

APPENDIX

SALP BOARD REPORT

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

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SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-482/86-02

Kansas Gas and Electric Company

Wolf Creek Generating Station

October 2, 1984 - January 31, 1986

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## I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated Nuclear Regulatory Commission (NRC) staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant operation.

An NRC SALP Board, composed of the staff members listed below, met on March 11, 1986, to review the collection of performance observations and data, and to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee's safety performance at Wolf Creek Generating Station for the period October 2, 1984, through January 31, 1986.

SALP Board for Wolf Creek Generating Station:

- E. H. Johnson, Director, Division of Reactor Safety and Projects, Region IV
- J. E. Gagliardo, Chief, Reactor Projects Branch, Region IV
- J. E. Cummins, Senior Resident Inspector
- D. M. Hunnicutt, Acting Chief, Project Section B, Reactor Projects Branch, Region IV
- P. W. O'Connor, Project Manager, Nuclear Reactor Regulation
- R. E. Hall, Chief, Radiological and Safeguards Programs Branch, Region IV

Attendees at all or part of the SALP Board Meeting were:

- B. L. Bartlett, Region IV
- R. P. Mullikin, Region IV
- B. Murray, Region IV
- W. C. Seidle, Region IV
- L. A. Yandell, Region IV

## II. CRITERIA

Licensee performance was evaluated in 12 selected functional areas. Each functional area normally represents areas significant to nuclear safety and the environment.

One or more of the following evaluation criteria were used to assess each functional area.

1. Management involvement and control is assuring quality.

2. Approach to resolution of technical issues from a safety standpoint.
3. Responsiveness to NRC initiatives.
4. Enforcement history.
5. Operational (including response to, analyses of, and corrective actions for).
6. Staffing (including management).

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

Based upon the SALP Board assessment, each functional area evaluated is classified into one of three performance categories. The definitions of these performance categories are:

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective so that satisfactory performance with respect to operational safety is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety is being achieved.

### III. SUMMARY OF RESULTS

Significant improvement has been achieved in the areas of Maintenance, Emergency Preparedness, and Quality Programs and Administrative Controls Affecting Quality. Performance has declined in the area of fire protection. The licensee experienced problems in the performance of the preoperational test program, but was able to correct them and adequately complete all program requirements. The lessons learned by the licensee from the preoperational test program were evident by the well managed and executed startup test program and the operational record during this assessment period.

The licensee's performance is summarized in the table below, along with the performance categories from the previous SALP evaluation period.

<u>Functional Area</u>	<u>Previous Performance Category (08/01/83 to 09/30/84)</u>	<u>Present Performance Category (10/02/84 to 01/31/86)</u>
A. Plant Operations	Not Assessed	2
B. Radiological Controls		2
1. Occupational Radiation Safety	1	
2. Radioactive Waste Management	2	
3. Radioactive Effluent Control and Monitoring	2	
4. Transportation of Radioactive Materials	2	
5. LWR Water Chemistry Controls	2	
C. Maintenance	2	1
D. Surveillance	Not Assessed	1
E. Fire Protection	1	2
F. Emergency Preparedness	3	2
G. Security	2	2
H. Outages	Not Assessed	Not Assessed
I. Licensing Activities	1	1
J. Training and Qualification Effectiveness	Not Assessed	2
K. Quality Programs and Administrative Controls Affecting Quality*	2/3	1
L. Preoperational/Startup Testing	2	2

\*This category was divided into two categories in the previous SALP report.

The total NRC inspection effort during this SALP evaluation period consisted of 70 inspections including resident inspector inspections and emergency exercises for a total of 11,446 direct inspection hours. Average plant availability since commercial operation has been 97 percent.

#### IV. Performance Analysis

##### A. Plant Operations

##### 1. Analysis

This area was inspected on a continuing basis by the NRC resident inspectors. Five violations and no deviations were identified in this functional area during the assessment period:

- Failure of control room operators to respond to an alarmed control room annunciator as required by procedures. (Severity Level V, 8519-02)
- Failure to adhere to Technical Specification requirements regarding operable emergency core cooling systems. (Severity Level III, 8535-01)
- Failure of a radiation worker to wear specified protective clothing prior to entering a posted potentially contaminated area. (Severity Level IV, 8535-02)
- Failure to establish and implement an adequate procedure to assure that a nonseismic component (component cooling water surge tank sight glass) was isolated as required during normal plant operation. (Severity Level IV, 8537-01)
- Failure to control the installation/removal of a temporary modification used for testing. (Severity Level IV, 8526-01)

The 30 licensee event reports (LERs) listed below involved activities in the plant operations functional area:

- A manual control room ventilation isolation signal (CRVIS) was not initiated as required by Technical Specifications. (85-002)
- A CRVIS was accidentally initiated by an operator. (85-003)
- A safety injection (SI) was accidentally initiated when an operator inadvertently unblocked a steamline low pressure SI signal. (85-012)
- A block switch was placed in the permit position with both main feedpumps (MFP) secured causing an auxiliary feedwater actuation signal (AFAS) to be generated. (85-019)
- The plant tripped on high steam generator (S/G) water level while trying to reestablish normal feedwater flow. (85-020)

- A SI and reactor trip occurred on rate-sensitive S/G pressure circuitry when a main steamline isolation valve (MSIV) was opened without adequately equalizing pressure across its seat. (85-021)
- A SI and reactor trip were generated due to interference from a hand-held radio transmission. (85-022)
- A feedwater isolation signal (FWIS) and AFAS were generated due to interference from a hand-held radio transmission. (85-024)
- During cleaning activities a breaker cubicle was inadvertently struck causing the breaker feeding 480 volt Load Center NG03 to trip resulting in a CRVIS, containment purge isolation signal (CPIS), and fuel building ventilation isolation signal (FBVIS). (85-026)
- A SI and reactor trip occurred on low steamline pressure due to the addition of feedwater decreasing the steamline pressure to the trip setpoint. (85-027)
- An AFAS was generated when an operator increased the flow rate of feedwater to S/G "D" sharply causing a shrink in level. (85-028)
- During recovery from an SI, flow was not restored to containment atmosphere radiation monitors prior to resetting the signal causing a CRVIS, CPIS, and FBVIS. (85-029)
- A turbine trip and FWIS were generated on high S/G level when the S/G water levels were not allowed to stabilize before initiating another transient on the plant. (85-031)
- An AFAS occurred when a trip of the auxiliary boiler caused a loss of condenser vacuum resulting in the tripping of both main feed pumps. (85-038)
- After a turbine trip, the operator was attempting to maintain S/G level with the turbine driven auxiliary feedwater pump (TDAFW) when it tripped on overspeed due to a valve positioning error, resulting in an AFAS. (85-041)
- A FWIS and turbine trip on high S/G level resulted from feedwater control problems. (85-042)
- A FWIS and turbine trip on high S/G level resulted from main feedwater control valve leakage. (85-043)

