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SUBJECT: Forwards response to NRC Bulletin 88-010, "Nonconforming Molded-Case Circuit Breakers."

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AEP:NRC:1083A

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
NRC BULLETIN NO. 88-10: REPORT ON ACTION ITEM STATUS

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

May 16, 1989

Dear Dr. Murley:

The purpose of this letter is to provide a response to NRC Bulletin No. 88-10, "Nonconforming Molded-Case Circuit Breakers." Reporting requirement 1 of the bulletin required all holders of operating licenses to provide a written report by April 1, 1989, that:

1) Confirms that only molded-case circuit breakers that meet the criteria of Item 7 of the actions requested are being maintained as stored spares for future use in safety-related applications,

2) Provides information on those circuit breakers that could not be traced to the circuit breaker manufacturer in Items 1 and 4 of the actions requested, and

3) Confirms that Items 1 through 7 of the actions requested have been completed or will be implemented as requested.

A previous submittal, AEP:NRC:1083, "Request for Extension on NRC Bulletin No. 88-10 Action Items and Reporting Requirements," requested extension of our response to May 16, 1989. The attachments to this letter fulfill our commitment to respond to the bulletin.

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PDR ADOCK 05000315
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This letter is being submitted under oath pursuant to the provisions of Section 182a, Atomic Energy Act of 1954, as amended. As such, an oath is attached.

Sincerely,

David H. Williams, Jr.
Vice President

ldp

Attachments

cc: M. P. Alexich
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Charnoff
A. B. Davis
NRC Resident Inspector - Bridgman
G. Bruchmann

STATE OF OHIO
COUNTY OF FRANKLIN

David H. Williams, Jr., being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the forgoing Response to Bulletin No. 88-10: Nonconforming Molded Case Circuit Breakers and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

D. H. Williams, Jr.

Subscribed and sworn to before me this 16th

day of May, 1989.

Diane P. Powell
NOTARY PUBLIC

DIANE P. POWELL
NOTARY PUBLIC - STATE OF OHIO
MY COMMISSION EXPIRES .....6/16/93.

ATTACHMENT 1 TO AEP:NRC:1083A

RESPONSE TO NRC BULLETIN NO. 88-10

Reporting Requirements:

1) All holders of operating licenses are required to provide a written report by April 1, 1989, that:

a) Confirms that only molded-case circuit breakers that meet the criteria of Item 7 of the actions requested are being maintained as stored spares for future use in safety-related applications.

Response

Steps have been initiated to ensure that only molded-case circuit breakers that meet the criteria of Item 7 of the actions requested are being maintained as stored spares for future use in safety-related applications.

b) Summarizes the total number, manufacturer, model number, and to the extent possible the procurement chain of those circuit breakers that could not be traced to the circuit breaker manufacturer in Items 1 and 4 of the actions requested. For installed circuit breakers, also identify each system in which they are/were installed. If Item 4 of the actions requested has not been completed by April 1, 1989, due to the schedule for tests in Item 3 of the actions requested, this information should be updated within 30 days of the completion of Item 4 to address those additional circuit breakers that could not be traced to the circuit breaker manufacturer.

Response

The total number, manufacturer, model number, and, to the extent possible, the procurement chain of those circuit breakers that could not be traced to the circuit breaker manufacturer in Item 1 of the actions requested are summarized in Attachment 2. Since these circuit breakers were initially being maintained as stored spares, the system in which they are/were installed is not applicable.

The total number, manufacturer, model number, procurement chain to the extent possible, and each system in which they are/were installed for those circuit breakers that could not be traced to the circuit breaker manufacturer in Item 4 of the actions requested are summarized in Attachment 3 for

Unit 1 only. Item 4 of the actions requested has been completed for Unit 1 (presently in a refueling outage) with the exception of the five models of General Electric (GE) circuit breakers identified in Attachment 3. The traceability of these circuit breakers has not yet been verified. We plan to take the following actions regarding these circuit breakers:

GE THED(60 amp), GE TED(80 amp) and GE TFK(125 amp): These circuit breakers were purchased as part of a qualified system (control room instrumentation distribution inverters) from Solidstate Controls. While indications exist that these circuit breakers were manufactured by General Electric, Plainville, CT, for Solidstate Controls via GESCO, Columbus, OH, a complete documentation trail has not yet been established. We are continuing attempts to establish traceability for these circuit breakers. If traceability cannot be established, an analysis justifying continued operation will be prepared prior to startup of Unit 1 and the untraceable circuit breakers will be replaced at the next refueling outage.

