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Docket Nos. 50-348  
50-364

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

Gentlemen:

Joseph M. Farley Nuclear Plant - Units 1 and 2  
Nonconforming Molded-Case Circuit Breakers (NRC Bulletin 88-10)

By letter of March 31, 1989, Alabama Power Company informed the NRC that 112 molded-case circuit breakers (MCCBs) had been identified as being maintained as stored spares for future use in safety-related (Class 1E) applications. This letter also stated that these MCCBs were purchased from five different suppliers (parties other than the circuit breaker manufacturer) through seven purchase orders, and that Alabama Power Company had verified certificates of conformance to the requirements of the purchase orders had been received from the five suppliers. Subsequent to this submittal, three additional MCCBs were identified as being maintained as stored spares for future use in safety-related applications at the time of the inventory.

In summary, all 115 MCCBs are considered traceable to the manufacturer except for six MCCBs purchased from Exide Power Systems on one purchase order. As discussed in the Enclosure, Alabama Power Company requests relief from the requirements of Actions 4 and 5 of the bulletin on the basis that the one purchase order is not an indication of repeatable programmatic breakdowns in the Alabama Power Company procurement practices for Farley Nuclear Plant.

Unless directed to proceed with Actions 4 and 5 of the bulletin, Alabama Power Company does not plan to perform any additional actions in response to NRC Bulletin 88-10. Accordingly, this letter and the Enclosure provide the complete response to NRC Bulletin 88-10 for Farley Nuclear Plant.

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Enclosure

Alabama Power Company (APCo)  
Response to the Actions Requested in NRC Bulletin 88-10

1. NRC Requested Action:

All addressees are requested to perform the following review by March 1, 1989:

- a. Identify all molded-case circuit breakers (MCCBs) purchased prior to August 1, 1988, that are being maintained as stored spares for safety-related (Class 1E) applications or commercial grade MCCBs that are being maintained as stored spares for future use in safety-related applications; this includes MCCBs purchased from a circuit breaker manufacturer (CBM) or from any other source. If the number of these stored spare MCCBs is less than 50 at a nuclear plant site, then randomly select MCCBs purchased between August 1, 1983 and August 1, 1988 that have been installed in safety-related applications as replacements or modifications to form a minimum sample of 50 MCCBs per nuclear plant site.
- b. Verify the traceability of these MCCBs.
- c. Identify the number, manufacturer, model number, and to the extent possible the procurement chain for all those MCCBs identified in (1a) that cannot be traced to the CBM. For installed MCCBs, also identify each system in which they are/were installed.

APCo Response:

- a. All MCCBs purchased prior to August 1, 1988 that are being maintained as stored spares for safety-related (Class 1E) applications or commercial grade MCCBs that are being maintained as stored spares for future use in safety-related applications have been identified. The total number of these MCCBs determined to be in storage at the time of the initial inventory was 112. Subsequently, three additional MCCBs were identified as being stored for safety-related use at the time of initial inventory and were added to the total number of MCCBs to be verified as traceable.

The 115 MCCBs were purchased from six different suppliers through nine purchase orders. These suppliers were Combustion Engineering, Exide Power Systems, Gamma Metrics, Gould, Telemecanique and Westinghouse. The following table summarizes the nine purchase orders and

the total number of MCCBs associated with each purchase order:

<u>Supplier</u>	<u>Purchase Order</u>	<u>No. of MCCBs in Stock</u>
Combustion Engineering	QP-0410	4
Exide Power Systems	QP-1129	6
Gamma Metrics	QP-0993	1
Gould	24634	1
Telemecanique	QP-0377	1
	QP-0439	1
	QP-2498	97
Westinghouse	QP-2766	2
	QP-2837	2

b. NRC Bulletin 88-10 defines verifiable traceability as:

"Documented evidence such as a certificate of compliance that establishes traceability of purchased equipment to the CBM. If the certificate of compliance is provided by any party other than the CBM, the validity of such certificate must be verified by the license or permit holder through an audit or other appropriate means."

The bulletin also defined the circuit breaker manufacturer (CBM) as the manufacturing facility that actually produced the circuit breaker being purchased.

