



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

SEP 28 1979

MEMORANDUM FOR: F. Schroeder, Acting Director, Division of Systems  
Safety, ONRR

FROM: R. P. Denise, Acting Assistant Director for Reactor  
Safety, DSS

SUBJECT: LONG RANGE RESEARCH PLAN - WRSR

In accordance with your request, we have reviewed the package of vu-graphs, transmitted to you by Bill Russell on September 21, 1979, as representing a Long Range Research Plan for WRSR. Our significant comments are given below, but it should be recognized that the vu-graphs alone do not convey a good understanding of the program proposed by WRSR.

- 2.A.I. 2D/3D Tests - No mention is given of possible UHI testing. This was requested last year and Dr. Tong said it would be considered later in the program.
- 2.B.I. Semiscale Tests - It is not clear what ECC by-pass means in this case. Semiscale geometry may not be very applicable to by-pass study.
- 4.D.II The statistical LOCA program is not mentioned, but it should be reassessed in light of TMI.
- 2.D.II. BWR Containment Analysis

The draft plan calls for providing improved analytical models for BWR containment response by FY 1983. In our view, there is no further need for improved analytical models in our containment programs associated with the licensing of BWR plants. If the RSR plan is to develop another modification of the BEACON Code for this purpose, we believe that further discussions between R&S and NRR are warranted before this effort is undertaken.

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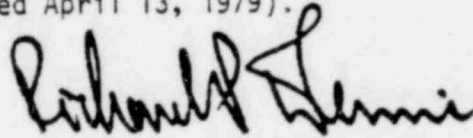
We wish to note that there exists an NRR need for RES support in monitoring the foreign test programs now underway at the JAERI facility in Japan and at the GKSS facility in Germany. In this regard, we foresee a need for an accompanying program to make the results obtained from these facilities useable in the licensing process.

- 2.E.II. We note that the draft program includes a hydrogen program which extends through FY 1983. If the program details do not already provide for it, we would recommend establishment of an early milestone, i.e., around FY 1981, which provides early results on hydrogen sources from coatings and corrosion.
- 4.D.II. The draft plan indicates an activity associated with use of the BEACON Code in analysis of new subcompartment test data which is scheduled for completion in FY 1983. The material available for our review does not indicate that new test data from further subcompartment testing will be obtained. In our view, such new data are required so that the job of assessing the adequacy of the BEACON Code for this purpose can be completed.
- I.A.III. We support and encourage the completion of this program earlier than indicated; i.e., more in line with the resolution of the ATWS issue.
- We think the ATWS related tests should be completed in 1981; in fact, the proposed schedule is inconsistent with EPRI's plans. NRC should make an effort to take advantage of EPRI's program in this area.
- 3.A.III. The schedule under Human Factors appears drawn out. For example, Operator Training for degraded plant conditions should not be delayed until 1982.
- 2.F.II Hydrogen Program
- The objective of the program should be to "Understand the phenomenology of hydrogen generation, migration, burning and/or exploding under core degraded accident conditions".

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Core Meltdown

Add: Molten Core Debris Interaction with Refractory  
Sacrificial Materials (see NRR Research Request  
RR-NRR-79-10, dated April 13, 1979).

A handwritten signature in black ink, appearing to read "Richard P. Denise". The signature is written in a cursive, somewhat stylized font.

Richard P. Denise, Acting Assistant  
Director for Reactor Safety  
Division of Systems Safety