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Licensee: Georgia Power Company
P.O. Box 1295
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Facility Name: Hatch Nuclear Station Units 1 and 2

Inspection At: Baxley, GA and Atlanta, GA

Inspection Conducted: February 12-23, 1996 at Atlanta, GA
March 11-22, 1996 at Baxley, GA
March 25- April 5, 1996 at Atlanta, GA

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Enclosure

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EXECUTIVE SUMMARY

The Region II Office of the U.S. Nuclear Regulatory Commission conducted an integrated assessment of Georgia Power Company's Plant Hatch Units 1 and 2 on February 12 through April 5, 1996. The purpose of this assessment was to (1) develop an integrated perspective of performance strengths and weaknesses based on an independent review of selected objective information on the Hatch docket and validated through an on-site inspection, (2) develop inspection recommendations for future NRC inspections at Hatch, and (3) develop information for the NRC on the effectiveness of the regulatory programs and their implementation at Hatch.

This final assessment of Plant Hatch Units 1 and 2 was the result of integrating the preliminary review of docketed information for Plant Hatch with observations obtained during an on-site review conducted between March 11 and 22, 1996. The original docket review covered approximately a two year period ending in January, 1996. The results of the preliminary assessment were documented in NRC Inspection Report 50-321/96-03 and 50-366/96-03 dated February 23, 1996. Throughout the assessment the team did not identify any existing situation which would question the operability of any safety system. Acronyms used in the assessment are defined in Appendix B and a list of references is provided in Appendix C. Ratings for performance areas are identified on the Final Assessment/Inspection Planning Tree (Appendix A) and are summarized as follows:

The licensee's focus in operations was on plant safety. Procedures provided appropriate direction to operate equipment and operators effectively controlled plant configuration. Operators generally performed well in response to transients and scrams. Operator excellence was also noted during routine events but, operator errors occurred throughout the period. Trending of operator errors was comprehensive but lacked detailed root cause analysis. Problem resolution was normally timely and effective in preventing recurrence of a particular event by that particular crew, but did not result in a discernable decrease in operator errors. Overall, normal inspection is recommended for the operations functional area with reduced emphasis on the elements of safety focus and programs & procedures.

The licensee's maintenance and test activities were normally focused on safety. However, a lack of effective communication of expectations and oversight of contractors during outages recurred throughout the assessment period. The test program was generally good with some weaknesses in the review/approval/deferral controls and procedural "triggers" associated with TS situational surveillances. Although generally effective, there were some weaknesses in the maintenance program. Poor BOP equipment performance and material condition caused numerous scrams, transients and downpowers. Throughout these extensive challenges, safety related equipment properly functioned. The majority of maintenance activities were properly performed, but there were execution errors, especially during outages. Also, weak vendor support occasionally contributed to poor maintenance. Most required tests were performed correctly and on schedule. However, several TS surveillances were not performed on schedule due to personnel errors. DCs were normally used to identify equipment and personnel performance deficiencies. Corrective actions were generally effective, but contractor control problems persisted. Overall, normal inspection is recommended for the maintenance functional area with increased emphasis on material condition, maintenance during outages and contractor control.

The licensee's engineering organizations, onsite and at corporate headquarters, were properly focused on safety. Engineering effectively identified problems. Engineering involvement in the resolution of problems was good in a number of respects. However, engineering support to maintenance on recurring equipment problems was mixed. Occasionally, the complexity of the problem and the poor vendor support during problem evaluation extended the resolution time. The quality of engineering work was normally good. Routinely, programs and procedures contributed to good performance. Overall, normal inspection is recommended for the engineering functional area with increased emphasis on engineering support to maintenance associated with recurring equipment problems. Reduced emphasis is recommended for the safety focus and problem identification elements.

Consistent, excellent performance was exhibited in all the security elements. Consistent, superior performance was exhibited in all, but the programs and procedures element associated with emergency preparedness. There was a high state of operational readiness in emergency preparedness. Accident assessments during emergency plan actuations were generally superior except when classifying events. Normally, excellent safety focus was maintained in the radiation protection functional area. However, mid-way through the period, ineffective communication and reinforcement of management expectations associated with radiation worker practices appeared to contribute to poor performance. By the end of the assessment period an excellent safety focus had been regained as evident by significantly improved radiation worker performance during the most recent RFO. The quality of radiological controls was generally good. Nevertheless, personnel did not always conform to established radiological practices and did not always properly handle radioactive material within the facility. With rare exceptions, procedures provided ample guidance for performing diverse radiological functions. In most programs the licensee effectively identified the few problems and rectified them. Overall, reduced inspection is recommended for the plant support function area; but with normal inspection emphasis on the quality of radiation protection, radiological problem identification/resolution and emergency preparedness programs & procedures.

The licensee was normally effective at identifying problems through diverse systems (DCs, SORs, QC, audits, etc.). The licensee initiated formal self assessments in perceived problem areas during the latter portion of the assessment period. ERT evaluation of problems, committee (SRB & PRB) evaluations for unreviewed safety questions and realignment of the audit program based upon past performance were good. However, there were limitations in the process for identifying recurring equipment problems. Extensive trending of human performance errors was being accomplished, but translation into corrective actions was limited. Also, limited recommendations were made by the safety committees in areas of licensee performance other than safety evaluations. Problem resolution was normally timely and effective. Corrective actions to independent and external assessments were generally effective. Licensee responsiveness to industry issues and the NRC was good. Overall, normal inspection is recommended for the Safety Assessment and Corrective Action functional area with inspection emphasis on problem analysis and evaluation.

FINAL INTEGRATED PERFORMANCE ASSESSMENT OF HATCH

1.0 PLANT OPERATIONS

Overall, normal inspection is recommended for the operations functional area with reduced emphasis on the elements of safety focus and programs & procedures. The licensee's focus in operations was on plant safety. Procedures provided appropriate direction to operate equipment and operators effectively controlled plant configuration. Operators generally performed well in response to transients and scrams. Operator excellence was also noted during routine events but, operator errors occurred throughout the period. Trending of operator errors was comprehensive but lacked detailed root cause analysis. Problem resolution was normally timely and effective in preventing recurrence of a particular event by that particular crew, but did not result in a discernable decrease in operator errors.