NRC clarifications expanded the definition of traceability and the function of the audit in verifying traceability. The clarifications are repeated as follows:

The Staff requires traceability of MCCBs to their CBM to be specifically addressed by audited and verified documentation in the utility's possession such as a certificate of compliance (COC). If procurement of MCCBs was direct to the CBM and the CBM has been audited in accordance with Appendix B, then the COC applicable to that procurement represents verifiable traceability for the set of MCCBs on the order. As stated in Attachment 2 to the Bulletin, certification from other than the CBM should be verified by audit or other appropriate means. Audit of an intermediary supplier must assure that the suppliers' MCCBs are consistently traceable to the CBM. Results of recent audits could support verifiable traceability only if traceability of MCCBs to their CBM for each purchase order was specifically addressed. The Staff will permit some flexibility in establishing verifiable traceability as suggested by the phrase "or other appropriate means" in the Attachment 2 definition. The Staff suggested joint audits as an acceptable alternative method.

Based on these clarifications, Alabama Power Company requested an extension to the schedule required to complete Action 1b of the bulletin in our March 31, 1989 letter in order to perform an audit of each of the purchase orders placed with suppliers and to provide complete conformance with the NRC request. The purpose of the audits was to assure that the suppliers' MCCBs are consistently traceable to the CBM based on the NRC clarification. This was accomplished by reviewing each supplier's supporting documentation to trace the MCCBs for each purchase order to the CBM. Additionally, where the audits may not have demonstrated traceability based on the review of documentation, other appropriate means were pursued (i.e., return the MCCBs to the manufacturer for inspection to determine if the MCCBs had been refurbished).

The following summarizes the results of actions pursued since March 31, 1989:

#### Combustion Engineering

The four breakers from Combustion Engineering were supplied by Electro-Mechanics, Inc. One of the four breakers came out of Electro-Mechanics' stock and the other three were received by Electro-Mechanics from The L. E. Whelan Company, an authorized distributor of Heinemann. The Whelan Company provided a letter describing that the three breakers were shipped from inventory and were genuine original equipment made by Heinemann. However, purchase records were not available as supporting documentation.

The fourth breaker that came from Electro-Mechanics' stock could not be shown by documentation during the audit to be clearly traceable to Heinemann, the CBM. Based upon the above, Alabama Power Company shipped these four MCCBs to Heinemann. Heinemann concluded that the MCCBs are of original Heinemann manufacture, do not show any evidence of tampering and have the original riveting. Heinemann provided a letter to Alabama Power Company documenting the results of their inspection. Alabama Power Company considers this verification by Heinemann as an alternate appropriate means for verifying the traceability of the MCCBs and ensuring that the MCCBs have not been refurbished. Thus, Alabama Power Company considers these MCCBs to also meet the definition of verifiable traceability.

#### Exide Power System

Based upon the audit of the purchase order to Exide Power Systems for six MCCBs, Alabama Power Company considers these MCCBs not to be traceable by documentation to the CBM. Exide purchased the MCCBs from Kentucky Lighting and Supply (KLS) who in turn purchased them from Breaker Overload. Exide provided documentation of their order to KLS, but neither KLS nor Breaker Overload could provide documentation of the purchase.

Additionally, Exide was using KLS to provide equipment for which they had not been qualified to provide to Exide, and Exide did not receive a COC from KLS as its QA program required.

During discussions with Siemens, the CBM, regarding the traceability of these six MCCBs, Siemens also offered to inspect the MCCBs for potential refurbishment. Alabama Power Company shipped the MCCBs to Siemens. Siemens performed a visual examination of the MCCBs and concluded that the MCCBs have probably been in service at some point, and may have been refurbished or tampered with by parties other than the original manufacturing location. Therefore, the Siemens inspection supports the non-traceable conclusion of the audit.

#### Gamma Metrics

The audit of the purchase order to Gamma Metrics for one MCCB found documentation that verified traceability to Heinemann, the CBM, because the audit produced a Heinemann COC that had been provided to Gamma Metrics. However, investigation during the audit demonstrated that the Heinemann COC received by Gamma Metrics with the MCCB was not valid. During discussions with Heinemann's Quality Assurance Manager regarding the traceability of this MCCB, Heinemann offered to inspect and test the MCCB as necessary to verify it was not defective or had not been refurbished. Accordingly, Alabama Power Company shipped the MCCB to Heinemann. Heinemann visually inspected the MCCB and concluded that the MCCB was manufactured by Heinemann Electric Company and "...has not been tampered with, or has been altered in any way by anyone, but the manufacturer." Alabama Power Company considers the verification by Heinemann as an alternate appropriate means for verifying the traceability of the MCCB and ensuring that the MCCB has not been refurbished. Thus, Alabama Power Company considers this MCCB to also meet the definition of verifiable traceability.