GE TEB (20 amp) and GE TEB (50 amp): These circuit breakers were purchased as panel components from Farwell & Hendricks and are installed in the auxiliary feedwater and auxiliary emergency local shutdown control distribution panels. Only two of the 20 amp circuit breakers are presently supplying loads in Unit 1 with the remainder of the 20 amp circuit breakers and all of the 50 amp circuit breakers serving as spares. A modification is under investigation to relocate the two loads from the 20 amp circuit breakers to alternate power sources. If traceability cannot be established for these circuit breakers, an analysis justifying continued operation will be prepared prior to startup of Unit 1.

Item 4 of the actions requested is projected to be completed for Unit 2 by June 30, 1989. We will update Attachment 3 with Unit 2 information by July 28, 1989.

The procurement information presented in Attachments 2 and 3 provides the source(s) for each model number

of molded-case circuit breaker. A specific model number may have been procured from more than one source. Since the circuit breakers are not tracked by serial number, the source of a given circuit breaker cannot be identified. However, the source of a given circuit breaker is limited to those sources listed for that model number. All sources, even those that provide traceability, are listed for each model number. The source(s) for which traceability could not be verified are marked with an asterisk (*). The sources were identified by reviewing stores issue and receipt inspection records at Cook Nuclear Plant.

c) Confirms that Items 1, 2, 3, 4, 5, 6 and 7 of the actions requested have been completed or will be implemented as requested.

Response

1) Per action Item 1.a, we identified all molded-case circuit breakers purchased prior to August 1, 1988, that were being maintained as stored spares for safety-related (Class 1E) applications. No commercial grade circuit breakers were being maintained as stored spares for future dedication and use in safety-related applications. More than 50 stored spare circuit breakers were identified per Item 1 of the actions requested. Therefore, it was not necessary to randomly select installed circuit breakers to form a minimum sample of 50 circuit breakers.

Action Item 1.b requests that the traceability of the sample identified above be verified. "Circuit breaker manufacturer" and "verifiable traceability" are defined in Attachment 2 of NRC Bulletin No. 88-10. Per these definitions, documented evidence from the manufacturing facility that actually produced the circuit breaker is required to establish traceability. If the documented evidence is provided by any party other than the circuit breaker manufacturer, the bulletin required that the validity of the evidence be verified through an audit or other appropriate means.

In evaluating the traceability of molded-case circuit breakers at Cook Nuclear Plant,

traceability to distribution centers or divisions other than supply companies was accepted. For example, in the case of molded-case circuit breakers manufactured by Westinghouse Electric Corporation at their facility in Beaver, PA., traceability to distribution centers in Duncan, SC., or St. Louis, MO., was accepted. Traceability to Westinghouse divisions such as Westinghouse Nuclear Services in Monroeville, PA., or Westinghouse Power Systems in Pittsburgh, PA., was also accepted. On the other hand, traceability to any regional office of Westinghouse Electric Supply Company (WESCO) was not accepted. This methodology was used for evaluating the traceability of stored spares per Action Item 1 and installed circuit breakers per Action Item 4.

Action Item 1.c requests that the number, manufacturer, model number, and, to the extent possible, the procurement chain for all those circuit breakers identified in action Item 1.a be identified. This information has been identified and is submitted in Attachment 2 of this letter.

2) Action Item 2 requests that all holders of operating licenses who identify installed circuit breakers per action Item 1 or 4 that cannot be traced to a circuit breaker manufacturer prepare, within 30 days of the completion of each item, an analysis justifying continued operation until action Items 1 through 5 have been completed.

