U.S. NUCLEAR REGULATORY COMMISSION

REGION II

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| License No: | DPR-23 |
| Report No: | 50-261/96-14 |
| Licensee: | Carolina Power & Light (CP&L) |
| Facility: | H. B. Robinson Unit 2 |
| Location: | 2112 Old Camden Rd.<br>Hartsville, SC 29550 |
| Dates: | November 17 - December 28, 1996 |
| Inspectors: | B. Desai, Senior Resident Inspector<br>J. Zeiler, Acting Senior Resident Inspector<br>P. Byron, Resident Inspector, Surry<br>F. Jape, Project Engineer, RII (Section 07.2)<br>G. MacDonald, Project Engineer, RII (Section 07.2)<br>J. Lenahan, Reactor Inspector, RII (Sections 07.2, E1, E2, E5, and E7)<br>G. Salyers, Reactor Inspector, RII (Sections P2, P3, P5, P6, and P7) |
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Enclosure 2

# EXECUTIVE SUMMARY

H. B. Robinson Power Plant, Unit 2
NRC Inspection Report No. 50-261/96-14

This integrated inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a six-week period of inspection. In addition to inspections conducted by resident inspectors, it includes the results of an engineering inspection conducted by a regional inspector, an emergency preparedness inspection conducted by a regional inspector, and, a corrective action program inspection conducted by regional project engineers and inspectors.

Operations

- Operations personnel demonstrated a heightened sensitivity to potential hydraulic transients with the identification of a water hammer during startup of the C Auxiliary Boiler. Engineering performed a detailed investigation of the transient and were successful in identifying the root cause. Licensee planned corrective actions were appropriate to address the procedure discrepancy identified, as well as the generic implications of other potential procedural configuration weaknesses. The inspectors noted that continued licensee emphasis and sensitivity to potential hydraulic transients was warranted due to past weaknesses in this area (Section O1.2).

- Operators responded appropriately upon noting the abnormal condition relative to water dripping into an Emergency Diesel Generator room from a crack in the concrete roof. The licensee adequately evaluated the safety impact of the crack on the operability of diesel generator (Section O1.3).

- A failure of an instrument air tubing caused a Feedwater Heater level controller to fail resulting in a transient and a subsequent power reduction. Further, it was identified that Feedwater Heater relief valves were not in a periodic testing program. The decision to restore the 6A Feedwater Heater to normal alignment at full power was considered a weakness. Continued licensee attention relative to the reliability of the Instrument Air System, as well as periodic testing of secondary relief valves is warranted (Section O1.4).

- The onsite review functions of the Plant Nuclear Safety Committee (PNSC) were conducted in accordance with Technical Specifications. The PNSC meeting attended by the inspectors was well coordinated and meeting topics were thoroughly discussed and evaluated (Section O7.1).

- Based on review of selected Conditions Reports (CRs), it was concluded that the licensee's corrective action management program was being implemented in accordance with licensee procedures and regulatory requirements (Section O7.2).

- In general, personnel in all organizational components were identifying and fixing problems within their area. CRs were discussed on a regular basis and being assigned for action. CR assessments were thorough and

root causes analyses were considered good. Trending of CR data by unit managers was an effective method for identifying and reversing problems and adverse trends, and improve overall plant performance (Section 07.2(1)).

- Several potential adverse conditions were voided with poor documentation of justification. A need for training was indicated by the number of voided CRs with poor documentation of justification. The large number of voided CRs also indicated a weakness in personnel awareness of what constituted an adverse condition (Section 07.2(1)).

- Self-assessments in Engineering, and Materials and Contract services indicated a need for training. Nuclear Assessment Section assessment 96-01 identified a weakness in the understanding of the CR process. Discussions with plant personnel disclosed that there was no formal training provided to personnel, other than CR evaluation personnel (Section 07.2(1)).

- The Operating Experience Program (OEP) was judged to be effective. The completed OE evaluations reviewed were acceptable. OEP self-assessments and NAS audits were thorough. The OE weekly status meeting, monthly report, and OE tracking provided good program oversight. The incorporation of OE data into routine daily activities was viewed as a strength (Section 07.2(2)).

- The self-assessment program has been effective in identifying performance deficiencies and was useful in providing oversight to management. Managers have been proactive in following up on issues identified at other sites to identify and correct deficiencies at the plant. Licensee management is committed to the self-assessment process as indicated by the resources, including assistance of outside organizations, involved in the self-assessment process, and the number of self-assessments performed on an annual basis (Section 07.2(3)).

- Operations personnel identification and response to an anomaly between Steam Pressure transmitter output and energization of Freeze Protection circuitry was considered an example of good attention to detail and plant monitoring (Section M1.2).

Maintenance

- The inspectors concluded that maintenance and surveillance activities were performed satisfactorily (Section M1.1).

- The lack of comprehensive preventive maintenance on the Freeze Protection system was identified as a weakness in the licensee's cold weather protection program. Had there been preventative maintenance to verify the operability of Freeze Protection system thermostats, the problems associated with thermostats in the Steam Generator and Steam Header pressure transmitter cabinets could have been identified previously (Section M1.2).

Engineering

- The licensee's design change process was determined to be adequate, however, a concern was identified that a process was in place that used an engineering review in lieu of a design verification for plant changes designated as configuration changes only. An Unresolved Item (URI) was identified for further review of the licensee's engineering review requirements. The existence of duplicate administrative procedures (corporate and site specific) controlling the engineering design and design change process could result in confusion and design control errors in the future due to differences in requirements (Section E1.1).

- Design changes and modification packages reviewed were determined to be of good quality. The packages contained sufficient specifications, drawings, and procedures to be properly installed and tested (Section E1.2).

- A violation was identified regarding the licensee's failure to follow procedures in canceling corrective actions required by an engineering evaluation for inspections of the containment liner plate for corrosion (Section E2).

- Engineers were actively involved in the day-to-day support of plant equipment. The material condition of the plant and equipment was considered good to excellent (Section E2).

- The licensee's program for training and qualification of system engineers was determined to meet regulatory requirements (Section E5).

- An Unresolved Item was identified involving a potential inadequate 10CFR50.59 evaluation conducted for a change to a procedure allowing the Containment Spray System to be aligned in an undesirable configuration during Spray Additive Tank discharge valve leakage testing (Section E8.1).

- Engineering thoroughly evaluated Steam Generator and Steam Header pressure transmitter output anomalies that were caused from higher than designed cabinet temperatures resulting from Freeze Protection system malfunctions (Section M1.2).

Plant Support

- The Emergency Preparedness (EP) program was receiving strong management support (Section P6). The EP facilities were satisfactorily equipped and maintained in operational readiness (Section P2.1). The operational status and maintenance of the siren system was good (Section P2.3). The licensees's dose assessment capabilities were satisfactory and sufficient personnel were trained to perform onshift dose assessment using real time meteorological and radiological data (Section P2.2). The new designation and reorganization of the EP procedures was considered an improvement (Section P3.1).

- The licensee was effectively implementing the Emergency Response Organization training program. The licensee had rewritten their training program and reorganized their lesson plans. The new training program and lesson plan were an improvement, but the exams could be improved (Section P5.2). Combining licensed operator retraining with emergency preparedness drills was a strength for the emergency preparedness program and resulted in an increase in the number of training drills (Section P5.1). The number of drills performed during the year, the level of participation, and the feedback training provided to the players was a strength (Section P5.3).

- Nuclear Assessment Section audits of the EP program were detailed in scope and thorough (Section P7.1).

- The EP organization was adequately tracking and resolving upper tier issues. The licensee's loss of their lower level tracking system for EP drill comments and issues contributed to continuing problems with documentation. Control of documentation continues to be a concern (Section P7.2).

## Report Details

### Summary of Plant Status

Unit 2 remained at power the entire inspection period completing 70 days of continuous operation since startup from Refueling Outage 17. On December 22, 1996, a downpower to 96 percent and later to 90 percent was conducted in order to recover from a feedwater heater transient and to reseat a relief valve that lifted on the 5B Feedwater Heater. The 5B Feedwater Heater relief valve lifted while attempting to place the 6A Feedwater Heater level control instrument in service following an air-line failure to the level controller.

## I. Operations

### O1 Conduct of Operations

#### O1.1 General Comments (71707)

The inspectors conducted frequent control room tours to verify proper staffing, operator attentiveness and communications, and adherence to approved procedures. The inspectors attended operations turnover, and management review meetings to maintain awareness of overall plant operations. Operator logs were reviewed to verify operational safety and compliance with Technical Specifications (TSs). Instrumentation, computer indications, and safety system lineups were periodically reviewed from the Control Room to assess operability. Plant tours were conducted to observe equipment status and housekeeping. Condition Reports (CRs) were reviewed to assure that potential safety concerns and equipment problems were reported and resolved. Specific events and noteworthy observations are detailed in the sections below.

#### O1.2 "C" Auxiliary Boiler Water Hammer Incident

a. Inspection Scope (71707)

On December 20, while placing the "C" Auxiliary Boiler in service, a water hammer occurred downstream of the boiler in the piping to the C Auxiliary Boiler Deaerator Tank. The inspectors reviewed the circumstances leading to the water hammer, discussed the incident with engineering personnel who were investigating the incident, and walked down the piping to determine if all damage was properly identified by the licensee.

b. Observations and Findings

On December 20, operations personnel were placing the "C" Auxiliary Boiler in service in accordance with Operations Procedure (OP)-401, Auxiliary Heating Steam, Rev. 31. The purpose for starting the "C" Auxiliary Boiler was to supply supplemental heating steam to certain areas of the Auxiliary Building due to decreasing outside environment temperatures. When valve AS-2317, the Auxiliary Steam to the "C" Auxiliary Boiler Deaerator Tank, was opened in accordance with the procedure, evidence of a water hammer was heard downstream of AS-2317 in

the piping to the C Auxiliary Boiler Deaerator Tank. Boiler startup was suspended and engineering personnel were notified of the incident and requested to inspect the affected piping for any damage. Although no damage was identified as a result of the incident, an investigation was initiated to determine the root cause of the water hammer.

The licensee determined that the water hammer was the result of a drain valve lineup problem associated with OP-401. The procedure required that AS-2317 be closed whenever the C Auxiliary Boiler was not in service. Closing AS-2317 also isolated a downstream steam trap allowing steam trapped in the piping to condense and form voids in the piping. When AS-2317 was opened during startup of the boiler, the sudden re-pressurization of the piping resulted in a water hammer.

