



Portland General Electric Company

September 29, 1980

Trojan Nuclear Plant  
Docket 50-344  
License NPF-1

Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Eisenhut:

Our previous letter to the NRC, dated January 2, 1980 (C. Goodwin, Jr. to H. Denton), provided our commitment to meet the January 1, 1981 implementation date for various TMI Lessons Learned items. Furthermore, PGE agreed to provide notice of delays in implementation due to material delivery problems. Attachment 1 provides a summary of the PGE commitments to the NRC on NUREG-0578 action items to be completed by January 1, 1981.

Difficulty in meeting the January 1, 1981 date is anticipated for the following items:

- 2.1.3.b - Vessel Water Level Indication
- 2.1.6.b - Plant Shielding and Environmental Qualification of Equipment
- 2.1.8.a - Post-Accident Sampling Capability
- 2.1.8.b - Increased Range of Radiation Monitors
- 2.1.9.b - Containment Water Level Indication
- 2.1.9.c - Reactor Vessel Head Vent

All of these items require a plant shutdown to perform the installation except for Item 2.1.8.a.

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Portland General Electric Company

Mr. Darrell G. Eisenhut  
September 29, 1980  
Page 2

The current status of implementation of each of the TMI Lessons Learned action items not yet completed, together with a description of the anticipated difficulties in attaining the January 1, 1981 completion date, and the alternate means of performing that action to be utilized for interim operation are provided in Attachment 1. A great deal of extra effort - in both man-hours and a higher premium has been expended to obtain the material, complete the design, and attempt to meet the January 1, 1981 deadline.

Your letter of September 5, 1980 provided additional clarification and preliminary schedule relief for many TMI Lessons Learned action items previously required to be implemented by January 1, 1981. The September 5 letter granted relief from all of those potential problem items described in Attachment 1, with the exception of Item 2.1.9.b, Containment Water Level Indication. It is now expected that all of the action items in Attachment 1 will be completed in accordance with the revised schedule, with the exception of Item 2.1.9.b.

Design and installation of a wide-range Containment water level monitoring system commenced in the fall of 1979 and continued during the spring refueling outage in 1980. The original system considered consisted of a bubbler-type monitor which required two Containment penetrations. Necessary adaptors for the Containment penetrations were not completed in time for installation during the 1980 refueling shutdown. A shutdown would be required between now and January 1, 1981 for completion of this action item. Such a shutdown would last approximately 3 weeks - 2 weeks for completion of the work, 1/2 week for shutdown and cooldown, and 1/2 week for heatup and startup. Any shutdown between now and the spring of 1981 is likely to significantly increase oil and natural gas consumption in the Pacific Northwest for replacement power.

Furthermore, evaluation of the bubbler design for the Containment water level monitoring system reveals that it does not meet all aspects of the criteria specified in Regulatory Guide 1.97, Revision 2 (Draft E). Therefore, consideration is being given to an alternative design that utilizes differential pressure transmitters located inside Containment. It is not possible to obtain qualified differential pressure transmitters prior to January 1, 1981. We are in the process of ordering these transmitters and have a promised date of April 1981 which we will attempt to improve. A potential design utilizing Gem limit switches was also under consideration, but has been rejected because it was not clear that it could meet the requirements of Regulatory Guide 1.97.

Portland General Electric Company

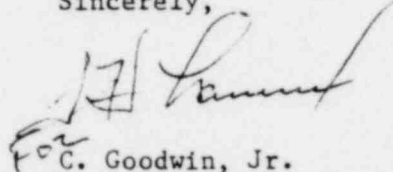
Mr. Darrell G. Eisenhut  
September 26, 1980  
Page 3

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We have made a concerted effort to meet the January 1, 1981 date for all TMI Lessons Learned items. However, due to circumstances that could not be foreseen and which are not under our control, we hereby request a delay in implementation of the Containment water level monitoring system until startup from our Cycle 4 refueling outage, currently scheduled for the spring of 1981. In order to either plan or discontinue planning for a fall outage currently scheduled to commence on October 24, 1980, a decision on this matter would be appreciated as soon as possible but certainly no later than October 3, 1980. If additional discussion is necessary, please do not hesitate to contact us.

Attachment 2 provides some editorial and other miscellaneous comments on the September 5, 1980 letter for your consideration in a future revision.

