



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING CONTINUED OPERATION OF ARKANSAS NUCLEAR ONE, UNIT NO. 1 WITH
THE REACTOR VESSEL SURVEILLANCE PROGRAM
CONDUCTED AT DAVIS-BESSE, UNIT NO. 1

By letter dated January 15, 1980, Arkansas Power and Light Company (AP&L), the licensee of Arkansas Nuclear One, Unit No. 1 (ANO-1) advised the NRC that the Davis-Besse, Unit No. 1 (DB-1) had failed to maintain a cumulative reactor utilization factor of greater than 65% and provided justification for continued operation of ANO-1. The reason for this justification is that the reactor vessel surveillance specimens for ANO-1 are being irradiated in the DB-1 reactor vessel and Technical Specification (TS) 4.2.8 requires that if DB-1 at any time (beginning one year after DB-1's attainment of commercial operation at 100% power) fails to maintain a cumulative utilization factor of greater than 65%, the licensee shall submit a report to NRC justifying continued operation.

The date of commercial operation for DB-1 is November 20, 1977. Between December 20, 1978 (one year after attainment of commercial operation at 100% power) and March 28, 1979 (TMI-2 incident) DB-1 had a cumulative reactor utilization factor less than 65%. However, since the restart following the TMI-2 incident, DB-1 has maintained a reactor utilization factor considerably higher than 65%. Also, during this period, the operating history of DB-1 is very similar to ANO-1.

At the end of 345 EFP days of operation of ANO-1, capsule ANI-E was withdrawn from the ANO-1 vessel and the contents tested. Based on the results of these tests, the ANO-1 pressure-temperature limits of the reactor coolant pressure boundary were modified and these limits are applicable through five EFP years of operation. Currently ANO-1 has operated for about 3.5 EFP years. The second ANO-1 capsule has recently been removed during the current refueling outage from DB-1. It is expected to have received a fluence of 3.3×10^{18} n/cm². From the results of tests of these two ANO-1 capsules, we will be able to modify the ANO-1 pressure-temperature limits of the reactor coolant pressure boundary to be applicable through nine EFP years before the inspection date of the present limits.

Prior to nine EFP years another ANO-1 capsule will have been pulled from DB-1 to further extend our data base and update the pressure-temperature limits on the reactor coolant pressure boundary.

We consider that the relatively low utilization factor in the early life of DB-1 will not adversely affect the ANO-1 surveillance schedule.

We conclude, that since capsule ANI-B has now been removed from the DB-1 vessel and is being prepared for testing, that data from ANO-1 capsules will be available in time to provide a basis for updated pressure-temperature operating limits for ANO-1 prior to the expiration dates of the present limits.

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Based on the above, we find it acceptable to continue operation with the reactor vessel surveillance program conducted at DB-1. However, to assure the continuation of an adequate reactor vessel surveillance program for ANO-1 with the utilization of the DB-1 reactor, we will request the licensee to propose TS which would provide limiting conditions of DB-1 operations for the irradiation of the third and remaining ANO-1 capsules in the DB-1 vessel.

Dated: