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EXECUTIVE SUMMARY

The purpose of the Integrated Performance Assessment at Robinson was to (1) develop an integrated perspective of the plant's strengths and weaknesses based upon an independent review of selected objective information on the plant docket and validated through an on-site assessment, (2) develop inspection recommendations for future NRC inspections at the plant, and (3) develop information for the NRC in the effectiveness of the regulatory programs and their implementation at the plant.

This Phase II final assessment of the H. B. Robinson Steam Electric Plant, Unit 2, was the result of integrating the Phase I preliminary review of docketed information for the plant with observations obtained during the on-site review conducted between June 3 and June 14, 1996. The original docket review covered a two year period from March 1994, through March 1996, with emphasis placed on the information after August 1995. The results of the preliminary assessment were documented in NRC Inspection Report 50-261/96-06 dated May 17, 1996. The team identified that with the exception of the area of plant support, the docketed material did not accurately reflect the performance of the plant and staff. These inaccuracies were caused by omissions of corrective actions that the licensee has taken to previously identified problems (1994). The current management staff has been in place for an average of less than two years and the programs implemented by the new management have not been addressed in inspection reports. This causes the docketed material to lag behind the actual progress that the plant has made.

The team evaluated the overall area of Safety-assessment and Corrective Actions as very effective and decreased inspection effort is recommended. Problem Identification continues to have a low (appropriate) threshold. Problem Analysis and Evaluation has improved and the backlog of open CRs and ESRs is being adequately managed. Problem Resolution has improved overall plant material condition and procedure enhancements. Personnel errors are decreasing. An effective self-assessment program is one of the key factors in these improvements.

The team evaluated the overall area of operations as good and has recommended it for normal inspection effort. The number of personnel errors that affected all attributes related to operations has declined. This has resulted in notable improvements in the quality of operations. Self-assessments and solicitations by management of potential improvements from all levels of personnel has had a positive affect on the problem identification as well as resolution. Though improvements were noted in the area affecting programs and procedures, increased emphasis on procedure adequacy and usage is indicated.

The team evaluated the overall area of maintenance as good and has recommended it for normal inspection effort. Recent improvements in management attention, licensee's self-assessment program, and more effective communication of expectations has resulted in better performance and a significant reduction in errors. While normal inspection is recommended for the maintenance functional area, emphasis should be placed on predictive maintenance and reliability centered maintenance, maintenance during outages, foreign material exclusion, and contractor control.

Overall, normal inspection is recommended for the engineering functional area with emphasis on the safety focus of engineering personnel during the performance of operability determinations. Additionally, emphasis is recommended in the areas of procedures and programs as the licensee is in the process of revising several programs to reduce the differences between CP&L sites.

The Plant Support Area consists of activities in Radiological Control, Security, and Emergency Preparedness. Overall, reduced inspection is recommended in the area of Radiological Controls. The focus of the Radiological Control program was maintained on safety by superior program management. Increased inspection is recommended for the Security program area. The Security program was not properly focused during most of the assessment period due to insufficient management oversight and involvement in the program. Reduced inspection is recommended in the area of Emergency Preparedness. The program was properly focused on safety as evidenced by the superior facilities provided for emergency response and the high level of management participation in the program functions.

1.0 PLANT OPERATIONS - PERFORMANCE ASSESSMENT

The licensee's focus in operations was on safety. The personnel error rate that affected all attributes related to operations has declined. This has resulted in notable improvements in the quality of operations. Self-assessments and solicitations by management of potential improvements from all levels of personnel has had a positive affect on the problem identification as well as resolution. Though improvements were noted in the area affecting programs and procedures, increased emphasis on procedure adequacy and usage is indicated. Overall, normal inspection is recommended for the operations functional area.

1.1 Safety Focus

The licensee maintained focus on safety. Numerous challenges that occurred distracting this safety focus during 1994 and 1995 appear to have been curtailed. These distractions were primarily human performance related events that manifested in the form of instances of valve misalignments, clearance and tag-out problems, ineffective communications, and inadequate procedures. Inter and intra departmental coordination, pre-job briefings, management communication of expectations and accountability, and increased awareness of the STAR concept have resulted in the reduction of operations related errors. This reduction in the error rate has culminated in no recent plant transients and the unit continuously on line for 320 days.

The licensee was responsive to overall plant and equipment conditions. The ACR process was satisfactorily utilized to keep focus on safety. Operational performance during shutdown and reduced inventory as well as following several transients was indicative of conservative operating philosophy. PNSC and NAS actively participated in event and plant condition report reviews. Further, the incorporation of PRA/PSA related information into the work control process to regulate system availability and LCO action statement management was noted. This was accomplished through a cross reference matrix that places constraints on the removal of redundant or related equipment to an out-of-service status. However, the inspector noted that the spent fuel pool cooling pumps were not considered in this risk matrix. Plant management was responsive to NRC questions.

Normal inspection is recommended.