The licensee planned to revise OP-401 to ensure that AS-2317 remained open and provisions for verifying that the piping downstream of AS-2317 was properly drained of condensation prior to placing the C Auxiliary Boiler in service. An operations clearance was placed on the C Auxiliary Boiler until the procedure was revised. The inspectors conducted a walkdown of the affected piping following the event. No damage to the affected piping was observed from this walkdown.

At the end of the inspection period, the licensee was still investigating the reason why OP-401 had been written to allow the improper lineup that allowed the potential for a water hammer event. A procedure discrepancy was evident since plant piping details showed the normal lineup for AS-2317 as open. The results of the licensee's investigation and associated corrective actions to address the procedure problem were to be documented in CR 96-03184, which was initiated to address this incident.

The inspectors noted that this was the third steam or water related hydraulic transient that had occurred over the past several months. For example, in September 1996, during plant shutdown for refueling outage 17, a water hammer was introduced in certain feedwater heater drain lines as a result of re-admitting steam to the Moisture Separator Reheaters which had previously been isolated during plant cooldown. In October, during reactor coolant system check valve leakage testing, a water hammer occurred in the Safety Injection cold leg injection piping as a result of not adequately re-pressurizing the piping during testing restoration. In both of these two incidents, the primary cause was the result of inadequate procedures controlling the system or test alignment. In each of the three incidents, the problems associated with the procedures had gone uncorrected over many years even though the procedures had been used periodically. The inspectors noted that this indicated a lack of sensitivity to recognizing and resolving minor hydraulic transient problems.

The inspectors have noted a heightened awareness by operations and engineering personnel/management to the potential for hydraulic transients since the first two incidents discussed above. The

identification and detailed investigation of the C Auxiliary Boiler water hammer transient was an example of this heightened awareness.

The licensee indicated that a more detailed review of all operations system lineup and test procedures would be conducted to ensure that other configuration problems which could lead to potential hydraulic transients were identified and corrected.

c. Conclusions

The inspectors concluded that operations personnel demonstrated a heightened sensitivity to potential hydraulic transients with the identification of this incident. Engineering performed a detailed investigation of the transient and were successful in identifying the root cause. The licensee's planned corrective actions were appropriate to address the procedure discrepancy identified, as well as the generic implications of other potential procedural configuration weaknesses. While the Auxiliary Boiler is not a safety related system, the inspectors noted that continued licensee emphasis and sensitivity to potential hydraulic transients was warranted due to past weaknesses in this area.

O1.3 Crack in the Emergency Diesel Generator Room Roof

a. Inspection Scope (37551, 71707)

The inspectors reviewed and discussed with the licensee, CR 96-03202 that was generated due to a noted crack in the concrete roof of the B Emergency Diesel Generator (EDG) building.

b. Observations and Findings

The condition report was originated when an operator noted some water dripping from the roof into the EDG room. Upon noticing the condition, Robinson Engineering Support Section (RESS) was notified. Further it was verified that no water was dripping onto electrical equipment within the EDG room. The inspectors performed a walkdown of the EDG building, including the roof with the licensee and discussed the condition with the assigned structural engineer. The crack was not obviously visible from the EDG room.

An evaluation associated with the condition report concluded that the seismic/structural integrity of the building was not negatively impacted by the crack in the EDG roof and that the ability to maintain negative pressure in the auxiliary building was maintained. As immediate corrective action, the affected area of the roof was re-coated with a sealing paint. Additionally, the licensee plans to re-coat the entire roof with a flexible water tight sealing material. Action request (AR 96-05410) was initiated by the licensee to track this planned corrective action. The inspectors plan to continue to periodically monitor this issue during the conduct of routine inspections.

c. Conclusions

The inspectors concluded that the operator acted appropriately upon noting the abnormal condition relative to water dripping into the EDG room. Further, the crack did not impact the operability of the EDG.

01.4 Failed Instrument Air Line Affecting 6A Feedwater Heater

a. Inspection Scope (71707, 62707, 37551, 40500)

An Instrument Air (IA) line associated with a feedwater heater level controller failed initiating a minor transient as well as power reductions. The inspectors assessed licensee activities associated with the event. CRs 96-03194 and 96-03195 were generated as a result of the event.

b. Observations and Findings

On December 22, 1996, while Robinson Unit 2 was at 100% power, an instrument air line on the 6A Feedwater Heater level controller (LC) failed such that the 6A Feedwater Heater level control valves (LCV) 1508A and 1508B failed closed. With the 6A Feedwater LCVs closed, the drain path to the heater drain tank was isolated and the 6A Feedwater Heater shell side level started to increase. This initiated a transient which manifested in a level deviation in the C Steam Generator (S/G) due to lower S/G level and an increase in power to approximately 101.4 %. The control room responded to the level deviation alarm and reduced power to approximately 96%. Following restoration of S/G level and stabilization of the transient, the plant was returned to full power. The 6A Feedwater heater alternate LCV 1508B was opened to allow shell side blow-through.

Troubleshooting and repairs were performed and the failed section of the copper instrument air tubing to the LC was replaced. A small crack was noted in the IA line which was attributed to cycling of the tubing for connection and disconnection purposes. Upon discussion, the inspectors were informed that the plant had experienced other problems with the IA system, and consequently, the IA system is being carried as a "TOP 10" item to appropriately prioritized attention and resources. The failed portion of the IA tubing was replaced.

Additionally, since the 6A Feedwater Heater High level alarm had not come in as expected following the closure of the LCVs, the shell side level switch was checked and demonstrated to operate properly.

During the restoration to normal alignment following repairs, the 5B Feedwater Heater shell side relief valve HDV-381B lifted. Consequently, a power reduction was initiated and the relief valve reseated at approximately 90%. The restoration was being performed at full power and it involved transferring the 6A Feedwater Heater level controls from the alternate to the primary LCV (i.e. from LCV 1508B to LCV 1508A). The licensee is postulating that during this transfer, a pressure

perturbation occurred and was transmitted through the heater drain tank to the 5B Feedwater Heater. The inspectors questioned whether the licensee decision to restore the 6A Feedwater Heater to normal alignment at full power was conservative. The licensee plans to review this issue, including assistance from RESS, through the condition report process.

Initially, the licensee believed that the relief valve had prematurely lifted at approximately 176 psig with an expected setpoint of 225 psig. This was based on the system pressure readings as observed on Emergency Response Facility Information System (ERFIS) reading approximately 176 psig. However, upon further review, the licensee believes that the system pressure did probably reach 225 psig and the data sampling frequency of ERFIS was such that it did not capture the instantaneous system pressure that caused the relief valve to lift.

Feedwater heater relief valves, including HDV-381B are not periodically tested. Consequently, a work request was initiated to test the relief valves on the 3A, 3B, 4A, 4B, 5A, 5B, 6A, and 6B heaters during the next scheduled outage. Further, the licensee will assess the periodic testing of the relief valves through the condition report. Upon questioning, the inspectors were informed that the lifted relief valve setpoint, if changed due to the lifting, is more likely to have lowered.

c. Conclusions

The inspectors concluded that a reliability problem associated with a portion of the IA system resulted in a transient on the secondary side. Continued licensee attention to address this issue, as well as periodic testing of secondary relief valves is warranted. The decision to restore the 6A Feedwater Heater to normal alignment at full power was considered a weakness.

## 07 Quality Assurance In Operations

### 07.1 Plant Nuclear Safety Committee Meeting

a. Inspection Scope (40500)

The inspectors evaluated certain activities of the Plant Nuclear Safety Committee (PNSC) to determine whether the onsite review functions were conducted in accordance with TS and other regulatory requirements.

b. Observations and Findings

On December 18, 1996, the inspectors attended the PNSC meeting during which the committee reviewed an evaluation of SOER 96-1, Control Room Supervision, Operational Decision Making, and Teamwork; a violation response and procedural revisions; and a presentation from the Nuclear Fuels Group on the disposition of the error in the Siemens' code for a large break loss of coolant accident (LBLOCA). The presentations were thorough and the presenters readily responded to all questions. The

committee members asked probing questions and were well prepared. The committee members displayed understanding of the issues and potential risks. The inspectors considered that the chairman appropriately limited discussion to the issues and their safety ramifications.

c. Conclusions

The inspectors concluded that the onsite review functions of the PNSC were conducted in accordance with TSs. The PNSC meeting attended by the inspectors was well coordinated and meeting topics were thoroughly discussed and evaluated.

07.2 Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems

The licensee has provided a site-wide, common program for identifying issues that require corrective action. The goal of the program was to improve overall plant performance by correcting conditions adverse to quality. During this inspection, the inspectors reviewed the administrative and procedural aspects of the program, the effectiveness of the corrective actions, the self-assessments and audits of the program, and other processes that provided for the incorporation of operating experience feedback.

1. Corrective Action Program

Inspection Scope (40500)

The licensee's procedure, PLP-026, Corrective Action Program, Rev. 24, was reviewed by the inspectors. In addition many of the specific elements of the program and completed CRs were reviewed.

Observations and Findings

The inspectors reviewed 7 CRs which were classified as significant CRs in accordance with PLP-026. The inspectors verified that operability assessments were performed, management reviews were completed, evaluations and recommended corrective actions were appropriate, and when required, appropriate immediate corrective actions were performed based on the nature of the problem. The following CRs were reviewed by the inspectors and determined to be appropriately dispositioned.

- 95-01873: Inadequate corrective actions to respond to NAS findings,
- 96-02272: Position of Containment butterfly valves,
- 96-02471: Cutting of incorrect conduit during plant modification,
- 96-02754: Water hammer during safety injection accumulator piping surveillance test,

- 95-01523: Inadvertent Residual Heat Removal pump start,
- 95-02216 - Unexpected Emergency Diesel Generator start during clearance tagout, and,
- 95-01661 - Main Feedwater Isolation following high Steam Generator level.

In addition to assessing the program, the inspectors reviewed another sample of Condition Reports. Within the sample it was found that about 20% had been deferred to provide an extension of time for corrective action, and about 44% required more time for evaluation.

Deferrals are permitted by PLP-026, with restrictions. The restrictions include specific level of management approval for the first two extensions. If an additional extension is needed, approval from the Site Vice-President is required. The deferral rate was acceptable. The inspectors concluded that the controls in place have kept the number of CR deferrals in check. The inspectors did not find any deferred CRs without a valid reason, nor did the deferral have an adverse effect on safe plant operations. This area was reviewed for trends by the Self-Assessment Manager to assure that items were not improperly deferred.