- A FWIS, turbine trip and AFAS resulted from a power mismatch between the reactor and the turbine due to nuclear instrumentation being set conservatively high. (85-044)
- A reactor trip and AFAS occurred due to leakage through the S/G feedwater check valves causing a low S/G water level. (85-046)
- A wire supplying power to a 120 volt instrument panel failed causing a loss of governor control power to main feedwater "B" resulting in a low S/G level reactor trip, FWIS, and AFAS. (85-054)
- Due to drain tank level control problems on moisture separator reheater (MSR) "A", a reactor trip, FWIS, and AFAS occurred on high level in the MSR. (85-060)
- A personnel error in the performance of a post maintenance surveillance test left "A" centrifugal charging pump (CCP) inoperable for greater than its TS allowable limit of 72 hours. (85-063)
- A lack of feedwater preheating increased the effects of shrink and swell causing a reactor trip, FWIS, and AFAS on low S/G levels. (85-064)
- A turbine trip, reactor trip, FWIS, and AFAS occurred on low electro-hydraulic control (EHC) oil pressure when a faulty discharge relief valve prevented an EHC pump from providing adequate pressure. (85-065)
- A turbine trip, reactor trip, FWIS, and AFAS occurred on low S/G level when a controller card for S/G "D" feedwater control valve failed causing the valve to fail closed. (85-067)
- Aquatic plants from the cooling lake fouled the traveling screens at the circulating water screen house (CWSH) forcing the operators to reduce power and trip the reactor. (85-069)
- A reactor trip, turbine trip, FWIS, and AFAS occurred on high level in S/G when an operator did not allow sufficient time for S/G levels to stabilize following manual adjustment of feedwater control valve positions. (85-072)
- This was a voluntary LER involving an inadequate procedure which allowed backflow of a portion of containment air volume into the outside air intake plenum. (85-074)
- The power range high neutron flux setpoints were not reduced to less than 55 percent rated thermal power within 4 hours

after 60 minutes of axial flux difference penalty time had been accumulated, as required by TS. (85-079)

- A casing failure on a potential transformer caused a partial loss of offsite power resulting in D/G "A" and the TDAFW pump starting, a CRVIS, CPIS, and FBVIS. (85-082)

Seventeen of these events were attributed to operator actions and/or inadequate operating procedures. Ten of these events were caused by equipment/component malfunctioning or failing. Two of these events were caused by personnel keying hand-held radios adjacent to electrical/electronics equipment and one of these events was caused by aquatic plants fouling the circulating water intake and causing a reactor shutdown.

Because of the potentially serious consequences that could have resulted from unknowingly making a portion of the emergency core cooling system inoperable, NRC Violation 50-482/8535-01 was categorized as a Severity Level III. A civil penalty is normally considered for a Severity Level III violation. However, a civil penalty was not imposed for this violation because the licensee promptly identified and reported the violation and took prompt corrective action to prevent recurrence.

During this assessment period, WCGS has evolved from the final stages of construction and preoperational testing through initial fuel load, initial criticality, low power testing, power ascension testing, and into commercial operation. Each phase of this evolution required the deep involvement of operations staff personnel. The performance of the operations staff has been both professional and competent during this assessment period as noted by the NRC. The fact that the plant had operated continuously at power for 111 days at the time this assessment period ended is indicative of a high level of performance and responsiveness on the part of all factions of the WCGS staff.

Approximately ten LER's (85-020, 027, 028, 031, 041, 042, 043, 046, 064, and 072) reported reactor plant trips occurred during the early days of plant operation at power, apparently due to the failure to adequately control steam generator water level. A significant contributor to this problem appeared to be a man-equipment interface where the operators had to get familiar with the way components in the steam generator water level control system responded under actual startup conditions. The operations staff was very aggressive in evaluating and correcting this problem. The problem was resolved primarily by additional training, changing applicable operating procedures, and refining the operator's method of controlling steam generator water so that the effects of a change (i.e., increasing feed flow) were minimized and controllable. The operations staff has displayed this same aggressive attitude in resolving other problems and maintaining equipment operational.

The licensee has initiated a college program designed to provide shift supervisors and supervisory operators with the required college credits to qualify as shift technical advisor (STA). Since the licensee uses the shift supervisor to also perform the STA duties, this provides a method for operations personnel to qualify for shift supervisor.

The licensee has implemented a program to eliminate nuisance alarms in the control room. This program has been successful in that most of the nuisance alarms have been eliminated or plant modification requests have been initiated to correct them.

The licensee has implemented a six-shift rotation schedule for operators. There is a professional atmosphere in the control room and activities (i.e., noise, traffic) that might distract the operators are minimized. The operations staff was responsive and candid to any NRC inquiry and appears to be knowledgeable of activities in which they were involved. The operations staff has readily adapted to each new phase as the plant evolved from construction to commercial operation.

## 2. Conclusions

The licensee has shown a commitment to operating the plant as safely as possible. This has come about by having dedicated and professional personnel at all levels of plant operations. When an operational event has occurred the licensee has aggressively pursued the problem until it has been solved and corrected. If the cause of the event was procedural, the procedure was changed and other procedures were reviewed for similar deficiencies. When personnel error was involved the adequacy of training was reviewed and changed accordingly. The licensee has demonstrated to the NRC that they want and are willing to learn from their problems and those encountered by others. For example, the licensee is in direct contact with their "sister" SNUPPS plant (Calloway) in order to be alert to problems that occur there which might affect Wolf Creek. The Calloway LERs are required reading for selected operations personnel at Wolf Creek.

The licensee is considered to be in Performance Category 2 in this area.

Trend: The performance in this area has improved as evident, in part, by the fact that the plant has operated continuously at power for 111 days at the time the assessment period ended, and the LERs decreased by about one-half during the second part of the period.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should be consistent with the routine program.

b. Recommended Licensee Actions

Licensee management should continue its aggressive attitude toward resolution of problems and its prompt identification and corrective actions subsequent to identified problem areas.

Licensee management should also continue its philosophy of attempting to anticipate potential problems and avoid them. These attitudes are especially important since the plant will go through its first refueling outage in the Fall of 1986. This first refueling outage will involve numerous activities that will have to be performed for the first time under conditions (i.e., higher radiation levels, more contaminated components/areas) that will change as the outage progresses.

