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Niagara Mohawk Power Corp. Syracuse, N. Y. 13202 T. J. Brosnan	9-29-72	10-2-72	X			

TO:	ORIG	CC	OTHER	
Mr. Skovholt	1			SENT AEC PDR X SENT LOCAL PDR X

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U/PROP INFO		40	50-220

DESCRIPTION:

Ltr re our 8-3-72 ltr.......furnishing info regarding flooding potential & the HPCI System.......W/Attachment Figure 1

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ENCLOSURES:

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ACKNOWLEDGED

39 add'l cys Rec'd 10-5-72 of Ltr

PLANT NAMES: Nine Mile Point Unit No. 1

FOR ACTION/INFORMATION 10-3-72 AB

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NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD, WEST
SYRACUSE, N. Y. 13202

DOCKETED USAEC OCT 2 1972 REGULATORY MAIL SECTION DOCKET CLERK

September 29, 1972

RECEIVED OCT 2 1972 U.S. ATOMIC ENERGY COMMISSION Regulatory Mail Section

Mr. Donald J. Skovholt
Assistant Director for Operating Reactors
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Skovholt:

Re: Nine Mile Point Unit No. 1
Docket 50-220

Your letter of August 3, 1972, requested a review of our Nine Mile Point Unit No. 1 facility to determine (1) whether failure of any equipment which does not meet the criteria of Class I seismic construction, particularly the circulating water system, could cause flooding sufficient to adversely affect the performance of engineered safety systems, and (2) whether failure of any equipment could cause flooding such that common mode failure of redundant safety related equipment would result. The requested studies have been completed with the result that there is no flooding potential for existing engineered safety systems. For the case of the HPCI system, which is scheduled to be in service by the end of the Spring 1973 refueling outage, flood protection is being incorporated as described below.

Reactor Building

The reactor building houses a large number of engineered safety systems at various elevations throughout the structure. These include the core spray system pumps and discharge valves at the corners of the building at elevation 198 feet, the pumps and valves of the containment spray system - also at elevation 198 feet, the pumps and explosive valves for the liquid poison system at elevation 298 feet, the control rod drive pump motors at elevation 237 feet, the auto depressurization system valves located on the main steam lines inside the drywell, the containment isolation valving and inerting system components at various locations in the building, sensors of the reactor protection system located in the north, east and west instrument rooms, power boards 16, 17, 167 at elevation 281 feet and power boards 161 and 171 at elevation 261 feet.

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Investigation of piping routed within the reactor building reveals that there are no non-Class I systems of sufficient size whose failure could cause flooding anywhere in the building. Most of these non-Class I lines are associated with drain and sump systems.

Turbine Building

Engineered safety systems housed within the turbine building include the following:

a. The isolation valves for the normal reactor building ventilation system and the fans, valves and filters associated with the reactor building emergency ventilation system are located in the turbine building above elevation 290 feet.

b. The High Pressure Coolant Injection (HPCI) system was previously committed to be in service by the end of the Spring 1973 refueling outage. It consists of the condensate, booster and feedwater pumps, and associated piping and valving. The condensate pumps are located at elevation 243 feet with their motors at elevation 252 feet, as shown in Figure 1. Both the booster and feedwater pumps are located at elevation 261 feet. (The 115KV reserve bus and reserve transformers which serve this system are located outside the turbine building at, or above, grade elevation in an area not subject to flooding.)

c. The diesel generator and Station battery systems are both located at elevation 261 feet.

d. All power boards serving engineered safety systems are located at, or above, elevation 261 feet. These include power boards 11, 12, 102 and 103 at elevation 261 feet, power board 101 at elevation 277 feet, and power board 1671 at elevation 300 feet.

Analysis shows that there are several non-Class I piping systems within the turbine building, the largest of which are the circulating water and service water piping systems. Failure of these lines would drain to the turbine building subfloors below elevation 261 feet and would eventually fill this area, assuming the inrush of water exceeds the 200 gpm capacity of the turbine building sump pumps. High level alarm from the turbine building sump pump pit at elevation 243 feet would alert the control room operator to an abnormally high water condition. If flooding continues, the water level would rise above the condensate pumps with a second high level alarm being given in the control room from the sump pump at elevation 250 feet. In the event of total failure of the largest pipe (one 72-inch circulating water line), it would take approximately 40 minutes after the operator receives the first high water alarm

for flooding to reach elevation 261 feet. Therefore, ample time is available for the operator to manually shut off the pump responsible for the flooding condition.

Portions of the HPCI system are the only safety-related equipment located below the 261 foot elevation. Before the HPCI is placed in service, the cavity housing this system's equipment below elevation 261 feet will be suitably protected against flooding to that elevation by structures meeting Class I requirements.

