

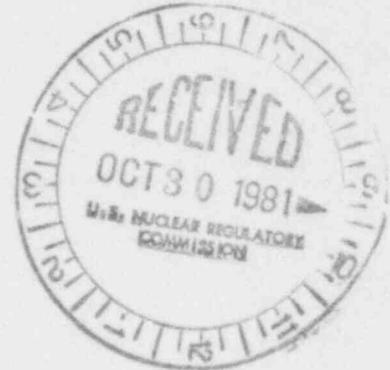


ARKANSAS POWER & LIGHT COMPANY
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October 19, 1981

1CAN108107

Director of Nuclear Reactor Regulation
 ATTN: Mr. J. F. Stolz, Chief
 Light Water Reactors Branch #1
 U. S. Nuclear Regulatory Commission
 Washington, D. C. 20555



SUBJECT: Arkansas Nuclear One - Unit 1
 Docket No. 50-313
 License No. DPR 51
 Degraded Grid Voltage Questions
 (File: 1510)

Gentlemen:

In response to your letter of September 1, 1981, the following information is provided.

In response to item 1, the voltage study using the computer programs stopped at the 480 volt level since the 120 volt class IE system is fed from the inverters that are battery backed. However, your concern may be related to the control power transformer (CPT Rated 480:120) 120 volt A.C. in all class IE starting equipment. If so, the calculations used in the study were based on the following:

1. Assume 90% of motor rated voltage 460 ($.9 \times 460 = 414$) is available at the input side of the CPT.
2. Calculation of the CPT voltage drop is made during the inrush current prior to initial movement of contactor Armature.
3. Next, calculate the output voltage at the CPT.
4. Calculate the difference between output voltage at the CPT terminal and minimum voltage required to successfully close the contactor coil. The difference is the maximum allowable voltage drop for control wiring.
5. Compute the length of control cables that would give the allowable drop in 4 above.
6. Use 75 to 80% of computed lengths in 5 above and compare to existing sizes and lengths used.

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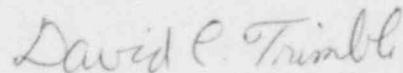
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7. For those starters that have long control cables that did not meet the above criterion replace the CPT with a larger size.

The control transformers requested in item 2 of your letter are identified on the attached drawing, E84 sheet 4 Rev 0-1. These are the transformers identified by the above method.

Item 3, the degraded grid voltage test, will be addressed in our forthcoming letter of November 2, 1981 as discussed in our conference call of October 19, 1981.

Very truly yours,



David C. Trimble
Manager, Licensing

DCT:MSC:sc

Attachment