report (UFSAR) still do not accurately describe the features required to automatically initiate the Containment Spray System (CSS). Following the initiation of the Low Pressure Coolant Injection (LPCI) systems (A or B), automatic initiation of the CSS requires the timing out of a 10 minute timer, with the presence of a high drywell pressure signal and a high containment pressure signal. This logic then opens the containment spray valve and closes the LPCI injection valve. This item remains open until the UFSAR accurately reflects the CSS operation.

(Closed) Inspector Followup Item 416/86-39-01. The inspectors have periodically inspected the airlock door seals and noted that the licensee has minimized the use of lubricant such that there is no visible evidence of lubricant. Surveillance Procedure 06-ME-1M23-V-0001, Containment and Drywell Airlock Seal Leak Test, still allows a moderate application of suitable lubricant to be used to enhance inflatable seal performance.

(Closed) Temporary Instruction 2515/80. The data collection for the performance indicator trial program has been completed. The NRC performance indicator program has been revised based on the trial data collected. This task is complete.

(Open) Inspector Followup Item 416/86-32-02, SSW vent line operation. On October 9, 1986 the inspectors informed the licensee that section 5.1.2.c of SOI 04-1-01-P41-1, SSW System, can mislead the operator into accepting an abnormal condition if it becomes necessary to add water to the SSW

Basin siphon line. On February 25, 1987 a Temporary Change Notice was issued to correct this. On March 30, 1987 the change was incorporated by Revision 29 of the SOI. Upon reviewing this section of the SOI the inspectors noted several other discrepancies. The two notes preceding the procedure steps appear to be confusing. One note states to vent after level is restored above 7.25 feet, and the other states to only vent after level has increased above 6.67 feet. Step 5.1.2.c.(1) requires the operator to remove the blind flange to access valve F304. The flange does not prevent access to the valve. Step 5.1.2.c.(4) states to add water to the vent line if required. If the water level in the vent line is less than the basin, there is probably a problem that places the operability of the siphon in question, and adding water to the vent line would not be an acceptable solution. This was discussed with the licensee.

(Closed) IFI 416/82-56-01. Automatic Sprinkler protection to be provided for area 1A424 prior to the first refueling outage. The licensee issued and implemented Design Change Package (DCP) 83-0003. The design change provided the design and installation of a wet pipe sprinkler system in Fire Zone 1A424 on Elevation 166 feet of the Auxiliary Building. The licensee submitted a Technical Specification (TS) change to the NRC and received approval under an amendment 15 of the TS. The inspectors reviewed the applicable documentation and toured Fire Zone area 1A424 to confirm the installation of the sprinkler system.

(Closed) Inspector Followup Item 417/85-02-01. Inspector followup items 416/85-05-01 and 417/85-02-01 were initiated to determine the licensee's actions to clarify the responsibilities for the coordination of closing of open items. 416/85-05-01 was closed in Inspection Report 416/ 87-10 and 417/85-02-01 should have been closed at that time.

No violations or deviations were identified.

11. Maintenance Program Implementation (62700)

The objectives of this inspection were to determine whether the GGNS maintenance program is being implemented in accordance with regulatory requirements, and to determine the ability of the licensee to conduct an effective maintenance program on important plant equipment.

The inspectors selected records and procedures pertaining to safety related and non-safety-related equipment failure leading to a plant shutdown, equipment failure leading to reduced capability of a safety related system, and a recurring safety related equipment failure.

Parts of this inspection were conducted prior to this reporting period, starting in April 1986. The results are documented in NRC Inspection Reports 416/86-11, 86-13, 87-01 and 87-05.

During this reporting period, the inspectors completed a review on recurring safety related equipment failures. The inspectors selected, at random, the continued failures of the Off-Gas Hydrogen Analyzers.

Since the Off-Gas System has been placed in service in 1983, the Hydrogen Analyzers have experienced repeated failures, largely due to wetting of the hydrogen sensor. The electrochemical hydrogen sensors are galvanic in nature and are in an acid electrolyte system separated from the sample atmosphere by a gas-permeable membrane. As this membrane became wetted due to moisture, less hydrogen permeated and the sensor became less sensitive than it must be for the analyzer to properly indicate hydrogen concentration in the Off-Gas System effluent. The licensee concluded that the principal source of water was the inventory maintained in the analyzer chamber (Sample Detection Assembly) to act as a coolant and flame arrester. A Design Change Package (DCP 84/4045) was implemented during the 1986 refueling outage which modified the hydrogen analyzer chamber assemblies on both units to allow the water to be removed from them and still provide the required flame arresting capability. A high analyzer temperature detector was installed which causes the sample inlet to be isolated if a high temperature should occur.

