ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-482
License No.:	NPF-42
Report No.:	50-482/97-10
Licensee:	Wolf Creek Nuclear Operating Corporation
Facility:	Wolf Creek Generating Station
Location:	1550 Oxen Lane, NE Burlington, Kansas
Dates:	May 18 through June 28, 1997
Inspectors:	J. F. Ringwald, Senior Resident Inspector J. L. Dixon-Herrity, Resident Inspector
Approved By:	W. D. Johnson, Chief, Reactor Projects Branch B

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Wolf Creek Generating Station
NRC Inspection Report 50-482/97-10

Operations

- The licensee identified that they had re-established containment integrity following containment entries during a forced outage without performing the required containment cleanliness surveillance inspection as required by Technical Specifications. The licensee had reported numerous examples of this Technical Specification violation in Licensee Event Report (LER) 96-14 due to an inappropriate Technical Specification Clarification that was cancelled. Corrective actions for LER 96-14 failed to prevent the additional examples of this violation (Section O8.1 and O8.2).

- The inspector identified a violation of 10 CFR Part 50, Appendix B, Criterion XVI, after discovering that the licensee's corrective actions for a previous violation of the Technical Specification limitation on overtime usage and previous similar licensee findings, failed to prevent recurrence of additional occurrences (Section O6.2).

- The inspector identified a violation of 10 CFR Part 50, Appendix B, Criterion V, after discovering that the licensee had no administrative controls to ensure that operators had corrective lenses required by the conditions of their individual licenses for performing licensed duties while wearing respiratory protection. The licensee subsequently identified examples where operators did not have the required corrective lenses for use with respiratory protection equipment (Section O6.1).

- Licensee response to an extraction steam valve body-to-bonnet leak was appropriate. Operators controlled the plant during the manual reactor trip and properly followed the applicable procedures. Immediate corrective actions were appropriate (Section O1.1).

- Operators responded properly to a main feedwater pump speed controller failure. Effective corrective actions following a similar failure 10 years ago resulted in corrective actions that assisted operators during this event in recovering with only a very minor impact on plant parameters (Section O1.2).

Maintenance

- The inspector identified enhancements to the licensee's surveillance procedures to calibrate the seismic monitor after noting differences between the procedure and the vendor technical manual recommended calibration technique (Section M3.2).

Engineering

- The licensee identified that surveillance procedures for adjusting power range nuclear instruments failed to comply with Technical Specification surveillance requirements. This was determined to be a noncited violation (Section E4.1).

Plant Support

- The licensee identified two repetitive examples of a failure to follow Technical Specifications involving entries of radiation workers into the radiological controlled area without the required thermoluminescent dosimetry. One of the two entries involved entry into a high radiation area without the required dosimetry. This was determined to be a violation (Section R1.2).

- The inspector observed an effective emergency plan technical support center drill and critique (Section P5.1).

Report Details

Summary of Plant Status

The licensee operated at essentially 100 percent power from the beginning of the inspection period until May 20, 1997, when operators manually tripped the reactor in response to a large steam leak (described in Section O1.1). Operators restarted the plant and returned to essentially 100 percent power on May 26, 1997, where they operated through the end of the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 Manual Reactor Trip in Response to Unisolable Extraction Steam Leak

a. Inspection Scope

The inspector observed control room operators reduce power then manually trip the reactor in response to a turbine extraction steam valve body-to-bonnet leak. The inspector observed the operators' actions following the trip, reviewed the subsequent forced outage, and reviewed the licensee's posttrip evaluation and corrective actions.

b. Observations and Findings

On May 20, 1997 at 2:02 p.m., operators in the control room noted a 3 megawatt electric loss of load and received notification of a steam leak under the 2065-foot level of the turbine building. The shift supervisor dispatched operators to verify the report and evaluate the severity of the leak. The operator determined that the leak was on the 2033-foot level, but due to the steam in the area could not confirm the location of the source. Control room operators commenced a controlled load reduction and ordered an evacuation of the turbine building. The shift supervisor and operations manager decided to manually trip the reactor due to the size of the leak and the receipt of alarms due to grounds on the nonsafety electrical bus. Operators tripped the plant at 2:57 p.m. All safety-related equipment responded as designed. Subsequent inspections revealed that the leak was from the body-to-bonnet joint on Valve AF FV0058C, the third stage extraction steam isolation valve to High Pressure Feedwater Heater 7B.

