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RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation

SUBJECT: Responds to NRC 791030 ltr re implementation of recommendations contained in NUREG-0578.Supplements previous responses re power operated relief valves,safety valves & instrumentation for inadequate core cooling.

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INDIANA & MICHIGAN POWER COMPANY
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NEW YORK, N. Y. 10004

November 26,1979
AEP:NRC:00253A

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74

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

Dear Mr. Denton:

The attachment to this letter provides our response to your letter of October 30, 1979, which we received on November 8, 1979, concerning the implementation of the recommendations contained in NUREG-0578 and supplements our letter of October 24, 1979 (AEP:NRC: 00253). In accordance with the requirements of your letter and discussions with members of your staff we are supplementing our previous responses to NUREG-0578 for those items that contain schedule differences and/or require further clarification for compliance with the NRC position.

Very truly yours,

John E. Dolan

John E. Dolan
Vice President

JED:em

cc: R. C. Callen
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ATTACHMENT TO AEP:NRC:00253A
DONALD C. COOK NUCLEAR PLANT
DOCKET NOS. 50-315 & 50-316
LICENSE NOS. DPR-58 & DPR-74

RESPONSE TO ITEM 2.1.1, EMERGENCY POWER SUPPLY REQUIREMENT

a. Pressurizer Heaters

The AEP required actions will meet the NRC position as stated in position items 1 through 4 of NUREG-0578 page A-4. Any interfaces with the emergency busses will be through devices that meet safety-grade requirements. Procedures and training will be provided to assure safe access of the pressurizer heaters to the emergency diesel generator busses.

RESPONSE TO ITEM 2.1.3.A, DIRECT INDICATION OF VALVE POSITION

a. Power Operated Relief Valves

The existing stem mounted limit switches on the PORV's at Cook Plant partially meet the requirements of NUREG-0578, as supplemented, in that they provide direct and unambiguous indication of valve position in the control room. Each switch (one on each PORV) is a reliable single channel direct indication with its power supply from a vital instrument bus. The limit switch indication is backed up by the temperature indication and temperature alarm in the common discharge pipe transmitting to the control room. This design provides sufficient justification for the schedule to install the final design as described below.

Since the existing hardware is control grade, we will replace these limit swithces in accordance with the NRC requirements. We have placed an order for the replacement switches. The earliest probable delivery of these replacement limit switches is by the end of January 1980. An engineering/design review of the installation of the limit switches to meet the NUREG-0578 requirements is also underway. This review will result in the final design of the PORV position indication and procurement of any additional equipment as necessary. The replacement limit switches and any necessary associated equipment will be installed at the first outage of sufficient duration after the equipment and final design are available. A Unit outage is necessary to perform this work.

b. Safety Valves

AEP is actively participating with the safety valve manufacturer to engineer, design, develop and qualify, a system which will provide a direct indication of the safety valve position. There is at present no firmly established schedule for conclusion of this program other than the vendor's assurance that every effort is being made to complete the program as soon as possible.

Currently,the safety valves have individual discharge piping temperature indications and alarms displayed to the operator in the control room. Valve position can be inferred from these indications. This provides sufficient justification for the schedule to install a direct indication system as described below.

b. (Continued)

Because of the above-mentioned uncertainties associated with providing qualified direct limit switch indication consistent with the NUREG-0578 schedule, we have purchased an acoustic system. The promised delivery date is in the week beginning on November 26,1979. The acoustic monitoring system is a new design for Cook Plant and requires engineering/design effort to install. As such the installation cannot proceed immediately after equipment receipt. It is estimated that a schedule of approximately 18 weeks is necessary to complete the simultaneous parallel functions of revision to electrical elementaries, wiring diagrams and panel drawings together with the physical modifications to the panel fronts, pulling of new cabling and installation of the devices. This system can be installed at the first suitable outage of sufficient duration after the final design is available. A Unit outage is necessary to perform this work. Every effort will be made to complete the engineering/design work and install only the in-containment portions of the acoustic monitoring system on Unit 2 during its current refueling outage.

RESPONSE TO ITEM 2.1.3.B, INSTRUMENTATION FOR INADEQUATE CORE COOLING

The response presented in our October 24, 1979 (AEP:NRC:00253) is in agreement with the requirements of NUREG-0578 with the exception of the installation date of the subcooling meters. On November 20, 1979 a verbal order was placed for this meter. Delivery time for this equipment is scheduled for 10 weeks. Procurement activities for the balance of the equipment associated with the subcooling meter are underway and will take longer than 10 weeks to complete. The subcooling meter is new design for Cook Plant and requires engineering/design effort to install. It is anticipated that the simultaneous parallel functions of revision to electrical elementaries, wiring, diagrams, physical modification to the control room panel fronts, and behind the panel instrument racks, together with pulling of new cabling from the existing sensor outputs to the location of the subcooling meter computation device will require at least 18 weeks. This will lead to an installation date of April 1980.

Justification for this time frame was previously provided in our October 24, 1979 letter in that the operators have available curves of saturation temperature vs. reactor coolant pressure and have been instructed in using these curves.

Given below are the data, which we currently have available, as requested by clarification item 9 of the NRC's October 30, 1979 letter for this NUREG Item.

RESPONSE TO ITEM 2.1.6.A, SYSTEMS INTEGRITY FOR HIGH RADIOACTIVITY

A preventive maintenance program for leak detection will be developed in accordance with the requirements of NUREG-0578, as supplemented. This program will include maintenance controls of systems outside containment likely to contain radioactive materials. We plan to have the systems identified, measurement methods established and a general program in place by January 1, 1980.

