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

OFFICE OF THE
SECRETARY

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Docket No. 50-289 SP

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NOTE TO PARTIES IN THREE MILE ISLAND RESTART REMAND PROCEEDING

Due to an error in reproduction, the attached pages from the Licensing Board's Partial Initial Decision on the Remanded Issue of the Dieckamp Mailgram (LBP-85-30) were missing from the copy served on August 19, 1985.

Sorry for any inconvenience this error may have caused.

Docketing and Service Branch
Office of the Secretary of the Commission

plant stabilization, not recovery, and that several senior people should be immediately assigned to the control room to help with stabilization and damage control. Messrs. Lowe and Crimmins volunteered. They sought information about plant status and were told that the primary system was still "mushy"; that is, it was hard to control pressurizer level. The operators thought there might still be a steam bubble outside the pressurizer, but none of the many temperature readings were high enough for that. Lowe, ff. Tr. 28,151, at 5-6.

14. In the meantime in the evening of the 29th, Met Ed engineers Richard Bensel, Ivan Porter, and others had begun to pull together and photocopy strip charts of various plant parameters during the accident in order to begin the event analysis. Mr. Bensel recalled that he began to review these charts to familiarize himself with them. Upon reviewing the reactor building pressure chart, Mr. Bensel found the 28 psig pressure spike. Joint Ex. 107, at 54 (SIG Report).

15. Mr. Bensel showed the spike to a number of other individuals who were in the control room area and who were concerned with operations. Mr. Bensel learned that the spray system had come on at the same time. Looking at the alarm printer, he also discovered that all six pressure switches had activated. This led Mr. Bensel to conclude that there had actually been an increase in reactor building pressure. Id. Mr. Bensel then showed the pressure spike to Mr. Lowe at about 11 p.m. on the 29th.

Mr. Lowe's Discovery of the Significance of the Pressure Spike

16. Mr. Lowe's background in chemistry and nuclear power plant accident analyses led him to the intuitive judgment from the shape of the spike that it had been caused by the ignition of hydrogen in the containment building and that the hydrogen had been generated by the interaction of zirconium with steam in the reactor vessel. He postulated that the presence of hydrogen in the reactor vessel could explain the inability to stabilize the plant, the "mushiness," and could offer a potential for hydrogen expansion in the core that might prevent maintaining water coverage of the core. Mr. Lowe concluded that it was urgent to determine how much hydrogen was present and to eliminate it. Lowe, ff. Tr. 28,151, at 4-10.

17. At about 11:30 p.m. (on March 29, 1985) Mr. James Moore, an experienced GPUSC engineer arrived. Messrs. Moore, Crimmins and Lowe set about calculating the volume of hydrogen in the primary system above the core and ultimately determined (at about 3:30 a.m. on March 30) that the hydrogen volume was approximately 1100 cubic feet at 875 psi absolute. B&W supplied them with the information that the free volume within the reactor vessel above the outlet nozzles is 1129 cubic feet. This comparison, plus the fact that the one primary pump that was running was functioning normally, led to the conclusion that the core was covered, but generated the concern that further depressurization of the reactor vessel could uncover the core and prevent core cooling. Id. at 10-12.