



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D. C. 20555

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June 21, 2000

MEMORANDUM TO: T. Kress, Chairman, Severe Accident Management Subcommittee

FROM: P. Boehnert, Senior Staff Engineer *B*

SUBJECT: NRR/NEI MEETING ON CONTROL ROOM HABITABILITY, JUNE 13-15, 2000 - ROCKVILLE, MARYLAND

Representatives of nuclear utilities under the auspices of the Nuclear Energy Institute (NEI) and NRR met to continue discussions on the revision of the NEI guideline document, "Control Room Habitability Assessment Guidance", NEI-99-03. This meeting was the latest in an on-going series of working-level meetings, the goal of which is to develop a revised version of NEI-99-03 that will reflect the consensus positions of both NEI and the staff. I attended portions of the June 13 -14 meeting sessions.

### Background

In July 1998, during a public workshop, NRC presented a number of significant concerns associated with control room (CR) habitability issues. NEI, in response, formed the Control Room Habitability Task Force and prepared its first draft of NEI-99-03. In August of last year, NEI provided this first draft version to NRR for its review. The staff identified numerous significant concerns with the draft. In response, the staff and NEI initiated a series of working-level meetings to address the issues of concern to NRR with the goal of revising "99-03" to address the staff's concerns. The ACRS was briefed on the status of the issue of CR habitability during the September 16-17, 1999 Severe Accident Management Subcommittee meeting, and during the October 1999 full Committee meeting.

### Meeting Discussions

Significant issues remaining following the last working-level meeting (May 2-3, 2000) included the following:

- Need for a leakrate test of each control room to establish a quantitative baseline in-leakage rate.

- Assurance (via some sort of periodic testing) that control room in-leakage is maintained within the stated licensing basis.
- Establishment of a technical specification value to ensure control room integrity.
- Periodic reassessment of toxic gas challenges
- Control room in-leakage of externally generated smoke.

With the exception of the fourth item, these issues framed the discussions during this meeting, as they have been the most contentious. Some progress was made on all four of these issues, however, as noted below.

- Regarding baseline in-leakage testing, NEI had taken the position that such testing is unnecessary. During the last meeting, they had given indication that some sort of baseline testing may be necessary. At this meeting, NEI stated a formal position that with the issuance of the "99-03" document, licensees will be expected to commit to a program to "test, maintain and periodically reassess the control room envelope". This would include (some form) of baseline testing (see below) to quantify both unfiltered inleakage and overall inleakage, as well as periodic reassessment of the CR envelope integrity.
- For the issue of the challenge to CR habitability from smoke, NEI presented a position that "99-03" would include qualitative guidance for licensees to assess vulnerability to smoke infiltration. The staff is concerned with the common-mode failure aspects of smoke relative to safe shutdown of the plant (i.e., both the CR and the remote shutdown capability could be compromised by a single fire/smoke event). NEI does not believe quantitative guidance can be developed because design criteria do not exist for such parameters as location, duration and the type of smoke/fire at issue.

During discussion of this issue, it was noted that the industry has not performed any evaluations to determine the severity of the challenge to CR integrity. In response to a staff question, NEI acknowledged that licensees have not installed carbon monoxide (CO) detectors in their control rooms. [CO apparently can be released from the burning of electric cables.] Mr. S. LaVie indicated that NEI's approach for resolution of this aspect of the issue (CR habitability) may be acceptable. He also said, however, that the Agency should address the issue of the risk impact from smoke on a comprehensive basis, perhaps as a GSI, to ensure proper regulatory closure. The staff requested that NEI provide detailed justification in the revised 99-

03 report for its above-noted approach to resolve this matter; NRR will review NEI's response upon receipt<sup>1</sup>.

- Concerning the issue of CR inleakage control by use of technical specifications, NEI stated its position that based on extensive review of this matter by the NEI CR habitability Task Force, CR inleakage is not a parameter that meets the criteria of 10 CFR 50.36 (technical specifications). Extensive discussion ensued, centered on various options available to ensure that inleakage will be adequately controlled. In the end, the staff indicated that it will want a regulatory "hook" of some form to resolve this matter.
- During one of the discussion sessions, NEI proposed a summit meeting to try to get high-level agreement for the issues discussed above. I provided comment to the effect that I had seen little progress to closure of these issues over the past nine months and that the SAM Subcommittee and the ACRS has scheduled meetings in September and October to review the status of resolution of this matter. I suggested that both sides try to obtain agreement on these issues prior to the Committee's discussions this Fall.

While it was apparent that progress was made in obtaining closure on the above three issues, the "devil will be in the details" with regard to what NEI provides the staff in the next round of meetings. For example, NEI will need to convince the staff that use of component testing to establish a baseline inleakage rate will be adequate (NRR prefers use of tracer gas testing). Another example is that NEI has not yet defined what will constitute "periodic assessment" with regard to maintaining CR integrity.

NEI plans to have a revised draft of "99-03" available in August for internal (utility) review. No definite schedule was established for the next round of working-level meetings (early August was mentioned as a possibility).

cc: Balance of ACRS Members  
R. Savio

cc w/o attach (via E-mail):  
J. Larkins  
H. Larson  
S. Duraiswamy  
ACRS Technical Staff & Fellows

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<sup>1</sup> The staff, in response to NEI, indicated that the use of self-contained breathing apparatus by CR operators on a transient basis would be acceptable for resolution of this issue.