B. Radiological Controls

1. Analysis

Fourteen inspections concerning radiological controls were conducted during the assessment period by the region-based radiation specialist inspectors. These inspections involved the following areas: occupational radiation safety, radioactive waste management, radiological effluent control and monitoring, transportation of radioactive materials, and water chemistry. One violation and two deviations were identified:

- Failure to review health physics procedures. (Severity Level IV, 8542-01)
- Failure to provide continuous airborne monitoring. (Deviation, 8542-01)
- Failure to meet lower limits of detection (LLD) for environmental samples. (Deviation, 8543-01)

a. Occupational Radiation Safety

This area was inspected four times during the assessment period.

No significant problems were identified in the areas of exposure controls, surveys, control of radioactive materials, and contamination controls. The health physics staff consists of well trained and qualified personnel. The licensee has established well defined programs for general employee training, radiation worker training, and training for the health physics staff. Management oversight was evident by the performance of QA audits and reviews. The licensee's response to NRC initiatives and resolution of technical issues are thorough and based on good technical judgement. The annual turnover rate within the radiation protection staff was less than 10 percent.

The licensee places a heavy reliance on contractor personnel in order to implement their radiation protection program. This includes having contractors in supervisory positions for the operation health physics and ALARA programs. The licensee has not established an onsite ALARA committee. The ALARA program also appears to lack established functional duties, program goals, and objective evidence to determine program effectiveness.

b. Radioactive Waste Management

This area was inspected four times during the assessment period. A comprehensive training and qualification program had been established for personnel responsible for operating the radwaste systems. The licensee had not solidified any radioactive liquids, spent resins, or evaporator concentrates at the time of these inspections. The licensee had packaged a small quantity of dry active waste comprised of trash and contaminated materials in 55-gallon drums. Management oversight was evident by the performance of QA audits and reviews.

c. Radiological Effluent Control and Monitoring

This area was inspected five times during the assessment period. These inspections involved gaseous and liquid effluent controls and monitoring, offsite dose calculations and dose limits, radiological environmental monitoring, and onsite confirmatory measurements for the radiochemistry and whole body counting programs.

Two inspections involved onsite radiochemistry confirmatory measurements with the NRC mobile laboratory. The results of these comparative measurements indicated about 94 percent agreement. The expected agreement for these kinds of measurements should be greater than 90 percent.

The radiological environmental monitoring program was inspected once during the assessment period. Management support for this area has been good which included frequent onsite visits by the corporate staff responsible for administering this area. Improvement could be made concerning the timeliness and quality of environmental sample results provided by their offsite contractor. There appeared to be a need to provide QA personnel responsible for auditing the program with technical training related to environmental monitoring matters.

d. Transportation of Radioactive Materials

This area was inspected once during the assessment period. The licensee had not made any shipment of radioactive material at the time of this inspection which required a DOT or NRC certified package. The following observations were noted:

- Suppliers of transportation items had not been included on the qualified vendor list.
- NRC approval had not been received for certain shipping casks.
- A QA program has not been developed for transportation activities.
- Procedures have not been established regarding advanced notification, shipping manifests, analysis of waste samples, responsibility for the dry active waste program and responsibilities for the radwaste coordinator and radwaste supervisor.

e. LWR Water Chemistry Controls

This area was inspected along with the radiochemistry and confirmatory measurement inspections. No significant problems were identified.

2. Conclusions

The licensee is relying on contractor personnel to provide supervision of their operational health physics and onsite ALARA program. The onsite ALARA program also lacks established goals, specific guidance for personnel responsible for implementing the program, and a method to evaluate the effectiveness of the program. An onsite ALARA committee had not been established. Considerable work needs to be accomplished in the transportation program in order to establish a comprehensive, well documented program.

Management oversight was evident in the various radiological control program areas by the performance of QA audits and program reviews. The licensee's response to NRC initiatives and resolution of technical issues are thorough and based on sound technical judgment. No significant problems were identified in training and personnel qualifications and the reporting and analysis of reportable events.

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendation

a. Recommended NRC Actions

The NRC inspection effort in this area should be consistent with the routine program.

b. Recommended Licensee Actions

Management needs to review their policy of having portions of the radiation protection program supervised by contractor personnel. A review of the ALARA program is necessary to assure that the program is meeting its intended purpose. An onsite ALARA committee should be established. Several deficiencies in the transportation program need to be addressed.

C. Maintenance

1. Analysis

This area was inspected on a continuing basis by the NRC resident inspectors. Five violations and no deviations were identified in this functional area during the assessment period:

- Modification of a containment water level indicator, making it inoperable, without using procedures which had been established and implemented to control modifications. (Severity Level IV, 8523-01)
- Failure to reinstall a plug in a test port as required by procedures. (Severity Level IV, 8530-01)
- Failure to install flow orifices in accordance with design drawings. (Severity Level IV, 8530-03)
- Installation of flexible conduit contrary to methods specified in applicable design drawings. (Severity Level IV, 8535-04)

- Safety-related flexible conduit tied to essential service water system pipe hanger. (Severity Level V, 8601-01)

The 21 LERs listed below involved activities in the maintenance functional area:

- A spurious spike on a chlorine monitor caused three CRVIS related LERS. (85-011, 85-013, and 85-133)
- Seven CRVIS related LERs were initiated due to chlorine monitor paper tape problems. (85-014, 85-052, 85-056, 85-061, 85-081, 85-085, and 86-002)
- Three CRVIS related LERs were due to a hardware/software mismatch in a microprocessing unit. (85-037, 85-040, and 85-057)
- A CRVIS was initiated when a lamp failed in the analysis unit of a chlorine monitor. (85-062)
- A CRVIS was initiated when a sample pump failed causing a chlorine monitor's fuse to blow. (86-001)
- A plant cooldown was initiated when two MSIVs were declared inoperable simultaneously, due to malfunctioning hydraulic oil pumps. (85-025)
- Insulation activity in lower containment resulted in a containment accident water level instrument being made inoperable with tape wrapped around the slide pole. (85-034)
- A test switch was repositioned in error in support of maintenance activity on instrument root valves. (85-036)
- On three occasions a reactor trip, MFIS, and AFAS were initiated due to an improper zero adjustment on "B" main feedwater control valve positioner coincident with a loose connection between the valve and the valve operator. (85-050)
- This LER involved piston slide cracking due to the combined effects of the brazing and heat treatment processes used in manufacturing coupled with overpressurization of the valves during hydrostatic testing. This resulted in hydraulic fluid leakage from the MSIV 4-way valves. (85-075)
- The TDAFW pump was accidentally started when a technician failed to identify and block an actuation signal prior to deenergizing a cabinet for maintenance. (85-076)

Three of the LERs in this functional area were caused by personnel error.

