

SALP BOARD REPORT
U. S. NUCLEAR REGULATORY COMMISSION
REGION V
SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE
50-397/88-08
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
WNP-2
JUNE 1, 1987 THROUGH MAY 31, 1988

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) is an NRC staff integrated effort to collect available observations and data on a periodic basis and evaluate licensee's performance based on this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC's assessment of their facility's performance in each functional area.

An NRC SALP Board, composed of the members listed below, met in the Region V office on July 12, 1988, to review the observations and data on performance in accordance with Chapter NRC-0516, dated June 6, 1988, "Systematic Assessment of Licensee Performance." The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at WNP-2 for the period June 1, 1987 through May 31, 1988.

The SALP Board for WNP-2 was composed of:

- **D. F. Kirsch, Director, Division of Reactor Safety and Projects, Region V (Board Chairman)
- **G. W. Knighton, Director, Project Directorate V, NRR
- **R. B. Samworth, NRR Project Manager
- **R. P. Zimmerman, Chief, Reactor Projects Branch
- *R. J. Pate, Chief, Reactor Safety Branch
- **J. L. Montgomery, Chief, Nuclear Materials Safety and Safeguards Branch
- **P. H. Johnson, Chief, Reactor Projects Section 3
- *G. P. Yuhas, Chief, Facilities Radiological Protection Section
- *M. D. Schuster, Chief, Safeguards Section
- *R. F. Fish, Chief, Emergency Preparedness Section
- **C. J. Bosted, Senior Resident Inspector
- **C. W. Caldwell, Project Inspector
- *G. R. Cicotte, Radiation Specialist
- *G. M. Good, Emergency Preparedness Analyst
- *L. R. Norderhaug, Senior Material Control Analyst

* Denotes voting member in functional area of cognizance.

** Denotes voting member in all functional areas.

A. Licensee Activities

WNP-2 restarted from its second refueling outage in June 1987. During this refueling outage, the licensee completed several major work items, including rework of both recirculation pumps (due to vibrations experienced during the first two operating cycles). During the restart process, a series of events were experienced, including five reactor scrams in a period of eleven days. As a result of these events, the licensee elected to keep the plant shut

down pending an investigation of the problems and an evaluation of the root cause assessment program. This action was addressed in a Confirmatory Action Letter and discussed in a management meeting with the NRC on July 20, 1987. The plant subsequently restarted on July 26 and operated at essentially full power until December 1987.

Three plant outages were taken for condenser tube leak repairs between December 1987 and February 1988 (actions to improve condenser performance were taken during the 1988 refueling outage). One additional reactor scram occurred on February 4, 1988, due to technician error during the performance of surveillance activities. On February 14, 1988, a ventilation imbalance introduced by personnel error and equipment problems caused overpressurization of the reactor building (secondary containment) and rupture of the building's roof. This delayed restart for approximately three weeks while repairs and inspections were conducted. A number of additional human performance issues arose during the balance of the SALP period, as discussed in the Performance Analysis section of this report.

After repair of the reactor building roof, WNP-2 operated (except for a fourth condenser tube repair outage in March) during the balance of March and April 1988. The plant was shut down for its third refueling outage on April 30, 1988 and remained shut down for the balance of the SALP period.

B. Direct Inspection and Review Activities

Approximately 4000 on-site inspection hours were spent in performing a total of 31 inspections by resident, region-based, headquarters, and contract personnel. Inspection activity in each functional area is summarized in Table 1.

II. SUMMARY OF RESULTS

A. Effectiveness of Licensee Management

Notable licensee achievements were observed during this SALP period including one 4 1/2 month period of continuous full power operation. However, a number of weaknesses were observed that merit prompt attention by the Supply System. Concerns common to the functional areas assessed were insufficient Supply System management involvement in activities and insufficient follow-through on commitments and corrective actions. Weaknesses were identified in the Plant Operations, Maintenance/Surveillance, Engineering/Technical Support, and Safety Assessment/Quality Verification functional areas.

At the beginning of the SALP period (June and July 1987), 5 reactor scrams occurred within a period of 11 days. The principal concern regarding the scrams was the apparent willingness of management to proceed with plant operation without determining the fundamental reason for each scram. After the fifth scram, as documented in a

confirmatory action letter, the Supply System decided to keep the plant shutdown to fully evaluate the cause of the scrams. The corrective actions included implementation of a root cause assessment (RCA) program. Implementation of an RCA program has been sluggish and its effectiveness is still not demonstrated.

As the SALP period progressed, a pervasive theme in management meetings held between the NRC and the Supply System was the number and type of events experienced at the plant in 1988 that were due to personnel error, particularly in the Operations area. Several specific examples of concern were the rupture of the reactor building roof (secondary containment) on February 14, reactor vessel level control problems experienced on February 13 and May 1, and the resin spill which occurred on May 12, 1988. Most of these events involved failure to follow approved procedures or proceeding without adequate forethought in the presence of uncertain conditions. These were of particular concern due to their fundamental nature, and in view of the maturity of the plant and the extensive operating experience represented in the plant staff. In addition, these errors further illustrated the need for an effective RCA program. Also discussed during these management meetings was a need for more critical self-assessment in many plant functions.

Another significant weakness identified was with the preparation of equipment clearances, an activity which is fundamental to effective work control. Errors were made in the preparation of or adherence to several clearance orders that resulted in significant personnel safety hazards, with serious injury narrowly averted in at least one case.

Personnel errors during maintenance and surveillance activities resulted in a number of events which impacted on plant operations during this assessment period. In addition, insufficient controls and level of detail were identified for work performed on vital maintenance work requests.

Also of concern during this SALP period was the performance of engineering and technical support activities. The safety system functional inspection (SSFI) conducted in August 1987 and a resident inspection in February 1988 identified a number of significant weaknesses within the engineering and technical support organizations. These weaknesses included an insufficient understanding of the plant design, inadequate control of design processes, and discrepancies in the design data base.

The quality oversight groups (e.g., QA/QC) were considered to be insufficiently involved in plant activities through most of the SALP period. A number of events or problems (e.g., in Engineering and Operations) that occurred during the period had precursors which, if acted on in a timely manner, could have prevented subsequent recurrence. However, it was apparent that the oversight groups were not effective in recognizing event precursors and acting upon them accordingly.

Toward the end of the assessment period, discussions held with the NRC indicated that Supply System management appeared to have defined appropriate corrective actions to bring about needed improvements in the design engineering area. Enhancements in the Quality Assurance area, including organizational improvements, also appeared to have been appropriately defined. There was a noticeable increase in management presence in the plant which was starting to lead to improvements such as plant cleanliness. In addition, more Supply System managers were starting to interface directly with plant personnel to relate their expectations for personnel performance and the conduct of plant activities.

