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SUBJECT: Forwards final response to NRC Bulletin 88-010 & Suppl 1,
 "Nonconforming Molded-Case Circuit Breakers."

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WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

161-02724-WFC/JMQ
December 27, 1989

Docket Nos. STN 50-528/529/530

Document Control Desk
U. S. Nuclear Regulatory Commission
Mail Station P1-37
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- References:
- (1) Letter from NRC to all Holders of Operating Licenses or Construction Permits for Nuclear Power Reactors dated November 22, 1988.
Subject: NRC Bulletin 88-10, "Nonconforming Molded-Case Circuit Breakers"
 - (2) Letter from D. B. Karner, APS, (161-01808), to NRC dated March 30, 1989. Subject: Response to NRC Bulletin 88-10, "Nonconforming Molded-Case Circuit Breakers"
 - (3) Letter from NRC to NUMARC dated February 17, 1989.
Subject: NRC Comments on NUMARC's Draft Clarification of NRC Bulletin 88-10
 - (4) Letter from NRC to all Holders of Operating Licenses or Construction Permits for Nuclear Power Reactors dated August 3, 1989.
Subject: NRC Bulletin 88-10, "Supplement 1 Nonconforming Molded-Case Circuit Breakers"

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Response to NRC Bulletin 88-10 and Supplement 1, Nonconforming
Molded Case Circuit Breakers
File: 89-056-026

Attached is the PVNGS final response to NRC Bulletin 88-10.

If you have any questions on this matter, please call Mr. A. C. Rogers of my staff at (602) 340-4041.

Sincerely,



Document Control Desk
U. S. Nuclear Regulatory Commission
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161-02724-WFC/JMQ
December 27, 1989

WFC/JMQ/jle


Attachment

cc: J. B. Martin (all w/attachment)
M. J. Davis
T. L. Chan
T. J. Polich
G. W. Knighton
A. C. Gehr
A. H. Gutterman

161-02724-WFC/JMQ
December 27, 1989

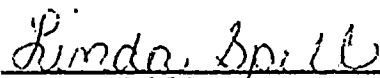
STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, W. F. Conway, represent that I am Executive Vice President - Nuclear, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true and correct.



W. F. Conway

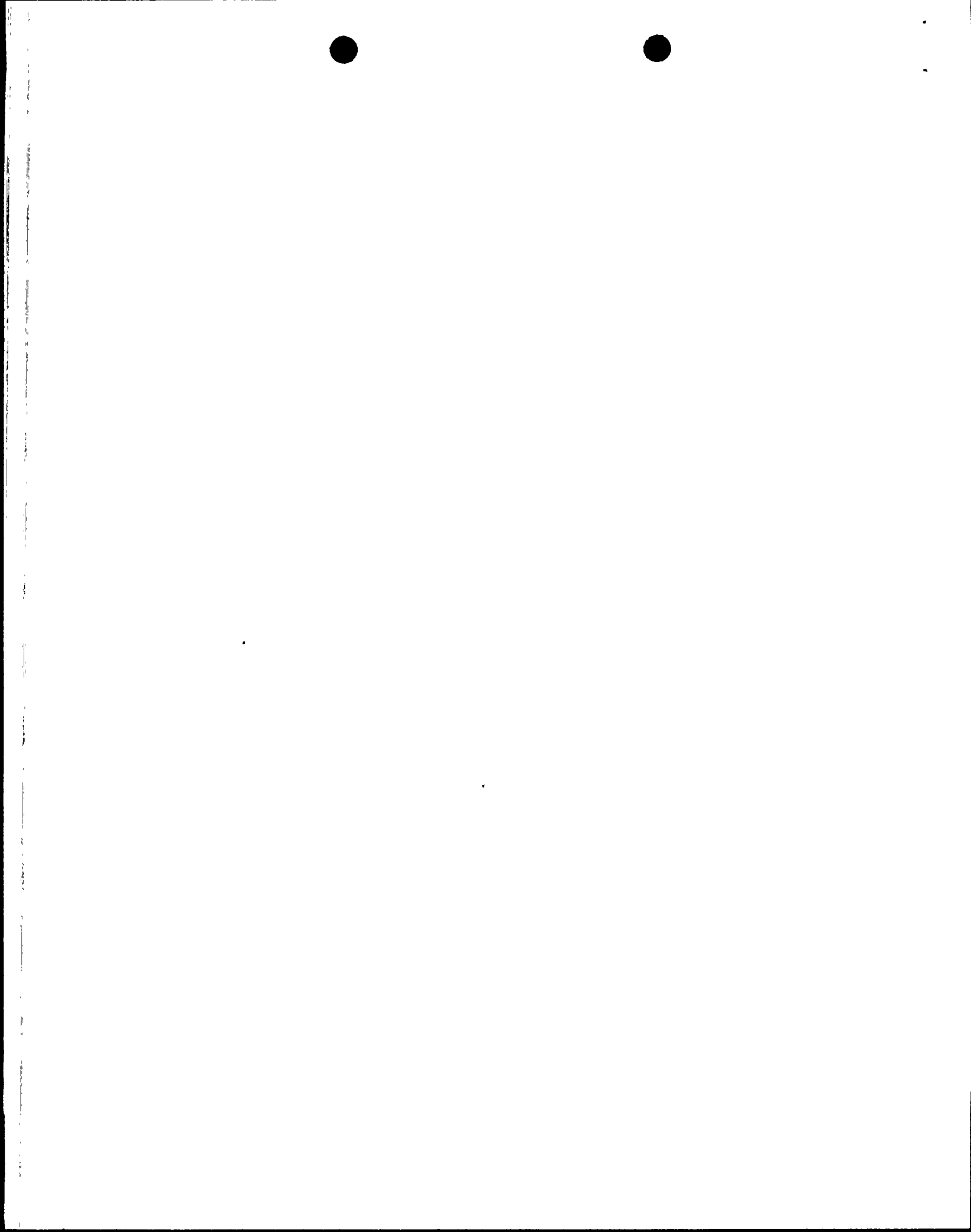
Sworn to before me this 26 day of December, 1989.



