

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: STN 50-482/84-58

Construction Permit: CPPR-147

Docket: 50-482

Category: B1

Licensee: Kansas Gas and Electric Company  
P. O. Box 208  
Wichita, Kansas 67201

Facility Name: Wolf Creek Generating Station

Inspection At: Wolf Creek Site, Coffey County, Burlington, Kansas

Inspection Conducted: December 17-21, 1984 and January 7-18, 1985

Inspectors:

*R. Smith*  
R. Smith, Team Leader, Wolf Creek Task Force

2-19-85  
Date

*G. L. Madsen*  
G. L. Madsen, Reactor Inspector

2-19-85  
Date

*for* *R. Smith*  
B. Breslau, Reactor Inspector, Wolf Creek Task Force

2-19-85  
Date

*R. Taylor*  
R. Taylor, Reactor Inspector

2-19-85  
Date

Approved:

*G. L. Madsen / for*  
L. Martin, Chief, Wolf Creek Task Force

2-26-85  
Date

Inspection Summary

Inspection Conducted December 17-24, 1984, and January 7-18, 1985  
(Report 50-482/84-58)

Areas Inspected: Routine, announced inspection of control room operations, preoperational test and testing, review of completed preoperational tests, review of startup and power ascension procedures. Review of KG&E's Quality First program, followup on allegations, review of open items, review of violations, observation of simulator operations, review of startup program and administrative procedures. The inspection involved 202 inspector-hours onsite by four NRC inspectors.

Results: Within the 10 areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Kansas Gas and Electric Company

- \*G. L. Koester, Vice President - Nuclear
- \*C. Mason, Project Director
  - F. T. Rhodes, Plant Manager
- \*R. M. Grant, Director Quality
  - F. D. McLaurin, Assistant Startup Manager
  - M. G. Williams, Superintendent of Regulatory, Quality, and Administrative Services
  - R. L. Stright, Licensing
  - K. R. Ellison, Supervisor, Startup Technical Support
- \*W. M. Lindsey, Supervisor, Quality Systems
  - R. Glover, Startup Manager
  - R. L. Hoyt, Emergency Planning Supervisor
- \*O. Maynard, Licensing Supervisor
- \*W. J. Rudolph, Quality Assurance Manager, Site
- \*W. B. Norton, Reactor Engineering Supervisor
  - M. Estes, Operations Coordinator
  - B. Hicks, Technical Writer
  - S. Armstrong, Shift Consultant
  - J. Goode, Licensing Engineer
  - H. Chernoff, Licensing
- \*C. A. Snyder, Manager, Quality First
  - H. Cambell, Startup Engineer
  - J. D. Pickett, Startup Engineer
- \*R. L. Walters, Quality First Investigator
  - A. Critchely, Quality First Investigator
  - J. Brooks, Quality First Investigator
- \*C. J. Hoch, Quality Assurance Technician
  - A. Mah, Training Supervisor
  - P. Turner, Manager, Nuclear Training

The NRC inspectors also contacted other site personnel including plant operator, startup engineers, test engineers, administrative and clerical personnel.

\*Denotes those attending the exit interview on January 8, 1985, and January 17, 1985.

2. Quality First Organization

The Quality First Program continues to be implemented under the direction of C. A. Snyder, Manager of Quality First, who reports to K. Brown, Group

Vice President, Technical Services. The organization has been reduced in size and presently consists of the following:

1. Manager - Quality First
2. One Supervisor
3. Three Interviewer/Investigators
4. Three Secretaries

3. Quality First Trending

As of January 10, 1985, KG&E records indicate that 686 concerns have been received, 685 concerns have been investigated and one concern remains to be investigated. The one remaining concern to be investigated is scheduled for completion by January 18, 1985, and is not considered to impact upon issuance of a fuel load license.

4. Review of Closed Files

To date KG&E has established 237 case files for the 686 concern received. Following NRC Inspection Report 50-482/84-52, 83 case files, representing 391 concerns, had not been closed by KG&E or reviewed by the NRC inspector. Seventeen case files, representing 86 concerns, were selected for closed case file review. The NRC inspector's evaluation included a review of:

- a. The accuracy of the inspection plan versus the concern received.
- b. The rationale of the investigation, corrective actions, and basis for closure of concerns.
- c. The reportability of the concern in accordance with the requirements of 10 CFR 50.55(e).
- d. The endeavors to recontact the individual that submitted the concern.

