

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

APR 16 1974

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

Subject: REPORT ON MILLSTONE NUCLEAR POWER STATION UNIT NO. 3

At its 168th meeting, April 11-13, 1974, the Advisory Committee on Reactor Safeguards completed its review of the application by the Millstone Point Company et al for authorization to construct the Millstone Nuclear Power Station Unit No. 3. This application had been considered previously at a Subcommittee meeting on March 15-16, 1974, and Committee members visited the site on January 26, 1974. During its review, the Committee had the benefit of discussions with representatives of the applicants and their consultants, the Westinghouse Electric Corporation, the Stone and Webster Engineering Corporation and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed below.

The Millstone Nuclear Power Station Unit No. 3 employs a 4-loop pressurized water reactor of 3411 MW(t) rated power. The Millstone Station site is located on the north shore of Long Island Sound about 40 miles southeast of Hartford and about 3.2 miles southwest of New London, Connecticut, the nearest population center (estimated 1970 population of 31,360). The site will be shared with Unit 1, presently in operation, and with Unit 2, now under construction. The exclusion radius of the site is 0.36 miles and the low population zone radius is 2.4 miles.

The applicants' evaluation of seismicity of the site indicated that a 0.17g horizontal ground acceleration value should be used in the analysis of the response of Category I systems to the Safe Shutdown Earthquake. The ACRS has reviewed this evaluation, together with additional information published subsequent to the applicants' studies, and agrees that the value proposed is acceptable for this site.

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The Committee recommended in its report of September 10, 1973, on acceptance criteria for ECCS, that significantly improved ECCS capability should be provided for reactors filing for construction permits after January 7, 1973. The Millstone Unit No. 3 is in this category. This unit will use 17x17 fuel assemblies similar to those to be used in Catawba Units 1 and 2, recently reviewed by the Committee. While details of the proposed design are available, complete analyses of the performance of this fuel arrangement are not yet available from the applicants, and the AEC Regulatory Staff has not completed their review. The Committee has been informed that performance analyses and reviews will be conducted during the coming year in connection with operating license applications for other nuclear units. The Committee believes that the applicants should continue studies that are responsive to the Committee's examples of design improvements. If studies establish that significant further improvements can be achieved, consideration should be given to including such additions to this unit.

The containment for the Millstone Unit No. 3, like that of Surry Units 1 and 2, is a subatmospheric design incorporating a steel-lined reinforced concrete vessel and a Supplementary Leak Collection and Release System to better control potential leakage. Reduced containment leakage rates may be required to meet the Part 100 limits. Evaluation of the containment peak pressure and subcompartment differential pressure during accident conditions is continuing. These matters should be resolved in a manner satisfactory to the Regulatory Staff. The Committee wishes to be kept informed.

The proposed offsite power systems for the Millstone Unit No. 3 comply with the requirements of General Design Criteria Numbers 17 and 18 but do not meet the recommendations of Regulatory Guide 1.32 concerning the availability of two, full capacity, immediate-access circuits from the offsite source. The applicants have committed to modifications to upgrade these systems. This matter should be resolved in a manner satisfactory to the Regulatory Staff.

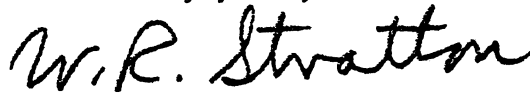
The Committee recommends that further attention be given by the applicants and the Regulatory Staff to those provisions of Regulatory Guide 1.17 which address design features to prevent or mitigate the consequences of acts of sabotage.

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Generic problems relating to large water reactors have been identified by the Regulatory Staff and the ACRS and discussed in the Committee's report dated February 13, 1974. These problems should be dealt with appropriately by the Regulatory Staff and the applicants.

The ACRS believes that the above items can be resolved during construction and that, if due consideration is given to these items, the Millstone Nuclear Power Station Unit No. 3 can be constructed with reasonable assurance that it can be operated without undue risk to the health and safety of the public.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "W. R. Stratton". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

W. R. Stratton
Chairman

References:

1. Millstone Nuclear Power Station Unit 3 Preliminary Safety Analysis Report (PSAR), Volumes 1-V submitted January 29, 1973
2. PSAR Amendments Numbers 1, 4-11, 13-20 dated March 8, 1973 through April 5, 1974
3. Safety Evaluation Report, dated March 13, 1974, by the Directorate of Licensing, U. S. Atomic Energy Commission, in the matter of the Millstone Point Company, et al, Millstone Nuclear Power Station Unit 3, Docket No. 50-423