ATTACHMENT 3

UNRESOLVED PROBLEM REGARDING REACTION FORCES FROM PIPING ATTACHED TO COMPOSITE, SINGLE BLOCK AND MORTARED DOUBLE BLOCK WALLS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-344
PORTLAND GENERAL ELECTRIC COMPANY, ET AL.	)	(Control Building)
	)	
(Trojan Nuclear Plant)	)	

JOINT AFFIDAVIT OF CHARLES M. TRAMMELL, III AND KENNETH S. HERRING ON UNRESOLVED PROBLEM REGARDING REACTION FORCES FROM PIPING ATTACHED TO COMPOSITE, SINGLE BLOCK AND MORTARED DOUBLE BLOCK WALLS

STATE OF MARYLAND)SS
COUNTY OF MONTGOMERY)

I, Charles M. Trammell, III, being duly sworn, depose and state:

1. I am a Senior Project Manager, Divison of Operating Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

2. I have prepared the statement of Professional Qualifications attached hereto, and, if called upon, would testify as set forth therein.

I, Kenneth S. Herring, being duly sworn, depose and state:

3. I am a senior structural engineer, Engineering Branch, Divison of Operating Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

4. I have prepared the statement of professional qualifications attached hereto, and if called upon, would testify as set forth therein.

We, the affiants Charles M. Trammell, III and Kenneth S. Herring, being duly sworn, depose and state:

5. In Licensing Board notification documents, dated November 13, 1979 and November 30, 1979, the Staff informed the Board of a problem whereby certain single block and mortared double block walls at Trojan were inadequately designed to withstand reaction forces from piping attached to such walls. As described in those Board notification documents, a number of pipe supports were required to be modified to deal with this problem. The reaction force problem remains unresolved at this time. A very small number of pipe supports that were modified for interim operation are being modified again to relieve the reaction force problem.

6. As background, it should be noted that the Board's Order of December 21, 1978 (incorporated into the Trojan Operating License by amendment on December 22, 1978) required that "[o]peration of the Trojan facility pursuant to the amendment may commence only after completion of such additions and modifications of pipe and equipment supports and pipe restrains as are necessary to assure that piping system and equipment within the Control, Auxiliary and Fuel Building Complex required for safe shutdown and to maintain off-site doses from accidents and within the guidelines of 10 CFR Part 100 are qualified to withstand earthquakes up to and including the 0.25g SSE."

7. Although the criteria for how this was to be done was not explicitly stated, it was the Staff's intention and the Licensee's commitment that these piping systems and equipment should be qualified to FSAR criteria for the revised response spectra. LER 79-15 modifies and supplements the techniques and criteria for evaluating piping and equipment support reactions.

8. There are, at this point, two supports which were modified for interim operation which are being modified again as a result fo LER 79-15*. The modifications are not triggered by an error on the Licensee's part in implementing the license condition quoted earlier. Rather, one is being changed to eliminate an interference with a newly modified support; the other is being thru-bolted as a result of more conservative criteria developed in LER 79-15. In addition, three supports on one masonry wall included in the STARDYNE model for interim operation will be thru-bolted as a result of the problem identified in LER 79-15.

9. While it is true that LER 79-15 deals with the same items as were considered under interim operation -- namely, piping and equipment suports, and walls and the seismic design of these items, the deficiencies identified in LER 79-15 are not dependent upon the existence of the deficiencies which are the subject of the Control Building proceeding.

10. This matter of LER 79-15 is currently being resolved by the NRC Staff (NRR and I&E personnel).

Kenneth S. Herring

Kenneth S. Herring

Charles M. Trammell, III

Subscribed and sworn to before me
this 7th day of December, 1979

Notary Public

My Commission expires: July 1, 1982.

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* See PGE Letter of November 19, 1979 (3 pages).

CHARLES M. TRAMMELL, III

DIVISION OF OPERATING REACTORS

U. S. NUCLEAR REGULATORY COMMISSION

PROFESSIONAL QUALIFICATIONS

I am a senior project manager in the Division of Operating Reactors, Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission. As such, I am responsible for managing and participating in the safety and environmental reviews associated with licensing actions regarding the design and operation of assigned operating power and research reactors. This includes planning and coordinating the efforts of other Commission personnel involved in the reviews.