The NRC acknowledges the licensee's efforts to define necessary program improvements. However, the NRC is concerned that the Supply System has previously made efforts to upgrade programs, meeting with limited effectiveness due to weak follow-through. Supply System management should concentrate on bringing these programs to fruition and ensuring they are effective in correcting the weaknesses.

B. Results of Board Assessment

Overall, the SALP Board found the performance of NRC licensed activities by the licensee was acceptable and directed toward the safe operation of WNP-2. The SALP Board has made specific recommendations in most functional areas for licensee management consideration. The results of the Board's assessment of the licensee's performance in each functional area, including the previous assessments, are as follows:

	<u>Functional Area</u>	<u>Rating Last Period*</u>	<u>Rating This Period</u>	<u>Trend**</u>
A.	Plant Operations	2	3	
B.	Radiological Controls	2	2	
C.	Maintenance/ Surveillance	2	2	
D.	Emergency Preparedness	1	2	
E.	Security	2	1	
F.	Engineering/Technical Support	*	3	
G.	Safety Assessment/ Quality Verification	2	2	

* Engineering/Technical was not a functional area last SALP period and thus it was not rated. Maintenance and Surveillance were separate functional areas last SALP period. However, both areas received a rating of 2 during the last assessment. Safety Assessment/Quality Verification is a new functional area this period. It is similar to, and more comprehensive than, the Quality Programs and Administrative

Controls Affecting Safety functional area that it replaced. Other functional areas rated last SALP period such as Fire Protection and Training are discussed, as appropriate, in the functional area analyses for this SALP period.

- ** The trend indicates the SALP Board's appraisal of the licensee's direction of performance in a functional area near the close of the assessment period such that continuation of this trend may result in a change in performance level. Determination of the performance trend is made selectively and is reserved for those instances when it is necessary to focus NRC and licensee attention on an area with a declining performance trend, or to acknowledge an improving trend in licensee performance. It is not necessarily a comparison of performance during the current period with that in the previous period.

III. CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

1. Assurance of quality, including management involvement and control.
2. Approach to resolution of technical issues from a safety standpoint.
3. Responsiveness to NRC initiatives.
4. Enforcement history.
5. Operational events (including response to, analysis of, reporting of, and corrective actions for)..
6. Staffing (including management).
7. Effectiveness of training and qualifications program.

However, the NRC is not limited to these criteria and others may have been used where appropriate.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

Category 1: Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

Category 2: Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

Category 3: Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimal regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

During the assessment period, the licensee's plant operations activities were observed routinely by both the resident and the regional inspection staff. Over 930 hours of inspection effort were devoted to this functional area. The licensee was noted to have had several accomplishments in the operations area during this SALP period, such as a 4 1/2 month period of continuous power operation which set several records for plant performance. Strengths were also observed in the size and experience of the operating staff. Weaknesses noted included insufficient attention to plant procedures, from both the procedure adequacy and compliance points of view; insufficient attention to equipment clearance orders, several instances of operators proceeding in the presence of uncertain conditions; insufficient management presence in monitoring and assessing plant activities; and (as discussed further in Section IV.G) an ineffective root cause assessment program.

A strength identified during this assessment period was the professionalism observed among the plant operating staff. Shift turnovers were conducted in a comprehensive and orderly manner. Shift staffing was considered an asset within the Operations organization. Among the equipment operators (EOs), there was a varying amount of plant experience; many held a reactor operator (RO) license and a few held a senior reactor operator (SRO) license. An SRO-licensed individual was

assigned to each shift to supervise and direct the EO's. Two ROs were assigned to each shift as control room operators with three ROs normally assigned to the control room during day-shift. Most shift technical advisors (STAs) held active SRO licenses.

A number of weaknesses were identified in the Plant Operations area during this period. Observations in the control room revealed that operators did not always obtain and refer to procedures for evolutions being performed unless step-by-step checkoff of procedure accomplishment was required. It also appeared that operators rarely referred to annunciator response procedures, and on a number of occasions did not know the reason for control room alarms (e.g., radiation alarms). Observations at the simulator also showed that operators did not always consult the Emergency Operating Procedures. Thus, there was a perception by the SALP Board of insufficient discipline and formality on the part of the operators (i.e., that they knew what they were doing and did not need to refer to the procedures).

In spite of the significant experience levels represented among the Operations staff, a number of operational events occurred during this SALP period as a result of weaknesses in operator performance. Most these events involved inattention to approved procedures or willingness of the operators to proceed with plant evolutions when presented with uncertain conditions. The events experienced included overpressurization and rupture of the reactor building roof, two inadvertent drainings from the reactor vessel, and a spill of about 200 curies of spent reactor water cleanup resin. Also, during performance of control rod drive stall flow measurements, operator inattention and lack of an appropriate procedure caused one control rod to be unknowingly inserted. As a result, the plant was operated for more than one shift with this control rod mispositioned, and power had to be reduced to restore the rod to its correct position.

Another observed weakness was insufficient attention to equipment clearances during the refueling outage. This resulted in an auto-isolation of the reactor building, flooding of a feedwater heater in which two mechanics were working, and two cases of electricians unknowingly working on energized electrical circuits. One of these cases resulted in an injury due to electrical shock. In response, management stopped all electrical work after this event until corrective actions could be accomplished. These actions consisted of maintenance personnel briefs and addition of a new level of interdisciplinary review to the clearance process. Although occurring after the close of the SALP period, insufficient operator attention also resulted in an excessive reactor vessel heatup rate during a plant startup in June 1988.

Six reactor scrams were experienced during this assessment period, five of which occurred within a period of 11 days early in the assessment period during restart from the plant's second refueling outage. These scrams were largely due to component failure or design problems. However, attempts were made to restart the plant after each scram without the necessary critical self-assessment of plant readiness to return to service. The corrective actions were not totally effective and in some cases addressed symptoms rather than the root causes of the scrams. After the fifth scram, as documented in a confirmatory action letter (CAL) issued by the NRC, Supply System management decided to keep the plant shutdown while the causes of the scrams were fully evaluated. The Supply System also committed to develop and implement a root cause assessment (RCA) program and enhance the post trip review program, and to cultivate a more self-critical attitude among the staff. However, development and implementation of the program were not performed in a timely or aggressive manner. As a result, the RCA program was still being implemented at the end of the SALP period and was of limited effectiveness.

Two violations were identified in this functional area during the assessment period. One dealt with changes made to Technical Specifications steam tunnel temperature trip setpoints without prior NRC approval (this led to the need for an emergency Technical Specification change). The other violation involved a failure to install backup nitrogen bottles per design drawings. These violations were not repetitive and did not appear to indicate a programmatic breakdown.