The inspectors screened 107 CRs that were voided in 1996 and observed that 40% were duplicates or were incorporated into another CR. Approximately 25% contained insufficient data to verify that CR voiding was appropriate, including 2 CRs which had no entry in the reason for voidance field. Based on further discussion and review of the reason for voidance, the dispositioning of the sample of voided CRs reviewed was acceptable.

Other CRs were voided and the reason stated for voidance on the form indicated that the item would be resolved by another mechanism. However, in some cases the issue was not resolved. Paragraph 5.1.2.1 of PLP-026 addresses the method to void CRs which, after evaluation, are determined to not meet the definition of an adverse condition. The procedure indicates that the reason for voiding a CR is to be documented on a CR change form. The inspectors reviewed eleven randomly selected "voided" CRs to verify the concerns documented on the CRs did not constitute an adverse condition, and that voiding of the CR was appropriate. The voided CRs reviewed were 96-00349, 96-00502, 96-00543, 96-01094, 96-02765, 96-00391, 96-00566, 96-00601, 96-00893, 96-02195, and 96-01356. The inspectors concluded that none of the concerns documented on the "voided" CRs met the definition of an adverse condition. However, review of the "voided" CR resolutions disclosed that the reason the CRs were voided was not always well documented. Examples identified were as follows:

- CR 96-00349 involved a procedure which required re-verification of the containment equipment hatch opening times each time the hatch is opened. The reason for voiding

stated that the CR was intended to be an engineering service request (ESR). The inspectors determined that an ESR was initiated (number 96-0122) but was later deleted since the existing procedure was determined to be appropriate. The inspectors did not identify a problem with the resolution of the issue although the final disposition was not well documented in the CR.

- CR 96-00502 involved an error found on one of the original plant construction drawings. The reason for voiding documented on the CR stated that a drawing change request (DCR) was initiated to revise the drawing. The inspectors determined that a DCR (number 96-168) was issued, but later also was voided. The final disposition of this concern was to delete the drawing since it was no longer required. However, this was not documented in the CR.

- CR 96-00543 concerned a potential incorrect fire barrier (penetration) design. The reason for voiding stated on the CR was that engineering felt that this issue had been previously evaluated, but that if the documentation could not be provided, a new CR would be issued. Discussions with the engineers involved in the resolution of the issue disclosed that the concern had been evaluated, as stated on the CR, and that the as-built design was acceptable. However, a reference to the final disposition of the issue was not documented in the CR.

- CR 96-01094 concerned an equipment item which had not been installed. An ESR, number 96-00272, was issued to resolve the issue. The CR was voided pending resolution of the ESR. The inspectors determined that ESR 9600272 was deleted by ESR 9600476 which was still open. The final disposition of the concern was not documented on the CR.

- CR 96-02765 concerned an error on a safety-related system flow diagram. The reason for voiding the CR stated that a DCR would be issued to correct the problem. The inspectors determined that DCR 96-1103 was issued to correct the drawing and that the DCR (drawing correction) was being implemented.

- CR 96-00391 involved a potential inadequate review of significant event report 92-012 regarding potential reverse rotation of containment fan units when in standby or shutoff. The reason for voiding the CR was not documented. The inspectors reviewed the CR resolution with licensee technical support and operations personnel and determined that procedural controls were utilized to prevent this problem as well as monthly surveillance. The resolution was acceptable although the disposition was not documented in the CR.

- CR 96-00601 involved a potential spread of contamination issue regarding High Efficiency Particulate Air (HEPA) filter hose left open. Procedural requirements include sealing the hose after use. It was later determined that the unit was still in use and did not require sealing at that time. The inspectors determined that the resolution was acceptable but the disposition was not documented in the CR.

The inspectors also reviewed three additional "voided" CRs and concluded that the reason for voidance was clearly documented in the CR. These were CR numbers 96-01091, -01402, and -01941.

The inspectors identified the following as a weakness in the licensee's corrective action program: Incomplete/improper documentation of the reasons for voiding a CR, and/or voiding a CR based on some planned action when the action was still incomplete when the CR was voided.

Significant CRs are required to be evaluated within 14 days and completed within 60 days of the evaluation approval date. Extensions or deferrals are periodically reviewed for adverse trends by the management of the Self-Assessment Section. Program data showed that about 2500 CRs are initiated per year and that all organizations were actively involved in the program. Corrective Action Program (CAP) tracking and data trending was good and the backlog was under control. The program recognition "Catch of the week" provided positive incentives. The Operating Events Assessment unit involvement provided program oversight which contributed to the success of the program. Management and site personnel had a positive attitude toward the program.

Section 5.13.1.2 of PLP-026 requires each site section or unit to perform a quarterly analysis of CR data to detect trends. The inspectors reviewed the analysis of the trends based on condition reports performed for the third quarter of 1996 in the Robinson Engineering Support Section, maintenance, and operations units. The analysis of the CR data indicated some potential adverse trends which the managers in the units documented on new CRs to evaluate and develop corrective actions to resolve the issues. The inspectors also attended a weekly Robinson Engineering Support Section managers meeting during which CRs identified during the previous week were discussed by the unit managers to address corrective actions, causes of the CRs, and steps to take to avoid similar CRs.

The OEA Manager performed trending and evaluation of the CR process. The data indicated that the CR backlog was not trending up and CR tracking was adequate for program control. The inspectors concluded that the trending of CR data by unit managers was an effective method to identify and reverse problems and adverse trends, and improve overall plant performance.

A sample of about 3000 CRs was examined to determine which organizational component was identifying the issues and who was fixing them. The following results were found:

| Organizational Component | % Found | % Fixed |
|---|---|---|
| Environ. & Radiation Control | 24 | 20 |
| Operations | 14 | 10 |
| Maintenance | 11 | 15 |
| Mechanical Systems | 9 | 14 |
| Nuclear Assurance Section | 8 | 8 |
| Security | 7 | 6 |
| Outage & Scheduling | 6 | 6 |
| Elec I&C | 4 | 9 |
| Others | 17 | 20 |

From the above data, it was evident that all organizational components were finding and fixing problems within their area. In some cases, such as maintenance and operations, CRs that were identified by their own personnel were assigned to another organizational component for corrective action. This was expected.

Several managers directly involved within the licensee's problem identification process and corrective action program were interviewed to determine the extent of their understanding of the process and their feelings toward ownership of the program. Those selected were from maintenance, engineering, plant support, operations, and quality assurance. The subjects discussed at these interviews included: the extent of their involvement, amount of resources devoted to the program, and, how well they thought the program was working.

All personnel interviewed accepted the program and were using it as intended. It was evident to the inspectors that significant resources were devoted to this program.

The inspectors reviewed the audits of the CAP conducted by NAS and Performance Evaluation Section, and the reviews of the Corrective Action Program by the onsite and offsite review committees. Self-assessments reports were also reviewed. The findings and actions taken by the various audits and reviews were examined for timeliness and completeness.

Additional areas of the CAP were reviewed as follows:

- a sample of recent events and issues were reviewed to determine if a CR was prepared for the item,
- the weekly Operating Experience Assessment Unit Weekly staff meeting and a Failure Prevention Inc. Users Group meeting were attended by the inspectors, and,
- a sample of significant, completed, and voided CRs were reviewed.

Conclusions

Based on review of selected CRs, the inspectors concluded that the licensee's corrective action management program was implemented in accordance with PLP-026 and UFSAR Section 17.3, Robinson Quality Assurance Program Description.

In general, all organizational components were finding and fixing problems within their area. CRs were discussed on a regular basis, at least weekly, and were assigned for action. CR assessments were thorough and root cause analyses were good. Trending of CR data by unit managers was an effective method to identify and reverse problems and adverse trends, and improve overall plant performance.

Several potential adverse conditions were voided with poor documentation. A need for training was indicated by the number of voided CRs with poor documentation. The large number of voided CRs indicated a weakness in personnel awareness of what constituted an adverse condition.

Self-assessments in Engineering, and Materials and Contract services indicated a need for training. NAS assessment 96-01 identified a weakness in the understanding of the CR process. Discussions with plant personnel disclosed that there was no formal training provided to personnel, other than CR evaluation personnel.

2. Operating Experience Program

Inspection Scope (40500)

The inspectors reviewed the licensee's Operating Experience (OE) Program.

Observations and Findings

Operating Experience is a part of the overall H. B. Robinson CP&L quality assurance process. The Operating Experience program ensures industry data is sent to applicable Robinson work units and that Robinson specific experience and data is supplied to other CP&L sites and the nuclear industry as appropriate. The inspectors reviewed Robinson procedure PLP-107, Operating Experience Program, Revision 0, dated June 26, 1996. This procedure provided the requirements for establishing the Robinson Operating Experience program including source document receipt, screening, evaluation, recommended actions, action tracking, action closeout and program status reporting.

OE feedback item applicability screenings, OE item evaluations, OE unit self-assessments, OE program Nuclear Assurance Section (NAS) audits, and OE tracking and work backlogs were reviewed. The inspectors attended the weekly Operating Experience Assessment (OEA) meeting, interviewed plant personnel and observed end use activities of the OE program.

OE source document screening items 5751, 5761, and 5774 were reviewed. The screening reviews were performed in accordance with PLP-107 and the applicability review and recommended actions were acceptable. The inspectors reviewed completed OE item evaluations 96-00636, 96-00955, and 96-01923. The evaluations were completed in accordance with PLP-107 and were thorough.

Self-assessments and NAS audits were performed on the OE program. The inspectors reviewed OE self-assessments: OEA 96-05, SOER/OSU 96-03, SOER/OEF 96-02, OEA 96-01 and R-OE-95-01. NAS audits RSOER 96-01 and R-CA-96-01 were reviewed. Both the NAS audits and OE self-assessments identified that procedures did not incorporate Significant Operating Experience Report (SOER) references. CR 96-00956 was initiated for resolution of this item. The inspectors concluded that the self-assessments and NAS audits were thorough and that the findings were substantive. The licensee was taking actions to address the findings.

The inspectors attended the OEA unit weekly status meeting and observed that the staff reviewed the OE items screened for the week and verified the acceptability of the item dispositioned. Condition Reports processed for the week were also reviewed including the CR classification. The OEA staff selected one corrective action/ improvement item identified each week and provided an award and mention for the CR initiator in a licensee newsletter. This provided positive feedback for the problem identification process and demonstrated commitment to problem self identification and resolution.

