UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

May 1, 2003

Mr. C. L. Terry, Senior Vice President
and Principal Nuclear Officer
TXU Energy
ATTN: Regulatory Affairs
Comanche Peak Steam Electric Station
P.O. Box 1002
Glen Rose, Texas 76043

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION - NRC INTEGRATED INSPECTION REPORT 50-445/02-06; 50-446/02-06

Dear Mr. Terry:

On April 5, 2003, the NRC completed an inspection at your Comanche Peak Steam Electric Station, Units 1 and 2, facility. The enclosed report documents the inspection findings which were discussed on April 14, 2003, with you and other members of your staff.

This inspection examined activities conducted under your licenses as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

This report documents two findings of very low safety significance (Green), which were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as noncited violations (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Comanche Peak Steam Electric Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

William D. Johnson, Chief
Project Branch A
Division of Reactor Projects

Dockets: 50-445
50-446
Licenses: NPF-87
NPF-89

Enclosure:
NRC Inspection Report
50-445/02-06; 50-446/02-06

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RIV:RI:DRP/A	SRI:DRP/PBA	SPE:DRP/A	C:DRS/OB	C:DRS/PSB
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Dockets:	50-445, 50-446
Licenses:	NPF-87, NPF-89
Report:	50-445,446/02-06
Licensee:	TXU Generation Company LP
Facility:	Comanche Peak Steam Electric Station, Units 1 and 2
Location:	FM-56, Glen Rose, Texas
Dates:	December 29, 2002, through April 5, 2003
Inspectors:	D. B. Allen, Senior Resident Inspector A. A. Sanchez, Resident Inspector C. J. Paulk, Senior Project Engineer, Project Branch A H. F. Bundy, Senior Operations Engineer, Operations Branch P. C. Gage, Senior Operations Engineer, Operations Branch P. A. Goldberg, Senior Reactor Inspector, Engineering and Maintenance Branch L. E. Ellershaw, Senior Reactor Inspector, Engineering and Maintenance Branch G. B. Miller, Reactor Inspector, Engineering and Maintenance Branch M. P. Shannon, Senior Health Physicist R. L. Nease, Senior Reactor Inspector, Engineering and Maintenance Branch
Accompanying Personnel:	L. Vick, Reactor Engineer (Examiner Qualified) J. P. Adams, Reactor Inspector, Engineering and Maintenance Branch
Approved by:	W. D. Johnson, Chief, Project Branch A Division of Reactor Projects
Attachment:	Supplemental Information

SUMMARY OF FINDINGS

Comanche Peak Steam Electric Station, Units 1 and 2
NRC Inspection Report 50-445/02-06; 50-446/02-06

IR 05000445-02-06; IR 05000446-02-06; 12/29/2002-04/05/2003; Comanche Peak Steam Electric Station; Units 1 & 2; Fire Protection Triennial, Surveillance Testing.

The inspection was conducted by resident inspectors, a regional project engineer, regional operations engineers, regional reactor inspectors, and a regional health physicist. Two Green noncited violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Inspector-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A violation of Comanche Peak Steam Electric Station Technical Specification 5.4.1.a was identified for failure to establish and maintain adequate procedures implementing the fire protection program. In particular, Abnormal Conditions Procedure ABN-803A, "Response to a Fire in the Control Room or Cable Spreading Room," did not direct operators to transfer control of the Train B power-operated relief valve from the control room, leaving it vulnerable to spurious operation in the event of a fire in the control room envelope requiring control room evacuation and remote shutdown. This violation is being treated as a noncited violation in accordance with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-445/0206-01).

  This finding was first identified in NRC Inspection Report 50-445/02-03; 50-446/02-03 as an unresolved item (URI 50-445/0203-01) pending significance determination. This issue was determined to be more than minor, because it is associated with the reactor safety mitigating systems cornerstone and affects the cornerstone objective as described in NRC Manual Chapter 0612, Appendix B. Specifically, this finding affected the licensee's capability to mitigate the consequences of a fire in the control room in order to achieve and maintain safe shutdown. In a Phase 3 risk analysis, the NRC determined that significance of this finding was Green, based on a relatively low fire ignition frequency plus a low likelihood that fire damage would cause the Train B power-operated relief valve to spuriously open (Section 4OA5.1).

- Green. An inadequate calibration procedure for the low temperature overpressure protection temperature channel resulted in the Train B residual heat removal system being inoperable while Technical Specification 3.9.6 required both trains to be operable. The procedure failed to state that the performance of the surveillance would interlock closed the reactor coolant system hot leg to Train B residual heat removal pump suction Valve 1-8702B.

This self-revealing, noncited violation of Technical Specification 5.4.1.a. was first documented in NRC Inspection Report 50-445/02-05; 50-446/02-05 as an unresolved item (URI) (50-445/0205-01) pending a Phase 2 analysis. This finding is greater than minor because it was associated with the mitigating systems attribute of equipment availability and affected the cornerstone objective to ensure the availability of a mitigating system. This violation degraded the safety of a shutdown reactor and, in accordance with Inspection Manual Chapter 0609, Appendix G, the shutdown safety function of the core heat removal guidelines was not met. Since the finding degraded the ability to recover decay heat removal once it was lost, a Phase 2 analysis was required. Because the Phase 2 shutdown risk tool is currently in draft, the analyst completed a Phase 3 analysis. This analysis resulted in the significance of this violation being very low (Green). This was primarily due to: (1) the operators having two methods to realign Train B residual heat removal to the decay heat removal mode and both being achievable within 10 minutes; and (2) the available water in the refueling water storage tank provided 9 hours of inventory and the water in the cavity increased the time to boil (Section 4OA5.3).