Review of licensee event reports (LERs) indicated that plant events were, in general, accurately identified and reported, but some analyses were marginal. For example, the Supply System issued LER 88-06 to describe the reactor pressure vessel (RPV) level transient of February 13, 1988. However, the LER did not identify weaknesses in the operating crew's understanding of the severity of the transient (RPV inventory loss of approximately 2400 gallons), nor did it identify corrective actions to prevent future backflow from the reactor water cleanup system through the feedwater system.

Supply System management was observed to be insufficiently involved in site operational activities. With the exception of the Assistant Managing Director for Operations, managers were not relying upon direct interface to convey their expectations to plant employees. Management's expectations, such as procedural adherence and investigation of uncertain conditions, were at times either poorly understood or neglected at the craft level and needed reemphasizing by management in order to ensure compliance. During a February 1988 management meeting, the Regional Administrator identified NRC concerns regarding insufficient site and corporate

management time in the plant. With a few exceptions, this concern applied to the full range of managers. Following this meeting, a noticeable increase in management tours of the plant was observed. Benefits from the increased tours by management were noted, such as improvements in plant cleanliness, a reduction in tools left in the plant at the end of work activity, and a higher visibility of management presence in daily activities.

The Supply System's licensed and non-licensed operator training and qualification programs received accreditation by the Institute for Nuclear Power Operations (INPO) in August 1987. However, the overall pass rate for licensed operator exams showed little improvement (83%) over the previous SALP period. Of particular interest was the decline in the SRO operating examination pass rate (75%). This was apparently due to training program weaknesses and a lesser amount of operating experience possessed by some SRO candidates who were not previously RO licensed.

The licensee made use of the plant specific simulator for training licensed operators. However, the simulator did not fully emulate the plant responses to certain abnormal conditions and did not provide the operators with the expected response to some events. These discrepancies between the simulator and the plant affected the ability of the operators to mitigate events (e.g., reactor vessel level and pressure transients). In addition, inadequate training was determined to be the root cause of some events. The licensee has been involved in a long-term upgrade program to make the simulator better reflect plant operations. Near-term actions have been identified and are in progress to make the simulator more closely model reactor vessel pressure/level control. However, the Board considered that there has been a lack of sufficient aggressiveness to provide timely resolution of the discrepancies between the plant and the simulator.

With regard to fire protection, the licensee's activities were assessed as improving. However, during the SSFI conducted in August 1987, two additional fire protection concerns were identified regarding potential flooding of the diesel generator (D/G) rooms and the loss of all on-site AC power. The licensee assigned significant resources to completion of corrective actions for these concerns and the NRC concerns identified in previous SALP periods. Preliminary results from a fire protection team inspection conducted in June 1988 (results to be documented in the next SALP period) indicated that the licensee has completed corrective actions for a majority of the previous fire protection concerns. Observation of fire fighting activities was not conducted during the SALP period. However, no problems have been identified in the past with regard to training or performance of the fire brigade.

Overall, performance in the Plant Operations area was observed to have declined since the last assessment period, based largely on the number and type of human performance problems experienced, particularly during the latter part of the SALP period. Some improvement was noted near or after the end of this assessment period in root cause analysis, implementation of corrective actions, and senior management involvement towards enhancing performance, although the full effectiveness of these actions has not yet been assessed.

2. Performance Rating

Category 3.

3. Board Recommendation

Supply System management is strongly encouraged to assume a more active involvement in the day-to-day operation of the plant and to give particular attention to assurance that corrective actions and commitments are aggressively pursued and effectively implemented. Plant management should continue with implementation of the root cause assessment program. Additional steps need to be taken to effectively correct and minimize personnel errors and stress the importance of correct individual performance. Particular emphasis should be placed on improving operator attitudes regarding the use of procedures and stopping in the face of uncertainty. Additional management emphasis and resources should also be devoted to provide for more expeditious completion of the simulator upgrade program. Most importantly, the Board considers that a serious self-critical attitude is essential to effectively confront, penetrate, and resolve plant problems so that operational activities are continually improving. The licensee is encouraged to adopt this critical attitude to promote and maintain high standards of excellence within the entire plant staff.

B. Radiological Controls

1. Analysis

Five inspections were conducted in the radiological controls area during the appraisal period. More than 370 hours were expended in the areas of occupational exposure during extended outages, external exposure control and dosimetry, internal exposure control and assessment, control of radioactive material, management of liquid and gaseous waste, as low as reasonably achievable (ALARA) program, organization and qualifications, solid waste, facilities, transportation of radioactive material, water chemistry control, and confirmatory measurements. In addition, the resident inspectors provided continuing observations in these areas.

The licensee has established an effective ALARA program that continued to meet its objectives and goals for maintaining personnel exposures as low as reasonably achievable. Thus, control of occupational exposure at WNP-2 continued to be good. However, occupational exposure increased from 136 person rems in 1985, to 222 person rems in 1986, to 406 person rems in 1987. Of the 29 BWRs for which data were available for 1987, 15 have reported total exposures which exceeded 406 person rems. Thus, the licensee's performance was average. The licensee continued to experience good fuel performance overall, although the licensee detected one small fuel pin leak during the past operating cycle. This was investigated during the Spring 1988 refueling outage, but not specifically identified. Upon restart, reactor coolant activity indicated that the fuel assembly containing the leaking pin had apparently been removed during the refueling outage.

During this appraisal period, examples of management involvement in ensuring quality were noted. Records were generally complete, well maintained and easily accessible through the licensee's archival system. In addition, the staff completed a review of the licensee's Offsite Dose Calculation Manual. This was found to be of acceptable quality, requiring no major revisions.

The licensee was generally responsive to NRC initiatives. Responses were normally thorough and technically sound although some were slow. The licensee recently implemented both a discrete radioactive particle control program and the use of a bag monitor for the detection of low levels of radioactivity in bags of potentially contaminated waste. Both actions were, in part, responsive to concerns expressed by the NRC. One unresolved item, related to plateout factors applicable to post Loss of Coolant Accident (LOCA) iodine sampling at temperatures below 50°F in accordance with NUREG 0737, Item II.F.1.2, has remained open since 1985. As of the end of the SALP period, the licensee had not proposed a date by which this matter would be resolved.

During this SALP period two severity level IV and two severity level V violations associated with radiological controls occurred. While this represents a significant improvement compared to the previous SALP period, the licensee's performance during outages could be improved, as described in Inspection Report 50-397/88-12. In particular, the licensee's problems in the area of posting and controlling radiologically controlled work areas continued to show the symptoms identified during the previous SALP period. Violations in these areas did not represent a programmatic breakdown in the radiological controls area. They do, however, indicate a need for improved performance in the occupational radiation safety sub-area.