Subsequent to startup in January 1987, the Hydrogen Analyzers continued to exhibit repeated failures. Again, a failures were attributed to moisture on the hydrogen sensors. The licensee performed a series of tests, which included running one of the units for an extended period of time on a relatively dry, zero purge instead of the Off Gas sample. After about two months of such operation it appeared that moisture in the sample gas was causing the same problem that the units were experiencing when there was water in the sample detector assemblies prior to implementation of the DCP above. The licensee is currently developing DCP 87/0058, which will add sample moisture removal equipment. General Electric is providing technical assistance and will furnish the necessary hardware. At the present time one hydrogen analyzer is operating and the other is standing by on a zero purge. The performance of both units is being monitored on a Control Room recorder.

The inspectors witnessed portions of the work and reviewed associated documentation and found no problems except that the operation and maintenance manual, 74SD4244AD, Revision 1, Off Gas Hydrogen Analyzer Model OGA 200AD, was not updated to reflect changes made by DCP 84/4045. The DCP contained copies of amended manual pages, however, which provided the necessary operating and maintenance instructions for the units as modified. The licensee was using the vendor manual and the amended manual pages for reference.

No violations or deviations were identified.

12. Review of Quality Assurance for Unit 2 Extended Construction Delay (92050)

This inspection was conducted to provide a periodic review of Quality Assurance (QA) activities for a construction site under an extended delay. The inspection was to determine whether the licensee had established adequate implementation plans, instructions and procedures which are in conformance with the established QA plan. Construction activities for Unit 2 are presently on hold until management makes a further decision in late 1989.

A Preventive Maintenance (PM) program for Q-listed and balance of plant equipment is the responsibility of Bechtel Power Corporation, the Architect-Engineer for the project. Construction Work Plan/Procedures WP/P-14, Material Control, and WP/P-15, Maintenance of Materials and Equipment, are the controlling documents for the PM program during this delay period. Bechtel controls and tracks the frequency of maintenance and inspections of all equipment by the use of their Instorage Maintenance System Bulk Listing (Job No. 09645001). The inspector reviewed the applicable procedures, walked through the Unit 2 power block and the Clinton Warehouse and verified that the equipment is properly maintained as described in the above procedures.

The following components were verified to have received the proper PM:

HPCS Motor Operator Valve E22-F023 Inspected 4/12/87 For coverings Inspected 4/02/87 For visual

Control Rod Drive water Pump Motor C11C001A Inspected 5/04/87 For visual Inspected 4/30/87 For space heaters

Local Panel H22P055A Inspected 5/01/87 Heat lamps installed and energized Inspected 4/28/87 For visual

Component Cooling Water Heat Exchanger P42B001A Inspected 4/03/87 For visual Inspected 3/25/87 To verify gauge operability

Cooling Water Pump Motor P49C001A Inspected 4/22/87 For visual Inspected 4/07/87 For lubrication

Load Center R20S220E Inspected 5/01/87 For visual

Reactor Vessel B13D003 Inspected 4/24/87 Energize/check space heaters Inspected 4/24/87 Special Instruction to insure relative humidity maintained below the dew point

ADS Valve Air Receiver B21A100A Inspected 4/17/87 For visual Inspected 4/04/87 For desiccant/ humidity indicator Electrical Penetration R60M014B Inspected 4/19/87 For visual Inspected 4/19/87 For nitrogen blanket 5-10 psi

Main Steam Stop and Control Valve N31D001 Inspected 4/21/87 Check desiccant/ humidity indicator Inspected 4/20/87 Apply rust or corrosion preventive to all machined surfaces

Fuel Pool Heat Exchanger G41B001A Inspected 3/20/87 Nitrogen blanket 2-5 psi Inspected 3/02/87 For Visual

Limitorque Valve SQ-6-DBB-MO-F045 E51 F045 Inspected 4/13/87 Apply rust or corrosion preventive to all machined surfaces Inspected 4/14/87 For visual

The System Energy Resources, Inc. (SERI) QA organization is required to perform audits of Bechtel to assure compliance with their QA program and to assure that they are acceptably implemented. The inspectors reviewed the following QA audits conducted by the SERI QA organization for compliance to the QA manual:

MAR 87/2-0001 Unit 2 MAR 87/2-0002 Unit 2

No violations or deviations were identified.