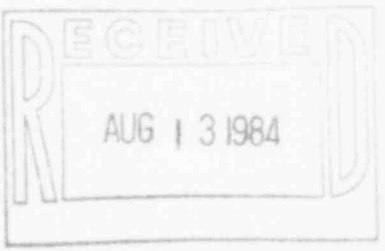
Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

August 10, 1984
LIC-84-251



Mr. J. T. Collins, Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Reference: Docket No. 50-285

Dear Mr. Collins:

Fort Calhoun Station
1984 Emergency Preparedness Exercise

The Commission requested Omaha Public Power District, by letter dated February 9, 1984, to provide the description of the scope of the annual emergency exercise and the objectives to be fulfilled by this exercise approximately 75 days prior to the exercise. Accordingly, the subject information is provided in Enclosures 1 and 2 for the Fort Calhoun Station's 1984 emergency exercise. Copies of this information are also being provided to the Federal Emergency Management Agency and the Director, Division of Emergency Preparedness and Engineering Response.

Sincerely,

W. E. Miller

W. E. Miller
Assistant General Manager

Enclosures

cc: Mr. Patrick J. Breheny
Regional Director
Federal Emergency Management Agency
Region VII
Old Federal Office Building, Room 300
911 Walnut Street
Kansas City, Missouri 64106

Director
Division of Emergency Preparedness and Engineering Response
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Enclosure 1

1984 EMERGENCY EXERCISE OBJECTIVES

1. Ensure the activation of the OPPD emergency organization including the Operations Support Center (OSC), Technical Support Center (TSC), and Emergency Operations Facility (EOF) to test the capability of the Initial Response Organization and Emergency Recovery Organization.

2. Ensure that notifications to state, local, and regulatory agencies and offsite support groups are performed to test the communication networks and the effectiveness of interface between these agencies.

3. Test the emergency response capabilities of OPPD, state authorities, local support agencies, and appropriate federal agencies.

4. Test the public notification system and require protective actions to be taken for the plume exposure and ingestion pathways. This may include evacuation (simulated or actual) of offsite areas.

5. Exercise the capability to provide periodic public information releases.

6. Test the emergency response capabilities of designated offsite emergency medical facilities and ambulance services.

7. Test the adequacy and content of the Radiological Emergency Response Plan (RERP).

8. Test the adequacy and content of the Emergency Plan Implementing Procedures (EPIP's).

9. Test the emergency equipment and its use.

10. Test the abilities of operating personnel and emergency response personnel to properly classify emergencies.

Enclosure 2

1984 EMERGENCY EXERCISE
SCENARIO DESCRIPTION

The 1984 annual emergency exercise at the Fort Calhoun Station will commence with the reactor in operation at full power with a primary-to-secondary leak of 0.1 gpm. A shutdown is scheduled for the upcoming weekend. The 161 KV line is out of service for repair of damage caused by a storm last night, and Electric Operations estimates repairs will require 12-24 hours. The station is operating using the generator auxiliary transformer, with the 13.8 KV line available. RCS activity is at a normal mid-cycle level. The post accident sampling system (PASS) is operational. Weather conditions are unstable and a tornado warning has been issued for Washington and Douglas Counties. A tornado has been sited north of Bennington moving east/northeast.

A "Notification of Unusual Event" will be declared due to a tornado crossing the northwest boundary of the plant site, causing a loss of the 13.8 KV supply. All necessary notifications and actions will be taken in accordance with the Radiological Emergency Response Plan (RERP) and the Emergency Plan Implementing Procedures (EPIP's). Shortly after the loss of the 13.8 KV supply, activity in steam generator RC-2B increases and a second charging pump starts. An operator is dispatched to look for leaks and, if an RCS leak rate is calculated, it will show less than 40 gpm. Letdown will probably be isolated.

Approximately 1 hour after the declaration of a "Notification of Unusual Event", with letdown isolated, the RCS leak rate increases to greater than 40 gpm. An "Alert" is declared and all necessary notifications and actions associated with this classification are taken. The plant contacts the dispatch center indicating their intent to initiate a plant shutdown. Dispatch requests a slow power descent due to system demand. A power decrease of 10% per hour is begun. In addition, the operator inspecting for leaks in containment reports that a small line is leaking. He is able to get to the root valve and stop the leak, but is burned by the leaking steam. The worker is contaminated and is taken to the UNO Medical Center for treatment.

Approximately 1/2 hour after declaration of the "Alert" status, RCS leak rate calculations show leakage to be 10 gpm. A second operator survey of containment indicates no other observable leakage. Leakage (10 gpm) is concluded to be from primary-to-secondary. The primary-to-secondary leak rate increases to 15 gpm and eventually reaches 20 gpm.

Approximately 2 hours after declaration of the "Alert", with reactor power at 80%, a steam generator tube rupture of 2 tubes occurs causing the primary-to-secondary leak rate to exceed charging pump capacity. A reactor and turbine trip occur on thermal margin/low pressure, the reactor coolant pumps begin to coast down, and the diesel generators start. A "Site Area Emergency" is declared. All necessary notifications and actions associated with this classification are taken. One minute after the reactor trip, a safety injection signal occurs. The pressurizer sprays are activated to reduce the delta-P between the primary and secondary systems. HPSI flow is throttled, and the MSIV for RC-2B is closed. 345 KV backfeed is established, and diesel generators are stopped, followed shortly thereafter by the startup of 2 reactor coolant pumps. With an RCS cooldown rate of approximately 30°F per hour established, RC-2B level is observed to be rapidly increasing and approaching a full condition.

Approximately 45 minutes after declaration of the "Site Area Emergency", a fault on the 345 KV line occurs, resulting in a total loss of offsite power. Only one diesel generator starts, and a fire is reported in the bay of the non-operating diesel generator. The fire is extinguished. Repair of the disabled diesel is planned and initiated. Auxiliary feedwater is manually actuated using FW-10 and steam from RC-2A, followed immediately by a steam line rupture downstream of YCV-1045, which disables both FW-6 and FW-10, the electric and steam driven auxiliary feedwater pumps. The steam line rupture is isolated upon closure of YCV-1045A. The RCS begins to heat up and repressurize.

Approximately 1 hour after declaration of the "Site Area Emergency" (approximately 4 hours into the exercise), the steam dump and bypass system is lost, so the operators begin using the atmospheric dump valve HCV-1040 located downstream of the MSIV's. A "General Emergency" is declared based on loss of 2 fission product barriers and the potential loss of a third. All necessary notifications and actions associated with this classification are taken. Approximately 15 minutes after the declaration of the "General Emergency", the intact steam generator dries out. The atmospheric dump valve is closed and the PORV's are opened to reduce flow out of the ruptured steam generator tubes. The secondary safety valves begin cycling as the steam generator pressure increases above 1000 psia. Two hours later, the 161 KV line is restored, and the main feedwater system, which is now operational, is available to refill the steam generators for secondary system heat removal. The safety injection system is used to refill the

RCS. The plant is brought to a stable configuration and confirmation is provided that the safety functions have been restored. Plans are initiated to address long term stabilization of the plant and plant recovery.

Radiological monitoring teams will be dispatched, both onsite and offsite, starting with initial indications of a release. Teams will track the plume of released activity and verify dose/concentration projections. The plume will be primarily directed into Iowa with a relatively low velocity.

At the time the plant is considered to be in a stable condition, the "General Emergency" classification will be de-escalated based upon the discretion of the Recovery Organization and offsite support agencies. The emergency exercise will then be terminated.