The licensee disassembled the valve and found that the bonnet flange bolting was potentially undertorqued. No damage was noted on the valve flange. The gasket was replaced with a new corrugated iron gasket wrapped with graphite tape. The licensee found that the valve had last been disassembled in April 1993. At that time, mechanics replaced the body-to bonnet corrugated iron gasket with a gasket made from Garlock 9800 compressed sheet material. Engineers calculated that the

mechanics applied a cold compressive load on the gasket of approximately 5500 psi. The manufacturer recommended a compressive load between 5500 and 15,000 psi. The licensee determined that the optimal compression was potentially not achieved, and the minimum load recommended by the vendor may not have been adequate for long-term reliability.

The inspector reviewed the licensee's immediate corrective actions. Engineering personnel identified additional high pressure and high temperature equipment that the subject gasket material had been used in and evaluated the application. As a result, engineering found the same gasket material in the body-to-bonnet joint of one other extraction steam valve. Maintenance personnel replaced the body-to-bonnet gasket of this valve during the forced outage with a corrugated iron gasket wrapped with graphite tape. Engineers identified eight other valves potentially susceptible to this problem. These valves were determined to not pose a significant threat of leakage prior to the next refueling outage because either the torque applied was adequate, or they were used in lower temperature fluid systems. While engineering concluded that these valves were currently acceptable, they recommended that the gaskets be replaced during the refueling outage in September 1997.

c. Conclusions

The operators responded to the identification of a nonisolable extraction steam system valve leak in an appropriate manner by manually tripping the reactor. The licensee response to the event and the immediate corrective actions taken were appropriate.

O1.2 Main Feedwater Pump Speed Controller Failure

a. Inspection Scope

Operators in the control room responded to the failure of the flow controller for Main Feedwater Pump B. The inspector observed a portion of the operators' response to the event.

b. Observations and Findings

On May 30, 1997, all four steam flow-feed flow mismatch annunciators alarmed. Control room operators immediately noted that the controller for Main Feedwater Pump B, Controller FC SK-509B, had failed to zero output and shifted to the manual mode, and that the feed regulating valves responded by opening fully. The operator immediately took manual control of Main Feedwater Pump B using the General Electric speed controller and controlled steam generator levels. The inspector observed operators refer to the appropriate alarm response procedures. Due to quick response of the operators, the effect on the plant was limited to a very small

change in steam generator level. Operators controlled the main feedwater pumps in manual until the driver card was replaced the next day.

According to the plant manager, approximately 10 years ago, a similar event resulted in a significant transient before operators were able to recover steam generator level. After stabilizing the plant during the previous event, operators recognized that if the General Electric speed controller manual signal was adjusted to the nominal steady state output, and a similar failure occurred again, they could quickly shift control to the General Electric speed controllers and maintain feed pump speed control with very little effect on steam generator level. Operators subsequently incorporated this practice into simulator training. The May 30, 1997, event and operator response demonstrated that the corrective actions for the previous event significantly minimized the consequences of the controller failure.

c. Conclusions

Appropriate operator response prevented a controller failure from causing a significant plant transient. The appropriate operator response was a direct result of effective and lasting corrective actions stemming from a similar event which occurred approximately 10 years ago.

O4 Operator Knowledge and Performance

O4.1 Clearance Order Status

a. Inspection Scope (71707)

The inspector reviewed clearance orders to ensure that they were properly prepared and implemented.

b. Observations and Findings

The inspectors noted no concerns with the clearance orders reviewed. However, the inspectors identified a possible vulnerability in the licensee's program. The operations representative to the work control center maintained the original clearance orders in the work control center during the day shift from Monday through Friday, and returned them to the control room at other times. Operators maintained copies of the clearance orders in a second set of books in the control room. However, the current status of the clearance orders including changes occurring during the time the books were kept in the work control center were not easily accessible to control room operators. While each clearance order change was approved by the shift supervisor, the licensee's program did not require copies of these changes to be maintained in the control room. Consequently, operators had the potential to refer to copies of clearance orders that may not have reflected all of the changes, and therefore would not provide ready access to accurate current plant alignment for response to events, if needed.

c. Conclusions

The inspector concluded that clearance orders were being handled in accordance with procedures. However, the inspector identified a potential vulnerability in the failure to always maintain copies of clearance order changes in the control room to provide operators with ready access to accurate current system alignment of systems for response to events.

