



ARKANSAS POWER & LIGHT COMPANY
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November 12, 1982

1CAN118204

Director of Nuclear Reactor Regulation
ATTN: Mr. J. F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Environmental Qualification -
Request for Additional Information
Relating to Radiation Profiles

Gentlemen:

By letter dated October 26, 1982, (1CNA108204) the NRC requested additional information pertaining to your review of the AP&L Environmental Qualification efforts. This letter is in response to your request.

Pertaining to your request concerning equipment not meeting the 5×10^7 radiation qualification level, we provide the following. A review of the most recent system component evaluation work sheets (SCEW) reveals that thirty (30) items located within the ANO-1 reactor building are not qualified to the 5×10^7 rad level and were therefore chosen for specific dose reduction. As described in section 4.1.3.1 of the attachment to our October 2, 1981, response to the SER, the inside containment dose was calculated at twenty-five selected locations. The calculated doses ranged from approximately 3×10^6 to 5×10^7 rad; therefore, all items were conservatively assigned a required value of 5×10^7 . Upon tabulating the 30 items whose qualification did not satisfy this conservative dose, it was decided that the items would be specifically located within the containment and compared to the locations of the 25 "detector" points previously calculated. In this way a location-specific dose was determined for each of the items. The items are listed in Attachment I with the revised doses as indicated on their respective SCEW sheets.

The 40 year normal dose (which is considered insignificant compared to the 5×10^7 dose level) is being added to the SCEW sheets for each of the 30 devices inside containment whose radiation level had been reduced below the conservative level of 5×10^7 rads. Inclusion of the 40 year dose to the device does not alter the qualification status of any of the 30 items.

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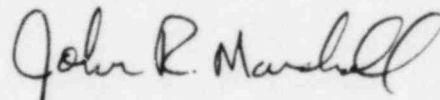
We previously indicated in our October 2, 1981 response (Attachment 1 Section 4.1.3.2) to the SER why equipment other than cables is not significantly affected by beta exposure. Our position has not changed; nonetheless we have reviewed the SCEW sheets which list all in-containment devices at ANO-1 and based upon our knowledge of component construction, it is our contention that each of the devices has more than adequate beta shielding based on its known protective metal housing or enclosure.

In response to your statement concerning the ability of the cable jacketing material to withstand the post-accident radiation dose, we provide the following information on the three applicable cable types at ANO-1:

1. Okonite-Okoprene jacketing and insulation (provided by Okonite Co.) is used for 600 volt power, control and instrumentation cable at ANO-1. It has been shown by testing to be capable of withstanding a radiation dose of 2×10^8 rads (ref. SCEW sheet A-105).
2. Bostrad 7 is used as jacketing and insulation for all BIW cable type 8374-H-002 used at ANO-1. This cable has been tested to a level of 5.5×10^7 rads which will be indicated on the next revision of SCEW sheet A-099.
3. The third cable type described is BIW type RG 11/U. It consists of an outer jacket of PVC, an outer copper-braid, a layer of polyester tape, an inner copper braid, and a layer of polyethelene. The most recent effort to qualify this cable has concluded using material analysis that the cable can withstand the maximum value of 5×10^7 rads. It should be noted that the only known use of this cable at ANO-1 is for neutron detection instrumentation which does not require qualification.

Therefore the described cable materials used at ANO-1 are capable of withstanding sufficient gamma exposure such that credit for beta shielding can be taken as well.

Very truly yours,



John R. Marshall
Manager, Licensing

JRM: CHT: sc

cc:

ATTACHMENT I

<u>TAG #</u>	<u>Location Specific Dose</u>
LT-1000	3×10^6
LT-1001	1×10^7
LT-1002	3×10^6
LT-2609	3×10^6
LT-2614	3×10^6
LT-2659	1.4×10^7
LT-2664	1.4×10^7
PDT-1028	1.4×10^7
PDT-1029	1.4×10^7
PDT-1030	1.4×10^7
PDT-1031	1.4×10^7
PDT-1034	1.4×10^7
PDT-1035	1.4×10^7
PDT-1036	1.4×10^7
PDT-1037	1.4×10^7
PS-2400	8.7×10^6
PS-2401	1×10^7
PS-2402	1.3×10^7
PS-2403	1.4×10^7
PT-1020	1.4×10^7
PT-1021	1.4×10^7
PT-1022	1.4×10^7
PT-1023	1.4×10^7
PT-1038	1.4×10^7
PT-1039	1.4×10^7

<u>TAG #</u>	<u>Location Specific Dose</u>
PT-1040	1.4×10^7
PT-1041	1.4×10^7
PT-2405	1.1×10^7
PT-2406	1.4×10^7
PT-2407	1.1×10^7