Sincerely,



For  
C. Goodwin, Jr.  
Assistant Vice President  
Thermal Plant Operation and  
Maintenance

CG/GAZ/KM/mg/4sh10A5  
Attachment

c: Mr. Robert A. Clark, Chief  
Operating Reactors Branch No. 3  
Division of Licensing  
U. S. Nuclear Regulatory Commission

Mr. R. H. Engolken, Director  
U. S. Nuclear Regulatory Commission  
Region V

Mr. Lynn Frank, Director  
State of Oregon  
Department of Energy

## ATTACHMENT I

## TROYAN NUCLEAR PLANT

## SUMMARY OF PGE COMMITMENTS TO THE NRC ON NUREG-0578 ACTION ITEMS FOR 1/1/81

(9/10/80)

NRC Requirements (NUREG-0578, NRC 10/30/79 Letters)	PGE Commitments	Status of Implementation	Anticipated Difficulties for 1/1/81 Completion	Alternate Design for Interim Operations	Action Plan Reference
<p>*2.1.3.b Vessel Water Level Indication:</p> <p>Install new instrumentation (e.g., vessel level indication) to provide unambiguous indication of inadequate core cooling. Implement necessary procedures to be used with the proposed equipment.</p>	<p>Provide new instrumentation for detection of inadequate core cooling; listed possible approaches being under review such as vessel level indication, incore detectors, excore detectors, RCP motor current and core exit thermocouples.</p>	<p>Installed pressure taps on top and bottom of RPV and provided piping to AP instrumentation. Conduit and cable pulling for transmitters inside Containment partially completed. Two electrical and one mechanical Detailed Construction Packages (DCPs) have been issued to the field. One electrical DCP for installation of instrumentation to be issued 9/15/80.</p>	<p>Installation of remainder of cable, transmitters, and RTDs will require a Plant shutdown. Construction estimates a 2-week duration for remaining shutdown work. Qualified Barton transmitters not scheduled to ship until May 1981. Temporary unqualified transmitters are physically installed but not operational. Delivery dates for several electrical instruments anticipated to be after 1/1/81.</p>	<p>Indirect indication of inadequate core cooling can be detected by existing subcooling monitors (1/1/80 item), core exit thermocouples, incore detectors, and RCP motor current.</p>	II.F.2
<p>2.1.6.a Integrity of Systems Containing Radioactivity:</p> <p>Identify potential paths for uncontrolled release of radioactivity and complete modifications.</p>	<p>Modify piping connections of RWST overflow line and Auxiliary Building floor drain lines to prevent potential paths for uncontrolled release of radioactivity.</p>	<p>The mechanical design for installation of pipe fittings, valves, drain trips for prevention of unmonitored gaseous release outside the Plant to be issued to the field by 9/15/80. Material to be ordered in early September (estimated delivery less than 30 days).</p>	<p>Modification can be completed during Plant operation. No major problems anticipated.</p>	III.D.1.1	
<p>*2.1.6.b Plant Shielding and Environmental Qualification of Equipment:</p> <p>Complete Plant modifications in shielding design, operating procedures and environmental qualification of equipment identified in the shielding design review.</p>	<p>Conduct additional shielding analyses in 13 areas identified in preliminary review and complete modifications, if any; analyze later identified four areas of modifications.</p>	<p>Design for installation of valve rearchrod for MGST issued to the field. All long lead material onsite.</p> <p>Inspection of spare filters in progress to determine if modifications required so that remote handling of contaminated filters is possible. If modifications are required, no long lead material required.</p>	<p>Modification can be completed during Plant operation. No major problems anticipated.</p> <p>If modification required, can be completed during Plant operation. No major problems anticipated.</p>	II.B.2	
<p>Complete Plant modifications in shielding design, operating procedures and environmental qualification of equipment identified in the shielding design review.</p>	<p>Complete modification of mechanical components to satisfy radiological environmental qualification, after additional analysis is completed on valve packing, O-rings, solenoid valves, gaskets, etc; subsequent analysis determined no modification is necessary.</p>	<p>Design approach just finalized. CVCS and HUT vent piping will be rerouted to minimize personnel exposure. Addition of lead shielding also required.</p>	<p>Rerouting of CVCS and HUT vent piping will require a Plant shutdown, cooldown, and partial draining of the RCS. Design can be completed to support full shutdown, but duration of outage affected by partial drain requirements. New vent and drain valves may be required - may be</p>	<p>Modification required to permit continuous occupancy of radwaste control panel following letdown to CVCS HUT tanks. Although radwaste panel occupancy is discussed in NUREG-0578, it is not required for the safe shutdown of the Plant. Until modification is complete, letdown can be directed to the Containment or temporary shielding could</p>	

