

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Inspection Report: 50-445/95-18  
50-446/95-18

Licenses: NPF-87  
NPF-89

Licensee: TU Electric  
Energy Plaza  
1601 Bryan Street, 12th Floor  
Dallas, Texas

Facility Name: Comanche Peak Steam Electric Station, Units 1 and 2

Inspection At: Glen Rose, Texas

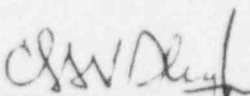
Inspection Conducted: September 19-28, 1995

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11-14-95  
Date

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of the quality oversight and corrective action program.

Results (Units 1 and 2):

Operations

- The inspectors noted that the licensee had a high number of operator work-arounds (approximately 24) in comparison to other facilities. However, the licensee had clearly documented each work-around and implemented appropriate compensatory actions, such as procedural changes (Section 3.6).

- The inspectors observed well-controlled control room activities and excellent communication among operators during plant tours (Section 7).

#### Engineering

- The licensee engineering organization had performed thorough operability evaluations, as documented in several technical evaluations and quick turnaround evaluations (Sections 3.3 and 3.5).

#### Plant Support

- The inspectors concluded that the plant material condition was excellent. The inspectors identified only a few minor deficiencies during plant tours, and these were promptly addressed by the licensee (Section 7).

#### Safety Assessment and Quality Verification

- The licensee had implemented an effective corrective action program, which encouraged identification and resolution of problems. The inspectors concluded that all personnel understood that the primary method for reporting deficiencies and generally reported deficiencies at a low threshold consistent with well-documented management expectations (Section 2.1.2).
- The licensee's methods for initial assessment of identified deficiencies allowed for prompt action, and appropriate prioritization and assignment of actions. The inspectors concluded that the licensee had implemented an excellent method to review and disposition new operations notification and evaluation forms, and an effective process of investigating events with the performance enhancement review committee process (Section 2.1.3).
- The licensee had recently implemented an effective prioritization method for deficiencies and had effectively tracked newer items; however, old low-priority items were not centrally tracked. The inspectors concluded that the licensee's information related to open operations notification and evaluation forms was not useful because the forms were often closed before the corrective actions were completed. The licensee was attempting to develop more meaningful backlog trends (Sections 2.2.1 and 2.2.2).
- The licensee had implemented effective, comprehensive, corrective actions for deficiencies, which addressed the identified root causes, and appropriately considered generic impact of the deficient conditions. The licensee identified effective corrective actions in operations notification and evaluation forms, licensee event reports, and plant incident resolutions. Although the inspectors found some of the documentation to be unclear or incomplete, the implementation of the corrective actions was unaffected (Sections 3.1, 3.2, and 3.4).

- The licensee's operating experience feedback program was exceptionally good, with issues being thoroughly reviewed in a timely manner, and corrective actions being tracked to completion (Section 4).
- The licensee had performed comprehensive nuclear overview department audits and external audits, and had tracked all corrective actions to completion. Based on interviews, the inspectors concluded that communication between the nuclear overview department and the line organizations was effective and timely. In addition, the licensee had identified adverse trends and initiated appropriate corrective actions (Sections 5.1 and 5.2).
- The licensee had a generally well-implemented management monitoring program. The program included assessment criteria and distributed tour assignments to provide broadness and consistency. However, the inspectors were concerned that the licensee had inconsistently documented the management tours (Section 5.4).
- The onsite safety review committee (Station Operations Review Committee) and offsite safety review committee (Operations Review Committee) appeared to be effective forums for discussing and reviewing site activities with an apparent focus on safety (Section 6).

Summary of Inspection Findings:

There were no inspection findings.

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - List of Documents Reviewed

## DETAILS

### 1 INTRODUCTION

#### 1.1 Objective

The objective of this inspection was to evaluate the licensee's quality oversight and corrective action programs. In particular, the inspection evaluated the effectiveness of licensee controls in identifying, evaluating, and correcting plant problems and deficiencies, so as to preclude their recurrence and to minimize the impact on overall plant safety.

#### 1.2 Scope

The inspection was conducted using NRC Inspection Procedure 40500, "Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems," and performed by three inspectors the first week and two inspectors the second week. The inspection focused on licensee performance in the engineering and operations areas.

#### 1.3 Inspection Methodology

The inspection was performed by means of the following principal methods.

##### 1.3.1 Document Review (approximately 50 percent of the inspection effort)

The inspectors reviewed licensee documents associated with the corrective action program activities. The review focused on the following types of recently issued licensee documents: program implementing procedures, deficiency and problem identification documents, licensee event reports, corrective maintenance documents, equipment operability evaluations, quality assurance audit and surveillance reports, independent self-assessment reports, and performance indicator and trending documents.

The primary emphasis of these reviews was to evaluate the overall quality of the licensee's program, including the comprehensiveness of problem identification and review processes; the thoroughness and validity of root-cause evaluations; the adequacy of corrective action evaluation, tracking and implementation; and the effectiveness of management feedback programs for verifying the adequacy of identified corrective actions. These reviews also served to develop insights for independent inspection of specific areas of potential weakness in the licensee's corrective action program.

### 1.3.2 Personnel Interviews (approximately 30 percent of the inspection effort)

The inspectors conducted interviews with senior plant managers. The primary emphasis of these interviews was to discuss with the senior plant managers their self-assessment of the major problems in their area of responsibility, the method used to validate the significance of these problems, their approach to solving the problems, and their methods for measuring progress in solution of the problems.

