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HUNTER,R.S. Indiana & Michigan Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Discusses actions described at 820430 meeting w/NRC in Bethesda,MD as result of NRC 820412-16 insp re fire protection.Info re emergency shutdown procedures,lighting provisions & reactor coolant pump encl.

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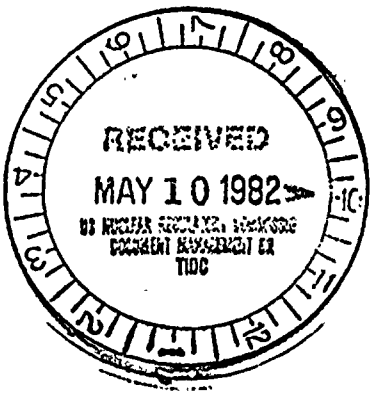

May 4, 1982
AEP:NRC:0692

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
Fire Protection - Appendix R Compliance

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

On April 30, 1982, representatives of American Electric Power Service Corporation and Indiana & Michigan Electric Company met with members of the NRC staff in Bethesda, Maryland, to explain why we believe the Donald C. Cook Nuclear Plant should continue operating notwithstanding the NRC inquiries during its recent fire protection inspection of the Plant. We appreciated the opportunity to meet with you to describe the actions we have taken in response to your principal concerns and our plans to assure conformance with the objectives of the Commission's fire protection requirements.

The NRC inspection conducted on April 12 - 16, 1982, found a number of areas where compliance with our previous submittals regarding fire protection had not been met. As a result, we have undertaken a number of near-term steps to respond to these matters. These were discussed with you on April 30. We are also initiating a number of longer-term safeguards and inquiries to assure that all of our fire protection commitments will be met in a manner consistent with the Commission's requirements. These will be described in some detail in a letter to be issued to you on May 10, 1982.

In this letter we are confirming the presentations made to you on April 30 regarding our alternate emergency shutdown procedures, emergency lighting provisions and procedures, and the reactor coolant pump oil collection system. These presentations are summarized in the attachments hereto. They provide reasonable assurance that the D. C. Cook units can adequately cope with fire hazards.

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Due to the request that this letter be written on short notice, it has not been prepared following our standard Corporate Procedures for such letters. We shall, however, review the letter according to our Corporate Procedures and will inform you if any modification is required.

Very truly yours,

R. S. Hunter
Vice President

RSH:frb

Attachments (3)

cc: John E. Dolan - Columbus
R. W. Jurgensen
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Charnoff
Joe Williams, Jr.
NRC Resident Inspector at Cook Plant - Bridgman

EMERGENCY SHUTDOWN PROCEDURE PRESENTATION

In case of a postulated cable vault fire, the D. C. Cook Plant Alternate Emergency Shutdown and Cooldown Procedure, in conjunction with the normal plant shutdown and cooldown procedures, provides instructions for remotely shutting the reactor down, placing and maintaining the reactor in a hot standby condition and later bringing the reactor to a cold shutdown condition. The cable vaults at the Cook Plant are not shared between units. Each cable vault is equipped with two zones of ionization fire detection, automatic total flooding Halon suppression, manually actuated low-pressure CO_2 suppression as a backup, and in the Unit 2 cable vault, an automatically actuated wet pipe sprinkler system. These installed measures assure that a cable vault fire will be detected early and extinguished before substantial cable damage occurs.

The philosophy used in developing the alternate emergency shutdown procedure is that the normal procedures will be followed as long as the preferred controls are available. As conditions deteriorate, other methods available in the Control Room will be used. When this can no longer be done, the "preferred alternate" method, that is, manual remote operation from the Hot Shutdown Panel, will be implemented. It is when these methods of Plant control are no longer available that the emergency procedures for local manual control of equipment will be utilized, as conditions require, to maintain the reactor in a Hot Standby condition and subsequently cooldown to place the reactor in a cold shutdown condition. The procedure is designed to manually stabilize plant conditions and achieve a manually controlled cooldown. Operator guidance is given to effect control of the Plant critical safety functions from locations inside or outside the main Control Room. In the event that local manual control of components is required, the operator has available to him, or will be in communication with other operators having access to instrumentation showing the appropriate plant parameter.