Report Details

Summary of Plant Status

Unit 1 began the report period at essentially 100 percent power. At 10:49 p.m. on March 16, 2003, condensate Pump 1-01 tripped on a motor fault and the operators manually tripped the reactor as a response to the subsequent loss of feedwater flow. The unit was restarted on March 17, with the closing of the main generator breakers at 10:41 p.m. The unit's power was limited to 57 percent until the condensate pump motor was repaired and reinstalled. On March 31, the unit achieved full power and operated at essentially 100 percent power for the remainder of the period.

Unit 2 operated at essentially 100 percent power for the entire report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors reviewed Station Administrative Procedure STA-634, "Extreme Temperature Equipment Protection Program," Revision 3, and Abnormal Conditions Procedure (ABN) ABN-912, "Cold Weather Preparations/Heat Tracing and Freeze Protection System Malfunction," Revision 6, to determine if these procedures were adequate to ensure that safety-related equipment would remain operable during freezing weather. On February 18, 2003, the inspectors reviewed the control room log of activities associated with the ABN-912 preparations and observed the control room operators implement a partial recovery from cold temperatures. The inspectors performed partial walkdowns of the following two systems and areas in each unit to verify that the freeze protection measures in ABN-912 had been implemented prior to the onset of freezing conditions.

- Units 1 and 2 electrical area supply fans, exhaust fans, and interlocked dampers
- Units 1 and 2 main steam and feedwater pipe area supply fans, exhaust fans, and dampers

On February 27 the inspectors reviewed the station's response to and recovery from the ice storm of February 25 and 26.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdown

a. Inspection Scope

The inspectors conducted partial walkdowns of the following three risk-significant systems to verify that they were in their proper standby alignment as defined by system operating procedures and system drawings. During the walkdowns, inspectors examined system components for materiel conditions that could degrade system performance. In addition, the inspectors evaluated the effectiveness of the licensee's problem identification and resolution program in resolving issues which could increase event initiation frequency or impact mitigating system availability.

- Unit 1 Train B motor-driven auxiliary feedwater pump in accordance with System Operating Procedure (SOP) SOP-304A, "Auxiliary Feedwater System," Revision 15, while Train A motor-driven auxiliary feedwater pump was inoperable due to scheduled calibration of the discharge pressure loop on February 6, 2003

- Unit 2 Train B safety chilled water system in accordance with SOP-815B, "Safety Chilled Water System," Revision 6, during outage on Train A safety chilled water for routine planned maintenance on February 11, 2003

- Unit 2 Trains A and B motor-driven auxiliary feedwater pumps and the turbine-driven auxiliary feedwater pump after completion of Operations Testing Procedure (OPT) OPT-206B, "AFW System," Revision 14, on February 19, 2003

b. Findings

No findings of significance were identified.

.2 Detailed Semiannual Walkdown

a. Inspection Scope

The inspectors conducted a detailed semiannual inspection of the Unit 2 auxiliary feedwater system using SOP-304B, "Auxiliary Feedwater System," Revision 9, and OPT-206B, "AFW System," Revision 14, to ascertain whether the system and its operating procedure were in accordance with the design and licensing bases of the system. Outstanding design issues were reviewed to determine if any impacted the system's ability to operate as designed. The system engineer was interviewed for the auxiliary feedwater system's open action items and issues and the system's health report. The inspectors performed walkdowns of the system during March 3-20, 2003.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors assessed the licensee's control of transient combustible materials, the materiel condition and lineup of fire detection and suppression systems, and the materiel condition of manual fire equipment and passive fire barriers during tours of the following six risk-significant areas. The licensee's fire preplans and Fire Hazards Analysis Report were used to identify important plant equipment, fire loading, detection and suppression equipment locations, and planned actions to respond to a fire in each of the plant areas selected. Compensatory measures for degraded equipment were evaluated for effectiveness.

- Fire Area AA153/154 - Units 1 and 2 safety chiller rooms on February 5-6, 2003
- Fire Zone AA96, AA97, and AA99a through e - fuel building on February 3, 2003
- Fire Zone 1SI012 - Unit 1 Train B emergency diesel generator Rooms 85 and 99A on February 18, 2003
- Fire Zone 2SB004 - Unit 2 790' safeguards corridor, Rooms 59, 64, 70, and 71, on March 11, 2003
- Fire Zone 2SB008 - Unit 2 810' safeguards corridor, Rooms 78, 79, and 82, on March 18, 2003
- Fire Zone 1SB008 - Unit 1 810' safeguards corridor, Rooms 78, 79, and 82, on March 18, 2003

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors conducted an inspection of flood protection measures at Comanche Peak. This included a review of flood analysis documentation and calculations to determine areas in the plant susceptible to flooding from internal sources. Based on that review and a review of the Comanche Peak Steam Electric Station (CPSES) probabilistic risk assessment summary document, a walkdown was performed on March 4, 2003, which included the Unit 1 South Penetration Valve Room 1-077A and Unit 2 North Penetration Valve Room 2-077A safeguards 810-foot elevation (Flood Zones 1SB143 and 2SB143) to assess the adequacy of flood protection measures regarding a postulated flood. The walkdown included determining whether mitigating systems defined in the flood analysis were in place and functional.

b. Findings

No findings of significance were identified.

1R07 Biennial Heat Sink Performance (71111.07B)

.1 Performance of Testing, Maintenance, and Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's test and cleaning methodology for the diesel generator jacket water and lube oil heat exchangers, the safety injection pump room coolers, and the residual heat removal(RHR) pump room coolers. In addition, the inspectors reviewed test data for the heat exchangers and design and vendor-supplied information to ensure that the heat exchangers were performing within their design bases. The inspectors also reviewed the heat exchanger inspection and test results. Specifically, the inspectors verified proper extrapolation of test conditions to design conditions, appropriate use of test instrumentation, and appropriate accounting for instrument inaccuracies. Additionally, the inspectors verified that the licensee appropriately trended these inspection and test results, assessed the causes of the trends, and took necessary actions for any step changes in these trends. The inspectors reviewed the methods and results of heat exchanger inspection and cleaning and verified that the methods used to inspect and clean were consistent with industry standards and the as-found results were appropriately dispositioned such that the final condition were acceptable.

b. Findings

No findings of significance were identified.