Fifteen of the LERs involved control room ventilation isolation signals which were generated due to the sensitive nature of the chlorine monitors in the control building air intake. The number of reportable events due to CRVIS actuation significantly decreased once the hardware/software interface problems and the spiking problems were corrected. However, at this time the breakage of the chlorine sensitive paper tape remains a problem even though the licensee has attempted to correct it.

During this SALP assessment period, maintenance activity evolved from training and procedure writing to actual performance of work request (WR), preventive maintenance (PM) and other maintenance-related activities. The licensee's maintenance program was found to be comprehensive and thorough, with the maintenance personnel effectively trained and managed. One item of concern during this SALP period has been the number and increasing trend of temporary modifications. The number of temporary modifications, while not being unmanageable, has been larger than would be desired in a well maintained plant. Increased management attention has been effective in closing out some temporary modifications.

One of the major maintenance efforts accomplished this appraisal period was during the full power acceptance run when power was reduced and Main Feedpump (MFP) "B" was removed from service due to high vibration. It took the licensee slightly over one week and a considerable investment in time and equipment to correct the problem. The licensee was observed to take thorough and deliberate actions to ensure that all operational concerns with both main feedpumps were addressed.

During a routine inspection of the facility, the NRC resident inspector (RI) observed a WR which stated that a flow orifice plate had been installed backwards and needed to be rotated. The RI questioned licensee personnel and determined the orifice was still operational and then asked if a random check of other orifice plates had been performed. After noting a lack of licensee action on this, both RIs then performed a random sampling of safety-related orifice plates. This inspection resulted in Violation 8530-03. As a result of this, the licensee has performed a 100 percent inspection of all safety-related and nonsafety-related orifice plates.

Another major maintenance item undertaken by KG&E during this appraisal period was the correction of the failure of hydraulic 4-way valves used to control the actuation of the main steam isolation valves (MSIVs). Three instances of hydraulic 4-way valve failure occurred due to piston slide cracking. The 4-way valves control the application of hydraulic fluid to the

hydraulic actuators on the MSIVs during normal valve positioning and engineered safety features (ESF) actuations. The licensee discovered this problem during investigations to determine the cause of hydraulic leakage. The licensee ensured that the cause of the failure was fully understood, ensured that corrective measures taken would maintain confidence in the operability of the MSIVs and submitted a licensee event report. Licensee actions on this subject demonstrate a commitment to ensure complete knowledge of failure mechanisms, where possible, and a commitment to safety.

The NRC inspectors frequently observed maintenance management personnel in the control room at the beginning of the day shift discussing current equipment problems and other items of maintenance with the shift supervisor and other members of the operations staff.

## 2. Conclusions

Most of the violations identified appear to be due to personnel not properly following approved procedures. The adequacy of training has been reviewed to help eliminate these events. Several of the NRC identified violations were due to activities performed during the construction and preoperational phases.

There were multiple control room ventilation isolations during the appraisal period. The licensee has shown dedication to actively pursuing this problem, and has corrected all but one failure mode. The isolations occurring due to the chlorine monitor tape breaking is still being actively investigated by the licensee for root cause.

The plant presently has a stable, well-qualified maintenance staff that is of sufficient size to minimize overtime and effectively handle most maintenance situations which could be expected to arise. The procedures were generally found to be adequate to perform the necessary maintenance activities.

The interface between maintenance and operations has been observed to be very good. The operations staff is kept informed of what maintenance activities are required. Maintenance management has been aggressive in correcting deficiencies found in the program either by the NRC or their own personnel. Management has learned from problems encountered in the early phase of plant operation and has incorporated this information into maintenance improvements via training and/or procedure revisions.

The licensee is considered to be in Performance Category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

Normally a Performance Category 1 would warrant a reduced level of inspection effort. However, since the plant has been operating for such a short length of time it is recommended that the inspection effort in this area be consistent with routine program.

b. Recommended Licensee Actions

Management attention to maintenance activities will have to be increased during the first refueling outage (Fall of 1986) to ensure that numerous complex maintenance activities are carried out correctly.

Increased management attention should be directed to further reduce the number of open temporary modifications and decrease the number of challenges to ESF systems due to generic type failures of plant equipment.

D. Surveillance

1. Analysis

This area was inspected on a continuing basis by the NRC resident inspectors. Two violations and no deviations were identified in this functional area during the assessment period:

- Performance of a surveillance using a procedure that did not have all the applicable temporary changes incorporated in it. (Severity Level V, 8526-02)
- Failure to establish and implement an adequate surveillance procedure for performing test of containment purge system radiation monitor. (Severity Level IV, 8530-02)

The 16 LERs listed below involved activities in the surveillance functional area:

- On three occasions a CRVIS and CPIS were actuated due to a faulty relay. (85-001)
- An instrument technician accidentally initiated a FBVIS and a CRVIS. (85-006)
- A CRVIS was initiated when an I&C technician deenergized a radiation monitor without verifying it had been placed in bypass. (85-007)

- A faulty relay caused a CRVIS and CPIS. (85-008)
- A ground fault indication tripped a power supply causing a CRVIS, CPIS, and FBVIS. (85-009)
- During the performance of a surveillance, a test switch was repositioned in error causing a CPIS and CRVIS. (85-032)
- During the performance of a surveillance test, a reactor trip occurred when the wrong reactor trip breaker was tripped. (85-045)
- A daily calorimetric required by TS above 15 percent power was not performed nor was a TS exemption requested. (85-048)
- While performing recalibrations in an electrical panel, a technician accidentally bumped a start relay and started D/G "A". (85-051)
- Electrical power was removed from a control room intake radiation monitor in accordance with a surveillance test procedure, however, due to a faulty bypass switch, a CRVIS was initiated. (85-053)
- A CRVIS was initiated when a nearby lightning strike caused a voltage fluctuation on a radiation monitor power supply. (85-055) (85-071)
- A reactor trip, FWIS, and AFAS occurred when one nuclear instrumentation channel spiked while another nuclear instrumentation channel was out-of-service for surveillance testing. (85-058)
- A TS violation occurred during the performance of a surveillance when it was determined that if residual heat removal (RHR) injection had been required part of the flow would have been diverted to the refueling water storage tank. (85-66)
- The allowable time interval for performing three surveillance tests of 3.25 times the specified interval was exceeded. (85-084)
- The required surveillances on the particulate and iodine monitoring skid sampler flow rate monitors in the unit vent and radwaste building vent were not performed. (86-003)

Eight of the LERs listed in this functional area involved personnel errors and two involved inadequate procedures.