O6 Operations Organization and Administration

O6.1 Corrective Lenses for Respiratory Protection Equipment

a. Inspection Scope (71707)

The inspector reviewed the licensee's compliance with corrective lens requirements for licensed operators while using respirator protection during the conduct of licensed activities.

b. Observations and Findings

On May 8, 1997, the inspector asked the shift supervisor if they had any mechanism to track respirator glasses for operators who had individual license conditions requiring them to wear corrective lenses while performing licensed duties. The shift supervisor stated that they maintained copies of the individual licenses in the shift supervisor's desk, and relied on each operator to ensure that they complied with the requirements of their license. The shift supervisor also stated that there was no tracking program to ensure that operators requiring corrective lenses actually had them for use while utilizing respiratory protection equipment. Several days later, the inspector expressed this concern to the operations supervisor and asked if there were any operators who had corrective lens restrictions, but did not have corrective lens inserts for respiratory protection equipment. The operations superintendent acknowledged that no program existed, and therefore said that they could not determine whether all required corrective lenses were available or not. Several days later, the operations supervisor informed the inspector that they did not have required corrective lenses for all operators, and that the needed lenses were being ordered. On May 16, 1997, the emergency preparedness manager initiated Performance Improvement Request (PIR) 97-1450 to document the identification of this question from another licensee.

On May 20, 1997, while the steam leak described in Section O1.1 was active, the inspector observed a licensed operator don respiratory protection equipment without corrective lenses for a nonlicensed activity. Later that day, the inspector asked the individual why corrective lenses had not been used. The operator responded by stating that the corrective lenses required by the individual license provided a minor eyesight correction, and from past experience, the correction provided by corrective lenses made for respiratory protection equipment did not improve the individual's

eyesight while wearing respiratory protection equipment. As a result, the operator individually decided not to wear the corrective lenses while wearing respiratory protection equipment. The inspector noted that the license stated that corrective lenses were required any time the individual engaged in licensed activities.

The inspector determined that the licensee did not have an administrative program to ensure that operators requiring corrective lenses actually had and used the required lenses for all licensed duties, and that this was an activity affecting quality. The failure to provide these administrative controls is a violation of 10 CFR Part 50, Appendix B, Criterion V (VIO 50-482/9710-01).

c. Conclusions

The inspector identified that the licensee failed to provide an administrative program to ensure that operators had and used the corrective lenses required by their individual licenses for all licensed activities.

O6.2 Overtime Requirements

a. Inspection Scope (71707)

The inspector reviewed the licensee's use of overtime and compliance with the Technical Specification requirement.

b. Observations and Findings

During April 1997, the inspector asked the licensee for the data pertinent to reviewing the licensee's compliance with Technical Specification overtime requirements. While compiling the data, the licensee noted that there had been a history of examples where they had not complied with the Technical Specifications requirements. NRC Inspection Report 50-482/94-12, which was issued on December 1, 1994, addressed examples which occurred during the Refueling Outage VII. Corrective actions for this violation included several actions that heightened the awareness of personnel to these requirements. Since then, one example occurred in 1995 and four examples occurred in 1996. Nine examples have occurred in 1997. The licensee initiated PIRs for each of these occurrences and the corrective actions involved procedure revisions, actions to reinforce expectations with workers, and the statement that the discipline policy would be invoked if future examples occurred. PIRs 95-1533 and 96-0286 recognized that previous corrective actions were ineffective and attempted to address the repetitive nature of these occurrences, but failed to prevent the subsequent occurrences.

While these examples of unauthorized overtime use without management approval occurred, the licensee also authorized overtime usage in excess of the overtime limits provided in the Technical Specifications a total of 118 times in 1995, 545 times in 1996, and 101 times during the first 6 months of 1997. While some of

these authorizations were related to plant outages, many of them were not. Technical Specification 6.2.2.f requires the licensee to comply with the guidelines of Generic Letter 82-12 which states that "Enough plant operating personnel should be employed to maintain adequate shift coverage without routine heavy use of overtime. The objective is to have operating personnel work a normal 8-hour day, 40-hour week while the plant is operating. However, in the event that unforseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modifications on a temporary basis, the following guidelines shall be followed: . . . Recognizing that very unusual circumstances may arise requiring deviation from the above guidelines, such deviation shall be authorized by the plant manager or his deputy, or higher levels of management. The paramount consideration in such authorization shall be that significant reductions in the effectiveness of operating personnel would be highly unlikely." Given the high number of deviations from the Generic Letter 82-12 guidelines, the inspector questioned whether each occurrence represented the ". . . very unusual circumstances . . ." provided for in the Generic Letter. The Chief Operating Officer acknowledged that the number of authorizations for overtime above the Generic Letter 82-12 guidelines had been excessive and that the numbers would be reduced considerably in the future.