1.2 Quality of Operations

The initial assessment of the quality of operations was noted to be poor. However, based on recent performance trends and the two week on-site inspection, the inspectors concluded that significant improvements have occurred or were under way in areas affecting quality of operations. The initial assessment was based on documented weaknesses in licensed and non-licensed operator performance and a lack of attention to detail resulting in numerous examples of component misalignments, incorrect configuration during clearance and tag-outs, and inadequate communication of actions and expectations. These errors

predominantly occurred in the 1994 and 1995 time frame. Further, weaknesses pertaining to licensed operator knowledge during initial examination were also noted.

During the on-site inspection, the inspectors noted good operator performance in the control room, the simulator, and the plant. Strengths were noted in control room shift as well as non-shift turnovers, communications, traffic control, noise level, formality, log keeping, and response to annunciators. The tag-out and clearance process from the work control center was also noted to be well controlled. Observed instances of tag-outs and plant equipment operation were properly performed by the non-licensed operators. The inspector also noted good operator performance in the simulator, including during requalification and a training emergency drill.

Portions of the HHSI system as well as overall plant walkdown were performed. No significant deficiencies were noted during these walkdowns. Minor boric acid leaks on two valves associated with the HHSI system were noted. There was already a work request on one of these valves and a work request was immediately initiated for the other one. The inspector also noted that the administrative procedure associated with control room logkeeping did not address the informal logs that the reactor operator keeps. The information from this informal log is then transferred to the official log. The licensee plans to review this for possible enhancements.

Normal inspection is recommended.

1.3 Problem Identification and Resolution

The initial assessment had noted that a significant portion of the problems including valve misalignments, clearance control, communication, and procedure related issues were identified by the resident inspector or were identified as a result of an event related to the problem. During the on-site phase of the inspection as well as a review of the recent inspection reports, the inspector noted that the frequency of errors attributed to operations has decreased. Stand down meetings, emphasis on STAR, and utilization of the ACR process appears to have contributed to this reduction. The inspectors also noted that operator work arounds were appropriately tracked and resolved. An index of all potential procedure enhancements was also maintained and prioritized. Self-assessments and solicitations of potential improvements by management were also noted.

Normal inspection is recommended.

1.4 Programs and Procedures

Operations related programs, including work control, risk management, plan of the day, and shift turnover were noted to be strengths. The operator license requalification program was adequate, and EOP and AOP validation and verification were effective. Strong multi-disciplinary

involvement during all aspects of activities affecting operations was noted during the on-site phase of the inspection. The weekly schedule and plan of the day meetings contributed to the completion of required surveillances, and missed surveillances had not been identified during the last two years.

There were several procedure related weaknesses identified in the initial assessment report. This included an occasional use of night orders, vice a formal procedure change that is subject to appropriate evaluation. An example of this was the change on allowed CCW temperature during normal operation from 55 degrees F to 45 degrees F. During the on-site review, the inspector noted another example where the troubleshooting activities related to the identification of accumulator leakage were conducted through the use of informal instructions vice, an approved procedure. The manipulations of affected valves per these instructions were however, subjected to independent verification and caution tags as necessary.

Other procedure related issues identified during the on-site inspection included the boration section of the CVCS procedure not specifically indicating the method of flushing of the blender following a boration. The inspectors noted that Robinson is required to maintain a boric acid tank boron concentration of approximately 21000 ppm and the operators routinely flush the boric acid blender following a boration with primary water. Upon identification to the shift supervisor, a procedure change request was immediately initiated. The inspectors also noted that during a surveillance associated with an intermediate range nuclear instrument, the rod drop turbine run-back initiated by the power range nuclear instruments was bypassed to preclude an inadvertent run-back due to a possible signal spike. The inspector noted that this was routinely done to preclude an inadvertent run-back and the surveillance procedure did not specifically include steps to bypass and subsequently restore the bypass feature. The licensee plans to update existing procedures to include steps for bypassing and restoring the turbine run-back bypass.

The inspector also noted that the operations procedure enhancement backlog has been reduced and that management remained aggressive in revising identified procedures that directly impacted plant safety. Notwithstanding the above examples, the inspectors noted that the overall licensee performance in this area was good as demonstrated by no significant issues related to this in the recent months.

Normal inspection is recommended with emphasis on procedural adherence and content.

2.0 MAINTENANCE

Overall, normal inspection is recommended for the maintenance functional area with emphasis on predictive maintenance and reliability centered maintenance, maintenance during outages, foreign material exclusion, and contractor control. The licensee's maintenance and test activities were

normally focused on safety. Improvements have occurred in this area largely the result of the licensee's self-assessment program and an improved communication of management expectations, which has resulted in a reduction of errors. Additionally, the licensee has implemented various changes which should result in improvement of oversight of contractors during the next outage. The test program was good, with required testing performed correctly and on schedule. The maintenance program has been generally effective. Equipment performance and material condition was good. The licensee has not experienced numerous scrams, transients or downpowers due to equipment problems or errors while performing maintenance or surveillance testing during the period. The majority of maintenance activities were properly performed. The licensee has made a significant reduction in the backlog of outstanding non-outage maintenance activities.