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ATTACHMENT I

TRIJAN NUCLEAR PLANT

SUMMARY OF PGE COMMITMENTS TO THE NRC ON NUREG-0578 ACTION ITEMS FOR 1/1/81

(9/10/80)

NRC Requirements (NUREG-0578, NRC 10/30/79 Letters)	PGE Commitments	Status of Implementation	Anticipated Difficulties for 1/1/81 Completion	Alternate Design for Interim Operations	Action Plan Reference
			long lead if valves cannot be found in spares onsite.	be installed around the panel if letdown to the HUT occurs after severe core damage.	
		<ul style="list-style-type: none"> <li>Design approach is being reviewed. Addition of steel plate shielding for MGST cubicle required. No long lead material required. Civil design to be issued to the field by 10/1.</li> <li>Design for installation of reachrod for RHR isolation valves issued to the field. All long lead material scheduled to arrive by mid-September.</li> </ul>	<ul style="list-style-type: none"> <li>Modification can be completed during Plant operation. No major problems anticipated.</li> <li>Modification can be completed during Plant operation. No major problems anticipated.</li> </ul>		
	<ul style="list-style-type: none"> <li>Upgrade environmental qualification of applicable electrical equipment reviewed in IR 79-018.</li> </ul>	<ul style="list-style-type: none"> <li>Replacement of certain electrical components outside Containment required. Some spares from other RDCs available onsite. Qualification of existing components also being pursued.</li> </ul>	<ul style="list-style-type: none"> <li>If hydrogen sample panels cannot be qualified to meet source term requirements, delivery of new panels unlikely before 1/1/81. Replacement of a solenoid air valve for CVCS system containment isolation valve requires a Plant shutdown. Four solenoid valves that should be in stock onsite have not been located yet (20 week lead time). Two limit switches not in stock have 6-week lead time.</li> </ul>	<ul style="list-style-type: none"> <li>Present qualification of electrical equipment in question is only a factor of 10 less than extremely conservative NRC specifications.</li> </ul>	
<p>2.1.7.b AFW Flow Indication:</p> <p>AFW flow indication to each steam generator shall satisfy safety-grade requirements.</p>	<p>Provide safety-grade power supply, flow indicators and transmitters.</p>	<ul style="list-style-type: none"> <li>Commitment partially completed by installation of Class 1E Power Supply to existing flow indication. Taps for new full safety-grade transmitters installed during spring outage. Mechanical and electrical DCPs for full safety grade to be issued to the field 9/15/80.</li> </ul>	<ul style="list-style-type: none"> <li>Modification can be completed during operation. No major problems presently anticipated. As design progresses, unforeseen problems may develop.</li> <li>Transmitters scheduled to ship 10/15/80. Power supply in warehouse; replacement no ETA. Current-to-current isolators has no ETA (installation can be delayed). The temporary flow indicators scheduled to arrive 9/15/80; replacement no ETA.</li> </ul>		<ul style="list-style-type: none"> <li>11.E.1.2</li> <li>tors A and B are powered from different vital a-c bus than steam generators C and D. Backup AFW flow indication is available by steam generator local and local AFW flow indication.</li> </ul>

## ATTACHMENT 1

## TROJAN NUCLEAR PLANT

## SUMMARY OF PGE COMMITMENTS TO THE NRC ON NUREG-0578 ACTION ITEMS FOR 1/1/81

(9/10/80)