The inspector reviewed the data provided by the licensee and noted that overtime data for verifying that exempt personnel complied with Generic Letter 82-12 guidelines was not available. The inspector asked the Chief Administrative Officer how they monitored exempt personnel overtime use to ensure that routine heavy use of overtime did not occur. The Chief Administrative Officer acknowledged such trending information was not available. The only data which was available were the authorization forms for overtime use in excess of the Generic Letter 82-12 guidelines for exempt employees.

The inspector asked if the licensee routinely reviewed the use of overtime to evaluate compliance with the Technical Specification requirement. The Chief Administrative Officer acknowledged that they did not. After recognizing the history of problems in this area, the licensee initiated PIR 97-1303.

Since the licensee failed to monitor and review the use of overtime on a periodic basis, this issue was only identified as a result of NRC inspection in this area. The licensee's failure to initiate actions to prevent recurrence of unauthorized use of overtime exceeding the Technical Specification requirements, particularly after a previous cited violation and previous significant PIRs, represents a corrective action failure in this area. Since the work activities associated with several of the examples of workers exceeding the Technical Specification overtime requirements involved safety-related work, this is a significant condition adverse to quality. The failure of the licensee to take adequate corrective actions to preclude recurrence of these events is a violation of 10 CFR Part 50, Criterion XVI (VIO 50-482/9710-02).

c. Conclusions

An NRC identified corrective action violation resulted from repeated occurrences of overtime use in excess of the Technical Specification requirements and the failure of the licensee to review and monitor the use of overtime, despite a previously cited violation and significant PIRs in this area.

O8 Miscellaneous Operations Issues

O8.1 (Closed) LER 96-014: Failure to comply with Technical Specification 4.5.2.c for visual inspection of containment. On October 18, 1996, the licensee identified that Technical Specification Clarification 010-85 was inappropriate to the circumstances. The clarification allowed plant personnel to violate Technical Specification Surveillance 4.5.2.c.2 by providing the interpretation that the containment inspection only had to be done daily rather than when containment integrity was restored. The clarification was used by the licensee multiple times since it was initiated in 1985. The root cause was determined to be a misalignment between the Wolf Creek organization culture and the regulatory environment. The corrective actions taken in response to this LER were not effective, as illustrated in Section O1.1.

The inspector concluded that the licensee failed to identify and take corrective actions to prevent recurrence of the violations. The failure to meet Technical Specification 4.5.2.c.2 due to the existence of an inappropriate Technical Specification Clarification is an example of a violation of Technical Specification 4.5.2.c.2 (VIO 50-482/9710-03).

O8.2 (Closed) LER 50-482/97-009: Failure to Comply with Technical Specification 4.5.2.c.2. This item involved a repeat occurrence of the issue discussed in Section O8.1 of this report. The licensee discovered that they failed to perform a containment cleanliness surveillance inspection after reestablishing containment integrity following three containment entries on May 20, 1997. The licensee initiated PIR 97-1477 to address the event, and PIR 97-1479 to address the failure of previously identified corrective action as discussed in Section O8.1 of this report. This failure to perform the containment cleanliness surveillance inspections prior to establishing containment integrity is an example of a violation of Technical Specification 4.5.2.c.2 (VIO 50-482/9710-03).

O8.3 (Closed) Violation 50-482/9618-02: Safety Injection Pump A Operable - Mode 5. The corrective actions taken in response to this event were not adequate because the licensee failed to address the root cause. The root cause identified in PIR 96-0062 was that the test director did not completely identify or assess his actions. The problem arose from trying to hang a clearance order on both trains of safety injection pumps at the same time to support diesel testing. The corrective action was to add a caution to the integrated diesel and safeguards actuation test to ensure that the other train clearance order is being changed and that it complies

with Technical Specification 4.5.4.1. The inspector questioned whether this addressed the root cause of the event. In response to this concern, the licensee counselled the test director and the shift supervisor involved. The PIR was added to the refueling concerns training for operations personnel.

In addition to these corrective actions, the licensee recognized a trend in the failure to completely address the root cause and identify effective actions in response to LERs 96-004 and -005. PIR 96-2592 was issued to address this trend. The corrective actions in response to this included forming a formal corrective action review board chaired by the Chief Operating Officer. This board will review the root cause determination and corrective action plan for all significant PIRs. Organization changes were implemented to provide operations personnel to support the corrective action process. Additional training was provided for managers and personnel implementing the corrective action program. The inspectors concluded that the licensee's corrective actions were appropriate.

