

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

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

Report No: 50-400/98-08

Licensee: Carolina Power & Light (CP&L)

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road
New Hill, NC 27562

Dates: August 16 - September 26, 1998

Inspectors: J. Brady, Senior Resident Inspector
R. Hagar, Resident Inspector in training
W. Rogers, Senior Reactor Analyst (Section E8.3)

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

Enclosure 2

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EXECUTIVE SUMMARY

Shearon Harris Nuclear Power Plant, Unit 1 NRC Inspection Report 50-400/98-08

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection and the results of an in-office review of an open item by a senior reactor analyst.

Operations

- The conduct of operations was in accordance with applicable procedures. Operational decision making during the down-power evolutions was conservative (Section O1.1).
- Procedures were being appropriately followed. The operations procedures for synchronizing to the grid and starting a second feedwater pump needed improvement. The procedure for synchronizing to the grid did not always provide for a smooth transfer from the steam dumps to the main turbine. The procedure for starting a second feedwater pump required stable steam generator levels to place the feed regulating valves back in automatic. This resulted in the operator's attention being focused primarily on the feed regulating valves for an excessive period of time (Section O3.1).
- Self-assessment activities were being properly performed in accordance with procedural requirements (Section O7.1).

Maintenance

- Maintenance activities were performed in accordance with the work instructions. Thorough planning was evident in the process instrumentation control cabinet power supply replacement work packages in relation to identification of potential problems (Section M1.1).
- Surveillance tests were conducted in accordance with applicable procedures and proved operability of the subject equipment (Section M2.1).
- The licensee did a good job, during the review and approval cycle for each work week schedule, of assessing the effects of planned activities on plant risk, as required by the Maintenance Rule. (Section M7.1).
- The on-line maintenance backlog was being better managed than it had been in the previous two years (Section M6.1).

Engineering

- Troubleshooting efforts associated with a trip of a heater drain pump were ineffective. The site troubleshooting procedure did not include sufficient guidance for planning and conducting troubleshooting activities to ensure a systematic and analytical approach to troubleshooting was used. The licensee recognized that inadequacy (Section E4.1).



- A Non-Cited Violation was identified for failure to perform Quality Assurance audits of off-site activities (Section E8.1).
- A Non-Cited Violation was identified for implementing an Unreviewed Safety Question (USQ) without prior Commission approval. The USQ involved a calculated increase in the dose consequences of a design basis accident for the cycle 6 fuel load (Section E8.2).
- A Violation was identified for failure to document an incorrect safety evaluation as an adverse condition. This Violation was an example of a larger problem related to enforcement of corporate standards for off-site activities (Section E8.2).

Plant Support

- The control of contamination and dose for the site was good and was attributable to good teamwork between the various departments. Teamwork was exemplified by the tank desludging effort which reduced dose rates in the floor drain tank area by a factor of approximately 100 (Section R1.1).
- The performance of security and safeguards activities were in accordance with applicable procedure and the security plan (S1.1).
- Fire Protection equipment was being adequately maintained in accordance with procedures. A fire brigade drill observed was adequately conducted and evaluated by licensee personnel. Performance of the fire brigade demonstrated that they were trained to control the fire (Section F1.1).

Report Details

Summary of Plant Status

Unit 1 began this inspection period at 100 percent power. Power was reduced on August 20 for the repair of a condenser tube leak. Power was returned to approximately 100 percent on August 22. Power was reduced to 95 percent on September 9 for the end-of-life moderator temperature coefficient test. A heater drain pump trip on September 11 prompted the licensee to reduce power to 91 percent and then to 86 percent on September 12. Power was returned to 100 percent on September 14. At the end of the period the unit had been on-line continuously for 390 days.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

a. Inspection Scope (71707)

