



**Wisconsin Electric** POWER COMPANY

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November 3, 1973

Mr. John F. O'Leary, Director  
Directorate of Licensing  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Dear Mr. O'Leary:

DOCKET NO. 50-266  
POINT BEACH NUCLEAR PLANT  
DILUTION OF "B" BORIC ACID STORAGE TANK

This letter is to report the details of an abnormal occurrence at the Point Beach Nuclear Plant, Unit 1, Facility Operating License No. DPR-24, as defined by Section 15.1.a.B of the Technical Specifications and more specifically, by Section 15.3.2.C.3 of the Limiting Conditions for Operation. This written report, filed in accordance with Section 15.6.6.A.2 of the Technical Specifications, follows a telephone report made to Mr. E. Jordan of Region III Regulatory Operations on the subject on October 19, 1973, as required by Section 15.6.A.1 of the Technical Specifications.

At 4:00 P.M. on October 13, 1973, the "B" boric acid storage tank, with a boric acid concentration of 11.8%, was placed in service to Unit 1 at Point Beach. The "A" boric acid tank concentration was known to have fallen below the Technical Specifications limit of 11.5% immediately prior to the transfer of tanks but with Unit 1 reactor subcritical this was not a Technical Specifications violation.

Following completion of an operating cycle of the boric acid evaporator on October 13, 1973, a quantity of concentrated boric acid in the boric acid evaporator feed tank was sampled by an operator and determined to be 12.3%. This boric acid was then pumped to the "B" boric acid storage tank via the boric acid concentrates tank. Normal practice is to recirculate the boric acid concentrates tank to arrive at a homogeneous mixture and resample before pumping the concentrate to any boric acid storage tank. This recirculation and resampling operation was not done on this occasion and it appears that some loss of communication between shift changing operators may have been a factor contributing to this inconsistency.

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A routine sampling of the "B" boric acid storage tank by the Chemistry and Health Physics personnel on October 16, 1973, indicated a concentration of 11.7% boric acid in the tank. A second routine sampling by Chemistry and Health Physics at 8:50 A.M. on October 19, 1973, showed the concentration to be 11.4%. Steps were immediately taken to place the "A" tank (concentration 12.4%) in service in place of the "B" tank.

As noted earlier in this report, the "A" boric acid storage tank was known to be below Technical Specifications limits at 4:00 P.M. on October 13, 1973. Plant records indicate that this tank was returned to above the Technical Specifications limit at 12:45 P.M. on October 18, 1973. Using a conservative approach and presuming that the routine Chemistry and Health Physics Group analysis of October 16 was in error, it can be concluded that the "B" boric acid storage tank may have been at a concentration of 11.4% from approximately 5:00 P.M., October 13, when the last batch of boric acid was added to the tank, until 8:50 A.M. October 19. When the "A" boric acid storage tank was returned to Technical Specifications limits at 12:45 P.M. on October 18, however, this condition was corrected.

The possibility that dilution of the "B" tank may have been caused by inleakage of water from an outside source has been discounted. Two thorough checks of valve lineups and valve tightness disclosed nothing untoward. A check of tank level changes over the period shows them to conform closely with boric acid usage as logged by computer printout. A second possibility, that the sample analyses may have been erroneous because of out-of-standard chemicals has also been discounted following a careful recheck of the chemicals used in the titration.

The conclusion must be reached that two personnel errors led to the violation of this Limiting Conditions for Operation. The first, the operators' communication breakdown which caused the boric acid concentrates tank to be pumped to the "B" boric acid storage tank without sampling, and a second, a probable inaccurate analysis of the "B" boric acid storage tank concentration by a Chemistry and Health Physics technician on October 16, 1973. The latter error cannot be verified but must be presumed.

The primary purpose of the concentrated boric acid held in a boric acid tank is that it should be capable of providing sufficient neutron absorbing boron ready for injection into the reactor coolant system should safety injection occur. The Technical Specifications require that two of the three tanks installed

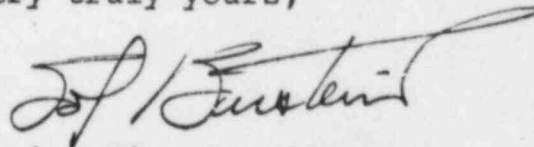
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contain 2000 gallons of 11.5% boric acid, i.e., 1920 pounds of boric acid by weight. The lowest tank level reached, during the period that "B" boric acid storage tank was below specifications, was 62%, or 3400 gallons at a concentration of 11.4%, i.e., 3240 pounds of boric acid by weight. In addition, the "A" tank containing a minimum of 4150 gallons of 10.0% boric acid was available throughout the period. Further, the problem with the "B" boric acid storage tank in no way compromised the availability of the 275,000 gallons of greater than 2000 ppm borated water in the refueling water storage tank. In view of these conditions, it is considered that this violation of Technical Specifications did not pose a hazard to the health and safety of the public.

To prevent a recurrence of this event, the following actions will be taken:

1. The importance of full discussion and, where necessary, documenting of events prior to shift turnover will be stressed to the operators involved in this occurrence.
2. Chemistry personnel will be reminded that, while all analyses are important, those which result in a reading close to a Technical Specification limit should be rechecked for accuracy.
3. The Operations Group will be advised to maintain boric acid storage tank concentrations as much above Technical Specification limits as is prudent (in view of effect on boric acid freezing point) to prevent this type of borderline violation of the Limiting Conditions for Operation.

Very truly yours,



Sol Burstein

Senior Vice President

cc: Mr. James G. Keppler, Regional Director  
U. S. Atomic Energy Commission  
Directorate of Regulatory Operations, Region III  
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