NRC inspectors have reviewed completed activities for about 50 percent of the 237 case files, representing 686 concerns, received to date.

As of January 10, 1985, 21 case files representing 149 concerns remain to be closed. The investigation of the concerns has been completed; however, the evaluation and acceptance of responses to Quality First Action Requests (QFARs) and Quality First Observations (QFOs) is in progress.

5. Quality First Action Requests (QFARs)

Quality First has initiated 78 QFARs. The QFARs are formally transmitted to the responsible organizations and require a response. Records indicate that responses have been received and accepted for 73 QFARs. As a result

of a Quality First Review, 11 of the initial responses to these 73 QFARs were rejected and were sent back to the responsible organization for action. Five QFARs have not been closed by Quality First. These five QFARs are scheduled for closure by January 18, 1985.

During this inspection, the NRC inspector reviewed 18 accepted QFAR responses to assess the adequacy of the followup activities. To date, 28 of the 73 accepted QFAR responses have been reviewed by the NRC inspector.

6. Quality First Observations (QFOs)

As a result of Quality First Investigation of concerns, 22 QFOs have been initiated. A QFO is a condition that appears to be adverse to quality and which was outside of the area of concern being investigated. The QFOs are forwarded to the affected organization for action and closure.

Of the 22 QFOs issued, responses have been completed for 20 QFOs. The remaining QFOs are scheduled for completion by January 18, 1985.

7. Followup On Allegations

(Closed) 4-84-A-22: This allegation case stemmed from a contact with a former employee of Daniel International Constructors and the NRC. The case was referred to KG&E for followup. KG&E personnel interviewed the allegor in the presence of the NRC inspector. KG&E broke down the interview into 10 separate items of concern. The NRC inspector compared the content of KG&E's 10 concerns versus notes which were generated during the initial contact between the allegor and NRC and found adequate compatibility.

KG&E examination of the 10 concerns, revealed that two of the items were valid and either required corrective action or corrective action was underway which was caused by other findings. The remaining items were not substantiated or were found to be without technical merit. The NRC inspector examined documentation relating to KG&E actions. The NRC inspector considers that the individuals concerns have been examined and addressed by KG&E in an acceptable manner. KG&E contacted the allegor and provided documentation regarding their findings and action. The NRC inspector contacted the allegor to confirm receipt of the KG&E response. The NRC inspector considers this case closed.

(Closed) 4-84-A-98: The allegations were received by NRC Region IV as an attachment to a letter from the U.S. Department of Labor dated September 25, 1984, in regard to a complaint received by DOL under Article 210 of the Energy Reorganization Act. Several of the items reported by the complainant were found to have been also reported to the licensee's Quality First organization. The NRC inspector noted that the

allegation received by the NRC consisted of 6 essentially separate items while Quality First had 14 separate items. The following discussion will center first on the items common to both the NRC inspector's followup and also to the licensee's investigation.

1. NRC Item 1: Contrary to procedures, material traceability for pipe supports was verified at weld fitup or later.

Licensee Finding: The allegation was confirmed. Basic charge was that bulk steel was cut off prior to applying markings to cut off piece. Traceability of the cut off piece was later established based on records for like material.

Licensee Action: The licensee report indicated applicable procedures had been clarified in September 1982, and that sample of records generated after that time indicated satisfactory implementation.

NRC Finding: The NRC inspector accepted the licensee's finding and would note that this is a relatively common problem involving oversights by construction craft and QC personnel. The resolution appears adequate based on an interview with a knowledgeable person who stated that he and his group had been involved with hundreds of like instances. When no doubt about the traceability could reasonably exist, the individual piece would be marked for traceability. Where doubt existed, nonconformance reports were generated and the piece in question replaced. Several NRC inspections of completed pipe supports have not identified any significant traceability problems.

Conclusion: Based on the licensee's investigation and the referenced interview, the allegation is considered substantiated and adequate corrective action has been taken.

