

October 19, 1981

TELEX

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BRS Files

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Task No. 7/2

Research Request No.

FIN No.

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Other

Dear Mr. Silberberg,

The following are my personal technical comments on the "Draft Report of NRC Fuel Testing Task Force". These comments are essentially those presented in Sun Valley in August at your review meeting.

COMMENTS ON DRAFT REPORT OF NRC FUEL TESTING TASK FORCE

1. P. 6-11 "However, this (program) ... Can only be realized if the SFD (Severe Fuel Damage) program and its important accident management research interfaces are not adequately integrated and coordinated in terms of schedule and technical milestones, with all the other degraded core cooling accident programs being promulgated by the NRC". The NRC report recognizes the most important factor impacting the success of the program. A management plan should be written and implemented with clear goals. Integration is currently lacking.
2. The Research and Development (R&D) effort should be carried out and completed prior to rulemaking. (The report suggests that the R&D will be confirmatory of the rule). If the R&D is used "after the rule" it is like the game, pin-the-tail-on-the-donkey. Where we pin the tail (make the rule) without looking only to take off the blindfold later to see how close we came to the goal with the R&D. We should take the blindfold off prior to making the rule.
3. Examination of the core state at TMI-2 is of essential importance to NRC and rulemaking. While it is impractical in a policy/political sense, NRC would be best off if they spent all their money to see what the TMI-2 core looks like prior to rule-making rather than doing any of the proposed work. We are not proposing to scrap the proposed program, only to indicate the relative importance of TMI-2.

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4. From the point of view of public health and safety, fission product behavior is of utmost importance and the bottom line. Explicit inclusion of fission product tracking and chemical form, should be included in the SFD program.
5. In-pile prototypical experiments are best decay heat driven, allowing for fission product release and a central role ascribed to the thermal-hydraulics and heat transfer of the system. The volatile fission product release is important in tests since it results in a redistribution of the heat source (which cannot be done in-pile). It also serves as "source term" to fission product behavior in the primary system. Thermal-hydraulics/heat transfer can be very important re: a little heat transfer can have significant impact), cold walls or surfaces in tests could be problematic and bypass flow relative to a damaged blocked center a bundle is different for 32 pin test relative to whole core.
6. Document clarification or program reorientation toward accident management/mitigation.
7. Realistic computer codes are required if NRC want to be able to "manage" accidents.
8. PBF will most likely have difficulty in getting prototypical debris data as the SFD program wants. Cold wall effects and thermal-hydraulic/heat transfer problems would more likely lead to non-prototypical debris (and as cold wall freezing of liquid fuel rather than fractured "rubble" debris). PBF's role should be restricted to studying important separate effects/non-debris related information.

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9. SCDAP (NRC fuel severe core damage code to replace MARCH) needs to be interfaced with MARCH/CORAL and other codes for integrated accident analysis.
10. No specific needs for this program have ever been clearly enunciated. It is prudent to define the needs PRIOR to defining the program to meet the needs.

If there are any questions, feel free to contact me.

Sincerely,

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