.2 Verification of Conditions and Operations Consistent with Design Bases

a. Inspection Scope

For the selected heat exchangers, the inspectors verified that the heat sink and heat exchanger condition, operation, and test criteria were consistent with the design assumptions. Specifically, the inspectors reviewed the applicable calculations to ensure that the thermal performance test acceptance criteria for the heat exchangers were being applied consistently throughout the calculations. The inspectors also verified that the appropriate acceptance values for fouling and tube plugging for the diesel generator jacket water heat exchangers remained consistent with the values used in the design-basis calculations. Finally, the inspectors verified that the parameters measured during the thermal performance tests for the diesel generator jacket water heat exchangers were consistent with those assumed in the design bases.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors verified that the licensee had entered significant heat exchanger/heat sink performance problems into the corrective action program.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

.1 Biennial Licensed Operator Requalification Evaluation

a. Inspection Scope

During the week of March 3, 2003, operator performance since the last requalification program evaluation was assessed to verify that the facility licensee's requalification program for licensed reactor operators (ROs) and senior reactor operators (SROs) supported safe power plant operation. The examination period covered May 7, 2001 to March 7, 2003. This assessment was conducted by evaluating how well the individual operators and crews had mastered the training objectives with emphasis on high-risk operator actions; assessing the facility licensee's effectiveness in evaluating and revising the requalification program for licensed operators based on their operational performance, including requalification examinations; and assessing the facility licensee's effectiveness in ensuring that the individuals who are licensed to operate the facility satisfy the conditions of their licenses as specified in 10 CFR 55.53. Concurrent with this assessment, examination security measures and procedures were evaluated for compliance with 10 CFR 55.49, and simulator performance was evaluated for conformance with requirements specified in 10 CFR 55.46.

The inspectors evaluated the licensee's sample plan for the written and operating examinations for compliance with 10 CFR 55.59 and NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1, as referenced in the facility requalification program procedures. In addition, the inspectors: (1) reviewed the number of applicants and pass/fail results of the individual operating tests and simulator operating tests administered during the annual examinations and the biennial written examinations; (2) observed facility evaluators administer 2 dynamic simulator scenarios to 3 requalification crews; (3) observed 2 facility evaluators administer 3 in-plant job performance measure to 2 licensed operators; (5) observed 6 facility evaluators administer 2 simulator job performance measures to 14 licensed operators; and observed administration of the written examinations to 14 licensed operators.

The inspectors reviewed the licensee's process for revising and maintaining an up-to-date licensed operator continuing training program, including the use of feedback from plant events and industry experience information.

The inspectors verified the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that identified licensed operator or crew performance weaknesses during training and plant operations were addressed. Remedial training and examinations for examination failures were reviewed for compliance with facility procedures and suitability of training to address identified weaknesses. The inspectors reviewed the remediation documents for nine individuals, which involved either written examination failures or simulator failures.

The medical and license maintenance records of 22 individuals were reviewed for compliance with 10 CFR Part 55, Subparts C and F, and licensee procedures. This included a review of facility records and tracking systems for licensed operator training, qualification, and watchstanding.

The inspectors assessed the adequacy of simulator performance and testing to satisfy the requirements of 10 CFR 55.46. The inspectors reviewed simulator configuration control procedures, simulator performance tests, and simulator action requests and interviewed simulator support and training personnel. The inspectors also observed the performance of requested transients on the simulator.

b. Findings

No findings of significance were identified.

.2 Quarterly Licensed Operator Requalification Activities Review

a. Inspection Scope

The inspectors observed a licensed operator evaluation session in the control room simulator and attended the critique on February 21, 2003. The scenario included: a loss of instrument power, a reactor coolant pump bearing reservoir leak that resulted in a manual reactor trip, loss of all auxiliary feedwater, loss of offsite power to safety related buses, faulted steam generators inside containment, and a recovery of the turbine-driven auxiliary feedwater pump. Simulator observations included formality and clarity of communications, group dynamics, the conduct of operations, procedure usage, command and control, and activities associated with the emergency plan.

The inspectors also attended and reviewed a lecture concerning onshift performance, prejob briefs, observations, and postjob critiques on February 20, 2003.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors independently verified that CPSES personnel properly implemented 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for two equipment performance problems identified in the following Smart Forms (SMF):

- SMF-2001-002650-00
- SMF-2002-000123-00

The inspectors also independently verified that the corrective actions and responses were appropriate and adequate.

The inspectors reviewed whether the structures, systems, or components (SSCs) were properly characterized in the scope of the Maintenance Rule Program and whether the SSC failure or performance problem was properly characterized. The inspectors assessed the appropriateness of the performance criteria established for the SSCs (if applicable).

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed five selected activities regarding risk evaluations and overall plant configuration control. The inspectors discussed emergent work issues with work control personnel and reviewed the potential risk impact of these activities to verify that the work was adequately planned, controlled, and executed. The activities reviewed were associated with:

- Freeze seal and weld repair of Unit 1 containment spray drain Valve 1CT-0208 on February 7, 2003

- Failure and repair of Unit 1 control rod drive motor Generator 1-01 for the period February 17-20, 2003

- Planned outage of the Unit 1 Train B centrifugal charging pump concurrent with boric acid Tank X-02 outage for Design Modification DMA-01-0960, boric acid Tank X-02 nitrogen sparger modification on February 17, 2003

- Failure and replacement of Unit 1 Train B diesel generator emergency starting air solenoid Valve 1-SV-3422B-2 following planned outage for routine

maintenance on the diesel generator concurrent with unplanned outage of 138 kV transmission line from Stephenville station on February 19, 2003

- Unit 1 forced outage worklist, restart of Unit 1 with only one condensate pump, and unplanned outage of the Stephenville 138 kV transmission line during the week of March 16-21, 2003

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Evolutions and Events (71111.14)

a. Inspection Scope

For the three nonroutine events described below, the inspectors reviewed operator logs, procedure use, plant computer data, and applicable SMFs and interviewed ROs to determine what occurred and to determine if the operator response was in accordance with plant procedures. When applicable the inspectors also attended Plant Event Review Committee meetings.

