

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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May 11, 1989
MP-13080

Docket No. 50-423
Re: 10CFR50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit Number 3
Shutdown to Repair Unisolable Charging/Letdown System
Leak at a Weld Connection of 3CHS*V995

This Special Report is being submitted to provide further information regarding the letdown system leak which occurred on April 11, 1989 at Millstone Unit 3.

On April 11, 1989, at 2348 hours, while operating in Mode 1 at 100 percent power, 586 degrees Fahrenheit and 2250 psia, an unidentified Reactor Coolant System leakrate of greater than 1 gallon per minute (gpm) was discovered. An inspection of Reactor Coolant and Charging/Letdown System piping revealed that the leak was issuing from a crack at the joint where vent valve 3CHS*V995 is welded to a vent line located on the letdown piping. A plant shutdown and cooldown were performed in order to make repairs. Immediate notification per 10CFR50.72(a)(1)(i) was made to document that an Unusual Event had occurred, but there are no 30 day Report requirements per 10CFR50.73 which apply.

The damage to 3CHS*V995 was caused by a sudden increase in letdown piping pressure and temperature due to water flashing to steam. The flashing was initiated when an operator, while throttling charging flow control valve, 3CHS*FCV121, incorrectly shut the remotely operated valve. With no cooling being provided to the Regenerative Heat Exchanger (RHX), the letdown outlet temperature of the RHX increased to greater than 500°F. This caused flashing downstream of the letdown orifices and resulted in the operation of letdown relief valve 3CHS*RV8117. Charging was restored within 30 to 60 seconds, and normal letdown was established within two minutes of the loss of RHX cooling.

This is the second leak that has occurred at 3CHS*V995. A leak was also discovered at this valve on January 17, 1986. At that time, the welded joint on the valve to the pipe was cracked. The crack was ground out, and the connection was rewelded. Because the recent failure occurred in the same general location, an immediate investigation was conducted to determine if there is the likelihood of a design problem.

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A walkdown of the letdown piping in close proximity to the affected vent was performed in order to determine if any damage had occurred to other components in the letdown line as a result of the pressure/temperature transient. No damage was evident to piping, valves, welded connections (except 3CHS*V995), snubbers, hangers, or pipe restraints. Letdown pipe movement during the transient was minimal as no damage had occurred to pipe insulation located in close proximity to restraints and wall/floor openings through which the letdown line was run.

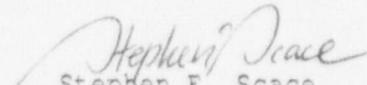
An inspection was conducted of other vent and drain welded connections located on the letdown line. There were no indications of weld or pipe failure. A visual inspection of the failure indicated a circumferential pipe crack occurred at the toe of the weld which joins 3CHS*V995 to the 3/4-inch pipe. Pending completion of a more complete analysis of the failure, it is speculative as to precisely how the failure occurred.

As corrective action, the 6-inch vent pipe was cut about 3 inches below the cracked connection, and the entire vent valve and pipe assembly was removed for further analysis. A new vent valve was installed on the remaining 3-inch vent line, and the plant was returned to operation.

The licensee contact for this Special Report is Nelson D. Hulme, who may be contacted at (203)-444-5398.

Very Truly Yours,

NORTHEAST NUCLEAR ENERGY COMPANY



Stephen E. Scace
Station Superintendent
Millstone Nuclear Power Station

SES/NDH:dlr

cc: W. T. Russel, Region I Administrator
D. H. Jaffe, NRC Project Manager, Millstone Unit No. 3
W. J. Raymond, Senior Resident Inspector, Millstone Units No. 1,2, and 3