

Portland General Electric Company
Trojan Nuclear Plant
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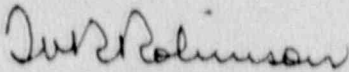
WRR-137-90
November 2, 1990

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

Gentlemen:

Licensee Event Report No. 90-42 is attached. This report discusses an event in which Mode changes were made while relying upon an Action Statement for the Containment high-radioactivity monitor and Reactor Coolant System leak detection system.

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

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 90.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TITLE (4) Plant Mode Changes Were Made While in a Technical Specification Action Statement as a Result of Personnel Failing to Recognize the Equipment as Inoperable

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 NAMES		DOCKET NUMBER(S)					
1	0	3	9	0	4	2	0	0	1	1	0	2	9	0	NA	0 5 0 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)

OPERATING MODE (9) 3	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 1 0 0	20.406(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(v)	73.71(a)
	20.406(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 386A)
	20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Scott A. Bauer, Manager, Nuclear Regulation Branch	TELEPHONE NUMBER AREA CODE 5 1 0 3 5 1 5 1 6 1 - 1 5 1 2 1 7
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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
NA									

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. approximately fifteen single-space typewritten lines) (16)

On October 3, 1990 a review identified that the Plant changed Modes on several occasions while in a Trojan Technical Specification (TTS) Action Statement. On each of these occasions, Process and Effluent Radiation Monitor (PRM)-1 was either not operable for detecting particulates from Reactor Coolant System (RCS) leakage as required by TTS 3.4.6.1, or was not operable for performing its Containment Ventilation Isolation function. Changing Modes with PRM-1 inoperable violates TTS 3.0.4 by relying upon the provisions of an ACTION Statement to meet a Limiting Condition for Operation (LCO). The cause of these events was the failure to recognize that PRM-1 was inoperable, thus resulting in the failure to recognize that Mode changes were prohibited. A contributing cause was conflicting TTS requirements that were not reconciled when the Radiological Effluent Technical Specifications were incorporated in 1984. A procedure was revised to change the setpoints for PRM-1 in the RCS leak detection Mode to no more than twice the background level. Another procedure was revised to require that PRM-1 be declared INOPERABLE for the purpose of meeting TTS 3.4.6.1.a during a Containment pressure reduction. A change to the TTS has been processed. This event had no effect on the health and safety of the public.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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 (F-200), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20549, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT IF THIS EVENT IS REPORTED, USE PREVIOUS NRC FORM 388A (17)

EVENT DESCRIPTION

Background

The Containment Process and Effluent Radiation Monitor (PRM)-1 at the Trojan Nuclear Plant is used to perform three different functions and to satisfy three separate TTS requirements. These three requirements are TTS 3.3.2, "Engineered Safety Features Actuations System Instrumentation", TTS 3.3.3.11, "Radioactive Gaseous Process and Effluent Monitoring Instrumentation", and TTS 3.4.6.1, "Reactor Coolant System Leakage". The three functions of PRM-1 are: (1) to initiate Containment Ventilation Isolation from high Containment radioactivity, (2) to monitor radioactive gas and effluents from the Containment, and (3) to monitor Reactor Coolant System (RCS) leakage.

Normal alignment of PRM-1 during operation is to sample the Containment atmosphere where it is performing an PCS leakage detection function. For this mode of operation, the setpoint of the detector was established at no greater than four times background, and all Containment Ventilation Isolation valves are closed. When Containment ventilation is needed, PRM-1 is aligned to the Containment Ventilation Exhaust duct downstream of a bank of discharge filters to monitor the effluent stream. In this mode, the setpoint of the detector is set at no more than twice the background as required by TTS 3.3.2 and TTS 3.3.3.11.

TTS 3.3.2, "Engineered Safety Features Actuation System (ESFAS) Instrumentation", requires ESFAS instrumentation channels and interlocks in Table 3.3-3 to be OPERABLE with trip setpoints consistent with the Trip Setpoint column of Table 3.3-4. TTS Table 3.3-4, Item 3.b.2 requires a trip setpoint for Containment Ventilation Isolation from high Containment radioactivity of no more than twice the background level. TTS Table 3.3-3, Item 3.b.4 requires the channels for high Containment radioactivity to be operable in Modes 1, 2, 3, and 4. This TTS does not have an exemption from TTS 3.0.4. TTS 3.0.4, "Applicability", states that operational Mode changes shall not be made unless the Limiting Conditions for Operation (LCO) can be met without relying upon provisions contained in the Action Statements. The Action Statement for TTS Table 3.3-3, Item 3.b.4 is ACTION 17 which states that operation may continue provided that the Containment ventilation valves are maintained closed.

TTS 3.3.3.11 addresses each function of PRM-1. For the Containment Ventilation Isolation function, the TTS dictates a trip setpoint of no more than twice the background. For the Reactor Coolant System (RCS) leak detection mode, no setpoint requirement is established, and so the Final Safety Analysis Report (FSAR) value of no more than four times background is used. TTS 3.3.3.11 contains an exemption from TTS 3.0.4.

