Safety and Reliability Directorate

Wigshaw Lane
Culcheth
Warrington WA3 4NE

Telex 629301
Telephone Warrington (0925) 31244
Extension 7205

Abbey

2nd February, 1984.

Mr. M. Jankowski,
USNRC,
Silver Spring,
Washington. 20555,
USA.

Dear Mike,

BMI 2104 Peer Review Meeting, January, 1984

The discussion at this meeting covered most of the issues I wished to raise more than adequately, however there are one or two smaller points which it may be worth drawing your attention to at this stage:

1. In Volume V there seems to be some confusion in the nomenclature for the TMLB' delayed containment failure accident. For example, in tables 6.2 and 6.3 it is referred to as δ_1, and elsewhere as ℓ. I am not sure whether the above or below ground options for containment failure make any difference to the source term in practice, but in any event the situation needs to be clarified.

2. Volume V leaves me in some doubt as to whether it is a hot or cold-leg V sequence which is analysed. Mike Kuhlman assures me that it is a cold-leg sequence, and the inclusion of the steam generator in figs. 6-20 and 7-9 to 12 suggests that this is, in fact, the case. However, that being so, I find it difficult to understand why the steam generator (module 6) appears to retain so little of the fission products and aerosol. This is in contrast to the S_2D-ℓ case, for example, in figs. 7-14 to 16, where the steam generator is a good site for retention.

3. Volume VI says that it does not analyse the V sequence for Zion because it is much less likely than for Surry. From the table on page 4-2 of Volume VI it seems that the V sequence might contribute quite significantly to risk if the associated source term approximates to that for Surry. However, this is not necessarily an argument for analysing the V sequence for Zion.

4. I note that BMI 2104 does not analyse any severe accidents involving steam generator tube rupture. Is this perhaps because the USNRC feels that there would be no new phenomena involved which are not being covered in the existing calculations?

5. In MERGE/TRAP-MELT the condensation of fission product vapours in the upper plenum is assumed to be controlled by mass transfer factors only. In fact, heat transfer factors may well be important, (cf the treatment of steam condensation in MARCH, the results of which are then carried over into NAUA). I cannot see this point acknowledged anywhere in the documentation

SRD United Kingdom Atomic Energy Authority

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for the meeting. It has been suggested that if heat transfer factors were properly accounted for the amount of CsI and CsOH condensation on aerosol might be substantially reduced, with a corresponding increase in condensation at walls.

6. We have been unable to discover from the documentation how NAUA obtains its steam supersaturation values from the MARCH output. We cannot comment therefore on the validity of the condensation modelling in NAUA.

I hope these comments are helpful. May I say that I found the meeting very interesting and stimulating at the end of a year's abstinence! It was also a pleasure to renew old acquaintances. Once again thank you for an excellent dinner.

Best Wishes,

Yours sincerely,

F. ABBEY

c.c.

M. R. Hayns, NST
P. N. Clough, NST
I. H. Dunbar, NST
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