Three LERs were submitted in this functional area during the period. The root cause for one LER was determined to be personnel error and corrective actions were taken in a timely manner. Another event, involving a radioactive resin spill, was reported (as an informational LER) shortly after the end of this assessment period. Managements' evaluation and determination of root cause for this event were timely but did not identify apparent deficiencies in the equipment operators' knowledge of radiation safety precautions, control of very high radiation areas, periodic radwaste system valve lineups and failure of the area radiation monitor multipoint recorder to operate as intended. The NRC inspection of this event conducted shortly after the end of the SALP period identified two apparent violations related to this event. The third LER was a 10 CFR Part 21 report which identified a potential unmonitored effluent release path that might exist under certain accident conditions (due to a design error by the architect/engineer).

Observations indicated that the licensee has an adequate staff with key positions identified and responsibilities defined. Health Physics Technician staffing for the 1988 refueling outage appeared to be adequate while corporate and site technical support staffing appeared to be excellent.

2. Performance Rating

Category 2.

3. Board Recommendations

Management should provide increased emphasis toward assuring that all of the basic aspects of the radiological control program are fully implemented during outages as well as during normal plant operations. The focus of management's attention in this area should extend to ensuring effective implementation of the radiological control program requirements as they interface with other elements of plant operations.

C. Maintenance/Surveillance

1. Analysis

This functional area was observed routinely during the assessment period by both the resident and regional inspection staff. Over 890 hours of inspection effort were devoted to this functional area. Strengths identified included Maintenance Department staffing and the surveillance scheduling program. Observed weaknesses included: (1) insufficient Supply System management involvement in plant activities, (2) a number of plant events stemming from poor maintenance personnel performance (e.g., not following

procedures), (3) insufficient controls over work performed on vital maintenance work requests, and (4) inadequate maintenance training.

Maintenance Department staffing was considered a strength, with key positions identified and responsibilities well defined. Vacant key positions were filled on a priority basis. Expertise for problem resolution was usually available within the staff, making the need for outside consultants rare. Only occasional difficulties were experienced with controlling the backlog of maintenance work items or overtime. In addition, experience levels for management met licensing commitments. Other strengths identified were the experience of the maintenance and surveillance staff, the low turnover rate of personnel, and the implementation of an effective preventive maintenance program.

Only three surveillances were missed of several thousand required to be performed during the rating period, indicating that the scheduling of surveillances was generally good. Furthermore, instances of inadequate surveillance procedures were minimal. Midway through the SALP period, condenser tubes were damaged by water impingement from damaged condenser baffles. This caused circulating water intrusion and impaired primary water chemistry conditions. These adverse water chemistry conditions were identified by surveillances and were promptly mitigated. Additionally, observations indicated that chemistry control measures continued to be effectively implemented.

A number of weaknesses were identified in this functional area during the SALP period. Insufficient Supply System management and supervisory involvement in site activities was observed at times during the SALP period. Management policies appeared to have been marginally communicated to personnel. As a result, policies such as preparation of nonconformance reports for plant problems were marginally understood by some maintenance personnel. In at least one case, nonconforming conditions (Limitorque torque switches), were not identified in a timely manner to proper levels of management for resolution.

Personnel errors resulted in a number of events which impacted on plant operation during this assessment period. Examples of such events included (1) a reactor scram on February 4, 1988 due to failure to follow a surveillance procedure, (2) dropping of two new fuel assemblies on April 1 caused by failure to attach securing brackets, (3) improper installation of a design change on No. 1 diesel generator on May 25, and (4) a mechanic stepping on a new fuel assembly on April 11 while preparing it for inspection. Numerous plant nonconformance reports (NCRs) documented instances wherein equipment was tested and not properly reset, resulting in inadvertent half-scrams. Two inadvertent nuclear steam supply shutoff system (NSSSS) isolations also occurred during system surveillance tests, both as a result of personnel error.

Review of work performed under the vital maintenance work request (MWR) program was also observed. Several problems were identified with the level of detail specified and the controls established in a number of vital MWRs. For example, a vital MWR used to troubleshoot an inoperable declutching mechanism for valve MSLC-1A specified only that the craftsmen were to troubleshoot and repair the component. No details such as valve disassembly requirements, interface requirements between electrical and mechanical maintenance, or QC hold points were established. As a result of this inadequately controlled and monitored maintenance, the valve operator was apparently assembled improperly and burned up during post maintenance testing.

A technically adequate training program was in effect for most of the maintenance staff. However, the training did not sufficiently address administrative controls applicable to maintenance activities, such as procedural adherence in performing sign-offs, double verification, and use of electrical determination and retermination sheets. As a result, some personnel did not sufficiently understand these administrative matters, which contributed to the procedural violations and personnel errors. The training cycle had provisions for refresher training of maintenance department journeymen. However, no criteria were established for the program's content or frequency, and provision was not made in the schedule for personnel to attend this training. Consequently, it was possible that many journeymen would not receive refresher training due to workload.

Six violations were identified during the course of the assessment period, as identified in Tables 1 and 2. Most of these indicated failures to properly provide or follow procedures. These violations were corrected by the licensee and did not indicate a programmatic breakdown.

2. Performance Rating

Category 2.

3. Board Recommendation

The licensee is strongly encouraged to pursue more aggressive measures to reduce the number of personnel errors and procedure compliance problems. Management should give additional emphasis to improving root cause assessments, strengthening the training program, and ensuring proper communication of management expectations to craft personnel.

D. Emergency Preparedness

1. Analysis

Region V conducted a total of three emergency preparedness inspections during this appraisal period. Areas addressed during these routine inspections included: shift staffing and augmentation, training, licensee audits, and followup on previous inspection findings. The licensee's 1987 annual emergency exercise was observed during this appraisal period. More than 270 hours of direct inspection effort were expended by region based and resident inspectors in the area of emergency preparedness.

The inspections during this appraisal period showed that upper management continued to support the Emergency Planning program. The inspections also showed that licensee management could be more proactive with its corrective action determination and root cause assessment of identified problems. Followup on several items identified during the 1987 annual emergency exercise indicated a tendency to rationalize problems or to relegate the responsibility to solve the problem to the training staff. The latter tended to put the burden on training personnel to determine the root cause and provide training, thereby decreasing the Emergency Planning staff's participation in the process. Related to this matter, the inspections showed that some improvement had been made in the documentation associated with corrective action records (CARs), including those prompted by NRC inspections. During the previous SALP period, it was noted that the licensee had not flagged or tracked inspection findings other than open items. A system was established to identify and flag findings from NRC reports. However, room for improvement still existed. A sampling of findings from NRC reports showed that, in several cases, the findings were not considered for resolution, because they had been overlooked.