- On January 23, 2003, the restoration of Inverter IV1PC2, following modification work, resulted in the loss of the 1PC2 protection bus. The control room operators responded to the loss of the bus and took immediate actions in accordance with ABN-603, "Loss of Protection or Instrument Bus," Revision 6. The bus was restored within 2 minutes by the operators in the field. The inspectors responded to the control room, and attended the Plant Event Review Committee. SMF-2003-000200-00 was initiated to enter the event into the corrective action program.

- On March 16, 2003, at 9:49 p.m., Unit 1 was manually tripped following the loss of condensate Pump 1-01. Control room operators responded to alarms pertaining to the loss of the condensate Pump 1-01 and the loss of both main feedwater pumps. The operators verified that both main feedwater pumps had tripped and immediately tripped the reactor. The inspectors responded to the site and observed the control room conditions. SMF 2003-000754-00 was initiated to enter the event into the corrective action program.

- On March 17, 2003, the inspectors observed control room operators start up Unit 1 following the manual reactor trip on March 16, 2003. The startup was performed in accordance with Integrated Plant Operations IPO-002A, "Plant Startup From Hot Shutdown," Revision 15. The inspectors reviewed the estimated critical condition with reactor engineers and verified the accuracy of that estimation. Inspectors observations included formality, clarity of communications, conduct of operations, and procedure usage.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected five operability evaluations conducted by CPSES personnel during the report period involving risk-significant systems or components. The inspectors evaluated the technical adequacy of the licensee's operability determination, determined whether appropriate compensatory measures were implemented, and determined whether or not other pre-existing conditions were considered, as applicable. Additionally, the inspectors evaluated the adequacy of the CPSES problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below:

- Quick Turnaround Evaluation QTE-2003-000310-01-01, Operability evaluation of Trains A and B containment spray pumps due to a weld leak on drain Valve 1CT-0208 in the common recirculation test line on February 20, 2003

- SMF-2003-446-00, Industry operating experience concerning possible calibration discrepancies with Rosemount Model 1153 level transmitter, reviewed on March 20, 2003

- Quick Turnaround Evaluation QTE-2003-000006-02-01, Operability of Unit 2 Nuclear Instrumentation Channel 2-N-0042, reviewed March 18, 2003

- Quick Turnaround Evaluation QTE-2002-004158-01-03, Operability of Valves 1-8804A/B and 2-8804A/B control circuits, reviewed March 19, 2003

- Quick Turnaround Evaluation QTE-2002-004228-01-01, Operability of the Unit 1 safety injection interlock function for realignment to take suction from the RHR system, reviewed March 20, 2003

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed the boric acid storage Tank X-02 outage for the nitrogen sparger modification to determine if the functional capability of the system or human reliability in responding to an initiating event was affected. The inspectors evaluated the effect of the unavailability of the tank on the operator's ability to implement emergency boration in accordance with ABN-107, "Emergency Boration," Revision 7.

In addition, compensatory actions for equipment problems, shift orders, and caution tags were reviewed to determine that CPSES personnel were identifying operator workarounds at an appropriate threshold and that the equipment problems were identified in the corrective action program.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

.1 Biennial Inspection

a. Inspection Scope

The inspectors reviewed nine permanent plant modification packages and associated documentation, such as drawings, calculations, review screens, and safety evaluations, to verify that they were performed in accordance with regulatory requirements and plant procedures. The inspectors also reviewed procedures governing plant modifications to evaluate the effectiveness of the programs for implementing modifications to risk-significant systems, structures, and components, such that these changes did not adversely affect the design and licensing basis of the facility. Permanent plant modifications and procedures reviewed are listed in the attachment to this report.

The inspectors interviewed the cognizant engineers for selected modifications as to their understanding of the modification packages.

The inspectors reviewed the licensee's biennial design control assessments and evaluated the effectiveness of the licensee's corrective action process to identify and correct problems associated with the performance of permanent plant modifications. In this effort, the inspectors reviewed the assessments and corrective action documents listed in the attachment to this report.

b. Findings

No findings of significance were identified.

.2 Annual Inspection

a. Inspection Scope

The inspectors reviewed Permanent Plant Modification FDA-2001-002990-01-00, "Pre-Charge Circuit Installation for All 10 kVA Inverters," including SMF-2001-002990-00, associated 10 CFR 50.59 screenings, and the implementing work order. Inspectors also interviewed the system engineer and observed the postmodification field conditions. The modification consisted of the installation of a dc precharge circuit on safety-related and nonsafety-related 10 kVA inverters. This modification allows the precharging of a filter capacitor bank prior to closing the breaker, thus reducing the current inrush that

was subsequently causing dc bus transients. The modification affected Units 1 and 2 and did not require a license amendment.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors witnessed or reviewed the results of four postmaintenance tests for the following four maintenance activities:

- Replacement of Unit 1 feedwater Heater 1-4A normal drain level control Valve 1-LV-2525 valve positioner on January 23, 2003
- Replacement of an ac output ammeter on Inverter IV1PC2 on March 19, 2003
- Unit 1 condensate Pump 1-01 motor replacement on March 29-30, 2003
- Unit 2 atmospheric relief Valve 2-03 positioner replacement on April 1-2, 2003

