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May 26, 1993

William J. Cahill, Jr.
Group Vice President

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445
FAILURE TO SATISFY TECHNICAL SPECIFICATION SURVEILLANCE
REQUIREMENT FOR PRIMARY PLANT ESF EXHAUST FILTRATION UNIT
LICENSEE EVENT REPORT 93-006-00

Gentlemen:

Enclosed is Licensee Event Report 93-006-00 for Comanche Peak Steam Electric Station Unit 1 "Failure to Satisfy Technical Specification Surveillance Requirement for Primary Plant ESF Filtration Unit".

Sincerely,


William J. Cahill, Jr.

OB:tg
Enclosure

cc: Mr. J. L. Milhoan, Region IV
Mr. L. A. Yandell, Region IV
Resident Inspectors, CPSES (2)

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NRC FORM 366		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
LICENSEE EVENT REPORT (LER)				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.	
Facility Name (1) COMANCHE PEAK-UNIT 1				DocId Number (2) 05000445	
Title (4) FAILURE TO SATISFY TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FOR PRIMARY PLANT ESF EXHAUST FILTRATION UNIT				Page (3) 1 OF 107	
Event Date (5)		LER Number (6)		Report Date (7)	
Month	Day	Year	Year	Sequential Number	Revision Number
04	26	93	93	006	00
Other Facilities Involved (8)		Facility Name(s)			
CPSES UNIT 2		DocId Number(s)			
N/A		05000446			
Operating Mode (9) 1					
This report is submitted pursuant to the requirements of 10 CFR § (Check one or more of the following) (11):					
20.402(b)		20.405(c)		50.73(a)(2)(iv)	
20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	
20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vi)	
20.405(a)(1)(iii)		<input checked="" type="checkbox"/> 50.73(a)(2)(i)		50.73(a)(2)(vii)(A)	
20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(vii)(B)	
20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)	
73.71(b) 73.71(c) Other (Specify in Abstract below and in Text, NRC Form 366A)					
Licensee Contact For This LER (12)					
Name D. J. REIMER, MANAGER, SYSTEM ENGINEERING				Area Code 817 Telephone Number 897-5584	
Complete One Line For Each Component Failure Described in This Report (13)					
Cause	System	Component	Manufacturer	Reportable To NPRDS	
				N	
Supplemental Report Expected (14)					
<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)				<input checked="" type="checkbox"/> No	
Expected Submission Date (15)				Month	Day
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>In February 1993, Mechanical Maintenance personnel replaced the upstream High Efficiency Particulate Adsorber (HEPA) filter cartridges in Primary Plant ESF Exhaust Filtration Unit CPX-VAFUPK-16 with Prefilter cartridges.</p> <p>The root causes of the event were determined to be less-than-adequate equipment labeling, specification of the wrong procedure for the task, and a discrepancy in the Master Equipment List (MEL) Parts List.</p> <p>Corrective actions to be taken are; a) the nomenclature on the labels for the HEPA filters on all atmospheric cleanup filtration units will be changed to eliminate confusion; b) maintenance planners will review this incident for lessons learned to ensure that Preventive Maintenance (PM) activities run for the first time are more closely reviewed; and, c) changes have been made to the appropriate procedures to require review by Procurement Engineering of Design Change Notices (DCNs) which modify any part/component as originally supplied by a vendor and to revise the MEL Parts List accordingly.</p>					

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I. DESCRIPTION OF THE REPORTABLE EVENT**A. REPORTABLE EVENT CLASSIFICATION**

Any operation or condition prohibited by the Technical Specifications.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On February 8, 1993, Comanche Peak Steam Electric Station (CPSES) Unit 1 was in Mode 1, Power Operations, at 100 percent rated thermal power. CPSES Unit 2 was in Mode 6, refueling operations, with the core unloaded.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no inoperable structures, systems or components that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On February 8, 1993, an auxiliary operator (utility non-licensed), while performing his shiftly walkdowns, noted that the differential pressure gauge labeled as X-PI-6177A was reading 1.6 inches of water column-gauge (inwg). This reading exceeded the limits specified in the procedure. The operator initiated a work request to have the "prefilter" on CPX-VAFUPK-16 (EIS(FLT)(VA)) changed out.

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<p>Text (If more space is required, use additional NRC Form 366A's) (17)</p> <p>On February 10, 1993, utilizing the Preventive Maintenance (PM) program, a work order was generated by the mechanical maintenance planner (utility non-licensed). The PM activity specified a specific maintenance procedure to be used in performing the work order. A step of this procedure required that a Technical Specification surveillance test be performed on the filters after the work was complete. Since the work request (which was translated into the work order) was for change out of a "prefilter", the maintenance engineering technician (utility non-licensed) informed the planner that a surveillance test was not required. The planner eliminated the surveillance test step from the work order.</p> <p>On February 12, 1993, the mechanics removed the upstream HEPA filter cartridges and replaced them with prefilter cartridges. The mechanics noticed the difference between the filter cartridges that were removed and the prefilter cartridges which were to be installed. A reverification of MEL was performed and it was concluded by the mechanics that the cartridge to be replaced was approved for use in CPX-VAFUPK-16. Hence, no post work testing was required.</p> <p>E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR</p> <p>On April 26, 1993, while conducting a routine surveillance test, maintenance engineering personnel discovered the prefilter cartridges installed where the HEPA cartridges should have been installed.</p> <p>II. COMPONENT OR SYSTEM FAILURES</p> <p>A. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT</p> <p>Not applicable - there were no component failures associated with this event.</p> <p>B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY</p> <p>Not applicable - there was no safety related equipment rendered inoperable during or as a result of the event.</p>									

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C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

Credit for 95 percent iodine filtration by the Primary Plant Ventilation System (PPVS) Engineered Safety Featured (ESF) filters is applied for ESF system leakage during a Loss of Coolant Accident (LOCA). It is assumed that 50 percent of the core iodine inventory will be released from the containment sump and circulated outside containment via the ESF systems. The ESF systems are assumed to leak, releasing radioactive material (via steam) into the building where it is eventually filtered and exhausted to the atmosphere via the PPVS.