2. NRC Item 2: Engineering aids signing for engineers. All signatures on "QICs" and "Pre-QIC reviews" to be signed by hanger engineers, not aids.

Licensee Finding: The licensee's investigation confirmed that aids to hanger engineers were signing quality inspection checklist (QICs) pre-designating inspection attributes and signing again after inspection. The investigation revealed that the engineer or his designee could sign the form and further found that the quality engineering gave approval to the attribute selection of the hanger engineer or his aid and was responsible for the inspection. Thus, the allegation was considered to be unsubstantiated.

NRC Finding and Conclusion: The allegation was substantiated but without merit.

3. Allegation 3: CAT team rejected hanger X-M16-AEOS-R016/145Q for missing identification and this was not properly addressed by NCR 19260H. NCR disposition in error and CRG stamped in error.

Licensee Finding: Allegation was substantiated by investigation and NCR 20369 issued to obtain proper corrective action.

NRC Finding and Conclusion: The NRC inspector reviewed both NCRs and found the allegation to be substantiated and that appropriate action was taken to rectify.

4. Allegation 4: "Use-as-is-NCRs" affecting hanger material dimensions and location would not have been incorporated into drawings had the alleger not insisted.

Licensee Finding: None - this allegation was not made to the licensee.

NRC Finding and Conclusion: The alleger appears in his statement to say that the perceived problem was resolved to his satisfaction. The alleged factors that might not have been documented were within the scope of the as-built walk down program for pipe supports conducted by the licensee. This program was the subject of an NRC inspection (NRC Inspection Report 50-482/84-23) which identified no violations or deviations involving the alleged factors. Since the alleger seems to have caused satisfactory resolution, the NRC inspector was unable to substantiate the validity of allegation.

5. Allegation 5: Inadequate verification of the snubber transition assemblies and of the double nuts used on sway struts. The alleger stated he achieved resolution of his concern through his efforts.

Licensee Finding: None - comparable allegation not made to licensee.

NRC Finding and Conclusion - same as allegation 4.

6. Allegation 6: General breakdown in SDL (System Discrepancy List) program.

Licensee Finding: Substantiated but corrected via Daniels Construction (DIC) Corrective Action Request No. 45.

NRC Finding and Conclusion: The allegation is considered substantiated. The allegation was adequately addressed by DIC

Corrective Action Request No. 45. NRC Inspection Report 50-482/84-08 also identified significant problems with the SDL program. NRC Inspection Report 50-482/84-18 noted that the violation (482/8408-03) was found to be adequately corrected by revision to procedures and that lists had been updated.

- b. The licensee's Quality First group received seven other concerns or allegations than those identified in the complainant's letter to DOL referenced above. These were:
1. Hoop shrinkage in stainless steel pipe at welds not procedurally addressed.
  2. No QC inspection of welds presently underwater in the service water pump house.
  3. No water samples taken to verify halides in flush water after removal of purge dams.
  4. MSSWRs generally inadequate.
  5. No QC verification of coping on skewed welds.
  6. Color code not sufficient for controlling pipe bolting material.
  7. Walkdowns not covering all inspectable attributes.

Review of the Quality First group records indicated that concerns 1, 4, 5, and 6 substantiated. Concern 1 was, however, considered without technical merit. Concerns 4, 5, and 6 were corrected by reinspection programs. Concern 2 was considered refuted because the problem had been documented in NCR 7138 in November 1982, which was dispositioned by the A/E; the components having been redesigned which obviated the need for the uninspected welds. Concern 3 was refuted since the flushing and sampling are part of the licensee's startup testing program. Concern 7 was considered refuted since the walkdown program was not structured to inspect all possible attributes. The NRC inspector followed up on each of the seven items by review of related documents, interviews of site personnel outside the Quality First group, and by review of NRC inspection reports. The NRC inspector determined that the Quality First investigations and findings were adequately responsive to the concerns.

No violations or deviations were identified in this area.



8. Inspection of TMI Task Action Plan (TAP) Items

The following TMI TAP items were reviewed to determine their status. This review consisted of a comparison to NUREG 0660 requirements as clarified by NUREG 0737, to licensee implementation of the same and involved a selected review of procedures and records as well as direct inspection of physical plant conditions.