1.1 Safety Focus

The licensee's focus in operations was on plant safety. Conservative operability and operational decisions were made when necessary. Management responded promptly and appropriately to off-normal conditions as evidenced by their actions to verify river water supplied safety related heat exchangers during low river water levels in 1995. (Reference 41) In 1994 the licensee took prudent actions in response to a flood induced increase in river level. (Reference 9) Reasonable compensatory actions were established when degraded equipment performance was identified such as when the control rod operating system would not allow rod movement in 1994. (Reference 37) Evolutions were generally well controlled such as the back feeding of the station transformer during the most recent RFO. (Reference 46) While onsite, the team noted that management conservatively shutdown Unit 2 due to leaking safety relief valves. Also, the licensee completed installation of an alternate decay heat removal system significantly improving their ability to compensate for shutdown problems. (Reference 2)

Management expectations were well communicated. The licensee's morning management meetings and shift turnovers highlighted pertinent safety concerns such as control rod movement and shutdown cooling. Prior to the upcoming Unit 1 RFO, the crew designated to perform the shutdown met, with shutdown risk as a discussion topic. Following safety relief valve replacement, station management provided continuous coverage during the Unit 2 startup. One exception to good communication of management expectations was demonstrated by a superintendent of shift and shift technical advisor wearing hard hats in the control room in contradiction to station policy.

While onsite the team validated the "black board" control room annunciator panel policy enabling operators to focus on off-normal indications. Few annunciators were out of service and a relatively quick repair time was noted for those taken out of service. Operations staffing was stable with no requests for new license examinations during the assessment period. Also, overall use of overtime trended down. (Reference 50)

Reduced inspection is recommended.

1.2 Quality of Operations

Operators generally performed well in response to transients and scrams. Examples of good operator response included: promptly responding to a broken reactor recirculation pump feedback rod by locking the scoop tube; good response to a Duval shunt reactor breaker trip; handling of transients caused by a Unit 1 loss of feedwater heating in 1994; and on loss of PSW cooling to a diesel, manually tripping the diesel. (Reference 24, 32, 27, 29) A rare exception to this involved a manual reactor scram caused by the operators' failure to promptly diagnose an air bound water box due to their reluctance to believe condenser water box pressure indications. (Reference 41, 86)

Operator excellence was noted during routine events such as the 1995 Unit 2 RFO and subsequent testing to upgrade the licensed power limit. (Reference 49) While onsite, the team observed proper operator performance while shutting down and starting up Unit 2 and maintaining Unit 1 at power. Control room operators were appropriately focused on plant evolutions and monitoring plant conditions as exemplified by operators identifying valves which unexpectedly de-energized on three occasions while the team was onsite. Face to face turnovers by the control room operators were comprehensive. Onshift management generally maintained good command and control as exemplified by the Unit 1 shift supervisor stopping and declaring RCIC inoperable when complications arose during a test at the RSDP while the team was onsite. Except for an unplanned drainage of the reactor vessel when trouble shooting valves operated from the RSDP in November 1995, adequate command and control was exhibited by on shift supervision. (Reference 46, 91)

However, operator errors occurred throughout the period. Several events resulted from failure to follow procedures. In addition to repetitive fuel bundle movement and control rod positioning errors, operators attempted to lift a fuel bundle without engaging the grapple, contributed to an unnecessary radiation exposure of one man-rem to a maintenance team due to not operating the hydrogen water chemistry controls by procedure, and caused a 350 gallon diesel fuel spill due to not performing the required valve line up. (Reference 2, 14, 17, 32, 41, 45, 46) Other operator errors included a reactor scram from installing jumpers across the wrong terminals while starting up the RWCU system and an EDG tripping on reverse power when the operator mis-operated the controls while out of service for a test. (Reference 28, 30, 84) Also, late in the assessment period operators exceeded the APRM rod block line for almost six hours during a recent power ascension on Unit 2.

Normal inspection effort is recommended.

1.3 Problem Identification

The team observed some minor material condition discrepancies that had not been identified such as valve numbers in pencil on HPCI cabinets, leaking and unlabeled components in the security diesel room, a missing position indication knob on the remote valve operator for a SFP skimmer valve, and a stanchion under the declutch lever of a RCIC valve. Also, the DC description on a recent SLC tank level problem partially contributed to slow resolution of the problem. However, operators had identified a large part of the DCs generated at the facility. Trending of operator errors was comprehensive but lacked detailed root cause analysis. For significant operational occurrences ERTs identified areas for improvement. Following operational occurrences, areas of operator knowledge needing improvement were identified for topics such as RFPT bias disparity, sensitivity to control rod status, and use of jumpers. (Reference 30, 49, 84) Up until the end of the assessment period self assessments were accomplished by an informal quality check program. However, at the end of the period a formal self assessment was performed regarding control rod and fuel bundle movements. Also, at senior management request, the operations manager performed an assessment at the end of the period.

Normal inspection effort is recommended.

1.4 Problem Resolution

Problem resolution was normally timely and effective in preventing recurrence of a particular event by that particular crew, but did not result in a discernable decrease in operator errors. Consequently, corrective actions were not always sufficient to preclude recurrence of events. For example, corrective actions to mispositioning fuel bundles in March and April, 1994, did not preclude bundle mispositioning in September, 1994. Additional corrective actions after the September event appeared effective with no fuel bundle mispositionings during the RFO at the end of the assessment period. Also, corrective actions to mispositioning a control rod in August, 1994 did not preclude a similar event in September, 1995. (Reference 2, 14, 17, 45, 49) During Unit 2 shutdown/startup activities, the team observed that effective corrective actions had been instituted to reduce control rod mispositionings. Also, operations management and training recognized that lack of proper procedure usage was common to recent operator errors. Consequently, the team observed instructors effectively emphasizing proper procedure usage during requalification training. Conversely, the team noted ineffective problem resolution via the BOST. The BOST was designed as an expedient method of informing shift crews of operating events. These frequently conveyed operating policy but were not reviewed by operations management. A particular example was the BOST following operation in the unanalyzed region of the power/flow curve for almost six hours during a recent Unit 2 power ascension.

The BOST for this event dated March 4, 1996, did not adequately convey the concerns associated with operating in this area of the power/flow curve.

Normal inspection is recommended.

1.5 Programs and Procedures

Operations effectively utilized and maintained programs and procedures. There was an effective transition to the new, improved TSs with only minor problems identified. (Reference 39) Procedures provided appropriate direction to operate equipment and operators effectively controlled plant configuration. (Reference 39) One exception documented in the licensee's DC system resulted in damage to the seals for a Unit 2 RWCU pump. An operator had recommended clarification be added to a procedure due to a wording problem which could lead to a failure to unisolate the RWCU seal purge. This request was placed in a hold file for inclusion in the next revision. On January 17, 1996, prior to revising the procedure, such a situation occurred and the seals were damaged. The team reviewed the present hold file, revealing a small backlog and no requests with an urgent safety significance.

Reduced inspection is recommended.

2.0 MAINTENANCE

Overall, normal inspection is recommended for the maintenance functional area with increased emphasis on material condition, maintenance during outages and contractor control. The licensee's maintenance and test activities were normally focused on safety. However, a lack of effective communication of expectations and poor oversight of contractors during outages recurred throughout the assessment period. The test program was generally good with some weaknesses in the review/approval/deferral controls and procedural "triggers" associated with TS situational surveillances. Although generally effective, there were some weaknesses in the maintenance program. Poor BOP equipment performance and material condition caused numerous scrams, transients and downpowers. Throughout these extensive challenges, safety related equipment properly functioned. The majority of maintenance activities were properly performed, but there were execution errors, especially during outages. Also, vendor support occasionally contributed to poor maintenance. Most required tests were performed correctly and on schedule. However, throughout the assessment period TS surveillances were not performed on schedule due to personnel errors. DCs were normally used to identify equipment and personnel performance deficiencies. Corrective actions were generally effective, but contractor control problems persisted.