The inspectors also conducted interviews with selected working-level maintenance and operations personnel. The primary emphasis of these interviews was to determine the working level knowledge and implementation of the corrective action program. The interviews also attempted to determine how well the program was being implemented from the perspective of the working level personnel.

### 1.3.3 Independent Verification (approximately 20 percent of the inspection effort)

The inspectors performed in-plant inspections to assess whether problems were being identified and corrected. Additionally, the inspectors selected and verified implementation of specific corrective actions for safety-significant problems. The inspectors determined the relative safety significance of the systems involved from the licensee's individual plant evaluation. The selected systems included the auxiliary feedwater system and the emergency diesel generator system. The inspectors reviewed examples of recent plant work activities on these systems to identify potentially safety-significant weaknesses or deficiencies that should have been identified and corrected by the licensee's corrective action program.

## 2 CORRECTIVE ACTION PROGRAMS

### 2.1 Deficiency Reporting

#### 2.1.1 Reporting Methods

Station Administrative Manual Procedure STA-421, "Operations Notification and Evaluation," Revision 4-1, described the process to report potential adverse conditions. The operations notification and evaluation (ONE) form process was the only approved mechanism to report potential adverse conditions. Procedure STA-421 had two attachments which gave examples of conditions for when ONE forms should be initiated and when they should not be initiated. However, the licensee used other processes, such as technical evaluations and work requests, to identify conditions that did not reach the adverse condition threshold.

The licensee used Procedure STA-504, "Technical Evaluations," Revision 11, to request and document technical information, evaluation or assistance within an organization, from one organization to another, or from unit to unit. In addition, the licensee used ONE form quick turnaround technical evaluations (ONE-QTEs) in conjunction with the ONE form process to determine operability or immediate reportability concerns. Procedure STA-504, Step 6.3.2.8, required the individual performing the technical evaluation to determine if the technical evaluation identified a condition adverse to quality. If a condition adverse to quality was identified, the technical evaluation would have to be closed and a ONE form initiated. Therefore, the technical evaluation process had a built-in mechanism to ensure that adverse conditions were properly evaluated using the ONE form process.

The inspectors interviewed various licensee management, supervisory, and non-supervisory personnel in order to ascertain their understanding of the corrective action process. All personnel demonstrated a sufficient knowledge of the corrective action process, especially the ONE form procedure. Individuals were able to give general examples of when a ONE form should be written versus using a technical evaluation or a work request. All personnel interviewed indicated that they had initiated ONE forms.

#### 2.1.2 Reporting Threshold

Procedure STA-421 included general guidance and examples reflecting licensee management's expectations regarding the conditions desired to be documented on ONE forms. The licensee expected their staff to report essentially all unexpected abnormal conditions not identified by existing programmatic checks. For example, if a clearance tag was misplaced but caught by the second checker (i.e., identified as part of the clearance tagging process), this was not expected to be reported. However, if the tag was found incorrectly hung after the second check was completed, that was expected to be reported. The licensee also did not expect conditions that were correctable by routine maintenance to be reported by a ONE form. These conditions were required to be reported by a work request. All conditions required to be reported by 10 CFR Parts 50.72 or 50.73 were also required to be documented on a ONE form. Most managers interviewed stated that the reporting threshold was proper. Interviews with nonsupervisory personnel and reviews of lists of ONE forms reflected that the licensee had adequately implemented this relatively low threshold. Nevertheless, some managers noted that the threshold was somewhat inconsistent between various departments and work groups.

The inspectors interviewed the managers of system engineering, operations, and maintenance concerning the corrective action process and self-assessments. All the managers indicated that management had expressed their expectations concerning initiation of ONE forms through department meetings and sometimes through lessons-learned training. The maintenance and operations managers

indicated that their personnel were not hesitant to initiate ONE forms. The inspectors confirmed this aspect through interviews with supervision and working level personnel. The system engineering manager did note some reluctance by the system engineers to write ONE forms, and he was currently working on improving performance in this area.

The maintenance and operations departments had conducted informal departmental self-assessments. The inspectors viewed these self assessments as positive indicators. The licensee was identifying problem items and areas of concern and tracking these for resolution internal to each department, unless the concern met the corrective action threshold. In addition, the maintenance department was using industry knowledge to develop their self-assessment program.

### 2.1.3 Initial Assessment

Procedure STA-421 required all ONE forms to be forwarded to the shift manager for immediate assessment. The procedure required that conditions that had a potential operational significance to be delivered in person by the originator. This requirement ensured that all conditions were assessed and acted on in a timely manner.

The licensee held a ONE form committee meeting each weekday morning to review ONE forms initiated since the previous meeting. The inspectors attended two of these meetings and noted that the committee discussed each ONE form to understand the condition in enough detail to judge the appropriate priority (defined in Procedure STA-422, "Processing of ONE Forms," Revision 11), and to determine the appropriate disposition, including assignment of a responsible manager for each action. The ONE form included a list of potential dispositions. During the observed meetings, the committee appropriately addressed all the apparent deficiencies identified and that the committee addressed all the issues in a generally excellent manner. The committee explicitly addressed interim actions, in addition to assigning longer-term actions.

A potentially significant event occurred during the inspection involving the calibration of a linear power range nuclear instrument using data from the wrong unit. The licensee reported this issue on ONE Form 95-915. Because of the significance of the issue, the licensee convened a performance enhancement review committee meeting, which the inspectors attended. The plant manager conducted this meeting, which was attended by all involved managers and personnel, to bring all relevant facts out in a nonthreatening, nonpunitive environment. The discussions were effective in piecing together how the error occurred and who was involved, enabling licensee management to decide how to deal with the problem. The licensee corrected the condition by recalibrating the instrument channel using the correct data. Actions to prevent recurrence had not been determined by the end of the inspection.