The OEA unit tracking and work backlog was reviewed. A monthly report was prepared by the OE reviewer which addressed the items processed for the month and tracked the evaluations issued, and the status and age of open evaluations. The OE backlog was examined and the inspectors determined that the backlog was not excessive and no evidence was noted of items being deleted or deferred.

The licensee had incorporated OE feedback data into several routine activities. The inspectors observed that OE feedback items were discussed at morning shift turnover meetings. The checklist for conducting pre/post job briefings requires that the briefing include a discussion of applicable OE data for the evolution. An OE item file by system was maintained in the control room for use in conjunction with the OE database for conducting briefings. The files contained experience data identified by the NRC, INPO, and other CP&L sites. The frequent use of OE data in routine daily activities was viewed as a strength.

Discussions with site personnel indicated that performance during the outage was improved with the emphasis on frequent use of OE data. OE information was used in briefings for all the major evolutions of shutdown, cooldown, startup, and heatup. The recent safety injection system water hammer event was an example where previous experience did not preclude a similar event.

Conclusions

The Operating Experience Program was determined to be effective. The completed OE evaluations reviewed were acceptable. The OE self-assessments and NAS OE audits were thorough. The OEA weekly status meeting, monthly report, and OE tracking provided good program oversight. The incorporation of OE data into routine daily activities was viewed as a strength.

3. Self-Assessment Activities

Inspection Scope (40500)

The inspectors reviewed self-assessment activities performed within the Robinson line organizations.

Observations and Findings

Self-assessments are part of the overall CP&L quality assurance program at Robinson. Self-assessments are critical evaluations of activities, processes, or programs performed by the individuals or organizations accountable for the work. The results of these assessments are categorized as strengths, or findings. Findings may be adverse conditions, areas not meeting expectations, or areas needing improvement. The inspectors reviewed Robinson procedure PLP-057, Self-Assessment, Revision 5, dated September 16, 1996. This procedure specifies the requirements for establishing the self-assessment program including development of an annual self-assessment plan, the frequency for self-assessments, areas to be covered, e. g., the corrective action program in each work unit, conducting assessments, reporting results, and follow-up activities.

The inspectors reviewed the 1996 Self-Assessment plans for the following Robinson work units: the engineering support section, training, operations, maintenance, materials and contract services, and the Robinson NAS. The inspectors noted that the majority of the planned assessments were performed on schedule, assessments were not being canceled or deleted, and assessments were added to the schedule or were being rescheduled (planned dates moved-up) to respond to events which occurred at other sites. The licensee also performed additional assessments if findings were identified which appeared to have generic implications. An example of this was the self-assessment of the 50.59 process in the Robinson Engineering Support Section which indicated deficiencies in the quality and documentation of safety evaluations performed for design changes. A site wide assessment was performed by NAS to determine if similar problems existed in 50.59 evaluations performed by other site work units. The inspectors also noted that assistance was provided by personnel from other sites and other organizations to perform some of the self-assessments. The use of individuals from other organizations provides additional insight in the various processes which are being evaluated. The self-assessments covered all major functional areas.

The inspectors reviewed the following self-assessments:

- R-96-OP-04: Operator Actions not Covered by Procedures,
- MNT 96-01: Effectiveness of Maintenance CAP Program,
- MNT 96-05 - UFSAR Commitments,
- TRAIN 96-03 - Training Section Corrective Action Program,
- RESS 96-09 - RESS Corrective Action Program,
- RESS 96-12 - Temporary Modification Control (follow-up),
- RESS 96-15 - RESS Organization & Administration,
- RESS 96-18 - Engineering Product Quality,
- RESS 96-26 - Environmental Qualification,
- RESS 96-31 - Identification and Updating of Affected Design Documents (follow-up),
- RESS 96-32 - Safety Review Screening,
- RAS 96-01 - 10 CFR 50.59 Program, and,
- M&CS/P 96-06 - Corrective Action Program.

From review of the above self-assessments, the inspectors determined that CRs were initiated when findings in self-assessments were identified as adverse conditions, follow-up reviews were performed, and improvement CRs were initiated to track recommended actions resulting from self-assessments. Licensee management was actively involved in monitoring the results of the self-assessments and monitoring the overall effectiveness of the program.

Conclusions

The inspectors concluded that the self-assessment program at Robinson has been effective in identifying performance deficiencies and was useful in providing oversight to management. Managers have been proactive in following up on issues identified at other sites to identify and correct deficiencies at Robinson. The inspectors also concluded that licensee management was committed to the self-assessment process as indicated by the resources, including assistance of outside organizations, involved in the self-assessment process, and the number of self-assessments performed on an annual basis.

## 08 Miscellaneous Operational Issues (92901)

08.1 (Closed) VIO 50-261/95-21-01, Operator Failure To Monitor Plant Status: This violation was issued because operators failed to adequately monitor steam generator (S/G) levels and take appropriate actions. As a result, a high S/G level trip occurred. The root causes were determined to be personnel error (inattention to detail and misjudgment) by operations personnel, and equipment degradation of feedwater regulating valves (FRVs) and FRV bypass valves. The corrective actions included event review with operating crews, additional emphasis on operations self assessments, improvement to pre-job and post-job briefings, evaluation of FRV bypass valve leakage, and revisions to operator event simulator training. The inspectors reviewed shift personnel statements, event review training records, Operations Shift Error Prevention Plans, discussed pre-job and post-job briefing changes with operations personnel, Engineering Evaluation of FRV bypass valves leakage, Training Scenario EPP-4 Reactor Trip Response, and scenario training records. The inspector verified the corrective actions described in the licensee's response letter, dated September 11, 1995, to be reasonable and complete. The corrective actions addressed the event root cause. Two new corrective actions subtasks were established to implement FRV bypass valve vendor recommendation for improving valve leakage performance at the next valve overhaul. This item is closed.

08.2 (Closed) VIO 50-261/95-27-01, Inadequate Clearance Results In Unexpected Emergency Diesel Start: This violation was issued because an unexpected Emergency Diesel Generator (EDG) start occurred while implementing a clearance for scheduled maintenance. An inadequate clearance boundary allowed air trapped in the air start piping to start the engine. An incorrect assumption was made that the volume of trapped air would not start the engine. The licensee and vendor evaluated the event and determined that no engine damage occurred. This EDG evaluation was described in NRC Inspection Report 50-261/95-27 as adequate. The event cause was due to personnel error. The corrective action included performing the evaluation of the EDG and providing training. The inspectors reviewed the EDG evaluation (ESRs 9500990 and 9500993), the work request which inspected the EDG (WR/JO 95ALTZ1), and the records for the training on venting/draining requirements and the need for conservative decisions regarding operation and clearances for Engineered Safety Features equipment of procedure Operations Management Manual (OMM)-005, Clearance and Test Request. The inspectors verified the corrective actions described in the licensee's response letter, dated December 14, 1995, to be reasonable and complete. The corrective actions addressed the event root cause. This item is closed.

08.3 (Closed) VIO 50-261/96-01-01, Auxiliary Feedwater System Valve Misalignment: On January 16, 1996, during a walkdown of the accessible areas of the Auxiliary Feedwater (AFW) System, the inspectors identified that two valves were not in the specified position. Operating Procedure (OP)-402, Auxiliary Feedwater System, Revision 38, Attachment 9.1, AFW Valve Checklist requires that valves AFW-110 and AFW-111 be in the full open position. The inspectors observed that these valves were in the

throttled position and notified the Shift Supervisor. An auxiliary operator(AO) later verified that the valves were 60% open and placed them in the specified position. CR 96-00126 was initiated to follow this item.

The licensee performed an extensive investigation and concluded that the most probable cause for AFW-110 and AFW-111 to be found 60% open was flow induced vibration. Testing would not have detected the mispositioned valves. The valves are in the recirculation line of each motor driven AFW pump and allowed sufficient flow to meet the surveillance acceptance criteria.

On February 13, 1996, during the performance of Operations Surveillance Test (OST)-201-B, MDAFW System Component Test-Train B (Monthly), the AO who was performing the test and a system engineer who was assisting observed that AFW-111 vibrated five full turns in the closed direction. CR 96-00359 was initiated to follow this issue. The licensee's corrective action was to lock open valves AFW-110 and AFW-111 and revise the flow diagram. CR 96-00126 was also revised to reflect the CR 96-00359 corrective actions. Additional corrective actions were to revise Operations Management Manual (OMM)-001, Conduct of Operations, to provide additional guidance for valve verification. PLP-030, Independent Verification, was also revised to reflect the changes of OMM-001. The event was reviewed with the operators during training.

The inspectors reviewed Flow Diagram G-190197, Revision 38, Sheet 4 and verified that valves AFW-110 and AFW-111 were locked open. They reviewed lesson plans and training records and verified that training was given to the operators. The corrective actions have been completed and this item is closed.

## II. Maintenance

### M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (61726 and 62707)

The inspectors observed all or portions of the following maintenance related WRs/JOs and surveillances and reviewed the associated documentation:

- WR/JO 95-ANLE1: Replacement of Instrument Air Check Valve IA-474
- WR/JO 96-AIPP-003: "B" Instrument Air Compressor Preventative Maintenance
- WR/JO AHVN-001: Thermal Overload Testing of 480V Breaker for Motor-Operated Valve CC-749A

- OST 352-2: Containment Spray Component Test - Train B, Rev. 2

b. Observations and Findings

The inspectors observed that these activities were performed by personnel who were experienced and knowledgeable of their assigned tasks. Work and surveillance procedures were present at the work location and being adhered to. Procedures provided sufficient detail and guidance for the intended activities. Activities were properly authorized and coordinated with operations prior to start. Test equipment in use was calibrated, procedure prerequisites were met, system restoration was completed, and surveillance acceptance criteria were met.

c. Conclusions

The inspectors concluded that maintenance and surveillance activities were performed satisfactorily.

M1.2 Lack of Comprehensive Preventive Maintenance for Freeze Protection Circuits

a. Inspection Scope (62707)

The inspectors continued followup on several maintenance related issues identified during the previous inspection report period involving Freeze Protection (FP) circuitry. Additionally, the inspectors reviewed the licensee's evaluation of an anomaly in the output of the Steam Generator and Steam Header pressure transmitters due to a FP circuitry failures.

b. Observations and Findings

During the previous inspection period, the inspectors conducted a review of the licensee's cold weather protection program. Associated with this review, the inspectors performed a walkdown of the selected FP circuitry status panels and identified that several FP circuit status lights were not illuminated when they should have been. Also, the inspectors noted that the settings for FP circuitry thermostats were not periodically verified to be at their proper setpoint to ensure that the circuits energized and deenergized at the proper temperature. Based on discussions with the Electrical/Instrumentation & Control (I&C) supervisor during the earlier inspection, the licensee felt that other surveillances being performed by either I&C or operations would identify any circuitry problems. These other surveillances included the periodic manual energization of FP circuits and measurement of the current drawn, and operations personnel requirement to monitor for FP circuit status lights that were not illuminated.

