

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

R. H. LEASBURG
VICE PRESIDENT
NUCLEAR OPERATIONS

July 29, 1982

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, N.W., Suite 3100
Atlanta, GA 30303

Serial No. 445
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Docket Nos. 50-338
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License Nos. NPF-4
NPF-7

Dear Mr. O'Reilly:

EMERGENCY EXERCISE SCENARIO
NORTH ANNA POWER STATION

The Virginia Electric and Power Company intends to exercise the emergency plan of the North Anna Power Station on September 18, 1982. Enclosed is a copy of the exercise scenario.

The scope of the exercise has been included in an earlier submittal. It will be followed, as submitted, except evacuation of on-site non-essential personnel will be conducted in lieu of transporting an injured and contaminated individual to the Medical College of Virginia. This event has been changed since station personnel recently transported an injured individual to a supporting medical facility.

Should you have any questions concerning the North Anna Emergency Exercise, please notify us.

Respectfully yours,

R. H. Leasburg
for R. H. Leasburg

Enclosure

cc: Mr. Brian K. Grimes, Director
Division of Emergency Preparedness
Office of Inspection and Enforcement

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VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION

EMERGENCY EXERCISE SCENARIO NARRATIVE

NOTE: Times are approximate

The exercise will begin at 0345 the morning of September 18, 1982 with both unit 1 and 2 operating at 100% power.

Unit 1 achieved this power level at 2200 the previous day (9/17) after recovering from a spurious reactor trip. That trip was caused by the failure of a nuclear instrumentation channel, while another was undergoing surveillance testing. Shortly after that trip the radioactivity levels of the reactor coolant increased and subsequently stabilized at 2000 that day (9/17).

At 0345 (9/18) a further increase in reactor coolant radioactivity levels will be observed and purification flow will be maximized by the Operations staff. The Shift Supervisor will request additional sampling and analysis to trend the levels and better identify the cause.

At 0415 the Shift Supervisor will receive a report that a significant increase in reactor coolant fission product concentration has occurred. The Shift Supervisor will inform the Superintendent - Operations, or SRO on call, of these indications of fuel cladding failure. The decision will be made to remain at 100% power due to activity levels being below Technical Specification limits.

At 0430 the reactor coolant letdown radiation monitor will have exceeded 1×10^5 CPM for greater than 15 minutes. The Shift Supervisor will activate the North Anna Emergency Plan at the Emergency Class of "NOTIFICATION OF UNUSUAL EVENT", and assume the position of Station Emergency Manager (SEM).

At 0515 the SEM will receive a report of further increases in reactor coolant radioactivity levels and the decision made to commence a unit rampdown at a 0.3% per minute rate.

At 0550 the SEM will receive a report of 320 $\mu\text{Ci/gm}$ dose equivalent I-131 concentration in the reactor coolant. The SEM will escalate the classification of the emergency to "Alert" and the unit rampdown rate will be increased to 1.0% per minute.

The unit will be off-line at 0720 followed immediately by an orderly reactor shutdown.

At 0730 a fire located in the Fruin-Colnon trailer will be reported to the Control Room. This fire will exceed the fire fighting capabilities of the station, and off-site fire fighting assistance will be called upon.

Also at 0730 a valve in the charging system will fail closed (cause unrelated to the fire) which will necessitate the removal of the reactor coolant letdown purification system from service. During this removal six (6) valves will fail to operate as designed and will result in a pipe, located in the Auxiliary Building penetration area, to rupture. This will result in an unplanned/uncontrolled release to the environment via the "A" ventilation vent stack.

By 0735 the "A" stack radiation monitor, normally used, will peg off-scale. Onsite and offsite radiological monitoring teams will be dispatched shortly thereafter in accordance with the provisions of the EPIPs.

The Shift Supervisor will advise the SEM, who will concur, to commence an emergency cooldown at 100°F per hour.

At 0835 the dose rate at the site boundary will reach the "SITE EMERGENCY" level and the SEM will upgrade the emergency classification accordingly. The leak continues at a decreasing rate as the reactor is being brought to the cold shutdown condition.

At 0950 the dose rate at the site boundary will reach the "GENERAL EMERGENCY" level and the SEM will upgrade the emergency classification accordingly.

At 1215 the leak will be terminated by closure of one of the six valves which previously malfunctioned. The release to the environment will cease at this time.

Simulating repair and testing time the rupture will be repaired at 1315 with the purification system back in service at 1330.

At 1500 the reactor coolant letdown radiation monitor reading will decrease below 1×10^5 CPM and the "RECOVERY PHASE" will be entered.

The exercise will be terminated at 1600 followed by an exercise critique.