During this SALP assessment period surveillances were observed during all phases of plant operation, from initial fuel load to commercial operation. Personnel performing surveillances were observed to be knowledgeable of the systems they were working on, to follow procedures and to question and request modifications to procedures when required. As experience was gained in performing these procedures, the licensee showed an aggressive attitude in revising the procedures.

The licensee utilizes a computerized surveillance tracking system and a full time surveillance coordinator to ensure surveillances are performed within the time limits and that discrepancies are identified and corrected.

2. Conclusions

The functional area of surveillance has shown the effects of involvement by licensee management. Early weaknesses in the program were mainly due to some procedures not being totally adequate to perform the required surveillance. However, the licensee has used the information obtained from the problems encountered in the performance of the maintenance activities to revise the procedures when necessary. This is reflective in the fewer number of surveillance-related operational events occurring in the later part of the appraisal period.

The NRC has observed that surveillance personnel are knowledgeable and dedicated individuals. This is reflective of their aggressive training program. The use of the computerized surveillance tracking program appears to be working to ensure that surveillance are done on time.

The licensee is considered to be in Performance Category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

Normally a Performance Category 1 would warrant a reduced level of inspection effort. However, since the plant has been operating for such a short length of time it is recommended that the inspection effort in this area be consistent with the routine program.

b. Recommended Licensee Actions

Management attention should be directed to further reduce the number of events due to personnel error.

E. Fire Protection

1. Analysis

This area was inspected by a region-based NRC inspector and on a continuing basis by the NRC resident inspectors. Five violations and no deviations were identified in this functional area during the appraisal period:

- Failure to control fire hazard (charcoal stored in auxiliary building) as required by 10 CFR 50, Appendix B, Criterion II. (Severity Level IV, 8449-01)
- Failure to perform required Technical Specification actions when a fire detection instrument was inoperable. (Severity Level IV, 8535-03)
- Failure to perform surveillance of fire suppression system for ESF transformers as required by Technical Specification. (Severity Level IV, 8541-01)
- Failure to perform surveillance of electric motor driven fire pump in accordance with an established and implemented procedure. (Severity Level V, 8541-02)
- Failure to control transient combustibles and to maintain housekeeping and cleanliness controls as required by procedures. (Severity Level IV, 8535-05)

The twelve LERs listed below involved activities in the fire protection functional area:

- An hourly fire watch patrol did not inspect all required fire barriers (once per hour) as required. (85-004)
- A normally closed roll up fire door was found partially open. (85-005)
- A continuous fire watch was not established when a pre-action sprinkler system was taken out-of-service. (85-010)
- The 3-hour fire rating on some fire dampers supplied by Ruskin Manufacturing Company was degraded without compensatory measures being initiated. (85-017)
- Hourly fire watch patrols were not performed as required when a contractor employee fell asleep in the auxiliary shutdown panel room. (85-047)

- A TS violation occurred when the individual performing the hourly fire watch patrol failed to inform the control room when he discovered a door inoperable. (85-059)
- Hourly fire watch patrols missed one area of the auxiliary building which contained an inoperable fire barrier penetration. (85-068)
- When a containment zone fire detector failed, hourly containment temperature readings were not recorded as required by TS. (85-070)
- Due to operator error in entering keyboard commands at the Fire Alarm Control Panel five transmitter/receivers were found disabled. (85-073)
- When a fire barrier was removed from around an auxiliary feedwater valve an hourly fire watch was not established. (85-077)
- Two valves in the fire suppression water system were not demonstrated to be in the correct position at least once per 31 days as required by TS. (85-080)
- Required fire dampers were not installed within two ventilation penetrations through fire walls in the auxiliary building. (85-086)

Eleven of the 12 LERs in this functional area involved personnel error.

Seven of the reportable events involved missed hourly or continuous fire watch patrols. At the beginning of this assessment period fire watch patrols were performed by contract personnel. As a direct result of the problems experienced with contractors, the licensee is now using security officers to perform fire watch patrol. This, with the addition of modified procedures and better training, has greatly reduced the number of reportable events due to missed fire watch patrols.

The NRC inspectors identified areas within the auxiliary building where good housekeeping practices and the control of transient combustibles were not being maintained. The licensee took immediate corrective action and performed walkdowns to identify similar problems in this area.

The licensee has a full time fire protection specialist, fire protection trainer, and clerk. This staff was observed to be competent and aggressive towards safety in their attitude. Fire brigade training was observed to be very good with both classroom and hands-on fire fighting training being taught.

During this assessment period, management involvement and control significantly increased, resulting in a decrease in the number of reportable events and an increase in responsiveness to NRC initiatives.

2. Conclusions

The licensee has made significant progress towards reducing the number of missed fire watch patrols, improving procedures, and insuring proper management controls.

At the beginning of the assessment period management involvement in the area of fire protection was observed to be less than adequate. However, due to an organization change this involvement has noticeably increased. This along with the already competent fire protection staff has resulted in a marked improvement in this area at the end of the assessment period.

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should be maintained at the routine level.

b. Recommended Licensee Actions

Management attention to good housekeeping practices and the control of combustibles should remain at a high level especially during the upcoming refueling outage when the level of work activities will increase. Also management should increase attention toward further reducing the number of missed fire watch patrols.

F. Emergency Preparedness

1. Analysis

During the assessment period, five emergency preparedness inspections were conducted. One violation and three deviations were identified during the assessment period:

- Failure to complete required operator training in emergency preparedness by date committed to. (Deviation, 8502-01)
- Failure to meet commitment for indoctrination of visitors. (Deviation, 8529-01)

- Failure to retain monthly communication procedure checklists. (Deviation, 8529-02)
- Failure to follow procedures and failure to maintain the distribution control procedure. (Severity Level V, 8533-01)

An emergency preparedness assessment had been performed during the period September 17-28, 1984, and 45 significant deficiencies and 47 improvement items were identified. Much effort was expended by the licensee during this assessment period resolving and closing out these items. All of the significant deficiencies were corrected prior to the licensee receiving an operating license on March 11, 1985.

The first inspection conducted during this evaluation period was during the period November 5-9, 1984, when the licensee conducted a required full-scale emergency exercise.