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. The licensee approached on-line work by considering the TS allowed outage time and utilizing these in a conservative manner. Additionally, probabilistic risk insights were incorporated into scheduling. Although the licensee's on-line risk maintenance program had not previously required formal evaluation of increased risk due to on-line maintenance, the existing program was enhanced to require a written evaluation when designated criteria are not met. Outages appeared to be planned and conducted in a conservative manner with risk insights factored into the shutdown activities.

Coordination and communication with other departments especially with maintenance and operations were good. Personnel performing work activities displayed a questioning attitude.

Normal inspection is recommended.

2.2 Programs and Procedures

The test program along with technical adequacy of test procedures were generally good. Improvements in the overall adequacy of work instructions developed by planning and scheduling has resulted from the usage of WR feedback reports by maintenance personnel. Fewer problems with inadequate equipment clearances have resulted due to increased attention to detail and an improved work control process. The licensee has implemented corrective actions associated with previous FME problems. However, the team was unable to assess the adequacy of these corrective actions due to lack of work activities in this area. In the area of contractor control, numerous corrective actions were enacted including extensive training of licensee personnel responsible for oversight of contractors, additional required training for contractor personnel in areas such as foreign material exclusion, planned pre-outage meetings with contractors to express management expectations, and

contractual performance incentives. Although these should result in improvements in this area, no significant contractor work activities are scheduled until the next outage, and the team was unable to assess the effectiveness of these corrective actions.

Although no independent verification errors were noted by the team during observation of ongoing maintenance, the licensee has not always effectively communicated management expectations in this area. Separation by time and distance was not emphasized during a formal classroom training session and some personnel interviewed by the team were not fully aware of management expectations in this area.

Normal inspection is recommended with emphasis on control of contractors and FME during the next outage.

2.3 Equipment Performance and Material Condition

Equipment performance and material conditions have generally been acceptable, and safety-related equipment has functioned properly. The external material condition of plant equipment is very good. There has been a minimum of boric acid buildup, no major system leaks or extensive use of catch containers. Minor leaks had been previously identified by the licensee, and WRs submitted. Housekeeping was generally satisfactory, and equipment condition of selected systems appeared to be good. There have not been a significant number of scrams or unplanned power reductions due to equipment problems or errors while performing maintenance or surveillance testing during the period. Few equipment repetitive problems occurred. An exception to this has been the failure of both Spent Fuel Cooling Pumps during the last five months. In each case the failed pump was not available for an extended period of time.

The licensee does not have a effective predictive maintenance program for equipment which is not required by the Technical Specifications. Additionally, performance monitoring of this equipment is limited. However, management is currently in the process of reviewing recommendations by engineering which if implemented should result in significant improvements in this area.

Normal inspection with emphasis on predictive maintenance and reliability centered maintenance is recommended.

2.4 Quality of Maintenance

The majority of maintenance activities were properly performed. Most required tests were performed correctly and on schedule. Maintenance and testing activities were well planned and implemented. Work activities observed by the team were performed correctly without any significant errors. Maintenance management demonstrated strong supervisory involvement, coordination and communications during ongoing

work activities. Work instructions were adequate and maintenance personnel demonstrated good work practices. Minimum levels of equipment required by TS were always maintained.

Normal inspection with emphasis on outage activities is recommended.

2.5 Problem Identification/Problem Resolution

The licensee's threshold for identifying equipment and personnel performance deficiencies was conservatively low. The licensee's self-assessment program is more effective and significant improvement has occurred in this area. Performance of routine self-assessments and informal peer reviews by members of the maintenance organization has resulted in identification of Condition Reports and improvement recommendations. Additionally, recent improvements have occurred with communication of management expectations. This has resulted in a significant reduction in errors associated with recurring problems such as procedure adherence and inadequate restoration of equipment following maintenance.

Corrective actions were generally effective as evident by a significant reduction in the numbers of personnel errors, inadequate clearances, and inadequate WRs. These improvements have resulted as a result of the improvements in the licensee's self-assessment program, increased management emphasis on procedural adherence, use of three way communications, and the STAR program.

Normal inspection is recommended.

3.0 ENGINEERING

Overall, normal inspection is recommended for the engineering functional area with emphasis on verifying that improvements have been demonstrated in the safety focus of engineering personnel during the performance of operability determinations. The licensee has developed a new site level procedure which established the requirements to be followed in the determination of "Operability" for safety-related systems, structures, or components. Other changes have also been made to site level procedures which describe CP&L's requirements for various engineering activities. It will take time in order to assess the effectiveness of these new program changes.

