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Docket No. 50-220

Niagara Mohawk Power Corporation
ATTN: Mr. Philip D. Raymond
Vice President - Engineering
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

The Advisory Committee on Reactor Safeguards has issued their report dated September 10, 1974, on the application for conversion of the provisional operating license to a full-term operating license for the Nine Mile Point Nuclear Station Unit 1. A copy of the report is enclosed for your information.

Sincerely,

Original Signed

George Lear, Chief
Operating Reactors Branch #3
Directorate of Licensing

Enclosure:
ACRS Report dtd
September 10, 1974

cc: See next page

OFFICE	ORB#3	ORB#3	ORB#3			
SURNAME	SATeets/kmf	CJDeBevec	GLear			
DATE	9/13/74	9/13/74	9/ /74			

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Original signed

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

September 10, 1974

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

Subject: REPORT ON NINE MILE POINT NUCLEAR STATION UNIT 1

Dear Dr. Ray:

At its 173rd meeting, September 5-7, 1974, the Advisory Committee on Reactor Safeguards completed a review of the application by the Niagara Mohawk Power Corporation for conversion of its Nine Mile Point Nuclear Station Unit 1 provisional operating license to a full-term operating license. The application also was considered at a Subcommittee meeting in Washington, D. C. on July 29, 1974. During its review, the Committee had the benefit of discussions with representatives of the Niagara Mohawk Power Corporation, General Electric Company, and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed. The Committee previously discussed this project in an operating license report of April 17, 1969 and in subsequent reports dated June 16, 1970 and February 6, 1971.

In its review, the Committee evaluated the operation and performance of this unit with particular emphasis on the response of the applicant to past recommendations for improvements in safety related systems.

Unit 1 is a non-jet pump boiling water reactor of 1850 MW(t) rated power level. Commercial power operation of the plant was begun in December, 1969. The operating history of the unit has been generally satisfactory. However, a number of operating problems or design deficiencies have been encountered during the approximately five year period of power operation. Included among these are: cracking of a core spray nozzle safe end; development of cracks in the steam dryer assembly; control rod scram sluggishness; failure of some control rods to remain fully inserted after scram; increased control rod operating restrictions found necessary to assure protection for a postulated rod drop accident; feedwater control deficiency, with resultant flooding of steam lines; torus baffle dislocation by relief valve steam discharge into the torus; and, failure of a relief valve to reclose. All of these deficiencies appear to have been satisfactorily corrected. Reactor availability has averaged approximately 66%.

Difficulty also has been experienced in respect to repeated occurrences of excessive leakage rates of the main steam isolation valves under test conditions. The applicant now proposes to remachine the valve seats and plugs to an improved configuration and believes that this, together with the probable low levels of residual stresses now existing in these valves, will enable maintenance of acceptable leakage rates in the future. This matter should be followed closely by the Regulatory Staff.

A number of design improvements have been accomplished or committed to since operation began. Among the most significant of these from the point of view of safety are the following. The feedwater system has been modified also to serve as an additional emergency core cooling system for small breaks; emergency power for this system is supplied by an offsite source of hydroelectric power. A fuel cask drop protection system has been designed and approved, and installation will be completed before shipment of spent fuel is undertaken. A containment atmosphere dilution (CAD) system for combustible gas control will be installed and available for operation in 1976. An additional primary pressure boundary leak detection system has been added, and position indication in the control room for the containment vacuum breaker valves has been provided.

Approximately one-fifth of the reactor 7x7 fuel bundles have been replaced with 8x8 fuel; through additional reloads, the core eventually is to consist entirely of 8x8 fuel.

Because of the relatively limited accessibility for in-service inspection of the reactor pressure vessel, the Committee wishes to emphasize again its belief that additional means for assuring continued vessel integrity, including possible improvement in accessibility, should continue to be actively studied and implemented to the degree practical.

The Committee recommends that the Regulatory Staff and the applicant give further consideration to the possible advisability of additional backfitting of Unit 1 where significant and practical safety improvements can be made.

The Committee believes that, in view of the generally satisfactory operating experience to date and the improvements made in the plant as noted herein, and subject to the above comments and those in previous ACRS reports on this plant, there exists reasonable assurance that the Nine Mile Point Nuclear Station Unit 1, can continue to be operated at power levels up to 1850 MW(t) without undue risk to the health and safety of the public. The Committee concurs in conversion of the present provisional operating license to a full-term operating license.

Sincerely yours,

W. R. Stratton

W. R. Stratton
Chairman

References: See Page 3

References:

1. Niagara Mohawk Power Company Technical Supplement to Petition for Conversion from Provisional Operating License to Full-Term Operating License dated July 1972.

2. Applicant's Environmental Report, Operating License Stage, Conversion to Full-Term Operating License, June 1972.

3. Amendments 1 through 3 to Application for Full-Term Operating License.

4. Directorate of Licensing Safety Evaluation Report dated July 3, 1974.

5. Directorate of Licensing letter dated July 3, 1974 concerning list of outstanding items in connection with their review of application for Full-Term Operating License.

6. Niagara Mohawk Power Corporation letter dated November 20, 1972 concerning Fuel Densification and its Effect on Reactor Operation Including Transients and Postulated Loss-of-Coolant Accident.