



Portland General Electric Company  
Trojan Nuclear Plant  
71760 Columbia River Hwy.  
Rainier, Oregon 97048  
(503) 556-3713

November 5, 1990  
WRR-138-90

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

Gentlemen:

Licensee Event Report No. 90-43 is attached. This report discusses an event in which continuous fire watches were not established in all of the areas required by the Technical Specifications when the fire detection monitoring panel became inoperable.

Sincerely,

W. R. Robinson  
General Manager  
Trojan Nuclear Plant

c: Mr. John B. Martin  
Regional Administrator, Region V  
U.S. Nuclear Regulatory Commission

Mr. David Stewart-Smith  
State of Oregon  
Department of Energy

Mr. R. C. Barr  
USNRC Resident Inspector  
Trojan Nuclear Plant

LER Distribution

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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 (F430), 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) Trojan Nuclear Plant DOCKET NUMBER (2) 0 5 0 0 0 0 3 4 4 1 OF 0 4

TITLE (4) Lack of Adequate Administrative Controls Results in Some Missed Continuous Fire Watches When Fire Detection Instrument System Fails

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME(S)	DOCKET NUMBER(S)	
10	04	90	90	043	00	11	05	90	NA	0 5 0 0 0 0	
										0 5 0 0 0 0	

OPERATING MODE (9) 3

POWER LEVEL (10) 0 1 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(e)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(e)(1)	<input type="checkbox"/> 50.73(e)(2)(v)	<input type="checkbox"/> 73.71(e)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(e)(2)	<input type="checkbox"/> 50.73(e)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 308A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(e)(2)(ii)	<input type="checkbox"/> 50.73(e)(2)(vii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(e)(2)(i)	<input type="checkbox"/> 50.73(e)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(e)(2)(iii)	<input type="checkbox"/> 50.73(e)(2)(v)	

LICENSEE CONTACT FOR THIS LER (12)

NAME John D. Guberski, Compliance Engineer TELEPHONE NUMBER 5 0 3 5 5 6 - 5 5 2 3

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., 2800 characters) (16)

On October 4, 1990 the Plant was in Mode 3 (Hot Standby) with the Reactor Coolant System at an average temperature of 551 degrees F. At 1721, a major failure occurred in the control panel (C-43) for the Technical Specification fire detection instrumentation. The cause was determined to be a failed relay solder joint. This was repaired and the control panel restored to operation at 1500 on October 5, 1990. Due to penetration fire barriers being inoperable, the Plant had been operating in the Action statement of Trojan Technical Specification (TTS) 3.7.9, "Penetration Fire Barriers", which required operable fire detectors and an hourly fire patrol. The more restrictive portion of this Action statement, which requires a continuous fire watch on at least one side of an inoperable barrier, was entered when the detectors became inoperable. Within one hour, continuous fire watches were established as required by TTS 3.7.9, in those areas required to have operable fire detectors by TTS 3.3.3.7, "Fire Protection Instrumentation". The existing hourly fire patrol was continued as a conservative measure. Subsequently it was determined that fire watches were not established in all required areas. The cause of the missed fire watches is that administrative controls did not exist which would allow the Shift Supervisor to promptly determine where continuous fire watches needed to be posted for a major failure of C-43. A contingency plan has been developed to direct what actions need to be taken for C-43 being inoperable. This contingency plan has been implemented via a Night Order. The contingency plan will be incorporated into appropriate Plant procedures by November 30, 1990.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN FOR RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20549, AND TO THE PAPERWORK REDUCTION PROJECT (216C 3104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Trojan Nuclear Plant	DOCKET NUMBER (2)  0500034490	LER NUMBER (6)		PAGE (3)  02 OF 04
		YEAR	SEQUENTIAL NUMBER	
		90	043	

TEXT IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC Form 385A (17)

EVENT DESCRIPTION

Background Information

At the Trojan Nuclear Plant, the fire detection instrumentation system provides status information to Operations personnel via two devices. These two devices are referred to as the K-50 panel and the C-43 panel. The K-50 panel (Video Display Terminal) is a microprocessor based system which receives status information on various portions of Trojan's fire protection systems. The C-43 panel is the monitoring panel for fire detection instruments required operable by Trojan Technical Specifications (TTS). Alarms received at C-43 are repeated on the K-50 panel. K-50 is located in the main control room, adjacent to the main control board area. Annunciators showing which fire detection instrument(s) has alarmed are mounted on C-43. C-43 is located in the back of the main control board area.

Event

On October 4, 1990 the Plant was in Mode 3 (Hot Standby) with the Reactor Coolant System at an average temperature of 551 degrees F. An alarm was received on K-50 indicating that the C-43 device was not responding. Investigation by Operations personnel determined that C-43 did not alarm when fire detection instruments (5 smoke detectors) were placed in 'Test'. At 1721, the fire detection instrumentation systems associated with C-43 were declared inoperable (Plant wide). The Action Statement for TTS 3.3.3.7, "Fire Protection Instrumentation", was entered. This Action Statement requires that a fire patrol be established to inspect the zones with inoperable instruments within one hour.