3.1 Safety Focus

The licensee reorganized the engineering functions from a central design centered organization located at the corporate office to an on-site centered organization. The intent of this reorganization was to establish a consistent engineering organization at each of the three CP&L nuclear sites and to increase the efficiency of the delivery of engineering services (Ref. IR 94-25). RPRG was also established to review and approve proposed plant modifications for inclusion in the Master Project Index and the Robinson Five Year Plan. Prioritization of

proposed plant modifications under the RPRG review and approval process included assignment of an index based on nuclear safety concerns which determined the scheduled implementation date of plant modifications (Ref. IR 94-25). A second reorganization change was also implemented to establish the Rapid Response Team, which provides immediate response to engineering service requests transmitted to the RESS (Ref. IR 95-07).

The staffing level of the on-site engineering group was considered adequate to maintain engineering support to plant operations and maintenance (Ref. IR 94-25). During the course of the inspection, there was a reduction in the number of engineering personnel assigned to RESS. The impact of this reduction on the timeliness and technical quality of the engineering support provided to the operating unit will be assessed in the future.

The licensee's engineering organization was properly focused on safety. The results of some operability determinations, however, failed to demonstrate that degraded and nonconforming equipment could perform its design function with reasonable assurance or reliability. Operability Determination 96-009 described deficiencies involving the SGBD sample valves FCV-1933A & B, 1934A & B, and 1935A & B which were required to ensure the integrity of the containment vessel isolation. An engineering evaluation was not performed to identify the technical and quality requirements for the replacement solenoid valves which were installed using the plant maintenance work order process. Operability Determination 96-010 also involved the misapplication of solenoid valves which were found to be under-rated for the pressure required to operate their respective feedwater regulating and feedwater regulating bypass valves.

These operability determinations were part of a bigger problem involving CP&L's action in response to NRC Information Notice No. 88-24, Failures of Air Operated Valves Affecting Safety-related Systems, dated May 13, 1988. The Information Notice was provided to the licensees to alert them to a potential problem with air operated valves in safety-related systems, similar to those described in Operability Determinations 96-009 and 96-010. The licensee performed an extent of condition review for the degraded/nonconforming solenoid valves and identified numerous solenoid valves in multiple safety systems that require corrective actions. The licensee is continuing to investigate this problem to accurately identify the scope to develop and implement corrective actions for the solenoid valves identified.

An additional example of lack of safety focus was demonstrated by Operability Determination 96-003, which involved an unauthorized design change that resulted in the replacement of a safety-related circuit breaker with a commercial grade non-safety-related circuit breaker. A Material Equivalency Evaluation was incorrectly used for replacing the circuit breaker. Plant modification ESR No. 96-00069 was developed to downgrade the quality classification of the EDG skid mounted components and also to evaluate the acceptability of using commercial grade non-safety-related circuit breakers for supplying power to the skid mounted

EDG auxiliary electrical equipment. It failed to demonstrate that selective coordination existed between the 480 VAC MCC feeder breaker which fed the EDG auxiliary loads and the upstream 480V emergency bus circuit breaker.

Normal inspection is recommended with emphasis on verifying improvements in safety focus during implementation of these new program controls.

3.2 Problem Identification

Self-assessments and independent quality audits of engineering activities by the Nuclear Assurance Department were effective in identifying several major areas for improvement. Engineering Technical Support Near-Term Improvement Action Item Plan-Engineering Excellence 94 was initiated and details of this plan was shared with the NRC on August 29, 1994 (Ref. IR 94-25). The Engineering Excellence 94 program has been extended with the objective of making it a corporate wide program in 1996 (Ref. IR 95-07).

The engineering staff, for the most part, has been effective and timely in responding to plant problems and in interfacing with the operations staff (Ref. IRs 95-07, 95-26, 95-27, and 95-30). Identification and correction of the pressure locking phenomenon involving the containment sump also demonstrated effective problem identification and resolution (Ref. IR 95-07). The effectiveness of the system engineering function in identifying and resolving problems was demonstrated by Operability Determination 95-021, Reactor Trip Setpoint Lead/Lag Time Overcurrent Test. The method for evaluating the timing traces in order to determine the time frame within which the lead/lag unit for over-temperature delta T protection will trip had never been proceduralized nor formally documented. Because of this, I&C technicians, using skill of the craft, erroneously calculated these values on numerous occasions during performance of Procedure PIC-605, Hagan Lead/Lag Controllers. The procedure was revised by the system engineer to delineate the correct method for performing this activity. An additional example of system engineer's effectiveness was demonstrated by EE No. 94-031 which evaluated the use of Thermon type HTEK series resistance heater cable as a replacement for Thermon type TEK series resistance heater cable. This engineering evaluation provided for timely replacement of the heater cables as they failed, thus ensuring continued operability of the system. Independent audits and self-assessments were effective in identifying needed improvements in engineering program controls. Twenty seven self-assessments have been scheduled to be performed in 1996. Self-assessment reports reviewed were determined to have adequately met their stated scope and objectives. Also, self-assessments findings were clearly described and the recommended corrective actions addressed the apparent root causes of the identified deficiencies.