No installed circuit breakers were examined per the requirements of action Item 1. Therefore, action Item 2 is not applicable to those circuit breakers identified during our evaluation of stored spares.

Per action Item 4, installed circuit breakers that could not be traced to the circuit breaker manufacturers were identified in Unit 1, which is presently in a refueling outage. As stated previously, an analysis justifying continued operation of Unit 1 will be prepared prior to startup if the traceability of any installed circuit breakers

cannot be established. At least 50% of the circuit breakers identified by Attachment 3 will be replaced prior to Unit 1 startup.

As stated previously, action Item 4 is projected to be completed for Unit 2 by June 30, 1989. If this evaluation identifies installed circuit breakers that cannot be traced to the circuit breaker manufacturer, then we will prepare an analysis justifying continued operation of Unit 2 within 30 days of the completion of action Item 4.

3) Action Item 3 requests all addresses who identify 80 percent or more circuit breakers traceable to the circuit breaker manufacturer per action Item 1 to test the circuit breakers that are not traceable to the circuit breaker manufacturer in accordance with the test program described in Attachment 1 of NRC Bulletin No. 88-10. For Cook Nuclear Plant, less than 80 percent of the circuit breakers identified in action Item 1 were traced to the circuit breaker manufacturer. Therefore, action Item 3 is not applicable to Cook Nuclear Plant.

4) Action Item 4 requests all addressees who identify less than 80 percent of the circuit breakers traceable to the circuit breaker manufacturer per action Item 1 to identify all molded-case circuit breakers purchased between August 1, 1983, and August 1, 1988, and installed in safety-related applications. The traceability of the circuit breakers identified under this action item is requested to be verified.

A review of design change documentation, stores issue records, and job orders was performed in order to identify molded-case circuit breakers installed in Unit 1 after August 1, 1983. Information regarding those circuit breakers that could not be traced to the circuit breaker manufacturer is submitted in Attachment 3 of this letter. We are still trying to verify the traceability of the GE circuit breakers identified by Attachment 3.

A review of the above documentation is in progress for Unit 2. This review is projected to be completed by June 30, 1989. We will update Attachment 3 with Unit 2 information and submit this update by July 28, 1989.

5) Action Item 5 specifies the requirements for replacing installed safety-related circuit breakers that cannot be traced to the circuit breaker manufacturer. This action item allows replacement with circuit breakers that meet the criteria of action Item 7 or circuit breakers that pass all tests in accordance with the test program described in Attachment 1 of NRC Bulletin No. 88-10. Action Item 5 further requests holders of operating licenses to replace at least one-half, or all if the total number is less than 75, of these installed circuit breakers before startup from the first refueling outage beginning after March 1, 1989.

Unit 1 is presently in a refueling outage that began after March 1, 1989. We will replace at least one-half of the safety-related circuit breakers installed in Unit 1 that could not be traced to the circuit breaker manufacturer before Unit 1 startup. A total of 100 installed circuit breakers that have not been traced to the circuit breaker manufacturer were identified in Unit 1. We will replace at least 50 of these prior to Unit 1 startup. An analysis justifying continued operation will be prepared for the remaining installed circuit breakers prior to Unit 1 startup. Of the remaining circuit breakers, we will replace all units for which we have not verified traceability at the next refueling outage.

We have not completed identification of safety-related circuit breakers installed in Unit 2 for which traceability cannot be verified. Action Item 5 will be implemented as requested for Unit 2.

6) Action Item 6 requires that information generated while performing action Items 1 through 5 be documented and maintained for a period of 5 years after all action items have been completed. We will implement action Item 6 as requested.

7) Action Item 7 specifies procurement requirements for molded-case circuit breakers installed in safety-related applications after August 1, 1988. Several molded-case circuit breakers that do not meet the criteria of action Item 7 (i.e., could not be traced to the circuit breaker manufacturer) were installed at Cook Nuclear Plant after August 1, 1988. The time delay between August 1, 1988, and receipt of NRC Bulletin No. 88-10 and the time required for us to complete action Item 1 of the bulletin created the situation where circuit breakers without verifiable traceability were installed in safety-related applications after August 1, 1988.