2.1 Safety Focus

The licensee's maintenance and test activities were normally focused on safety. The prioritization of work activities both during operation and shutdown periods reflected the proper safety focus. At the beginning of the assessment period the licensee approached on-line work by considering the TS allowed outage time and utilizing these in a conservative manner. Near the end of the assessment period the licensee enhanced their approach by incorporating probabilitistic risk insights into scheduling. Both methods were effective with no forced shutdowns necessary. Outages appeared to be planned and conducted in a conservative manner. Valve testing during the current outage was planned to be accomplished only during those times when shutdown cooling was not required. While onsite, the team observed good coordination when inspecting relays during the Unit 2 unplanned outage, with risk insights factored into the shutdown activities. This same coordination was not evident early in the assessment period when loss of shutdown cooling was caused by an engineer moving a bundle of wires in a main control panel during the 1994 Unit 2 outage while a high decay heat load existed. (Reference 2, 53) Although not actually performing the work at this time, the exploratory evolution could have been delayed until later in the outage. Management was very pro-active in the areas of chemistry and corrosion control. This was exemplified by the hydrogen water chemistry and surveillance coupons programs. (Reference 21) Coordination and communication with other departments was good. Only one example of poor communications between maintenance and operations was evident, in the use of divers to clean the service water intakes. (Reference 12)

However, lack of effective communication of expectations and poor oversight of contractors during outages recurred throughout the assessment period. This contributed to dropping the shroud headbolt in the SFP and contributed to dropping some CRD stellite ball bearings in the refueling canal. Also, contractors did not respond and notify appropriate personnel when the head bolt and stellite ball bearings were dropped. (Reference 5, 24, 32, 39, 44, 50) On three occasions while the team was onsite, safety related breakers were tripped adjacent to newly installed scaffolding for the upcoming Unit 1 RFO apparently attributable to contractor activity.

Normal inspection is recommended.

2.2 Programs and Procedures

The test program was generally good. Test procedures were technically correct. A significant improvement to the test program was the institution of new, improved TSs. Consequently, the RSDP deficiencies that had existed for many years were identified and corrected. Procedure reviews identified several areas in surveillances that required additional testing or modification of tests prior to the implementation of the new TSs. (Reference 32, 49) However, while onsite the team identified limited review/approval/deferral controls associated with TS surveillances. Also, there were weaknesses in some of the procedural "triggers" for performing situational TS surveillances. These weaknesses partially contributed to some of the missed TS surveillances.

Although generally effective, there were some weaknesses in the maintenance program. The output from a valve packing computer software program allowed the individuals performing valve repacking to make inappropriate choices of packing configurations. Consequently, four safety related valves were improperly packed during the most recent RFO for Unit 2. The BOP preventive maintenance program early in the period appeared to be lacking in scope and depth as evidenced by the frequency of plant transients caused by BOP problems. Later in the period, program improvements were made. However, BOP problems continued throughout the assessment period. Also, there was no preventive maintenance program for the PASS early in the assessment period. (Reference 14)

Normal inspection is recommended.

2.3 Equipment Performance/Material Condition

Poor BOP equipment performance and material condition caused numerous scrams, transients and downpowers. Recurring cooling tower fill material problems and transformer cooling fan failures imputing electrical grounds caused four plant transients and a scram. (Reference 24, 30, 41, 46) Three runbacks were caused by two AIM failures in the switchyard. (Reference 39, 46) One power reduction and one scram late in the assessment period was due to EHC filter clogging. (Reference 7, 41, 50) Other scrams were caused by overheating of the main generator exciter rings and high MSR levels. (Reference 2, 49) Other transients and down power maneuvers were caused by MSR leaks, fuel leaks, and five failures of relays in the extraction steam system. (Reference 95) Throughout the assessment period, BOP steam and water leaks caused delays in return to full power or required down power transients to repair. (Reference 95) While the team was onsite, the licensee performed a shutdown of Unit 2 to replace/repair leaking safety relief valves.

Throughout these extensive challenges, safety related equipment properly functioned. Also, containment leakage rates, drywell leakage and external leakage of post accident systems outside of primary containment were good and improved throughout the assessment period.

Increased inspection is recommended.

2.4 Quality of Maintenance

The majority of maintenance activities were properly performed as exemplified by the hydrogen/oxygen analyzer calibration and safety relief valve replacement observed by the team while onsite. However, there were execution weaknesses, especially during outages. Loose material was identified in both unit drywells during outages. (Reference 5, 46) The team observed clear plastic in a trash bag on the Unit 1 refuel floor. This was a repetitive observation from a previous RFO. (Reference 5) During maintenance on a condensate booster pump the team observed poor foreign material control while working on the lube oil piping. Although the team did not observe any un-inspected rigging being used during the onsite visit, weaknesses were evident during the last RFO. Inspectors identified un-inspected rigging being used for some evolutions and poor rigging practices were indicated while lifting a temporary power supply when a manufactured padeye failed, dropping the load. Coiled cables in a BOP connection box shorted contributing to a partial loss of feedwater heating. (Reference 21) A HPCI steam supply/containment isolation valve failed partially due to poor workmanship during a RFO. (Reference 39) Also, during non-outage maintenance in mid-February troubleshooters were slow at identifying a bubbler malfunction associated with an indicated increasing SLC tank level. TS minimum level requirements were always maintained.

The team also noted that weak vendor support occasionally contributed to poor maintenance as exemplified by: (1) An EDG oil pump supplied by the vendor was internally configured to pump in the reverse direction. This caused overheating of the lube oil heater and required an emergency shutdown by the plant equipment operator. (Reference 20) (2) During the rebuilding of a RWCU pump while the team was onsite the vendor failed to provide proper fit-up directions causing a physical impeller interference. An additional 1.4 man-rem was expended resolving the interference. (3) Recently, a vendor rebuilt a circulating water pump and motor with the bearing carrier being out-of-round instead of round. Consequently, the bearing failed and the was pump taken out of service, contributing to a power reduction. (4) Poor assembly of a LPCI valve contributed to motor failure less than a month after re-assembly. (Reference 40) The poor assembly was in the area of the motor bushing clearance and was not addressed in the vendor technical manual.