O8.4 (Open) Unresolved Item 50-482/9709-02: Containment Cleanliness. This item involved the inspector's identification of fire hose covers on containment fire hose stations inside containment during power operation. Engineering personnel evaluated this issue and documented their conclusions on Reportability Evaluation Request 97-032. The inspector noted that the licensee considered the evaluation complete, and it had been approved by the plant safety review committee. The inspector reviewed the evaluation and discussed the conclusions with the engineer who performed the evaluation. During the discussions the engineer stated that the fire hose was stuffed into the cover because it was a tight fit. The inspector noted that the evaluation did not evaluate the effect of the expected postaccident containment temperature on the ability of the hose cover hook and loop fasteners to remain fastened. The engineer acknowledged that this was not evaluated and stated that this was not considered necessary. The evaluation described an experiment that the engineer performed to determine how much force would be needed to remove the cover from the fire hose station. When the inspector asked the engineer if the experiment was ever performed with the hook and loop fasteners unfastened, the engineer stated that this was never considered. The inspector observed six fire hose stations in the plant, and noted that the covers were loosely hung over the fire hose stations, and that the cover did not provide a tight friction fit. Based on these questions, the inspector determined that the licensee's conclusion that none of the fire hose covers could come off and be transported to the recirculation sumps, could not be verified. Since these various questions remained at the end of the inspection, this item will remain open pending resolution of these issues.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments on Maintenance Activities

a. Inspection Scope (62707)

The inspectors observed all or portions of the following work activities.

105716	Task 3	Calibration check of the Emergency Diesel Generator A rocker lube oil reservoir level annunciator
109427	Task 1	Installation of a drain trap on instrument
119829	Task 2	Postmaintenance test for Component Cooling Water Pump C
INC L-1000	N/A	Calibration of Instrument Air Compressor A temperature indicator
RNM C-1301	Task 4	Calibration Check of Emergency Diesel Generator A volts per hertz relay
STN SP-033	N/A	Quarterly Channel Check for ST RE-33, containment purge radiation monitor

b. Observations and Findings

The inspectors found no concerns with the maintenance observed.

c. Conclusions

The inspectors concluded that the maintenance activities were being performed as required.

M1.2 General Comments on Surveillance Activities

The inspectors observed all or portions of the following surveillance activities.

a. Inspection Scope (61726)

STS IC-201A, Revision 8	Analog channel operational test of TAVG, Delta T and Pressurizer Protection Set 1 - partial to Test P-11 permissive
STS IC-209A, Revision 5	4kV degraded voltage TADOT NB01 bus - Separation Group 1
STS IC896, Revision 8	Channel calibration triax spectrum recorder (PASSIVE), seismic monitor
STS KJ-015A, Revision 4	Manual/Auto start synchronization D/G NE01

b. Observations and Findings

Except as noted in Sections M3.1 and M3.2, the inspectors had no concerns with the surveillances observed.

c. Conclusions

Except as noted in Section M3.1 and M3.2, the inspectors concluded that the surveillance activities were being performed as required.

M3 Maintenance Procedures and Documentation

M3.1 Failure to Test P-11 Permissive Input Relay

a. Inspection Scope (37551)

Engineers at Callaway determined that the an input relay in the pressurizer pressure P-11 circuits for Protection Channels I, II, and III were not tested. The inspectors reviewed the licensee's actions taken in response to this concern.

b. Observation and Findings

On June 4, 1997, engineers at Callaway contacted engineers at Wolf Creek and informed them of a concern they had identified during a review in response to Generic Letter 96-01, "Testing of Safety-related Logic Circuits." The surveillance tests for the solid state protection system failed to overlap in that the input relay and contact for the safety-injection block for low-pressurizer pressure and low-steamline pressure were not tested. This portion of the system was designed differently from the rest of the system in that the three lights on the annunciator panel remained on as long as the contact was open. When the system was placed in test, the contact remained open, so the three lights for the circuit remained lit. The system was normally in a fail-safe condition during operation in that manual

safety injection initiation was blocked until the contact was closed. Lowering pressurizer pressure below 1970 psig caused the contact to close and this removed the block on manual initiation of safety injection.

