50-289

From: John Segala
To: Colburn, Timothy
Date: Fri, Jun 23, 2000 1:15 PM
Subject: BNL's Questions Regarding TMI-1's GL 99-02 TS Amendment Request

Tim,

Attached are the contractor's (Brookhaven National Laboratory) Questions Regarding TMI-1's GL 99-02 TS Amendment Request.

I think we can resolve them quickly on the phone because they are mostly for clarification.

Please set up a conference call soon so we can discuss the questions.

Also, please make arrangements for BNL to be in on the call, either by using three way calling or a bridge number. Thanks

John

CC: BNL, Mozafari, Brenda

DF01

REQUEST FOR ADDITIONAL INFORMATION (RAI)

THREE MILE ISLAND NUCLEAR STATION UNIT No.1

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(1) GL 99-02 states that only systems with humidity control can be tested at 70% relative humidity (RH). It also states that humidity control can be provided by heaters or an NRC-approved analysis that demonstrates that the air entering the charcoal will be maintained less than or equal to 70 % RH under worst-case design-basis accident conditions. The current Technical Specification (TS) Section 3.15.4.2.b requires laboratory testing of the fuel handling building air treatment system charcoal samples to be performed at 95 percent relative humidity (RH). The November 30,1999 letter proposes to change the TS to test at 70 percent RH. The letter is taking credit for installed heaters to maintain the RH at or below 70% for the system. Typically, plants that use heaters to test at 70 percent RH have the following two surveillance tests in their TS:

> (1) Operate each train for at least 10 continuous hours every month with the heaters in operation (heaters on), and
>
> (2) Demonstrate at least once per operating cycle (18 or 24 months) that the heaters for the system dissipate a specified wattage when tested in accordance with ANSI N510-1980.

The purpose of the first surveillance test is to periodically ensure that the heaters function properly and that they dry out any moisture accumulated in the charcoal from humidity in the ambient air. The purpose of the second surveillance test is to periodically verify that the heaters are capable of reducing the RH of the air to less than or equal to 70 percent.

Please refer to or provide docketed information indicating that the heaters are safety related and that they are sized to maintain the inlet air at less than or equal to 70 percent RH during worst-case design-basis accident conditions (100% RH inlet air, TS flow rate minus 10%, degraded voltage, etc). Also, provide justification for why the above two surveillance tests should not be added to the TMI-1 TS.

(2) All three air treatment systems have type II charcoal filter trays consisting of two 2-inch-deep beds of charcoal mounted in a horizontal casing. However, the face velocities and the residence time per bed depth are different for these three systems. Please describe the method used in calculating both these parameters for all three systems. Do these face velocities correspond to actual operating conditions or nominal design values? What are the proposed face velocities for laboratory testing of both new and used charcoals for these three systems?

The actual system face velocities can be calculated by dividing the maximum system flow rates specified in the technical specification (TS) (nominal + typically 10% upper value) by the total exposed surface area of the charcoal filter media. Per GL 99-02, if this value is >110% of 40 ft/min, then the TS should be revised to specify that value as the test face velocity. (The guidance on calculation of the residence times in ASME

AG-1-1997, Division II, Sections FD and FE, Articles I-1000 or in ANSI N510-1975 can be used to calculate the actual system face velocities).

(3) GL 99-02 states in Requested Action 2 that if you choose to adopt the ASTM D3803-1989 standard, then submit a TS amendment request to require testing to this standard. In addition, GL 99-02 specifically includes the ASTM D3803-1989 standard in the attached sample TS, not in the TS Bases. However, the November 30,1999 letter proposed to add ASTM D3803-1989 to the TS Bases rather than in the proposed TS action statements. Please provide the basis for why the ASTM D3803-1989 standard should be added to TS Bases instead of the TS action statements.

NOTE TO NRC:

(1) In response to GL requested item 4 relating to the charcoal testing after August 2, 1999, the licensee has adopted the conservative test criteria of ASTM D3803-89 for charcoal testing after this date. However, no other details regarding any testing activities are stated. Provide the following information:

(a) Was there any charcoal (new or used) testing performed after August 2, 1999?
(b) Were the test results within the acceptable limits with a safety factor of 2?