



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

June 26, 1989

Docket No. 50-395

Mr. Ollie S. Bradham  
Vice President  
Nuclear Operations  
South Carolina Electric & Gas Company  
P. O. Box 88  
Jenkinsville, S.C. 29065

Dear Mr. Bradham:

SUBJECT: COMMENTS ON THE SOUTH CAROLINA ELECTRIC & GAS COMPANY RESPONSE TO GENERIC LETTER 88-17 WITH RESPECT TO EXPEDITIOUS ACTIONS FOR LOSS OF DECAY HEAT REMOVAL FOR VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (TAC NO. 69782)

Generic Letter (GL) 88-17 was issued on October 17, 1988 to address the potential for 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 23, 1989. Your letter also included responses on programmed enhancements. These responses will be reviewed at a later date. We find that your response appears to meet the intent of the generic letter with respect to expeditious actions. However, your response is brief and sufficiently vague that we cannot 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 have stated that the times for containment closure will be within the time periods identified in Enclosure 2 to GL 88-17. In addition, you indicate that you are pursuing analysis to extend times for containment closure. Until these calculations have been completed, Generic Letter 88-17 applies and 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 closure time will be less if there are vent areas totaling greater than 1 square inch in the cold leg (see Enclosure 2, Section 2.2.2 of GL 88-17).
2. 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 complement 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.

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3. For provisions to implement containment closure you have identified flow paths of concern as "penetrations which provide direct access to outside atmosphere...." However, we are concerned with all containment penetrations that could cause a release (e.g., penetrations from the containment into a fuel handling or auxiliary building).
4. You state that you will have three level indicators; two tygon hoses from 2 RCS loop and the RVLIS. You have not provided a description of these three level systems including where the tap locations are located for the tygon hose system and where the discrete level measurement levels are for the RVLIS. Also you have not provided information on the range or accuracy of these level systems. The tygon hose level indications are to be monitored by a TV camera with continuous display in the control room. You have stated that if the indication of reactor vessel level is lost to the control room then the tygon hose reading will be monitored by an operator stationed inside of containment and that the readings will be forwarded every 15 minutes during reduced inventory conditions to the control room for logging. The RVLIS system level readings are useful when the discrete level points are in the region of concern of the hot leg.

Otherwise, they can be used as a cross check for the tygon hose readings. When two or more level instruments are in place, care should be taken to resolve any discrepancy between the measurement systems. Also, the pressure of the reference leg should approximate the pressure of the void in the hot leg or be compensated to obtain the correct level value.

5. Walking the tygon tube following installation to verify lack of kinks or loop seals is necessary. Experience shows that periodic walkdowns are needed after installation. We recommended daily walkdowns when the tygon tube is in use, with an additional walkdown immediately prior to its being placed in use.
6. For the expeditious action regarding provision of at least two available or operable means of adding inventory to the RCS that are in addition to pumps that are a part of the normal DHR systems, you have provided information on two means. One of these means is a charging pump. This should be capable of high pressure injection at the required flow rate. The second means is gravity feed from the RWST to the RCS. You have not described the injection paths. As alluded to in Enclosure 2, Section 2.2.2 of GL 88-17, if openings totaling greater than 1 square inch exist in the cold legs, reactor coolant pumps and crossover piping of the RCS, the core can uncover quickly when pressurized under loss of RHR conditions. If this situation should arise, it is generally more effective to inject makeup water into the hot leg rather than the cold leg. For the gravity feed from the RWST a proper hot leg vent opening is needed (see next item).
7. You have not stated the use of any specific vent openings on the hot side of the RCS to relieve RCS pressurization. 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.

Elinor G. Adensam/for

John J. Hayes, Project Manager  
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cc:  
See next page

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(LTR. TO BRADHAM FROM JJHAYES)

LA:PD21:DRP:NRR  
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PM:PD21:DRP:NRR  
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