During interviews, management personnel indicated that personnel who initiated ONE forms would receive copies of the ONE forms after the initial categorization and assignment to a responsible individual. However, when the inspectors questioned nonsupervisory personnel, approximately half stated that they did not receive copies of the ONE forms. In addition, the inspectors reviewed ONE Forms 95-314, 95-640 and 95-829 that were coded "L - Further Action not Required (Justify Below)." The inspectors interviewed the individuals who initiated these three ONE forms. All three individuals indicated that they did not receive copies of the dispositioned ONE forms. However, they were aware of the disposition and were satisfied with the response. Procedure STA-422, Step 6.5.11, "Noted, Further Action Not Required," stated that a copy of the processed ONE form should be provided to the originator. Although the inspectors identified these isolated instances where management's expectations were not being followed, the inspectors did not note any negative impact of this oversight. The licensee determined through additional interviews that copies were routinely provided to the originators of ONE forms, and concluded that no further corrective action was warranted. The inspectors concluded that the licensee's response to this concern was adequate.

## 2.2 Corrective Actions

### 2.2.1 Prioritization

The licensee implemented a new prioritization scheme for ONE forms (and actions resulting from their disposition) in July 1995. The priorities reflected an adverse impact on the plant or on regulatory requirements, as opposed to probabilistic risk assessment criteria as determined by the licensee's individual plant evaluation. Priority 1 required immediate resolution. Priority 2 required resolution within 24 hours (consistent with operability determination timeliness guidance). Priority 3 required resolution within 30 days (consistent with the reportability requirements of 10 CFR 50.73). Priority 4 did not have a specific resolution guideline. The licensee categorized significant operational events as plant incident resolutions and as a Priority 3 or higher.

Responsible managers had prioritized the actions from older ONE forms. The new scheme was consistent with that implemented for work orders, and included guidance for revising the priority and for extending due dates. The licensee reviewed the priorities of some older items and assigned priorities based on the new scheme. However, this was not done for all outstanding corrective actions. The inspectors reviewed the current scheme, observed its implementation with ONE forms dispositioned at the ONE form committee meetings attended, and concluded that the prioritization was appropriate.

### 2.2.2 Tracking

Prior to about July 1995, the licensee depended on responsible managers to track assigned corrective actions through to completion. Because some corrective actions had been missed, the licensee centralized the tracking of



all actions resulting from ONE forms. The licensee reviewed all actions from ONE forms initiated since the end of 1994, and all actions from plant incident resolutions, to ensure that all open actions were captured. The inspectors noted that the licensee did not verify the actions from older, low priority ONE forms, but still relied on responsible managers to track and complete those items. The inspectors considered the licensee's action to be responsible and had marginal safety consequences.

The licensee had a practice of closing the ONE forms, including ONE plant incident resolutions, once all the individual corrective actions were tracked by other auditable systems, such as design modifications or work requests. Although trends of the numbers of open ONE forms were tracked and presented to licensee management in the monthly plant performance overview report, the inspectors concluded that these numbers had marginal value. Additionally, the licensee's list of ONE forms greater than 1-year old had little meaning because it did not include closed ONE forms that still had open actions. The inspectors discussed this with the licensee and determined that the licensee had efforts in progress to provide more meaningful backlog information. The inspectors reviewed lists of ONE plant incident resolutions that had been closed to other tracking systems and concluded that the licensee could track individual actions back to the originating ONE forms.

The system engineering manager indicated that a recent increase in the engineering backlog, including outstanding technical evaluations, had occurred due to recent events including the dual unit trip, INPO and NRC team inspections, turbine-driven auxiliary feedwater pump failures, and engineering training. Nevertheless, he indicated that the numbers were still manageable. The inspectors reviewed the recent trends in engineering backlog numbers and agreed with the manager's assessment.

### 3 LICENSEE RESOLUTION OF PROBLEMS

#### 3.1 Operations Notification and Evaluation (ONE) Forms

The inspectors selected 12 ONE forms for a detailed review from a listing of ONE forms from the previous 6 months. A review of the corrective actions or proposed corrective action was completed by the inspectors. In most cases, the inspectors found the corrective actions to appropriately address the identified concern. The inspectors verified that the proposed corrective actions were either implemented or tracked for completion as a ONE form corrective action. The inspectors had specific comments on the following ONE forms:

- ONE Form 95-0106 described an evaluation of the vulnerability of a solid state protection system failure from a steam line rupture. The licensee wrote this ONE form to evaluate a potential generic concern, identified at Diablo Canyon, with inadequate train separation for the main turbine inputs to the solid state protection system. The licensee conducted a detailed analysis looking for potential problems with train separation in the turbine building. Analyses by the nuclear steam system supplier,

as well as an engineering consultant, concluded that the Comanche Peak facility was not susceptible to this type of failure. The licensee also conducted plant walkdowns to verify the installed configuration was in accordance with the as-built configurations. The licensee reviewed the generic implications of this issue and identified one system enhancement to prevent the possibility of causing a short circuit while performing maintenance, which would trip the reactor. The licensee initiated Minor Modifications 95-49 and 95-50 to improve plant reliability, and scheduled the modifications for implementation during the upcoming outages on both units. The inspectors concluded that the licensee had performed an excellent review of this generic issue.

