From: Ashok Thadani
To: TWD1.TWP4.DFR DF Ross
Date: 3/5/97 8:12am
Subject: Denny,

Denny,

I forgot to follow up on your request regarding the office position on the proposed generic letter. I represented the office position when I transmitted the generic letter proposing to eliminate certain redundant and marginal requirements.

Ashok

Attachment 3 to the Combined Minutes of CRGR Meeting No. 299 and 300

Proposed Generic Letter "Modification of the NRC Staff's Recommendations for the Post-Accident Sampling System"

(CRGR Meeting No. 299 January 28, 1997)

TOPIC

CRGR review and endorsement of the proposed Generic Letter titled "Modification of the NRC Staff's Recommendations for the Post-Accident Sampling System." Following the Committee's endorsement, staff plans to publish this generic letter for comments. Although, this generic letter does not impose new requirements, it does addresse a shift in the previously accepted staff position. It is proposed that the staff would now entertain licensee-initiated requests to modify current post-accident sampling system (PASS) requirements based on NRC's previous recommendations for PASS, originally specified in NUREG-0737. Specifically, staff would now consider licensee-initiated requests to modifiy some of their PASS requirements such as (1) elimination of sampling hydrogen in containment atmosphere, dissolved gases in reactor coolant in BWRs, and chloride concentration in reactor coolant; and (2) increase in sampling-and analysis-time for the variables which are used to provide information needed at a later phase of accident management, such as, dissolved gases in reactor coolant in PWRs, activity in the reactor coolant and containment atmosphere, and boron concentration in reactor coolant. However, licensees would have to evaluate any adverse impact of these modifications on the effectiveness of their emergency plans in accordance with 10 CFR 50.54(q). Furthermore, those licensees who propose to implement PASS modifications under the provisions of 10 CFR 50.59 should are cautioned to ensure that 10 CFR 50.54(q) requirements are met.

BACKGROUND

(i) Memorandum dated December 10, 1996, from Ashok C. Thadani to Edward L. Jordan, "Request for Endorsement Without Formal review of the Proposed Generic Letter, 'Modification of the NRC Staff's Recommendations for the Post-Accident Sampling Systems'." This review material (CRGR Item No. 151) was forwarded to the members on January 14, 1997. The attachments are as follows:

1. Proposed Generic Letter Titled, "Modification of the NRC Staff's Recommendations for the Post-Accident Sampling Systems"

2. Response to the CRGR Charter Questions

3. SECY-93-087, "Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water reactor (ALWR) Designs"

4. Staff Requirements Memorandum, dated July 15, 1993, on SECY-93-087.

Attachment 3(A) contains the presentation material used by the staff at the meeting.

ISSUES/QUESTIONS

The CRGR made several comments on the technical aspects and the scope of the proposed generic letter. The Committee made the following specific recommendations:

- Use the words "modifications to the NUREG-037 requirements..." instead of "..proposed relaxations to the NUREG-037 requirements..." Also, clearly state that adoption of these modifications is voluntary and that the staff would evaluate any licensee-initiated changes to the licensee's PASS program.

- Include a lead-in paragraph in the "Discussion" section clearly stating that the licensees (who are required to comply with the NUREG-0737 PASS requirements by Orders or through license conditions) may initiate requests for certain PASS modifications. However, any adverse impact of these modifications on the effectiveness of their emergency plans should be evaluated in accordance with 10 CFR 50.54(q). Furthermore, those licensees who propose to implement PASS modifications under the provisions of 10 CFR 50.59 should also be cautioned to ensure that 10 CFR 50.54(q) requirements are met.

- Under "Discussion," Item 1, clearly state that hydrogen monitor in the containment is required to be safety grade.

- Under "Discussion," Item 3, in the context of gross amount of dissolved gases in the reactor coolant samples, explicitly state that reference is being made mainly to hydrogen.

- Also under "Discussion," Item 3, delete the sentence that alleges that "..completing sampling and analysis by 24 hours...will provide adequate protection to public health and safety...," as there is no obvious basis for that conclusion. However, it is acceptable to say that performing sampling in 3 hours does not provide benefits commensurate with the cost.

- Under "Discussion," Item 5, time for measuring activity levels in the reactor coolant can be extended from 3 hours up to 24 hours, rather than from 3 hours to 24 hours. Also, include the rationale for this.

- Commitee also agreed that the CRGR endorsement of the proposed generic letter is contingent upon the receipt of a letter from Director, NRR, to the Chairman, CRGR, stating in accordance with, Section IV(B)(x), CRGR Charter, Revision 6, that the public health and safety and the common defense and security would be adequately protected if the reduction in PASS requirements were implemented.

Atachment 3(B) contains the red-line/strike-out version of the generic letter, as endorsed by the CRGR.

BACKFIT CONSIDERATIONS

No backfit is either intended or approved as the actions described in the proposed generic letter are strictly voluntary.

