

FGE

March 20, 1979

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Director of Nuclear Reactor Regulation
ATTN: Mr. A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

The Nuclear Regulatory Commission, upon approval of Amendment 29 to Trojan's Operating License, requested that Portland General Electric furnish the results of radiation surveys which confirm the effectiveness of the modified biological shield design.

The radiation surveys have been completed and are summarized in the attachment. The results, obtained at 100-percent power, are for water bags over the inspection ports and no shielding over the reactor cavity annulus.

The results indicate that neutron dose rates throughout the Containment are generally lower than predicted except for streaming in the vicinity of the reactor pressure vessel at Points 1, 3, and 3A. At Point 3A, measured neutron dose rates are about three times higher than predicted. Neutron dose rates below the operating floor (Elevation 93 ft) were less than 5 mrem/hr. The neutron measurements were taken using a PNR-4 neutron survey meter with an upper scale reading of 5000 mrem/hr. The maximum dose rate of 11.5 rem/hr at Point 3A was extrapolated from 50-percent power data and subsequently confirmed by independent measurements by NRC Region V and Battelle Northwest Labs.

Battelle Northwest Labs is conducting a survey at operating nuclear sites to determine neutron energy spectra and response characteristics of various neutron monitoring devices. Trojan has participated in this

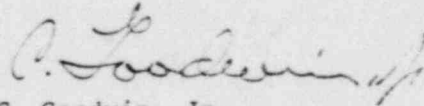
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survey. Preliminary results from other plants indicate that the PNR-4 survey meter may over-respond by a factor of three at the low to intermediate neutron energies typically found inside PWR Containments. This effect may explain the factor of three discrepancy between measured and predicted results.

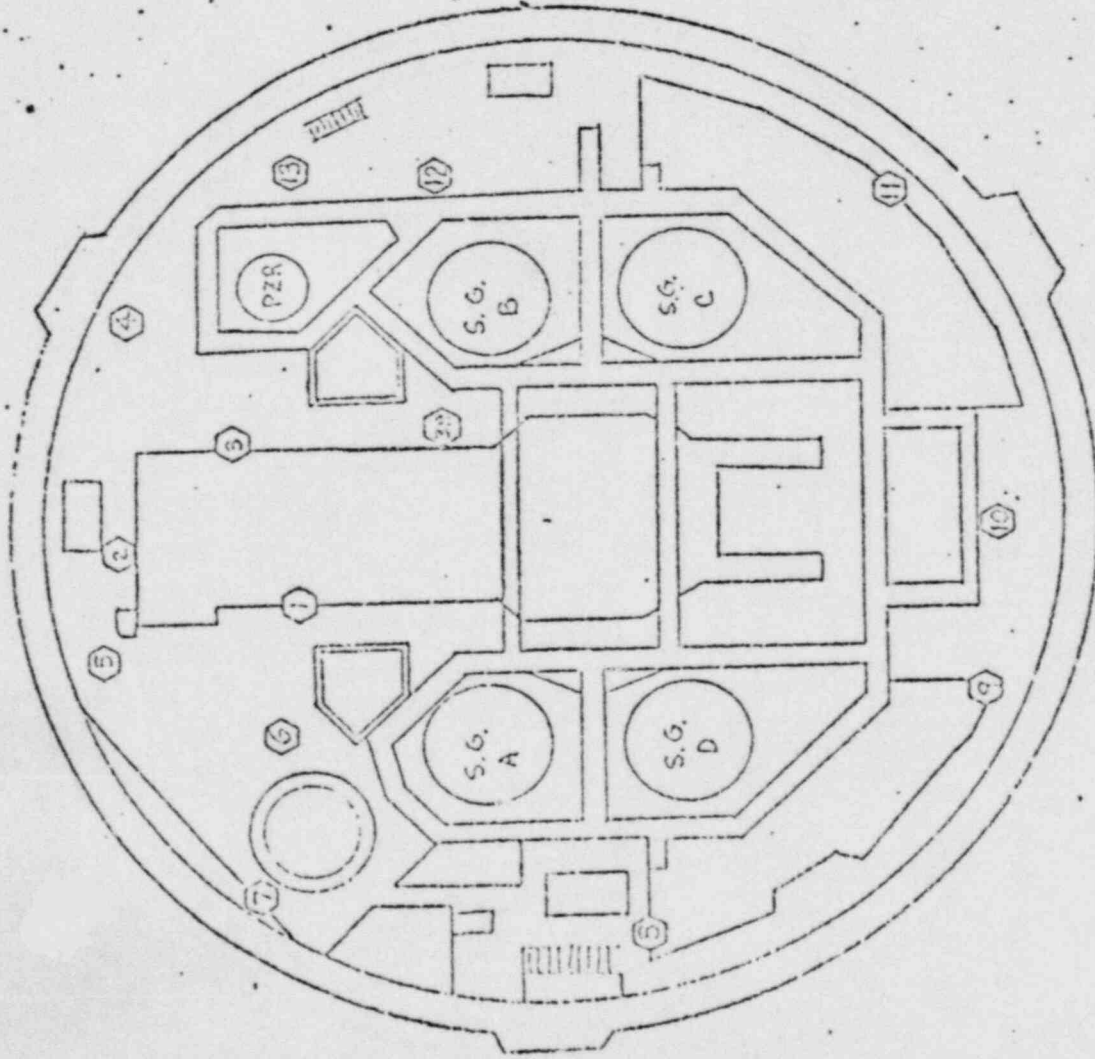
Sincerely



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

CG/JWL/JLT/4kk10A16
Attachment

TRUJAN - PREDICTED & MEASURED NEUTRON DOSE RATES



CONTAINMENT BUILDING EL. 93'

POINT #	MEASURED NEUTRON mrem/hr	PREDICTED NEUTRON mrem/hr
1	4800	1925
2	1100	1463
3a	11500	3696
3	5000	1540
4	160	539
5	210	303
6	360	550
7	210	133
8	10	34
9	13	34
10	25	30
11	10	30
12	5	19
13	15	27