- ONE Form 95-0173 involved wiring errors in electrical switchgear. While implementing a design modification, meter and relay personnel identified that prior internal wiring changes to Breaker 1EA1/CUB2 (spare breaker) as shown on Design Change Authorization 65503 had not been implemented. The inspectors noted that the resolution of the ONE form was not clearly documented and that the ONE form provided insufficient detail to support an assessment of the adequacy of corrective actions. However, followup conversations with the design engineer responsible for the resolution provided additional facts that clarified the scope of the review. The inspectors concluded that the licensee performed an appropriate evaluation for this identified wiring discrepancy.
- ONE Forms 95-0247 and 95-0314 involved the identification of switchgear undervoltage relays found out-of-specification. Specifically, meter and relay personnel identified numerous undervoltage relays that did actuate within the voltage limitations of the Technical Specifications, during the refueling outage for Unit 1. The inspectors determined that the licensee performed a thorough and detailed root cause evaluation of the problem.
- ONE Form 95-0272 involved bearing damage on a motor-driven auxiliary feedwater pump. During performance of Work Order 1-94-067716-00, the licensee found that the outboard motor bearing was damaged. The ONE form resolution indicated that misalignment caused excessive contact on the inboard edge of the bearing. A Westinghouse engineer recommended shimming the motor end bell to correct the misalignment. The licensee incorporated this change into the Vendor Technical Manual CP-0411-001, "Horizontal Induction Motors," Revision 3; however, the addition of the shim was not incorporated or evaluated for incorporation into the specific maintenance procedure (MSE-CO-4319, "Auxiliary Feedwater Pump Motor Rework," Revision 1, to ensure that future motor rework would not impact proper bearing alignment. The inspectors reviewed Procedure STA-206, "Review of Vendor Documents and Vendor Technical Manuals," Revision 18, and determined that an impact evaluation of applicable procedures was required to be completed for the vendor technical manual change. The inspectors reviewed impact evaluation forms from Procedure STA-206 and noted that the review sheet had designated the maintenance manuals as being impacted; however, the computer-generated list did not

have Procedure MSE-C0-4319 cross-referenced to the vendor technical manual. The licensee indicated that the procedure was inadvertently not cross-referenced to the vendor technical manual and that this error was being corrected. Although the licensee missed the impact evaluation of one maintenance procedure due to an administrative oversight, the inspectors determined that the licensee did have appropriate programmatic controls in place and that an impact evaluation on maintenance procedures was done in accordance with procedures.

### 3.2 Licensee Event Reports

The inspectors selected three Licensee Event Reports for a detailed review to: (1) ensure that the licensee had identified the root cause for each event, (2) ensure that the licensee had completed, planned, or justified for nonimplementation the recommended corrective actions (3) compare the licensee event report with the associated ONE form to ensure all corrective actions were appropriately captured, and (4) evaluate the effectiveness of licensee's corrective actions to prevent recurrence of the event. The inspectors had specific observations on two of the reviewed licensee event reports.

Licensee Event Report 445/94-006 involved a turbine trip/reactor trip due to low cooling water stator flow indication. A Unit 1 turbine trip/reactor trip occurred on November 29, 1994, due to low stator cooling water flow. Subsequent licensee investigations identified no actual loss of cooling flow, and the licensee believed the trip was caused by a sensing line hydraulic anomaly (gas bubbles coming out of solution) affecting the stator cooling water flow transmitters. The inspectors noted that the licensee had conducted an extremely detailed review of the system. The ONE form provided detailed information on the troubleshooting efforts and proposed corrective actions. The ONE form was also consistent with the actions contained in the licensee event report. All the proposed corrective actions of the ONE form were either implemented or were being scheduled and planned for implementation. The ONE form did establish generic implications for the Unit 2 turbine generator and similar modifications were planned for implementation during the Unit 2 Refueling Outage 2. The inspectors determined that the licensee's corrective actions were very comprehensive and should be adequate to prevent spurious and unwanted trips associated with gases coming out of solution and affecting the stator cooling water flow transmitters.

Licensee Event Report 445/95-002 involved an automatic reactor trip due to lightning strike. On May 5, 1995, a lightning strike created a voltage surge in the rod control cabinets causing some of the low voltage power supplies to trip on overvoltage. The loss of power to both the main and backup power supplies for some power cabinets resulted in loss of power to the associated control rod drive mechanism and subsequent power range negative rate reactor trip. The licensee determined that the root cause of the event was a failure of the lightning protection system to protect against lightning induced affects on sensitive plant electrical equipment. Although the licensee event report did not have any corrective actions to prevent recurrence, it referred to a ONE Form 95-0531 plant incident resolution task team review. The

licensee task team review provided a comprehensive evaluation of the problem including several recommendations such as: (1) installing a lightning deterrent system on the Units 1 and 2 containments, (2) evaluating the lightning protection and ground system, and (3) replacing the rod control power supplies that automatically reset following an overvoltage protection trip. The lightning deterrent system was installed and operational at the time of the inspection. The licensee had scheduled the replacement of the power supply for the upcoming refueling outage for each unit. The inspectors also verified that the replacement was included on the forced outage maintenance list. The task team also reviewed generic aspects and recommended installing the lightning deterrent system on meteorological towers. At the end of the inspection, the system was installed on the primary meteorological tower, but had not been installed on the backup tower. The licensee was in the process of reviewing the need for installation of the lightning deterrent system on the backup tower. The inspectors concluded that the licensee had performed a broad generic review of the lightning strike issue and undertaken comprehensive corrective actions that should prevent recurrent reactor trips due to lightning strikes.

