

April 26, 1989

Docket Nos. 50-334
50-412

Mr. J. D. Sieber, Vice President
Nuclear Group
Duquesne Light Company
Post Office Box 4
Shippingport, PA 15077

Dear Mr. Sieber:

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Docket File

NRC Local PDRs
Plant File
SVarga
BBoger
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PTam
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BGrimes
ARRS(10)

SUBJECT: BEAVER VALLEY UNITS 1 AND 2 - RESPONSE TO GENERIC LETTER 88-17 ON LOSS
OF DECAY HEAT REMOVAL, EXPEDITIOUS ACTIONS (TAC NOS. 69723 AND 69724)

We have completed our review of your January 13, 1989 response to Generic
Letter 88-17 on loss of decay heat removal.

We find the response appears to meet the intent of the generic letter with
respect to recommended expeditious actions. Your overall response was brief
and therefore did not address all items in detail. Our detailed comments are
enclosed. We intend to audit both your response to these expeditious actions
and your response on the programmed enhancements (transmitted by your letters
dated February 23 and March 17, 1989). The areas addressed in our comments
may be covered in that future audit.

No response to this letter and its enclosure is expected of you. We will
address your programmed enhancements in a separate letter.

Sincerely,

/s/

Peter S. Tam, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

[DOCKET NOS. 50-334, 50-412]

LA:PDI-4
SNorris
4/26/89

PM:PDI-4
PTam:cb
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PD:PDI-4
JStolz
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PDR ADOCK 05000334
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Mr. J. Sieber
Duquesne Light Company

Beaver Valley Power Station
Units 1 2

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

OFFICE OF NUCLEAR REACTOR REGULATION

COMMENTS ON THE DUQUESNE POWER AND LIGHT COMPANY RESPONSE
TO GENERIC LETTER 88-17 WITH RESPECT TO EXPEDITIOUS ACTIONS
FOR LOSS OF DECAY HEAT REMOVAL FOR BEAVER VALLEY POWER STATION

Generic Letter (GL) 88-17 was issued on October 17, 1988 to address the potential loss of decay heat removal (DHR) during nonpower operation. In the GL, we requested (1) a description of your efforts to implement the eight recommended expeditious actions of the GL and (2) a description of the enhancements, specific plans and a schedule for implementation of the six recommended program enhancements.

The NRC staff has reviewed your response to Generic Letter 88-17 on expeditious actions in the letter of January 13, 1989. We find that it appears to meet the intent of GL but lacks some of the details represented in Enclosure 2 of GL 88-17. Your response to some items is brief and therefore does not allow us to fully understand your actions taken in response to GL 88-17. You may wish to consider several observations in order to assure yourselves that the actions are adequately addressed:

1. You mention training for reduced RCS inventory operation, where lowered loop operations are anticipated, with your operations staff and other personnel. It is not specifically stated that maintenance personnel are also included. The item was intended to include all personnel who can affect reduced inventory operation.

2. You indicate that procedures will be revised to address containment closure requirements and that time for containment closure will be correlated to expected heat-up rates of any given time. It is not stated if you have completed the necessary analysis yet. You have not presented any times for closure in the meantime. Generic Letter 88-17 states that "containment penetrations including the equipment hatch, may remain open provided closure is reasonably assured within 2.5 hours of initial loss of DHR." This time will be less if there are vent areas totaling greater than one square inch in the cold leg (Sec. 2.2.2, GL 88-17 enclosure). In some plants, the quick closure of the equipment hatch is achieved by the installation of a reduced number of bolts. If you plan to use less than the full compliment of bolts for sealing the equipment hatch then you should first verify that you can make a proper seal of the periphery mating surfaces to meet the closure criteria.
3. Your addressing of containment closure is cursory and no information is provided regarding how you will keep track of and control the many potential openings which may have to be closed simultaneously. We assume your procedures and administrative controls will address this topic.
4. You mention that a minimum of two core exit thermocouples (CETs) will be monitored in the control room whenever the core is in mid-loop condition and the reactor vessel head is on the reactor vessel. It was also stated that the temperature indications would be recorded twice per shift. It was not stated whether the CETs would be automatically and continuously monitored and alarmed as recommended in Generic Letter 88-17. If the readings are taken from a location outside of the control room the observations should be recorded at intervals no greater than 15 minutes during normal conditions and communicated to an operator in the control room if significant changes occur.
5. For Unit 1 you indicate that two independent, continuous RCS water level indications in the control room will be available whenever the RCS is in

a reduced inventory condition. These consist of two level transmitters with recorder traces and high and low level alarms. You also refer to a level indicator outside the control room which will be read every 15 minutes if reliance is put on it. For Unit 2 you indicate that one level transmitter provides continuous (level recorder) RCS water level indication in the control room. You have not indicated if this instrument has alarm capability. A second level indicator is stated to be placed in service in the containment area and will be read and recorded every 15 minutes.

You have not provided information on the accuracy of the level instruments or the location of the instrument taps and therefore it is not known if any common taps are used. If so, care must be taken to avoid common errors. Also, you have not stated if the readings taken outside of the control room are from tygon hose arrangements which are commonly used in the containment. If so, the tubing should be examined periodically to verify that there are no kinks or loop seals. When two instruments are in place, care should be taken to resolve any discrepancy between the two measurement systems. Also, the pressure of the reference leg should approximate the pressure in the void in the hot leg or be compensated to obtain a correct value.

6. You state that "two available means of adding inventory to the RCS will be, (1) a flow path from the refueling water storage tank (RWST) to a charging pump to the RCS and, (2) a flow path from the RWST to a low head safety injection pump to the RCS." You have not indicated if the path of water injection is such that the flow cannot bypass the reactor vessel before exiting any opening in the RCS. Also, there is no reference to any analysis performed to demonstrate the adequacy of these systems to keep the core covered from RCS conditions arising from loss of RHR.
7. You have not stated the use of any vent opening on the hot side of the RCS to relieve RCS pressurization. The removal of a pressurizer manway

or steam generator manway, for example, is a means to provide RCS venting. Calculations need to be performed to verify the effectiveness of RCS openings however, because even for relatively large hot side openings in the RCS, pressurization to several psi can still result. For example, with removal of a pressurizer manway large steam flows in combination with flow restrictions in the surge line and lower pressurizer hardware may still lead to pressurization.

There is no need to respond to the above observations.

As you are aware, the expeditious actions you have briefly described are an interim measure to achieve an immediate reduction in risk associated with reduced inventory operation, and these will be supplemented and in some cases replaced by programmed enhancements. We intend to audit both your response to the expeditious actions and your programmed enhancement program. The areas where we do not fully understand your responses as indicated above may be covered in the audit of expeditious actions.

This closes out the staff review of your responses to the expeditious actions listed in the GL. The area of programmed enhancements will be addressed in a separate letter.

Principal Contributor : Harry Balukjian

Dated : April 1989