I have a Bachelor of Arts degree in mathematics from Brown University, and one year of graduate studies in mathematics at Rennselaer Polytechnic Institute where I worked as a graduate assistant.

From November 1962 until February 1964, I attended U. S. Naval Destroyer School at Newport, Rhode Island, and was subsequently assigned as Engineer Officer of USS Farragut (DLG-6), where I was responsible for all aspects of propulsion engineering and related auxiliary equipment.

My experience in the nuclear field began in 1964, when I entered the Navy Nuclear Power Program. I attended a one-year course in naval nuclear power, and was subsequently selected for a staff position at the Navy's prototype nuclear power plant (D1G) at West Milton, New York. There I

was in charge of a shift crew which operated the plant for training and engineering testing. I was responsible for the training and nuclear qualification of assigned officers and enlisted men.

From 1967 until 1974, I was employed by Public Service Electric and Gas Company where I was responsible initially for the Preliminary Safety Analysis Report for the Salem Nuclear Generating Station. Later, I attended the Westinghouse Reactor Operator Training Program (10 months) which led to certification of equivalency as Reactor Operator thereby establishing eligibility for a "cold" senior reactor operator license at Salem. In 1969, I was promoted to Reactor Engineer at the Salem station where I was responsible for developing physics and core performance tests and fuel handling procedures while the plant was under construction. Training at Westinghouse Nuclear Operations Division and startup testing experience at Indian Point, Ginna, H. B. Robinson and Surry stations led to qualification as nuclear engineer in accordance with ANSI Standard N18.1. In September 1973, I was promoted to the position of Quality Assurance Engineer at the Salem site, where I was responsible for developing the quality assurance program for the operational phase of the Salem station.

I have held my position with the Commission since September 1974. I have participated in numerous safety and environmental reviews of all types of commercial nuclear power plants, including testifying as an expert witness in the Trojan Spent Fuel Pool Expansion Hearing.

PROFESSIONAL QUALIFICATIONS
OF
KENNETH S. HERRING

EXPERIENCE:

Jan. 1977 to Present

U.S. Nuclear Regulatory Commission
Engineering Branch, Division of Operating Reactors
Office of Nuclear Reactor Regulation
Washington, D.C. 20555
Applied Mechanics Engineer (1/77 to 1/79)
Structural Dynamicist (1/79 to 10/79)
Senior Structural Engineer (10/79 to Present)
Responsible for the review, the analysis, and the evaluation of structural and mechanical aspects related to safety issues for reactor facilities licensed for power operation, and test reactor facilities, including the formulation of regulations and safety criteria. An emphasis is placed on seismic, impact and other dynamic loading considerations, in addition to static loading considerations; and linear and nonlinear, concrete and steel behavior.
Responsible for coordinating various outside technical assistance programs and internal tasks related to structural and mechanical applications to nuclear power plants.

Aug. 1974 to Dec. 1976

Stone and Webster Engineering Corporation
3 Executive Campus
Cherry Hill, New Jersey
Structural Engineer in the Structural Mechanics Group
Responsible for conducting static and dynamic, including seismic, finite element analysis and design of structures in nuclear power generation facilities.
Responsible for maintaining the Strucural Mechanics computer facilities at CHOC.
Fortran IV programming experience.

Aug. 1973 to Aug. 1974

University of Illinois, Department of Civil Engineering
Urbana, Illinois 61801
Research Assistant
Responsible for conducting an investigation into the material properties of fiber reinforced concrete using quick-setting cements for the Department of Transportation, Federal Railroad Administration. A report on the outcome of the study was published.

EDUCATION:

State University of New York at Stony Brook - Bachelor of Engineering - May 1973

University of Illinois at Urbana-Champaign - Master of Science in Civil Engineering (Structures) - August 1974

ENGINEER-IN-TRAINING: New Jersey

TECHNICAL SOCIETIES:

American Society of Civil Engineers - Associate Member - April 1974 to Present.

ASME BOILER AND PRESSURE VESSEL CODE COMMITTEES:

Section XI - Subgroup on Containment - Member - January 1979 to Present.