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DESCRIPTION:
Ltr furnishing addl info regarding plant design modifications.....

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PLANT NAMES: Nine Mile Point Unit # 2

ENCLOSURES:

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NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N.Y. 13202

April 30, 1973

Mr. Robert A. Clark, Chief
Gas Cooled Reactors Branch
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Clark:

Re: Nine Mile Point Unit 2
Docket No. 50-410

In accordance with recent discussions with the Commission Staff, some plant design modifications have been made and supplemental information developed in connection with the Preliminary Safety Analysis Report for our Nine Mile Point Unit 2, as described below:

Combustible Gas Control System:

The primary control of combustible gas concentration following a DBA will be accomplished by providing two redundant 100 percent capacity recombiners, each rated at 100 scfm. The system provided meets the requirements of Safety Guide 7.

The containment will be inerted to 4 volume percent oxygen during normal operation. To maintain the oxygen concentration below 5 volume percent following a LOCA, one recombiner would be initiated at approximately 1.4 days after the accident. At this time, the minimum containment atmosphere temperature would be about 86 F assuming an initial pool water temperature of 65 F and a service water temperature of 32 F. These conditions give the minimum steam dilution effect. Sinks were not included in this analysis for conservatism. Since the average temperature of the drywell structure would be above the 86 F temperature discussed above, inclusion of the sinks would serve to raise the minimum calculated

temperature. One 100 percent recombiner initiated at about 1.4 days would maintain the oxygen concentration below 5 volume percent.

A backup purge system is being provided which would not have to be initiated until approximately 30 days after a LOCA, if the recombiner system is not used. Nitrogen from the nitrogen inerting system would be added to the containment until the containment pressure reaches 30 psig (design pressure is 45 psig). Under the conservative assumption of no containment leakage, a containment pressure of 30 psig would not be reached until approximately 30 days after the DBA. At this time, a purge flow rate of 8 scfm would be capable of maintaining the oxygen concentration below 5 volume percent.

As indicated in PSAR Section 5.4.10 (page 5.4-13), radiological doses from purge initiation at 7 days would be substantially below the guidelines of 10CFR100.

Liquid and Gaseous Radwaste System:

PSAR Figures 9.2-1A through 9.2-1C and Figure 9.4-1 are being revised to include the following:

1. Additional detail on controls and instrumentation.
2. Pipe size and pipe materials.
3. Tank volumes.
4. Fail position of significant valves.

New figures 9.2-1D and 9.2-1E will also be added. These will show the floor drainage collection systems in the reactor building, turbine building and radwaste building. A new figure 9.2-1F will also be added to define abbreviations and symbols used in the figures discussed above.

The gaseous radwaste system will be automatically isolated on a high radiation signal from the radiation monitor downstream of the charcoal beds.

The following is an estimate of the noble gases released from the mechanical vacuum pumps. The source of noble gases released via the mechanical vacuum pump is condensate in the hotwell, and the inventory of noble gas daughter products removed from the condensate demineralizers when the demineralizers are put on recirculation to the hotwell approximately

10 hours prior to plant startup following a six week refueling outage. It is conservatively assumed that the mechanical vacuum pumps are operated during the entire six week refueling outage each year. Since the mechanical vacuum pumps will normally be secured when reactor steam is passing to the condensor, a reactor steam source of noble gases to the mechanical vacuum pumps was not considered. The following assumptions were employed in developing the noble gas release estimate:

a. Noble gas inventories were based on a 100,000 μCi/sec after 30 minutes failed fuel basis.

b. All noble gases available at the sources described were assumed to be released.

c. Vacuum pump "sweep" air flow rate was 4,000 cfm.

d. The condensate demineralizers (7) were in service for 30 days since their last regeneration prior to shut down.

e. Site boundary doses were calculated using average annual X/Q values for an elevated release.

Noble gas releases were thus calculated to be:

Noble Gas Isotope	Hotwell Contribution (Ci)	Demineralizer Contribution (Ci)	Total Release (Ci)
Kr83m	.110	.0	.11
Kr85m	.001	.0	.001
Kr85	.0	.0	.0
Xe131m	.00032	.170	.170
Xe133m	.0061	.00	.0061
Xe133	.085	.160	.25
Xe135m	4.7	.0	4.7
Xe135	.41	.8	.41
			5.65

The site boundary dose due to total noble gas release is less than 10^{-4} mrem.