The molded-case circuit breakers installed in Unit 1 safety-related applications after August 1, 1988, that could not be traced to the circuit breaker manufacturer were identified during the evaluation performed under action Item 4. These circuit breakers will be replaced before Unit 1 startup.

Any molded-case circuit breakers installed in Unit 2 safety-related applications after August 1, 1988, that cannot be traced to the circuit breaker manufacturer will be identified during the action Item 4 evaluation for Unit 2. Action Items 2, 5 and 6 will be applied to these circuit breakers as outlined in the above responses.

Except for those cases described above, steps have been initiated to ensure that the criteria of action Item 7 will be met for future installations of molded-case circuit breakers in safety-related applications.

2) All holders of operating licenses are required to submit a report that summarizes available results of tests conducted in accordance with Items 3 and 5 of the actions requested within 30 days after startup from the first and second refueling outages beginning after March 1, 1989. For circuit breakers that pass these tests, the only information required is the number, manufacturer, model number, and to the extent possible the procurement chain of circuit breakers tested (summary report format is acceptable). For circuit breakers that fail these test(s), these reports should indicate the test(s) and the values of test parameter(s) at which the failure(s)

occurred, as well as the corresponding manufacturer, model number, and to the extent possible, the procurement chain.

Response

We do not plan to perform tests conducted in accordance with Items 3 and 5 of the actions requested. These circuit breakers will not be installed at Cook Nuclear Plant.

ATTACHMENT 2 TO AEP:NRC:1083A

Attachment 2 - Information on stored, spare, molded-case circuit breakers that could not be traced to the circuit breaker manufacturer in Item 1 of the actions requested.

Manufacturer	Model Number	Number	Procurement Source(s)
W	FB3015	7	*Construction Store Room Westinghouse Elec. Corp., Beaver, PA; *WESCO, Ft. Wayne, IN Westinghouse Elec. Corp., St. Louis, MO
W	FB3020	5	*Contruction Store Room
W	FB3030	12	*Construction Store Room Westinghouse Elec. Corp., Beaver, PA
W	FB3050	14	*Construction Store Room Westinghouse Elec. Corp., Duncan, SC; *WESCO, Monroeville, PA
W	FB3070	19	*Construction Store Room *WESCO, Columbus, OH *WESCO, Monroeville, PA
W	FB3090	10	*Construction Store Room *WESCO, Hammand, IN; Westinghouse Elec. Corp., Duncan, SC
W	FB3100	6	*Construction Store Room Westinghouse Elec. Corp., Duncan, SC; *WESCO, Ft. Wayne, IN
W	FB3125	11	*Construction Store Room *WESCO, Monroeville, PA
GE	TEB(20 amp)	50	**Farwell & Hendricks, Milford, OH

Manufacturer	Model Number	Number	Procurement Source(s)
GE	TEB(50 amp)	11	**Farwell & Hendricks, Milford, OH
GE	THED(60 amp)	2	Solidstate Controls, Columbus, OH **GESCO, Columbus, OH
GE	TED(80 amp)	2	Same as above
GE	TFK(125 amp)	2	Same as above
ITE	P1515	2	Comsip, Inc., Whittier, CA *Nunn-Royal Elec., Carson, CA
ITE	FJ3B225	2	*Exide Industrial Battery, Richmond, KY
ITE	JL2F400	2	*Exide Industrial Battery, Richmond, KY
Square D	FAL240501021	1	Power Conversion Products Inc., Crystal Lake, IL *Interstate Electric, Crystal Lake, IL
Square D	QOU325	1	Same as above
		TOTAL 159	

*Verifiable traceability was not obtained.

**Verifiable traceability is still being pursued.

ATTACHMENT 3 TO AEP:NRC:1083A

Attachment 3 - Information on molded-case circuit breakers that could not be traced to the circuit breaker manufacturer in Item 4 of the actions requested.

