



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

July 13, 1978

Honorable Joseph M. Hendrie  
Chairman  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

SUBJECT: REPORT ON NEW ENGLAND POWER COMPANY NUCLEAR UNITS, NEP 1 AND 2

Dear Dr. Hendrie:

During its 219th meeting, July 6-8, 1978, the Advisory Committee on Reactor Safeguards reviewed the application of the New England Power Company and eight other utilities (Applicants) for a permit to construct the New England Power Company Nuclear Units, NEP 1 and 2.

The proposed site for the plant was visited by members of a Subcommittee on June 28, 1978, and a Subcommittee meeting was held in Warwick, Rhode Island on June 28 and June 29, 1978. During its review, the Committee had the benefit of discussions with the Nuclear Regulatory Commission (NRC) Staff, representatives of and consultants to the Applicants, the Yankee Atomic Electric Company, and the Westinghouse Electric Corporation, as well as comments from members of the public. The Committee also had the benefit of the documents listed.

The NEP units will be replicates of the Seabrook Station Units 1 and 2 on which the Committee reported in its letter of December 10, 1974. These units will utilize two four-loop Westinghouse pressurized water reactor nuclear steam supply systems each having a power level of 3411 MWt. Each unit utilizes the RESAR-3 Consolidated Version and is similar to the Marble Hill Station on which the Committee reported in its letter of October 22, 1976 and the Tyrone Energy Park on which the Committee reported in its letter of December 11, 1975.

The proposed plant will be located on a 549 acre site in the southern part of Washington County, Rhode Island adjacent to Block Island Sound. The proposed site is the location of the abandoned Charlestown Naval Auxiliary Landing Field and is presently owned by the General Services Administration. The site is approximately 35 miles south of Providence, Rhode Island and 18 miles west-southwest of Newport, Rhode Island. The contiguous communities of Westerly, Rhode Island and Pawcatuck, Connecticut (approximately 7.5 miles west of the site) have been designated as the nearest population center (1970 population 19,000; projected 1990 population 25,000). The minimum exclusion area boundary distance is 2130 feet from the center of either containment building and the low population zone radius is 1.5 miles. Land uses in the vicinity of the proposed plant site are primarily for residential and recreational activities.

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The Applicants have proposed that horizontal ground accelerations of 0.15g and 0.075g, at the foundation level, are appropriate reference acceleration values for the safe shutdown earthquake and operating basis earthquake, respectively. However, since the NEP design is a replicate of the Seabrook design, the units will be designed for a safe shutdown earthquake acceleration of 0.25g at the foundation level and for an operating basis earthquake acceleration of 0.13g.

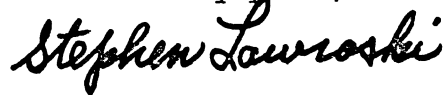
The Committee recommends that the Applicants and the NRC Staff evaluate the transient resulting from a loss of the combined offsite and onsite AC power systems as a function of time of system loss, as well as the capability of the plant to tolerate a loss of AC power for extended periods. If appropriate, design modifications to improve reactor capability in this regard should be developed. The Committee wishes to be kept informed.

Although committed to compliance with Regulatory Guide 1.97, Revision 1, the Applicants have taken exception to Position C.3 requiring extended range instrumentation. The intent of this position is to provide the facility operator with a capability for following the course of postulated accidents beyond the design basis accident. To assist in this matter, the Committee recommends that the NRC Staff provide the Applicants with an illustrative model showing an appropriate response to this position. The Committee wishes to be kept informed.

With regard to generic problems cited in the Committee's report, "Status of Generic Items Relating to Light-Water Reactors: Report No. 6," dated November 15, 1977, items considered relevant to the NEP Units are II-2, II-3, II-4, II-5B, II-6, II-7, II-9, II-10, II-A2, II-A3, II-A4, II-B2, II-C1, II-C2, II-C3A, II-C3B, II-C4, II-C5, II-C6, II-D2. These problems should be dealt with by the NRC Staff and the Applicants as solutions are found.

The Advisory Committee on Reactor Safeguards believes that, contingent upon the acquisition of the site by the Applicants, if due consideration is given to the foregoing, the New England Power Company Nuclear Units, NEP 1 & 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,

A handwritten signature in black ink that reads "Stephen Lawroski". The signature is written in a cursive, slightly slanted style.

Stephen Lawroski  
Chairman

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References:

1. New England Power Company Preliminary Safety Analysis Report, NEP 1 and 2. Volumes 1 through 9 with Amendments N1 through N11.
2. Safety Evaluation Report related to construction of New England Power Project, Units 1 and 2, NUREG 0424, June 1978.
3. Westinghouse Electric Corporation Reference Safety Analysis Report, RESAR-3 Consolidated Version, Volumes I through VIII with Amendments 1 through 6.
4. Written statement from Dr. Clement A. Griscom, Division of Marine Resources, University of Rhode Island.
5. Written statement from Mr. James E. Hickey. Division of Occupational Health and Radiation Control, Department of Health, State of Rhode Island and Providence Plantations.