The licensee worked with the vendor and Callaway Plant personnel to devise a safe method to test the untested portion of the circuit with the plant operating. The licensee's general operating procedures required operators to verify that the lights went out at 1970 psig and provided actions to be taken if they did not. The procedures used to test the system, STS IC-201A, -202A, and -203A, "Analog Channel Operational Test of TAVG, Delta T, and Pressurizer Protection Set 1 - Partial to Test P-11 Permissive," Revision 8, were modified to allow testing of the circuit. The inspectors observed technicians test the input relay using the revised methodology. The three channels functioned according to design. At the end of the inspection period, licensee personnel were still working with the vendor and Callaway personnel to establish a long-term solution. The long-term corrective actions will be reviewed during a future inspection and will be tracked as an inspection followup item (482/9710-04).

c. Conclusions

The licensee appropriately addressed concerns resulting from the identification of an untested portion of the solid state protection system.

M3.2 Seismic Monitor Surveillance Test

a. Inspection Scope (61726)

The inspector observed portions of the surveillance test of the seismic monitor.

b. Observations and Findings

On June 16, 1997, the inspector observed instrument and control technicians perform Procedure STS IC-896, "Channel Calibration Triax Spectrum Recorder (PASSIVE)," Revision 8. During the surveillance the inspector compared the procedure with the vendor technical manual and found several differences. The suggested data table in the vendor technical manual recommended that the technicians record the actual displacement measurements during sensitivity determination. The procedure only required the technicians to record the results of the calculation to convert the measurement from displacement to sensitivity. The procedure suggested that the technicians use a tool to move the plates while obtaining the displacement marks to avoid side loads that would affect the outcome of the measurements. The procedure did not specify how to obtain the displacements and the technicians performed this by hand.

After discussing the observations with the technicians and the first line supervisor, the inspector determined that the differences noted did not affect the outcome of

the observed surveillance test. However, to enhance the test, the first line supervisor decided to revise the procedure by August 30, 1997, to address these differences.

c. Conclusions

The surveillance of the seismic monitor was being performed appropriately. Inspector identified differences between the procedure and the recommended testing method in the vendor technical manual resulted in the initiation of enhancements to the surveillance procedure.

III. Engineering

E4 Engineering Staff Knowledge and Performance

E4.1 Failure to Meet Technical Specification 4.3.1.1

a. Inspection Scope (37551)

The licensee determined that they were not meeting Technical Specification 4.3.1.1 regarding power range channel adjustments following calorimetric calculations. The inspectors reviewed the concern and the corrective actions taken.

b. Observations and Findings

On June 4, 1997, an engineer in nuclear engineering questioned whether a change made in July 1996, to Procedures STS SE-001, "Power Range Adjustment to Calorimetric," Revision 21, and STS SE-002, "Manual Calculation of Reactor Thermal Power," Revision 16, violated Technical Specification 4.3.1.1, Table 4.3-1, Power Range, Neutron Flux High Setpoint Note 2. Note 2 states that above 15 percent of rated thermal power, excore channel gains are to be adjusted to be consistent with calorimetric power if the absolute difference is greater than 2 percent. The engineer had initiated the change in response to Westinghouse Technical Bulletin ESBU-TB-92-14-Rq, "Decalibration Effects of Calorimetric Power Measurements on NIS High Power Reactor Trip at Power Levels Less Than 70 Percent RTP." This bulletin recommended that if the nuclear instrumentation indicated power is greater than the calorimetric indicated power and the calorimetric power level is less than 70 percent, the nuclear instrumentation channels should not be corrected by introduction of a gain shift to reflect the calorimetric power.

Based on this guidance, the licensee revised Procedures STS SE-001 and -002 on July 31, 1996, to prevent a reduction of the nuclear instrumentation gain to match calorimetric power if the power level is less than 70 percent. This change directed operators to not comply with the requirements of Technical Specification 4.3.1.1. On May 25, 1997, the licensee operated below 70 percent power in a condition

where Technical Specification 4.3.1.1 required adjustment of the nuclear instruments, yet the revised procedure directed operators not to make the required adjustment.

After identifying the concern, the licensee revised Procedures STS SE-001 and -002, initiated PIR 97-1635, and indicated that they planned to issue an LER. The inspector reviewed the procedures and noted that an on-the-spot-change had been approved on June 9, 1997. Additional corrective actions included disciplining the engineer involved in the initiating error. The licensee indicated that resolution of PIR 97-1635 will also consider additional actions to reinforce the importance of the review process, particularly with the individuals involved in reviewing these procedure changes. Since operators failed to make the required nuclear instrument adjustments, this is a violation of Technical Specification 4.3.1.1. This nonrepetitive, licensee-identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-482/9710-05).

c. Conclusions

Engineers exhibited good questioning attitude in identifying a failure to meet a Technical Specification requirement to maintain the nuclear instrumentation calibrated within two percent of the calorimetric. During the review of the change to the surveillance procedures, engineering and operations personnel failed to ensure that the procedure provided guidance consistent with the requirements of Technical Specifications.

