Suppl. Files

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

October 30, 1968

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THRU: Robert L. Tedesco, Chief, Reactor Project Branch 2, DRL

MINUTES OF MEETING WITH NIAGARA MOHAWK POWER CORPORATION, NINE MILE POINT DOCKET NO. 50-220 - OCTOBER 15, 1968

Purpose

This meeting was held to review the installation of instrumentation, control and electrical equipment.

Attendees

| Niagara Mohawk | | AEC |
|---|---|---|
| G. K. Rhode | R. Baker | O. Parr, DRL |
| P. A. Burt | L. J. Blasiak | R. L. Ferguson, DRS |
| W. Van Dyke | D. Dise | M. S. Hildreth, Jr., CO |
| W. A. Rumberger | C. R. Weil | |

Summary of Discussions and Observations

At a brief meeting in the visitors center prior to touring the plants, Messrs. Parr and Hildreth informed the applicant of installation errors that were found in the instrumentation routing at Oyster Creek and the remedial action that was taken there. The applicant was asked if he had discovered any similar problems.

The applicant stated that some errors were found in the cable routing at Nine Mile Point by a "spot check" of some installations. Consequently, a team of Stone and Webster and Niagara Mohawk Power Corporation (NMPC) personnel are making a point by point check of all wiring. This check should demonstrate that the installation is according to the design. In addition, NMPC personnel will make a performance check of all systems starting at the actuators and working forward in the instrument channels to the sensors after the wiring check is completed. The applicant stated that he would shock the low signal level cables, to test their ability to generate multiple safety signals, during this test. This test should demonstrate that all channels are capable of functioning.

Following this brief meeting, we toured the plant. Mr. Parr will summarize his observations in a separate memorandum. My observations of this tour are the following:

1. The applicant explained and demonstrated his method for maintaining separation between counterpart cables. He appears to have provided as much separation as is physically feasible.

2. The applicant explained his method for identifying protection system cabling and components. He is using a system of numbered and colored tags. The numbered tags are installed by the equipment installers; the colored tags are installed by the independent team checking the installation. At present the applicant believes the system is adequate and beneficial in providing identification of protection system components.

3. The air for starting a diesel generator is supplied via a single pipe 20-30 feet long. The exhaust and intakes for combustion air are single ducts that rise vertically from the engine to the roof 20-30 feet above. We intend to request the applicant to provide an analysis of these pipes and ducts to survive an earthquake.

4. The applicant stated he had operated each diesel about 30 hours. They have had several problems in putting the units into operation. He referred to these as "usual preoperational problems." He did not describe the problems in detail, but stated that these problems were in both the D/G as received from the manufacturer and the interface between the D/G and the remainder of the system.

5. The temperature detectors which monitor the steam lines from the reactor to the emergency condensers consist of four resistance bulbs (RTD) mounted on the ceiling of the room containing the isolation valves. Two RTD's are located over each steam line. It appears that any leak would close the isolation valves in both lines. A bypass switch is provided to allow the operator to open these valves if they are closed by the RTD signals. The circuit details were not explained.

   The temperature detectors that monitor the main steam lines for leaks were described as four Fenwal thermal switches mounted at four locations: outside main steam line isolation valve, main steam line tunnel, turbine stop valve, and the bypass valve. The switches are connected in 1 of 8 taken twice logic. These detectors were not yet installed.

   The radiation monitors that isolate the emergency condensers were described as geiger or scintillation counters with a three inch lead shield. They were not installed and the circuit details were not described.

Recommendation: We intend to request a description of these detectors, their circuit and installation details and a description of their operation as well as an analysis of their behavior during an earthquake, a loss-of-coolant accident at this plant and a design basis loss-of-coolant accident at a nearby plant (e.g., NMPP-2 or Ginna).

6. The instrument lines from the reactor vessel used to measure pressure and water level are relatively long runs of 1 inch pipe located inside and outside of the containment. The applicant stated that these lines were not x-rayed or analyzed for their capability to withstand an earthquake. As presently installed, it is quite easy to cause vibrations in several of these pipes by shaking only one of the pipes. The applicant explained that the support structure was not complete. We will request an analysis of the pipes with respect to earthquake conditions.

R. L. Ferguson
Division of Reactor Standards

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cc: P. A. Morris
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