Nine open items were identified in the areas of offsite notification, accountability, offsite monitoring, and emergency classification. The second inspection was conducted during the period January 7-11, 1985, and included followup on emergency preparedness assessment items, training, public education, personnel accountability, radiological monitoring, and communications.

The third inspection was an emergency assessment followup conducted during the period June 24-28, 1985. Areas examined during the inspection included the Technical Support Center, Emergency Operations Facility, and emergency evacuation routes. The fourth inspection was conducted during the period August 19-23, 1985. Areas examined during the inspection included changes to the emergency preparedness program, knowledge and performance of duties and review of the emergency preparedness program. The last inspection of this evaluation period occurred during the period November 18-22, 1985. Areas examined during the inspection included the implementation of the emergency plan and procedures during the annual exercise. Four deficiencies were identified. Two of the deficiencies concerned dose assessment personnel not recognizing release monitor data reported from a monitor that had gone offscale and raw data and calculated data being received by the staff and not reviewed for accuracy, thereby causing the emergency director to make unrealistic offsite protective action recommendations to the state and county. Additionally, the licensee dispatched an inadequate number of offsite radiological monitoring teams, and did not have onsite core damage assessment capabilities. The licensee committed at the exit interview to take corrective action.

2. Conclusions

During this assessment period, the licensee went through the transition from construction to operation. Most of the NRC concerns resulted from the licensee not having an adequate record management system. Licensee management has been responsive to NRC concerns and appears to initiate corrective actions in a timely manner.

The findings of the NRC inspections conducted during the evaluation period indicate that, overall, the licensee's emergency preparedness program is adequate to protect the health and safety of the public.

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendation

a. Recommended NRC Action

The NRC inspection effort in this area should be consistent with the routine program.

b. Recommended Licensee Action

The level of management attention to the implementation of the emergency preparedness program should be maintained to ensure proper response to NRC-identified items. The licensee should evaluate the emergency preparedness retraining program as to scope and depth in the dose assessment area, and ensure that sufficient depth of trained and qualified personnel are maintained to fill positions on the emergency response organization.

G. Security

1. Analysis

During this SALP evaluation period, the licensee made the transition from the preoperational phase to the operating phase. During the early part of this evaluation period and prior to operations, the licensee was in the startup phase. The facility's security systems were being evaluated to ensure that the systems met the requirements of 10 CFR 73.55. The licensee had previously been authorized to receive fuel, which was protected under an interim security plan. Both efforts were inspected on a continuing basis by the resident inspectors and by regional-based NRC physical security inspectors on eight occasions. No viola-

tions or deviations were identified during the preoperational period; however, four violations were identified during the latter part of this assessment period.

- Access control card issuance. (Severity Level IV, 8517-01)
- Security officer training and qualification. (Severity Level IV, 8527-01)
- Padlocked access to refueling water storage tank. (Severity Level IV, 8527-02)
- Inadequate physical barrier (Severity Level pending, 8544-01)

The four LERs listed below involved activities in the security functional area:

- 85-015, 85-016, 85-018, and 85-03C.

There is evidence of prior planning on the part of licensee management, who assigned specialists to design the systems of physical security, to organize the force to protect the facility, and to involve the managers of the related fields in the development of the total security program. This contributed to the issuance of adequately stated and understood policies and procedures, but the flaws in startup testing for the security-related mechanical and civil engineering systems caused problems later. Decisionmaking has consistently been at a level that ensures adequate management review and corporate management has frequently been involved in site activities. Reviews by management and their staff have been timely, thorough, and technically sound. Procedures and policies were rarely violated, but the absence of several procedures at the beginning of operations caused some omissions of performance. Once discovered, corrective action was timely and effective as indicated by the lack of repeat violations.

A problem area that the licensee continues to work with is the development and maintenance of records. This impacts their ability to track security system elements for the purpose of making judgments about the life and behavior of the equipment. A similar weakness has been observed in security training records. At the same time, the background investigation files appear to be in excellent condition.

The licensee has demonstrated a clear understanding of technical issues from a safety standpoint and quickly gathers the expertise necessary to resolve matters that arise. The resolutions were, in general, technically sound and thorough, and conservative

intermediate protective measures were taken until the issues were fully resolved and permanent measures were in place.

The licensee maintains an open line of communications with the NRC, is responsive to NRC initiatives, and provides positive feedback to those initiatives. The systems, and their design and control methods, are advanced and are reflective of forward thinking on the part of the site management. In addition, efforts to enhance the system are continuing.

The security operations, during the initial stages of operation, had been heavily impacted by some construction and design oversights. These oversights were the causative factors behind several violations. These problems were symptomatic of a programmatic breakdown in that security-related civil and mechanical engineering tasks were excluded from the formalized safety startup quality checks. When such flaws were identified, there was a rapid systematic response to resolve the issue. Certain weaknesses in the security officer training were identified as being the reason for two violations. When security events do occur, they are promptly identified and thoroughly analyzed.

Key positions within the security organization have been identified and while the positions have been well defined, personnel filling these positions were not knowledgeable of their duties and responsibilities. The organization is currently undergoing a major revision to account for the experience gained since the plant became operational. During the period prior to commercial operations, the licensee had engaged a contract security firm to provide some support services, but this proved to be a problem and the service has been discontinued. The current training and qualification program is overcoming an early documentation problem. The documentation did not reflect the quality and specificity of the training received by security officers and general employees. The training does contribute to an adequate understanding of the security tasks assigned security officers and the responsibilities of the general employees. There is a satisfactory adherence to procedures, with a modest number of personnel errors.

## 2. Conclusion

As a result of problems identified during this assessment period, licensee management attention and involvement have become focused through a comprehensive quality assurance audit and surveillance program. Management attitudes about security are excellent. While the security operation has been hampered seriously on a few occasions by design and construction errors, plant management and

their security organization have a strong base to build upon and have a positive attitude toward the development of the security program.

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should be consistent with the routine program.

b. Recommended Licensee Actions

Continued management oversight and support for the QA reviews of the development of the security plan is encouraged. Records retention for equipment and training should continue to be improved. The licensee needs to continue efforts to resolve design/construction deficiencies as they pertain to the security system.

H. Outages

The unit achieved initial criticality on May 22, 1985, and was synchronized to the electrical grid on June 12, 1985. During the period between June 12 and September 3, 1985, the unit operated for significant periods of time at reduced power levels in support of the Power Ascension Testing Program. The unit was declared available for commercial operation on September 3, 1985.