(Closed) TAP item I.C.1, Short Term Accident Analyses and Procedure Revision. The licensee committed to implement emergency operating procedures based on the revised Westinghouse Owner's Group Guidelines in accordance with the schedule of NUREG 0737. The NRC inspector reviewed selected emergency Procedures, i.e., EMG-FS-33 Post SGTR Cooldown Using Steam Dump, EMG C-31 SSTR With Loss of Reactor Coolant, Subcooled Recovery, EMG FR-H1 Response to Loss of Secondary Health Sink, EMG E-0 Safety Injection. These revised procedures adequately address the Westinghouse Owner's Group Guidelines.

(Closed) TAP Item II.B.1, Reactor Coolant System Vents. The licensee shall install reactor coolant system and reactor vessel head high point vents remotely operated from the control room. A review of system drawings MO2-BB04-Q (Reactor Head Vent System) and M12-BB02-Q (PORV) coupled with a direct inspection of the installation indicated adequate installation of the vent systems. Remote control and indication is acceptably established in Systems Operation Procedure SYS-BB-110.

(Closed) TAP Item II-B-2, Plant Shielding. Each licensee shall provide for adequate access to vital areas or temporary shielding, or postaccident procedural controls. The design review shall determine which types of corrective actions are needed for vital areas throughout the facility. The licensee submitted its analysis to the NRC which was subsequently accepted and documented in NUREG 0881, Supplement 2. An onsite inspection of dose rate zone maps, inline monitoring systems and shielding installation meets the requirements within this item.

9. Action on Previous Inspection Findings

(Closed) Open Item (482/8426-03) - NSSS Vendor Review of Power Ascension and Emergency Procedures for Operating License Applications: Operating license applicants are required to obtain reactor vendor review of power ascension and emergency procedures as a further verification of the adequacy of the procedures. NRC Inspection Report 50-482/84-44 closed this item after conducting a detailed review of licensee documentation, these inspections results are adequate to close this open item.

(Closed) Open Item (482/8426-05) - Relief and Safety Valve - Applicant's shall submit to NRC, a correlation or other evidence to substantiate that relief and safety valves tested in a generic test program demonstrate the functionability of as-installed primary relief and safety valves. Evidence of PWR relief block valve functionability will also be provided.

NRC Inspection Report 50-482/84-55 closed this item after conducting a detailed review of licensee documentation, these inspection results are adequate to close this open item.

(Closed) Open Item (482/8426-13) - The installation of inadequate core cooling instruments, supplementing the primary saturation monitor, must cover the full range from normal operation to reactor core uncovering. This item is being tracked by SER Item 84-00-140, which will remain open pending system operability.

(Closed) Open Item (482/8426-14) - Shift Relief and Turnover Procedures: This item is adequately addressed by Administrative Procedure ADM 02-010 "Shift Relief and Turnover."

(Closed) Violation (482/8420-01) - The NRC inspector reviewed and verified that preoperational test SU3-BG03 has been properly corrected to reflect the requirements of WCGS Administrative Procedure ADM 14-200. Additionally, the attendance sheets were reviewed which reflected that training sessions had been conducted for all startup personnel covering the requirements of the startup administrative procedure.

(Closed) Open Item (482/8426-10) - Two channels for accident monitoring of containment pressure are installed. The licensee has calibration procedures for these instruments. This item is closed. This is Tasks II.F.1 Attachment 4 of NUREG 0737.

(Closed) Open Item (482/8426-11) - Task II.F.1. Attachment 5 requires that a containment water level monitor be installed.

The following containment water level indicators are in place and operable:

- Normal sump level, 2 channels
- Recirculation sump level, 2 channels

There are approved procedures for calibration of the transmitters and instrument loops for both level indicators. This item is closed.

(Closed) Open Item (482/8426-12) - Task II.F.1, Attachment 6, Containment Hydrogen Monitor. A continuous indication of hydrogen concentration in the containment atmosphere shall be provided in the control room. Measuring capability shall be from 0-10 percent under positive and negative ambient pressure conditions. The indication shall function properly within 30 minutes of safety injection.