During this report period, the inspectors verified that appropriate repairs were performed to correct the problems previously identified with the FP circuits.

Also during this report period, the licensee identified an example where a FP cabinet heater thermostat for the Steam Generator pressure transmitters failed to deenergize which caused excessive cabinet temperatures. This resulted in the output of the transmitters indicating higher than actual pressures. This problem was identified by operations personnel on December 12, 1996, when it was noticed that whenever the FP cabinet heater energized, an increase in steam pressure occurred. The worst case observed was approximately 10 psig. This problem was significant since the output of the steam pressure transmitters provide inputs to the reactor protection system. The higher pressure signals could result in exceeding the analyzed values for the instrument uncertainties. A similar problem was identified when the FP circuitry in the Steam Header pressure transmitter cabinets. Due to one of the heaters in this cabinet being miswired, it remained energized all the time, resulting in higher than expected temperatures inside.

The inspectors reviewed CR 96-03075 which documented these incident. The results of an engineering evaluation on the effect of the increase in steam generator and steam header pressure outputs determined that the available margin in the instrument uncertainty calculations was not exceeded. The licensee's corrective actions for these problems included a review of all transmitters subject to freezing for proper freeze protection design and the addition of periodic preventive maintenance for checking the operability and setpoint of FP thermostats. The inspectors determined that the licensee had adequately evaluated and proposed adequate corrective actions to address this issue.

c. Conclusions

The inspectors concluded that the lack of comprehensive preventive maintenance on Freeze Protection circuitry was a weakness in the licensee's cold weather protection program. Had there been preventative maintenance to verify the operability of Freeze Protection thermostats, the problems associated with the thermostats in the Steam Generator and Steam Header pressure transmitter cabinets could have been identified previously.

Operations personnel identification and response to the anomaly between Steam Pressure transmitter output and energization of Freeze Protection circuitry was considered an example of good attention to detail and plant monitoring.

Engineering thoroughly evaluated Steam Generator and Steam Header pressure transmitter output anomalies that were caused from higher than design cabinet temperatures resulting from Freeze Protection system malfunctions.

**M8 Miscellaneous Maintenance Issues (92902)**

M8.1 (Closed) VIO 50-261/95-19-05, RHR Pump Start Due to Troubleshooting: This violation was issued because adequate measures were not established

to prevent inadvertent operation of B RHR Pump during troubleshooting of a defective relay. The licensee's root cause evaluation determined personnel error as the cause of the event. No positive controls were used to prevent inadvertent pump start. The event was reviewed with shift operations personnel and maintenance mechanics and technicians. The inspectors reviewed the records of this training and verified that Procedure Maintenance Management Manual MMM-001, revision 29 contained the requirement that maintenance personnel will use positive controls such as clearances, caution tags or procedural guidance to prevent inadvertent equipment operation. The inspectors verified the corrective actions described in the licensee's response letter dated August 23, 1995, to be reasonable and complete. The corrective action addressed the event root cause. This item is closed.

M8.2 (Closed) LER 50-261/95-06-00, Technical Specifications Violation Due To Failure To Meet Minimum Degree Of Redundancy:

and,

(Closed) LER 50-261/95-07-00, Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy:

and,

(Closed) LER 50-261/95-07-01, Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy:

and,

(Closed) LER 50-261/95-08-00, Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy:

On September 3, October 29, and November 5 and 14, 1995, the licensee had similar events. The first three events were caused by the Overtemperature Delta-Temperature (OTDT) Temperature Indicator and the fourth was caused by the Overpower Delta-Temperature (OPDT) setpoint indicator drifting beyond their acceptable tolerances and the associated protection channel was declared inoperable. The minimum degree of redundancy as required by Technical Specification 3.5, Table 3.5-2, Items 5 and 6 could not be satisfied until the channel was placed in a tripped condition. These event are described in detail in the subject LERs.

CRs 95-02062, 95-02556, 95-02618, and 95-02687 were issued to track each of the events. The licensee combined the November 5 and October 29 events into a single LER (95-07) as the second event was caused by an improper installation of a component. Hardware inspection revealed that a failed capacitor was the cause of the OTDT drifting. The licensee determined that the electrolytic capacitors in the Hagan modules would be replaced. A Technical Specification change to provide an allowed outage time for instrumentation channels was one of the proposed corrective actions. The proposed change was submitted to the NRC by

Letter RNP-RA/95-0214 on December 11, 1995, and was granted in Amendment 175. The amendment allows for the licensee one hour to meet the minimum degree of redundancy. These LERs were closed.

## III. Engineering

### E1 Conduct of Engineering

#### E1.1 Design Change Processes

a. Inspection Scope (37550)

The inspectors reviewed the licensee's procedures which control the design change program to determine if the licensee was properly controlling the design basis of the plant.

b. Observations and Findings

The inspectors reviewed the procedures listed below which control design and design changes to determine if the procedure implement the requirements of 10 CFR 50, Appendix B, Criterion III and 10 CFR 50.59. The following procedures were reviewed:

- EGR-NGGC-001, Conduct of Engineering Operations, Rev. 1, dated June 28, 1996
- EGR-NGGC-003, Design Review Requirements, Rev. 0, dated June 3, 1996
- EGR-NGGC-005, Engineering Service Requests, Rev. 2, dated November 7, 1996, and,
- EGR-NGGC-0304, Maintenance of Design Documents, Rev.0, dated November 11, 1995.

The EGR-NGGC series of procedures were corporate level procedures being issued to standardize engineering work activities at all three CP&L nuclear plants. However, the inspectors noted that when the new EGR-NGGC procedures were issued to improve design control activities, previously issued procedures which they were meant to replace were not deleted and/or canceled. For example, EGR-NGGC-005 was issued to replace procedures PLP-064 and MOD-022. The inspectors noted that PLP-064 and MOD-022 were still being maintained current. Discussions with licensee engineers disclosed that these procedures will be superseded and deleted from the licensee's document control system in the near future. EGR-NGGC-005, Engineering Service Requests, streamlined the process for performing engineering work.

The inspectors concluded that the new procedures adequately addressed: design input, training, drawing changes, post-

modification testing, control of field changes, 10 CFR 50.59 safety evaluations, and ALARA reviews. However, review of EGR-NGGC-005 disclosed the following problem: EGR-NGGC-005 defines three types of engineering service requests (ESRs) which is the process used for performing engineering work. These are design change (DC), configuration change (CC), and engineering disposition (ED) ESRs. Design change ESRs were defined as a change which affects the design input of a system, structure, or component (SSC), while a configuration change was a change to a SSC which does not change the design inputs. Engineering disposition ESR were used to supply information and did not produce design output documents or change any SSC. ESRs designated as design change ESRs require design verification to meet the requirements of 10 CFR 50 Appendix B, Criterion III, ANSI N45.2.11, and Regulatory Guide 1.64. ESRs designated as configuration changes require an engineering review, instead of a design verification. The engineering review, as defined by CP&L procedure EGR-NGGC-003 does not meet the in-depth review and independent review requirements as defined by Appendix B, Criterion III, ANSI N45.2.11, and Regulatory Guide 1.64. Pending further review of the licensee's engineering review requirements, this issue was identified as URI 50-261/96-14-01, Review Licensee's Design Verification Requirements.

c. Conclusions

With the exception of the issue identified in URI 50-261/96-14-01, the inspectors concluded that the licensee's design change control procedures complied with the requirements of 10 CFR 50.59, and 10 CFR 50, Appendix B, Criterion III. However, the inspectors noted that duplicate procedures exist which could possibly result in confusion in the future and could result in potential design errors. Further, a process was in place that used an engineering review in lieu of a design verification for plant changes designated as configuration changes only. This practice does not appear to meet the requirements of 10 CFR Appendix B and another regulatory guidance.

E1.2 Review of Design Changes and Modification Packages

a. Inspection Scope (37550)

The inspectors reviewed the design change and modification packages to: (1) determine the adequacy of the safety evaluation screening and the 10 CFR 50.59 safety evaluations; (2) verify that the modifications were reviewed and approved in accordance with Technical Specifications and administrative controls; (3) verify that applicable design bases were included; (4) verify that Updated Final Safety Analysis Report requirements were met; (5) verify that both installation testing and post modification testing requirements were specified so that adequate testing would be accomplished.

b. Observations and Findings

The inspectors reviewed the following design change and modification packages:

- ESR-9500870: PORV Block Valve Stem Replacement,
- ESR-9500782: Resolve GIP Issues for RFO 17,
- ESR-9600579: MSIV Evaluation,
- ESR-9600538: ECCS Sump Screen - Functional and Structural Evaluation, and,
- ESR-9600375: Provide Input on EDG Fuel Oil Storage Tank Level.

The inspectors found that the modification packages had been reviewed and approved in accordance with the licensee's design control procedures and that the format and content of the modification packages was consistent with the design control procedure. The quality of the modification packages was good.

c. Conclusions

In general, the modification packages were judged to be of good quality and would not degrade plant performance, safety, or reliability. The modification packages contained sufficient specifications, drawings and procedures to be properly installed and tested. The licensee's 10 CFR 50.59 evaluations were completed in accordance with NRC requirements.

**E2 Engineering Support of Facilities and Equipment**

a. Inspection Scope (37550)

The inspectors performed a walkdown inspection of safety-related structures and reviewed engineering involvement in maintaining material condition of safety-related structures, systems, and components.

b. Observations and Findings

The initial point of contact for maintenance personnel to obtain engineering assistance is the RESS rapid response team. The purpose of the rapid response team is to respond to emergent issues, and to provide engineering assistance to plant personnel. The rapid response team is involved directly in day-to-day maintenance activities. The rapid response team has been recently reorganized to include the predictive maintenance, preventative maintenance, and thermal performance programs.