Overall, the inspectors concluded that the licensee performed detailed reviews of each event with detailed root cause evaluations. The licensee identified appropriate corrective actions. The licensee also implemented the corrective actions, or effectively tracked them for implementation. The inspectors determined that the corrective actions should preclude similar events from occurring.

### 3.3 Technical Evaluations

The inspectors selected six technical evaluations for review. The licensee used three of the technical evaluations to evaluate operability concerns (Refer to Section 3.5). The inspectors reviewed the technical evaluations to ensure that the evaluations were comprehensive, and that the licensee had taken appropriate corrective actions to address any identified concerns.

The licensee had completed an appropriate evaluation of the identified condition for each of the technical evaluations. When required, the technical evaluations contained recommended corrective actions based on sound engineering evaluations and in most cases, the corrective actions were being implemented.

### 3.4 Plant Incident Resolutions

The inspectors selected five items from a list of closed plant incident resolutions to determine if the corrective actions implemented were effective at preventing recurrence. Necessarily, some of the items reviewed were relatively old. The inspectors made the following observations:

- ONE Form 92-866 evaluated a 1992 event in which the Diesel Generator 2-02 output breaker was closed approximately 170 degrees out-of-phase. The available documentation identified that an operator's

personal error had caused the event, and that the corrective actions included a very thorough inspection of the diesel components and the breaker, counseling the operator, clarifying the procedure, and initiating design modifications to prevent closing the diesel generator or main generator output breakers out of phase. The inspectors noted that the documentation was poorly organized and was incomplete, in that the human performance enhancement system evaluation was not included. The available documentation did not address the control room command and control aspects of the event, and it was not clear what position the operator who made the error held at the time. Overall, however, the evaluation addressed generic concerns and all pertinent technical concerns with the diesel, and was excellent in quality.

- ONE 94-1377 dealt with improper restoration of Diesel 2-02 following maintenance, resulting in damage to the jacket water heaters. The inspectors noted that the documentation was poorly organized, rendering tracking the assignment and closure of assigned corrective actions very difficult. However, the licensee's investigation of this complex event appeared to be thorough. For example, the licensee had evaluated the entire clearance process to assess how restorations should be performed. The licensee had added specific cautions to the diesel generator procedure and had considered generic implications. The assessment was very good overall. The inspectors concluded that the root causes were adequately identified, that corrective actions were appropriate to address the identified causes, and that the corrective actions were effective in preventing recurrence of these events.

### 3.5 Operability Evaluations

The licensee conducted operability evaluations in accordance with Procedure STA-504, "Technical Evaluation," Revision 11. Operability evaluations were documented using ONE-QTEs. The procedure contained appropriate details and requirements for initiation, resolution, and closure of the ONE-QTE. The inspectors reviewed three ONE-QTEs: 94-442, 95-0756, and 95-0640.

ONE-QTE 95-442 detailed the failure to perform as-left seat leak test on Relief Valves 1PS-0502 and 1SI-8972 as required by ASME/ANSI OM-1987 Part 1. Relief valve testing was being conducted in accordance with Procedure MSM-G0-0204, "Safety and Relief Valve Bench Testing." The inspectors noted that the ONE-QTE was not clearly written and that it was not possible to determine the resolution for the failure to perform the seat leakage test. The ONE-QTE evaluation did not state that the valves were retested. The inspectors had a followup conversation with the inservice test engineer. He indicated that the failure to test the relief valves was found during the review of the work package. The failure involved the technicians inadvertently skipping a section of the procedure. As corrective action, the engineer reviewed other completed work activities on the valve to see if any other testing could be used to satisfy the testing requirement; however, no other work satisfied the requirements. Therefore, in accordance with the code

requirements, he recommended that the valves be removed from the system and retested. During discussion with the engineer, he stated that the valves were removed and subsequently passed the as-left leak rate test. This testing resolved the operability concern.

With the exception of the one poorly written ONE-QTE, the inspectors concluded that these technical evaluations contained the appropriate detail and scope necessary for determining operability.

### 3.6 Operator Work-Arounds

The inspectors reviewed operations work-arounds in order to determine if associated procedures existed, if there were any differences between shifts concerning the work-arounds, and if there were any difficulties implementing the work-arounds. Work-arounds were items that required operators to take compensatory measures beyond the intended design of the plant or could distract the operator from required actions during transient conditions.

The inspectors interviewed several senior reactor and reactor operators concerning operator work-arounds. Based on a consensus of the interviews, the inspectors determined that the operators had procedures in place for work-arounds where appropriate. Differences between shifts in the handling of the work-arounds were not noted. Finally, the interviews with operators did not indicate any operational concerns with the current list of work-arounds. The inspectors determined that the current work-arounds were being appropriately tracked and prioritized for resolution with estimated completion dates. However, the inspectors noted that the number of current work-arounds (approximately 24) was relatively high.

## 4 OPERATING EXPERIENCE FEEDBACK

The inspectors evaluated the licensee's industry operating experience report review program implementation. The inspectors reviewed selected operating experience documents applicable to Comanche Peak and evaluated the associated actions that the licensee implemented. The inspectors also attended a weekly industry operating experience group meeting to review the licensee's assessment and evaluation process.