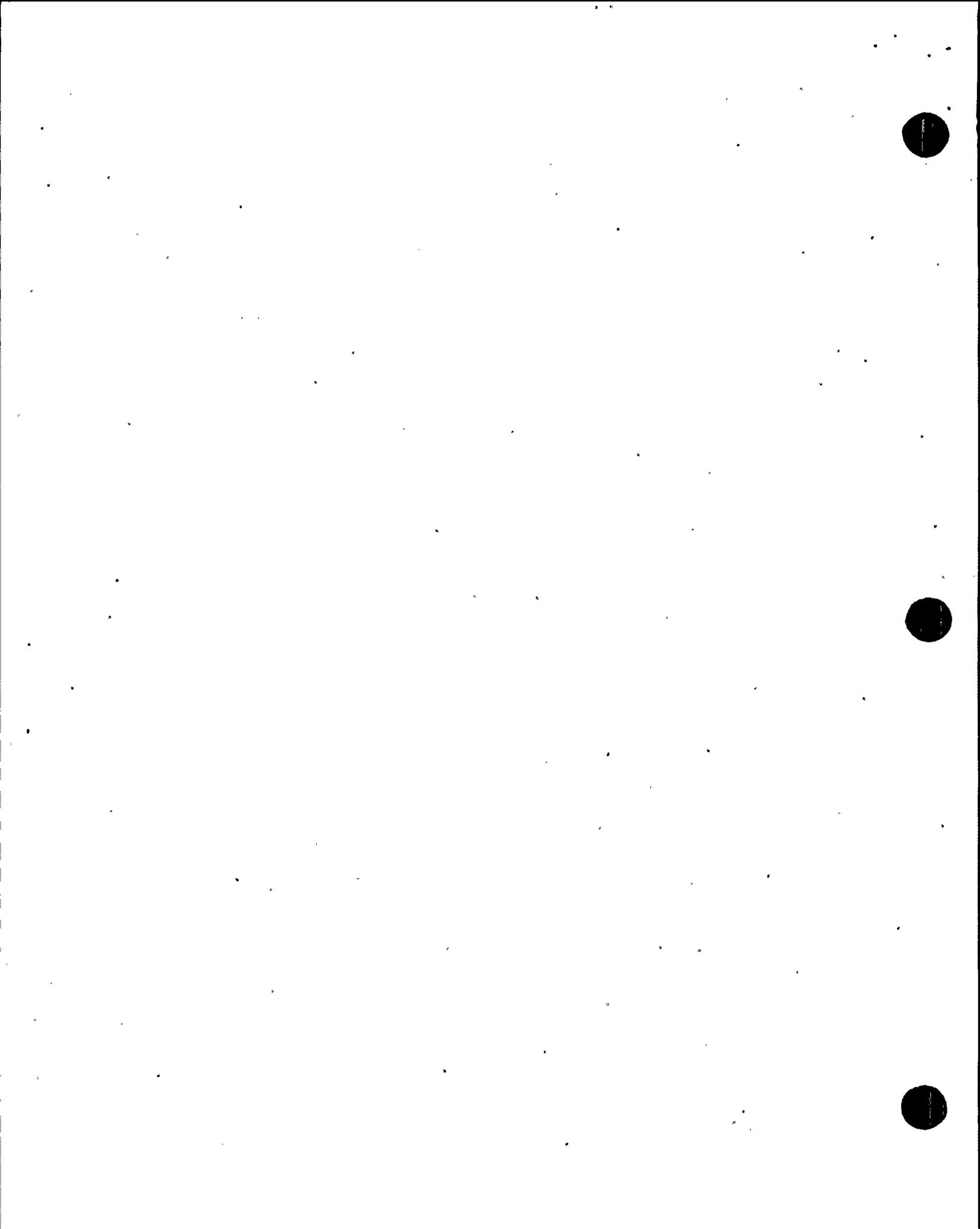
The inspectors conducted frequent reviews of ongoing plant operations including control room tours, shift turnovers, control room staffing, observation of operations surveillance activities, and review of operations logs.

b. Observations and Findings

In general, the conduct of operations was professional and safety-conscious. Routine activities were adequately performed as required by procedures. Operations shift crews were sensitive to plant equipment conditions and maintained a questioning attitude in relation to unexpected equipment responses. Alarm response procedures were being consulted when alarms occurred. Operators were knowledgeable of the tasks being performed and auxiliary operators adequately communicated their activities to the main control room. Operations performance during the down-power evolutions for the condenser tube leak repair and the heater drain pump problems were in accordance with required procedures. The inspectors found that logs were being appropriately maintained. Operational decision making was conservative. Two observations on Procedure GP-5, "Power Operation (Mode 2 to Mode 1)," Revision 20, are contained in Section O3.1.

c. Conclusions

The conduct of operations was in accordance with applicable procedures. Operational decision making during the down-power evolutions was conservative.



O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Feature System Walkdowns (71707)

The inspectors walked down accessible portions of the Containment Spray System. The inspectors found that equipment operability, material condition, and housekeeping was acceptable, and that the operational status of this system was in accordance with Technical Specification (TS) requirements. No discrepancies were noted.

O3 Operations Procedures and Documentation

O3.1 Procedures for Power Operations

a. Inspection Scope (71707)

The inspectors observed plant operators during the return to power following the condenser tube leak on August 22, 1998, and observed simulator training to assess procedural implementation during startup.

b. Observations and Findings

The inspectors noted two areas for improvement with procedure GP-5," Power Operations (Mode 2 to Mode 1)," Revision 20.