The inspectors, accompanied by a licensee engineer from the rapid response team, walked down the auxiliary, control, containment, and fuel handling buildings and examined plant material condition and the condition of plant equipment. During the walkdown, the inspectors noted that plant material condition was good to excellent. There was no evidence of degraded operating equipment; however, a few minor deficiencies were observed in containment building. These included the presence of a rag, piece of duct tape, pieces of string and other miscellaneous loose items in the containment. Minor damage to the sheet metal waterproof barrier covering the containment liner plate insulation was also noted. The damage to the waterproof barrier included damaged/buckled sheet metal panels and deteriorated caulking between numerous sections of sheet metal and at the floor line. EBASCO specification No. CPL-R2-M-18 and drawing G-190343 required the liner insulation to be positively sealed against moisture. The specification also required periodic monitoring of the presence of moisture between the insulation and the liner plate. The purpose of monitoring for moisture is to prevent corrosion of the liner plate.

Discussions with licensee engineers disclosed that problems with the sheet metal panels and containment liner corrosion were documented in Engineering Evaluation EE-93-159 which was closed in May, 1994. Some corrosion damage to the containment liner plate was observed and evaluated. The inspectors reviewed the general required actions list to close the engineering evaluation. These included issuing of a work request (number WR 94-AHRZ1) which required removal of additional panels for inspection of the liner for potential corrosion during the next scheduled refueling outage (refueling outage 16). The inspectors reviewed the work request and noted that it had been canceled (deleted) without the required inspections being performed. Licensee engineers were unable to provide any justification for not performing the liner plate/insulation inspections. Paragraph 5.14.5.1 of CP&L procedure MOD-001 Engineering Evaluation Rev. 1 requires the engineering evaluation (EE) to be revised if the intent of the required actions to close the EE are changed. Paragraph 5.9.2 of CP&L procedure MMM-003 Maintenance Work Request requires the reason for cancellation of a work request to be documented on the work request. Failure to revise the engineering evaluation when the intent of the required actions (perform additional inspections of the containment vessel liner plate for corrosion damage) were changed, and failure to document the reason for cancellation of the work request was identified to the licensee as a violation of 10CFR50, Appendix B, Criterion V, failure to follow procedures. This issue was identified as Violation 50-261/96-14-02, Failure to Complete Corrective Actions to Resolve Containment Liner Corrosion per Engineering Evaluation. The licensee initiated Condition Report No. 96-03023 to followup on the condition of the liner insulation and degraded panels.

c. Conclusions

A violation was identified regarding failure to follow procedure in canceling corrective actions required by an engineering evaluation. However, the inspectors concluded that licensee engineers are actively involved in day-to-day support of plant equipment. The material condition of the plant and equipment is good to excellent.

**E5 Training and Qualification of System Engineers**

a. Inspection Scope (37550)

The inspectors reviewed the licensee's program for training and qualification of plant (system) engineering personnel to assure the quality of engineering training.

b. Observations and Findings

The inspectors reviewed the following procedures which specify the requirements for training of engineering personnel:

- Training Program Procedure TPP-213, Engineering Support Personnel Training Program, Rev. 5, dated July 17, 1996
- Technical Support Management Manual TMM-105, System Engineer Certification Procedure, Rev. 2, dated April 20, 1996

These procedures establish the guidelines for training and certification of personnel in the Robinson Engineering Support Section (RESS). Individual training schedules have been developed for all RESS engineers which document required training, training completed to date, and the scheduled completion dates for any remaining training. The training includes initial orientation training and position specific training for each engineer assigned to RESS. After completion of their required training, the engineers will receive certification as plant engineers. The plant engineers will be responsible for both system design and operation/maintenance. The inspectors reviewed the training guides for individual engineers and noted that almost all engineers are scheduled to be fully qualified as plant engineers by June 1997.

c. Conclusions

The inspectors concluded that the licensee's program for training and qualification of system engineers meets NRC requirements.

## E7 Quality Assurance in Engineering Activities

### E7.1 Special UFSAR Review

A recent discovery of a licensee operating their facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR descriptions. While performing the inspection discussed in this report, the inspectors reviewed selected portions of the UFSAR that related to the areas inspected. The inspectors verified that for the select portions of the UFSAR reviewed, the UFSAR wording was consistent with the observed plant practices, procedures and/or parameters.

## E8 Miscellaneous Engineering Issues (37551 and 92903)

E8.1 (Closed) LER 50-261/94-18-01, -02, Technical Specification 3.0: Containment Spray System: These LERs involved the licensee's entries into TS 3.0 to sample the concentration of sodium hydroxide downstream of the Containment Spray System (CSS) Spray Additive Tank (SAT) discharge valves. The purpose of the sampling was to verify that sodium hydroxide from the SAT was not leaking past the discharge valves. The sample was obtained from a drain valve on the SAT eductor line after aligning a 2-inch Refueling Water Storage Tank (RWST) line to the SAT eductor piping. The licensee performed this sampling in conjunction with the performance of CSS Inservice pump testing. In August 1994, the licensee recognized that this sampling alignment resulted in the potential inoperability of both trains of CSS since water from the 2-inch RWST line would be educted along with sodium hydroxide from the SAT. This could result in reduced concentration of sodium hydroxide to the suction of both CSS pumps should a CSS actuation signal occur. Sodium hydroxide is used in the CSS to remove Iodine from the containment atmosphere during design basis accidents. The licensee determined that this sampling lineup potentially rendered the Iodine removal function of the CSS inoperable, since the design concentration of sodium hydroxide could not be assured to CSS pumps. As a result of the potential inoperability of both trains of CSS, the licensee entered the action requirement of TS 3.0 during the pump testing and sampling evolutions until this issue could be resolved.

The licensee's corrective actions included performing an evaluation to determine the effect of delaying the addition of sodium hydroxide to the containment atmosphere on the control room operator 30-day thyroid dose following an accident. The inspectors reviewed the results of this evaluation which were documented in Calculation RNP-M/MECH-1592, Rev. 0. General Design Criteria (GDC) 19 limits the 30-day thyroid dose to the control room operators to 30 Rem. The results of the licensee's calculation indicated that sodium hydroxide could be delayed by as much as 6 minutes without exceeding the 30 Rem regulatory limit. However, this delay would result in a slight increase from the previously calculated control room operator dose of 27.3 Rem to 29.7 Rem. At the end of the inspection period, the inspectors had not completed a

detailed review of the methodology used in the calculation to ensure that it was acceptable. Pending completion of this review, this item will be tracked as Part 1 of Unresolved Item (URI) 50-261/96-14-03: Review Aspects of Containment Spray Additive Tank Eductor Line Sampling.

Using the results from the revised control room operator dose calculation, the licensee determined that continued sampling using this alignment could be performed without rendering the Iodine removal function of the CSS inoperable as long as the SAT could be returned to its normal alignment within 6 minutes. The licensee revised the CSS pump test procedure, as well as other procedures where the sampling was conducted, to add procedural controls for returning the SAT to its normal alignment within 6 minutes of a CSS actuation signal. The inspectors reviewed Operations Surveillance Test (OST)-352, Containment Spray Pump Test, Rev. 31, dated January 12, 1995, which incorporated these changes. The inspectors determined that detailed guidance was added to ensure that manual operator actions were completed to realign the SAT to its normal lineup should a CSS actuation signal occur. The inspectors verified that these actions were performed properly on December 17, 1996, while witnessing the inservice testing of the "B" CSS pump.

Upon review of the 10CFR50.59 evaluation for OST-352, Rev. 31, the inspectors questioned whether it was adequate. Specifically, the inspectors questioned whether the change to the procedure constituted an unreviewed safety question which would require NRC review and approval prior to implementation. The inspector noted that this change might be considered an unreviewed safety from several perspectives. First, based on review of the UFSAR and TSs, the sampling evolution was not required by, nor discussed in either of these licensing documents. Based on this, the evolution might be considered a new "test" (i.e., leak check of the SAT discharge isolation valves), which would make the change an unreviewed safety question. Secondly, the licensee stated in their evaluation that the change did not create the possibility of a malfunction of equipment important to safety of a different type than any evaluated previously in the Safety Analysis Report (SAR). The inspectors disagreed with this conclusion since failure of the operator to close the manual RWST valve and failure of this manual valve to open due to mechanical failure both introduce new failure modes which could result in an increase in the probability of malfunction of the CSS Iodine removal function. Thirdly, the licensee stated that the change did not reduce the margin of safety as defined in the basis of the TSs or increase the consequences of an accident evaluated previously in the SAR. The inspectors disagreed with these conclusions since the licensee's recalculation of control room operator dose showed that there would be an increase from the current control room operator dose value that was referenced in the SAR as a result of allowing a 6 minute delay in sodium hydroxide to the containment atmosphere. At the end of the report period, the inspectors were still discussing with the licensee and NRR personnel specifics with regard to the adequacy of this 10CFR50.59 evaluation. The inspectors determined that further NRC review of this issue was necessary, as such, this issue will be tracked

as Part 2 of URI 50-261/96-14-03: Review Aspects of Containment Spray Additive Tank Eductor Line Sampling.

The inspectors discussed with engineering personnel the origin of the SAT eductor line sampling evolution. The licensee initiated the sampling evolutions in 1988 after it was identified that one of the SAT discharge valves leaked by causing the contamination of sodium hydroxide in the RWST and RCS. The licensee determined that continued sampling was necessary to prevent recurrence of this incident. However, based on inspector discussions with engineering personnel, they could not recall any further incidents since 1988-89 where sample results had identified similar leakage. This was attributed in part to repairs performed on the SAT discharge valves which improved their leak tightness. The inspectors questioned whether the licensee had evaluated other sampling options or configurations and if it was still considered prudent to perform this sampling evolution using such an undesirable configuration. At the end of the report period, the inspectors were continuing discussions with the licensee on the justification for continuing with the present sampling configuration in lieu of other options which did not challenge the operability of the CSS iodine removal function. This will be tracked as Part 3 of URI 50-261/96-14-03: Review Aspects of Containment Spray Additive Tank Eductor Line Sampling.

The LERs were closed based on tracking the issues identified from this review via URI 50-261/96-14-03.

E8.2 (Closed) LER 50-261/95-02-00, Inadvertent Main Steam Isolation Valve Closure During Plant Cooldown: On June 6, 1995, the unit was in Hot Shutdown (231°F) and reactor coolant temperature decreasing to Cold Shutdown (<212°F). A Main Steam Isolation signal was received which caused an automatic closure of the Main Steam Isolation Valves (MSIVs), which are Engineered Safety Features (ESFs). CR 95-01501 was initiated to follow this item.

Investigation revealed that high steam flow bistables actuated with zero steam flow indicated on the RTGB. The high steam flow signal was created by a loss of water in the steam flow transmitter sensing line which actuated the high steam flow bistables. An inspection of the sensing line revealed that a portion of the line had been insulated preventing radiant and convective heat loss. As a result, the water in the sensing line flashed to steam as the operators decreased secondary pressure to cool the plant.