Most required tests were performed correctly and on schedule such as the recent power upgrade tests on Unit 2 and the integrated leak rate test. (Reference 46, 50) However, throughout the assessment period TS surveillances were not performed on schedule due to personnel errors. Consequently, seven valves and two pumps were not tested at the required ASME test frequency, reactor recirculation jet pump surveillance, drywell & equipment sump surveillances and vacuum breaker surveillances were not accomplished per TS requirements. (Reference 5, 56, 80, 21, 68, 30, 85) At the end of the assessment period a TS surveillance associated with secondary containment integrity was improperly deferred. Fortunately, when tested all equipment was operable. Also, personnel caused two ESF actuations during the most recent RFO while performing emergency core cooling system testing. (Reference 46, 72, 73)

Increased inspection is recommended, especially during outages.

2.5 Problem Identification

DCs were normally used to identify equipment and personnel performance deficiencies. However, the team identified that the licensee did not write DCs when: (1) The wrong water source was connected during maintenance on the Unit 2 "F" demineralizer, (2) A solenoid was not retained from a failed containment isolation valve impairing root cause analysis efforts or (3) A temporary power supply dropped during the recent Unit 2 RFO. Self assessments were performed through an informal quality check program until late in the assessment period when, at senior management request, the performance team manager completed a self assessment. This review appeared to be frank and realistic.

Normal inspection is recommended.

2.6 Problem Resolution

Corrective actions were generally effective as exemplified by a comprehensive review of actual valve configurations performed after identifying packing problems during the last RFO. Corrective actions for missed TS surveillances generally focused on the individual performance deficiencies until late in the assessment period when another member of the operating crew was tasked with reviewing any deferred TS surveillances. In the area of contractor control numerous corrective actions were enacted including initiation of an administrative procedure exclusively for contractor control, tours of the facility for contractors prior to work commencement, standup meetings to express management expectations, videos of select activities such as foreign material exclusion and self study material to read and sign. These corrective actions were not totally effective with contractor control problems persisting to the end of the assessment period.

Normal inspection is recommended, with emphasis on actions to improve contractor performance.

3.0 ENGINEERING

Overall, normal inspection is recommended for the engineering functional area with increased emphasis on engineering support to maintenance associated with recurring equipment problems. Reduced emphasis is recommended for the safety focus and problem identification elements. The licensee's engineering organizations, onsite and at corporate headquarters, were properly focused on safety. Engineering effectively identified problems. Engineering involvement in the resolution of problems was good in a number of respects. However, engineering support to maintenance on recurring equipment problems was mixed. Occasionally, the complexity of the problem and the poor vendor support during problem evaluation extended the resolution time. The quality of engineering work was normally good. Routinely, programs and procedures contributed to good performance.

3.1 Safety Focus

The licensee's engineering organizations, onsite and at corporate headquarters were properly focused on safety. Engineering input to operability evaluations were thorough, timely, and reached reasonable conclusions. Especially strong reviews were noted involving a foreign object in the plant service water piping to the 2A EDG heat exchanger and low discharge pressure to the 2B plant service water pump. (Reference 32, 41) Other issues receiving satisfactory analysis that were reviewed during the onsite visit included evaluations of LPCI operability during torus cooling, expected maximum differential pressure across recirculation discharge valves and their ability to close under worst case conditions, and HPCI operability with a flow controller output signal set at 97 percent. An experienced engineering and technical support staff was maintained throughout the assessment period at both headquarters and the site. (Reference 8)

While onsite, the team noted that a recent re-organization caused some changes in engineering functions. The maintenance department was aligned into performance teams with the maintenance manager becoming the performance team manager. The performance teams consisted of staff from operations, I&C, electrical maintenance, mechanical maintenance, engineering and health physics. These teams were responsible for handling emerging day to day problems on assigned systems. System engineers were tasked to be more proactive, look at long term issues, improve performance monitoring, trending, and improve equipment reliability. The IPAP team confirmed that the functional duties and responsibilities for the various engineering organizations were clearly understood by managers, supervisors, and staff. The team noted that site engineering interfaced well with other departments (e.g. operations, maintenance, and licensing) as demonstrated by the interchanges that took place during the morning meetings.

Reduced inspection effort is recommended.

3.2 Problem Identification

Engineering effectively identified problems. Deficiency cards and significant occurrence reports were routinely used to identify, evaluate and correct problems. System engineering was a strength in this element as demonstrated by identification of a significant design problem with the Unit 1 and 2 diesel generator voltage regulator logic circuits. Other examples included: identification that the Unit 1 standby gas treatment system was not able to establish secondary containment negative pressure in the requisite time, the presence of a foreign object in the plant service water supply line to 2A EDG causing reduced cooling flow, and the deletion of 50 local power range monitor inputs to the process computer. (Reference 32, 37) An informal quality check program was the only self assessment performed until the latter portion of the assessment period. During the latter portion of the period formal self assessments were performed in the areas of problem solving (associated with long standing recurring equipment problems) and root cause training effectiveness (in progress while the team was onsite).

Reduced inspection is recommended.

3.3 Problem Resolution

Engineering involvement in the resolution of problems was good in a number of respects. Requests for engineering review and action items assigned to the site engineering department for problem resolution and corrective action were tracked with appropriate priority assigned. Few items were past their assigned due dates. The total number of action items assigned to the department was small. The majority of items in the backlog was less than one year old and within manageable limits. (Reference 52) The backlog of design change requests trended downward throughout the assessment period, however, there was an increase in the number of minor design changes. Audit findings associated with the permanent and temporary modification programs were promptly rectified.

Engineering support to maintenance on recurring equipment problems was mixed. Occasionally, resolution was slow. Examples of issues that took a long time for engineering to resolve were the 1B RPS MG set tripping problems in 1994 and 1995, multiple trips of the 1B LPCI inverter, and switchyard transformer cooling fan motor failures which resulted in spurious tripping of 600 VAC breakers. While onsite the team noted that other recurring problems such as leaking Unit 1 plant service water strainers, safety relief valve leakage (an industry problem associated with this particular design) and seal/lube oil internal leakage on the reactor feedwater pumps were being pursued by engineering. Occasionally, the complexity of the problem and the poor vendor support during problem evaluation extended the resolution time. During the latter part of the assessment period, the licensee established an equipment reliability list to focus management attention on equipment performance, performed a self assessment on problem solving and was in the process of completing a root cause training effectiveness self assessment. Also, the recent re-alignment of engineering duties was partially to allow system engineers to focus on long-term equipment problems.

Increased inspection is recommended.

