ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

February 12, 1974

Honorable Dixy Lee Ray
Chairman
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: REPORT ON HOPE CREEK GENERATING STATION (FORMERLY NEWBOLD ISLAND GENERATING STATION), UNITS 1 AND 2

Dear Dr. Ray:

At its 166th meeting, February 7-9, 1974, the Advisory Committee on Reactor Safeguards completed its review of the application by the Public Service Electric and Gas Company for a permit to construct the dual-unit Hope Creek Generating Station. The design features of this facility are the same as those for the Newbold Island Generating Station except for certain site-related matters. The Newbold Island facility was considered by the Committee at a number of meetings, and the results of its review reported to the Commission in a report dated August 10, 1971. Further recommendations regarding the Newbold Island facility, some of which are not site-related, were included in the Committee's report to you of July 17, 1973. The Hope Creek project was considered also at a Subcommittee meeting on January 23, 1974 in Washington, D. C. The site was visited by the Subcommittee on January 22, 1974. During its review, the Committee had the benefit of discussions with representatives and consultants of the applicant, the General Electric Company, the Bechtel Power Corporation, and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed below.

The station will be located on a 700-acre site adjacent to the Salem Generating Station on the east bank of the Delaware River, approximately 18 miles southeast of Wilmington, Delaware, 40 miles south of Philadelphia, Pennsylvania, and 7.5 miles southwest of Salem, New Jersey. The nearest population center of 25,000 or more is Wilmington, Delaware. The low

population zone, with a radius of 5 miles, has a population of about 1500 (1970 census data). The nearest residence is 2-3/4 miles from the site. The minimum exclusion distance is 2600 feet.

Each of the Hope Creek units includes a boiling water reactor to be operated at 3293 MWt. These units are unchanged from those previously reviewed for the Newbold Island station. Waste heat from the station will be rejected to the atmosphere by natural draft cooling towers. Cooling water for safety-related equipment as well as make-up water for the turbine condenser cooling system will be supplied from the Delaware River.

Re-evaluation of core operating limits will be necessary as a result of the recently promulgated Acceptance Criteria for Emergency Core Cooling Systems.

Although the seismological, geological and foundation conditions at the site are expected to be essentially the same as those at the adjacent Salem station, the applicant is reviewing these features and has underway an extensive program of soil borings and laboratory tests of soil samples, as a basis for selecting the methods of excavation and dewatering, the seismic design bases, and the foundation design. These matters should be resolved in a manner satisfactory to the Regulatory Staff.

The applicant is making a study to determine the probability of an accident involving waterborne traffic on the Delaware River that is of such a nature as to affect the safety of the plant. This study will include, among other things, barge collision with the service water intake structure, spills of oil or of LNG and possible fires, and explosions of ship cargoes. If the probability of such an accident affecting the safety of the plant is not acceptably low, the applicant has agreed to provide suitable protection or make other design changes as required. This matter should be resolved in a manner satisfactory to the Regulatory Staff.

Attention is called to the fact that the additional remarks by H. O. Monson, D. Okrent, and N. J. Palladino, appended to the Committee's report of August 10, 1971, and those by N. J. Palladino, appended to the report of July 17, 1973, were specific to the station proposed at the Newbold Island site and do not apply to the Hope Creek station.

The Committee believes that the items mentioned above can be resolved during construction and that, if due consideration is given to these items as well as to the non-site-related items mentioned in previous reports on the Newbold Island station, the Hope Creek Generating Station, 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.

Sincerely yours,

W. R. Stratton

W. R. Stratton
Chairman

References

1. Newbold Island Nuclear Generating Station Preliminary Safety Analysis Report, Amendments 13, 14, 15, 16, and 17.

2. Hope Creek Generating Station, Nos. 1 and 2 Units, Preliminary Safety Analysis Report.

3. Supplement No. 2 to the Safety Evaluation Report on the Newbold Island Generating Station by the Directorate of Licensing.

4. Supplement No. 3 to the Safety Evaluation of the Hope Creek Generating Station (formerly Newbold Island Nuclear Generating Station) by the Directorate of Licensing.

5. Public Service Electric and Gas Company letter dated January 4, 1974 regarding additional information and commitments to provide additional information.

6. Public Service Electric and Gas Company letter dated January 11, 1974 regarding anticipated transients without scram (ATWS).

7. Public Service Electric and Gas Company letter dated January 11, 1974 regarding soils liquefaction studies and design heat rejection requirements.