The first area of improvement concerned starting of the second Main Feedwater (MFW) pump followed by return of the MFW regulating valves to automatic control. During the return to power, the inspectors observed that the operators placed the MFW regulating valves in manual control prior to starting the second MFW pump and waited 10-15 minutes to ensure steam generator levels were stable prior to shifting MFW regulating valves to automatic control. The inspectors found these actions were in accordance with the procedure. However, maintaining the valves in manual control requires the balance-of-plant operator to continuously attend the valves, which could complicate the operators' response to a plant transient. The inspectors discussed this issue with the operations and training staffs, observed several simulator demonstrations, and noted that the MFW regulating valves need not be in manual mode longer than is required to match feed flowrate and steam flowrate. The licensee agreed with the inspectors' observations and agreed that the procedural guidance should be changed.

The second area for improvement to GP-5 related to synchronizing the plant main generator to the grid. In NRC Inspection Report (IR) 50-400/97-09 section O2.1, the NRC had discussed the history of transients that had been introduced by the synchronization procedure. Two problems noted during synchronization included steam generator level transients and control of Reactor Coolant System average temperature (Tave).

The licensee had revised the procedure to achieve a smooth synchronization to the grid without transients. The PNSC had reviewed the procedure change, observed the implementation of the revised procedure on the plant main control room simulator, and

concluded that the change was adequate. On September 3 GP-5 was utilized for synchronization in the plant simulator. The inspectors observed that steam generator levels remained essentially constant, which was a significant improvement. The synchronization was smoother than the ones observed with the old procedure. However, the inspectors observed a two percent step increase in power at synchronization, instead of a simple transfer of steam demand between the steam dump valves and the main turbine, with no power change. The power mismatch caused Tave to drop immediately after synchronization, prompting the operators to pull control rods to control the temperature transient. The inspectors found that the cause for the step jump in power, which produced the temperature transient, was that the parameter bands specified for presynchronization power and temperature were two percent too low. The inspectors determined that the procedure revision was ambiguous and did not provide sufficient guidance to achieve a bumpless transfer without a temperature transient. The inspectors learned that the procedural weakness was known by the licensee who continued to train operators on the procedure. The licensee continues to have difficulty in implementing problem resolution for this issue.

c. Conclusions

Procedures were being appropriately followed. The operations procedures for synchronizing to the grid and starting a second feed pump needed improvement. The procedure for synchronizing to the grid did not always provide for a smooth transfer from the steam dumps to the main turbine. The procedure for starting a second feed pump required stable steam generator levels to place the feed regulating valves back in automatic, which resulted in the operator's attention being focused primarily on the feed regulating valves for an excessive period of time.

O6 Operations Organization and Administration

O6.1 Review of World Association of Nuclear Operators (WANO) Report (71707)

The inspectors reviewed the WANO report, dated June 23, 1998, and found that the report findings were consistent with the field notes, which were reviewed in NRC IR 50-400/98-06. The inspectors found the report contained no safety issues that required immediate NRC attention.

O7 Quality Assurance in Operations

O7.1 Review of Quality Assurance Activities

a. Inspection Scope (40500, 71707, 92901)

During the inspection period, the inspectors reviewed multiple licensee quality assurance activities, including:

- Condition Reports;
- Nuclear Assessment Section (NAS) Audits on Corporate Fuels (HNAS 98-141) and Procurement and Contracting (HNAS 98-142);

- the Plant Nuclear Safety Committee (PNSC) meeting on September 21;
- the Nuclear Safety Review Committee (NSRC) meeting on August 20;
- Operations self-assessments

b. Observations and Findings

The NAS audits were being performed to satisfy requirements from the Quality Assurance Plan that had not been met in the past, as discussed in Section E8.1. The inspectors observed that TS requirements for the PNSC were met and that the discussion was thorough. The NSRC meeting met the quarterly requirement and entailed vigorous discussion.

c. Conclusions

Self-assessment activities were being properly performed in accordance with procedural requirements.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors observed all or portions of the following work activities:

- WR/JO 98-AFZG1 4A Feedwater Heater Problems
- WR/JO AMCR-001 Process Instrumentation Control (PIC) Cabinet 9 Primary Power replacement
- WR/JO APLM-001 PIC Cabinet 2 Primary Power replacement

b. Observations and Findings

The inspectors found the work performed under these activities to be professional and thorough. All work observed was performed with the work package present and in active use. Technicians were experienced and knowledgeable of their assigned tasks. The inspectors frequently observed supervisors and system engineers monitoring job progress, and quality control personnel were present whenever required by procedure. Peer-checking and self checking techniques were being used.

