**PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE** PNO-V-92-029C

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region V staff on this date.

**Facility**
Washington Public Power Supply System
Washington Nuclear 2
Richland, Washington
Dockets: 50-397

**Licensee Emergency Classification**
X Notification of Unusual Event
Alert
Site Area Emergency
General Emergency
Not Applicable

Subject: UPDATE/FINAL REPORT - UNUSUAL EVENT AND MANUAL SCRAM DUE TO POWER OSCILLATIONS

At 0304 PDT on 8-15-92, a manual scram was initiated due to power oscillations of approximately 24 % power, centered at 34 % power, and lasting approximately 140 seconds. An UNUSUAL EVENT was declared at 0320 PDT, and was terminated at 0430 PDT, on the basis of stable plant conditions after the shutdown.

The Augmented Inspection Team completed its investigation of the sequence of events, of immediate and root causes, and of the licensee's investigation and proposed corrective actions on August 29, 1992. A public exit meeting was held at the licensee's headquarters in Richland, Washington on August 29, 1992 to review the team's findings.

In summary, the AIT found that the power oscillations which occurred were predictable for the skewed radial and axial power distributions which were present. A secondary factor contributing to the instability was the presence of a mixture of Siemens 9X9 and 8X8 fuel. The licensee's startup procedures did not contain adequate precautions to ensure that core stability was maintained in the more vulnerable operating region between 25 % and 35 % power during plant startups. A stability monitor which was available, but was not required to be in service, would have given one or two minutes prior warning of potential instability.

Neither the licensee nor the fuel vendor had implemented additional stability precautions recommended by the Boiling Water Reactor Owner's Group advisory letter of March 18, 1992, "Implementation Guidance for Stability Interim Corrective Actions."

As part of its corrective action program, the licensee has agreed to strictly control control rod patterns, peaking factors, decay ratio, and feedwater temperature throughout the more vulnerable operating region during power escalation through the point of shifting to 60 Hz recirculation pumps. The control rod patterns to be used will be recalculated periodically to account for the influence of burnup. In addition, using a best estimate code (STAIF), the licensee has calculated the core will be stable throughout the region of vulnerability. The licensee has agreed to operate with the stability monitor in use and to continuously monitor it in the vulnerable operating region.



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The AIT independently assessed the stability of the reactor at the time of the event, and under the proposed operating constraints, using a different best estimate code (LEPOR). The AIT concluded that the probability of power oscillations under the new constraints should be very low.

The licensee restarted on August 30, 1992, using its new operating constraints for the startup. The resident inspectors will monitor the plant startup through the region of vulnerability.

This information is current as of 1500 PDT on August 31, 1992.

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