The following are a few examples to demonstrate this concept:

A. Subcriticality:

1. Reactor Trip

   a) Control Room Manual

   b) Turbine/Reactor from turbine front standard if above P-7

   c) Local manual trip of Reactor Trip Breakers

2. Emergency Boration

   a) Charging pump running normally from the Control Room

      i. with suction from the boric acid transfer system

      ii. with suction from the refueling water storage tank

   (or) iii. injecting the boron injection tank

b) Charging pump running from local manual control

i. with suction from the boric acid transfer system

ii. with suction from the refueling water storage tank

(or) iii. injecting the boron injection tank

B. Heat Sink:

1. Steam Dump

a) To condensers with control from the main Control Room

b) Through the Steam Generator Power Operated Relief valves (atmospheric dump)

i. controlled from Control Room in Auto or Manual

ii. controlled from Hot Shutdown Panel in Auto or Manual

iii. local manual control

c) Through the Steam Generator Safety Valves (atmospheric dump)

2. Auxiliary Feedwater Supply:

a) Manual operation of the auxiliary feedwater system from the Control Room

b) Manual operation of the auxiliary feedwater system from the Hot Shutdown Panel

c) Operation of one of unaffected Unit's motor-driven auxiliary feedwater pumps to supply one or two of the affected Unit's steam generators through the existing cross-tie line using manual local control of feedwater control valves with local steam generator water level indication

d) Local manual operation of the affected Unit's turbine driven auxiliary feedwater pumps

e) Local manual operation of one of the affected Unit's motor-driven auxiliary feedwater pumps

C. R.C.S. Pressure Control:

1. Normal pressurizer heater control from the Control Room

2. Pressurizer heater control utilizing the procedure to connect certain pressurizer heater loads to the diesel generator safety buss

Since the NRC Team Inspection, we have been taking steps to update and improve the Alternate Emergency Shutdown Procedure. Some of the changes that have been completed are:

1. A walk-through of the entire procedures for both Units 1 and 2.

2. Discrepancies pointed out during the NRC audit and the ones discovered during the walk-through have been corrected in the procedure.

3. The procedure has been amended to include the actions required to achieve and maintain the reactor coolant system temperature in the Hot Standby condition for an extended period of time, if this should be desired.

4. Procedure changes required due to the auxiliary feedwater system design modification have been incorporated into the procedure.

5. Component ventilation equipment has been included in the procedure.

6. The operating procedure for local control of the diesel generators has been issued.

7. To facilitate performing breaker modifications in close proximity to energized circuits, we have, on an interim basis, established around-the-clock, seven-day-week coverage by two qualified electricians/technicians, who will perform any required breaker modifications in the event of a cable vault fire. The electricians will be directed by qualified operators. The coverage will be continued until all the appropriate modifications and the operator training are completed.

8. Emergency Tool Kits for performing breaker modifications associated with the emergency shutdown procedure have been placed in the Shift Supervisor's office, Unit 1 and Unit 2 main switchgear rooms, 345 KV and 765 KV switch yard control houses and at the 69 KV emergency power supply breaker.

9. All licensed operators received formal training in the emergency shutdown procedure during the January, 1982, requalification training. As part of their shift assignments, operators are presently reviewing and will walk through the emergency shutdown procedure and the diesel generator local control procedure.

10. The two electricians/technicians presently on-shift on a 24-hour-per-day, seven-day-week schedule have received training in the breaker modification procedure.

In addition to these changes and interim improvements, the procedures for Remote Shutdown will be completely reviewed and revised by June 4, 1982. This revision will include separate sections for achieving Hot Standby and for cooling down to Cold Shutdown. The revised procedures will include reference to other Emergency Operating Procedures such as Natural Circulation, Local Diesel Generator Control and Energizing of the Pressurizer Heaters. Appropriate information will be included on the availability of equipment to perform the modifications. One of the objectives of the revised procedures will be to provide the simplest method of modification of equipment and to establish priorities in methods used to operate the equipment.

Prior to the issuance of the revised procedures, a complete walk-through of the procedures will be performed to insure that the procedures and Plant markings are compatible. Any necessary revisions to the markings will be made on an expedited basis.

Also, prior to issuance, operators will be trained in the revised procedures and thereafter they will be included in the regular shift training schedule.

EMERGENCY LIGHTING PRESENTATION

Three areas were identified by the NRC Inspectors as requiring the addition of emergency lighting units. These areas are U-1 QUAD2, U-2 QUAD2 and U-2 Volume Control Tank. Lighting units have been temporarily added to these areas.