The insulation was removed from the flow element ring headers of all three steam generators to allow radiant and convective heat loss to sustain condensation in the sensing lines during low steam line temperature and pressure conditions. Labels were affixed to these lines which specify that the lines should not be insulated. The licensee revised General Procedure (GP)-007, Plant Cooldown From Hot Shutdown to Cold Shutdown, in Revision 37 to preclude having the plant in the condition to receive these spurious actuations of the MSIVs.

The inspectors verified the placement of the signs on the sensing lines. GP-007, Revision 37 was reviewed and the inspectors noted that Section 5.2.39 was changed to read reactor coolant temperature rather than steam generator pressure and Section 5.2.39.8.d was added to close the MSIVs. The inspectors reviewed GP-007, Revision 41 and verified that it contains the same information. This item is closed.

E8.3 (Closed) LER 50-261/95-04-00, Reactor Trip Due To Main Steam Isolation Valve Closure: On June 30, 1995, a reactor trip occurred with the unit operating at 100% power, as the result of an inadvertent closure of the "B" Main Steam Isolation Valve (MSIV), MS-V1-3B. The closure of MS-V1-3B resulted in a Reactor Protection System (RPS) reactor trip signal from Low-Low "B" Steam Generator Level. The operators placed the unit in Hot Shutdown in accordance with procedures. CR 95-01660 was initiated to follow this event.

The followup investigation revealed that the MSIV closure was caused by a loose fuse block fuse clip for the fuse that supplies control power to the MSIVs actuator "open" air supply solenoid valve. A loss of power to the solenoid valve occurred while an operator was reinstalling a fuse in another circuit on the same fuse block. A second loose fuse clip was identified during a panel walkdown.

The inspectors determined that on October 9, 1993, the licensee experienced a short circuit between fuse clips which resulted in arcing in a fuse block in the MSIV control cabinet. CR 93-00193 was initiated to document the event. Corrective actions were to replace the fuse blocks with a newer, more rigid design and review the event with the operators. Engineering Service Request (ESR) 94-00543 was issued to evaluate an improved design. Work Request (WR) 94-AHFQ1 was issued to replace some of the older design fuse blocks. The work was scheduled for Refueling Outage (RFO)-16 but subsequently deferred to RFO-17.

The licensee's corrective actions for the loose fuse clips included replacing all the old design fuse blocks in accordance with the resolution of ESR 94-00543 and reviewing the event with Operations and Maintenance personnel. WR 94-AHFQ1 was canceled and WRs 95-ALAJ1, 95-ALAK1, and 95-ALAL1 were issued to perform the work.

The inspectors reviewed CRs 93-00193 and 95-01660; training records; ESR94-00543; and WRs 94-AHFQ1, 95-ALAJ1, 95-ALAK1, and 95-ALAL1. They verified that the event had been reviewed with Operations and Maintenance personnel. The review of the WRs which replaced the fuse blocks indicated that the work had been completed between September 19 and 25, 1995. The licensee completed their corrective actions and this item is closed.

## IV. Plant Support

### P2 Status of EP Facilities, Equipment, and Resources

#### P2.1 Facility Inspection

a. Inspection Scope (82701)

The inspectors toured the facilities to determine whether key facilities and equipment were adequately equipped and maintained.

b. Observations and Findings

During the training drill on November 12, 1996, the inspectors toured the Technical Support Center (TSC), Operational Support Center (OSC), and Emergency Operations Facility (EOF) and observed the licensee's facilities and equipment being utilize during the drill. The Telephones, fax machines, Safety Parameter Display System (SPDS), Emergency Response Facility Information System (ERFIS), Dose Assessment Computer, and the Emergency Notification Network (ENN) phone system operated properly.

The inspectors reviewed surveillance records of emergency supplies and equipment required in EPPRO-02, Maintenance and Testing. All surveillances were performed at the required frequencies. The documentation of the surveillances indicated that the licensee maintained good control of their emergency supplies and that the emergency equipment was reliable. No discrepancies were noted by the inspectors. No significant changes had been made to the facilities.

c. Conclusion

The inspectors concluded that the facilities were well equipped and the licensee maintained the facilities and equipment in a good level of operational readiness.

#### P2.2 Emergency Response Dose Assessment Capabilities

a. Inspection Scope (82701)

Dose Assessment Capabilities were inspected to verify that the licensee maintained continuous dose assessment capabilities which used real time meteorological and radiological data.

b. Observations and Findings

The licensee's dose assessment program was on the Emergency Response Facility Information System (ERFIS) computer. The inspector observed the licensee's dose assessment program in operation during the training drill. The program was a straight line gaussian calculation which used

real time radiological and meteorological data which was automatically updated and input into the program.

The licensee maintained Emergency Plan Implementing Procedure, EPRAD-03, Dose Projection, for performing manual dose calculations. All licensed operators were trained in both the computer and EPRAD-03 to perform on-shift dose assessment.

c. Conclusion

The inspectors concluded that the licensees's dose assessment capabilities were satisfactory and that sufficient personnel were trained to perform onshift dose assessment using real time meteorological and radiological data.

P2.3 Public Alert And Notification Capabilities

a. Inspection Scope (82701)

This area was inspected to review the licensee's method of notifying the public in the event of an emergency, the notification test frequency, and notification test data.

b. Observations and Findings

The licensee maintained 45 sirens within the Emergency Preparedness Zone (EPZ) for their public alert and notification system. The licensee performed a bi-weekly silent test, quarterly growl test, and an annual sounding of the sirens. The 1995 Robinson Nuclear Plant siren availability report summary indicated a siren availability of 98.5 percent.

The inspectors reviewed documentation of Robinson's siren testing from October 1995, through October 1996 and determined that the sirens had been tested at the required frequencies.

c. Conclusion

The inspectors concluded that the operational status and maintenance of the siren system was good.

**P3 EP Procedures and Documentation**

P3.1 Maintenance of the Emergency Plan and Procedures

a. Inspection Scope (82701)

The inspectors reviewed the licensee's process for making changes to the Emergency Plan and Plan Emergency Procedures (PEPs). The inspectors reviewed changes to the PEPs to verify that the changes were in agreement with and implemented the Emergency Plan.

b. Observations and Findings

The inspectors compared the instrumentation ranges and nomenclature identified in the Emergency Action Levels (EALs) to the installed instrumentation in the Control Room. In the comparison, no inconsistencies in nomenclature or in the use of terms were identified by the inspectors. The inspectors verified that the EALs were reviewed and agreed upon by the State.

The licensee had performed a detailed "word by word" annual review of their Emergency Plan in Revision 34. Concurrently with Revision 34, the licensee completely reviewed and re-organized their PEP's. In the procedure reorganization, procedure identifiers were changed from PEP to EP plus the facility or function identifier.

The inspectors reviewed Administrative Procedure AP-22, "Document Change Procedures," the licensee's process for making changes to their Plan and Plan Emergency Procedures (PEP), Plant Licensing Procedure PLP-032, 10 CFR 50.59 Reviews of Changes, Tests And Experiments, and the licensee's re-organized emergency procedures. The inspector determined that the re-organized procedures were in agreement with the plan, and the licensee had followed AP-22 and PLP-32 in making the plan and procedure changes.

The inspectors viewed the emergency procedure changes as a excellent organizational and ergonomic improvement of the EPs.

The inspectors reviewed the change matrix associated with the EP's re-organization and the change packages associated with the individual EP changes and determined that they were satisfactory and followed AP-22 and PLP-032.

The process for making changes to the PEPs and the Emergency Plan met the intent of 10 CFR 50.54(q).

All of the changes reviewed were approved and distributed in accordance with the licensee's procedures. The NRC was notified within 30 days of all changes as required in 10 CFR 50 Appendix E.

Controlled volumes of the EPs in the Technical Support Center (TSC), Emergency Operations Facility, and Operational Support Center (OSC) were reviewed and determine to be maintained up to date.

The inspectors reviewed the letters of agreement identified in Appendix 6.2, "Agreement Letters", of the Emergency Plan and verified that they were up-to-date.

c. Conclusion

The inspectors concluded that the licensee's Plan and procedure change review process was thorough and met the requirements of 10 CFR 50.54(q). The inspectors viewed the new designation and reorganization of the

emergency procedures as a excellent organizational and ergonomic improvement.

P3.2 Use Of The Emergency Implementing Procedures

a. Inspection Scope (82701)

The inspectors reviewed the licensee's event declarations to verify that each event was properly classified and the Emergency Implementing Procedures were properly implemented.

b. Observations and Findings

Review of the licensee's 10 CFR 50.72 reports since September 1995, revealed that the licensee had made one event declaration:

> May 13, 1996, a Unusual event was declared due to a fire in the mechanical equipment room of the chemistry building lasting greater than ten minutes.

c. Conclusion

The inspectors review concluded that the licensee properly classified the event.

**P5 Staff Training and Qualification in EP**

P5.1 Drill Observation

a. Inspection Scope (82701)

Observe a licensee training drill, their preparation, degree of play, and critique.

b. Observations and Findings

Records reviewed showed that each of the five shift operating crews drilled with one of the emergency response team in each of the three cycles of their annual retraining. As a result of the licensee combining licensed operator requalification training and emergency preparedness training, the licensee plans to perform fifteen emergency response drills this year.

The inspectors observed an Emergency Preparedness drill on November 19, 1996. The drill was observed as a training evolution rather than being evaluated. The licensee had committed almost as much work in the drill's planning and details as licensee's normally do for an evaluated exercise. Scenario booklets were developed, pre-drill evaluator briefs and post drill critiques were held. All of the facilities were activated and functioned properly. As part of the scenario, the OSC was relocated when the facilities habitability was challenged. The licensee's critique following the scenario was objective. Issue's

identified during the critique were documented by the licensee as improvement items or corrective actions, particularly in the Joint Information Center.

c. Conclusion

The inspector concluded the licensee's combining of licensed operator requalification training and emergency preparedness training was a strength for the emergency preparedness program.