There are two hydrogen analyzers installed at the Wolf Creek facility that are in compliance with the requirements of NUREG-0737.

There are approved calibrations and operability verification procedures to ensure system operability and compliance with Technical Specifications.

Operating procedures have been provided for placing this system in use and the use is specified in the emergency procedures. This item is closed.

(Closed) Unresolved Item (482/8429-03). This item was unresolved due to the FSAR requiring that replacement training for the I&E technicians be accomplished by classroom lecture for:

- "1. Fundamentals of instrumentation and control
2. Pneumatic systems and equipment
3. Electronics
4. Plant systems
5. I&C and other job related procedures
6. Surveillance requirements"

The NRC Inspector found that items 1, 2, 3, and 5 above were being handled by self study, not classroom training; that item 4 was being taught in the classroom; and that item 6 had not been accomplished. With regard to items 1, 2, 3, and 5, the NRC inspector concluded that the licensee's program was adequate.

The NRC inspector also found that the FSAR committed that the I&C supervisor and most KG&E I&C technicians would complete a 15-week Westinghouse I&C course. The NRC inspector found that the Westinghouse I&C course actually was 11 weeks in length. The difference between the 11 and 15 week courses was, according to licensee representatives, caused by the deletion of material not directly related to the Wolf Creek site. It was determined that the licensee's training in the I&C area was technically adequate.

Further review of revisions to the FSAR indicates that the FSAR has been revised to reflect the training that is required for Wolf Creek plant.

(Closed) Open Item (482/8429-04) - The NRC inspector reviewed training records and requirements for training of the I&C technicians as related to surveillance testing and concluded that in the area inspected this training and training plans were adequate. This item is closed.

(Closed) Open Item (482/8429-05) - The NRC inspector noted in review of the FSAR requalification plan that results of evaluations of licensed operators were not included. This is a requirement of 10 CFR Part 55, Appendix A. The NRC inspector also noted that the reactivity manipulations did not include all items as required by NRC letter from H. R. Denton, dated March 28, 1980. Documenting results of evaluations and the reactivity manipulations are now included. This item is closed.

(Closed) Open Item (482/8426-01) - Three Mile Island Action Plan Item 1.A.1.1 Shift Technical Advisor. The Shift Supervisors and Senior Operators have had 60 semester hours of technical or scientific education. A Safety Evaluation Report (SER) has been written documenting acceptance of this approach for the Wolf Creek Generating Station. This item is closed.

(Closed) Open Item (482/8426-06) - Three Mile Island Action Plan Item II.B.4. Training for Mitigating Core Damage. The plant manager has completed the required training and the NRC inspector had reviewed the records of this training and considers the actions taken acceptable. This item is closed.

(Closed) Unresolved Item (482/8446-01) - Independent Witness of Testing During Startup Testing. The licensing Quality Assurance organization reviews all startup test procedures. This Quality Assurance organization has performed, reviews, audits and surveillance inspections of testing and has plans and schedules for future reviews, audits and surveillance inspections. The testing organizations has inserted witness signoff steps in the test procedures that will be performed by a person other than the person performing the test. There are also requirements for technical reviews of test and sections of tests by management and the Plant Safety and Review Committee. The inspector considers these type activities adequate at this time and conformance and technical adequacy will be inspected during the (startup) power ascension phase of operation. This item is closed.

(Closed) Violation (482/8438-01) - Failure to Follow Procedures. The licensee's response to this violation has been reviewed and is acceptable. Additional witnessing of that preoperational testing had shown that corrective action has been taken and improvement has been achieved. This item is considered closed.