Bases for Accident Analyses:

The analyses detailed in Section 14 of the Nine Mile Point Unit 2 PSAR are based on the fuel design described in Section 3. This design and the analyses described in Section 14 are typical of the 1969 General Electric product line plants.

PSAR - Appendix J:

The cumulative usage factor as defined in Section J.2.1.1.1(3) is changed from 0.2 to 0.1.

The entire Section J.2.1.1.3 is deleted and replaced with the following: All high energy lines penetrating the primary containment will be restrained as close as practical to the outboard valve in order to prevent lateral movement due to a longitudinal break.

A description of the PISCES computer program referenced in Section J.2.1.2(3) will be included in a future PSAR submittal.

In connection with Sections J.2.1.3 and J.2.3, loading combinations will be submitted, which include simultaneous earthquake and pipe loads for the design of Class I structures other than primary containment.

The following sentence is added to the end of the first paragraph in Section J.2.4.1: Ventilation equipment, if required to mitigate the environmental consequences of a pipe break, will be designed with redundancy and environmental capability to ensure its availability.

Section J.2.4.2 is modified by replacing the last sentence with the following: The possibility of flooding will be considered for each pipe break as part of system design. Verification will be made that no break can cause a flooding condition, which will affect the ability to safely shut down.

Section J.3.1.1 is modified such that the last sentence reads as follows: Breaks in the main steam and feedwater piping, anywhere in the plant, cannot affect any engineered safety features.

The information described above will be incorporated in an Amendment to our application and submitted to the Commission in the near future.

Very truly yours,

Philip D. Raymond
Vice President-Engineering

PDR/vk

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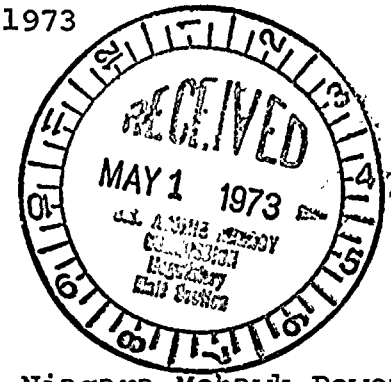

Mr. John F. O'Leary
Director of Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Re: Niagara Mohawk Power Corporation
Nine Mile Point Unit 2
AEC Docket No. 50-410

Dear Mr. O'Leary:

The Applicant transmitted two (2) copies of its proprietary response to request 3.8 in accordance with 10 C.F.R. §2.790 and §9.5(a)(4) as part of Supplement No. 10, transmitted by Amendment No. 11 in the above-captioned proceeding. Your Staff has requested thirty-eight (38) additional copies of this proprietary response.

Therefore, we transmit herewith thirty-eight (38) additional copies of the proprietary response to request 3.8 originally filed on April 17, 1973 by Amendment No. 11 in this proceeding. We request that these additional copies also be withheld from public disclosure pursuant to our original letter of transmittal.

Since the other parties to this proceeding were served with notice of the submission of the response to request 3.8 on April 17, 1973 but the response was not made available to them, no service of this submittal is being made upon the other parties at this time.

Very truly yours,

LeBoeuf, Lamb, Leiby & MacRae
Attorneys for Niagara Mohawk
Power Corporation

Enclosures

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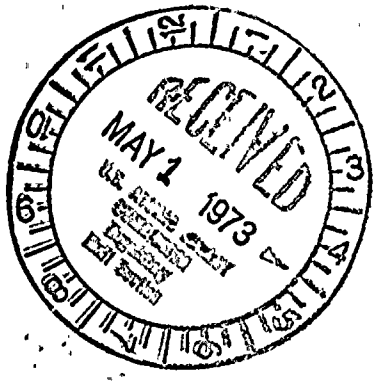

BEFORE THE UNITED STATES

ATOMIC ENERGY COMMISSION

In the Matter of	)	
	)	
Niagara Mohawk Power Corporation	)	Docket No. 50-410
(Nine Mile Point Unit 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that I have served, pursuant to the Atomic Energy Commission's Rules and Regulations, copies of the Applicant's letter of April 30, 1973 concerning the combustible gas control system and other matters in the above-captioned proceeding upon the following persons this 1st day of May 1973.

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