Screenhouse

The only engineered safety equipment located in the screenhouse are four containment spray raw water pumps and two diesel engine cooling water pumps. All of these are located at or above elevation 256 feet, as indicated in Figure 1. There are a number of non-Class I piping systems located in the screenhouse such as the circulating water system and the service water system.

Investigation shows that failure of these lines would first fill the cavity below elevation 256 feet which houses the circulating water and service water pumps before spilling over to the inlet forebay. There is no way for the water level to rise sufficiently above the 256 foot elevation so as to adversely affect the six pumps mentioned above.

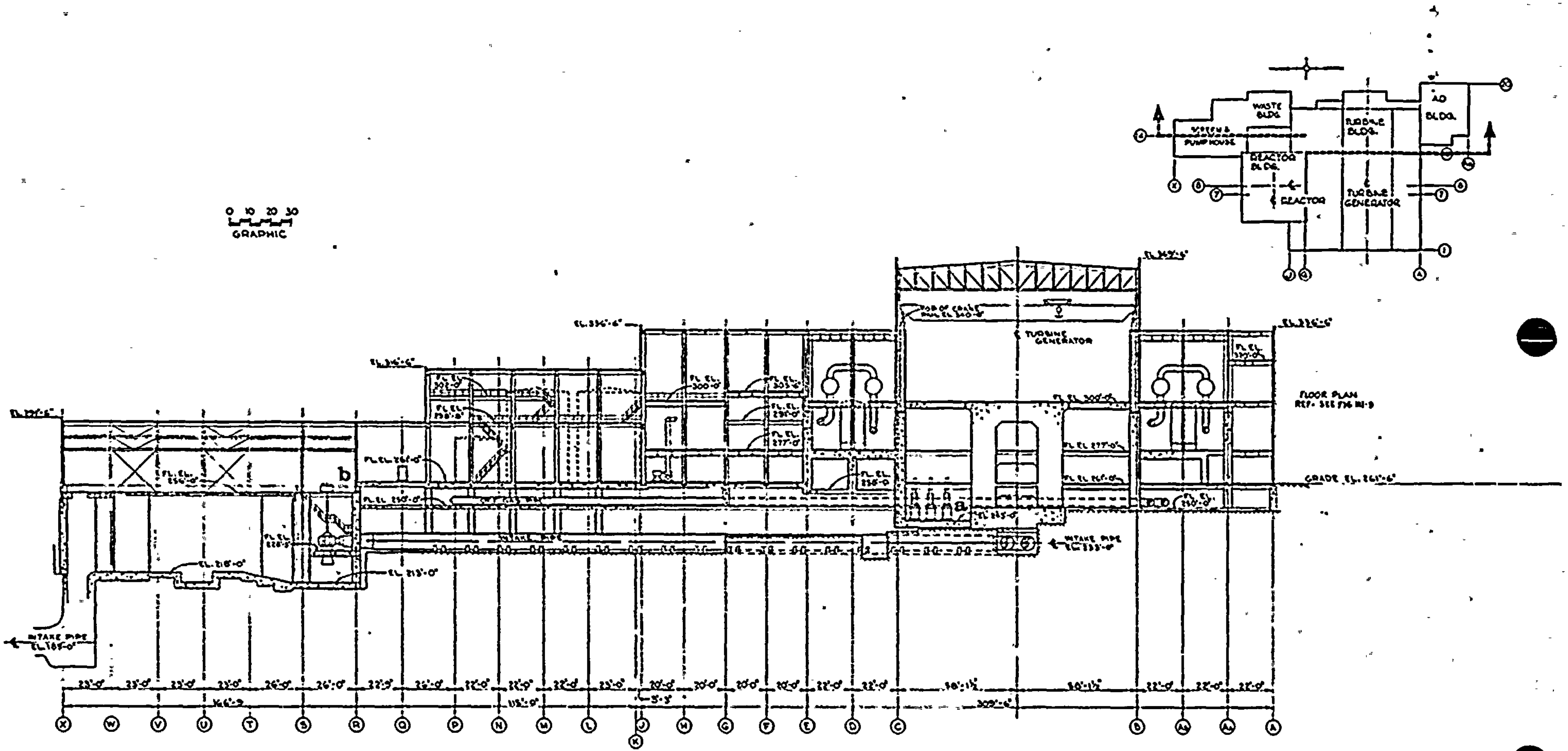
Very truly yours,

T J Brosnan

T. J. Brosnan
Vice President and Chief Engineer

TJB/vk

FIGURE 1



a Condensate Pumps

b Elevation of Containment Spray Raw Water and Diesel Engine Cooling Water Pumps