(Closed) Violation (482/83-36, Part 3) - Segregation of Like Material With Different Quality Requirements. Based on a review of DIC Nonconformance Report ISK 14670C and Cooper-Turner, Inc. letter dated December 12, 1983, it is apparent that regardless of what is stipulated in a purchase order to govern testing and documentation requirements for a given type of load indicating washer, Cooper-Turner produces and tests the washers in the same manner. The above referenced letter was provided with a typical test certificate for the product. The letter states that the manufacturing plant (in England) tests each "cast" for load development capability in a companion bolt at a standard .015 washer protrusion gap. The letter also states that the company's laboratory in Pennsylvania also performs a comparable test. The provided test certificate indicated the minimum six tests had been performed on one "cast" while another "cast" was tested a total of 48 times. The typical test data indicated results of a consistent nature and all indicated an ability to develop a bolt preload approximately 10 percent greater than the required minimum proof load of

the associated bolt. It follows that segregation of the washers by purchase order requirements would not contribute to the quality of installed bolted connections. The licensee also caused DIC to research all field procurement orders to assure that the orders contained the technical product requirements of the Bechtel Technical Specification. Bechtel also undertook a review of essentially the same orders already reviewed by DIC to provide further assurance that all purchase orders contain appropriate requirements. All of these actions have been documented in DIC Corrective Action Report 1-G-0036. This item is considered closed.

(Closed) Violation (482/83-36, Part 7): Use of Hot-Forged High Strength Bolts with LIWs. The licensee has stated that he believes that the inclusion of American National Standard B18.2.1 within ASTM A-325 and ASTM A-490 is sufficient to preclude the concern for under head distortion.

The NRC inspector agrees Table 5 of ANSI B18.2.1-1981 does require that the surface under the head of these particular bolts to be washer faced and flat. By letter dated November 12, 1984, Cooper-Turner appears to contradict their cautionary note, at least as it applies to A-325 and A-490 bolts. The NRC inspector examined a small sample of A-325 and A-490 bolts which may or may not have been hot-forged (documentation by the supplier of the forging method is not a requirement). The bolts examined did have a raised, washer faced, flat area under the heads in conformance with ANSI B18.2.1-1981. This item is considered closed.

(Closed) Unresolved Item (482/8336-04): Weakness in Procedures for Turnover of Construction Records to Permanent Record Vault - DIC Procedure QCP-I-05, Revision 20, contains the necessary provisions to document post initial-review changes to quality documentation. QCP-I-05 also contains necessary instructions to assure that nondiscipline related quality documentation will be forwarded to the licensee for retention. The several discipline related procedures and QCP-I-05, all for document review activities, have been revised to require review and retention of procurement documents versus the documented design as-built status. The NRC inspector was satisfied that the procedural changes have been implemented based on an interview of a licensee employee that had been heavily involved in the activities of the Combined Review Group (CRG) since its inception. This item is considered closed.

(Closed) Unresolved Item (482/8336-05): Procedure For Design of No-Go Gages for Determining the Acceptability of Joints Tightened Using LIWs - Via a licensee prepared mockup containing two each A-325 and A-490 bolts, one each 3/4" and one each 1-1/4" bolt, the NRC inspector verified that the field modified feeler gages would go between the compressed washer protrusions and thus are capable of accurately measuring the required

washer gap with the same accuracy as the washer vendor supplied gages. This item is considered closed.

(Closed) Unresolved Item (482/8336-06): Apparent Lack of Procedures for Revision Control of Manufacturer's Instruction - The NRC inspector found that paragraph 4.16 of Procedure AP-1X-03, Revision 22, requires that each vendor manual or instruction be received and stored by DIC Document Control. This provision is applicable to both original and to subsequently revise vendor documents. The above paragraph also requires Document Control personnel to send the new or revised document to the appropriate lead discipline (installation) engineer who is required to review the document for impact on installation instructions and to document such review on a form to be returned to Document Control for retention. This item is considered closed.

(Closed) Open Item (482/8418-01): Temperature Differentials for Ultrasonic Examinations - The licensee provided the NRC inspector with a letter by Westinghouse dated January 8, 1985, stating that examiners are trained and instructed to enter differential temperature on all records as opposed to entering the temperature for the calibration block and the component under examination. The licensee stated the above referenced letter will be placed with the records for permanent retention. This item is considered closed.