In each case, the associated work orders and test procedures were reviewed against the attributes in Inspection Procedure 71111, Attachment 19, to determine the scope of the maintenance activity and determine if the testing was adequate to verify equipment operability.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the adequacy of periodic testing of important nuclear plant equipment, including aspects such as preconditioning, the impact of testing during plant operations, and the adequacy of acceptance criteria. Other aspects evaluated included test frequency and test equipment accuracy, range, and calibration; procedure adherence; recordkeeping; the restoration of standby equipment; test failure evaluations; jumper control (if applicable); and the effectiveness of the licensee's problem identification and correction program. The following five surveillance test activities were observed or reviewed by the inspectors:

- Unit 2 Train B motor-driven auxiliary feedwater pump surveillance test run in accordance with OPT-206B, "AFW System," Revision 14, performed on February 20, 2003

- Unit 2 Train A centrifugal charging pump surveillance test run in accordance with OPT-201B, “Charging System,” Revision 6; and SOP-103B, “Chemical and Volume Control System,” Revision 6, performed on March 4, 2003

- Unit 1 turbine-driven auxiliary feedwater pump surveillance test run in accordance with OPT-206A, “AFW System,” Revision 23, performed on March 13, 2003

- Unit 2 Train B RHR pump surveillance test run in accordance with OPT-203B, “Residual Heat Removal System,” Revision 10, performed on March 20, 2003

- Sampling and testing of a diesel fuel oil shipment for the Unit 2 Train B emergency diesel generator storage tank in accordance with COP-609A, “Diesel Generator,” Revision 1; and CHM-160, “Diesel Fuel Oil Testing Program” Revision 2, performed on March 27, 2003

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the following two temporary modifications and associated 10 CFR 50.59 reviews. The temporary modifications were verified to be installed in accordance with plant documentation and procedures. The postinstallation tests were reviewed to confirm the tests were adequate and that the test results were satisfactory.

- Installation of temporary box fan and removal of the back door to the leading edge flow meter Cabinet CPX-FWELRK-50 as described in SMF-2002-2153 and associated evaluations

- Installation of temporary cooling for the Unit 2 exciter housing after discovery of a leak in the normal exciter cooling coils. The installation was performed in accordance with Work Order 4-03-147277-00 and Final Design Authorization FDA-2003-000144-02-00.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency exercise conducted on March 26, 2003, with the Green team. Observations were conducted in the simulator control room and the emergency operations facility and included the opportunities for emergency classification, offsite notification, and protective action recommendations during the scenario. This evaluation included reviewing the scenario and drill objectives, observing licensee performance in the emergency facilities, observing the licensee's critique, and discussing observations and the licensee's findings with the emergency preparedness manager.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Initiating Events

a. Inspection Scope

The inspectors reviewed a sample of performance indicator data submitted by the licensee regarding the initiating events cornerstone to verify that the licensee's data was reported in accordance with the requirements of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The sample included data taken from control room RO logs, the SMF database, and licensee event reports for January through December 2002, for both units for the following performance indicators:

- Unplanned scrams per 7,000 critical hours
- Unplanned scrams with loss of normal heat removal
- Unplanned power changes per 7,000 critical hours

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors reviewed the Units 1 and 2 SMF data base of closed SMFs to determine if recurring problems were being properly identified, characterized, and entered into the corrective action program for evaluation and resolution. The inspectors selected nine SMFs for review that had been issued between November 1998 and January 2003. The inspectors evaluated the nine SMFs and associated work orders to determine that the licensee's problem identification was complete and accurate. Also, the licensee's efforts in establishing the scope of problems, generic implications, and common cause were evaluated by reviewing pertinent work orders and action plans. The inspectors determined whether the licensee had completed the corrective actions in a timely manner commensurate with risk associated with the issue.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup (71153)

Unit 1 Reactor Trip Due to the Loss of the Condensate Pump 1-01 Motor

a. Inspection Scope

On March 16, 2003, at 9:49 p.m., Unit 1 was manually tripped following the loss of condensate Pump 1-01. The operators stabilized the unit and operations entered Procedure IPO-002A, "Startup From Hot Standby," Revision 15, approximately 5 hours after the trip. The root cause of the condensate Pump 1-01 motor failure was a degradation of the insulation between the windings, which caused a phase-to-phase short. The inspectors responded to the site; reviewed operator logs, procedure use, and computer printouts; interviewed operators and the shift manager; and walked down the control boards. The licensee's posttrip review package was reviewed in accordance with procedure Operations Department Administration Manual ODA-108, "Post RPS/ESF Actuation Evaluation," Revision 8.

b. Findings

No findings of any significance were identified.

4OA5 Other Activities

.1 Closed: URI 50-445/0203-01: Alternative Safe Shutdown Capability

In NRC Inspection Report 50-445/02-03; 50-446/02-03, the NRC identified a violation of CPSES Technical Specification 5.4.1.a for failure to establish and maintain adequate procedures implementing the fire protection program. In particular, ABN-803A, "Response to a Fire in the Control Room or Cable Spreading Room," failed to direct

operators to transfer control of the Train B power-operated relief valve from the control room, leaving it vulnerable to spurious operation in the event of a fire in the control room envelope requiring control room evacuation and remote shutdown. This finding was left unresolved pending determination of its risk significance.

This issue was determined to be more than minor, because it is associated with the reactor safety mitigating systems cornerstone and affects the cornerstone objective as described in NRC Manual Chapter 0612, Appendix B. Specifically, this finding affects the licensee's capability to mitigate the consequences of a fire in the control room in order to achieve and maintain safe-shutdown. The operators would use ABN-803A in the event of a fire in the control room or in the cable spreading room. The Phase 2 risk evaluation performed using the NRC's Significance Determination Process described in Manual Chapter 0609, Appendix F, indicated that the significance of this finding could be greater than very low (Green). The Phase 3 significance determination resulted in the significance of this violation being very low (Green). This was primarily due to: (1) the low likelihood that a fire could start in the control room and be of such severity as to result in control room evacuation; and (2) the low likelihood that fire damage could cause failures in the Train B power-operated relief valve circuitry, which would result in the spurious opening of the power-operated relief valve.