Notary Public

My Commission Expires:

My Commission Expires June 5, 1992



Response to NRC Bulletin 88-10 and Supplement 1:
Nonconforming Molded-Case Circuit Breakers

The following summarizes the actions taken by APS for each of the Bulletin's "Actions Requested," Item Nos. (AI) 1 thru 8 of Bulletin 88-10.

- 1-Per this requested action item, the Molded Case Circuit Breakers (MCCBs) stored in the PVNGS warehouse, classified for use or potential use in safety related applications, were identified. The total number of CBs identified was 1309, thus exceeding the required minimum sample of 50 CBs. As a result, no installed CBs were required to be removed from the plant safety related systems to form the 50 CB minimum required sample. The traceability and/or acceptance status, as defined within the context of the Bulletin, was verified for 1240 CBs of the 1309 CBs identified. Of the 1240 CBs, 159 were received prior to August, 1983. This effort resulted in the traceability/acceptance of 94.73% of the CB (i.e., 1240) and the rejection of 5.27% of the CBs (i.e., 69). Attachment 1 includes a complete listing of the non-traceable CBs with all the associated information (i.e., manufacturer, model number and the procurement chain when available).
- 2-This requested action item is considered not applicable to PVNGS since no installed CBs were recovered per AI 1. In addition, a justification for continued operation will not be required for the case of the non-traceable CB described in the response to AI 5 below. This CB was discovered during the current Unit 1 outage and will be removed prior to the start-up of the Unit 1.
- 3-Based on the 80% or more CB traceability to the Circuit Breaker Manufacturer (CBM), this action item requires testing of the non-traceable CBs per the test criteria as set forth in the Bulletin. Per Reference 3 (paragraphs 4 and 5), the NRC intent for the testing of non-traceable CBs is to demonstrate the proper operability of these CBs in the case where proper replacements are not readily available. It is stated, however, that "The Staff will not require utilities to test stored non-traceable MCCBs but will require, in lieu of testing, all non-traceable breakers be considered failed within the context of the Bulletin." As a result, APS has opted not to perform any testing on the non-traceable CBs identified in the response to AI 1, but rather to remove the identified non-traceable CBs from PVNGS warehouse stock. In addition, per the stated NUMARC recommendation, APS will also quarantine the non-traceable CBs for the requested one year period.
- 4-This requested action item requires that if more than 10% of the non-traceable CBs fail the proposed Bulletin's tests, all molded-case CBs purchased between August 1, 1983 and August 1, 1988, be identified, traceability verified and all associated information identified (i.e., model number, manufacturer, installation application and procurement chain). In lieu of testing, PVNGS has considered that all non-traceable CBs failed the Bulletin's required tests.