Resolution of technical issues related to the Emergency Plan and its implementation was generally sound. Problems identified during the 1986 annual emergency exercise did not recur in the 1987 annual emergency exercise. One problem that was identified during this assessment period was the licensee's reluctance to declare events in accordance with the Emergency Plan Implementing Procedures (EPIPs). One Unusual Event (UE) was declared during this SALP period and it was noted that there was some delay in declaring it. Procedural weaknesses and management philosophy appeared to have contributed to this problem. Late in the SALP period, the emergency classification procedure, EPIP 13.1.1, was revised in an effort to limit the discretionary aspects of the procedure so that it could be implemented in a more consistent manner. The effective resolution of emergency planning issues was hampered by the lack of health physics and operations

expertise within the Emergency Planning organization. The lack of this type of expertise affected the Emergency Planning staff's ability to objectively evaluate the performance (emergency response) and procedural contributions provided by the Health Physics and Operations staffs.

Licensee personnel responsible for conducting emergency response training continued to show initiative by developing innovative ways to improve training.

2. Performance Rating

Category 2.

3. Board Recommendation

Licensee management should ensure that additional emphasis is applied to the area of emergency preparedness and that appropriate levels of operations and health physics expertise are developed within the Emergency Planning staff.

The Emergency Planning staff is encouraged to closely monitor Emergency Plan implementation during significant events with the intent of assuring conservative implementation of the Emergency Plan. In addition, The Emergency Planning staff is encouraged to be more self-critical and be more proactive in its root cause determinations and corrective actions.

E. Security

1. Analysis

Region based inspectors conducted two inspections during the SALP period dealing with physical security. No material control and accounting inspections were conducted. The resident inspectors also monitored implementation of the security program as part of their routine inspection activities. Areas inspected included the licensee's compliance with the safeguards requirements of 10 CFR Parts 50 and 73, the licensee's approved physical security and guard training and qualification plans, and the implementing procedures related thereto. More than 180 hours of inspection effort were expended in the area of physical security.

With regard to management's involvement in assuring quality, corporate security management continued to review the implementation and operation of the security program. They have promptly implemented remedial measures to correct past deficiencies identified in the course of both internal audits and NRC security inspections. During the reporting period, security management, developed a detailed computer based tracking system to assure immediate knowledge of the status of evaluation and corrective actions for audit findings, to include the completion of established milestone due dates.

Major program upgrades previously underway (particularly in the area of training) have, to a great extent, been completed and appear to have been successful.

Technical resolution of security issues as related for example, to the evaluation of protected area detection aids and CCTV surveillance, was generally sound and thorough, although some continuing problems with image clarity at the maximum field of view were identified by the inspectors as deserving further attention. Security radio communications, CCTV cameras, personnel and package search operations, vital area barriers and, to a lesser extent, response equipment were identified during the assessment period as needing to be evaluated for continued adequacy. Much of the security hardware currently in use was purchased and put into service more than five years ago and thus, in some cases, is approaching end of expected life. The licensee initiated, and is continuing, a comprehensive program for long range upgrade of security equipment (e.g., security radio communications). However, the licensee's actions have thus far been essentially limited to radios and, to a minor extent, the security computer.

During the assessment period, three information notices related to security were issued. These related to a perceived foreign threat to U. S. nuclear facilities; criminal prosecution by the U. S. Department of Justice resulting in the conviction of two individuals for falsification of security training records; and the discovery of falsified pre-employment screening records. The licensee's actions, as reviewed to date, were found to be appropriate; however, the last two information notices were issued after the most recent of the two security inspections.

The NRC staff reviewed the licensee's updates to the Security Plan and issued a license amendment and Safeguards Evaluation Report documenting the status of the licensee's plan. Staff review found consistent evidence of prior planning by utility (including corporate level) management. Responses regarding safeguard matters were technically sound and consistent, which demonstrated the existence of well developed policies and procedures for control of security related activities. Responses were generally timely, and the proposed resolutions were generally acceptable the first time.

The enforcement history for the period of June 1, 1987 through May 31, 1988 included one Severity Level IV violation related to failure to test certain vital area intrusion detection aids as required.

During the SALP period six safeguards events were reported. These events related to personnel search and access control problems (3), barrier or alarm degradations (1), inadequate or failed compensatory measures (1) and one off-site arrest of an

employee involved in a domestic disturbance (charges later dropped). The licensee's immediate remedial actions in response to the events appeared to be generally appropriate and in two cases, represented the results of independent vulnerability studies conducted by the licensee at his own volition. The event involving inadequate compensatory measures occurred after a change in the requirements of 10 CFR 73.71(c) and thus was reported in the Licensee Event Report (LER) format meeting both content and timeliness expectations.

With respect to staffing, key positions were identified and responsibilities were generally well defined. As a result of NRC concerns identified in the previous SALP report, the licensee relocated certain key management people to help alleviate a perception of a management conflict of interest. Expertise was usually available within the staff and the security force manning level was maintained to provide a training squad for expeditious implementation of the upgraded security program. The licensee's detailed internal reviews and tracking of corrective action measures resulting therefrom, were progressing and can be expected to effect further improvements in program operations and equipment upgrades.

2. Performance Rating

Category 1.

3. Recommendation

Licensee management is encouraged to continue their augmented support with particular attention of the subtle degradation of aging security hardware. The findings of the Regulatory Effectiveness Review at other nuclear sites should be evaluated for application at WNP-2.

F. Engineering/Technical Support

1. Analysis

During the assessment period, the licensee's engineering and technical support activities were observed routinely by both the resident and the regional inspection staff. Over 290 hours of inspection effort were devoted to this functional area. These inspections showed the licensee's engineering and plant technical organizations to be well staffed with experienced personnel. However, it was apparent that these organizations were not being effectively utilized. As a result, a number of significant weaknesses were observed. These included: (1) insufficient understanding of plant design, (2) insufficient control of design processes, (3) weaknesses in the plant's design data base, and (4) inadequate senior management involvement in design and engineering issues.

With respect to engineering involvement in licensing activities, the licensee demonstrated considerable initiative and capability by identifying areas where changes could be made to improve plant operation. During the rating period, the licensee proposed amendment applications to extend the length of the fuel cycle by reducing feedwater temperature at the end of the cycle when no further addition of reactivity is available by withdrawal of control rods. The licensee also proposed to increase the limit of power operation with a single recirculation pump in service. Through two years of experience with single loop operation, the Supply System has acquired expertise unique to the industry in this area. Another initiative was identified in the engineering area in that the Supply System is developing the capability to perform future reload analyses rather than contracting this work out.