Description of Problem

On October 3, 1990 following a review by the Quality Assurance Department, questions were raised about the operability of PRM-1 when aligned for its

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TEXT CONTINUATION

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 (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

different functions. When PRM-1 is aligned to Containment to monitor for RCS leakage with its setpoint established at no greater than four times background, it was determined that PRM-1 is not operable for its Containment Ventilation Isolation function. Since TTS 3.3.2 and 3.3.3.11 require a setpoint of no more than twice the background for Containment Ventilation Isolation, PRM-1 cannot be considered operable, and ACTION 17 of Table 3.3-3 and ACTION 33 of Table 3.3-13 should be entered. It had not been the practice to declare PRM-1 inoperable in this manner. Had PRM-1 been declared inoperable, Mode changes would not have been allowed as ACTION 17 of Table 3.3-3 does not have a TTS 3.0.4 exemption.

A similar condition exists with regard to TTS 3.4.6.1.a, "Reactor Coolant System Leakage Detection Systems", which requires that the Containment atmosphere particulate radioactivity monitoring system be OPERABLE in Modes 1 through 4. This TTS does not have an exemption from TTS 3.0.4. Containment pressure reductions are performed with the Hydrogen Vent System. During pressure reductions, PRM-1 is realigned to the exhaust duct as required by TTS 3.3.2 and TTS 3.3.3.11. The design of the Hydrogen Vent System has the effluent filtered by a high-efficiency particulate air (HEPA) filter and by charcoal prior to being monitored by PRM-1. While this meets the intent of TTS 3.3.3.11 to monitor the gaseous radioactive effluent and terminate a release at greater than twice background levels, in its realigned condition PRM-1 would not have been able to detect particulates from RCS leakage at the level described in the FSAR while selected to the exhaust duct. Therefore, the ACTION statement of TTS 3.4.6.1 must be entered when PRM-1 is selected to monitor the exhaust duct, and Mode changes would be prohibited.

Because it was not recognized that ACTION 17 of TTS 3.3.2 and the ACTION statement of TTS 3.4.6.1 should have been entered as described above, Mode changes were made on numerous occasions with PRM-1 technically inoperable. These Mode changes would not have been allowed by TTS 3.0.4. The violations of TTS 3.0.4 are considered to be operations or conditions prohibited by the TTS and reportable under the requirements of Title 10 of the Code of Federal Regulations, Part 50.73(a)(2)(i)(B). This report is submitted to fulfill those requirements.

Cause

The cause of these events is the failure to recognize that different functions of PRM-1 were inoperable, both when the PRM was aligned to the exhaust duct and when the setpoint was established at no greater than four times background. This resulted in the failure to recognize that Mode changes were prohibited.

An additional contributing cause of these events was conflicting TTS requirements that were not reconciled when the Radiological Effluent Technical Specifications were incorporated in 1984.

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TEXT CONTINUATION

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Corrective Actions

Plant Operating Test (POT) 26-2, "Process and Effluent Radiation Monitoring System (PERMs)", was revised to change the setpoints for PRM-1 in the RCS leak detection Mode to no more than twice the background level. This allows Mode changes when PRM-1 is being used for RCS leak detection because ACTION Statement 17 of TTS Table 3.3-3 is not invoked.

Operating Instruction (OI) 10-3, "Containment HVAC", was revised to require that PRM-1 be declared INOPERABLE for the purposes of meeting TTS 3.4.6.1.a during a Containment pressure reduction. This prevents Mode changes during operation of the Hydrogen Vent System.

License Change Application 186 was submitted to the Nuclear Regulatory Commission on November 30, 1989. The changes proposed in that application will resolve the TTS inconsistencies.

Safety Significance

TTS Table 3.3-3, ACTION 17 allows operation without a Containment Ventilation Isolation function from high Containment radioactivity in Modes 1, 2, 3, and 4 only when the Containment ventilation valves are closed. In the event of increased radiation levels in Containment when PRM-1 was lined up to measure the Containment atmosphere with a setpoint of four times background, the isolation function called for would already have been taken. Therefore, this event had no effect on the health and safety of the public.

Containment pressure reductions are required to be monitored by PRM-1 by TTS 3.3.2 and TTS 3.3.3.11 with a setpoint of no more than twice background. During pressure reductions, PRM-1 would have detected any significant increase in effluent activity and terminated the release by closing the Containment ventilation valves. While the particulate channel of PRM-1 would not have been able to detect RCS leakage to the level described in the FSAR, two other independent methods as specified in TTS 3.4.6.1 (Containment sump inventory and either the Containment air cooler condensate inventory or the Containment atmosphere gaseous radioactivity monitoring systems) were OPERABLE and could have detected RCS leakage. As a result, there was no effect on the health and safety of the public.

Previous Similar Events

Licensee Event Reports for the last five years were reviewed for other instances where Mode changes were made while relying upon the Action Statement of TTS 3.0.4. No instances were identified. This instance appears to be an isolated occurrence.