In response to this item, reference is again being made to the Staff's clarifications of Bulletin 88-10 (Reference 3). Per paragraph 4, "...Given the existing language of Bulletin 88-10, this requires utilities with even a small percentage of non-traceable breakers to proceed with AIs 4 and 5. The Staff will, on a case by case basis only, consider the circumstances of individual utilities with a very small number of 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 the utility procurement practices, the staff may relieve utilities from AI's 4 and 5 and instead requires only the removal from stock of the non-traceable MCCBs...."

Based on the above provision, APS has met the intent of this action item, based on the following justification and other actions taken in support of Bulletin 88-10 and Supplement 1:

- a) The high percentage of traceable/acceptable CBs (i.e., 95%) stored in PVNGS' warehouse, for safety related (SR) service totaling 1240 CBs, reflects a very high confidence factor in the procurement, storage and application programs of safety related (SR) CBs at PVNGS.
- b) APS assessed and accounted for the installed CBs, that were procured under non-traceable purchase orders, identified as a result of the PVNGS warehouse inspections (see AI 5).
- c) The 5% (69) non-traceable CBs are divided into two categories; MRS (Material Returned to Stores) rejects (21 CBs) and supplier rejects (48 CBs).

The MRS CBs were returned to the warehouse stock, after being tested for acceptability per PVNGS test procedures, either from PVNGS original plant equipment or after being released from the warehouse for the plant's use. Documentation relating the MRS CBs to a particular purchase order does not exist, thus deeming these CBs as non-traceable per the guidelines of Bulletin 88-10.

Forty two of the non-traceable CBs from the supplier rejects category were procured from three of PVNGS' major equipment suppliers of safety related equipment: Combustion Engineering (CE, the NSSS supplier), Cooper (Safety Related Diesel Generator supplier) and Elgar (Inverter supplier). All of the non-traceable CBs were procured as class IE SR from an approved PVNGS vendor and with a certificate of compliance. The other six CBs that belong to the supplier rejects category were procured from a local distributor (J. E. Redmond) thru a regional distributor (MAG-TROL). Although both vendors produced traceability and procurement records for only selling new and factory originated CBs, their records were not kept for more than five years. Due to the procurement date of the six CBs (August, 1983) these CBs were deemed non-traceable, since no traceability documentation was found.

The described circumstances and non-traceability cases definitely do not suggest repeatable programmatic breakdowns of PVNGS procurement practices. As stated earlier and during the performance of AI 1, it was clearly identified that a great majority of the CBs were traceable to the CBM.

- d) As indicated in Reference 2, during the five years covering August 1, 1983, through August 1, 1988, there were only four Engineering Change Evaluations (ECEs) for commercial grade dedication of molded-case circuit breakers. In all of the four identified cases the molded-case CBs were traced back to the CBM. There was another commercial grade dedication case, however, that identified non-automatic type CBs, classified as molded-case switches which did not contain any overcurrent trip mechanisms. These switches were determined to be non-traceable and, although were not considered to be within the scope of the Bulletin, were addressed immediately upon discovery and replaced in all PVNGS' units per PNVGS internal procedures, regulatory and reportability requirements.

5-This requested action requires the replacement of all non-traceable molded-case CBs installed in safety related systems with CBs that meet the traceability criteria of Bulletin 88-10. As a result of this action item, PVNGS has identified only two cases of non-traceable molded-case CBs, resultant from the warehouse inspections. In one case, two CBs, although classified for safety related applications, were issued for use in a non-safety related application as part of a PVNGS temporary modification. In the second case, two CBs were issued for use in a safety related application in Unit 1. As a result, a PVNGS work order has been issued to replace the installed CB during the current PVNGS Unit 1 outage. All the other non-traceable molded-case CBs, part of the purchase orders listed in Attachment 1, are accounted for and currently quarantined in the PVNGS warehouse, as previously indicated in the response to AI 1 above. This response also meets the NRC position "4" requirements of Bulletin 88-10, Supplement 1.