During this SALP period, observations indicated that understanding of plant design issues was at times lacking, as evidenced by certain events which occurred during the assessment period. An example was the overpressurization and rupture of the reactor building roof, in that an earlier investigation concerning autostart of the vent fans incorrectly determined that the fans were functioning as designed. In addition, a reactor scram occurred in June 1987 due to a test component that was inadvertently left installed in auxiliary power transformer TR-N1. Following a similar scram the next day, the licensee performed a more detailed root cause analysis and found that a test component should have been removed from both auxiliary transformers prior to initial criticality. The resolution of these problems required considerable attention by the senior plant management before they were adequately resolved.

Major problems in the control of engineering and design work were identified by NRC inspectors and by Supply System personnel investigating the root cause of an inadequate modification package for the anticipated transient without scram (ATWS) modification. In particular, the design review process failed to identify a number of significant deficiencies with the ATWS modification package. A followup audit also identified problems in other plant modification request (PMR) packages which required numerous field change requests (FCRs) to correct. The use of independent self-assessment organizations, such as QA and the nuclear safety assurance group (NSAG), to directly assess the technical operation of the engineering groups was also limited during most of the assessment period.

The problems found in the modification packages indicated significant weaknesses in the design process and in management's control of engineering and design activities. Although policies for the generation engineering group appeared to be adequately stated, they were either not fully understood or not followed. In the cases discussed above, PMR

packages involving key safety systems were reworked, in some cases several times, without engineering management awareness that an inadequate product was sent to the plant. Span of control in the design organization appeared to have contributed to the problems observed, with a design engineer to supervisor ratio as high as 35 to 1.

Several errors in the plant's design basis documents were identified during the safety system functional inspection (SSFI) conducted in August 1987. Examples included a reduction in available load margin (during accident conditions) for vital batteries and the lack of a properly defined design basis for time delay relays. Other errors in design basis documents were identified as a result of Limitorque motor operator bypass jumpers that were found missing in July 1987. Investigation of the missing jumpers led to the identification of inconsistencies between the "top-tier" and elementary electrical wiring diagrams.

The plant technical and Generation Engineering organizations were well staffed with experienced personnel. However, the workload for the staff engineers was extremely high. It was apparent that these engineers were being shuttled between varying priorities, with a consequent lack of continuity and proper followup of issues. An example of this difficulty to follow through on priority tasks was the licensee's corrective actions for the Limitorque motor operator bypass jumpers discussed above. The Supply System identified in an LER that "Engineering efforts already in progress to upgrade Electrical Wiring Diagrams to top tier status will be expedited." However, this effort was apparently discontinued in December 1987 and remained on hold thereafter due to a realignment of priorities.

Training for the engineers in the technical groups appeared to be minimal due to the heavy workloads. Design engineers were rarely observed in the plant and did not have an understanding of the day-to-day problems experienced. They appeared to rely largely on the technical staff engineers for information and input on plant events.

The significant weaknesses in the engineering and technical areas, as discussed above, outweigh the observed strengths. Insufficient management involvement, organizational weaknesses, and inconsistencies in the plant's design data base have inhibited the staffs' abilities to perform up to their potential. It appeared by the end of the SALP period that the Supply System had initiated appropriate actions to provide improved performance in this functional area. The effectiveness of these actions will be evaluated closely during the 1988-89 SALP period.

2. Performance Rating

Category 3.

3. Recommendations

Licensee management should ensure high levels of personal involvement and assessment in the engineering and technical area. In addition, the amount of direct managerial involvement should be increased. The future QA engineering assessment group should be used to look at the work of both the design engineers and the operations support engineers. Efforts to update the plant's design data base and wiring diagram upgrades should be expedited. In addition, the engineering and technical staffs should become more familiar with the design data base. Supply System management should assess the scope of engineering and technical work currently being performed and ensure that the workload is not greater than can be properly performed by the existing staff. Also, senior management should ensure that the improvement programs are carried to completion.

G. Safety Assessment/Quality Verification

1. Analysis

This functional area was observed routinely during the assessment period by both the resident and regional inspection staffs. Over 440 hours of inspection effort were devoted to this functional area. The performance of QA/QC, the Nuclear Safety Assurance Group (NSAG), the Plant Operations Committee (POC), the Corporate Nuclear Safety Review Board (CNSRB), and the licensing organizations were included in this assessment. These quality oversight groups were perceived by the SALP Board to have been insufficiently involved in plant activities, although increased involvement was observed near the end of the SALP period. Weaknesses were also identified in the implementation of the root cause assessment (RCA) program, management's involvement in assuring that corrective actions are taken in response to QA findings, and in staffing levels in some of the quality groups.

The NRC views these quality oversight groups as the fundamental problem-finding elements of the licensee's organization. However, a number of events or problems experienced during this SALP period had precursors which, if acted upon in a timely manner, could have prevented subsequent recurrence. Examples included 5 scrams in 11 days at the beginning of the period, rupture of the reactor building roof, two unintentional drainings from the reactor vessel, the May 12 resin spill, a personnel injury due to electrical shock while working on a cooling tower makeup pump, and numerous problems identified in the performance of engineering/design work. Two instances were noted (NSAG's determination of

inadvertent draining of reactor coolant to the condenser on February 13, and QA's issuance of a stop-work order on the material management system in late 1987) wherein the quality oversight groups did properly identify plant problems. Overall, however, the most significant weakness in this functional area was deemed to be an insufficient ability of the quality oversight groups to recognize event precursors and act upon them accordingly.

Following the series of five scrams in June and July 1987, the Supply System committed to implement an RCA program. Although a completion date was not established, the NRC perceived as the SALP period progressed that this effort was not being aggressively pursued. The revised post-trip review (PTR) procedure was not issued until February 4, 1988, with issuance apparently prompted by a reactor scram which occurred on that date. Many elements of the RCA program were included in the revised PTR procedure, but the RCA procedure was not issued until May 1988. Although the new RCA methodology was used to evaluate a number of plant events near the end of the period, observations indicated that increased effectiveness of the RCA program was necessary. In addition, the RCA procedure did not clearly identify for what types of events or concerns the RCA process should be invoked. These concerns were discussed with responsible licensee management, and efforts to resolve them were in progress at the end of the SALP period.

During the past several assessment periods, strengthening of the plant QA/QC organizations was recommended by the NRC. During this period, efforts to do this were observed. The site groups have identified some problems (as noted above), but in several cases these groups have not presented a strong image to other site organizations (or to outside monitoring groups) in ensuring timely and effective correction of the problems. A review of monthly QA audits and surveillances showed numerous occasions wherein the findings of the audit or surveillance, along with needed followup actions, were ignored or forgotten by the organizations assessed. It was apparent that QA management was not assuming a strong role in ensuring that the responsible organizations performed timely corrective actions.

