

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

July 17, 1973

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

Subject: SUPPLEMENTAL REPORT ON NEWBOLD ISLAND NUCLEAR GENERATING
STATION UNITS NOS. 1 AND 2

Dear Dr. Ray:

At its 159th meeting, July 12-14, 1973, the Advisory Committee on Reactor Safeguards reviewed additional information on population distribution and preliminary emergency plans submitted by the Public Service Electric and Gas Company in connection with its application for a permit to construct the Newbold Island Nuclear Generating Station. These matters were considered also at Subcommittee meetings on October 24, 1972 and June 6, 1973 in Washington, D. C. During its review, the Committee had the benefit of discussions with representatives and consultants of the Public Service Electric and Gas Company, the General Electric Company, and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed. The Committee has previously reported the results of its pre-application site review and its construction permit review in letters dated September 10, 1969 and August 10, 1971.

In accordance with an order of the Atomic Safety and Licensing Board, the applicant has made a new and more detailed study of the present and projected population distributions in the area surrounding the site. This study includes, but has not been limited to, the proposed real estate developments by the Warner Realty Investment Company (WRIC). The Committee believes that the results of this revised population study do not differ from those previously considered by such an amount or in such a manner as to change its previous opinion that the site is acceptable, subject to the other considerations noted in its letter of August 10, 1971.

The applicant has prepared a preliminary emergency plan which considers, among other things, the feasibility of evacuating the population within the Low Population Zone (LPZ) in the unlikely event of a major accidental release of radioactivity from the plant. The applicant has also described studies of the feasibility of evacuating an area extending as much as three miles from the plant, assuming the projected population that would result from the full development envisioned by the WRIC, and has concluded that such evacuation is feasible. Detailed emergency plans, to be developed by the State of New Jersey and the Commonwealth of Pennsylvania, have not yet been completed.

The Committee concludes that a suitable emergency plan can be developed for the Newbold Island site. The Committee believes also that plans for appropriate protective measures should extend several miles beyond the proposed LPZ radius of one mile. It is essential also that plant personnel be provided with those instruments, indicators, and measurements that will define clearly the nature and course of an accident so that off-site emergency plans can be initiated at a level and on a time scale consistent with the severity or potential severity of the accident.

The Committee believes that the on-site power system for this plant should be capable of coping with a postulated event involving a LOCA in one unit and a concurrent spurious ECCS actuation signal from the other unit, assuming the failure of a single active component, other than the spurious signal.

The applicant stated that it is a design criterion that failure of components not designed to seismic Category I requirements will not prevent safe shut down or the proper function of any engineered safety features, and that the necessary attention will be given to this aspect of design.

The Committee recommends that further studies be made of methods to enhance the reliability of isolation of low-pressure systems, such as the residual heat removal system, from the primary system while the latter is pressurized, and that such methods as are practical be implemented.

The applicant is giving careful attention to the control of access to the plant and its vital components. The Committee recommends that deliberate consideration be given to other aspects of design and layout that could improve plant security.

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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 those mentioned in previous reports, the Newbold Island Nuclear Generating Station Units Nos. 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.

Dr. H. O. Monson, Dr. D. Okrent, and Dean N. J. Palladino, whose additional comments were appended to the Committee's letter of August 10, 1971, believe that those additional comments are still applicable to the Newbold Island Station.

Additional comments by Dean N. J. Palladino are presented below.

Sincerely yours,


H. G. Mangelsdorf
Chairman

Additional Comments by Dean N. J. Palladino

"In the belief that a more conservative approach is appropriate in the design of a nuclear power plant at this site, I recommend that separate and independent on-site a.c. emergency power systems be provided for each unit of this plant."

References attached.

References

1. Preliminary Safety Analysis Report (PSAR), Volumes 1 through 5.
2. Amendments 1 through 5, 7 through 9, and 11.
3. Directorate of Licensing Safety Evaluation Report dated December 17, 1971.
4. Reid and Priest letter dated August 18, 1972 to the Atomic Safety & Licensing Board submitting a document entitled "Population Estimates and Projections for Newbold Island Region" dated July 11, 1972.
5. Reid and Priest letter dated September 20, 1972 to the Atomic Safety & Licensing Board submitting a document entitled "Preliminary Emergency Plan," dated September 15, 1972, which completes the applicant's response to order, dated July 14, 1972.
6. Public Service Electric and Gas Company letters dated January 10, 1973 and May 1, 1973.
7. Directorate of Licensing Supplement No. 1 to the Safety Evaluation dated May 17, 1973.
8. State of New Jersey, Department of Environmental Protection letter dated June 29, 1973 regarding "Procedures for Implementing Protective Action Guides".