The inspectors reviewed the Nuclear Overview Department Procedure NQA 2.30, "Industry Operating Experience Report Review Program," Revision 4, which established the licensee's industry operating experience report review program. The program ensured that lessons-learned from industry operating experience were utilized to improve plant safety, reliability, availability and maintenance. The procedure detailed the requirements and responsibilities of designated reviewers, determined due dates for prompt or normal industry operating experience report reviews, and provided a tracking system via Form NQA 2.30-1, "IOER Assignment/Tracking Sheet."

The inspectors reviewed several examples of industry operating experience report evaluations and licensee appropriate actions. This review indicated that the evaluations were extensive and thorough. The licensees' evaluations indicated excellent performance in screening, assessing, and implementing corrective measures to prevent occurrence of events based on industry experience. In addition, the inspectors determined that the assessments and evaluations were conducted by experienced evaluators, and were tracked to completion. The inspectors determined that the licensee management attention to tracking of the assigned items via a monthly generated summary of open industry operating experience report recommendations was an excellent method of keeping status of each industry operating experience report. This summary was sorted by the responsible organization, discipline, due date, and provided a status of the recommendations. In addition, the inspectors attended the weekly licensee industry operating experience report meeting which detailed where the assessment and evaluations for operating events were to be forwarded for review. In that meeting, participants were knowledgeable about the fire/reactor trip event at Waterford 3 on June 10, 1995. The inspectors noted that the licensee had taken proactive steps to address industry concerns. For example, the licensee had already contacted Waterford 3 about the event and obtained preliminary information.

The inspectors interviewed selected individuals who were directly involved with the industry operating experience report review program to gain their insight on the effectiveness of their efforts and the response by licensee staff to the industry operating experience report evaluations. These individuals indicated that licensee staff on the whole were responsive, and willing to take the responsibility for the evaluations as necessary.

In conclusion, the inspectors determined that the licensee's industry operating experience report review program was excellent. The licensee had established lessons-learned from operating events and effectively utilized these events to improve plant safety, reliability, and availability and maintenance.

## 5 SELF-ASSESSMENT ACTIVITIES

### 5.1 Contribution of Self-Assessment Activities

The inspectors evaluated the licensee's self-assessment capability by reviewing self-assessment audits. The inspectors reviewed a sample of recent nuclear overview department self-assessment audits to determine depth and scope of the self-assessment. Most audits reviewed indicated that the program and its implementation continued to ensure that adverse conditions were properly identified and reviewed for operability, reportability, and significance in a timely manner. In addition, the inspectors determined that the licensee had reported, evaluated, categorized, and processed conditions requiring corrective/preventive maintenance in accordance with the ONE form requirements.

In particular, Nuclear Overview Department Evaluation Report NOE-EVAL-95-000140 described that the degree of management attention applied to conditions when first identified was regarded as a strength in the ONE form process. In addition, the inspectors noticed that the licensee significant reviews to determine the correct level of management involvement and resource application to effect resolution were an ongoing process during the inspection. The inspectors' review indicated that the findings were intensive in determining recommended areas for improvement. The inspectors' review of these findings and recommendations indicated that the self-assessment audit process was thorough and conducted in-depth probing to determine weaknesses in the program. In addition, the inspectors' review indicated that the audit evaluation results indicated that station processes for identifying, maintaining, and tracking commitments function for their intended purpose. Each evaluation audit finding or recommendation was tracked after the evaluation audit toward completion.

In conclusion, the inspectors determined that the licensee's self-assessment process was working well. The process assured that adverse trends would be recognized and effectively corrected. The self-assessment audits were determined by the inspectors to be thorough and intrusive.

#### 5.2 Effectiveness of Corrective Actions from Self-Assessment Activities

The inspectors reviewed the effectiveness of the corrective actions from the self-assessment audits. The inspectors reviewed the self-assessment audits and evaluated their findings. The inspectors, through interviews and in-plant inspection, validated the findings. The validated licensee audits indicated that (1) the licensee reported most identified trends or adverse trends in a prompt manner, (2) the licensee provided probable-cause determinations for adverse conditions, (3) the licensee specified appropriate actions to correct the conditions identified, (4) the licensee had completed corrective actions in a timely and effective manner, and (5) the licensee had effectively resolved the identified conditions and appeared to be effective in preventing or mitigating recurrence. The inspectors' review of the self-assessment audits and their findings indicated that the corrective actions appeared to be effective in preventing or mitigating recurrence of events. In addition, the licensee tracked corrective actions to closure.

#### 5.3 Scope of Self-Assessment Activities

The licensee had conducted self-assessment audits on all programs at the site, including the areas of operations, maintenance, engineering, and plant support. For example, the audits were conducted in the corrective action programs, radiation protection, nuclear overview self-assessment, and design control and modification programs.

These audits were conducted by site auditors, as well as, by joint utility management audits. The purpose of the audits was to assess selected programs, processes, and activities to make an overall determination of adequacy and effectiveness, and to identify areas for improvement. Most of the audits



included evaluating the adequacy of the program, the staffing, and certification levels of personnel. In addition, the licensee assessed the quality of the supporting documentation associated with each program for adequacy.

The inspectors reviewed selected audits for depth and scope of the audits. The inspectors determined that the audits were comprehensive and provided innovative and effective overview of station programs, processes, and activities. The audits provided recommendations for improvement, and positive attributes that were considered strengths. For example, joint utility management Audit 95-01 indicated the following positive attributes of the nuclear overview department evaluation program: evaluation plans were very comprehensive; there was excellent spirit of teamwork between nuclear overview department groups; and nuclear overview department management had been proactive in marketing the concept to the staff.