With the determination of the final risk significance of the finding, Unresolved Item 50-445/0203-01 is closed. This Green finding is a violation of CPSES Technical Specification 5.4.1.a and is being treated as a noncited violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-445/0206-01).

.2 Closed: URI 50-445,446/02-10-01: Possible nonconservative calibration/efficiency determination of radiation portal monitor detectors.

Procedure RPI-886, "Calibration of the Eberline PM-7 Personnel Monitor," Revision 0, was not written in accordance with the vendor's technical manual recommendations. When calibrated with the above procedure, detector efficiencies ranged from 1.0 to 1.4 percent, which were below the vendor's recommendations. Utilizing the vendor's technical manual calibration method, detector efficiencies should range between 6 and 11 percent.

On January 21, 2003, the licensee provided the inspectors with an evaluation of the two calibration methods and the results of detector sensitivities. From this review, the inspectors concurred with the licensee's conclusion that either calibration method would be satisfactory and there were no significant statistical differences in detector sensitivity. Results of the evaluation are documented in the licensee's corrective action program as SMF 2002-4278.

.3 Closed: URI 50-445/0205-01: Inadequate Low Temperature Overpressure Protection (LTOP) surveillance procedure resulted in Train B RHR Being Inoperable

Introduction. A Green noncited violation was identified for failure to maintain an adequate calibration procedure for the LTOP temperature channel which resulted in the Train B RHR system being inoperable.

Description. In NRC Inspection Report 50-445/02-05; 50-446/02-05, the NRC documented a self-revealing violation of CPSES Technical Specification 5.4.1.a for failure to establish and maintain an adequate surveillance procedure for the LTOP temperature channel. This violation resulted in the Train B RHR system being inoperable while Technical Specification 3.9.6 required both trains to be operable. Specifically, the procedure failed to state that the performance of the surveillance would interlock closed the reactor coolant system (RCS) hot leg to Train B RHR pump suction Valve 1-8702B.

Analysis. This finding was greater than minor because it was associated with the mitigating systems attribute of equipment availability and affected the cornerstone objective to ensure the availability of a mitigating system. This violation degraded the safety of a shutdown reactor and, in accordance with Inspection Manual Chapter 0609, Appendix G, the shutdown safety function of the core heat removal guidelines was not met. Since the finding degraded the ability to recover decay heat removal once it was lost, a Phase 2 analysis was required. This violation was left unresolved pending determination of its risk significance through the completion of a Phase 2 analysis.

Because the Phase 2 shutdown risk tool is currently in draft, the analyst completed a Phase 3 analysis in accordance Manual Chapter 0609, "Significance Determination Process." This analysis included completing the draft Phase 2 and validating this with a bounding hand calculation. The Phase 3 significance determination resulted in the significance of this violation being very low (Green). This was primarily due to: (1) the operators having two methods to realign Train B RHR to the decay heat removal mode and both were achievable within 10 minutes; and (2) the available water in the refueling water storage tank providing 9 hours of inventory and the water in the cavity increasing the time to boil. With the determination of the final risk significance of the finding, Unresolved Item 50-445/0205-01 is closed.

Enforcement. This Green finding is a violation of Technical Specification 5.4.1.a; however, because of its very low safety significance and because it was entered into the corrective action program as SMF-2002-3317, it is being treated as a noncited violation in accordance with Section VI.A.1 of the NRC Enforcement Policy (NCV 50-445/0206-02).

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. L. Terry, Senior Vice President and Principal Nuclear Officer, and other members of licensee management at the conclusion of the inspection on April 14, 2003. Proprietary information was reviewed by the inspectors during the inspections and returned to the licensee.

The team leader for the triennial fire protection inspection discussed the final risk significance of the alternative shutdown finding (see Section 4OA5.1 of this report) with Mr. Roger Walker, Regulatory Affairs Manager, on March 18, 2003. Mr. Walker acknowledged the risk significance.

The inspectors presented the heat sink performance inspection results to Mr. M. Blevins, Vice President and Deputy to the Senior Vice President, and other members of licensee management on March 7, 2003. Licensee management acknowledged the inspection findings. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Proprietary information was reviewed by the inspectors and left with the licensee at the end of the inspection.

The inspectors presented the licensed operator requalification program inspection results to Mr. M. Blevins, Vice President and Deputy to the Senior Vice President, and other members of licensee management on March 7, 2003. Licensee management acknowledged the inspection findings. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Proprietary information was reviewed by the inspectors and left with the licensee at the end of the inspection.

On March 14, 2003, the inspectors presented the permanent plant modifications inspection results to Mr. Dave Moore, Director of Nuclear Engineering, and other members of licensee management. At the conclusion of this meeting, the inspectors asked the licensee's management whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Even though proprietary information was reviewed during this inspection period, no proprietary information is included in this report.

ATTACHMENT

Supplemental Information

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Blevins, Vice President and Deputy to the Senior Vice President
S. Bradley, Supervisor, Radiation Protection
J. Curtis, Manager, Radiation Protection
E. Evans, Plant Modifications Manger
R. Flores, Vice President Operations
J. Kelley, Vice President, Nuclear Engineering and Support
E. Meaders, Nuclear Training Department Manager
D. Moore, Director of Nuclear Engineering
M. Sunseri, System Engineering Manager
C. Terry, Senior Vice President & Principal Nuclear Officer
R. Walker, Manager, Regulatory Affairs

NRC

D. Loveless, Senior Reactor Analyst, Region IV

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-445/0206-01	NCV	Failure to establish and maintain adequate procedures covering activities associated with fire protection program implementation (Section 4OA5.1).
50-445/0206-02	NCV	Inadequate Low Temperature Overpressure Protection (LTOP) surveillance procedure resulted in Train B RHR Being Inoperable (Section 4OA5.3)