Normal inspection is recommended for this area.

3.3 Problem Resolution

Engineering involvement in the resolution of problems was weak in some instances. Restart of the reactor following the reactor trip on June 30, 1995, was identified as one such example (Ref. IR 95-21). Deficiencies related to the set point control program were also identified as weaknesses in this area (Ref. IR 96-02 and 94-16). The engineering functions' effectiveness for resolving problems was demonstrated by the number of items on the Operator Work-Around list assigned to RESS for which actions had been completed. As of June 10, 1996, a total of seventeen work-around items had been assigned to RESS. Item 96-03 was cancelled because of ongoing field investigations by the I&C technicians. RESS has successfully processed thirteen work-around items for resolution of degraded or non-conforming conditions. Resolution of long standing or repetitive concerns were also demonstrated by actions taken by RESS for deficiencies identified on RNP "Top Ten" Equipment Issues List. Typical of these actions was the corrective action developed and implemented for LER 95-009-01. The commitment to the NRC for identifying any transmitter that could exhibit erroneous indication because of air entrapment in addition to tracking and documenting the configuration of transmitters that needs to be corrected, has been completed by the licensee.

A process for prioritizing engineering work has not been formalized, and this process is not delineated in any site level procedure. With the latest reduction in engineering staff, the present work load of the RESS (including initiatives), and slippage in the schedule to complete training required by the Plant Engineer concept, the lack of a process to prioritize work activities could conceivably affect the timeliness and quality of engineering work products and services provided by RESS. Corrective actions planned for deficiencies identified in independent audits and self-assessments have been implemented for the engineering organization (Ref. IR 95-07 and 94-25).

Normal inspection effort is recommended in this area.

3.4 Quality of Engineering Work

Plant modification and temporary modification packages were generally determined to be technically adequate. The control of temporary modifications was also effective as was demonstrated by their low number and the high level of management review they receive (Ref. IR 95-07 and 94-25). Numerous instances of deficiencies involving inadequate design control were also identified. Additionally, one example of the use of an unverified assumption in a 10 CFR 50.59 Safety Evaluation was identified (Ref. IR 96-03, 95-19, 95-06, 94-27, 94-24, and 94-16). These deficiencies demonstrated a lack of attention to detail during implementation of the design engineering control program. Corrective actions for identified deficiencies were resolved in an acceptable manner (Ref. IR 95-29, 95-21, and 95-12). However, a lack of engineering justification was identified in some of the completed corrective actions (Ref. IR 95-20).

Plant modifications developed for implementation during RFO 17 were selected for review to determine the technical adequacy of the ESRs. The plant modifications were technically adequate and had been prepared in accordance with the controls of the ANSI N45.2.11-1974 design control program. Additionally, the design changes had been reviewed in accordance with the requirements of 10 CFR 50.59. One design inadequacy was identified with ESR No. 9500686, involving the control room area exhaust damper, HVE-16, interlock modification. Based on the sample size reviewed, this single deficiency was not considered representative of the quality of engineering work produced by RESS.

Desired skill sets for the functional positions of Plant Engineer have been identified. Nuclear engineering department development plans have also been prepared for each RESS staff member to identify and document completion of specific training requirements that have been established for that employee. Management's expectations concerning transition from Design Engineer/Systems Engineer to the Plant Engineer concept has also been expressed to the RESS staff. The Plant Engineer transition status, as indicated by the number of planned and completed Engineering Qualification Guides scheduled for 1996 was behind schedule. The number of Engineering Qualification Guides planned to be completed in May was 212, and in June it was 334. None had been completed up to the time of the inspection. The Plant Engineer functional titles require engineering personnel to have considerable more skills and technical knowledge for successful job performance than that which was required prior to the transition.

Normal inspection is recommended for this area.

3.5 Programs and Procedures

Engineering technical support programs and procedures were determined to be adequate for the development and management of both temporary and permanent plant modifications. Additionally, the mission, standards, administration, organization, responsibilities, and duties of the engineers were adequately delineated in Technical Support Management Manual TMM-001 (Ref.94-25). Implementation of these procedural controls has resulted in work products and services of varying quality. Effective implementation of procedural controls requires indoctrination and training of the staff in the use of the procedures. Changes are presently being made to site level procedures which delineate requirements for (1) engineering service requests; (2) design control; (3) design verification; (4) vendor manual review; and (5) operability determinations. These changes need time to be implemented in order to demonstrate the effectiveness of the new program controls.

Increased inspection is recommended in this area in order to verify completion of indoctrination and training of personnel in the new program controls along with assessing the effectiveness of the new program controls in improving the quality of the engineering products and services provided by RESS.

