



hearings before the Atomic Safety and Licensing Board on August 26-27, 1982 in Oak Ridge, Tennessee.

3. This affidavit is prepared for use in the above-captioned proceeding.

4. My testimony at Tr. 2777, 2779, 2785 and 2789 contains an error which I wish to correct.

5. In response to a series of questions by Judge Linenberger I incorrectly characterized a nuclear explosion as requiring a sufficient rate of energy deposition to result in the generation of a shock wave. Although it was not my intent, I may have left the impression that this was an important damage mechanism in an LMFBR energetic CDA.

6. While shock wave propagation may (or may not) be an important determinant in the energetics of a CDA (i.e., in whether a large energetic vapor explosion could ever occur) [see generally Alan E. Walter and Albert B. Reynolds, Fast Breeder Reactors, Pergamon Press, 1981, pp. 654-660] shock wave production is not required for an explosion to occur.

7. Furthermore, in a CDA, or nuclear explosion in an LMFBR, the expansion of a high temperature pressure bubble of reaction products, or vaporized material (e.g. fuel) is thought to be the predominant damage mode (rather than shock wave propagation) for the slower time-scale pressure buildup of an LMFBR excursion as compared to a chemical high-explosive detonation. [Walter and Reynolds, op. cit., p. 664.]

8. In response to Interrogatory 23 of Applicants' Sixth Set of Interrogatories to Intervenors, I have set forth a more complete (and accurate) definition of a nuclear explosion in an LMFBR.

TC Cochran

Thomas B. Cochran

Date: October 20, 1982

Sworn and subscribed to before me  
this 20<sup>th</sup> day of October, 1982.

Dorinda Marie Skiles  
Notary Public

My Commission Expires: 7/31/82.