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ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

December 11, 1984

Office of Inspection and Enforcement
Attention: Mr. R. C. DeYoung, Director
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Response to IE Bulletin 84-03
Refueling Cavity Water Seal

Gentlemen:

In our response to IE Bulletin 84-03, we provided a summary report on our evaluation of the potential for a refueling cavity water seal failure. A proofreading error resulted in the deletion of an important phrase from the report.

The second sentence of the second paragraph of the fourth page of the Attachment should read, "The refueling pool seal elevation is higher than the top of the active fuel region of the fuel stored in the spent fuel pool." A corrected page is enclosed.

We apologize for any inconvenience this may have caused.

Very truly yours,

Arthur E. Lundvall

AEL/MDP/vf

Enclosure

cc: D. A. Brune, Esq.
G. F. Trowbridge, Esq.
Mr. D. H. Jaffe, NRC
Mr. T. Foley, NRC

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POTENTIAL EFFECT ON STORED FUEL AND FUEL IN TRANSFER

Consideration was given to the potential consequences of a refueling pool seal leak on spent fuel stored in the spent fuel pool or in the transfer carriage which is moved from one pool to the other via the transfer tube. The transfer tube isolation gate valve is manually operated from a valve operating station adjacent to the spent fuel pool. This valve cannot be shut unless the transfer carriage is in the spent fuel pool.

The fuel stored in the spent fuel pool would not be damaged so long as it is submerged. The refueling pool seal elevation is higher than the top of the active fuel region of the fuel stored in the spent fuel pool. As a result, even if a hypothetical refueling pool leak went unchecked and the transfer tube were not shut, the spent fuel would remain covered. Dose rate in the vicinity of the spent fuel pool would, however, be high, complicating recovery from the event.

We have calculated that adequate time is available to retract the transfer cart and to isolate the transfer tube. These computations were performed using a computer code for dose calculation and assuming a dose rate at the valve operating station from a full, freshly irradiated core located in the area of the spent fuel pool closest to the operator. Retraction of the transfer carriage may be complicated by viscous drag due to flow from the spent fuel pool into the refueling pool; however, as noted in the previous paragraph, failure to retract the cart and isolate the tube would not result in a hazard to public health and safety.

The time to fuel damage without operator action was calculated, but this scenario would require multiple and unreasonable violations of procedure. Throughout the transfer process and under credible circumstances, the fuel remains submerged and dose rates to the operator are maintained at acceptable levels. This is true even in the case where power is lost to the fuel handling machinery, since the machinery can be manually operated. Fuel handling procedures specifically address actions to be taken on unexplained increased or decreases in the level of the refueling pool or the spent fuel pool.