Attachment 3(A) to the Minutes of CRGR Meeting No. 299 and 300

Proposed Generic Letter "Modification of the NRC Staff's Recommendations for the Post-Accident Sampling System"

(CRGR Meeting No. 299 January 28, 1997)

Presentation Material used by the Staff at the Meeting

CRGR Meeting No 29
Attachment

Presentation to the CRGR on the Proposed Generic Letter

"Modification of the NRC Staff's Recommendations for the Post-Accident Sampling System (PASS)"

by

K.I. Parczewski, NRR/DE/EMCB

January 28, 1997

Purpose for Issuing of the Generic Letter

- To notify licensees about the proposed modifications of some of the original recommendations for PASS

- Additional knowledge gained by the staff, since the original PASS recommendations were formulated in 1980, has indicated that several recommendations could be relaxed without affecting quality of the information obtained by PASS

- To make more consistent implementation of the PASS recommendations by different licensees

Purpose of Post-Accident Sampling System

The original PASS requirements are:

- **Promptly obtain and analyze within 3 hours, from making decision to take a sample, coolant and containment atmosphere samples for the following variables:**

  - **certain radionuclides that may be indicators of the core damage**

  - **hydrogen levels in the containment atmosphere**

  - **dissolved gases in the coolant**

  - **boron concentration in the coolant**

Purpose of Post-Accident Sampling System

- Chloride concentration within 24 or 96 hours, depending on the plant's cooling water characteristics

- To able to take samples without exceeding radiation occupational limits by the operators and without a need to place auxiliary systems in operation

Background Information

- Original recommendations for PASS (11 criteria) were specified in Section II.B.3 of NUREG-0737, "Clarification of TMI Action Plan Requirements," published in November 1980

- Staff Guidance for implementation of the PASS recommendations were specified in two Generic Letters 83-36 (for BWR) and 83-37 (for PWR), issued in November 1, 1983.
  In these letters NRC specified that PASS program can be referenced in the administrative control section of the TS and its detailed description included in the plant operating manuals. This would allow the licensees to modify PASS programs under 10 CFR 50.59

Background Information (cont'd)

- In spite of the staff guidance, specified in Generic Letters 83-36 and 83-37, the recommendations of NUREG-0737 were imposed in the majority of operating plants as requirements by orders or as license conditions. These licensees are required to obtain NRC authorization to modify PASS operational procedures

- In 1987 PASS program was evaluated by Pacific Northwest Laboratory which in its report (NUREG/CR- 4330) proposed some modifications

Background Information (cont'd)

- In 1990, in response to inquires from PASS Owners Group and a 1993 request from Combustion Engineering, the NRC staff clarified its position on several PASS recommendations and identified several areas where some changes are acceptable (elimination of analyses for containment hydrogen and pH and oxygen in the reactor coolant)

- More recently, EPRI requested several relaxations of PASS requirements for their Advanced Light Water Reactor Utility Requirements Documents. These relaxations were reviewed by the staff and passed to the Commission in SECY-93-087. In a staff requirements memorandum dated July 21,1993, the Commission approved these modifications with some changes

Proposed Modifications of PASS

(1) Elimination of hydrogen analysis in the containment atmosphere

This analysis is not needed because of the existence of hydrogen monitor, recommended in Item II.F.1 of NUREG-0737

(2) Elimination of dissolved gas analysis in reactor coolant in BWRs

Whenever the reactor vessel is depressurized during a suspected core uncovery, dissolved gases will be released. Measuring their concentration in the coolant is therefore meaningless. Their concentration before depressurization could be estimated from their concentration in the containment atmosphere. When core uncovery is not suspected, concentration of dissolved gases can be determined later by a normal process sampling

Proposed Modifications of PASS (cont'd)

(3) Increasing analysis time for dissolved gases in PWRs from 3 to 24 hours after an accident

This information is used later in the plant recovery phase and sampling at 3 hours after an accident puts unjustifiable burdens on a licensee.

(4) Elimination of chloride analysis in PWRs and BWRs

This information is required for assessing the need for corrosion control. Since corrosion is a long-term phenomenon, samples can be taken later by process sampling.

Proposed Modifications of PASS (cont'd)

(5) Increasing time for making activity level measurements

Activity levels are needed for determining core damage, classify events, determine source term for dose calculations, determine protective action recommendations for the public and analyze the progression of an accident. Although other indications are available, PASS results provide direct confirmation. Any licensee proposing to extend of the sampling time, will be required to meet the requirements of 10 CFR 50.54(q)

Proposed Modifications of PASS (cont'd)

(6) Increasing analysis time for boron from 3 to 8 hours after an accident

Knowledge of boron concentration in the reactor coolant is required for evaluating reactivity of the core. However, for the plants equipped with neutron flux monitoring instrumentation which meets Category I criteria of Reg Guide 1.97, this information can be obtained independently of boron concentration and for these plants analysis for boron can be postponed to 8 hours after an accident

Backfit Discussion

- The modifications of the PASS procedures, described in the proposed generic letter, consist of the changes of the existing recommendations, specifies in Section II.B.3 of NUREG-0737, which licensees may introduce into their facilities

- Since these licensees' actions are strictly voluntary, the staff has not performed a backfit analysis

Attachment 3(B) to the Combined Minutes of
CRGR Meeting No. 299 and 300

Proposed Generic Letter "Modification of the NRC Staff's Recommendations for the Post-Accident Sampling System"

(CRGR Meeting No. 299 January 28, 1997)

Red-line/strike-out version of the generic letter endorsed by the CRGR