3.4 Quality of Engineering

The quality of engineering work was normally good. The licensee's engineering organizations, onsite and at corporate headquarters, were effective in initiating, prioritizing, and completing several major modifications that enhanced the safety and operational performance of the plant. Both major and minor design changes were well planned and technically correct. Design and implementation related errors per DCR have been trending down. However, late in the assessment period the licensee identified that the Unit 1 RCIC system operating and test instructions from the RSDP were inadequate. Following a DCR which installed a steam bypass valve (1E51F0119) that interlocked with the main steam admission valve, engineering personnel failed to identify changes in the operating procedures to permit opening the main steam admission valve from the RSDP. Fortunately, there were recovery actions available to the operator. The quality of licensing submittals was excellent. Other technical reviews were generally good such as those involving reactivity assessments following control rod mispositionings and leaking fuel bundles, reducing feedwater temperature while operating at the end of Unit 2's core life, and upgrading Unit 2's licensed power level in November 1995. (Reference 14, 39, 41)

Conversely, engineering involvement in other areas was weak. During inservice inspection activities personnel put reference marks for weld inspections at the wrong locations during two RFOs. Also, the engineering oversight for fabricating lifting slings in 1994 was weak. This contributed to the sling's failure, resulting in dropping a core shroud head bolt which damaged the SFP liner. (Reference 24, 31)

Onsite engineering communicated and interfaced well with corporate engineering and maintenance personnel. Engineering effectively interfaced with operations regarding transition to the new, improved TSs. However, this was not always true resulting in operators being unaware that the Unit 1 LPCI inverter alarm was not working for several months in 1995, a disparity in the Unit 1 feedwater bias, and deficiencies in operator knowledge of the flow instability region. (Reference 28, 31, 50) The knowledge deficiency associated with the feedwater bias contributed to reactor water level decreases and recirculation pump speed runback transients after the bias concern was initially identified.

Normal inspection is recommended.

3.5 Programs and Procedures

Routinely, programs and procedures contributed to good performance. The design control process provided satisfactory direction to the engineering staff. While onsite the team confirmed that the licensee's infrared thermography surveying program and procedures were satisfactory. The frequency of surveys and the scope of equipment in the program were reasonable. Deficiencies were well documented and corrected through maintenance work orders. The configuration control program for critical control room drawings was good. As-Built Notices were properly tracked and incorporated into drawings. Normally, procurement documents were technically accurate except for the delineation of control room filter testing requirements. (Reference 12) This contributed to filters being installed in 1994 without the required TS absorption factor. (Reference 9) A strength was evident in the interpretation and testing records dealing with motor operated valve diagnostic testing. (Reference 26) The use of a fully-automated ultrasonic system to examine RPV welds in the ISI program was also a strength as evidenced by the identification of an indication that would have gone undetected via visual inspection techniques. (Reference 1) However, several ISI procedure problems indicated weak engineering review. (Reference 44)

Also, UT procedures did not require UT examiners to compare previous exam results and report the differences. (Reference 18) Limited software controls existed for the process computer until near the end of the assesment period. (Reference 37)

Normal inspection is recommended.

4.0 PLANT SUPPORT - (SECURITY, EMERGENCY PREPAREDNESS, AND RADIATION PROTECTION)

Overall, reduced inspection is recommended for the plant support function area but; with normal inspection emphasis on the quality of radiation protection, radiological problem identification/resolution and emergency preparedness programs & procedures. Consistent, excellent performance was exhibited in all the security elements. Consistent, superior performance was exhibited in all but, the programs and procedures element associated with emergency preparedness. There was a high state of operational readiness in emergency preparedness. Accident assessments during emergency plan actuations were generally superior except with some problems when classifying events. Reduced inspection is recommended for the radiation protection elements of safety focus and programs and procedures. Normally, excellent safety focus was maintained in the radiation protection functional area. However, mid-way through the assessment period, ineffective communication and reinforcement of management expectations associated with radiation worker practices appeared to contribute to poor performance. By the end of the assessment period an excellent safety focus had been regained as evident by significantly improved radiation worker performance during the most recent RFO. The quality of radiological controls was generally good. However, personnel did not always conform to established radiological practices and did not always properly handle radioactive material within the facility. With rare exceptions, procedures provided ample guidance for performing diverse radiological programs. In most programs the licensee effectively identified the few problems and rectified them.

4.1 Security - All Elements (Safety Focus, Quality of Security, Problem Identification & Resolution, Programs & Procedures)

Consistent, excellent performance was exhibited in all the elements. Security personnel were well trained, especially in the area of intruder response and the use of lethal/non-lethal force. Also, security personnel understood and carried out their normal job responsibilities with few errors. Strong interdepartmental communications existed with engineering and operations in properly implementing the intruder response portion of the security plan. The security plan provided the necessary direction and guidance. Security equipment with the exception of perimeter fence alarms due to environmental effects worked well with a low maintenance backlog maintained. Positive hardware (excluding environmentally induced perimeter fence alarms) and personnel performance trends were evident throughout the assessment period. When necessary, compensatory measures were properly established with rare exception. Audits were thorough and comprehensive with findings promptly resolved. (Reference 51)

While onsite, the team observed security officers performing their CAS, SAS, periodic rounds and entry/exit portal duties. The team also observed security supervision interacting with the uniformed officers. Throughout those observations the guard force consistently performed excellently. The team confirmed that security equipment testing was being accomplished to the established schedule with good equipment reliability achieved. The team observed that the newly installed vehicle bomb barriers were operational. The team confirmed that most alarms were environmentally induced. However, there was an increase in door alarms during refuel outages due to the increased number of personnel unfamiliar with the facility within the protected area. The team ascertained that there were diverse self assessments being performed such as end of shift weapons and key inventories. The team also observed a communication check randomly performed by the security manager.

Reduced inspection in all elements is recommended.

4.2 Emergency Preparedness - All Elements (Safety Focus, Quality of Emergency Preparedness, Problem Identification & Resolution, Programs & Procedures)

Consistent, superior performance was exhibited in all but the programs and procedures element. The licensee's safety focus was superior throughout the assessment period as evidenced by the high state of operational readiness and properly functioning facilities during an actual event and numerous drills and exercises. (Reference 29, 32, 38) The team also confirmed that the emergency facilities and equipment were in an excellent state of readiness while onsite. However, the team observed an out of date procedure in a field team's external survey kit.

Accident assessments during emergency plan actuations were generally superior except with some problems when classifying events. The declaration was slow during the one actual activation of the emergency plan of this assessment period, an Unusual Event due to a carbon dioxide initiation in the control building. (Reference 20) As conditions warranted during the 1995 annual exercise, escalation to a Site Area Emergency was delayed. During a January 1996 drill the event was misclassified. Contributory to these classification weaknesses were unclear declaration criteria and personnel understanding of the criteria. Self-assessment of the numerous drills and exercises provided good feedback on performance weaknesses. Problems from drills, exercises and audits were generally resolved in a timely manner (Reference 33, 39) and, at the end of the assessment period, the licensee was initiating a review of all classification criteria to identify passages for improvement.

Reduced inspection is recommended in all areas except programs and procedures, for which normal insp ction is recommended. Special emphasis within the programs and procedures element on classification training and criteria is recommended.