4.0 PLANT SUPPORT

Assessment of the Plant Support functions was based on evaluations of program performance in the areas of Radiological Control, Security, and Emergency Preparedness. Reduced inspection is recommended in the area of Radiological Controls. The focus of the Radiological Control program was maintained on safety by superior program management. Identification and resolution of problems by NAS audits and self-assessments in this area was also superior. The continued generally decreasing trends for occupational and public radiation exposure was a result of the exceptional quality of the radiological controls exercised at the facility. Enhancements to radiological control procedures were made routinely based on recommendations from the self-assessment process.

Increased inspection is recommended for the Security program area. The Security program was not properly focused during most of the assessment period due to insufficient management oversight and involvement in the program. Late in the assessment period significant actions were initiated by licensee management to improve program performance and to refocus the program towards safety. Self-assessments had not been put to effective use for identification and resolution of problems in the Security area. Program deficiencies identified by NAS audits, utilization of the self-assessment process, the quality of the Security program, and upgrading of Security procedures were being addressed by the management improvement initiatives.

Reduced inspection is recommended in the area of Emergency Preparedness. The program was properly focused on safety as evidenced by the superior facilities provided for emergency response and the high level of management participation in the program functions. Problem identification and resolution was adequate in this area. The high quality of the program was demonstrated by excellent performance during a drill conducted while the inspection team was on-site. An entirely new set of emergency response procedures had been developed and were used effectively during the most recent drill.

4.1 RADIOLOGICAL CONTROLS

4.1.1 Safety Focus

The manner in which the licensee managed the facility was effective in maintaining the focus of the radiological control program on safety. Daily interdepartmental management meetings were held to review the status of the current on-going activities in the plant and the near-term planned activities. Participation in those meetings kept E&RC abreast of the work being scheduled. This early involvement in the work planning process enabled E&RC to make the necessary preparations for the requisite radiological support of those scheduled activities. E&RC also attended morning meetings in order to be aware of and provide support for emergent work in addition to previously scheduled activities. Pre-work briefings were also conducted to ensure interdepartmental coordination of work activities and to minimize radiation exposure to

workers. ALARA work plans were prepared for tasks which would incur more than five rem and for those plans which required prior approval by the ALARA Committee, the members of which included senior management. Weekly E&RC staff meetings were held to discuss scheduled work plans, the status of ongoing projects, staff training, and current issues. Those meetings were also used to convey management expectations for performance of the staff and the radiological controls program. E&RC management and supervision also conducted weekly plant tours to observe work practices, procedure adherence, radiological postings, high radiation area access controls, plant material conditions, and housekeeping. Based on the observations made during the tours, work requests were written as needed, and CRs were issued for recommended improvements. In combination the above series of meetings and management practices resulted in the radiological control program being properly focused on safety.

4.1.2 Problem Identification/Problem Resolution

NAS audits and E&RC self-assessments were used very aggressively to identify problems and areas for improvement. Identified issues were evaluated and characterized as significant, non-significant or improvement issues. The CR tracking system was used for monitoring the completion of warranted corrective actions and program improvements as deemed appropriate by the management evaluation of the issues. The E&RC staff utilized the self-assessment process more extensively than was required by the procedure which implemented the program for the entire facility. Independent reviews of the CRs were performed quarterly to identify trends and common root causes and to monitor timeliness in completing corrective actions. Audits and self-assessments in this area were considered a program strength.

4.1.3 Quality of Radiological Controls

Radwaste processing and the radioactive effluent release control program continued to be effective in reducing the amount of activity released from the plant. A tabulation of the amounts of activity released in liquid and gaseous effluents, as reported in the semi-annual effluent release reports for the past five years, indicated a continued general decreasing trend. Concurrently the doses to the general public from the liquid and gaseous effluents were less than one percent of their respective regulatory limits. The performance of those programs was further confirmed by the results of the environmental monitoring program during 1995. Trace amounts of radioactivity attributable to plant operations was detected in only 14 of the approximately 1200 environmental samples collected during 1995.

The radiation protection program continued to be very effective in reducing occupational exposure. The annual collective dose during 1994 was 63 person-rem, and the collective dose during the 1995 refueling outage was 182 person-rem. These were the lowest ever achieved at the site. The annual collective dose during 1995 was 215 person-rem, which included the refueling outage dose. As of early June 1996, the

collective dose was approximately 10 person-rem; the goal for the year was set at 211 person-rem. RWPs, pre-job surveys for dose rates and contamination, job planning and coordination, ALARA planning, and pre-job briefings were all used effectively for controlling worker exposure and work practices. Good work practices for minimizing internal and external exposures were observed during the on-site inspection.

4.1.4 Programs and Procedures

Procedures for implementing the radiological control program were kept current to ensure compliance with regulatory requirements. Revisions to those procedures were also being made, when appropriate, to incorporate the improvements identified by the self-assessment process.

Reduced inspection in all elements of this area is recommended.

