



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 5, 1990

Docket No. 50-245

Mr. Edward J. Mroczka, Senior Vice President  
Nuclear Engineering and Operations  
Northeast Utilities Energy Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

Dear Mr. Mroczka:

SUBJECT: MILLSTONE UNIT 1 - CONTAINMENT PURGE AND VENT: NUREG-0737,  
SUPPLEMENT 1, ITEM II.E.4.2

By letter dated July 3, 1986, Northeast Utilities Energy Company responded to the staff's most recent request for the installation of an automatic high radiation closure feature on large (18") diameter containment purge and vent valves at Millstone Unit 1. However, this letter, as well as those you have previously submitted, has failed to completely address concerns which have been raised by our staff. As such, we cannot concur with your conclusion that automatic closure of containment purge and vent valves on a containment high radiation signal is not justified, and we request that you agree to provide a schedule for the implementation of this feature.

In particular, the staff does not agree with your assertion that an "undetected small LOCA" is an event of concern primarily for large PWR containments. Our position has been that, with your large purge and vent valves open, the possibility of an undetected small LOCA is not insignificant. We believe that during purge and vent operations, a LOCA could occur of sufficiently small size that your other automatic isolation setpoints (high containment pressure, low reactor level) would not be reached for some period of time. This situation would permit the release of reactor coolant to the environment and result in a measurable dose at the site boundary.

Your June 28, 1985 submittal referenced our February 25, 1985 safety evaluation (SE) concerning the compliance of purge and vent at Millstone 1 with NUREG-0737, Supplement 1, Item II.E.4.2. In your submittal, you stated that our SE had concluded "no unacceptable radiological consequences would occur" due to a LOCA during a containment purge. While our conclusion regarding the consequences of a LOCA during purge is valid, you have taken this conclusion out of its proper context. The SE evaluated the effects of a detected LOCA using the assumption that the containment purge and vent valves closed within 15 seconds of the start of the event. This is not the same as a small undetected LOCA in which automatic isolation does not occur immediately. In the case of the small LOCA with delayed closure of the purge and vent valves, the more conservative TID source term must be used to evaluate the radiological consequences. This position was previously stated in the staff's May 2, 1986 supplemental SE.

Your July 3, 1986 letter provided additional dose calculations to support your assertion that no automatic high radiation closure is necessary for containment purge and vent valves. These calculations used criteria found in a staff safety evaluation sent to the Boiling Water Reactor Owners Group (BWROG) in response to its request for exemption of two inch diameter and smaller purge and vent valves

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from automatic high radiation closure requirements. The staff finds your conclusions to be invalid as the acceptance criteria presented in our May 7, 1986 SE do not apply to your large diameter purge and vent lines. Additionally, your calculations assumed a 1" unisolable break outside containment. While we agree that the consequences from a small LOCA inside containment with the 18" purge valves open are bounded by an equivalently sized break located outside containment, we are not convinced that the 1" break size used in your calculations actually represents the largest possible undetected small LOCA for the Millstone 1 containment. Thus, we conclude that you have not presented adequate justification to support this position.

While the staff does, in some instances, give credit for operator actions to mitigate the consequences of an accident, we are not convinced that an operator would be able to take timely corrective actions in response to the proposed undetected small LOCA. The staff position has always been that containment integrity is of utmost importance during a LOCA. Your large diameter purge and vent lines represent significant release pathways to the environment, making the prompt closure of the associated isolation valves essential during an accident sequence. Therefore, the staff does not consider the use of a dedicated operator to be an acceptable substitute for the installation of an automatic high radiation closure feature for the containment purge and vent valves.

Additionally, NRC Standard Review Plan (NUREG-0800) Chapter 6.2.4 states that: "System lines which provide an open path from the containment to the environs should be equipped with radiation monitors that are capable of isolating these lines upon a high radiation signal. A high radiation signal should not be considered one of the diverse containment isolation parameters." As the SRP states that the high radiation isolation of containment purge and vent valves is totally separate from other containment isolation functions, we cannot consider your other "redundant and diverse" isolation signals in our determination of your compliance with this requirement, although you have taken credit for their functions in your May 20, 1981 letter. This position was reiterated in your August 12, 1981 submittal.

The staff has concluded that your submittals concerning automatic high radiation closure of containment purge and vent valves have not presented an adequate justification for exception from NUREG-0737, Supplement 1, Item II.E.4.2. We request that, you submit a schedule for the implementation of an automatic isolation function for the 18" containment purge and vent valves whenever a high radiation condition exists within the containment. This schedule should be in the next semiannual update of the Millstone Unit 1 integrated schedule.

Sincerely,

/s/

Michael Boyle, Project Manager  
Project Directorate I-4  
Division of Reactor Projects  
Office of Nuclear Reactor Regulation

cc: See next page

\*See previous concurrence

*PE/PD31:DRSP	*NRR/SPLB	*NRR/SPLB	*D/PD31:DRSP	PM/PD14:DRP	D/PD14:DRP
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Mr. Edward J. Mrocza  
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Mr. Edward J. Mroczka

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PD31 R/F

PDI-4 R/F

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