The replacement of the PIC Cabinet 2 primary power supply was delayed because of a problem with the card/connector for B-loop T-hot (T422). This problem was discovered when the primary power supply was deenergized and the card did not pick up on the secondary power supply. While handling this problem, operations and maintenance personnel communicated and coordinated well, and were able to promptly determine the correct course of action. The work package was written such that potential problems

were anticipated with equipment transferring to the secondary power supply. Steps were placed in the work instruction to verify that all equipment had properly transferred. This forethought in the work instructions ensured that equipment operability was addressed prior to proceeding with the power supply replacement.

c. Conclusions

Maintenance activities were performed in accordance with the work instructions. Thorough planning was evident in the process instrumentation control cabinet power supply replacement work packages in relation to identification of potential problems.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Surveillance Observation

a. Inspection Scope (61726)

The inspectors observed all or portions of the following surveillance tests:

- OST 1073 "Emergency Diesel Generator Operability Test Monthly Interval," Revision 12
- MST I0272 "Hydrogen Analyzer HAIC-21WG-1118 BW," Revision 13, for waste gas recombiner.
- EST-209 "Type B Local Leak Rate Tests," Revision 11, for Emergency Air Lock Door.
- OST-1111 "Auxiliary Feedwater Pump 1X-SAB Operability Test Monthly Interval," Revision 8
- EST-702 "Moderator Temperature Coefficient - EOL," Revision 12
- OST-2044 "Radwaste Daily Operations Surveillance Test," Revision 15

b. Observations and Findings

The inspector found that the testing was adequately performed. One procedural clarification was identified for procedure EST-209 which the licensee addressed by the issuance of Condition Report (CR) 98-02301. The clarification pertained to proceduralizing a necessary step that was not in the procedure, being utilized by licensee personnel.

c. Conclusions

Surveillance tests were conducted in accordance with applicable procedures and proved operability of the subject equipment.

M6 Maintenance Organization and Administration**M6.1 Maintenance Backlog (62707)**

The inspectors reviewed the maintenance department monthly report for August in relation to management of the on-line work backlog. The licensee's goal for on-line backlog was 300 items. During the previous SALP period, March 1996 to January 1998 (22 months), the licensee was near the goal in only two months, with a peak in May, 1997, of 737 items. Since then the maintenance department and site management have been effective in significantly reducing the backlog. In 1998, the licensee maintenance backlog was between 300 - 350 items for the entire period, and between 300 - 325 items for the past seven months. The inspectors concluded that the on-line backlog was being better managed than it had been in the previous two years.

M7 Quality Assurance in Maintenance Activities**M7.1 Plant Safety Assessments Before Taking Equipment Out-of-Service****a. Inspection Scope (62707)**

The inspectors examined the licensee's safety assessments required by paragraph (a)(3) of the Maintenance Rule (10 CFR 50.65).

b. Observations and Findings

During each work week the licensee follows a schedule that has been developed, reviewed, and approved in preceding weeks. Determining the risk impact of removing equipment from service appeared to be a key element of the review and approval process for the work-week schedules. As each work-week schedule is being finalized, an engineer in the Probabilistic Safety Assessment (PSA) work group identifies the different plant configurations that will be established during the week, and calculates an updated Core Damage Frequency (CDF) for each configuration, using the Equipment Out Of Service (EOOS) module of the CAFTA risk-assessment software package. If he notes any high-risk configurations that would result from planned component outages, the PSA engineer notifies the work-week manager, and plans are changed as necessary to avoid those configurations. For the final schedule, the PSA engineer prepares a plot that charts instantaneous CDF versus time through the work week, and routinely distributes that plot to the work control center manager and the work-week managers.

c. Conclusions

The licensee does a good job, during the review and approval cycle for each work week schedule, of assessing the effects of planned activities on plant risk, as required by the Maintenance Rule.

III. Engineering

E4.1 Troubleshooting of Plant Events

a. Inspection Scope (37551)

The inspectors observed troubleshooting activities associated with a recent heater drain pump trip to assess whether problem analysis techniques, observed to be ineffective in the NRC SALP Report, 50-400/98-99, and in NRC Violation 50-400/98-01-01, had improved.

b. Observations and Findings

On September 10, while the plant was operating at approximately 95 percent power, heater drain pump (HDP) "A" tripped for unknown reasons. A troubleshooting team was assembled to investigate the cause of the trip and determine appropriate corrective actions.

The inspectors observed a meeting of the troubleshooting team which concluded that the HDP had tripped in response to a low level in Feedwater Heater (FWH) 4A. The troubleshooting team shifted its focus to the cause(s) of the low level in the FWH.

