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June 11, 1980

1-060-08
2-060-10

Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Arkansas Nuclear One-Unit 1&2
Docket No. 50-313 & 50-368
License No. DPR-51 & NPF-6
Loss of Offsite Power Events
(File: 1510, 2-1510)

Gentlemen:

In response to Mr. Reid's letter of May 5, 1980, the following information is provided concerning loss of offsite power events at Arkansas Nuclear C...

Very truly yours,

David C. Trimble
Manager, Licensing

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EVENTS:

February 22, 1975; December 5, 1975; and April 7, 1980. It should be understood that our records were based on loss of offsite power events which significantly affected plant operation. Therefore other events may have occurred that are not in our records because they did not affect plant operations.

Attached is a short description of each event with answers to NRC questions. Some questions were answered without hard data because records concerning the information were not available.

EVENT DATE: February 22, 1975.

EVENT DESCRIPTION: At 1345 hours the 161 KV ANO to Morrilton East transmission line relayed out and locked out. Later it was energized from ANO but was deadended and only feeding from ANO. At 1608 hours three towers were blown down by a tornado on the Mabelvale-ANO 500 KV line and that line was lost for several days. Oscillograph traces indicate that the fault was cleared in $3\frac{1}{2}$ cycles; then 29 cycles later one ACB was automatically released on the fault. Again the ACB relayed out in $3\frac{1}{2}$ cycles. When this line fault occurred the 500 KV bus voltage dropped to very near zero. This in turn caused the inplant voltage to sag. The inplant low voltage condition caused a reactor trip which tripped the generator lock out relay. This relay tripped all four 500 KV ACB's open, leaving only the 161 KV Russellville East line to supply ANO.

Answers to Questions:

- #1. This event occurred prior to the completion of the ANO-Mayflower 500 KV transmission line. At that time four circuits were normally available; three circuits were lost.
- #2. See event description.
- #3. See event description.
- #4. Detailed information is not available, but due to the nature of the event, it is not likely that any voltage perturbations occurred prior to the event.
- #5. Detailed information is not available, but due to the nature of the event, frequency probably was unaffected until the event itself, then frequency fluctuations, both high and low were experienced.
- #6. Detailed information is not available, but records indicate that power was unavailable for approximately 5 minutes.

EVENT DATE: December 5, 1975

EVENT DESCRIPTION: At 1819 hours, a lightning induced interruption occurred on the 161 KV Morrilton East transmission line with instantaneous reclosing of breakers 1215 and 1218. There was a voltage and frequency dip associated with the lightning strike.

Answers to Questions:

- #1. This event occurred prior to completion of the ANO-Mayflower 500 KV transmission line; at the time of the event, four circuits were normally available. One circuit was lost only momentarily.
- #2. See event description.
- #3. See event description.
- #4. There was no voltage perturbation experienced prior to the lightning strike.
- #5. There was no frequency perturbation experienced prior to the lightning strike.
- #6. Only a momentary interruption in power was experienced.

EVENT DATE: April 7, 1980

EVENT DESCRIPTION: Loss of all offsite power occurred. At 1728 hours, the 500 KV line to Ft. Smith was lost due to tornado damage and 57 minutes later the 500 KV line to Mabelvale was also lost due to tornado damage. At 1848 hours ANO Units I and II tripped on loss of all offsite power. Due to relay action in the switchyard the startup transformers were temporarily unavailable although power was available via the 161 KV transmission system.

Answers to Questions:

- #1. Offsite power was off 22 minutes. However, there was power available through the 161 KV transmission system during this time, but was not used since both units were stable on emergency power. Maintenance personnel were dispatched to confirm that the startup transformers were undamaged prior to being re-energized.
- #2. Loss of offsite power and turbine trip was simultaneous.
- #3. Power recovery was not accomplished within 10 minutes, but could have been accomplished manually in that time frame.
- #4. Detailed information is not available. However, there were voltage perturbations during earlier line failures and lightning strikes. However, these were not sustained for long periods.
- #5. Frequency perturbations were experienced prior to and during the event when lightning strikes occurred but these were not for sustained periods.