#### Gould

The Gould breaker was supplied with a COC from Gould (presently Telemecanique). Telemecanique has supplied Alabama Power Company with supporting documentation to demonstrate traceability to the CBM. Therefore, Alabama Power Company considers that this breaker meets the definition of verifiable traceability established in accordance with the bulletin.

Telemecanique

The results of the audit show that supporting documentation was available to demonstrate traceability to the CBM for 98 of the 99 MCCBs that were supplied by Telemecanique. Even though one MCCB purchased from Telemecanique was not clearly traceable to Siemens, the audit found that only Siemens MCCBs are purchased by Telemecanique and are consistently traceable to Siemens, the CBM. Therefore, Alabama Power Company considers that each of the above 99 MCCBs meet the definition of verifiable traceability.

Westinghouse

The results of the audit show that supporting documentation was also available to demonstrate traceability to the CBM for all four of the MCCBs that were supplied by Westinghouse. Therefore, Alabama Power Company considers that these four MCCBs meet the verifiable traceability definition. It should be noted that in April 1989, one Westinghouse breaker was installed in the vital distribution system (7.5KVA inverter) subsequent to the initial inventory.

- c. The six MCCBs purchased from Exide Power Systems are not considered traceable to the CBM. The manufacturer of the MCCBs was ITE - Imperial and ITE - Gould, predecessors to Siemens. The Siemens visual examination verified the MCCBs to be two KM2F800 MCCBs, three JL3P400 MCCBs, and one ET81127 MCCB. (These are manufacturer catalog numbers.) The response to Action 1b above describes, to the extent possible, the procurement chain of these MCCBs. It should be noted that none of these six MCCBs have been installed in Farley Nuclear Plant, nor are they currently included as stored spares.

2. NRC Requested Action:

All holders of operating licenses who identify installed MCCBs per item 1 above or item 4 below that cannot be traced to a CBM are requested to prepare, within 30 days of the completion of each item, an analysis justifying continued operation until items 1 through 5 of the actions requested in this bulletin have been completed.

APCo Response:

This action was not required because the number of MCCBs identified in response to Item 1 was greater than 50, which precluded the need to evaluate installed MCCBs. However, Alabama Power Company also verified that no other MCCBs supplied by Exide Power Systems as replacements have been installed in Farley Nuclear Plant.

3. NRC Requested Action:

All addressees who identify 80 percent or more MCCBs traceable to the CBM per item 1 above are requested to test the MCCBs that are not traceable to the CBM in accordance with the program described in Attachment 1. Any installed MCCBs that fail any of

these tests should be replaced with MCCBs that meet the criteria of item 7 of the actions requested or MCCBs that pass all tests in accordance with the testing program described in Attachment 1. If more than 10 percent of the MCCBs tested fail any of the tests described in Attachment 1, continue with item 4; otherwise, proceed to item 6 of the actions requested.

Holders of operating licenses are requested to complete this testing program before startup from the first refueling outage beginning after March 1, 1989. Holders of construction permits are requested to complete this testing program before fuel load.

APCo Response:

Based on the actions taken in response to Action 1, APCo has determined that 109 of 115 MCCBs being maintained as stored spares for safety-related use are traceable to the CBM. Therefore, more than 80% of the MCCBs identified in Action 1 are traceable to the CBM. In accordance with the bulletin, APCo is requested to test the six MCCBs in accordance with the testing program described in Attachment 1 to the bulletin and continue with Action 4 if more than 10 percent of the MCCBs tested fail any of the tests. However, the NRC clarifications state that the NRC will not require the non-traceable MCCBs to be tested as long as the non-traceable MCCBs are considered failed within the context of the bulletin (i.e., Alabama Power Company must proceed with Actions 4 and 5 of the bulletin). The NRC clarifications further stated that the NRC may relieve utilities from Action Items 4 and 5 and instead require only the removal from stock of the non-traceable MCCBs provided all non-traceable MCCBs can be accounted for and the circumstances contributing to the non-traceable stock do not suggest repeatable programmatic breakdowns of utility procurement practices.

It should be noted that the six non-traceable MCCBs have been tested in accordance with the program described in Attachment 1 of Bulletin 88-10. The breakers were shipped to Wyle Laboratories for testing in accordance with Wyle Test Procedure No. 6110-26, Revision C, "Test Procedures for Molded Case Circuit Breakers." Preliminary results of the testing by Wyle indicate that five of the six breakers successfully completed the test program.

