FROM: Naval Ordnance Laboratory-White Oak
Silver Spring, Maryland 1910
J. F. Proctor

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TO: Edson G. Case

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DESCRIPTION: (Must Be Unclassified)
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FSAR...re Aircraft Impact Design...

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REMARKS:

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Mr. Edson G. Case, Director
Division of Reactor Standards
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Case:

I have completed my review of Amendment 19, FSAR, Three Mile Island Nuclear Station-Unit 1, Docket No. 50-289 which replaces in its entirety Appendix 5A "Summary of Aircraft Impact Design", Volume 2 of the original FSAR.

In this complete rewrite of Appendix 5A, the applicant has either directly or indirectly answered my questions and comments submitted in my earlier letter to you dated 22 July 1970 on this matter. The new amendment gives a reevaluation of the aircraft impact loading on the containment dome that agrees very closely with my original estimates. The increased impact load has been incorporated into all structural analyses presented in the document with resulting increased stresses and deflections. With respect to my concern on the use of more conservative dynamic load factors (DLF) on flat wall type construction, the applicant did not change his basic approach but did include a design check (Section 3.2.4) that shows each wall can withstand a shear load equal to the product of the maximum DLF (1.52) from Figure 5A-3 and the peak impact load (17.5×10^6 lb) from Figure 5A-2. Therefore, the conservation shown here is sufficient to alleviate my concerns with the DLF approach.

In conclusion, it is my opinion that the applicant has presented in Amendment 19 an accurate summation of the aircraft impact loads on the containment building and other protected structures. However, with respect to the high compressive stresses induced in the concrete containment dome by the impact loads, I leave final judgement on the structural response portion of the analysis to more qualified persons in the fields of prestressed structures and concrete behavior under combined loads such as Dr. Alexis Gluckman of your staff and Dr. Nathan Newmark, your structures consultant.

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Very truly yours, 1589 201

J. F. PROCTOR
Air/Ground Explosions Division

2114.