In conclusion, the inspectors determined that the scope and depth of the audits were comprehensive and evaluated all phases of the programs audited. The inspectors did not identify any deficiencies or discrepancies with the audits.

#### 5.4 Effectiveness of Line Organization Oversight Activities

The inspectors reviewed Station Administration Procedure STA-510, "Plant Management Monitoring Program," Revision 3, which provided guidance to personnel conducting the plant management monitoring program. The plant management monitoring program directly observed, evaluated, and communicated management standards on personnel performance, work practices, material conditions and housekeeping. In addition, the inspectors determined that Procedure STA-510 defined the responsibilities, program goals, scheduling of tours, and monitoring activities for each zone. The conduct of monitoring activities was listed on a quarterly zone schedule for each manager by assigned zone number. The inspectors determined that over a period of four quarters, no plant manager was assigned to inspect the same zone during the year cycle, to ensure a broader degree of oversight of each zone.

The inspectors reviewed several plant management monitoring activities and determined that the plant tours were comprehensive and detailed corrective actions were initiated to solve the conditions. The inspectors also performed several monitored tours with system engineers and plant staff to obtain direct and active feedback on the observations and findings. The inspectors noted that the majority of monitored tours discovered simple housekeeping problems and operational enhancements. For example, several of the monitoring tours identified minor difficulty with components. The inspectors concluded that the plant management monitoring program was satisfactory. The inspectors also determined that this program provided a positive feedback for the staff when the managers were performing observation tours, since several system engineers accompanied the managers.

## 6 ONSITE AND OFFSITE SAFETY REVIEW COMMITTEE ACTIVITIES

### 6.1 Station Operations Review Committee

The inspectors reviewed the activities associated with the station operations review committee to ensure that Technical Specification 6.5, which established the requirements for duties, composition, meeting frequency, and responsibilities were being met. Procedure STA-401, "Station Operations Review Committee," Revision 17, implemented the Technical Specification requirements and appropriately addressed all the requirements. The station operations review committee had the responsibility for reviewing items, such as safety evaluations, changes to procedures that involve unreviewed safety questions or involve a change in Technical Specifications, proposed changes to Technical Specifications or operating license, all reportable events, significant events, and plant modifications.

In order to assess the committee's effectiveness, the inspectors attended a meeting on September 22, 1995, and reviewed meeting minutes for three previous meetings (August 4, 11, and 17, 1995). All of these meetings had the necessary quorum. The inspectors reviewed previous meeting minutes that indicated that items brought before station operations review committee were being challenged before being accepted. The station operations review committee meeting of September 22, 1995, reviewed Minor Modifications 93-300 and 93-301, several proposed procedure changes, and a discussion of tracking of open items associated with plant incident resolution ONE forms. Numerous members of the committee asked detailed and probing questions concerning the proposed changes/modifications. The station operations review committee members did not rely on the chairman to guide the discussion.

### 6.2 Operations Review Committee

Operations Review Committee Manual, Revision 22, dated June 27, 1994, implemented the requirements of Technical Specification 6.5. The committee was responsible for the review of safety evaluations; proposed changes to procedures, equipment or systems which involve an unreviewed safety question; proposed test or experiments which involve an unreviewed safety question; proposed changes to the Technical Specifications or operation license; violations of codes, regulations, Technical Specification, etc., which have a nuclear safety significance; significant operating abnormalities that affect nuclear safety; all reportable events; all unanticipated deficiencies that affect nuclear safety; and reports and meeting minutes of the station operations review committee.

The inspectors attended a segment of a committee meeting on September 19, 1995, that discussed industry events experiences. This discussion was very general, focusing on broader issues such as reduced outage durations and the affects on maintaining equipment. The discussion was very open with varying opinions expressed by the diverse committee. The operations review committee was made up of a good cross-section of inhouse, industry, and academic personnel.

## 7 IN-PLANT OBSERVATIONS

The inspectors toured both Units 1 and 2 several times to ensure deficient conditions were being appropriately identified by the plant staff. Overall, the material condition of the plant was excellent. Although the inspectors identified minor housekeeping discrepancies, none were significant.

The inspectors performed a complete walkdown of locked components for Unit 1 chemical and volume control system (Procedure OWI-103 Form 1103) and a partial walkdown of locked components for Unit 1 auxiliary feedwater system (Procedure OWI-103, Form 1304). The inspectors confirmed that all components were in the position specified on the lineup forms, and that the label tag identification descriptions matched those on the forms. The components were determined to be appropriately maintained (i.e., no valve packing leaks or other deficient conditions). The inspectors also toured both Units 1 and 2 control rooms to verify operations were being conducted appropriately. Overall, the inspectors noted that the control room operators were attentive to their panels. Communications were very professional; the operators acknowledged annunciators and informed their supervisors of the alarm and condition, and the supervisors repeated back the alarm and condition. In conclusion, the inspectors determined that operations were being conducted in a very professional manner, and that communications among the personnel were excellent.