Staffing of the various organizations during most of the SALP period appeared to be aimed at achieving the desired program. However, the resources in some areas were strained. For example, there were a number of corrective actions for open items and commitments that were put on hold due to a realignment of priorities (e.g., the drawing updates discussed in Paragraph IV.F). In addition, the compliance organization was having difficulty in tracking and statusing open items due to a large workload in preparing LERs, for which they were also responsible. The Supply System indicated a sensitivity to this concern and identified that an evaluation of the current staffing levels would be performed by the new Director

of Safety and Assurance during the upcoming year. As a result, the budget was updated to include additional personnel so that experienced engineers can be assigned to a design assessment group and to a root cause assessment group which will be assigned to the site. This was considered to be a significant improvement over past conditions.

Observations indicated that, in general, training of plant QA/QC personnel was adequate and contributed to improved individual performance. However, it was noted that specialized training on certain plant processes and activities, such as motor operated valve analysis and testing, was not provided to all QA inspectors that were performing observation of these activities. These QA observations were performed as part of a recent shift of the QA organization's emphasis from a compliance (record review) assessment to a performance assessment similar to the NRC's inspection program:

Five violations were identified in this functional area, two of which were found during the SSFI. The SSFI team identified a failure to comply with 10 CFR 50.59 requirements for performing a review of a plant modification and a failure to identify nonconforming conditions. An observation concerning the conduct of Plant Operations Committee (POC) meetings was made later in the assessment period. In particular, a tendency was noted on the part of regular POC members to have alternate members attend meetings even though the regular members were on-site. This problem was corrected at the end of the assessment period by plant management. Near the end of the period, the weakness in documenting nonconforming conditions was again identified. In this case, plant problems (stepping on a fuel assembly and certain problems with Limitorque motor operated valve torque switches) were not documented as such, which resulted in issuance of a Notice of Violation after the end of the SALP period.

The licensee filed thirteen license amendment applications during the rating period. Four of these were required on an emergency basis. Although the staff concluded that the four emergency amendments could be made without compromising safety, it was apparent that the need for two of the four could have been anticipated and avoided.

Of the thirteen amendments actually issued during the rating period, five were based solely on the original amendment application. The remainder required supplemental submittals. The Project Director, the Project Manager, and the NRR Licensing Assistant travelled to the site in August 1987 to discuss licensing procedures with the Supply System. The NRC staff considered that turnaround time for license amendments could be significantly reduced by the Supply System providing more detailed submittals.

Although the number of LERs continued to decrease during this assessment period, the number of reportable events was above the industry average. To some extent, the continuation of a high number of reportable events was considered a reflection of the thoroughness of safety reviews. The events described above indicated that further improvements could be made to the safety review process.

Late in the assessment period, observations indicated that corporate management became more involved in the overall quality aspects of the plant and several important actions were undertaken. Recent Supply System efforts to enhance the effectiveness of quality functions were identified to the NRC during a management meeting after the close of the assessment period. The efforts identified included: reorganization of the Licensing and Assurance Department, ongoing implementation of a root cause assessment program (with a dedicated staff), and more aggressive involvement in operations and engineering activities (e.g., a design engineering assessment and a plant modification process evaluation). It appeared that some of these actions were a result of NRC concerns while some actions were independent initiatives. The NRC acknowledged the licensee's efforts to define necessary program upgrades. However, the NRC expressed concern that the Supply System has previously made efforts to upgrade quality programs, meeting with limited effectiveness. During the management meeting in June 1988, the Regional Administrator emphasized that these actions were considered as the beginning steps towards enhancing plant performance and that these actions would be closely monitored by the NRC.

2. Performance Rating

Category 2.

3. Recommendations

Supply System management should focus attention on the recently defined program improvements to ensure that they are effectively carried to completion and achieve the desired results. Full implementation of the root cause assessment program should be expedited. Management should also participate more fully in the followup of QA findings to ensure that these findings are being corrected in a timely fashion. Efforts need to be made to improve the timeliness of the Supply System's ability to track and close items identified for corrective action. Implementation of planned organizational and staffing improvements should continue. The licensee should strive to improve the quality and thoroughness of licensing submittals.

V. SUPPORTING DATA AND SUMMARIES

A. Enforcement Activity

One NRC resident inspector was on-site during the 1987 portion of the SALP period, with one additional inspector arriving in January 1988. Thirty one inspections, including a team safety system functional inspection in August 1987, were conducted during this period for a total of 3393 inspector hours. A summary of inspection activities is provided in Table 1 along with a summary of enforcement items from these inspections. A description of the enforcement items is provided in Table 2. During this SALP period, no escalated enforcement items were identified.

B. Confirmation of Action Letters

WNP-2 finished its second refueling outage in June 1987. In the process of returning to service after the refueling outage, a series of mishaps was experienced, including five reactor trips in a period of 11 days. As a result of these mishaps, the licensee elected to keep the plant shutdown pending an investigation of the problems and an evaluation of their root cause assessment program. The licensee's decision was confirmed by issuance of a CAL on July 6, 1987 by Region V. The CAL identified that the Supply System would, for example: evaluate the effectiveness of the post-trip review and root cause assessment programs, reevaluate the specific problems encountered during the return to service, and assess major work items accomplished during the 1987 refueling outage and evaluate their impact on return to operation.

A followup meeting between the Supply System and Region V was held two weeks later to review the licensee's corrective actions on the items identified in the CAL. The plant subsequently restarted on July 26, 1987 and the CAL was rescinded.

C. Other

An Office for Analysis and Evaluation of Operational Data (AEOD) review of licensee events at WNP-2 is included as Attachment 1. The AEOD reviewed the LERs and significant operating events for quality in reporting and effectiveness of corrective actions identified.

TABLE 1

INSPECTION ACTIVITIES AND ENFORCEMENT SUMMARY (6/1/87 - 5/31/88)WNP-2

<u>Functional Area</u>	<u>Inspections Conducted</u>		<u>Enforcement Items</u>				
	<u>Inspection*</u> <u>Hours</u>	<u>Percent</u> <u>of Effort</u>	<u>Severity Level**</u>				
			<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>
A. Plant Operations	938	27.66				1	1
B. Radiological Controls	373	11.59				2	2
C. Maintenance/ Surveillance	897	25.85				4	2
D. Emergency Prep.	272	8.01					
E. Security	182	5.35				1	
F. Engineering/ Technical Support	290	8.55				3	
G. Safety Assessment/ Quality Verif.	440	12.98				2	3
	—	—	—	—	—	—	—
Totals	3393	100.00				13	8

* Allocations of inspection hours to each functional area are approximations based upon NRC form 766 data. These numbers do not include approximately 770 inspection hours by NRC contract personnel.