Concern was expressed over the number of units that had floating discs or had the red indicating lamp continuously lit. These two indications are complementary. If all discs are down the battery is fully discharged and, in all probability, cannot be recharged to an operable level. If one or two discs are floating, the battery is partially discharged and should be recharging. The red indicating lamp will glow brightly if a full charge is being applied and will glow dimly if under a trickle charge. A maintenance procedure has been issued which requires a periodic (at least once per year) "deep" discharge test which the manufacturer advises us is necessary. The maintenance procedure requires quarterly examination of the floating discs to evaluate specific gravity. To assure that emergency lights are properly aimed, the surveillance procedure has been revised to require that the area covered by the light beam be checked.

The NRC inspectors reported that, according to the information supplied by the manufacturer, the battery units were not rated for eight-hour operation. When purchased, the units were specified to be 6-volt, 80AH batteries with two 25-watt incandescent lamps. We believed that these units were capable of more than eight hours of service. However, we have been recently advised by the manufacturer that the 80AH rating is based on a twenty-hour discharge rate. If so, these units should be rated at a minimum of 5.9 hours when supplying 50 watts of incandescent lamps. It should be noted, however, that tests run on fully charged batteries by both the NRC Inspection Team, and independently by plant personnel have resulted in several units meeting the eight-hour requirement.

In addition to the above, we have taken the following steps to bring our emergency lighting into compliance with our fire protection program. An order was placed for expedited delivery of twenty dozen Halogen 12-watt lamps. These are direct replacements for the existing 25-watt incandescent lamps and will reduce the power requirement so that the existing batteries will have an eight-hour capability. Also, an order was placed for expedited delivery of 120 units containing a 36AH (@ 8-hour rate), 12-volt battery, with two 25-watt PAR36 incandescent lamps.

RCP OIL COLLECTION PRESENTATION

The RCP motor oil spillage collection system can be divided into two parts, the collection points at the motor and the drainage and holding facilities. The design was by Westinghouse for the former and AEP for the latter.

The holding facility is a 275-gallon tank, 3-foot diameter by 5-foot long. It is constructed of 12-guage steel with 12-guage welded closure plates at each end and is further stiffened by two steel support saddles. The natural frequency of this assembly is estimated to be above 8 Hertz. The DBE seismic response g value at this frequency and at the containment slab level where the tank is located is only about 0.7g. While we have not performed a detailed seismic evaluation of the tank and its supports, a preliminary evaluation of the tank parameters and its support provides reasonable assurance that the holding tank and its support system is adequate for DBE seismic conditions.

The guage glass on the oil holding tank was installed as a convenience during inspections. It does not replace the liquid level instrumentation. Valves are provided top and bottom to isolate the guage glass. These can be left closed and only opened during inspections to determine visually if the oil level has increased to the point where pumpout is required. The guage glass assembly is 28¼" long and is rated at least 200 lbs. Our evaluation of this device will determine if we keep the guage glass in continuous service.

The design criteria required the drainage piping from the collection points to the holding tank to be seismically supported. For cold piping systems of 2" size, we use an alternate analysis (psuedo-dynamic) which provides a conservative support system adequate for a Safe Shutdown Earthquake.

Class III B combustible liquid tanks do not require flame arrestors. The RCP motor lube oil is Mobil Synthetic Lubricant with a 480°F flash point and is a Class III B combustible liquid. We have taken a conservative approach by providing a flame arrestor on the holding tank vent line. A flame arrestor on the holding tank overflow line would serve no purpose. Flame arrestors are to prevent an external vapor ignition from progressing into a vessel causing an internal explosion. The purpose of the overflow line is to pass liquid, not vapor. The overflow line is a dip tube extending into the tank to a point 1" above the bottom. The tank capacity of 275 gallons is more than the combined upper and lower oil reservoir capacity of one RCP motor. The tank is instrumented for liquid level with control room alarm.

We believe that the connections with return bends at the top of the RCP motor are "Flywheel seal vents" and not overflows. This has been confirmed with Westinghouse RCP Motor Group, who also advised that their purpose is to vent air, since no oil is in this area. In view of this, their design provides no oil collection points at these connections.

We believe the hole in the oil lift enclosure is for a flexible conduit to the oil lift pump motor of the spare RCP Motor. This is used to periodically operate the oil lift pump allowing personnel to manually rotate the motor shaft during storage of the motor. The flexible conduit was in place prior to the installation of the enclosure. Should it be necessary to use the spare motor, the hole for the flexible conduit will be sealed before installation in the containment. A conduit entry point is provided at the top of the oil collection enclosure in the Westinghouse design, but was not used for the spare motor.

Plant procedures have been updated to include surveillance of the integrity of the system and the assurance that the system is empty prior to startup.