From June 12, 1985, through March 11, 1986, the unit had 18 forced outages with a total down time of about 420 hours and 4 scheduled outages with a total down time of about 297 hours. During these outages, maintenance, investigations and monitoring of problem areas (examples: main feedwater pump trip, turbine load limiting circuitry, operator errors, calibration of equipment, and failure of instrumentation) and related activities were completed. Due to the nature of the outages and the short operating history of the unit, this area was not included in the SALP assessment; therefore, no performance category rating has been assigned.

I. Licensing Activities

1. Analysis

This functional area was rated Category 1 in the previous SALP assessment period (August 1, 1983 through September 30, 1984).

During this rating period, the primary licensing activity involved the issuance of the low power and full power operating license for Wolf Creek Generating Station.

The staff concluded on June 3, 1985, (Commission Briefing) that the licensee had satisfied all the requirements for issuance of a full-power license. The full-power license was issued on June 4, 1985. The low-power license was issued on March 11, 1985.

The licensee's management has consistently demonstrated active participation in licensing activities and kept abreast of all current and anticipated licensing actions. The staff found consistent evidence of prior planning and assignment of priorities, as well as an adequate understanding of staff policy.

The licensee's management and its staff demonstrated a sound technical understanding of the issues involving licensing actions. In several cases the staff noted that the information provided by the licensee was technically correct and complete such that no followup action was required on the staff's part. Often, this resulted in timely resolution of the issues.

The licensee has generally responded promptly to staff requests for additional information. The staff also notes that the licensee has been very informative and attentive in resolving all of the staff's concerns, both formal and informal.

2. Conclusion

The licensee has been very responsive and technically competent in all aspects of licensing activity during this rating period and is considered to be in Performance Category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

The NRC should continue timely processing of licensing actions.

b. Recommended Licensee Actions

The licensee should continue to address their license conditions and other licensing activities, as well as any future licensing activity, with the high level of performance that has been demonstrated in this evaluation period.

J. Training and Qualification Effectiveness

1. Analysis

During this SALP assessment period, examinations were administered to five applicants for operator licenses. In addition, final results became available for the examinations administered during September 1984 which were not available for input during the last SALP reporting period. All of the Operator Licenses issued were "Cold Licenses" and no replacement or requalification examinations were conducted during this period. Four licenses have been inactivated due to personnel transferring, terminating, or no longer having need for a license. The final results of the September 1984 examinations resulted in issuing a total of 16 licenses. All five reactor operators who retook the exam after an initial failure passed the reexamination. One out of two initial reactor operator candidates passed the examination and was licensed. Ten out of twelve senior reactor operator candidates passed examinations and were licensed. The examinations conducted in April of 1985 resulted in the issuance of two senior reactor operator licenses and two instructor certifications. A fifth candidate failed the reactor operator examination on his second attempt. There were no generic weaknesses evident during the administration of the April 1985 examinations.

The licensee is presently pursuing the establishment of a program of licensed and nonlicensed training to meet the Institute for Nuclear Power Operation (INPO) guidelines. Due to INPO accreditation not being received during this assessment period the NRC did not perform a formal overall inspection of training other than licensed operator training. However, during the course of routine inspections in other functional areas the following observations were made:

- Management involvement has been evident as to the necessity for adequate training and retraining in the areas of plant operations, radiological controls, maintenance, surveillance, fire protection, emergency preparedness, and security.
- Training programs in each of these areas were found to be effective. Some cases of personnel error were found, but were not considered to be due to major program deficiencies. Lessons learned from problems encountered are fed back to management, and training is adjusted as needed.

2. Conclusions

Overall performance in training has been satisfactory. The licensee's management has shown a commitment to provide adequate training for their personnel.

The licensee is considered to be in Performance Category 2 in this area.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should be with the routine program.

b. Recommended Licensee Actions

Continued management oversight and support for the training program is encouraged to meet accreditation commitments and obtain operator requalifications.

K. Quality Programs and Administrative Controls Affecting Quality

1. Analysis

This functional area includes all verification and oversight activities which affect or ensure the quality of plant activities, structures, systems, and components. This area can be viewed as the comprehensive management system for controlling the quality of work performance and for controlling the quality of verification activities that are intended to confirm that the work was performed correctly. Assessment in this area is based on the results of management actions to ensure that the necessary people, procedures, facilities, and materials are provided and used during the operation of the plant. Emphasis in the assessment of this area is placed on the effectiveness and involvement of management establishing and ensuring the implementation of the quality assurance (QA) program. Also considered in this area is the licensee's performance in the areas of committee activities, design and procurement control, control of design change processes, inspections, audits, corrective action system, and records.

This area was inspected by region-based inspectors and on a continuing basis by the NRC resident inspectors. Six violations and one deviation were identified in this area during the appraisal period:

- Failure to perform activities in accordance with established and implemented procedures. (Severity Level V, 8435-02)
- Failure to ensure that conditions adverse to quality were promptly identified and corrected. (Severity Level V, 8445-01)

- Failure to adequately control records for plant modification packages. (Severity Level IV, 8525-01)
- Failure to perform activities in accordance with established procedures - three examples. (Severity Level V, 8511-01)
- Failure to establish procedures for certain activities that could affect the performance of safety-related equipment. (Severity Level IV, 8538-01)
- Failure to properly update procedure manual. (Severity Level V, 8519-01)

One deviation was identified in this area during the assessment period:

- Failure to fulfill a Safety Evaluation Report commitment to have an agreement to provide regional weather information in place within the specified time. (8434-01)

The licensee uses a Quality First (Q1) program to provide employees with a vehicle to confidentially report potential plant problems that they have identified. The Q1 staff investigates these concerns, reports conclusions to WCGS management for corrective action, and also provides investigation results and feedback to the concerned individual.

A special NRC inspection of the licensee's Q1 program was conducted during this assessment period. The purpose of this special inspection was to determine if the Q1 organization was properly dealing with the concerns brought to its attention by licensee employees and contractors. Based on this inspection no technical concerns were identified that would be a restraint to full power operation of WCGS.

One significant management change occurred during this assessment period. On October 11, 1985, the individual that was the combination Director of Nuclear Operations (DNO) and Site Director resigned. These positions have not been permanently refilled by the licensee. In the interim, the Vice President-Nuclear is both acting DNO and the Director of Engineering and Technical Services has been made the Interim Site Director. The resident inspectors have not observed any adverse impact on onsite activities as a result of these changes.

NRC resident and region-based inspectors continuously interface with the QA and QC organizations while performing inspections in

other areas. In addition, the NRC inspectors have discussed activities in these areas with appropriate management and staff personnel.