NRC Requirements (NUREG-0578, NRC 10/30/79 Letters)	PGE Commitments	Status of Implementation	Anticipated Difficulties for 1/1/81 Completion	Alternate Design for Interim Operations	Action Plan Reference
<p>2.1.8.a Post-Accident Sampling Capability:</p> <p>Shall have a capability to promptly (&lt;1 hr.) obtain RCS samples and a Containment atmosphere sample. Sample analysis capability should include determination of noble gases, iodines, cesiums, non-volatile isotopes, hydrogen and dissolved gases.</p>	<p>Provide a shielded sampling facility to obtain a pressurized sample of reactor coolant liquid for analyses of radioisotopic composition, hydrogen and boron (and possibly chloride). A capability to sample and analyze a Containment air sample will be included in the shielded sampling facility.</p>	<p>First DCP for interconnections and tie-ins for samples to be issued by mid-September. Bids from vendors for sample panels due 9/4.</p>	<p>Modification can be completed during Plant operation. Delivery and installation of panels by the end of May 1981 is in question because sample panel vendor has not been selected.</p>	<p>The NRC-approved PGE interim sampling methods and associated procedures are in place at Trojan; the NRC Radiological Assessment Team (RAT) has reviewed the interim approach. The team suggests relatively minor equipment and procedure changes.</p>	II.B.3
<p>2.1.8.b Increased Range of Radiation Monitors:</p> <p>Provide high-range noble gas effluent monitors for each release path, capability for effluent monitoring of radio-iodines and high-range Containment area radiation monitors.</p>	<p>Install two high-range (<math>10^{-10^7}</math> R/hr) Containment area radiation monitors.</p> <p>Improved iodine measurement will be covered in 2.1.8.c.</p> <p>Install high-range radiation monitors for Auxiliary Building (up to 300 <math>\mu\text{Ci/cc}</math>) and Condenser Air Discharge and Containment Purge (up to <math>1 \times 10^5</math> <math>\mu\text{Ci/cc}</math>).</p>	<p>Electrical design for conduit and cable in Containment partially installed during spring outage. Electrical design for installation of NCDT drain line monitor issued to the field. Final design scheduled to be issued 9/5 (install ratemeters, conduit, and cable outside Containment and detectors inside Containment).</p> <p>Electrical and mechanical design for expanding range of PRM 1 and PRM 6 is finalized. Rerouting of some sample piping to new detectors required. Electrical and mechanical design dependent on receiving design information from vendor (Victoreen).</p>	<p>All material scheduled to arrive onsite by mid-September. Installation of two detectors, cable, and connectors in Containment requires a Plant shutdown. Installation of cable and ratemeters in control room also requires a Plant shutdown. Construction estimates 1-week duration for shutdown work.</p> <p>Rerouting of sample piping and installation of ratemeters in panel C41 in control room require a Plant shutdown. Rack chassis and connectors for ratemeters may be available by shutdown - will permit wiring on C41 to be completed during shutdown. Preliminary drawings are on hand and are being sent to Bechtel. Design drawings from Victoreen expected by 9/26/80. High probability that radiation detectors and ratemeters will not arrive until December 1980 or later.</p>	<p>Interim noble gas radiation monitors (local readout) capable of measuring up to <math>1 \times 10^5</math> <math>\mu\text{Ci/cc}</math> are already in place on Condenser Air Discharge and Containment Purge systems. Auxiliary Building radiation monitor is already completed.</p> <p><math>\text{H}_2</math> monitor panel and sample line need to be relocated to reduce background radiation level at PRMs 1 and 2. (Concerns for PRMs 1 and 2 high backgrounds may be resolved by implementation of Administrative Orders for an interim period.)</p> <p>Alternate for high-range Containment ARMs is use of new RERP procedure to measure radiation level outside Containment. Also, current Containment ARMs have a range of <math>10^4</math> R/hr.</p>	II.F.1
<p>2.1.8.c Improved Iodine Instrumentation:</p> <p>Shall have a capability to accurately measure iodine concentrations under accident conditions at a low background and low contamination area.</p>	<p>Establish backup analysis capability for radioiodine in mobile sampling facility equipped with Ce-Li gamma spectroscopy system.</p>	<p>Continue review of the feasibility and necessary equipment.</p>	<p>No anticipated difficulties for meeting 1/1/81.</p>		II.F.1
<p>2.1.9.a Containment Pressure Indication:</p> <p>Provide continuous indication of Containment pressure (up to three times design pressure) in accordance with Regulatory Guide 1.97.</p>	<p>Install two Containment pressure transmitters with safety-grade cables and power supplies for measuring pressure between -10 and 190 psig.</p>	<p>Installation of root valves completed during spring outage. Mechanical DCP installation of impulse lines and pressure transmitters and electrical DCP for installation of conduit, cable, recorders and panel modification.</p>	<p>Qualified Rosemount transmitters scheduled for shipment 10/14/80. Barton transmitters available onsite for temporary installation. Transmitters can be changed out with Plant operating.</p>	<p>Currently Trojan has four safety-grade pressure transmitters measuring Containment pressure up to 75 psig.</p>	II.F.1 (Attachment 4)

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## ATTACHMENT I

## TROJAN NUCLEAR PLANT

## SUMMARY OF PGE COMMITMENTS TO THE NRC ON NUREG-0578 ACTION ITEMS FOR 1/1/81

(9/10/80)

