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August 13, 1970

C. P. Siess, Chairman
Brunswick Subcommittee

S. H. Bush, Vice Chairman, ACRS

CATEGORY B REPORTS - BRUNSWICK - DRL REQUEST FOR ADD'L INFORMATION; CP&L REPORT CONTAINING ADD'L INFO ON PRESSURE SUPPRESSION CONCEPT; DRL LETTER IDENTIFYING ENVIRONMENTAL INFO WHICH SHOULD BE SUBMITTED WHEN FSAR IS FILED

The listed reports and my summary of the contents are attached for your review.

DRL is continuing its review of the proposed reduction in containment design pressure from 62 psig to 53 psig. In Attachment #2, CP&L observes that there is considerable margin between the expected pressure and the pressure which the vessel can stand at the time of peak pressure.

No ACRS action is recommended until DRL has finished its review.

Attachment #2 should be retained in your permanent set of Brunswick documents.

Original Signed by
J. E. Hard

J. E. Hard
Senior Staff Assistant

Attachments:
1. DRL Ltr dtd 5/28/70 to CP&L
2. CP&L Ltr dtd 7/30/70, w/Report on pressure suppression concept
3. DRL Ltr dtd 7/6/70 to CP&L
4. Summary

cc: ACRS Members, w/attachments

FILE: Brunswick project & Category B files

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DATE ▶	8/13/70					

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In a letter dated May 28, 1970, DRL requested additional information on LOCA blowdown models and test data. This information would be used in evaluating the proposed reduction in containment design pressure from 62 psig to 53 psig. (This subject was discussed during the 123rd ACRS meeting.) This additional information was provided by GPCo in a report dated July 31, 1970. The report's conclusions state that the proposed design conditions of 53 psig and 300°F give a structure that is more capable than a 62 psig free-standing steel vessel. The main justification for this conclusion was the lag of liner temperature as compared to the containment pressure. This lag is of the order of minutes. At the time of peak drywell pressure, the liner temperature is about 215°F. As shown in Figure 27 of the report, this lower-than-design temperature would permit the acceptable pressure to go up to 73 psig - considerably above that which would be acceptable at 300°F. So, the margin at the time of peak pressure is 73 psig - 53 psig = 20 psi or 38%. The report also noted that steel-lined concrete containment vessels for PWR's make use of the transient temperature lag.

It is recommended that the ACRS continue to follow closely the developments regarding the Brunswick containment design pressure.

A DRL request of July 6, 1970, was for the usual type of environmental information. The letter asks that the required information be filed as an amendment or as part of the FSAR.

EXCERPT FROM
123RD ACRS Meeting
July 9-11, 1970

Meeting with Division of Reactor Licensing

Meeting with the Division of Reactor Licensing

1. Brunswick - DRL reported that CP&L has proposed setting the containment design pressure at 53 psi vice 62 psi, originally proposed. DRL noted that CE's analytical model for calculating the blowdown pressure underestimated actual test data for a blowdown by 5 psi. Therefore, DRL does not plan to approve this reduction unless the applicant can justify use of the newer analytical techniques. (No action was requested of the Committee.)

   Dr. Siess noted that variations exist in the margin between the accident and design pressure from plant to plant and asked the Staff for additional information regarding a consistent basis for establishing such margins. DRS has agreed to provide this information.

   The Committee decided to support the Staff position regarding the design pressure for the Brunswick containment.

   (Dr. Morris was informed of this decision.)