



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555**

February 16, 1983

Honorable Nunzio J. Palladino
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON THE SKAGIT/HANFORD NUCLEAR PROJECT, UNITS 1 AND 2

During its 274th meeting, February 10-12, 1983, the Advisory Committee on Reactor Safeguards completed its review of the application of the Puget Sound Power and Light Company, the Pacific Power and Light Company, the Washington Water Power Company, and the Portland General Electric Company (the Applicants) for a permit to construct the Skagit/Hanford Nuclear Project, Units 1 and 2. The Puget Sound Power and Light Company will be responsible for the design, construction, and operation of the station.

This project had originally been planned for a site on the Skagit River and was reviewed in that context by the ACRS during its 211th meeting, November 3-5, 1977. The Committee concluded that the Skagit Nuclear Power Project, Units 1 and 2, "can be constructed with reasonable assurance that they can be operated without undue risk to the health and safety of the public" in its letter to NRC Chairman, Joseph M. Hendrie, dated November 18, 1977. In 1980 the Applicants decided to move the project to a site on the Hanford Reservation, and the project name was changed in 1981 from the Skagit Nuclear Power Project to the Skagit/Hanford Nuclear Project. Taking into account this new site, the request to construct this plant was again reviewed during a Subcommittee meeting in Richland, Washington, on January 24-25, 1983. TMI-related requirements and other matters of interest were also reviewed. A visit to the new site was made by members of the Subcommittee on January 24, 1983.

The Skagit/Hanford Nuclear Project includes two 3800 MW(t) boiling water reactors of the BWR-6 type, each housed in a Mark III containment. The design of the Skagit Nuclear Project is similar to that of the Grand Gulf Nuclear Station, Unit 1 on which the Committee reported in its operating license letter of August 18, 1982.

The NSSS for the Skagit/Hanford plant is similar to, but not identical with, the GESSAR-251 reference design. The Committee reported on the GESSAR-251 design in its letter of December 17, 1976. Because of the differences in design and because GESSAR-251 had not received preliminary design approval when the Skagit application was originally submitted, the

NRC Staff made a custom review of the Skagit plant. Except as required by differences between the original and present sites -- including items such as the water supply, the temperature and humidity ranges of the atmosphere, and a foundation on soil rather than rock -- and changes in regulatory requirements between 1977 and 1982, the present plant design is essentially the same as that considered originally.

The Project will be located on the Hanford Reservation in Benton County, Washington, approximately 5 miles west of the Washington Public Power Supply System Nuclear Project No. 2 (WNP-2) and 4.8 miles northwest of the Fast Flux Test Facility (FFTF). It is 8 miles west of the Columbia River, 7 miles north of the Yakima River at Horns Rapid Dam, and 12 miles northwest of the city of North Richland. The exclusion area boundary is at a radius of one mile. The low population zone has a radius of 4 miles, which includes no residents. The 10 mile radius includes a resident population of 357. In addition, about 5000 persons are employed at the WNP-2 and FFTF sites. The nearest center of population is Richland, Washington with a population of 33,578 (1980 census).

The schedule for the start of construction has not yet been established. In addition to the need for receiving a construction permit, the start of construction will depend on the decision by the regional power planning council to include the Skagit/Hanford Nuclear Project as a power resource in their regional power plan. It is also dependent on the state of the economy.

The NRC Staff has asked the Applicants to perform additional core drilling to determine if capable faults are associated with the May Junction Monocline, which, at its closest point, is about 4 miles north of the site. We agree with this recommendation, and the Applicants have committed to the additional core drilling before any major construction work is initiated. Although it is not expected that such subsurface investigations will resolve small faults with accumulated vertical displacements less than about 20 feet, we believe that such faults would not present an earthquake hazard as large as that already taken into account in the seismic design. The Applicants have designed for a safe shutdown earthquake (SSE) of 0.35g, which is significantly higher than the SSE of 0.25g deemed acceptable for the WPPSS-2 plant located only 5 miles away.

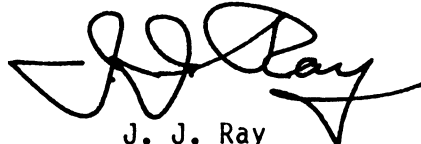
The Applicants have committed to perform a probabilistic risk assessment (PRA) to examine core and containment heat removal reliability. The PRA will include the potential effects of external events such as earthquakes, floods, and other environmental phenomena. The results may be useful in determining whether changes or design improvements are needed.

The ACRS believes that, if due consideration is given to the matters noted, the Skagit/Hanford Nuclear Project, Units 1 and 2 can be constructed with reasonable assurance that they can be operated without undue risk to the

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health and safety of the public. Should there be significant changes in design or regulatory requirements before the actual start of construction, the Committee would expect to review this application again.

Sincerely,



J. J. Ray
Chairman

References:

1. Puget Sound Power and Light Company, "Skagit/Hanford Nuclear Project Preliminary Safety Analysis Report," Volumes 1-12 and Amendments 1-29.
2. Puget Sound Power and Light Company, "Skagit/Hanford Nuclear Project Application for Site Certification/Environmental Report," Volumes 1-4 and Amendments 1-8.
3. U. S. Nuclear Regulatory Commission, "Safety Evaluation Report, Skagit Nuclear Power Project, Units 1 and 2," NUREG-0309, dated September 1977, and Supplement No. 2, dated October 1981, and Supplement No. 3, dated December 1982.