4.2 SECURITY

4.2.1 Safety Focus

During most of the assessment period the Security program had not been properly focused. However, licensee management has recently initiated significant actions to improve the safety focus of the program. Those initiatives included changes in Security management personnel, raising standards and expectations, enforcing expectations, improving communications, increased self-assessment, revising procedures, upgrading training, improving protection of safeguards information, and increasing the frequency of program audits. Management oversight and involvement in program implementation and operation was enhanced by participating much more actively in daily staff briefings and shift turnover meetings. During those meetings, management expectations for improved performance was routinely conveyed to the Security staff.

4.2.2 Problem Identification/Problem Resolution

NAS audits had identified significant weaknesses in the Security program but the recent management initiatives for improved performance included aggressive actions to correct those weaknesses. One of those weaknesses was ineffective use of the self-assessment process. During staff briefings and turnover meetings, management encouraged increased staff usage of self-assessments and emphasized to the staff that identification of problems and areas for improvement was viewed by management as positive, rather than negative, job performance. As a result, the Security staff is beginning to take more active participation in the self-assessment process.

4.2.3 Quality of Security

As a result of the management initiatives, improvements in the quality of the Security program were noted during the on-site inspection. During the assessment period, six violations of regulatory requirements occurred. The areas involved included access controls, alarm

monitoring, vital area boundary breaches, control of safeguards information, and testing of access control equipment. During the on-site inspection, the licensee's corrective actions for those violations were reviewed and determined to have been effectively implemented. One example of improved performance was in the control of safeguards information. The inventory of documents containing safeguards information was reduced by more than one half by destroying out-of-date and superseded documents. The number of repositories and locations of repositories was also reduced. No unattended safeguards documents were observed during the on-site inspection. Another example of improved performance was testing of access control equipment. The hand geometry measurement equipment had been tested after installation as part of the corrective action for the violation. Subsequently, a vendor recommended modification was made to the equipment to install lightning arresters. After that modification was complete the equipment was retested before being placed back in service.

4.2.4 Programs and Procedures

Security procedures were being upgraded as part of the management initiatives for improving the overall performance of the Security program. Selected procedures were reviewed during the on-site inspection and found to be consistent with the Security plan.

Increased inspection in all elements of this area is recommended.

4.3 EMERGENCY PREPAREDNESS

4.3.1 Safety Focus

The licensee's EP program was properly focused on safety. The superior facilities and equipment provided for responding to emergencies were indicative of senior management's support for the emergency response program. The facilities were located in areas with sufficient floor space to arrange the work stations and equipment such that the various emergency response functions could be conducted in a coordinated and efficient manner. Good interdepartmental coordination and communication was also evident by the level of participation in routine drills and development of the scenarios. Weekly staff meetings were used effectively for coordination and control of routine EP staff activities and to convey management expectations for performance to the staff.

4.3.2 Problem Identification/Problem Resolution

Problems identified by NAS audits in the EP area during the assessment period were promptly addressed and resolved. One of those problems involved communications with local authorities. EP management resolved the problem by meeting with State and county representatives to emphasize the importance of local communications during emergencies. Another NAS identified issue was ineffective utilization of the self-assessment process by the EP staff for finding and correcting deficiencies in EP procedures. EP management resolved this issue by

providing the staff with additional training for self-assessment and establishing a schedule for performing self-assessments of selected elements of the EP program.

4.3.3 Quality of Emergency Preparedness

During the on-site inspection the licensee conducted a previously scheduled, routine EP drill. Very good performance by the licensee's emergency response team was observed. The emergency response facilities, equipment, instrumentation, and supplies had been maintained in a good state of readiness which permitted the facilities to be promptly activated. Good communication between those facilities and good command and control within them were noted. Event classifications were correct, and notifications were timely. An entirely new set of procedures were used for the first time during this drill. The use of the new procedures did not appear to present any significant problems to the emergency response team.

4.3.4 Programs and Procedures

In response to a NAS audit finding that EP procedures contained several deficiencies, a new set of EP procedures were developed. The scope of the procedures was changed from a response team position basis to a facility operational basis. Reorientation and consolidation reduced the number of EP procedures from 53 to 9. Training in the use of the new procedures was successful as demonstrated by their use during the most recent drill.

Reduced inspection in all elements of this area is recommended.

5.0 Self-assessment AND CORRECTIVE ACTION

Overall, the team evaluated the area of Safety-assessment and Corrective Action as very good and recommends reduced inspection effort. Personnel errors and procedural related problems continue to be reduced in numbers through an aggressive self-assessment and STAR program.

5.1 Problem Identification

Overall, and based primarily on the on-site review, the team evaluated this area as very good and reduced inspection is recommended. The Condition Report process has a very good threshold for identification of problems. These reports are appropriately prioritized and effective corrective actions are carried out.

All site organizations are involved in self-assessments. NAS audits the self-assessment process to ensure the units are performing effective self-assessments. The units trend the findings of the self-assessments and the cause codes of CRs. The OEA unit also trends these findings and provided an inter-unit trend looking for items that might be overlooked by the unit's individual trends.

