

# NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY  
WESTERN MASSACHUSETTS ELECTRIC COMPANY  
HOLYOKE WATER POWER COMPANY  
NORTHEAST UTILITIES SERVICE COMPANY  
NORTHEAST NUCLEAR ENERGY COMPANY

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November 29, 1982  
Docket No. 50-245  
B10612

Director of Nuclear Reactor Regulation  
Attn: Mr. Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
U. S. Nuclear Regulatory Commission  
Washington D. C. 20555

- References: (1) J. Shea letter to W. G. Council dated, June 30, 1982.  
(2) W. G. Council letter to D. M. Crutchfield, dated September 22, 1982.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1  
SEP Topic II-3.C, Safety Related Water Supply (Ultimate Heat Sink)

In Reference (1), the Staff identified a concern that the service water pumps could be adversely affected by surging inside the intake structure during Probable Maximum Hurricane (PMH) surge and high wave conditions. In Reference (2), Northeast Nuclear Energy Company (NNECO) committed to evaluate the possible effects on the service water pumps resulting from the postulated PMH clapotis. In accordance with this commitment, NNECO is providing the following information.

Although not specifically identified in the Staff's evaluation as being vulnerable, the emergency service water pumps would also be subjected to the same surge conditions. It should be noted that the intake structure is not provided with any flood protection over site grade (el. 14 ft. 6 in.), while the other safety-related structures at the site are protected to elevation 19 ft. 0 in. Therefore, the water level would rise much faster inside the intake structure than it would inside other structures, where inleakage caused by overtopping of the floodgates would occur much slower. The following information summarizes the relative elevations of equipment in the intake structure;

A035

### Service Water Pumps

Mounting Plate Elevation:	14 ft., ½ in.
Elevation that would Flood Motor:	21 ft., 4 inches
Emergency Service Water Pumps	
Mounting Plate Elevation:	14 ft., ½ in.
Elevation that would Flood Motor:	19ft., ¾ inches
Revised Maximum Stillwater	
Elevation:	18.1 ft.
Revised Maximum Surge Level from Clapotis:	22.3 ft.

Although the emergency service water pumps might be vulnerable, loss of these pumps would not inhibit safe shutdown of the plant. The only safety-related function of the emergency service water pumps is to provide containment cooling following a design basis accident. Since extreme external events are not postulated to occur coincident with design basis events, no further protection is required for the emergency service water pumps.

Since the motors of the service water pumps are elevated well above the maximum stillwater level, but the level of surge inside the intake structure has not been determined, it is not clear whether or not the service water pumps would be affected by the surge. NNECO has therefore evaluated the effects of loss of the service water pumps on the ability to achieve and maintain a safe shutdown condition.

The safety-related functions of the service water system are to provide cooling water to the emergency diesel generator and to the heat exchangers of the turbine building secondary closed cooling water system. As stated in Reference (2), however, loss of the turbine building secondary closed cooling water system would not inhibit safe shutdown since it serves components of the Feedwater Coolant Injection System, (FWCI) and loss of the FWCI System would not prevent safe shutdown.

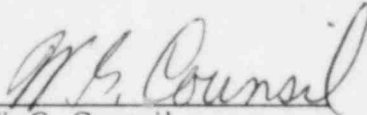
In the unlikely event that all of the service water pump motors were flooded as a result of the PMH, the result would be a loss of cooling to the diesel generator, however, the following options would remain available:

- o The gas turbine generator, which is flood protected, would be available as an alternate source of AC power. Since the gas turbine is air cooled, it would be unaffected by a loss of the service water pumps.
- o Should the gas turbine fail to start, the isolation condenser, which is independent of AC power, would be available for decay heat removal. The initial inventory in the shell side of the isolation condenser is sufficient to remove decay heat for about 40 minutes. Makeup could be provided to the isolation condenser via the fire water system. The fire pumphouse, which is flood protected, contains 2 motor driven fire pumps and one diesel fire pump, which is started by its own self contained battery system. One of the motor driven fire pumps receives emergency AC power from Millstone Unit No. 1; the other pump receives emergency AC power from Millstone Unit No. 2.

Based upon the above information, NNECO has concluded that there is sufficient redundancy so that failure of the service water system due to flooding in the intake structure would not preclude the plant from achieving and maintaining a safe shutdown condition. Therefore, NNECO considers SEP Topic II-3.C to be resolved, and no further action is planned.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

A handwritten signature in cursive script that reads "W. G. Council". The signature is written in dark ink and is positioned above a horizontal line.

W. G. Council  
Senior Vice President