6-This requested action requires the documentation and maintenance of the generated information while performing the required actions for Bulletin 88-10 for a period of five years. As requested, PVNGS will be maintaining all the generated documentation in an auditable form.

7-This requested action requires that molded-case CBs installed after August 1, 1988, be procured and dedicated per the Bulletin's stated criteria. As a result of this requested action, PNVGS procurement and dedication practices for molded-case CBs are being revised to meet or exceed the criteria delineated in Bulletin 88-10 (delineated in Section 4 of the attached report). In addition, per the response to AI 5 above, non-traceable molded-case CBs were identified and replaced.

8-This requested action item is for addressees who cannot meet the schedule for responding to the Bulletin by April 1, 1989, to provide and justify to the NRC their proposed alternative schedule. As a result, per Reference 2, APS requested an extension for submitting the final Bulletin's response by December 31, 1989.

Based on the above actions taken, the intent and requirements of NRC Bulletin 88-10 and Supplement 1 have been met. Per Bulletin 88-10 and Supplement 1 reporting requirements, APS confirms that only molded-case CBs that meet the requirements of AI 7 above, are being maintained as stored spares for future use in safety related applications. In addition, the information pertaining to the non-traceable CBs is being provided as part of the Attachment 1. APS also confirms that items 1 thru 7 of the Bulletin's requested actions have been satisfactorily addressed and/or completed.