** Severity levels are in accordance with NRC Enforcement Policy (10 CFR Part 2, Appendix C). No deviations were identified during this SALP period.

TABLE 2
ENFORCEMENT ACTIVITY

<u>Inspection Report No.</u>	<u>Subject</u>	<u>Severity Level</u>	<u>Functional Area</u>
87-19	Failure to install missile shield	4	F
87-19	Diesel generator fuel supply limits not per Technical Specification requirements	4	F
87-19	Failure to install backup nitrogen bottles per design drawings	5	A
87-19	Inadequate thermal overload procedures	4	C
87-19	Failure to implement thermal overload procedures	4	C
87-19	Failure to provide instructions for periodic calibration/testing of time delay relays	4	C
87-19	Failure to identify nonconforming conditions	5	G
87-19	Failure to comply with procedures for proper installation of electrical terminations	5	C
87-19	Failure to follow housekeeping and seismic restraint procedures	4	C
87-19	Failure to comply with 10 CFR 50.59 requirements	5	G
87-24	Failure to label packaged dry activated waste per 10 CFR 20.203(F)	5	B
87-26	Changes made without prior NRC approval to steam tunnel Technical Specification temperature trips	4	A
87-26	Loss of key control to high-high radiation areas	5	B
87-27	Failure to comply with overtime limits	5	C

TABLE 2 - ENFORCEMENT ITEMS (Cont'd)

<u>Inspection Report No.</u>	<u>Subject</u>	<u>Severity Level</u>	<u>Functional Area</u>
87-27	Plant operating committee quorum less than minimum requirements	5	G
88-01	Failure to test vital area door alarms as required	4	E
88-02	Incomplete corrective action on enforcement item identified during SSFI	4	F
88-02	Inadequate design reviews on modification package prior to installation	4	G
88-20	Failure to initiate nonconformance reports for plant problems with motor operator torque switches and a stepped on fuel bundle.	4	G
*88-22	Individual entered a high-high radiation without being accompanied by health physics personnel nor necessary equipment	4	B
*88-22	A high-high radiation area existed without necessary barriers to prevent personnel overexposure	4	B

* Denotes Notice of Violations that were issued after the end of the SALP period that pertained to deficiencies that occurred during the assessment period.

TABLE 3
SYNOPSIS OF LICENSEE EVENT REPORTS (LERs)

<u>Functional Area</u>	<u>SALP Cause Code*</u>						<u>Totals</u>
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>X</u>	
A. Plant Operations	5	1	1	4	4	1	16
B. Radiological Controls	2					1	3
C. Maintenance/Surveillance	9	1		3		1	14
D. Emergency Prep.							
E. Security	1						1
F. Engineering/Technical Support	3	2		1			6
G. Safety Assessment/Quality Verification	1						1
Totals	21	4	1	8	4	3	41

The above data are based upon LERs 87-13 through 88-20 and 88-S01. LER 88-17 will be included in the next SALP assessment period. This table includes 6 reactor scrams.

* Cause Code

- A - Personnel Error
- B - Design, Manufacturing or Installation Error
- C - External Cause
- D - Defective Procedures
- E - Component Failure
- X - Other

Functional Areas

- A - Plant Operations
- B - Radiological Controls
- C - Maintenance/Surveillance
- D - Emergency Preparedness
- E - Security
- F - Engineering/Technical Support
- G - Safety Assessment/Quality Verification

ATTACHMENT 1

Licensee Event Reports (LERs)

The Analysis Branch of the Office for Analysis and Evaluation of Operational Data (AEOD) reviewed 29 LERs issued by Washington Public Power Supply System, not including revisions, for WNP Unit 2 during the assessment period from June 1, 1987 through May 31, 1988. The review included LERs numbered as follows:

- 87-014 to 87-033
- 88-001 to 88-009

The LER review followed the general instructions and procedures of NUREG-1022. The specific review criteria and the findings were as follows:

1. Significant Operating Events

There were no occurrences in this assessment period that were identified as significant operating events by the AEOD screening and review process.

2. AEOD Technical Study Reports

No deficiencies were identified in this assessment period at WNP Unit 2 that were considered sufficiently serious to merit an in-depth technical study review by AEOD. However, the event described in LER 87-022 involved a situation that was considered in AEOD Case Study C301, "Failure of Class 1E Safety-Related Switchgear Circuit Breakers to Close on Demand." NRC Information Notice 83-50, "Failure of Class 1E Safety-Related Switchgear Circuit Breakers to Close on Demand", also addressed this issue. There was an ongoing NRC effort as part of Generic Issue 55, "Failure of Class 1E Safety-Related Switchgear Circuit Breakers to Close on Demand" on this problem.

3. Preliminary Notifications Issued in Assessment Period

Three Preliminary Notice (PN) of Event on Unusual Occurrence reports were issued for WNP Unit 2 during the assessment period. They were:

- PNO-V-87-79 - Plant Transient Caused by Improper Maintenance
- PNO-V-88-13 - Failure of Secondary Containment
- PNO-V-88-32 - Radioactive Resin Spill

The licensee submitted LERs 88-006 and 88-007 pertaining to PNO-V-88-13. The event addressed by PNO-V-87-79 was not reportable, and the 30 day report period for PNO-V-88-32 has not

expired. Thus, the licensee appeared to have submitted required event reports.

4. LER Quality

The LERs reviewed adequately described all the major aspects of the events, including component or system failures that contributed to these events and the significant corrective actions taken or planned to prevent recurrence. The reports were thorough, detailed, well written and easy to understand. The narrative sections typically included specific details of the event such as valve identification numbers, model numbers, numbers of operable redundant systems, the date of completion of repairs, etc., to provide a good understanding of the events. The root cause of the event was clearly identified in most cases.

The LERs presented the event information in an organized pattern with separate headings and specific information in each section that led to a clear understanding of the event information. In addition, previous similar occurrences were properly referenced in the LERs as applicable.

The licensee updated two LERs in the assessment period. The updated LERs provided new information and the portion of the report that was revised was denoted by a vertical line in the right hand margin so the new information could easily be determined by the reader.

5. Effective Corrective Action

A review of the LERs did not indicate a large number of recurring events. However, there did appear to be a pattern of personnel errors or procedure errors with different events. Several of the errors seemed to occur either as personnel failing to correctly follow a procedure or the procedure was inadequate (too general, insufficient detail, not complete, vague, etc.). A total of 17 of the 29 LERs evaluated (87-14 through 88-09) were related to personnel or procedure error. Those LERs were 87-15, 21, 22, 23, 24, 29, 30, 31, 32, 33 and 88-01, 02, 03, 04, 06, 07, and 09.