Department of Energy
Washington, D.C. 20585

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

LIGHT WATER BREEDER REACTOR - PLANNED MAXIMUM OPERATING POWER

The purpose of this memorandum is to inform the Nuclear Regulatory Commission (NRC) of the maximum operating power for the Light Water Breeder Reactor (LWBR) core at the Shippingport Atomic Power Station for operation from 21,000 to 24,000 Effective Full Power Hours (EFPH).

In Naval Reactors letter NR:D:HGRickover Z#818 dated March 10, 1980, the NRC was informed of the plans to continue the operation of the LWBR core beyond 18,000 EFPH. At that time, evaluations of the LWBR fuel element, nuclear, and thermal and hydraulic performances under steady state and assumed accident conditions had been completed demonstrating that the LWBR core could be operated safely through 24,000 EFPH. It was also noted that evaluations were in progress to determine if the LWBR core life could be extended to 30,000 EFPH or beyond. The plans for LWBR operations from 18,000 to 24,000 EFPH and the evaluation results were reviewed by the NRC, and were discussed with the Advisory Committee on Reactor Safeguards (ACRS) on May 1, 1980.

Continued operation beyond 18,000 EFPH was to be accomplished by reducing the maximum operating power to 80% from 18,000 to 21,000 EFPH and to 70% from 21,000 to 24,000 EFPH at an operating pressure of 1615 psia and an operating temperature of 521°F for the entire period.

Subsequent evaluations of the LWBR core performance to support operations beyond 24,000 EFPH and to establish the optimum lifetime have demonstrated that the LWBR core can be safely operated to at least 24,000 EFPH at a maximum operating power of 80% while still retaining adequate performance margins. Thus, it is planned to continue LWBR operation at a maximum operating power of 80% from 21,000 to 24,000 EFPH with the other operating parameters remaining as originally identified.

The evaluations of the LWBR core performance for operation beyond 24,000 EFPH are continuing to establish the optimum lifetime and operating parameters. When these evaluations are completed, I will inform you of the resulting plans for LWBR operation beyond 24,000 EFPH.

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