E8.1 (Closed) Unresolved Item 50-482/9704-06: Use of vendor technical manuals for selecting substitute parts. This item involved the use of vendor technical manuals to select substitute parts without an equivalency evaluation based on their inclusion in a bulletin included in the manual. The licensee contacted a former architect-engineer site manager and a quality assurance manager from the air conditioning unit vendor. Both individuals agreed with the licensee's interpretation regarding the use of the vendor technical manual for selecting substitute parts. The quality assurance manager said that the felt element would not be appropriate despite its appearance on the vendor bulletin page containing the designations of the approved filter cores simply because it was not grouped in the same column with the core initially supplied by the vendor. The quality assurance manager also said that if any of the filter core designations grouped with the one initially supplied with the unit were not appropriate for use at Wolf Creek, the entry would have been lined out in that table.

The inspector concluded that the licensee interpreted the manual in a manner consistent with the expectations of the vendor. The inspector also concluded that the logic for selecting replacement parts was not consistent and could lead to future confusion and possible misinterpretation and inappropriate substitution of replacement parts. At the exit meeting, the licensee acknowledged this possibility

and stated that it was being considered as part of a planned vendor technical manual update project.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Safety Injection Pump B

a. Inspection Scope (71707, 71750)

Using Inspection Procedure 71707 and 71750, the inspectors evaluated the Train A and B switchgear rooms and safety injection Train B components to verify operability.

b. Observations and Findings

Equipment operability, material condition, and housekeeping were adequate. The inspector noted that a leak in the outboard seal housing of Safety Injection Pump B caused a large boric acid accumulation on the skid of the pump. The accumulation occurred in a posted contaminated area on the pump skid. The inspector noted that this accumulation had worsened over the last several months and oil leaks had added to the accumulation. The licensee initiated an action request to repair the leak. On June 6, 1997, the inspector discussed the issue with the radiation protection manager. The inspector noted the skid had been cleaned on June 12, 1997. The inspector discussed the frequency of cleaning up this type of spill with radiation protection management. The skid had been cleaned 2 1/2 weeks before. The pump outboard bearing area also had a small but active leak. The licensee was monitoring the leak and the area daily to ensure that the leakage remained on the skid and inside the posted contaminated area, and to track the status of the leak.

c. Conclusions

The inspector concluded that safety-injection equipment was being maintained in an operable condition and that the radiation protection department appropriately monitored a minor system leak.

R1.2 Restricted Area Entry Without Thermoluminescent Dosimetry

a. Inspection Scope (71750)

The inspector reviewed the circumstances surrounding the licensee's discovery that on two occasions, properly trained radiation workers entered the restricted area without the thermoluminescent dosimetry required by administrative procedures.

b. Observations and Findings

On March 20, 1997, an engineer and a quality control inspector entered a high radiation area without wearing the thermoluminescent dosimetry required by Procedure AP 25A-001, "Radiation Protection Manual," Revision 2. The workers were wearing electronic dosimetry, and received 1 millirem and 2 millirem indicated dose, respectively. The licensee's computer controlled automated access system was not functioning at the time, and as workers manually logged onto the radiation work permit, they obtained electronic dosimetry but failed to obtain and wear their issued thermoluminescent dosimetry. While in the high radiation area, a worker noted that these two workers did not have thermoluminescent dosimetry. The workers exited the high radiation area while being escorted by a health physics technician. The licensee initiated PIR 97-0844 following the first occurrence on March 20, 1997, classified it significant, downgraded it to nonsignificant (thus deciding to not perform a detailed root-cause determination with detailed corrective actions), and closed it on April 23, 1997. Corrective actions included disciplining the workers involved, suspending radiological controlled area access to the two workers until they received retraining from the radiation protection superintendent, and discussing the event in the station newsletter admonishing all radiation workers to comply with radiation worker requirements. A PIR search identified one additional example of a worker inside the radiological controlled area without a thermoluminescent dosimeter, occurring in 1995.

On June 12, 1997, two mechanics entered the restricted area without dosimetry and without logging in on a radiation work permit as required by Procedure AP 25A-001. The licensee initiated PIR 97-1764 that day and classified it as significant, and as of the end of the inspection, had not closed it. The workers participated in a meeting in a room between the radiologically controlled area access desk and an acceptable but infrequently used door that led into the radiologically controlled area. The workers were not signed onto any radiation work permit. At the conclusion of the meeting, the workers recognized that they needed to obtain some measurements in support of the work they had discussed during the meeting. The workers used the infrequently used door to exit the meeting room and enter the radiological controlled area. After obtaining the measurements, the workers recognized their error and reported their error to health physics personnel. The workers were disciplined on June 27, 1997.

While these events were licensee identified, they are repetitive, suggesting that additional corrective action is needed to preclude future recurrence. The failure of radiation workers to wear the required thermoluminescent dosimetry during radiological controlled area entries is a violation of Technical Specification 6.11 (VIO 50-482/9710-06).

c. Conclusions

Radiation workers failed to ensure that they met all requirements prior to entering the radiological controlled area. These repetitive events demonstrate that corrective actions have not been successful in precluding recurrence.

R8 Miscellaneous Radiological Protection & Chemistry Controls

R8.1 Criticality Monitoring

a. Inspection Scope (92904)

The inspector reviewed the status of the licensee's compliance with the requirements of 10 CFR 70.24.

b. Observations and Findings

On June 24, 1997, the licensee received notification that their request for exemption from 10 CFR 70.24 criticality monitoring requirements was approved by the US NRC Office of Nuclear Reactor Regulation. The exemption stated that ". . . the staff concludes that the licensee's request for an exemption from the requirements of 10 CFR 70.24 is acceptable and should be granted. Accordingly . . . the Commission hereby grants Wolf Creek Nuclear Operating Corporation and exemption as described in Section II above from 10 CFR 70.24 . . . ."

c. Conclusions

The inspector concluded that the licensee was exempted from the criticality monitoring requirements of 10 CFR 70.24 provided that they maintained in effect the assumptions and conditions described in the letter granting the exemption.

P5 Staff Training and Qualification in Emergency Preparedness

P5.1 Emergency Plan Drill

a. Inspection Scope (71750)

The inspector observed emergency plan personnel actions in the technical support center during an activation drill.

b. Observations and Findings

On June 19, 1997, the licensee conducted a drill which required emergency plan personnel to respond to and activate the technical support center. Emergency plan personnel activated the technical support center within the required activation time, and the staff began initial response activities without the need for specific direction

from management personnel. Once the technical support center was activated, personnel conducted their initial briefing and established immediate priorities. The drill controllers then terminated the drill and asked the drill participants to conduct a critique. The critique was very detailed, and personnel raised concerns without apparent reservation.

c. Conclusions

The licensee conducted an effective technical support center activation drill, and critiqued their performance in an effective manner.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on June 27, 1997. The licensee acknowledged the findings presented. In response to several issues, e.g., the issues discussed in Sections O6.2, O8.1, and R1.2, the licensee commented that if personnel failed to comply with adequate programs, then the ensuing events did not constitute a problem with corrective action, but with human performance. The inspectors acknowledged this concern. While human performance appeared to be a significant aspect of these occurrences, corrective actions must address human performance as well as programmatic adequacy.

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

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. D. Boyer, Chief Administrative Officer
O. L. Maynard, President and Chief Executive Officer
B. T. McKinney, Plant Manager
R. A. Muench, Vice President Engineering
W. B. Norton, Manager, Performance Improvement and Assessment
C. C. Warren, Chief Operating Officer

INSPECTION PROCEDURES USED

IP 37551	Onsite Engineering
IP 61726	Surveillance Observations
IP 62707	Plant Operations
IP 71750	Plant Support Activities
IP 71707	Plant Operations
IP 92904	Followup-Plant Support

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

9710-01	VIO	Corrective lenses for respiratory protection equipment (Section O6.1).
9710-02	VIO	Overtime Requirements (Section O6.2).
9710-03	VIO	Containment tours during forced outage (Sections O8.1 and O8.2).
9710-04	IFI	Evaluate final resolution of the P-11 input relay testing (Section M3.1).
9710-06	VIO	Restricted area entry without thermoluminescent dosimetry (Section R1.2).

Closed

50-482/9704-06	URI	Use of vendor technical manuals for selecting substitute parts (Section E8.1).
50-482/96-014	LER	Failure to comply with Technical Specification 4.5.2.c for visual inspection of containment (Section O8.1).
50-482/9618-02	VIO	Safety Injection Pump A operable - Mode 5 (Section O8.3).
50-482/97-009	LER	Failure to comply with Technical Specification 4.5.2.c.2 (Section O8.2)

Discussed

50-482/9709-02	URI	Fire Hose Covers (Section O8.4)

Opened and Closed		
9710-05	NCV	Failure to meet Technical Specification 4.3.1.1 (Section E4.1)