The quality program staff appears to be involved in appropriate activities on site. The licensee's Director of Quality's office is located onsite, providing him with a current awareness of activities at the site. The Director of Quality directs an onsite QA staff of approximately 33 people, an onsite QC staff of approximately 25 people, and a home office QA staff of approximately 13 people.

The licensee's interface with the NRC is handled by the Manager of Licensing and his staff who are both located on site. Having this function on site optimizes efficiency.

Management at the plant is involved in ongoing activities and there is a great deal of team effort in resolving problems and planning activities.

2. Conclusion

The licensee's programs are greatly enhanced by having high level managers located on site where they can provide oversight on current plant activities. The licensee's management aggressively pursues and solves problems encountered. The licensee is considered to be in Performance Category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

Normally a Performance Category 1 would warrant a reduced level of inspection effort. However, since the plant has been operating for such a short length of time it is recommended that the inspection effort in this area be consistent with the routine program.

b. Recommended Licensee Actions

Licensee management should continue to give a high level of attention to prompt corrective action and long term solution of problems.

L. Preoperational/Startup Testing

1. Analysis

This area was inspected on a periodic basis by region-based inspectors and the NRC resident inspectors. Ten violations and no deviations were identified in this area during the appraisal period:

- Failure to follow established and implemented preoperational test procedures - six examples given. (Severity Level IV, 8438-01)
- Failure to follow established and implemented preoperational test procedures - three examples given. (Severity Level V, 8446-02)
- Failure to adequately control a temporary modification supplying water to the reactor coolant pump seal injection lines. (Severity Level V, 8449-02)
- Failure to adequately review preoperational test result packages for the chemical and volume control system. (Severity Level V, 8459-01)
- Failure of preoperational test procedures to verify the proper operation of designed safety functions. (Severity Level III 8443-09)
- Incorporation of improper test methods and failure of the review processes to identify and correct them. (Severity Level III, 8443-11)
- Failure to verify a FSAR commitment. (Severity Level III, 8443-10)
- Failure to test equipment in the conditions under which it is expected to operate. (Severity Level III 8443-12)
- Inadequate preoperational test procedure implemented in that an incorrect formula was provided for converting test data. (Severity Level V, 8511-02)
- Failure to control temporary modifications in that test flanges were installed and not identified and controlled as required by established procedures. (Severity Level V, 8511-03)

The four LERs listed below involved activities in the preoperational testing area:

- A reactor trip was generated when a separate surveillance and startup procedure being performed simultaneously generated an overtemperature delta T (OTdT) protection signal. (85-023)
- With one S/G "D" level transmitter removed from service for surveillance, a second level transmitter tripped due to perturbations in the sensing line caused by valving it out for a startup test. (85-030)

- An AFAS was generated on low-low S/G level due to over compensation by the automatic controls on the main feedwater bypass valves induced by startup testing of the steam dump system. (85-039)
- A reactor trip, FWIS, and AFAS on low S/G water level occurred when test leads being removed created a short resulting in a loss of feedwater to the S/Gs. (85-049)

The licensee was issued a Civil Penalty (CP) of \$25,000 for an apparent breakdown in the execution of the preoperational test program. This CP was based on NRC violations and concerns identified during NRC inspections of the licensee's preoperational test program. These NRC inspections were conducted during October and November, 1984, and February 1-28, 1985.

During the power ascension testing phase the licensee was observed to perform the required testing on each power plateau in a competent and deliberate manner. Before power was increased to the next plateau all required completed tests were reviewed and approved by the review committee. The licensee's QA staff was observed to monitor the performance of safety-related tests on a regular basis to ensure procedural compliance.

## 2. Conclusions

Problems were encountered in the execution of the preoperational test program as evidenced by the Civil Penalty assessed. However, all NRC concerns were adequately addressed and resolved prior to issuance of the operating license.

The licensee's startup test program was found to be effectively managed and controlled to ensure all required testing was properly completed.

The licensee is considered to be in Performance Category 2 in this area.

## 3. Board Recommendations

### a. Recommended NRC Actions

Not applicable.

### b. Recommended Licensee Actions

Management oversight and involvement in the postoutage testing for the Fall 1986 outage should be consistent with that demonstrated in the power ascension testing phase.

V. SUPPORTING DATA AND SUMMARIES

A. Major Milestones

The licensee received a low power (5%) license for the Wolf Creek Generating Station on March 11, 1985. Initial criticality was achieved on May 22, 1985. The full power operating license was issued on June 4, 1985, and the station was put into commercial operation on September 3, 1985.

B. Enforcement Actions

1. Escalated Enforcement Actions

Two notices of violations became escalated enforcement actions during the appraisal period.

- a. A Severity Level III violation was issued on May 8, 1985, citing four examples where the licensee failed to establish and execute an adequate preoperational test program which would demonstrate that structures, systems, and components would perform satisfactorily in service. A civil penalty of \$50,000 was proposed, but this amount was mitigated to \$25,000 based on the licensee taking prompt and extensive corrective action.
- b. A Severity Level III violation was issued on December 18, 1985, concerning a Technical Specification requirement regarding operable emergency core cooling systems. A civil penalty was not imposed in this case due to the licensee's prompt identification and reporting of the violation to the NRC, and unusually prompt and extensive corrective action taken to prevent recurrence.

2. Violations and Deviations

The violations not warranting escalated enforcement and the deviations found during the appraisal period are listed in Table 1 by functional area.

C. Licensee Conferences Held During Assessment Period

During the assessment period there were several conferences held prior to licensing. The one having the greatest impact on licensing was the one concerning the structural steel welding problem identified during the previous SALP period. The meeting occurred on February 27, 1985.

An enforcement conference was held at the plant site on December 4, 1984, for the escalated enforcement action concerning the preoperational test program.

TABLE 1

## ENFORCEMENT ACTIVITY

Functional Area	*No. of Violations in Each Severity Level		
	V	IV	DEVIATION
Plant Operations	1	3	
Radiological Controls		1	2
Maintenance	1	4	
Surveillance	1	1	
Fire Protection	1	4	
Emergency Preparedness	1		3
Security <sup>+</sup>		3	
Preoperational/Startup Testing	5	1	
Quality Programs and Administrative Controls Affecting Quality	4	2	1
Licensing Activities			
Training and Qualification Effectiveness			
TOTAL	14	19	6

\*There were two Severity Level III violations identified during the appraisal period. These are described in the enforcement actions section of this report.

<sup>+</sup>A violation identified in the security functional area presently has its severity level pending.