P5.2 Training of Emergency Response Personnel

a. Inspection Scope (82701)

The inspectors reviewed the Emergency Response Training Program and the verified that emergency response personnel were initially trained and retrained annually to maintain their training current.

b. Observations and Findings

The licensee's Emergency Preparedness training program EPPRO-03, Training and Qualification was rewritten in October 1996. The inspector interviewed staff personnel responsible for rewriting the program and reviewed the changes between the old and new program. The new program consolidated or reorganize lesson plans and course requirements for the different positions. In the two programs the same level of specific information was being taught to the member, but the scope of information presented had been expanded. The inspectors concluded that the new program provided more flexibility to the licensee in cross training Emergency Response Organization personnel and provided broader training for an individual ERO member. The inspector viewed the new program as a program improvement.

Emergency Preparedness training consisted of initial training, annual retraining, and continuing training. Initial training consisted of respirator qualification if required, classroom instruction and testing, reading the required procedures, job list, and observation or evaluation of performance in drill or exercise. Annual retaining consisted of reading the required procedures, job list and observation or evaluation of performance in drill or exercise. Continuing training consisted of classroom discussion prior to drills base upon training needs identified during drills/exercise critiques, student feedback, and/or related current industry events.

The inspectors reviewed the lesson plans and exams for the Overview, TSC, and OSC. The inspectors noted from the review that the lesson plans were organized and contained the appropriate depth of material. The exams could be improved upon. The exams were multiple choice and contained negative learning questions (were the student is asked to chose the wrong answer), poor distractor (obvious wrong answers), and instances in which the question asked was the answer to the preceding question. The inspectors discussed the exams with the licensee. The

licensee stated that they intended to re-write the exams as part to the program upgrade.

The status of ERO training was reviewed by randomly selecting ten individuals from the ERO and reviewing their training records. The training for all of the individuals reviewed by the inspectors was up-to-date. The licensee continued to maintain ERO training in accordance with their Emergency Plan and EPPRO-03.

c. Conclusion

The inspectors concluded that the licensee was effectively implementing the ERO training program.

P5.3 Emergency Planning Drills

a. Inspection Scope (82701)

The inspectors compared the licensee's drill commitments to the actual drills performed, and evaluated the quality of those drills.

b. Observations and Findings

Three scenarios were used in fifteen drills during the year. One scenarios was used for each of the three cycles of licensed operator training.

The inspectors reviewed the documentation from six of the licensee's drills. The scenarios were challenging, and the licensee's evaluation or critiques of the drills were objective. The drill comments were well documented, tracked, and resolved.

The inspectors reviewed the licensee's matrix of their exercise elements. The matrix identified required exercise elements and the last time the element was exercised. The matrix corresponded to the elements identified in the guidance of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Nuclear Power Plants" and NUREG-0737, "Clarification of TMI Action Plan Requirements." As a minimum, each element was to be exercised once every six years. All exercise element requirements were currently satisfied.

c. Conclusion

The license's conduct of drills exceeded their commitment in their Emergency Plan. The combining of licensed operator retraining with emergency preparedness drills, the number of drills performed during the year, the level of participation, and the feedback provided to the players was a strength.

## P6 EP Organization and Administration

a. Inspection Scope (82701)

The inspectors reviewed this area to determine if any changes in management or personnel had occurred which would effect the efficiency or performance of the Emergency Response Organization.

b. Observations and Findings

The manager responsible for the emergency preparedness programs direction and support recently changed. No significant changes had occurred which negatively affected the performance or maintenance of the Emergency Preparedness Program as a result of that change. During the inspection, the inspectors observed several areas that indicate that emergency preparedness was receiving strong management support. Examples were:

- Upgrading of the siren system,
- Personnel and time committed to drills and training,
- Rewriting or reorganizing of the emergency procedures, and
- Rewriting or reorganizing of the training program.

c. Conclusion

No changes occurred had which affected the performance of maintenance of the Emergency Preparedness Program. Emergency Preparedness was receiving strong management support.

## P7 Quality Assurance of EP Activities

### P7.1 Required 10 CFR 50.54(t) Audit Of Emergency Preparedness Program

a. Inspection Scope (82701)

The inspectors reviewed this area to assess the quality of the required audit, the qualification of the auditors, and verify that the audit met the requirements of 10 CFR 50.54(t).

b. Observations and Findings

The inspector reviewed Audit Report R-EP-95-02 and draft Audit Report R-EP-96-01. Audit Report R-EP-95-02 was a six person team audit conducted in November 1995 and identified one strength, one issue, and three weaknesses. Audit Report R-EP-96-01 was a six person team audit conducted in October 1996 and identified one potential issue, and one potential weakness.

After reviewing audit report R-EP-95-02 and draft audit report R-EP-96-01, the inspector reviewed the assessment outlines that had been developed prior to each of the audits. The inspector noted that the outlines were detailed and well organized. Audit areas were clearly defined and the elements used to audit the different areas were detailed and of sufficient scope to perform a thorough audit of the area.

After reviewing the audit summaries and assessment outlines, the inspectors interviewed the Lead Auditor and reviewed the auditor's elements and notes. The inspectors concluded from the interview and review of the auditor's notes that the scope and depth of the audit satisfactorily covered the elements required by 10 CFR 50.54(t) for an annual independent audit of the Emergency Preparedness program.

The inspectors reviewed the qualification and training, of the auditors and lead auditor. The auditor's qualifications met the licensee's Quality Audit program requirements.

c. Conclusion

The inspectors concluded that the auditors' qualifications were good, and the scope of the audit was good. The audit satisfied the 10 CFR 50.54(t) requirement for an annual independent audit of the EP program.

P7.2 Licensee's Corrective Action Program For Drill Comments and Issues

a. Inspection Scope (82701)

The area was inspected to evaluate the licensee's corrective action to comments and issues identified in their drills.

b. Observations and Findings

The inspectors reviewed findings from audits, inspection reports, and exercise and drill critiques. These findings were compared to the issues identified in the licensee's CAP.

The inspectors selected eight completed packages from the emergency preparedness CAP list for a more detailed review. The packages were reviewed to evaluate the licensee's responsiveness to resolving issues and the adequacy of their closure. From the packages reviewed, the inspectors determined that the licensee was responsive in addressing emergency preparedness issues and that the closure resolutions were adequate.

The licensee stated that they maintained a separate emergency preparedness tracking list for emergency preparedness issues (drill critiques) which do not rise to the level of the CAP program. The licensee stated that they were transferring the list from a "hard copy" to a computer based list, and that while upgrading the site's computer systems, the program was lost. The licensee was in the process of restoring their lower level tracking system. The inspectors selected

several issues that had been identified in drill critiques and were not in the CAP program, and verified they had been corrected.

Documentation had been identified as concerns in a previous NRC inspection and in Audit Report R-EP-95-02. Other examples of missing documentation note by the inspector during this inspection were:

- First semi-annual PASS drill,
- Two letters of agreement, and
- Corrected pages in procedure change form documentation.

c. Conclusions

The emergency preparedness organization was adequately tracking and resolving upper tiered issues through the CAP program. The licensee's loss of their lower level tracking system contributed to continuing problems with documentation. Control of documentation continues to be a concern.

## V. Management Meetings

**X1 Exit Meeting Summary**

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on January 6, 1997. Interim exits were conducted on November 22 and 27, and December 6, 1996. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

# PARTIAL LIST OF PERSONS CONTACTED

## Licensee

H. Chernoff, Supervisor, Licensing/Regulatory Programs
J. Clements, Manager, Site Support Services
D. Crook, Senior Specialist, Licensing/Regulatory Compliance
C. Hinnant, Vice President, Robinson Nuclear Plant
J. Keenan, Director, Site Operations
B. Meyer, Manager, Operations
G. Miller, Manager, Robinson Engineering Support Services
R. Moore, Manager, Outages/Scheduling
J. Moyer, Manager, Maintenance
D. Stoddard, Supervisor, Operating Experience Assessment
R. Warden, Manager, Nuclear Assessment Section
T. Wilkerson, Manager, Environmental Control
D. Young, General Manager, Robinson Plant

## NRC

B. Desai, Senior Resident Inspector
J. Zeiler, Acting Senior Resident Inspector
P. Byron, Resident Inspector, Surry

## INSPECTION PROCEDURES USED

IP 37550: Engineering
IP 37551: Onsite Engineering
IP 40500: Evaluation of Licensee Self-Assessment Capability
IP 61726: Surveillance Observations
IP 62707: Maintenance Observation
IP 71707: Plant Operations
IP 82701: Operational Status Of The Emergency Preparedness Program
IP 92901: Followup - Operations
IP 92902: Followup - Maintenance
IP 92903: Followup - Engineering

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

| Type | Item Number | Status | Description and Reference |
|---|---|---|---|
| URI | 50-261/96-14-01 | Open | Review Licensee's Design Verification Requirements (Section E1.1) |
| VIO | 50-261/96-14-02 | Open | Failure to Complete Corrective Actions to Resolve Containment Liner Corrosion per Engineering Evaluation (Section E2) |
| URI | 50-261/96-14-03 | Open | Review Aspects of Containment Spray Additive Tank Eductor Line Sampling (Section E8.1) |

### Closed

| Type | Item Number | Status | Description and Reference |
|---|---|---|---|
| VIO | 50-261/95-21-01 | Closed | Operator Failure To Monitor Plant Status (Section O8.1) |
| VIO | 50-261/95-27-01 | Closed | Inadequate Clearance Results In Unexpected Emergency Diesel Start (Section O8.2) |
| VIO | 50-261/96-01-01 | Closed | Auxiliary Feedwater System Valve Misalignment (Section O8.3) |
| VIO | 50-261/95-19-05 | Closed | RHR Pump Start Due to Troubleshooting (Section M8.1) |
| LER | 50-261/95-06-00 | Closed | Technical Specifications Violation Due To Failure To Meet Minimum Degree Of Redundancy (Section M8.2) |

| | | | |
|---|---|---|---|
| LER | 50-261/95-07-00 | Closed | Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy (Section M8.2) |
| LER | 50-261/95-07-01 | Closed | Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy (Section M8.2) |
| LER | 50-261/95-08-00 | Closed | Condition Prohibited By Technical Specifications Due To Failure To Meet Minimum Degree Of Redundancy (Section M8.2) |
| LER | 50-261/94-18-01 | Closed | Technical Specification 3.0: Containment Spray System (Section E8.1) |
| LER | 50-261/94-18-02 | Closed | Technical Specification 3.0: Containment Spray System (Section E8.1) |
| LER | 50-261/95-02-00 | Closed | Inadvertent Main Steam Isolation Valve Closure During Plant Cooldown (Section E8.2) |
| LER | 50-261/95-04-00 | Closed | Reactor Trip Due To Main Steam Isolation Valve Closure (Section E8.3) |