At 1730, a Plant wide page was made requesting that available personnel (qualified as fire watch personnel) report to the Shift Supervisor. Security was also contacted to supply fire watch personnel. Available, qualified, security personnel were sent to the control room. Security also directed any qualified personnel who were exiting the Plant (Protected Area) to report to the control room. By 1810, personnel were posted as fire watches in train 'A' Engineered Safety Feature rooms, to ensure the availability of one train of Engineered Safety Features. All Engineered Safety Features areas, designated by TTS 3.3.3.7 or TTS 3.7.9, "Penetration Fire Barriers", had personnel posted as fire watches by 1819. A specific log, by location and time period, of who was posted as a fire watch was not kept. Three separate tours were made by the Assistant Shift Supervisor to ensure that personnel were posted in the Engineered Safety Feature rooms/areas. The purpose of these tours was to confirm that personnel were posted prior to logging that this was done, and to maximize the use of qualified fire watch personnel in areas required by TTS 3.3.3.7 to have fire detection instrumentation.

Due to penetration fire barriers being inoperable, the Plant had been operating in the Action Statement of TTS 3.7.9. The Action Statement allows the use of an hourly fire patrol of the affected area(s) as a compensatory measure conditional

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN FOR RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTOR REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20549, AND TO THE PAPERWORK REDUCTION PROJECT (2150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (4)	PAGE (3)
Trojan Nuclear Plant	0 5 0 0 0 3 4 4 9 0	0 4 3	0 0 3 OF 0 4

TEXT (If this report is prepared, use instructions NRC Form 305A (11/79))

upon having operable fire detectors on at least one side of the non-functional fire barrier(s). If this condition is not met, the Action statement requires that a continuous fire watch be provided on at least one side of the affected penetration within one hour. Continuous fire watches were determined to be necessary in those areas with inoperable penetration fire barriers. The Shift Supervisor used Table 3.3-10, "Fire Detection Instruments", of TTS 3.3.3.7 as guidance on where to place fire watches for a major failure of C-43. This was done since the Shift Supervisor did not have information readily available on each area in the Plant with inoperable fire barriers. Additionally, as a conservative measure, the existing hourly fire patrol for inoperable fire barriers was continued.

A Maintenance Request was issued to determine why C-43 was inoperable. A cold solder joint was found on the alarm reset relay. This was repaired and C-43 restored to service at 1500 on October 5, 1990. Continuous fire watches were then stopped. Required hourly fire patrols were continued.

The investigation of this event determined that six personnel, not formally qualified as fire watches, were stationed as fire watches. They were used due to their ready availability. These personnel were badged for unescorted access to the Plant. Training of personnel for unescorted access to the Plant includes what actions should be taken upon discovery of a fire. This Training also covers use of fire extinguishers.

An investigation of this event identified that five areas with inoperable penetration fire barriers did not have a continuous fire watch posted during the time period that C-43 was inoperable. Failure to establish the required continuous fire watch constitutes a condition prohibited by the Technical Specifications. This event is being reported as required by Title 10, Code of Federal Regulations, Part 50.73(a)(2)(i)(B).

CAUSE OF OCCURRENCE

The cause of the failure of the C-43 panel was determined to be a cold solder joint on the alarm reset relay.

The failure to establish continuous fire watches in some areas where penetration fire barriers were inoperable is attributed to a lack of proper administrative controls. Administrative controls did not exist which would allow the Shift Supervisor to promptly determine where continuous fire watches were needed for a major failure of C-43. Due to the significant number of inoperable penetration fire barriers, a prompt review of the Fire Protection Patrol and Outage Work sheets as a means of identifying where continuous fire watches were needed was not practical for a significant failure of C-43. The Shift Supervisor used Table 3.3-10 of TTS 3.3.3.7 as guidance on where to place the fire watches.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN FOR RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (2150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Trojan Nuclear Plant	DOCKET NUMBER (2)  0500034490	LER NUMBER (6) YEAR SEQUENTIAL NUMBER REVISION NUMBER — 043 — 010	PAGE (3) 04 OF 04
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TEXT IF THIS SPACE IS REQUIRED, USE ADDITIONAL NRC FORM 288A (17)

CORRECTIVE ACTIONS

The alarm relay card was repaired. Testing of fire detection instruments was then performed to confirm that alarms were received on the C-43 panel. The C-43 panel was declared operable at 1500 on October 5, 1990.

A contingency plan has been developed to direct what actions need to be taken for either K-50 or C-43 being inoperable. This contingency plan has been implemented via a Night Order. The contingency plan will be incorporated into appropriate Plant procedures by November 30, 1990. This plan addresses where to station personnel, where hourly patrols need to be made, how to obtain additional personnel for fire watches, and the impact of a C-43 failure on activation of suppression systems. A long-term plan for restoring the inoperable fire barriers to service has been developed.

A review of the methodology for determining where continuous fire watches are needed when fire barriers are found to be inoperable will be conducted by November 30, 1990.

SIGNIFICANCE OF OCCURRENCE

This event did not have any effect on public health and safety because an hourly fire patrol was established for required areas, and water spray systems were available to suppress a fire if one occurred. No fires occurred during the time period C-43 was inoperable.

PREVIOUS SIMILAR EVENTS

A review of previous Licensee Event Reports identified four previous similar events. The Licensee Event Reports (LERs) were:

LER No.	Title
88-17	Hourly Fire Patrols for Inoperable Fire Barriers Missed
88-12	Fire Door Made Inoperable Due to Personnel Error
87-35	Fire Doors Made Inoperable Due to Personnel Error
87-29	Fire Watch Not Established Due to Personnel Error

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