



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

MAR 21 1984

DMC
Action on BRB-5 BWR plants

MEMORANDUM FOR:

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*Go John Z
3/22/84*

FROM:

Darrell G. Eisenhut, Director
Division of Licensing

SUBJECT:

GUIDANCE TO BE USED BY BWR PROJECT MANAGERS
REGARDING GE SIL-402

The purpose of this memo is to provide guidance to our project management staff regarding the actions to be taken in discussions with BWR Mark I and Mark II licensees regarding the recommendations contained in GE SIL-402, attached.

Background

On February 3, 1984, Georgia Power Company notified the NRC of a through-wall crack almost completely around the vent header within the containment torus of Hatch Unit 2. Later that day IE Bulletin 84-01 "Cracks in Boiling Water Reactor Mark I Containment Vent Headers" was issued to the licensees of BWR facilities. The bulletin requested that licensees of plants with Mark I containments, that were in cold shutdown, perform inspections for similar cracks. The inspections revealed no cracks.

Georgia Power Company is in the process of completing a detailed investigation of the Hatch Unit 2 cracks. The investigation, to date, has revealed that the vent header crack is located in the vicinity of the nitrogen line outlet to the torus. The nitrogen line is approximately 20 inches in diameter with the outlet about 7 feet directly above the vent header cracks. The preliminary indications are that the crack is a brittle-fracture type of failure due to cooling of the vent header below the NDT by impingement of cold gaseous or liquid nitrogen. The thermal stresses generated by the cooling may have contributed to crack initiation and propagation. The vent header material for Hatch Unit 2 is SA 516 Grade 70 carbon steel with the nil ductility temperature in the range of -20°F to 0°F.

The nitrogen is used to create an inert atmosphere inside the primary containment when the plant is in operation. The nitrogen supply system is designed to evaporate liquid nitrogen and warm the nitrogen gas before it is discharged. The discharge valve of the system is controlled by a temperature switch and is designed to isolate the system if discharge temperatures drop to 0°F or 50°F for some plants. However at Hatch Unit 2, the licensee has indicated that there have been problems with operation of the nitrogen evaporators and heaters and with the low temperature isolation provisions.

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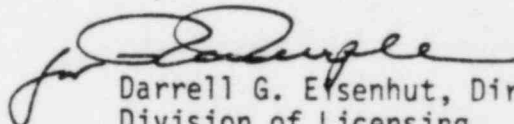
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The discharge temperature of the nitrogen gas should be in the range of 50°F to 100°F. Under worst case conditions of equipment failure, the discharge temperature could approach -200°F. It appears that the vent header temperature dropped below the nil ductility temperature when the evaporator and heater were not in operation.

Discussion and Actions

Based on our interaction with the BWR Regulatory Response Group, it has been determined that the attached GE-SIL was transmitted to all BWR Mark I and Mark II licensees on February 17, 1984. Of significance is that each licensee has been advised to contact their Project Manager and provide information regarding their plans to implement the recommendations contained in the GE-SIL.

Each Project Manager should advise the licensee that the staff needs to know of their plans for responding to the SIL, and determine whether and when the licensee intends to provide this information formally to the NRC. The results of this survey will be used to determine whether more formal regulatory action is warranted. Each Project Manager should conduct a survey of their licensees using the form in Enclosure 2. Results of this survey should be forwarded to ORAB by March ~~21~~, 1984. Should questions or issues arise regarding the information to be submitted, the point of contact for this effort is J. Zwolinski, x28543.


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