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U. S. Nuclear Regulatory Commission
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Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Response To NRC Request for Additional Information on the ANO-2 Containment Electrical Penetration Protection

Gentlemen:

As part of the Arkansas Nuclear One, Unit Two (ANO-2) electrical distribution system functional inspection (EDSFI), the NRC inspectors raised a question with regards to whether ANO-2 maintained adequate containment electrical penetration protection for the potential long duration, low energy overload condition. In the ANO-2 NRC inspection report dated November 21, 1991 (50-368/91-02), the inspection team reviewed the updated safety analysis report and related documentation given the absence of full overload protection, and agreed that ANO had implemented the approved design basis.

In NRC letter dated June 18, 1992 (2CNA069201), the NRC Staff requested that ANO-2 reassess the existing coordination of the primary and secondary containment penetration devices to assure that adequate protection was provided for the full range of overcurrent conditions. Entergy Operations provided the ANO-2 response in letter dated September 4, 1992 (2CAN099202). This letter documented the ANO-2 licensing basis and, where possible, proposed potential enhancements to the 480vac penetrations to better protect for potential overloads. Subsequent to this letter, additional information was provided informally for the 120vac/125vdc penetration circuits where full overload protection is not provided.

Based on review of the ANO-2 submittal, the NRC requested additional information in letter dated February 26, 1993 which the Staff considered necessary to resolve the ANO-2 penetration protection issue. The information requested included revising the reactor building penetration protection calculation, determining those areas where both primary and backup protection is not provided, providing additional design details for thermal overload heater protection including conductor ampacity, and providing discussion of design limitations and technical justification where overload protection cannot be provided.

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In review of the Staff's request, Entergy Operations determined that this level of detail could not be readily provided without the expenditure of significant manpower resources and analysis. Conference calls were conducted with the Staff on April 9, and April 22, 1993 where Entergy Operations explained that this information was beyond the ANO-2 licensing basis and could not be readily provided. As a result, the Staff indicated that by this request that they had not reached a conclusion as to whether ANO-2 was or was not within its licensing basis, but that the information was needed to make a further determination of the potential ANO-2 safety significance given the existing level of penetration protection. The Staff also stated that it was not their intent to require ANO to generate new information concerning penetration conductor damage based on interpretations of existing tests or the conducting of new tests. Therefore, it was agreed that the following ANO-2 information would be provided to the Staff in lieu of the specific information requested by the February 26, 1993 request for additional information:

1. A conductor based evaluation will be performed using a conservative conductor size to develop conductor capability curves in the overload range,

2. the reactor building penetration protection calculation (Calc. 85-E-0118-01) will be modified to remove the penetration protection figures which are not being utilized for any ANO-2 applications,

3. a figure will be added to the penetration protection calculation to show that the fuse curve utilized to evaluate the penetration circuit protection envelopes the worst case fuse application, and to

4. expand the penetration table previously provided in our September 4, 1992 submittal to include the remaining penetrations where protection is not provided for the full conductor capability curve.

This information will be provided to the NRC by August 20, 1993. Due to a conflict in ANO engineering resources to prepare this information, it was agreed with the Staff that the action to perform an evaluation of the ANO-1 penetration protection capability would be deferred from December 31, 1993 until April 29, 1994 as previously committed in Entergy Operations letter dated August 3, 1992 (OCAN089201).

If you have any questions on this matter, please contact me.

Very truly yours,

James J. Fisicaro

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Director, Licensing

JJF/sab

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