In a later meeting of the team, the inspectors observed that the team had concluded that FWH 4A had experienced a major loss of tube integrity. The inspectors also noted that subsequent testing of the FWH revealed that no tubes had failed. The inspectors reviewed CR 98-02262 which reported that while checking instrumentation prior to placing the FWH back in service, technicians discovered that four valves on the FWH 4A level control systems were out of position. The CR noted that the misaligned valves "may have contributed to inadequate level control and trip of the pump". (The troubleshooting team had not previously checked the subject valves.) The inspectors examined the subject valves, and concluded that their misalignment could have contributed to erroneous FWH level signals being supplied to the level control system. After properly aligning those valves, operations personnel restored FWH 4A to service, verified that it was operating properly, and subsequently restarted HDP A and restored the plant to 100 percent power. Noting that the troubleshooting team had mistakenly diagnosed FWH tube failures, and that properly aligning several previously misaligned instrumentation valves apparently restored FWH 4A to proper operation, the inspectors concluded that the troubleshooting efforts were ineffective.

When the inspectors questioned troubleshooting team members about available procedural guidance for troubleshooting activities, the team members mentioned only MMM-027, "Troubleshooting Guide," Revision 10. The inspectors reviewed the current revision of MMM-027, and noted that:

- Historically, this procedure had been put in place as guidance to assist maintenance technicians in distinguishing between those activities which could be performed under a troubleshoot-and-repair work ticket and those which required a more formal troubleshooting effort. After problems with



troubleshooting were identified in 1997 by the NRC (see SALP Report 50-400/98-99), additional guidance related to development of a troubleshooting plan was placed in the procedure.

- The procedure provided no guidance for either the composition of a troubleshooting team, or the activities that the team should complete.
- Although the procedure directed the preparation of a "detailed troubleshooting plan," the procedure provided little guidance that could assist the preparer of such a plan; it mentioned none of various systematic techniques that could be used to help the preparer of the plan determine and clarify the scope of the problem, decide what facts to seek, determine probable causes and contributing factors, and arrange and organize troubleshooting results in an orderly manner.
- The procedure provided no guidance for analyzing and evaluating information gathered and/or developed through troubleshooting activities, or for developing valid conclusions and recommendations based on that information.

The inspectors concluded that procedure MMM-027 did not include adequate guidance for planning and conducting troubleshooting activities.

The licensee acknowledged that MMM-027 did not provide adequate troubleshooting guidance by initiating CR 98-02318, which stated that, "during the recent heater drain pump troubleshooting effort, there was a lack of analytical formality and a lack of a formal site wide process in the initial troubleshooting efforts. This is not as is intended to be in MMM-027."

c. Conclusions

Troubleshooting efforts associated with a trip of a heater drain pump were ineffective. The site troubleshooting procedure did not include sufficient guidance for planning and conducting troubleshooting activities to ensure a systematic and analytical approach to troubleshooting was used. The licensee recognized that inadequacy.

E4.2 Engineering Support of Surveillance Testing

a. Inspection Scope

The inspectors reviewed the performance of procedure EST-702, "Moderator Temperature Coefficient - EOL," Revision 12.

b. Observations and Findings

Three reactor systems engineers and the reactor systems engineering supervisor supported operations in the completion of engineering surveillance test procedure EST-702, on September 9. The reactor systems personnel did not interfere with or distract control room operators during this test, and requested plant manipulations only through the unit senior control operator. While conducting this test, both the reactor systems personnel and the control room operators referred frequently to the procedure,



and conducted the moderator temperature coefficient test in accordance with the instructions. The inspectors concluded that engineering support for the moderator temperature coefficient test was both adequate and appropriate.

c. Conclusions

Engineering support for the end-of-life moderator temperature coefficient test displayed good teamwork with the control room operators.

E8 Miscellaneous Engineering Issues (92700, 92903)

E8.1 (Closed) URI 50-400/98-04-04: Harris Energy & Environmental Center (HEEC) metallurgical/analytical procedures. This unresolved item was opened to review the root cause and further assessments related to the failure of the HEEC metallurgical/analytical laboratories to satisfy the corporate Quality Assurance (QA) program requirements, as described in assessment H-MC-98-01. The subject inspection report described the licensee's initial corrective actions and the evaluation which determined that no operability concerns were identified. The report also described that the licensee had identified that the nuclear assessment section had missed assessments of the HEEC work groups that were required by the corporate QA program.

The inspectors noted that the licensee completed a root cause evaluation for this issue, and conducted assessments of several other licensee offsite support work groups, to determine the level of compliance with corporate QA program requirements among those groups. The inspectors reviewed root cause evaluation and assessment reports H-NF-98-01 (Nuclear Fuels), H-SP-98-07 (Procurement and Contract Services), R-SP-98-02 (Follow Up On All HEEC Laboratories), 98-09-QA-C (Independent Oversight), and B-ES-98-01 (NED Chiefs Group). These were performed because the licensee had identified that not all off-site organizations performing safety related activities were being audited as required by 10 CFR 50, Appendix B, Criterion XVIII, Audits, and the corporate quality assurance plan (NGGM-PM-007).