4.3 Radiation Protection

4.3.1 Safety Focus

Normally, excellent safety focus was maintained throughout the assessment period. In a number of facets associated with this functional area such as radiological releases, environmental monitoring, and the shipping of radioactive materials good safety focus was always maintained. (Reference 29, 35, 43)

However, mid-way through the assessment period, ineffective communication and reinforcement of management expectations associated with radiation worker practices appeared to contribute to poor performance. Personnel improperly frisked and did not wear dosimetry correctly during the 1994 Unit 1 RFO. (Reference 19) In November 1994, health physics was not contacted when contractors dropped several highly radioactive CRD stellite ball bearings onto the floor of the SFP transfer canal. Consequently, elevated dose rates were detected from the ball bearings when plant personnel DADs alarmed while passing through a hallway immediately beneath the transfer canal. (Reference 24, 25) In December 1994, health physics supervision was not contacted when contractors were splashed with radioactive SFP water when a core shroud headbolt fell into the pool. (Reference 24)

Responsive corrective actions were effective with significantly improved radiation worker performance during the most recent RFO. (Reference 45, 47) The team confirmed that excellent safety focus had been regained, as exemplified by the strong ALARA briefings for the upcoming RFO.

Reduced inspection is recommended.

4.3.2 Problem Identification and Resolution

In most programs (effluent monitoring, transportation of radioactive waste, environmental monitoring, ALARA) the licensee effectively identified and resolved problems, as exemplified by the revamping of the radiological effluent monitoring calibration program. (Reference 27) However, mid-way through the assessment period the licensee did not identify a noticeable degradation of radiation work practices and frisking capabilities during the Unit 1 RFO. (Reference 19) Corrective actions to radiation work practices were generally effective. Increased management attention and improved self assessment capability resulted in improved performance in radiological controls during the most current RFO late in the assessment period. To improve the self assessment capability, the licensee instituted a periodic roving review of radiation worker practices by two health physics technicians and better periodic checks of frisking monitors. (Reference 45)

The licensee identified a number of areas where radiation exposure could be reduced. Consequently, initiatives for reducing radiation dose based upon ALARA recommendations were enacted such as flushing the SFP drains and hydro-lazing scram discharge headers. However, the licensee was slow to address the radiological consequences associated with the poorly performing Unit 1 offgas recombiner condensate return pumps. Twelve man-rem in the first seven months of 1995 alone were expended. Twice ALARA recommendations to rectify this situation were proposed with little action. Through the nuclear operations general manager's involvement appropriate resources were allocated to determine the major causal factors in the pumps' problems and viable resolutions derived.

Normal inspection is recommended.

4.3.3 Quality of Radiological Controls

The quality of radiological controls was generally good. All personnel radiation exposures were within regulatory limits. Doses to the off-site population, due to plant operations (from direct radiation, effluent releases, etc.), were a small percentage of allowable limits. The collective radiation exposure for plant workers, as measured by the three-year rolling average, declined throughout the assessment period. This was attributable to a number of factors including better planning of work activities, use of cameras in critical high radiation areas, shorter outages, reduced respirator use, and a cobalt reduction program. Except in one instance, proper control of hydrogen injection (which increases general radiation levels but deters RPV internals cracking) was maintained when performing maintenance. While onsite the team confirmed that cameras were effectively used in reducing dose by eliminating selected surveillance rounds through high radiation fields and during the shutdown of Unit 2 by identifying leaking valves in the condenser bay. Also, the team observed excellent health physics involvement during the replacement of the Unit 2 safety relief valve in the drywell. The team observed radiation workers properly wearing their personal dosimetry.

However, personnel did not always conform to established radiological practices and did not always properly handle radioactive material within the facility. While onsite the team observed a contaminated rubber glove outside a posted area, a technician removing air sample filters with bare hands instead of with tweezers or gloves and a technician handled a potentially contaminated cotton liner without gloves. Also, the licensee had recently identified that radioactive material was left on a flatbed truck next to the owner controlled fence adjacent to the waste separation and temporary storage facility, (although highly unlikely) such that the dose could have exceeded the allowable annual dose to a member of the public if left there for 33 hours. Improper labeling of radioactive material and removal of contaminated scaffolding from the RCA without being identified as contaminated (Reference 19, 21, 25) were identified mid-way through the assessment period.

Normal inspection is recommended.

4.3.4 Programs and Procedures

With rare exceptions, procedures provided ample guidance for performing diverse radiological functions. The programs for environmental monitoring, reactor coolant chemistry, shipping of radioactive materials, ALARA, surveys, contamination control and basic radiological worker practices were of appropriate scope and provided correct instruction for performing these activities. (Reference 4, 19, 34, 29, 35, 43, 45, 47, 32) Radioactive effluent monitoring was of appropriate scope. (Reference 35) Most procedures were appropriate except those for interfacing between chemistry and emergency preparedness associated with the calibration factors of a gaseous effluent monitor. Also, calibration standards were not superior. (Reference 27) These procedures were promptly upgraded and subsequently provided appropriate direction. (Reference 37) While onsite the team confirmed that programs and procedures were effective in controlling personnel and environmental radiation exposures.

Reduced inspection is recommended.

5.0 SAFETY ASSESSMENT/CORRECTIVE ACTION

Overall, normal inspection is recommended for this functional area with inspection emphasis on problem analysis and evaluation. The licensee was normally effective at identifying problems through the DC/SOR/ERT system, QC reviews and the extensive use of audits. The licensee initiated formal self assessments in perceived problem areas during the latter portion of the assessment period. ERT evaluation of problems, committee (SRB & PRB) evaluations for unreviewed safety questions and realignment of the audit program based upon past performance were good. However, there were limitations in the process for identifying recurring equipment problems. Extensive trending of human performance errors was being accomplished but, translation into corrective actions was limited. Also, limited recommendations were made by the safety committees in areas of licensee performance other than safety evaluations. Problem resolution was normally effective and timely. Corrective actions to independent and external assessments were generally effective. Licensee responsiveness to industry issues and the NRC was good.

5.1 Problem Identification

The site wide process for identifying problems was the DC/SOR/ERT system. Due to the low threshold established by the licensee thousands of DCs were initiated in 1995 alone. The team did identify situations where a DC was not written or was not written in a timely manner as previously discussed in section 1.3 and section 2.5. However, the overwhelming number of problems reviewed by the team had been identified via DC. Depending upon the consequences, a DC may escalate to a SOR or to the highest level, an ERT. Also, although there were weaknesses, the employee concerns program provided a mechanism to identify problems to management.

Formal self assessments were performed in select functional areas throughout the assessment period and expanded into other functional areas as the assessment period progressed. Formal self assessments were routinely performed via drills and exercises in security and emergency preparedness. Also, an effective inter-lab comparison program was maintained throughout the assessment period for ensuring proper quantification of radiological effluent. (Reference 35) Following performance errors other formal self assessments were instituted in the form of two RP rovers during RFOs and shiftly weapons and key inventories by the security guard force. Beyond an informal "quality check" program most of the other functional areas had limited self assessments until the latter part of the assessment period. During the latter part, self assessments were designated for perceived areas of weakness such as problem solving, root cause analysis training effectiveness and control rod/fuel bundles movements. The root cause analysis training effectiveness assessment was ongoing during the team's onsite visit. Also, near the end of the assessment period and at senior management request, each department performed a performance assessment.