In light of the NRC clarifications, APCo requests that the NRC relieve Farley Nuclear Plant from the requirements of Actions 4 and 5 of the bulletin. The six MCCBs represent one purchase order in which the appropriate controls were not exercised by the supplier of the MCCBs. This one purchase order with Exide Power Systems was for replacement MCCBs for the Class 1E auxiliary building battery chargers at FNP. None of these six MCCBs have been installed in Farley Nuclear Plant. Furthermore, APCo has reviewed our procurement records for the purchase of other MCCBs from Exide and verified that no other MCCBs purchased from Exide as replacements have been installed in FNP. It should be noted that any MCCBs which do not successfully complete the test program will not be returned to stock, thereby preventing any possibility of their inadvertent use in Farley Nuclear Plant.

4. NRC Requested Action:

All addressees who identify less than 80 percent of the MCCBs traceable to the CBM per item 1 above or who identify a failure rate of more than 10 percent for the MCCBs tested per item 3 above are requested to perform the following actions:

- a. Identify all MCCBs that have been purchased between August 1, 1983 and August 1, 1988, and installed in safety-related applications as replacements or installed during modifications.
- b. Verify the traceability of these MCCBs.
- c. Identify the number, manufacturer, model number, system in which they are/were installed, and to the extent possible, the procurement chain for all those MCCBs identified in (4a) that cannot be traced to the CBM.

APCo Response:

APCo has not performed any of these actions. As discussed above in the response to Action 3, APCo requests relief from these requirements on the basis that only six of 115 MCCBs being maintained as stored spares for future use in safety-related applications resulted in non-traceable MCCBs. These six MCCBs were supplied by one vendor on one purchase order.

5. NRC Requested Action:

All addressees who identify installed MCCBs that cannot be traced to the CBM per item 4 above are requested to replace these MCCBs with components that meet the criteria of item 7 of the actions requested or to test them in accordance with the program described in Attachment 1; MCCBs that fail any of these tests should be replaced with MCCBs that meet the criteria of item 7 of the actions requested or MCCBs that pass all tests in accordance with the test program described in Attachment 1.

Holder of operating licenses are requested to replace or to test at least one-half, or all if the total number is less than 75, of these installed MCCBs before startup from the first refueling outage beginning after March 1, 1989. The remaining MCCBs should be replaced or tested before startup from the second refueling outage beginning after March 1, 1989.

APCo Response:

APCo has not performed any of these actions and, as discussed in the response to Action 3, has requested relief from these requirements.

6. NRC Requested Action:

Information generated while performing the actions requested in items 1, 2, 3, 4, and 5 above should be documented and maintained for a period of 5 years after the completion of all requested actions.

APCo Response:

The information generated while performing actions requested in response to the bulletin has been documented and will be maintained for a period of five years after the completion of all requested actions.

7. NRC Requested Action:

With the exception of actions taken in response to items 3 and 5 of the actions requested above, MCCBs installed in safety-related applications after August 1, 1988 should be:

- a. Manufactured by and procured from a CBM under a 10CFR50, Appendix B, program; or
- b. Procured from a CBM or others with verifiable traceability to the CBM, in compliance with applicable industry standards, and upgraded to safety-related by the licensee or others using an acceptable dedication program. The NRC encourages addressees to significantly upgrade their dedication programs through a joint industry effort to ensure their adequacy and consistency. The NRC will monitor these industry initiatives and if they are not sufficient or not timely, or if problems with the dedication of commercial grade equipment for safety-related use continue, the NRC will take appropriate regulatory actions.

APCo Response:

Since the MCCBs currently being maintained as stored spares for future use in safety-related applications were purchased as safety-related under a 10CFR50, Appendix B program with verifiable traceability to the CBM, the above requested action is met for the stored spare MCCBs. The current APCo procurement program meets the requirements of 7.b above.

With respect to the dedication process by which commercial grade (non-Class 1E) equipment is upgraded to safety-related (Class 1E) and is thereby considered qualified for use in safety-related applications, the APCo procurement process for Farley Nuclear Plant contains appropriate measures to accomplish a technical evaluation to determine the characteristics critical to fulfilling the safety function(s) and an acceptance process to ensure these critical characteristics are confirmed. Accordingly, APCo believes this process meets the intent of an acceptable dedication program described in the bulletin. Furthermore, APCo is closely following, through NUMARC, the industry efforts to address the adequacy and consistency of dedication programs for commercial grade items.

8. NRC Requested Action:

Addressees that cannot meet the schedule for the actions requested and/or the corresponding reporting requirements should justify to the NRC their proposed alternative schedule.

APCo Response:

By letter of March 31, 1989, APCo requested an extension to the schedule required to complete Action 1 of the bulletin. This response is provided in accordance with the schedule proposed in the March 31, 1989 letter.