The inspectors determined that the licensee's root cause evaluation was thorough and comprehensive. The licensee's evaluation determined that ineffective change management during a 1994 QA plan change and subsequent reorganization led to the missed assessments and failure to identify the QA program procedural noncompliances earlier. Assessment R-SP-98-02 indicated that compensatory actions for the problems identified in assessment H-MC-98-01 had not been timely, and had not been applied to all of the HEEC laboratories. The other identified assessments indicated that other licensee offsite work groups had similar QA program deficiencies. The inspectors concluded that the offsite support groups had not demonstrated the same QA program compliance culture as had the site groups, and were not being assessed to these requirements like the site groups. The failure of the HEEC metallurgical/analytical laboratories to satisfy corporate QA program requirements, and the failure to perform the required QA program compliance assessments of the corporate work groups performing safety-related activities represents a violation of 10 CFR 50 Appendix B, but is not considered a programmatic breakdown. Notwithstanding the guidance of

Enforcement Guidance Memorandum 98-006, this issue was identified in May 1998 and is indicative of a broader issue, therefore, this non-repetitive, licensee identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy, and is designated NCV 50-400/98-08-01, failure to perform QA audits of off-site activities.

The issue of the corporate/site interface and corporate standards is addressed further in section E8.2 below.

- E8.2 (Closed) URI 50-400/98-06-04: USQ determination related to cycle 6 reload. This unresolved item was identified during an inspection of licensee procedures for compliance with 10 CFR 50.59, and remained open pending NRC review of the collective safety and regulatory significance of these issues.

This unresolved item involves two issues. Those issues are summarized and dispositioned as described below:

(1) Incorrect Unreviewed Safety Question Determination

Section E8.3 of NRC IR 50-400/98-07 noted that an Unreviewed Safety Question (USQ) had been associated with the licensee's use of the cycle 6 fuel reload, that 10 CFR 50.59 required prior Commission approval prior to startup from the refueling outage, and that prior Commission approval had not been obtained. Startup of the reactor following installation of the cycle 6 fuel without prior Commission approval was considered a violation of 10 CFR 50.59.

The subject inspection report also noted that after the cycle 6 reload was installed, the licensee identified the USQ, planned and implemented action to correct the condition with which the USQ was associated, and completed those actions by updating the FSAR in Amendment 48. In addition, the report noted that the USQ was identified as a result of licensee corrective actions for a similar issue, which was reported in LER 95-006. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy, and is designated NCV 50-400/98-08-02, unreviewed safety question associated with the cycle 6 reload.

(2) Failure to Document the Incorrect Safety Evaluation

Inspection Report 50-400/98-07 noted that when the inspectors questioned the licensee about the activities described above, the licensee was unable to produce evidence that the USQ had been documented as an adverse condition in accordance with procedures AP-615, "Condition Reporting," Revision 23, and CAP-NGGC-001, "Corrective Action Management," Revision 1. The report also noted that in response to the inspectors' questions, the licensee initiated a Condition Report (CR) which stated, in part, that "In 1996 HNP identified an incorrect 10 CFR 50.59 evaluation and failed to generate a CR. Had a CR been generated, the reportability determination would have determined a condition outside design basis and an NRC report required." In followup questioning, the inspectors found that several of the personnel involved in developing and implementing the corrective actions to resolve the USQ believed not only that a CR was



required, but also that someone else had initiated one. The inspectors found this explanation credible because the corrective actions involved several onsite and offsite working groups.

This failure to generate a CR was significant, because it effectively allowed the adverse condition to not be subject to operability and reportability reviews. As noted above, the licensee determined that the condition would have been reported.

The inspectors concluded that this failure was associated with activities involving an interface between site and corporate personnel. A finding in NRC IR 50-400/98-01 regarding trending of corporate condition reports also involved that interface. In January, 1998, the licensee identified in CR 98-00347 that regulatory commitments contained in corporate procedures were not being placed in the appropriate procedure types (NGGS vs NGGC). This resulted in the appropriate safety reviews not being performed and the appropriate QA documentation not being maintained. In addition, the inspectors have noted several recent CRs which involved the same interface, including CR 98-02268 and CR 98-02277, the later which involved the failure to initiate a CR by a corporate work group. In Section E8.1 above, the licensee also found that audits of many corporate work groups had not been performed as required. The failure to initiate a CR, the finding in NRC IR 50-400/98-01, the recent CRs, placing of regulatory commitments in inappropriate procedure types, and the failure to perform QA audits of off-site activities, collectively indicate that in the past, corporate activities have not been held to the same regulatory standard as have been the sites.

The failure to document the USQ as an adverse condition in accordance with AP-615 and CAP-NGGC-001 requirements resulting in no operability or reportability reviews is considered a violation of 10 CFR 50, Appendix B, Criterion XVI, which requires that measures be established to assure that conditions adverse to quality such as deficiencies, deviations, and nonconformances are promptly identified and corrected. This violation is designated VIO 50-400/98-08-03, failure to document incorrect safety evaluation as an adverse safety condition.