Independent assessments were numerous in all functional areas. Audits were scheduled in excess of regulatory requirements in a number of areas and extended beyond conventual audit programs into such areas as the balance of plant and computer software controls. Audits generally identified performance weaknesses including the reliability of the PASS and selected aspects of contractor performance problems during RFOs. These audits were effective at identifying other performance weaknesses in security, fire protection, transportation of radioactive materials, and modification controls. (Reference 29, 33, 43, 50, 51) However, there were some weaknesses associated with the audit process during the assessment period. One weakness was noted by the team dealing with the lack of a radiation protection audit during the late 1994 RFO for Unit 1. Therefore, the numerous radiological deficiencies associated with that outage were not identified through the audit process. Also, the scope of emergency preparedness audits lacked thoroughness in the beginning of the assessment period. Both of these weaknesses were resolved by the end of the period. Quality control involvement was useful in the inservice inspection program and during reactor vessel internals repairs.

Normal inspection is recommended.

5.2 Problem Analysis and Evaluation

Although there were several weaknesses, certain aspects of the licensee's process for analyzing and evaluating problems were excellent. ERTs, the upper tier process for evaluating and analyzing problems, were very effective. These teams were used for such matters as TS violations, scrams and transients. While onsite the team reviewed numerous ERT reports, including those associated with recent scram due to EHC filter clogging, repetitive ESF actuations from the tripping of RPS bus 1B and a reactor scram initiated by cooling tower fill material falling into the circulating water canal. Once a problem met the ERT threshold, evaluations were normally thorough, comprehensive and timely. The SAER manager evaluated audits and NRC violations and effectively directed changes to the scope of the audit program on an annual basis.

Evaluation of DCs for repetitive equipment problems, a criteria for escalation to a SOR (which received a more comprehensive root cause review) occasionally identified recurring problems, such as a torus water level transmitter which was causing HPCI suction transfer from the condensate storage tank to the torus. However, there were limitations in the process. While onsite the team noted that this screening process did not identify the repetitive maintenance on the Unit 1 recombiner condensate return pumps (the nuclear plant general manager identified this situation independent of the screening process), the repeated need to patch cooling tower pipes or the recurring spiking of the Unit 1 liquid radwaste monitor for escalation to a SOR. In the human performance area, the licensee accumulated a good data base of errors by the end of the period. Also, extensive trending of the information was being accomplished. However, translation into corrective actions was limited.

The PRB (the onsite review committee) routinely held meetings to review procedure changes and proposed design changes prior to their implementation and was good at evaluating these procedures and design changes for unreviewed safety questions. The SRB (the offsite review committee) met at the required frequency and was very effective through subcommittees at evaluating proposed license changes and other safety evaluations for unreviewed safety questions. One weakness noted by the team was the SRB's examination of temporary modification safety evaluations after the modification had been removed from the facility. Also, these committees made limited recommendations in other areas of licensee performance. Some detractions to the SRB's review of problems was the untimely submittal of the DC/SOR trend report (trends for the first half of 1995 were published in 1996) and, reviewing LERs without the ERT report on the same subject which was occasionally more comprehensive.

Increased inspection is recommended.

5.3 Problem Resolution

Problem resolution was normally effective and timely. The team reviewed the status of independent and external assessment corrective actions and noted timely resolution except for corrective actions to PASS reliability. One area where timely problem resolution was not always evident was associated with event identified issues. There were numerous examples of recurring equipment malfunctions and failures due to a combination of slow or ineffective corrective actions. A large portion of these repetitive equipment problems was associated with BOP systems such as feedwater minimum flow control valves, switchyard components, and cooling tower fill material. The team reviewed the present corrective action backlog associated with SORs and ERT reports and noted little backlog.

Corrective actions to independent and external assessments were generally effective. In some instances strong corrective actions were noted. Examples included rectifying the programmatic weakness of engineering personnel not updating the computerized equipment locator index, re-emphasizing basic radiation protection practices prior to the Unit 2 1995 RFO, and totally revamping the calibration program for radiation monitors. (Reference 31, 35) However, initial corrective actions associated with fuel bundle and control rod mispositionings were not effective. Also, while onsite the team noted through the review of audit reports that corrective actions to selected contractor performance problems were not totally effective.

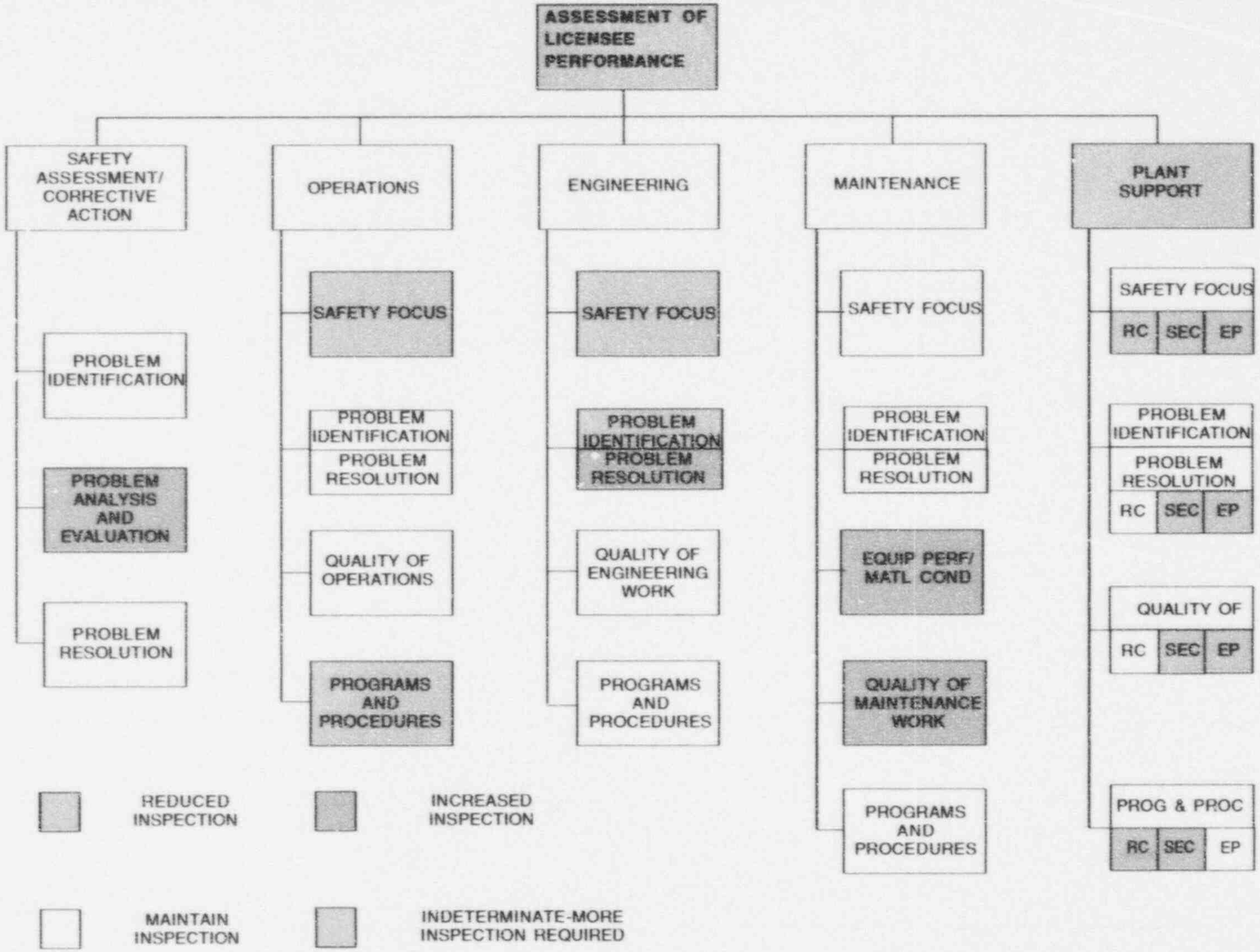
Licensee responsiveness to industry issues and the NRC was good, as evidenced by: establishing new, more user friendly TSs; appropriate compensatory and replacement actions for Rosemount transmitters susceptible to leaking oil; repair activities associated with reactor vessel core shrouds; actions associated with Thermo-lag fire protection wrap; and the aggressive reactor coolant chemistry initiatives taken as the BWR lead facility for implementing General Electric optimization recommendations. The team recognized that vendor material was being utilized in resolving equipment problems during ERTs. The team reviewed the vendor manual and industry correspondence status logs with minimal deficiencies noted.