Manufacturer	Model Number	Total Number	Procurement Source(s)	Quantity	System
W	BA1020	2	*Construction Store Room;	1	Heat trace-train A (boric acid)
			*WESCO: Ft. Wayne, IN; Monroeville, PA; Columbus, OH	1	Heat trace-train B (boric acid)
W	FB3015	26	Same as above	1	Spare
				1	Heater (AB diesel generator lube oil filter)
				2	Shutoff valve (pressurizer relief valve)
				1	Starter (control rod hoist)
				2	Shutoff valve (boron injection)
				1	Shutoff valve (west containment spray pump)
				1	Suction valve (refueling water storage tank pump)
				1	Outlet valve (volume control tank)
				2	Shutoff valve (boron injeciton tank outlet)
				1	Valve (charging pumps to regenerative heat exchanger)

Manufacturer	Model Number	Total Number	Procurement Source(s)	Quantity	System
				1	Suction valve (refueling water storage tank)
				1	Valve (essential service water to containment spray heat exchanger)
				1	Valve (essential service water from containment spray heat exchanger)
				1	Valve (essential service water to component cooling heat exchanger)
				1	Valve (essential service water from component cooling heat exchanger)
				1	Valve (motor driven auxiliary feedwater to steam generator #1)
				1	Valve (motor driven auxiliary feedwater to steam generator #4)
				1	Valve (component cooling to hydrogen skimmer vent)
				1	Valve (component cooling from hydrogen skimmer vent)
				2	Heater (containment quad 4 instrument room ventilation unit)
				2	Air handler (ice condenser ventilation)
W	FB3030	5	Same as above	2	Auxiliary charcoal filter (lower containment ventilation)

Manufacturer	Model Number	Total Number	Procurement Source(s)	Quantity	System
				1	Oil lift pump (#3 reactor coolant pump thrust bearing)
				2	Spare
W	FB3040	3	Same as above	1	Ventilation unit (containment quad 3 instrument room)
				1	Crane (containment ice condenser)
				1	Ventilation unit (upper containment quad 4)
W	FB3050	4	Same as above	1	Distribution panel (boric acid heat trace)
				1	Transfer pump (south primary water)
				1	Supply unit (auxiliary building ventilation)
				1	Inverter (channel IV control room instrumentation)
W	FB3070	7	Same as above	2	Exhaust fan (control rod drive mechanism ventilation)
				1	Heater (upper containment quad 3 ventilation)
				1	Exhaust fan (lower containment quad 1 ventilation)
				1	Exhaust fan (lower containment quad 2 ventilation)

Manufacturer	Model Number	Total Number	Procurement Source(s)	Quantity	System
				1	Exhaust fan B (lower containment quad 4 ventilation)
				1	Exhaust fan A (lower containment quad 4 ventilation)
W	FB3100	2	Same as above	1	Distribution panel (local shutdown)
				1	600 volt ac motor control center (technical support center)
W	FB3125	1	Same as above	1	Exhaust fan (auxiliary building ventilation)
W	FB3150	2	Same as above	1	Pressurizer heaters (#43, #73, #74)
				1	Ventilation fan (containment hydrogen skimmer)
GE	THED(60 amp)	4	Solidstate Controls, Worthington, OH **GESCO, Columbus, OH	4	Inverters (control room instrumentation distribution)
GE	TED(80 amp)	4	Same as above	4	Same as above
GE	TFK(125 amp)	4	Same as above	4	Same as above
GE	TEB(20 amp)	30	**Farwell & Hendricks, Milford, OH	1	Recorders refueling water storage tank level (and reactor coolant temperature and pressure)
				1	Recorder (reactor coolant system wide range temperature)
				28	Spares

Manufacturer	Model Number	Total Number	Procurement Source(s)	Quantity	System
GE	TEB(50 amp)	6	**Farwell & Hendricks, Milford, OH	6	Spares

TOTAL 100

*Verifiable traceability was not obtained

**Verifiable traceability is still being pursued.