Closed

50-445/0203-01	URI	Failure to establish and maintain adequate procedures covering activities associated with fire protection program implementation (Section 4OA5.1).
50-445;446/0210-01	URI	Possible nonconservative calibration/efficiency determination of radiation portal monitor detectors (Section 4OA5.2).
50-445/0205-01	URI	Inadequate Low Temperature Overpressure Protection (LTOP) surveillance procedure resulted in Train B RHR Being Inoperable (Section 4OA5.3)

PARTIAL LIST OF DOCUMENTS REVIEWED

Procedures:

NUMBER	TITLE	REVISION
ECE-1.03-DEF	Engineering Procedures Definitions Index	6
ECE-1.06	Engineering Quality Review Teams	5
ECE-5.01	Design Control Programs	4
ECE-5.01-08	Electronic Design Change Process	5
ECE-5.03	Calculations	12
ECE-5.05	Design Drawings and Special Documents	9
M.M.-P0-3357	Emergency Diesel Engine Jacket Water Cooler Cleaning	0
NQA-1.08	Development and Control of Evaluation Plans	3
NQA-3.01	Evaluation Program	6
NTP-103	Design	10
NTP-105	Implementation	16
NTP-603	Training Procedures Manual, "Simulator Certification Management"	12
ODA-315	Licensed Operator Maintenance Tracking	4
OPT-214A	Diesel Generator Operability Test	17
SOMI-001	Simulator Operation and Maintenance Instruction, "Simulator Facility Security and Protection"	4
SOMI-002	Simulator Operation and Maintenance Instruction, "Simulator Hardware Maintenance"	2
SOMI-003	Simulator Operation and Maintenance Instruction, "Simulator Disaster Recovery Plan"	0

Procedures:

NUMBER	TITLE	REVISION
SOMI-005	Simulator Operation and Maintenance Instruction, "Simulator Plant Computer"	0
SOMI-008	Simulator Operation and Maintenance Instruction, "Simulator Initial Conditions Control"	4
SOMI-009	Simulator Operation and Maintenance Instruction "Simulator Configuration Management"	6
SOMI-010	Simulator Operation and Maintenance Instruction, "Simulator Certification Testing"	13
SOMI-013	Simulator Operation and Maintenance Instruction, "Simulator Cycle Specific Core Model Updates"	1
SOMI-014	Simulator Operation and Maintenance Instruction, "Simulator Differences"	0
STA-121-2	License Operator Physicals and License Application Process	2
STA-302	Station Records	19
STA-716	Modification Process	16
STA-734	Service Water System Fouling Monitoring Program	2
TRA-204	Licensed Operator Requalification Training	13

Miscellaneous:

NUMBER	TITLE	REVISION
	Open Simulator Action Requests	03/01/03
	Simulator Action Requests Closed in 12 Months Ending	03/01/03
	Simulator Action Request Status	03/03/03
	Simulator Organization Chart	3/01/03

Miscellaneous:

NUMBER	TITLE	REVISION
	Evaluation Plan: Design Control	6
	Reactor Operator Log Sheets - NSSS and BOP Log - Unit 1 Modes 1,2,3	
13	Guideline for Simulator Training Standards	11/6/98
Drawing E-1176	Thermxchanger No. 1820 Type NSP-1 PASS Lube Oil Cooler	20
Drawing E-1153	Thermxchanger No. 2422 Type NSP-1 PASS Jacket Water Cooler	24
EVAL-2002-028	Training and Qualification	
EVAL-2002-047	Non-Routine Operations	
Specification No. 2323-MS-81	Emergency Fan Coil Units	May 2, 1988
Training Supplement for ECE-5.01	Trend Code Evaluations	3/13/03
TXX-930031	NRC Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment	January 26, 1990

Simulator Performance Tests:

PTAN 01 04	Manual Reactor Trip	06/19/02
PTAN 02 04	Manual Reactor Trip	08/05/02
PTAN 01 07	Simultaneous Trip of All Reactor Coolant Pumps	06/19/01
PTAN 02 07	Simultaneous Trip of All Reactor Coolant Pumps	08/02/02
PTAN 01 09	Main Turbine Trip	07/12/01
PTAN 02 09	Main Turbine Trip	08/02/02

PTAN 01 15	Normal Operations Test	06/18/01
PTAN 02 15	Normal Operations Test	01/15/02

Simulator Action Requests:

01SA0200	Rod Shadowing Effects
02SA0029	ED08N Loss of 1C4
02SA0038	Problem With SG Response to Loss of 1EC2 (Malf ED08F)
02SA0045	1PK-455B _ C Are Too Far Open
02SA0020	Relap Pressurizer Temperatures
02SA0107	CST level decreasing continuously and Drn Cir 6A/B flows Erratic
02SA0116	System Response to Degraded Voltage
02SA0118	FDA-2000-003111-01-00 Changed U1 Mn Turb Expansion Limits
02SA0151	S/G Levels Cycling 325 Deg Stm Dumps Closed Placing RHR in Service
02SA0158	RELAP Drops Out When LOCA Initiated in Mid-Loop
02SA0182	Suspect Core / Sec Response Following Turb Trip From Low Power
02SA0226	Condensate System Startup
02SA0246	Letdown Response While Pressurizing RHR in Mode 4
02SA0259	Large Break LOCA Response Not Repeatable
02SA0265	LOCA Response 100F Superheat With RVLIS Light Still On
02SA0338	Prepare U1C9 MOL Core Model and ICs

02SA0417	RELAP Droupout During Pull to Criticality
02SA0478	RELAP Quit While Running In Midloop 1C
02SA0505	FDA-2002-004119-01 Lift Lead on Core Exit Thermocouple
02SA0513	Sim Boration Counter Does Not Operate Like Counter On Unit 1
02SA0542	Fix Scale Display On New CB10 Yokogawa Digital Recorder