The PPVS charcoal beds are provided to remove primarily elemental iodine and organic iodines, while the HEPA filter should remove particulate iodines. The LOCA scenario postulated in accordance with Reg. Guide 1.4 assumes an iodine distribution of 91 percent elemental iodine, 5 percent particulate, and 4 percent organic iodines released from the fuel and containment. Therefore, only a small percentage of iodine assumed to be released may be in particulate form which would be filtered by the HEPA filters.

Using a pre-filter instead of a HEPA filter in unit CPX-VAFUPK-16 is not as efficient as a HEPA (85 percent efficiency versus 99 percent), but it does perform a filtering action by removing particulate matter, however, particulates not removed by the pre-filter may pass through the charcoal bed and load the downstream HEPA filters. Having the upstream HEPA filters installed instead of the pre-filters assures optimum particulate removal.

The effect of having the pre-filters installed instead of the HEPA filters is that the filtration unit's charcoal beds and downstream HEPA filters may be loaded slightly faster than having a set of upstream HEPA filters. Any particulates that pass through the charcoal beds would be trapped by the downstream HEPA filter bank. It should be noted that the downstream HEPA was tested and it met the acceptance criteria. HEPA filters are tested to take credit for 99 percent efficiency. This may have limited the duration the filtration unit, which would have been available. If this were to occur, the operator would switch operating filtration units.

These factors provided reasonable assurance that installation of pre-filters in lieu of the upstream HEPAs would not have adversely affected the unit's capacity to maintain 95 percent efficiency; therefore the unit can be considered operable. Based on this evaluation it was concluded that the event did not adversely impact the safe operation of Unit 1 or the health and safety of the public.

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III. CAUSE OF THE EVENT

Several factors contributed to this event. A discussion of each follows:

Equipment Labeling Change Process was Less-Than-Adequate.

The filter banks in the filtration units are not individually labeled or tagged. Operations and Maintenance personnel used the labels on the differential pressure gauges to identify the filter type.

The nomenclature for the Differential Pressure (DP) gauges for prefilter filter banks and for upstream HEPA filter banks are identical in all atmospheric cleanup filtration units. All of the DP gauges are named as "PRIMARY PLANT VENT EXHAUST FILTER X-{filter no.} and AFTFILT DIFF PRESS IND {channel no.}"; however, neither wordings were clear.

When the filtration unit was modified in 1989 by Design Change Request - DMRC 88-X-248, the prefilter was removed and replaced with a demister bank and heater bank. The differential pressure gauge for the prefilter was abandoned in place. When labels were installed on the gauges, the label for the upstream HEPA filter bank DP gauge was placed next to the abandoned gauge which was now reading DP across the demister bank.

Incorrect Procedure Specified in the Procedure Used

The PM activity which was specified as the controlling procedure for this task was written prior to its first conduct in February 1993. The request in February 1993 to change the filter cartridges was the first such request for filtration unit X-16. The work order should have referenced a different procedure which applied to ESF filtration units X-01, X-02, X-15, and X-16, and does not have a section covering the installation/removal of prefilter cartridges. If the planner had referenced the correct procedure, the mechanics would have stopped work and sought a procedure revision. The error would have been discovered while resolving that problem.

MEL Parts List Not Updated

The MEL Parts List is used by maintenance personnel to determine what parts are approved for use in a particular component. During the performance of the task the mechanics noticed that the filters to be installed were different than the filters to be removed. They reverified the part number for the replacement prefilter cartridges against the MEL Parts List and concluded that the prefilter cartridges were approved for use in the filtration unit. A review by Procurement Engineering after the event revealed that the MEL Parts Lists for filtration units X-15 and X-16 were identical to the MEL Parts List for non-ESF filtration units X-03 through X-14, which led to this error.

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IV. CORRECTIVE ACTION**A. IMMEDIATE**

The prefilter cartridge was removed, a HEPA filter cartridge was installed and the required testing was completed with acceptable results. A walkdown of all atmospheric cleanup units outside the containment building was performed to ensure that the filter cartridges presently installed are the correct type.

B. ACTIONS TO PREVENT RECURRENCE**Equipment Labeling was Less-Than-Adequate**

A label request has been initiated to change the nomenclature of the gauges for the upstream and the downstream HEPA filter banks in all atmospheric cleanup units. The gauges on filtration units X-15 and X-16, which have been abandoned in place, will be labeled as such. Procedures have been revised prior to this event which require revision to the labels as part of the design modification process.

Incorrect Procedure Specified

The procedure which governs the modification process will be revised, to require the cognizant personnel to assess the impact of design modifications on standard step instruction stored in the computer data base.

Maintenance planners will review this event for lessons learned. PM work orders generated from standard steps which are to be worked for the first time will be reviewed for equipment design changes prior to implementation.

MEL Parts List Not Updated

This discrepancy occurred in 1989 when many design modifications were being implemented. Many of the original personnel involved are no longer employed at CPSES and the programs and procedures have been revised several times since 1989. TU Electric believes that this is an isolated occurrence.

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<p>Similar events will be precluded by changes which were made prior to this event to engineering procedure to require reviews by Procurement Engineering of DCNs which modify any part/component as originally supplied by the vendor and to revise the MEL Parts List accordingly.</p> <p>V. PREVIOUS SIMILAR EVENTS</p> <p>No other similar events regarding ESF filtration units have been identified at CPSES.</p>									