Normal inspection is recommended.

6.0 EXIT INTERVIEW

Subsequent to the site visit on March 29, 1996, the team leader met with the representatives of the plant staff listed in Appendix D to discuss the results of the inspection. The licensee did not identify as proprietary any material provided to, or reviewed by the inspectors. The licensee did not express any dissenting comments.

FINAL HATCH
PERFORMANCE ASSESSMENT/INSPECTION PLANNING TREE



APPENDIX B

Acronyms

AIM	-	Automatic Interrupter Motor
ALARA	-	As Low As Reasonably Achievable
APRM	-	Average Power Range Monitor
ASME	-	American Society of Mechanical Engineers
BOP	-	Balance of Plant
BOST	-	Beginning of Shift Training
BWR	-	Boiling Water Reactor
CAS	-	Central Alarm Station
CRD	-	Control Rod Drive
DAD	-	Digital Alarming Dosimetry
DC	-	Deficiency Card
DCR	-	Design Change Request
EDG	-	Emergency Diesel Generator
EHC	-	Electro-Hydraulic Control
ERT	-	Event Review Team
ESF	-	Engineered Safety Features
HPCI	-	High Pressure Core Injection
IPAP	-	Integrated Performance Assessment Process
ISI	-	In-Service Inspection
LER	-	Licensee Event Report
LPCI	-	Low Pressure Coolant Injection
MG	-	Motor Generator
MSR	-	Moisture Separator Reheater
PASS	-	Post Accident Sampling System
PRB	-	Plant Review Board
PSW	-	Plant Service Water
QC	-	Quality Control
RCA	-	Radiological Control Area
RCIC	-	Reactor Core Isolation Cooling
RFO	-	Refueling Outage
RFPT	-	Reactor Feedwater Pump Turbine
RPS	-	Reactor Protection System
RPV	-	Reactor Pressure Vessel
RSDP	-	Remote Shutdown Panel
RWCU	-	Reactor Water Clean Up
SAER	-	Safety Audit & Engineering Review
SAS	-	Secondary Alarm Station
SFP	-	Spent Fuel Pool
SLC	-	Standby Liquid Control
SOR	-	Significant Occurrence Report
SRB	-	Safety Review Board
TS	-	Technical Specification
VAC	-	Volts Alternating Current

APPENDIX C

LIST OF REFERENCES

NRC INSPECTION REPORTS

Reference No.	
1	94-07
2	94-08
3	94-09
4	94-10
5	94-11
6	94-12
7	94-13
8	94-14
9	94-15
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45	95-22
46	95-23
47	95-24
48	95-25
49	95-26
50	95-27
51	96-01
52	96-02

LICENSEE EVENT REPORTS

UNIT 1

Reference No.	Event Report
53	94-001
54	94-002
55	94-003
56	94-004
57	94-005 *
58	94-006
59	94-007 *
60	94-008
61	94-009
62	94-010
63	94-011
64	94-012
65	94-013
66	94-014
67	94-015
68	95-001
69	95-002
70	95-003
71	95-004
72	95-005 *
73	95-006
74	96-001

UNIT 2

Reference No.	Event Report
75	94-001
76	94-002
77	94-003
78	94-004
79	94-005
80	94-006
81	94-007
82	94-008 *
83	94-009
84	95-001
85	95-002
86	95-003
87	95-004
88	95-005 *
89	95-006 *
90	95-007
91	95-008
92	95-009 *
93	95-010

* LER is common to both units

OTHER REPORTS REVIEWED

Reference No.	Report Title
94	Operational Safeguards Response Evaluation
95	Monthly Power History Reports

APPENDIX D

Hatch Exit Interview Attendees List

Licensee Personnel

G. Barker, Maintenance Support Superintendent
G. Benson, Quality Control Supervisor
J. Betsill, Operations Manager
J. Davis, Plant Administration Manager
P. Elder, Training Supervisor
P. Fornel, Performance Team Manager
J. Garvin, Acting Safety Audit and Engineering Review Supervisor
R. Godby, Assistant Performance Team Manager
M. Gouge, Outages and Planning Manager
J. Heidt, Nuclear Engineering and Licensing Manager
W. Kirkley, Health Physics and Chemistry Manager
C. Moore, Plant Support Assistant General Manager
J. Payne, Senior Engineer
G. Riner, Health Physics
P. Roberts, O & P Manager
J. Robertson, Outages and Planning Engineering Group Supervisor
E. Shaw, Engineering Supervisor
L. Sumner, Nuclear Plant General Manager
J. Thompson, Nuclear Security Manager
S. Tipps, Nuclear Safety and Compliance Manager
P. Wells, Plant Operations Assistant General Manager

NRC Personnel

J. Canady, Resident Inspector
E. Christnot, Resident Inspector
R. Holbrook, Senior Resident Inspector
W. Rogers, IPAP Team Leader

Enclosure