Simulator Dynamic Evaluations:

LO49.E02.E4P	Preparation Week
LO49.E02.E41	Week 1
LO49.E02.E42	Week 2
LO49.E02.E43	Week 3
LO49.E02.E44	Week 4
LO49.E02.E45	Week 5

Job Performance Measures:

LO49.E02.E5P	Preparation Week
LO49.E02.E51	Week 1
LO49.E02.E52	Week 2
LO49.E02.E53	Week 3
LO49.E02.E54	Week 4
LO49.E02.E55	Week 5

Written Examinations:

LO49.E02.E25, “LORT Annual RO Written Examination,” Approved February 11, 2003
LO49.E02.E15, “LORT Annual SRO Written Examination,” Approved February 11, 2003

Calculations:

NUMBER	TITLE	REVISION
2-ME-0042	Minimum Allowable Service Water Flow to the Diesel Generator	0
ME(B)-391	Minimum Allowable Service Water to Diesel Generators	3
ME-CA-0011-305	Diesel Jacket Water Heat Exchanger Fouling Factor Analysis	2
1-EB-302-6	As-Built HVAC Calculation Safety Injection Pump Rooms	4

Calculations:

NUMBER	TITLE	REVISION
1-EB-302-5	Unit 1 As-Built HVAC Calculations RHR Pump Rooms	4
2-HV-0044	Safety Injection Pump Rooms Unit 2	0
CS-CA-0000-5199	Reconciliation and Qualification of ESF Thermal Insulation on Piping Systems	0
2-HV-0048	RHR Pump Rooms Unit 2	1
CS-CA-0000-5157	ESF Thermal Insulation Requirements for CT, SI, CS, RHR, & CCW Systems	0

Smart Forms:

SMF-2001-000409-00
SMF-2001-001190-00
SMF-2002-001382-00
SMF-2001-001498-00
SMF-2001-001786-00
SMF-2001-002403-00
SMF-2002-000156-00
SMF-2001-000467-00
SMF-2000-2384
SMF-2001-1768
SMF-2002-0303
SMF-2002-2495
SMF-2003-0592
SMF-2003-0709
SMF-2003-0733
SMF-2003-0740

Smart Forms Reviewed for 71152 Inspection:

1999-0584-00	2000-0445-00	2000-1768-00	2000-2491-00
1999-0703-00	2000-1016-00	2000-1880-00	2001-0260-00
1999-3061-00	2000-1247-00	2000-2396-00	2001-1321-00

Work Orders:

3-98-314431-01
3-99-314431-01
4-00-131098-00
3-01-314431-01
3-98-314432-01
3-99-314432-01
3-01-314432-01

4-00-130733-00
3-98-328362-01
4-00-131095-00
3-01-328363-01
4-00-130734-00
3-02-342678-01

Final Design Authorization (FDA) Packages:

NUMBER	TITLE
FDA-1999-0241-04-01	Modify Unit 1 Actuators 1-8716A-MO and 1-8716B-MO to Increase Overall Gear Ratio to Provide Increased Actuator Capability with Sufficient Margin to Overcome Pressure Locking
FDA-1999-2297-01-00	Provide Permanent Lead Shielding on the Unit 1 Lower PZR Spray Lines in Loops 1 and 4
FDA-1999-2307-01-01	Addition of Two Layers of Lead Shielding Blankets on Both Lower Pressurizer Spray Lines
FDA-1999-3418-01-02	Install a 3/4" Throttling Valve in Each of the RCP Seal #3 Water Standpipe Fill Lines and a 3" Throttling Valve in the RMUW Header Supply
FDA-2000-1075-01-00	Revise DBD-ME-250 and DBD-ME-241 to Reflect Corrected Design Requirements for the RMW Supply to the PRT and for the Applicable Mode and Allowable Time for PRT Cooldown Following Full Discharge of PZR Steam Volume to the PRT
FDA-2000-1556-01-00	Revise Pressure Indicating Switch Setpoints
FDA-2001-1458-01-00	Provide Stiffener Plates to the AF Turbine Driven Pump Pedestal
FDA-2002-3339-01-00	Install a Filter/Screen and Two Isolation Valves on the Common Suction Line for CP1-CFAPCH-02, CPX-CFAPCH-02, and CP2-CFAPCH-02
FDA-2002-4167-01-00	Provide Repair Weld Overlay Details for CRDM Intermediate Seal Weld Leak

Calculations:

S-CC-1-N092, Revision 0, CN3, June 18, 2001

MEB093, Revision 1, January 30, 1990

Evaluations/Vendor Letters:

EVAL-2000-050, “FDA Evaluation,” September 25, 2000

EVAL-2001-015, “Engineering Quality Review Team Evaluation,” March 21, 2001

Westinghouse Letter WPT-16111 dated June 14, 2000, “Installation of Permanent Lead Shielding on the Unit 1 Lower Pressurizer Spray Line Stress Problem 1-043D”

Westinghouse Letter WPT-16156 dated October 17, 2000, “Pressurizer Relief Tank Cooling Requirements”

VL-02-000209, “Structural Analysis of TXU Auxiliary Feed Pumps CP1-AFAPTD-01 and CP2-AFAPTD-01,” February 19, 2002

LIST OF ACRONYMS

ABN	abnormal conditions procedure
AFW	auxiliary feedwater
CFR	Code of Federal Regulations
CPSES	Comanche Peak Steam Electric Station
ESF	engineered safety feature
LOCA	loss of coolant accident
LTOP	low temperature overpressure protection
NCV	noncited violation
NEI	Nuclear Energy Institute
OPT	operations testing
RO	reactor operator
RHR	residual heat removal
SDP	significance determination process
SMF	smart form
SSC	structures, systems, or components
SOP	system operating procedure
SRO	senior reactor operator
STA	station administrative procedure
URI	unresolved item