

**FGE**



December 1, 1989  
CPY-321-89

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

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

Gentlemen:

Licensee Event Report No. 89-25 is attached. This report discusses an event in which the Control Building through wall bolts tensioning data was not properly trended.

Sincerely,

C. P. Yundt  
General Manager  
Trojan Nuclear Plant

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

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

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

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Trojan Nuclear Plant	DOCKET NUMBER (2) 0 5 0 0 0 3 4 4	PAGE (3) 1 OF 0 4
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TITLE (4)  
Required Trending of Control Building Through Wall Bolts Not Completed  
Due to Personnel Errors

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	1	0	8	9	8	9	0	2	5	0	0	1	2	0	1	8	9	N/A	0	5	0	0	0

OPERATING MODE (9) 1

POWER LEVEL (10) 0 19 17

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 60.30(a)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 60.30(a)(2)	<input type="checkbox"/> 60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.406(a)(1)(iv)	<input checked="" type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.406(a)(1)(vi)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(i)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Tyrone R. Blackburn, PRB Engineer	TELEPHONE NUMBER AREA CODE 5 0 3 5 5 6 - 3 7 1 3
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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)

During a recent internal audit it was discovered that trend analyses of Control Building through-bolt inspections had not been performed as required by Trojan Technical Specification (TTS) 4.7.11.1.e, "Control Building Modification Connection Bolts." TTS 4.7.11.1.e states "Beginning with the third-year inspection a trend analysis shall be used to predict the existing bolt tension at the end of the next inspection interval." A thirty year projection of non-retensioned control bolts was used to verify the required tensions would be present at thirty years, vice performing trend analysis projections as required by the TTSs for the three and fifth-year surveillances. In summary, although projections were made to indicate that future tensions would be adequate, the required trend analysis to predict tensions for the next surveillance interval was not documented.

The primary causes were the failure to track a required surveillance and a personnel error in not completing all documentation. Additionally, a TTS change was initiated to document the methods being employed, but a personnel error kept the change from being processed. In addition to completing the required reports and trending, the TTS will be evaluated and if necessary a change submitted to update the actual testing, retensioning, and trending requirements.

This event had no effect on public health and safety.

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		89	025	00	02	OF 04

TEXT (If more space is required, use additional NRC Form 306A's) (17)

DESCRIPTION OF OCCURRENCE

During a recent internal audit it was discovered that the required trend analysis for three-year and five-year Control Building through-bolt inspections had not been performed as required by Trojan Technical Specification (TTS) 4.7.11.1.e, "Control Building Modification Connection Bolts." This TTS states "Beginning with the third-year inspection a trend analysis shall be used to predict the existing bolt tension at the end of the next inspection interval." In addition, the audit found that the documentation package for the fifth-year surveillance had not been completed and had not been reviewed and approved by the Nuclear Plant Engineering (NPE) Civil Branch.

The through wall bolts were installed and tensioned during the Control Building modifications in 1981, and function to maintain the structural integrity of the east and west walls of the Control Building. For the west wall, the tension in the bolts provide the clamping force needed to assure that the added large steel plate will act together with the masonry wall to resist any lateral loads demands. For the east wall, the bolts assure that the added concrete wall will act together with the masonry portion of the wall.

TTS 4.7.11.1 requires periodic surveillances of the tension in the bolts to assure that the structural integrity of the Control Building walls is maintained. These surveillances are performed at the end of six-months, one, three, and five years after initial tensioning (July 1981) and at subsequent five year intervals. The TTS requires that a trend analysis be used beginning with the third-year inspection to verify that the required tension will be present at the next interval.

During the first surveillance at the six-month point in January 1982, six (6) bolts were found to be untensioned or to have low tension. These tensioning errors were found to be due to personnel error. The failure resulted in retesting and retensioning all but the ten bolts in the special sample group described in TTS 4.7.11.2. Despite this, the mean tension of all bolts in the wall of concern, including the bolts with inadequate tension, was above the minimum mean tension value in TTS 4.7.11.1.b. No other events have occurred where bolts have experienced low tension conditions.

Subsequent to the six-month surveillance, bolts included in each surveillance sample have been retensioned to a higher value. This retensioning maintains a higher average tension for all bolts and is conservative. The effect of retensioning, along with the small number of data points from the surveillance, makes the trending of data from the general sample of bolts indeterminate. Therefore, trending was done using data from the special sample group of bolts. This sample consisted of ten bolts which were inspected as required by TTS 4.7.11.2 at three month intervals up to the third-year inspection (July 1984). The testing of this control sample was extended an additional year to August 1985 to provided better data for trend



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TEXT (If more space is required, use additional NRC Form 388A's) (17)

equations for the bolts. The data from the inspections of the control bolt sample were used to project bolt tensions out to thirty years. None of the projected bolt tensions for the ten bolts fell to below 80% of initial tension at thirty years. When the 30 year trend was performed it was considered to conservatively bound the TTS requirements. A TTS revision was initiated to include the 30 year trending; however, due to a personnel error the change was never processed.

The thirty year projection of the non-retensioned control bolts, performed prior to the fifth-year surveillance, was considered at the time to be a conservative alternative method of the required trend analysis. During the fifth-year surveillance, tension values for the inspection sample were compared to previous tension values to ensure that excessive losses had not taken place and that the values were within the expected range. Subsequent to the identification of the failure to calculate third and fifth-year trend values, a trend analysis for all bolts has been calculated. The predicted tension value for each bolt at the time of the next surveillance (ten years) has been calculated by using the projected losses with time from the control bolt sample and applying these losses to the last retensioning value obtained for the bolt. These calculations have not been approved, but will be by December 15, 1989.

In summary, although projections were made to indicate that future tensions would be adequate, the required trend analysis to predict tensions for the next surveillance interval was not documented. Initial calculations for this trend analysis have now been performed and the projected tensions for the next surveillance interval have been shown to meet the TTS requirements.

CAUSE OF OCCURRENCE

1. There was no scheduling or tracking mechanism for the trend requirement.
2. An additional cause was personnel error in not completing all required documentation.
3. A contributing cause was the personnel error in not completing recommended changes to the TTS.

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

CORRECTIVE ACTIONS

1. The surveillance requirements for the through wall bolts will be added to a surveillance tracking system by January 15, 1990. (CTL #31229)
2. The fifth-year surveillance report will be completed by December 15, 1989. (CTL #31230)
3. The TTS will be evaluated and if necessary a change to the TTS will be submitted to update the testing, retensioning, and trending requirements. (CTL # 30997)
4. Due to this and other surveillance problems recently identified, a task group has being organized to identify and rectify problems in the surveillance program. The scope of this task group and the schedule for surveillance program revisions will be provided in separate correspondence.

SIGNIFICANCE OF OCCURRENCE

Both the thirty year projection of tensions from the control bolt sample data, and the initial trend analysis of tensions for all bolts at the next surveillance interval, show that bolts will retain higher tensions than required. The required design margins for the Control Building shear walls containing the through wall bolts have been and will be maintained. This event had no effect on public health and safety.