(CONTINUED)

The general program will be set up such that each system can be fit into it and leakage measurement and reduction as necessary can be carried out. This program will include the following items:

a) Assure that systems are tight (e.g. valve packing and flanges)

b) Visually examine system components for leakage while systems are operating.

c) All instrumentation and recording devices to be reviewed, any abnormal leakages to be logged.

d) Any leakages that cannot be corrected by the inspection personnel are to be reported under a job order. Copy of order to the Assistant Plant Manager - Maintenance.

The first system is expected to be through the general program, all phases checked out and improvements made to the program if necessary, by January 1, 1980. In this manner the remaining systems can be done in a systematic fashion by April 1, 1980.

At Cook Plant we have permanently installed leak detection boxes on critical systems required for post-accident core cooling. Each train of the safety injection, containment spray, and residual heat removal systems has a permanently installed leakage alarm which alarms if the train leakage exceeds approximately 6 gpm. Floor drain piping in the auxiliary building has electrodes installed to alarm if the drain is passing water. This system assures that there are no significant undetected water leaks in the auxiliary building during post-accident core cooling.

The gas pressures in the decay tanks and CVCS hold up tanks are checked each shift to check on the gas inventory. This procedure assures that there are no significant gas leaks, at any time.

We believe that our approach to this program coupled with the permanent leak detection on critical systems justifies program completion by April 1, 1980.

RESPONSE TO ITEM 2.1.8.A, POST ACCIDENT SAMPLING

The schedule for implementing the NUREG-0578 requirements, as supplemented, for post accident sampling remains as stated in our previous response. Further clarification and justification is provided below.

(CONTINUED)

The following items are expected to be completed by January 1, 1980:

A) Design review of the existing reactor coolant and containment atmosphere sampling system;

B) Design review of existing radiological spectrum analysis facilities;

C) Recommended sample analysis procedures (as supplied by Westinghouse to the members of the Westinghouse Owners' group);

D) Design of interim sampling systems and associated minor plant modifications for taking post accident samples.

We have contacted outside contractors to assist us in completing the above review as well as recommend plant modifications and the following time schedule was developed:

November 16,1979 contract awarded to perform the design and description of plant modifications.

February 1, 1980 contractor to submit draft alternative proposals to implement NUREG-0578 requirements.

March 1, 1980 AEP to choose proposal for implementing NRC requirements.

April 1, 1980 AEP to submit to NRC the description of plant modifications and target date for implementing major plant modifications.

RESPONSE TO ITEM 2.1.8.C, IMPROVED IODINE INSTRUMENTATION

The existing plant portable air sampling monitors are capable of obtaining samples for iodine measurement upon replacement of the sample cartridges with silver zeolite type cartridges. The purchase order for these cartridges was issued November 12, 1979 for delivery within three (3) weeks. We will comply with requirements for the short term recommendations as clarified in the October 30, 1979 letter. The requirements for the long term recommendations are incorporated into our actions for Item 2.1.8.a.

RESPONSE TO ITEM 2.2.2.B, TECHNICAL SUPPORT CENTER

It is anticipated that the radiation monitoring device for this center will be an existing plant portable continuous air sampling system.

ATTACHMENT TO 2.1.3.b

INFORMATION REQUIRED ON THE SUBCOOLING METER

Display	
Information Displayed (T-Tsat, Tsat, Press, etc.)	Margin to T_{sat} or P_{sat}
Display Type (Analog, Digital, CRT)	Digital
Continuous or on Demand	Continuous
Single or Redundant Display	Single
Location of Display	Control Room
Alarms (include setpoints)	Later
Overall uncertainty (°F, PSI)	Later
Range of Display	350°F Superheat to 200°F Subcooled; 0 to 500 psi Margin
Qualifications (seismic, environmental, IEEE323)	Later
Calculator	
Type (process computer, dedicated digital or analog calc.)	Dedicated digital
If process computer is used specify availability. (% of time)	Not Applicable
Single or redundant calculators	Single
Selection Logic (hignest T., lowest press)	Both
Qualifications (seismic, environmental, IEEE323)	Later
Calculational Technique (Steam Tables, Functional Fit, ranges)	Steam Tables
Input	
Temperature (RTD's or T/C's)	Both
Temperature (number of sensors and locations)	See Note 1
Range of temperature sensors	RTDs 0-700°F T/C 0 - 2500°F

Uncertainty* of temperature sensors (°F at 1)	Later
Qualifications (seismic, environmental, IEEE323)	RTDs-See Note 2 T/C - Control Room
Pressure (specify instrument used)	Wide Range RCS
Pressure (number of sensors and locations)	2 RCS Loops 1 & 2
Range of Pressure sensors	0 -3000 psi
Uncertainty* of pressure sensors (PSI at 1)	Later
Qualifications (seismic, environmental, IEEE323)	See Note 2

Back up Capability

Availability of Temp & Press	In Control Room Recorders & Indicators
Availability of Steam Tables etc.	Pasted to Control Room Panel
Training of operators	Yes
Procedures	Yes

*Uncertainties must address conditions of forced flow and natural circulation

NOTE 1 - Sensors selected are 4 Hot Leg RTDs, 4 Cold Leg RTDs and 8 Core Exit Thermocouples which are inputed to the microprocessor through hi select devices.

NOTE 2 - See I&MPCo. response to IE Bulletin 79-01 dated June 28,1979(AEP:NRC:00153) further supplemented by our October 15,1979 submittal AEP:NRC:00277.