NRC Requirements (NUREG-0578, NRC 10/30/79 Letters)	PGE Commitments	Status of Implementation	Anticipated Difficulties for 1/1/81 Completion	Alternate Design for Interim Operations	Action Plan Reference
<p>*2.1.9.b Containment Water Level Indication:</p> <p>A continuous indication of Containment water level shall be provided by a narrow-range instrument (from bottom to top of sump) and a wide-range instrument (from bottom of Containment to the height of 500,000 gal. of water).</p>	<p>Install bubbler-type level indicator measuring Containment water level from bottom of sump to Elevation 53 ft. (500,000 gal.). The system will be safety-grade and will be powered from vital instrument bus.</p>	<p>Piping, pipe supports and stillwall inside Containment installed during spring outage. Electrical and mechanical DCPs for instrumentation, wiring, piping, valves, air cylinders, flow controller and pressure regulators to be issued to the field in September. DCP revision for Containment penetrations has been issued to the field.</p>	<p>Installation of flued heads (including testing), tie-in to instrument air header, installation of flow switch, installation of fuses, power for solenoid valves required to be done during a Plant shutdown. Control switches are not scheduled to arrive until 11/28/80. Several other material items that can be installed during Plant operation either have no ETA or ETAs in November and December.</p>	<p>Existing nonsafety-related level switches mounted in each of two Containment sumps has a water measurement range of 41 ft. elevation to 45 ft. elevation; also alternate approach for Containment water level indication could consist of a water inventory/water level correlation graph.</p> <p>Containment pressure, temperature radiation will be more indicative of conditions inside Containment.</p>	<p>II.F.1 (Attachment 5)</p>
<p>*2.1.9.c Reactor Vessel Head Vent:</p> <p>Provide Reactor Coolant System and reactor vessel head high point vents remotely operated from control room. Design of the system should be in accordance with 10 CFR 50.46, 50.44 and satisfy safety-grade requirements.</p>	<p>Install the remotely operated RPV head vent system which satisfies safety-grade and single failure criterion requirements with redundant power supplies to isolation valves.</p>	<p>Installation of raceways and cable pulling inside Containment for the reactor vessel head vent valves 95 percent complete. Installation of reactor head vent piping partially completed. Electrical design for outside Containment issued to the field. Additional larger design to be issued in September. All long lead material has been delivered onsite.</p>	<p>Installation of solenoid valves requires removal of missile shield in Containment. Installation of valves, piping and pipe supports in Containment and control wiring in panel C16 in the control room requires a Plant shutdown. Construction estimates a 3 week duration for the shutdown work.</p>	<p>Should a necessity for the head vent occur in a interim period, PORVs could provide a backup capability for venting.</p>	<p>II.B.1</p>
<p>2.2.2.b Technical Support Center (TSC):</p> <p>Establish a permanent TSC with required space, communication links, Plant parameter displays, Plant drawings and procedures.</p>	<p>The permanent TSC will be located in the control room viewing gallery with necessary habitability, communications and data transmission capabilities (subsequent meeting with the NRC informally described W computer system for TSC and a new TSC building).</p>	<p>W computer system has been purchased and necessary engineering works are in progress.</p> <p>Stone &amp; Webster was chosen as an A/E for engineering and construction of new TSC building.</p>	<p>NRC has reestablished deadline for completion as 4/82.</p>	<p>An interim TSC was established in the Auxiliary Building conference room with communication lines and closed-circuit TV from the control room.</p>	<p>III.A.1.2</p>

\* Completion of implementation requires Plant shutdown condition.

ATTACHMENT 2

Comment on September 5, 1980 NRC Letter  
To All Licensees of Operating Plants  
and Applicants for Operating Licenses  
and Holders of Construction Permits  
Providing Preliminary Clarification  
of TMI Action Plan Requirements

1. Item II.B.1, Reactor Coolant System Vents: With a new preliminary implementation date of January 1, 1982, submittal of operating procedures by July 1, 1981 is premature. Operating Procedures should not be required until October 1, 1981 or November 1, 1981.
2. Item II.B.2, Plant Shielding Modifications: This has been classified as a post-implementation review item by the NRC with a new preliminary implementation date of January 1, 1982. A submittal of material that is still required by June 30, 1981 is in conflict with the concept of post-implementation review. The June 30, 1981 date should be changed to January 1, 1982.
3. Item II.F.2, Reactor Pressure Vessel Level Indication: A similar schedule change to the above Item 2 should be made on this item. The new preliminary implementation schedule in the September 5, 1980 letter requires completion of modifications by January 1, 1982 followed by a submittal of final design description by January 1, 1981. Since this item is one of the post-implementation review items, the January 1, 1981 submittal date should be changed.