

SEP 1 1970

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DISCREPANCIES IN THE DAVIS BESSE ACRS REPORT AND RECOMMENDATIONS FOR
THE PUBLIC REPORT AND HEARING, DOCKET No. 50-346

Below is a discussion of the discrepancies in the Davis Besse ACRS report dated July 24, 1970. The discussion includes recommendations for the public report and hearing.

1. Page 11 of the report states erroneously that "The low population zone boundary of two miles will have a projected population of 1,213 (summer) and 702 (permanent) residents in the year 2000." Table 2-2 of the PSAR reports that the 0-2 mile projected population for the year 2000 will be 2,529 (summer) and 1,022 (permanent). I recommend that the public report include the following statement from our June 19, 1970 memo containing input for the ACRS report. "During 1969 the total population within two miles, including summer transients, was 1,564." Our statement reports the 1969 population rather than the projected population for the year 2000.
2. Page 11 of the report suggests that the nearest population centers are Toledo and Sandusky, which are 20 miles from the plant. Toledo and Sandusky had 1960 populations of 379,133 and 31,989, respectively. Since Part 100 criteria is based in part on a densely populated center containing more than about 25,000 residents, I recommend that the public report include the following statements from our June 19, 1970 memo. "Fremont, Ohio, is 17 miles south of the site and it had a 1960 population of 17,573. There are no population centers both larger and closer than Fremont."
3. Page 15 of the report does not state that the environmental monitoring will include dosimeters and samples of milk. Page 2-22 of the PSAR states that the program will include dosimeters and samples of farm products. In a meeting with the staff, the applicant explained that the words "farm products" are broad enough to include milk and he agreed to sample milk. Yet, he has not amended the PSAR to confirm the sampling of milk. Page 2-4a of the PSAR explains that two dairy cows are 1.5 miles from the site and that there are 133 cows within four miles. As stated in our June 19, 1970 memo, I recommend that the public report state that the applicant's program includes dosimeters and that we will require the sampling of milk in the technical specifications of the operating license.

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4. Page 39 of the report states erroneously that the maximum pressure in the annulus at the start of the loss-of-coolant accident would be limited to 6 inches of water. This statement should be corrected to explain that the maximum annulus pressure would be approximately .83 inches of water as shown on Figure 6-8 of the PSAR. The source of the error may be the statement on page 5-13 of the PSAR that the shield building ventilation system shall be designed to limit the temperature induced pressure transients to less than 6 inches of water. I understand that 6 inches of water is a guideline established by the American Society of Heating and Ventilation Engineers to assure that the ventilation system (ducts) is not damaged.

5. Page 39 of the report states that "Our dose analyses are based on a negative pressure being achieved within 2 minutes." Page 67 of the report states that "We have based our evaluation of the loss-of-coolant accident on a containment leak rate of 0.5%/day and assumed any leakage from the primary containment is released unfiltered while the shield building annulus has a positive pressure." These statements are incorrect and they should be deleted. The loss-of-coolant accident thyroid dose of 140 rems at the exclusion radius, as stated on page 66 of the report, assumes that all of the radionuclides released to the atmosphere passed through charcoal filters. If we assume an unfiltered release for the first two minutes, then the exclusion radius thyroid dose would be 190 rems.

Page 6-21 and Figures 6-8 of the PSAR explain that the annulus pressure will not exceed approximately .03 psi or .83 inches of water after a loss-of-coolant accident, that the exhaust fan should start within 45 seconds, and that the annulus pressure should become negative within approximately 65 seconds. If the staff concludes that the above conditions could allow a significant unfiltered release of radionuclides, then with today's technology we should require a design change in the ventilation system that would prevent the unfiltered release of radionuclides from the secondary containment.

6. Page 66 of the report states that a steam generator tube rupture could cause an exclusion radius dose of 20 rems to the thyroid assuming an iodine partition factor of 10 on the secondary side. We calculated a dose of 200 rems assuming no partition factor. In its March 6, 1970 report to the ACRS on the Midland Plant the staff explained that partitioning is not assumed because portions of the steam generator tubes in B&W plants are not covered by water on the secondary side. This staff position was developed by our Division's ad hoc committee on steamline breaks, rod ejection, and steam generator tube ruptures. Chuck Long is chairman of the committee.

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For the public report I expect we will state that the primary coolant concentrations will be limited to assure that the offsite doses resulting from the steam generator tube rupture will not exceed .5 rem whole body and 1.5 rem thyroid. Prior to the public hearing, projects and our group should agree as to whether or not we will assume a partition factor for iodine on the secondary side.

- 7. Page 73 of the report assumes that during the rod ejection accident 100% of the noble gases and 50% of the iodine in the damaged fuel rods are released to the primary coolant and that there is an iodine partition factor of 10 on the secondary side. The reported thyroid dose at the exclusion radius is 70 rems. In our June 19, 1970 memo, we assumed that 20% of the noble gases and 10% of the iodine in the damaged fuel rods are released to the primary coolant and that there is no iodine partition factor. We reported an exclusion radius thyroid dose of 140 rem. Although these assumptions need not be discussed in the public report, projects and our group should agree on the dose and assumptions prior to the public hearing.

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