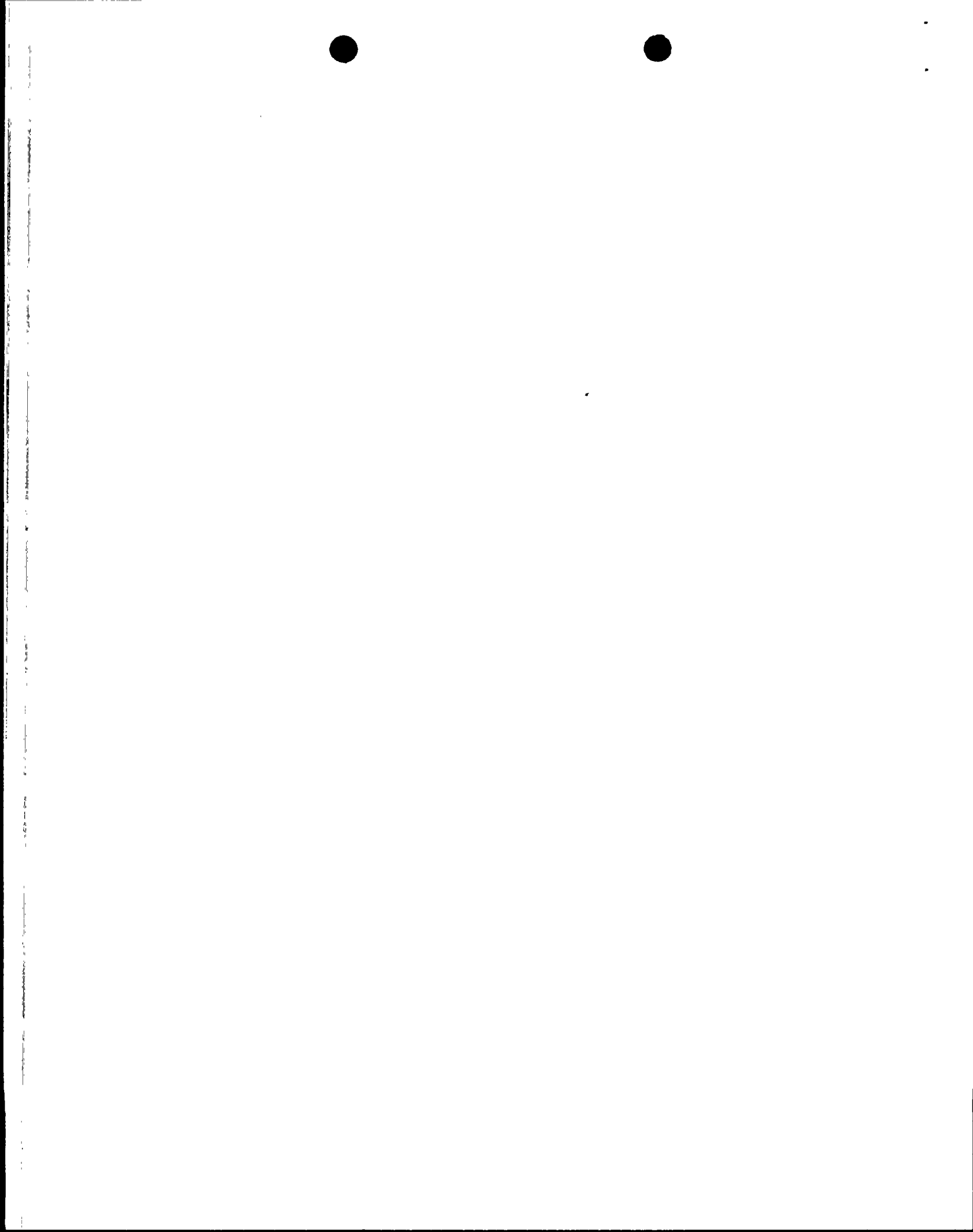
ATTACHMENT 1

NRC BULLETIN 88-10 SAFETY RELATED MOLDED CASE CIRCUIT BREAKERS

NON-TRACEABLE REJECTION SUMMARY

<u>ANPP PKG#</u>	<u>Class/ Item 4441-</u>	<u>QTY</u>	<u>Purchase Order/ Material Receiving Request</u>	<u>DESCRIPTION</u>	<u>REJECTION BASIS</u>
086	9	5	60117307/ 861006895	AM2-A3A-10-2 HEINEMANN No S/N*	C-E could not provide traceability to the CBM (Reference C-E Letter Ext - 89-144, dated 09/01/89)
004C	11	1	MRS23709	THED126015 GE 15A, 2POLE S/N N3709000046	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.
004C	11	1	MRS24548	THED126015 GE 15A, 2POLE S/N N3709000005	Unable to locate MRS copy.
050	11	1	MRS18347	THED126015 GE 15A, 2POLE S/N N4609100004	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.
021	14	1	F174639/ 206948	AM2-A3A-15-2 HEINEMANN (For QSPD System) No S/N	C-E could not provide traceability to the CBM (reference C-E Letter Ext-89-144, dated 09/01/89)
008	14	1	13NM001A/ 177470	AM2-A3A-15-2 HEINEMANN (for QSPD System) No S/N	C-E could not provide traceability to the CBM (reference C-E letter Ext-89-144, dated 09/01/89)
077	14	4	60110023/ 860814432	AM2-A3A-15-2 HEINEMANN (for QSPD System) No S/N	C-E could not provide traceability to the CBM (reference C-E letter Ext-89-144, dated (09/01/89)

*S/N - Serial Number



<u>ANPP PKG#</u>	<u>Class/ Item 4441-</u>	<u>QTY</u>	<u>Purchase Order/ Material Requiring Request</u>	<u>DESCRIPTION</u>	<u>REJECTION BASIS</u>
050	34	2	MRS18347	THED126090 GE 90A, 2POLE S/N's N6762390048 N6762390052	Material returned from unit and returned to stock. Traceability to purchase order could not be established.
069	71	4	33700299/ 860776212	THJK426F000 GE No S/N	Elgar's supplier GESCO cannot supply traceability to GE (Reference Elgar letter dated 10/18/89)
067	71	6	33700255/ 85047745	THJK426F000 GE No S/N	Elgar's supplier GESCO cannot supply traceability to GE (Reference Elgar letter dated 10/18/89)
053	123	2	NO PO	CD2-A3-DU HEINEMANN 15A, 240VAC No S/N	Breaker stored without traceability to a PO or MRS.
101	123	3	60140015/ 871201038	CD2-A3-DU HEINEMANN No S/N	C-E could not provide traceability to the CBM (reference C-E letter Ext-89-144, Dated 09/01/89)
013	123	1	F169196/ 205405	CD2-A3-DU HEINEMANN No S/N	C-E could not provide traceability to the CBM (Reference C-E letter Ext-89-144, dated 09/01/89)
041	140	1	F180818/ 218328	2-01E-028-038 HEINEMANN S/N 8612-2	Cooper could not provide traceability to the CBM
027	141	1	F176575/ 204135	TED124070 GE 70A, 2POLE S/N 128770	Source Surveillance (Cooper) - unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
028	141	1	F176577/ 204135	2-01E-028-030 GE 70A, 2POLE S/N 128771	Source Surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)