5.2 Problem Analysis and Evaluation

Overall, based primarily on the on-site review, the team evaluated this area as very good and recommended reduced inspection. The decreasing trends of operator error and tagging indicate a very effective program for problem analysis and evaluation. This effectiveness is also noted in the improved material condition and recent operating history of the unit. Recent changes in the method of responding to ESRs has improved the response of RESS to the originating organization and provides for more timely operability determinations.

5.3 Problem Resolution

Overall, based primarily on the on-site review, the team evaluated this area as very good and recommended reduced inspection. The decreasing trends of operator and maintenance errors as well as the increased availability of equipment indicate an effective program. Repetitive errors are identified and adequately resolved to prevent reoccurrence. Self-assessments by the units are very effective in ensuring that problems are adequately resolved. NAS ensures that the units are effective in assessing themselves and provide corrective input to those units that are less effective in self-assessment.

6.0 EXIT INTERVIEW

Subsequent to the site visit on June 14, 1996, the team leader met with the representatives of the plant staff listed in Appendix C to discuss the results of the assessment. The licensee did not identify as proprietary any material provided to, or reviewed by the inspectors. The licensee did not express any dissenting comments.

APPENDIX B

Acronyms and Initialisms

ACR	-	Adverse Condition Report
AFW	-	Auxiliary Feedwater
ALARA	-	As Low As Reasonably Achievable
AOP	-	Abnormal Operating Procedure
CIT	-	Clearance Information Tag
CCW	-	Component Cooling Water
CR	-	Condition Report
CVCS	-	Chemical and Volume Control System
E&RC	-	Environmental & Radiation Control
EDG	-	Emergency Diesel Generator
EOP	-	Emergency Operating Procedure
EP	-	Emergency Planning
ESR	-	Engineering Service Request
FME	-	Foreign Material Exclusion
HHSI	-	High Head Safety Injection
INPO	-	Institute of Nuclear Power Operations
IPAP	-	Integrated Plant Assessment Program
IR	-	Inspection Report
LCO	-	Limiting Condition for Operation
LER	-	Licensee Event Report
LTOP	-	Low Temperature Over Pressure
LHRA	-	Locked High Radiation Area
M&TE	-	Meters & Test Equipment
MDAFW	-	Motor Driven Auxiliary Feedwater
NAS	-	Nuclear Assurance Service
NRC	-	Nuclear Regulatory Commission
OEA	-	Operating Experience Assessment
PNSC	-	Plant Nuclear Safety Committee
PORV	-	Power Operated Relief Valve
PSA	-	Probabilistic Safety-assessment
PRA	-	Probabilistic Risk Assessment
PMT	-	Post Maintenance Test
RESS	-	Robinson Engineering Support Section
RCS	-	Reactor Coolant System
RHR	-	Residual Heat Removal
RPRG	-	Robinson Plant Review Group
RWP	-	Radiation Work Permit
RFO	-	Refueling outage
RTGB	-	Reactor Turbine Generator Gauge Board
SDAFW	-	Steam Driven Auxiliary Feedwater
SGBD	-	Steam Generator Blow Down
SI	-	Safety Injection
SRO	-	Senior Reactor Operator
TS	-	Technical Specifications
WD	-	Waste Disposal
WR/JO	-	Work Request/Job Order

APPENDIX C

PERSONS ATTENDING EXIT INTERVIEW ON JUNE 20, 1996

Licensee Personnel

R. Barnett, Superintendent, Maintenance Programs & Projects
W. Baum, Director, Human Resources
P. Cafarella, Superintendent, Mechanical Systems
R. Crook, Senior Analyst, Licensing/Regulatory Programs
J. Eaddy, Superintendent, Environment & Chemistry
S. Farmer, Superintendent, Operations Assessment
P. Gaffeny, Superintendent, Electrical & Instrumentation and Control
H. Habermeyer, Vice President, Nuclear Engineering
M. Herrell, Manager, Training
C. Hinnant, Vice President Robinson
J. Keenan, Director, Site Operations
R. Krich, Manager, Regulatory Affairs
B. Meyer, Manager, Operations
G. Miller, Manager, Robinson Engineering Support Section
R. Moore, Manager, Outage & Scheduling
J. Moyer, Manager, Maintenance
D. Stoddard, Supervisor, Operating Experience Assessment
B. Toney, Senior Analyst, Operating Experience Assessment
R. Warden, Manager, Nuclear Assurance Section
W. Wheelen, Supervisor, Industrial Hygiene & Safety
D. Young, Plant General Manager
S. Young, Superintendent, Security

NRC Personnel

J. Jaudon, Deputy Director, Division of Reactor Safety
G. Imbro, Director, Project Directorate
P. Kellogg, IPAP Team Leader
J. Zeiler, Resident Inspector
P. Balmain, Resident Inspector
P. Bryon, Resident Inspector

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