The inspectors concluded that this violation was an example of a broader issue related to enforcement of corporate standards for off-site activities. The licensee discussed this issue with the inspectors and was attempting to ensure that the overall scope and root cause of the problem was identified.

- E8.3 (Closed) IFI 50-400/97-07-01: evaluation of not fully maintaining the probabilistic risk assessment (PRA) assumptions when establishing performance criteria. Following a model revision in May 1998, the licensee performed a sensitivity analysis confirming that the maintenance rule goal setting and performance criteria for the systems in the PRA model were consistent with system safety significance. The analysis was bounding by setting both the reliability and availability basic events of the PRA model at the performance criteria and, using the baseline PRA failure rate when it was higher than the performance criteria failure rate. Core damage frequency increased by approximately 80 percent from the 5 E-5 baseline core damage frequency. The inspector performed an in-office review of the sensitivity analysis and concluded that such an increase in core damage frequency provided an adequate correlation that the performance criteria was set commensurate with safety.



IV. Plant Support

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 General Comments

a. Inspection Scope (71750)

The inspector observed radiological controls during the conduct of tours and observation of operations and maintenance activities.

b. Observations and Findings

The inspector found radiological controls to be acceptable. The general approach to the control of contamination and dose for the site was good. Teamwork between the various departments continued to be a major contributor to the good control of dose. This teamwork was exemplified by the liquid waste tank desludging efforts. These efforts were ongoing with the first tank being completed during the inspection period. The licensee was able to have a significant impact on the dose rates in the waste process building due to the sludge removal from floor drain tank C. The desludging reduced dose levels in the associated room by a factor of approximately 100. The sludge was being retained as solid radioactive waste.

c. Conclusions

The control of contamination and dose for the site was good and was attributable to good teamwork between the various departments. Teamwork was exemplified by the liquid waste tank desludging effort which reduced dose rates in the floor drain tank area by a factor of approximately 100.

P1 Conduct of EP Activities

P1.1 General Comments (71750,93702)

The inspectors observed preparations for hurricane Bonnie which had the potential to impact the site. The hurricane passed east of the plant on the North Carolina coast and did not have a significant impact on the site. Winds of 35-50 miles per hour were noted at the site and no damage occurred. The site activated the Technical Support Center with minimal staffing for approximately four hours. The inspectors observed that procedure AP-301, "Adverse Weather," Revision 22, was followed.



S1 Conduct of Security and Safeguards Activities**S1.1 General Comments****a. Inspection Scope (71750)**

The inspector observed security and safeguards activities during the conduct of tours and observation of maintenance activities.

b. Observations and Findings

The inspector found the performance of these activities were in accordance with the security plan and required procedures. Compensatory measures were posted when necessary and properly conducted. During the period an operational safeguards response evaluation was performed which is contained in NRC IR 50-400/98-201.

c. Conclusions

The performance of security and safeguards activities were in accordance with applicable procedures and the security plan.

F1 Control of Fire Protection Activities**F1.1 General Comments****a. Inspection Scope (71750)**

The inspectors observed fire protection equipment and activities during the conduct of tours and observation of maintenance activities. The inspectors observed a fire drill in the paint storage area conducted on August 28.

b. Observations and Findings

The inspectors found the fire protection equipment to be adequately maintained. The inspectors observed that the fire brigade responded to the drill and that the team demonstrated adequate safety techniques for fire fighting. Licensee fire protection evaluators observed the drill and performed a critique. The evaluators were stationed to evaluate the fire brigade response and actions. Performance of the fire brigade demonstrated that they were adequately trained to control the fire.

c. Conclusions

Fire protection equipment was being adequately maintained in accordance with procedures. A fire brigade drill observed was adequately conducted and evaluated by licensee personnel. Performance of the fire brigade demonstrated that they were trained to control the fire.



V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on September 29. 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.