#### 10. Test Results Review

The NRC inspector reviewed the following preoperational test results for technical content, compliance with the Safety Analysis Report, Regulatory Guide 1.68, and compliance to the licensee's administrative procedures:

SU3-AB01, Revision 0, Steam Pump System - The objectives of this preoperational test are to:

- Demonstrate the operability of the steam dump control system control circuits in both the average temperature and steam pressure modes of operation
- Demonstrate the operation of the main steam dump valves and steam dump cooldown valves, including valve response to safety signals
- Verify operation of the main steam line drain valves control circuits, including valve response to a turbine trip signal
- Verify operation of the main steam to turbine-driven auxiliary feedwater pump supply valves control logics, including valve response to an auxiliary feedwater actuation signal

The NRC inspector reviewed the results package and from this review, the inspector consider that the stated objectives were satisfied.

Preoperational Test SU3-BB07 Pressurizer Level Control Test:

The test objective was to demonstrate the level response and stability to pressurize level changes. The alarm and control steps to level changes were checked also. The acceptance criteria was verified and this review indicates an acceptable preoperational test.

Preoperational test SU3-BG06 Chemical and Volume Control System.

The objectives of this test are:

To determine by flow test that all letdown and cleanup flow rates are within design specification; To determine, by comparison of boron concentrations, that boric acid addition to the Reactor Coolant System has occurred, using the normal and emergency flow paths; To determine by flow test the ability of the Chemical and Volume Control System to make up to the Reactor Coolant at design flow rates and boron concentrations, in all modes of operations; To determine by operational test that the letdown containment isolation valve closure times are within design specifications; To demonstrate the ability of the charging pump room coolers to maintain room temperatures within design limits; To verify the ability of the alternate seal injection flow paths to provide the required seal injection flow; To verify the ability of the Boron Concentration Measurement System to measure Reactor Coolant System boron concentration; To verify the maximum dilution flow rate with both centrifugal charging pumps operating.

The test acceptance criteria were met and this test is considered acceptable.

SU3-EJ02 Residual Heat Removal System:

The objectives of this test are:

- Demonstrate the ability of the Residual Heat Removal System to cooldown the Reactor Coolant System at its design rate.
- Demonstrate that the RHR pump suction from RCS hot leg isolation valves, Safety Injection System test line isolation valves, RHR pump discharge to hot leg recirculation isolation valve, RHR loop crosstie valves closure times are within design specifications.
- Demonstrate that the RHR pump room coolers maintain room temperatures within design limits.

The acceptance criteria were met and this test is considered acceptable.

SU3-EM01 Safety Injection System Cold Operations - The objective of this test is to demonstrate that:

- The response and control circuit logic of valves, interlocks, motors and pumps of the Safety Injection and Containment Isolation Signals.
- The response of the control circuit logic of the Safety Injection System to Load Shed and Load Sequencing signals.
- The response of the Refueling Water Storage Tank valves associated with the Safety Injection System.

The acceptance criteria for Safety Injection Pump breakers are that each pump starts on a load sequencing signal and each pump stops on a load shedding signal. The applicable valves are required to close on Containment Isolation signals or open on Safety Injection signals.

This criteria were met and this test is considered acceptable.

SU3-BB04 - Pressurizer Pressure Control. The objective of this preoperational test is to demonstrate the stability and response of the pressurizer pressure control system including the verification of pressure alarm and control functions.

All acceptance criteria were satisfied during the performance of this test. The test included pressure change response causing opening closing of spray valves, the energization, de-energization of heaters, opening and closing of the Power Operated Relief Valves, and the functions of the alarm annunciators. This test is considered acceptable.

#### 11. Simulator Drills

The NRC inspector observed two emergency drills that were performed on the KG&E training plant simulator. These two drills were a steam line break outside the containment and a primary leak located in the discharge piping of the charging pumps. These drills were conducted in a satisfactory manner, however, the following comments were provided to the licensee:

- More attention to margin to saturation and natural circulation should have been taken.
- When verifying system are functioning properly closer observation of equipment status should be made.



12. I&E Circulars

The NRC inspector reviewed the KG&E's administrative procedure for controlling I&E circulars and considers the actions required and the actions taken on previous I&E circulars acceptable.

13. Exit Interview

Exit interviews were conducted with the licensee personnel (denoted in paragraph 1). Discussion were held on inspection finding in the Quality First program and the closure of open items, unresolved items and violations.