ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON 25, D.C.

March 18, 1966

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: REPORT ON MILLSTONE NUCLEAR POWER STATION

Dear Dr. Seaborg:

At the seventy-first meeting in Washington, D. C. on March 10-12, 1966, the Advisory Committee on Reactor Safeguards reviewed the proposal of The Connecticut Light and Power Company, the Hartford Electric Light Company, The Millstone Point Company and Western Massachusetts Electric Company to construct the Millstone Nuclear Power Station on the Millstone Point site. The Committee has reported on the Millstone Point reactor site in its letter of July 19, 1965. The applicants now propose a boiling water reactor using pressure suppression containment and designed by General Electric Company. The Committee had the benefit of discussions with representatives of the applicants, the General Electric Company, the AEC Regulatory Staff, and of the documents listed below. An ACRS Subcommittee visited the site on July 6, 1965, and met with the applicants to review the proposal on February 18, 1966.

The nominal thermal power of the Millstone Nuclear Power Station is 1730 MW, but the applicants have reported that all components are to be designed for an anticipated ultimate capability of approximately 2010 MW. It was stated that the General Electric Company has the responsibility to furnish the complete nuclear power station on a "turn key basis". The applicants state that the reactor facility is similar, except for size, to the Dresden Nuclear Power Station - Unit 2 (2255 MWt). Therefore, the development program described by the General Electric Company representatives for answering questions involving jet pump monitoring and system stability, metal-water reactions, instrumentation, and blowdown and emergency cooling for Dresden Unit 2 are expected to be applicable to the Millstone Station. As with Dresden Unit 2, the Committee recommends further studies of pipe-whipping and the generation of missiles which might cause engineered safeguards to be ineffective in the unlikely event of failure of the primary piping system.

It is also recommended that further studies, employing conservative values of significant parameters, be made of the course and consequences of potential reactivity transients.

The Committee urges that particular attention be given to the components in high pressure steam lines and again recommends that special attention be given to insure that no single rupture of the high pressure steam lines can lead to loss of containment. The Committee suggests that a study be undertaken to evaluate possible methods to reduce the escape of fission products from the turbine building in the unlikely event of failure of high pressure steam lines external to the reactor containment.

The Committee was advised that the coastal site of the Millstone Station is vulnerable to flooding during severe hurricanes. The applicants agreed to resolve with the Regulatory Staff the necessary degree of protection from such flooding. The applicants also stated that the stack design and location would be such as to preclude damage to the containment by stack failure.

The Committee notes that the applicants have undertaken a long-term observational program to improve their knowledge of the meteorological and marine biological conditions in the vicinity of the Millstone Point site.

The Committee understands that further consideration is being given by General Electric to additional methods of quality control in the fabrication of the reactor pressure vessel. The Committee also understands that considerable emphasis will be placed on the development and use of in-service inspection methods for ensuring the integrity of the vessel.

It is the opinion of the ACRS that resolution of the above problems can be attained during construction and that the Millstone Station can be constructed at the proposed site with reasonable assurance that it can be operated without undue risk to the health and safety of the public.

Dr. T. J. Thompson did not participate in the Committee's review of this project.

Sincerely yours,

/s/

David Okrent
Chairman

References attached.

References - Millstone Nuclear Power Station

1. Design and Analysis Report, Millstone Nuclear Power Station, Volumes I and II, received November 18, 1965.

2. Design and Analysis Report, Millstone Nuclear Power Station, Amendment No. 1, received February 7, 1966.

3. Substitute Pages to Design and Analysis Report, Millstone Nuclear Power Station, received March 3, 1966.

4. Design and Analysis Report, Millstone Nuclear Power Station, Amendment No. 3, received March 3, 1966.