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U. S. Nuclear Regulatory Commission
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Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Follow-up Information Concerning Open Containment Personnel Airlock
During Core Alterations Technical Specification Change Request

Gentlemen:

By letter dated May 19, 1995 (0CAN059503), Entergy Operations requested changes to the Arkansas Nuclear One (ANO), Unit-1 and Unit-2 Technical Specifications permitting the containment personnel airlock doors to remain open during core alterations. This request was approved for ANO-2 by the NRC on September 29, 1995 (2CNA099506), as Amendment No. 166. In a subsequent conversation, the Staff requested additional information for ANO-1 concerning the basis for the safety analysis report assumption of damaging the four outer rows of fuel rods, 56 of 208 total rods per fuel assembly, in the fuel handling accident analysis.

Specific analysis to support this assumption could not be located for ANO-1, so Entergy Operations requested Framatome to provide an assessment to determine the number of fuel rods that could be ruptured as a result of dropping a fuel assembly during fuel handling operations. The assessment considered vertical fuel assembly drops impacting the reactor vessel lower grid, pool floors, and another fuel assembly. The assessment concluded that a vertical fuel assembly drop would result in no fuel rods being damaged.

A fuel assembly was also assumed to fall vertically impacting an object below and rotate horizontally impacting another object. This scenario is more conservative than the original ANO-1 licensing basis and is the limiting fuel assembly drop in the Framatome assessment, resulting in no more than six rows of fuel rods being damaged. Therefore, the maximum number of fuel rods that would rupture during a fuel handling accident for ANO-1 is 82 fuel rods. It is believed that the primary reason for difference in fuel assembly damage between the ANO-1 and ANO-2 analysis, six versus four rows of fuel rods, respectively, is that the ANO-1 fuel assembly grid spans are significantly further apart than the ANO-2 grid spans.

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By increasing the number of fuel rods damaged from 56 to 82 fuel rods during a fuel handling accident for ANO-1, the maximum calculated offsite doses would be increased from 43.4 Rem to 63.6 Rem to the thyroid and from 0.616 Rem to 0.902 Rem to the whole body (sum of beta and gamma). These revised calculated offsite doses continue to remain well within the limits of 10CFR Part 100. Therefore, the conclusions of the no significant hazards consideration of the May 19, 1995, submittal remain unchanged by this information. Should you have any further questions, please contact me.

Very truly yours,

Dwight C. Mims
Director, Nuclear Safety

DCM/nbm

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