

ARKANSAS POWER & LIGHT COMPANY POST OFFICE BOX 551 LITTLE BOCK, ARKANSAS 72203 (501) 371-4000

February 23, 1981

GR-0281-06

Mr. K. V. Seyfrit, Director Office of Inspection & Enforcement U. S. Nuclear Regulatory Comm. Region IV 611 Ryan Plaza Drive, Suite 1000 Arlington, Texas 76011



TIC_

SUBJECT: Arkansas Nuclear One - Units 1 & Docket Nos. 50-313 and 50-368 License Nos. DPR-51 and NPF-6 Emergency Exercise Scenario (File: 1510.4, 2-1510.4)

Gentlemen:

Arkansas Pow and Light Company is presently planning to participate in an emergen / preparedness exercise with state and local authorities on March 24 and 25, 1981. Attached for your review is the narrative summary of the scenario to be used for the exercise. We request that you send any comments to us as soon as possible.

We would also like to know the expected extent of involvement the NRC plans to have in this exercise.

Very truly yours, male A. Castie

-David C. Trimble Manager, Licensing

DCT:1p

Attachment

cc: Director of Nuclear Reactor Regulation ATTN: Mr. Brian R. Grimes, Asst. Director Engineering and Projects U. S. Nuclear Regulatory Commission Washington, D.C. 20555

NARRATIVE SUMMARY OF THE SCENARIO

The exercise begins on March 24, 1981 with a report by the System Dispatcher that it is imperative for all units on line to remain on line if at all possible. A combination of scheduled and forced outages of other unit: (White Bluff, ANC-1) as well as a limited amount of power available from other utilities has made this request necessary in order to meet the current high demand for power. It is probable that any forced outage is likely to result in blackouts.

At 7PM CST on March 24th, the failed fuel monitor on Unit 2 indicates an increase in counts per minute. Radiochemistry takes a primary coolant sample and reports that the Termical Specification limit for iodine on primary coolant is exceeded signtly (reported value 2µci/gm). No increase in radioactivity levels is noted on the secondary side or in plantareas. The shift operations supervisor declares a notification of unusual event. Because the iodine activity seems to be stable and because of the need for power, it is determined to continue operating for 48 hours as allowed by the Technical Specifications. Monitoring of primary coolant is increased to every four hours.

At 11PM CST on March 24th, the failed fuel monitor indicates another step increase in primary coolant activity, the radiochemistry group reports that the most recent primary coolant sample has an iodine activity of 40 uci/gm. A decision is made to reduce power to 60% in order to remain well within the acceptable operating limits provided in the Technical Specifications and continue operating until the time limit imposed by the Tech Specs.

At 6AM CST on March 25, a significant step change in primary coolant iodine activity to 110 gci/gm is reported by radiochemistry. This value is within the limits of the Technical Specifications but an Alert Emergency Action level is declared by the Shift Operation Supervisor as required by the Emergency Plan. Increases in radioactivity in the vicinity of the Reactor Coolant Cleanup System are reported, but no offsite releases are reported. Due to the severe need for power, a decision is made to continue operation, until 4PM March 26, 1981 when it is expected that ANO-1 will be on-line.

At 11:30 AM CST on March 25, a partial load rejection on the Middle South grid leads to a reactor power-turbine power mismatch. The Steam Dump and Bypass System fails to operate, reactor pressure increases leading to reactor trip, and the main steam safety valves open to relieve steam generator pressure. In this process a safety valve on steam generator A fails catastrophicall; and at least two tubes in steam generator A rupture. The result of the above transient is high reactor coolant activity leaking from the primary side to the secondary side through ruptured steam generator tubes and a release to the environment through the broken safet; valve. The Shift Operations Supervisor declares a General Emergency Action Level as required by the Emergency Plan. A operation member dispatched to inspect the broken safety valve is stalded, radiologically contaminated and knocked unconscious by escaping steam. The emergency medical team is activated and the individual is pransported to St. Mary's Hospital for treatment.

Members of the Emergency Radiation Team dispatched to monitor the site environment report a whole body dose rate of 250 mr/hr at the site boundary in the Jownwind direction. Other areas report readings of approximately 1 mr/hr including within the administration building. Portions of the auxillary building are contaminated by escaping steam. An evacuation of the exclusion area is ordered and plant personnel are kept within plant buildings to minimize their exposure.

By approximately 3:30 PM the reactor coolant system and the steam generators are sufficiently depressurized to allow repairs on the broken safety valve to take place. Repairs are completed by 4PM and all offsite radiological releases are terminated at that time. By 4:30 PM, radiation levels at the exclusion area boundary are less than 1mr/hr. By 5:00 PM radiation levels within the 10 mile Emergency Planning Zone are reported to be less than Imr/hr by state officials and the exercise is terminated.

Narrative Summary

An operation member dispatched to inspect the broken safety valve is scalded, radiologically contaminated and knocked unconscious by escaping steam. The emergency medical team is activated and the individual is transported to St. Mary's Hospital for treatment.

Members of the Emergency Radiation Team dispatched to monitor the site environment report a whole body dose rate of 250 mr/hr at the site boundary in the downwind direction. Other areas report readings of approximately 1 mr/hr including within the administration building. Portions of the auxillary building are contaminated by escaping steam. An evacuation of the exclusion area is ordered and plant personnel are kept within plant buildings to minimize their exposure.

By approximately 3:30 PM the reactor coolant system and the steam generators are sufficiently depressurized to allow repairs on the broken safety valve to take place. Repairs are completed by 4PM and all offsite radiological releases are terminated at that time. By 4:30 PM, radiation levels at the exclusion area boundary are less than 1mr/hr. By 5:00 PM radiation levels within the 10 mile Emergency Planning Zone are reported to be less than 1mr/hr by state officials and the exercise is terminated.