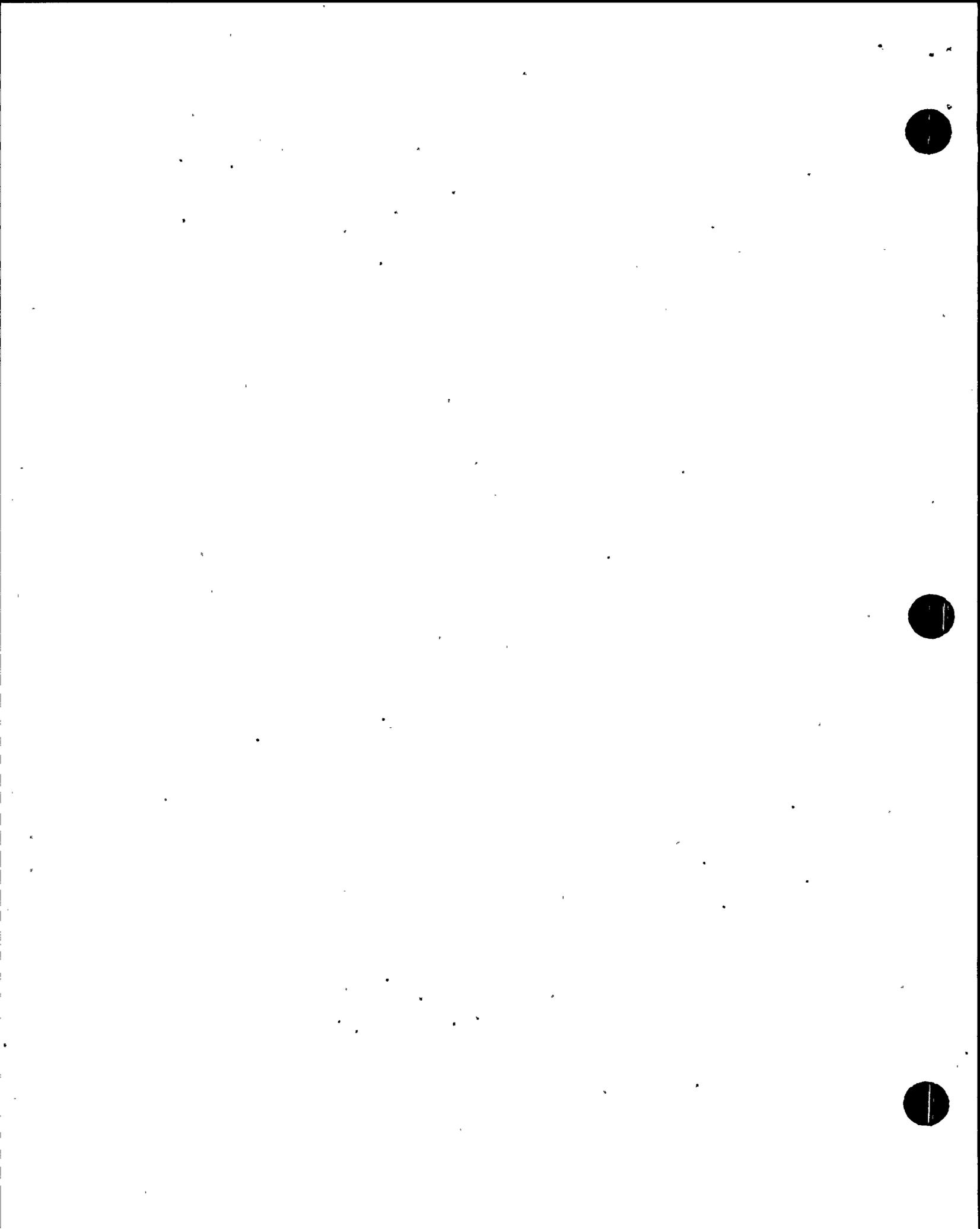
PARTIAL LIST OF PERSONS CONTACTED

Licensee

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B. Clark, General Manager, Harris Plant
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NRC

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INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observations
 IP 62707: Maintenance Observation
 IP 62706: Maintenance Rule
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 92700: Onsite Followup of Events
 IP 92901: Followup - Operations
 IP 92903: Followup - Engineering
 IP 93702: Onsite Response to Events

ITEMS OPENED AND CLOSED

Opened

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
NCV	50-400/98-08-01	Open	Failure to Perform Quality Assurance Audits of Off-Site Activities (Section E8.1)
NCV	50-400/98-08-02	Open	Unreviewed Safety Question Associated With Cycle 6 Reload (Section E8.2).
VIO	50-400/98-08-03	Open	Failure to Document Incorrect Safety Evaluation as An Adverse Condition (Section E8.2).

Closed

<u>Type</u>	<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
NCV	50-400/98-08-01	Closed	Failure to Perform QA Audits of Off-site Activities (Section E8.1).
NCV	50-400/98-08-02	Closed	Inreviewed Safety Question Associated With Cycle 6 Reload (Section E8.2).
URI	50-400/98-04-04	Closed	Harris Energy & Environmental Center Metallurgical/Analytical Procedures (Section E8.1).
URI	50-400/98-06-04	Closed	Unreviewed Safety Question Determination Related to Cycle 6 Reload (Section E8.2).

IFI 50-400/97-07-01 Closed

Evaluation of Not Fully Maintaining The
Probabilistic Risk Assessment Assumptions When
Establishing Performance Criteria (Section E8.3).