*S/N - Serial Number

<u>ANPP PKG#</u>	<u>Class/ Item 4441-</u>	<u>QTY</u>	<u>Purchase Order Material/ Requiring Request</u>	<u>DESCRIPTION</u>	<u>REJECTION BASIS</u>
049	141	1	MRS18315	TED124070 GE 70A, 2POLE No S/N	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.
027	142	1	F176575/ 208809	2-01E-028-026 HEINEMANN 5A, 1POLE No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
028	142	1	F176577/ 205422	2-01E-028-026 HEINEMANN 5A, 1POLE No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
028	143	1	F176577/ 204134	2-01E-028-017 HEINEMANN 1163A No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
097	143	6	60133325/ 861018400	2-01E-028-017 HEINEMANN 1163A No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
027	143	1	F176575/ 204135	2-01E-028-017 HEINEMANN 1163A No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
050	240	1	MRS18347	THED113CB020 GE 20A, 1POLE S/N N4651300010	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.
046	260	1	MRS18303	THED136015N GE 15A, 1POLE S/N N780T280003	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.

*S/N - Serial Number

<u>ANPP PKG#</u>	<u>Class/ Item 4441-</u>	<u>QTY</u>	<u>Purchase Order/ Material Requiring Request</u>	<u>DESCRIPTION</u>	<u>REJECTION BASIS</u>
100	484	3	60139040/ 871162288	N852-103-08 GE No S/N	Elgar's supplier GESCO cannot supply traceability to GE (Reference Elgar letter dated 10/18/89)
054	564	3	33400041/ 830229361	TEC36015S GE 15A, 3POLE No S/N	J. E. Redmond's supplier, Magtrol unable to provide traceability to the CBM. Both suppliers maintain their PO records for a period of 5 years; PO was issued in 1983.
054	568	3	33400041/ 830229361	TEC36050S GE 50A, 3POLE No S/N	J. E. Redmond's supplier, Magtrol unable to provide traceability to the CBM. Both suppliers maintain their PO records for a period of 5 years; PO was issued in 1983.
051	576	1	MRS23745	THED136050 GE 50A, 3POLE No S/N	Material returned from unit and returned to stock. Traceability to purchase order could not be established.
052	576	1	MRS24625	THED136050 GE 50A, 3POLE S/N N890T410007	Material returned from unit and returned to stock. Traceability to purchase order could not be established.
046	576	1	MRS18303	THED136050 GE 50A, 3POLE No S/N	Material returned from unit and returned to stock. Traceability to purchase order could not be established.
048	577	2	MRS18314	THED136070 GE 70A, 3POLE QTY 1 No S/N S/N N1095970010	Material returned from unit and returned to stock. Traceability to purchase order could not be established.

*S/N - Serial Number

<u>ANPP</u> <u>PKG#</u>	<u>Class/</u> <u>Item</u> <u>4441-</u>	<u>QTY</u>	<u>Purchase</u> <u>Order/</u> <u>Material</u> <u>Requiring</u> <u>Request</u>	<u>DESCRIPTION</u>	<u>REJECTION BASIS</u>
006	600	1	13MM018/ 191962	55519 ITEM 9 WESTINGHOUSE EB1015 No S/N	Source surveillance (Cooper) unable to establish traceability to the CBM. (Reference letter 028-01814 - WPP/MDF)
002A	604	2	MRS18311	THFK236070 GE 70A, 3POLE No S/N	Unable to locate MRS copy
006	615	1	MRS18303	THED136070N GE 70A, 3POLE S/N N890T410016	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.
047	616	3	MRS18310	THFK236125 GE 125A, 3POLE Qty 1 No S/N	Material returned from unit and returned to stock. Traceability to purchase order could not be esta- blished.

*S/N - Serial Number