## ATTACHMENT 1

### 1 PERSONS CONTACTED

#### 1.1 Licensee Personnel

- \*J. Ayres, Plant Support Overview Manager
- H. Ball, Electrical Maintenance
- \*J. Barker, Mechanical Maintenance Manager
- \*O. Bhatti, Senior Regulatory Affairs Specialist
- \*C. Biggs, Nuclear Overview Department
- \*M. Blevins, Plant Manager
- \*D. Bozeman, Chemistry Manager
- \*D. Buschbaum, Technical Compliance Manager
- \*R. Byrd, Manager
- R. Cowen, Instrumentation and Control Maintenance Supervisor
- \*D. Davis, Nuclear Overview Manager
- J. Davis, Instrumentation and Control
- E. Dyas, Operations Overview Department
- S. Ellis, Instrumentation and Control Maintenance Manager
- \*J. Finneran, Jr., Civil Engineering Manager
- R. Flores, System Engineering Manager
- J. Gallman, Performance Analysis Supervisor
- R. Gill, Supervisor, Instrumentation and Control Support Engineering
- \*D. Goodwin, Operations Support Manager
- J. Hicks, Work Control Programs Supervisor
- J. Hill, HPES Coordinator (Acting)
- \*L. Hinze, Senior Specialist, Nuclear Overview Department
- D. Hubbard, Operations Manager Staff Assistant
- \*T. Hope, Regulatory Compliance Manager
- \*J. Kelley, Vice President, Nuclear Engineering and Support
- \*D. Kross, Shift Operations Manager
- D. Lowrie, Work Control
- M. Lucas, Maintenance Manager
- \*F. Madden, Engineering Overview Manager
- \*T. Marvray, Maintenance Engineering
- D. McAfee, Programs Overview Manager
- G. McGee, Senior Engineer, System Engineering
- \*J. Martin, Consulting Engineer, Root-Cause Analysis
- J. Meyer, Senior Engineer, Design
- D. Moore, Operations Manager
- \*N. Paleologos, Vice President, Nuclear Operations
- \*D. Pendleton, Nuclear Contracts
- W. Reppa, Senior Engineer, System Engineering
- \*G. Ross, Shift Operations Staff Assistant
- \*S. Sawa, Plant Support Manager
- \*M. Smith, System Engineering Supervisor
- S. Smith, Work Control Manager
- \*D. Snow, Senior Regulatory Compliance Specialist
- \*M. Stakes, Acting Work Control Center Manager
- L. Strope, Performance Analysis Department
- \*J. Taylor, Procurement Engineering
- \*C. Terry, Group Vice President, Nuclear Production

\*D. Walling, Plant Modification Manager  
J. White, Senior Engineer, Design  
L. Wojcik, Nuclear Mechanical Analysis

1.2 NRC Personnel

\*D. B. Pereira, Reactor Inspector  
J. A. Sloan, Senior Resident Inspector  
\*G. E. Werner, Reactor Inspector

In addition to the personnel listed above, the inspectors contacted other personnel during this inspection period.

\* Denotes personnel that attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on September 28, 1995. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee did not express a position on the inspection findings documented in this report. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

## ATTACHMENT 2

### LIST OF DOCUMENTS REVIEWED

#### PROCEDURES

STA-421, "Operations Notification and Evaluation (ONE Form)," Revision 4-1, dated July 24, 1995.

STA-422, "Processing of Operations Notification and Evaluation (ONE) Forms," Revision 11, dated July 24, 1995.

STA-423, "Evaluation Team," Revision 2, dated May 11, 1990.

STA-510, "Plant Management Monitoring Program," Revision 3, dated May 19, 1995.

STA-511, Revision 0 (2/19/90), "Plant Performance Overview Program," Revision 0, dated February 19, 1990.

STA-512, "Failure Analysis and Trending," Revision 2, dated August 12, 1993.

STA-515, "Root Cause Analysis," Revision 3-1, dated July 22, 1994.

Nuclear Overview Department Procedure NQA 2.11, "Trend System," Revision 5, dated March 18, 1994.

Nuclear Overview Department Procedure NQA 2.30, "Industry Operating Experience Report Review Program," revision 4, dated September 7, 1995.

Nuclear Overview Department Procedure NQA 3.01, "Evaluation Program," Revision 0, dated December 1, 1994.

#### SELF-ASSESSMENT AUDITS

Annual Joint Utility Management Audit of the Nuclear Overview Program, dated February 23, 1995.

NOE-EVAL-95-000015, "Corrective Action," dated March 29, 1995.

NOE-EVAL-95-000036, "Regulatory Activities," dated March 24, 1995.

NOE-EVAL-95-000118, "CPSES Design Control and Modification Programs," dated June 9, 1995.

NOE-EVAL-95-000131, "SORC Communications," dated July 28, 1995.

NOE-EVAL-95-000140, "Corrective Action," dated September 18, 1995.

NOE-EVAL-95-000169, "Effluent and Environmental Monitoring Program," dated August 16, 1995.

NOE-EVAL-95-000194, "Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems: Line Organization Self-Assessment Activities (Supplemental Evaluation)," dated August 23, 1995.

ONE FORMS

91-1338  
91-1639  
92-0866  
94-0639  
94-1296  
94-1311  
94-1377  
95-0061  
95-0088  
95-0106  
95-0173  
95-0196  
95-0247  
95-0272  
95-0314  
95-0640  
95-0829  
95-0910  
95-0915

TECHNICAL EVALUATIONS

95-0117  
95-0135  
95-0260  
95-0442  
95-0640  
95-0756

NUCLEAR OVERVIEW DEPARTMENT EVALUATION PLANS

Corrective Action Evaluation Plan, Revision 1 (11/11/94)  
Management Control Evaluation Plan, Revision 1 (11/11/94)  
Self-Assessment Evaluation Plan, Revision 1 (11/11/94)  
Engineering Master Evaluation Plan, Revision 2 (2/13/94)  
Maintenance Master Evaluation Plan, Revision 2 (6/30/95)  
Operations Master Evaluation Plan, Revision 2 (6/30/95)