

March 31, 1989 Fort St. Vrain Unit No. 1 P-89104 Public Service Company of Colorado P.O. Box 840 Denver, CO 80201- 0840

R.O. WILLIAMS, JR. SENIOR VICE PRESIDENT NUCLEAR OPERATIONS

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

Docket No. 50-267

SUBJECT: PSC Response to NRC

Bulletin 88-10,

"Nonconforming Molded-Case Circuit Breakers"

REFERENCE: NRC Bulletin 88-10,

dated 11/22/88,

(G-88469)

Dear Sirs:

NRC Bulletin 88-10 (NRCB 88-10) requested that all holders of operating licenses or construction permits for nuclear-power reactors take actions to provide reasonable assurance that molded-case circuit breakers (CBs) purchased for use in safety-related applications, without verifiable traceability to the circuit-breaker manufacturer (CBM), can perform their safety function. The actions required, included reviewing traceability of all CBs stored for safety-related applications, identifying the location where all non-traceable CBs purchased in the time frame of August 1, 1983, to August 1, 1988, were installed, and testing if applicable. All holders are required to provide a written report summarizing their review findings by April 1, 1989.

DISCUSSION:

PSC Procedures provide requirements and guidelines for the evaluation of procurement documents for purchasing equipment, parts, or services for use at Fort St. Vrain (FSV). Guidelines for procurement of commercial-grade items are included in ENG-16. These guidelines are similar to EPRI NP-5652, "Guidelines for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications" (NCIG-PSC's initial-dedication practice, for circuit breakers purchased from commercial-grade vendors/suppliers, required electrical testing of all CBs before the CBs could be stocked for safety-related applications. Later, this practice was modified to test the CBs before installation. Electrical testing, consisting of overcurrent and instantaneous current-trip tests, per NEMA AB 2-1984 was performed on these breakers. No failures have occurred to date. These electrical tests demonstrated that the CBs could perform their intended function, which is to protect the electrical conductor against overloads. The mechanical test, the contact-resistance test. the hold-in test, and the overload test, specified in Attachment 1 (NRCB 88-10), are therefore not deemed necessary for dedication of commercial-grade CBs. As a further improvement of PSC's procurement program, the dielectric test will be added to dedication practices. The dielectric test will be controlled by PSC's Restricted Materials/Components List as described in PSC Memo NFS-89-0144. Breakers currently being stored for safety-related applications, that were purchased after January 1, 1983, and are not traceable to the CBM, will be tested per Attachment 1 of NRCB 88-10.

NRC 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 CBs that meet the criteria of Actions Requested Item 7 of the actions requested are being maintained as stored spares for future use in safety-related applications.

Actions Requested Item 7 requires that with the exception of actions taken in response to Actions Requested Items 3 and 5 molded-case CBs installed in safety-related applications after August 1, 1988 should be:

a. Manufactured by and procured from a CBM under a 10 CFR 50, 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 take appropriate regulatory actions.

PSC RESPONSE 1a:

The procurement of CBs initiated after August 1, 1988, will be in full compliance with these requirements. With the exception of the CBs tested per Actions Requested Items 3 and 5, CBs that are presently being stored as stocked spares for safety-related applications will be tested at FSV, per PSC's dedication practices, before being installed in safety-related applications. Dedication, per NEMA AB 2-1984, will include Insulation-Resistance Testing (dielectric), Time-Delay Overcurrent-Trip Testing, and Instantaneous Overcurrent-Trip Testing.

To assure that the purchasing requirements of this bulletin will be met, the Superintendent of Material Management directing Procurement has been directed to purchase CBs directly from the CBM, to purchase from suppliers that can provide verifiable traceability to the CBM, or to require that the CBs be shipped directly from the CBM as documented in PSC Memo NFS-89-0081. CBs were also added to the Restricted Materials/Component List. CBs that are purchased commercial grade will be dedicated per PSC's procurement program.

NRC REPORTING REQUIREMENTS:

1b. Summarizes the total number, manufacturer, model number, and to the extent possible the procurement chain of those CBs that could not be traced to the CBM in items 1 and 4 of the actions requested. For installed CBs, 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 Actions Requested Item 3 of the actions requested, this information should be updated within 30 days of the completion of Actions Requested Item 4 to address those additional CBs that could not be traced to the CBM.

Actions Requested Item 1 required that—all addressees are to perform the following review by March 1, 1989:

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

Actions Requested Item 4 required that—all addressees who identify less than 80 percent of the CBs traceable to the CBM per item 1 of the Actions Requested or who identify a failure rate of more than 10 percent for the CBs tested per item 3 above are requested to perform the following actions:

- a. Identify all molded-case CBs 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 CBs.
- 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 CBs identified in (4a) that cannot be traced to the CBM.

PSC RESPONSE 1b:

PSC identified 64 CBs, purchased prior to August 1, 1988, as being stored as spares for safety-related applications. This stock provides PSC with the required minimum sample in accordance with Actions Requested Item (1a). The traceability of these CBs was verified as required by Actions Requested Item (1b). A summary of this sample is included in Attachment A.

Actions Requested Item (1c) required that the number, manufacturer, model number, and, to the extent possible, the procurement chain for all those CBs identified in (1a) that cannot be traced to the CBM be identified. These requirements have also been met shown in Attachment B.

Actions Requested Item (1c) also required identification of the system where the CBs, identified in (1a), are/were installed. CB installation locations were identified. The locations are summarized in Attachment C.

Since the number of traceable CBs identified was less than 80 percent, steps were taken to identify the installed location of all CBs purchased between August 1, 1983, and August 1, 1988, per Actions Requested Item 4. Most CBs purchased during the specified period were installed in non safety-related applications. Those that were installed in safety-related applications were subsequently replaced by environmentally-qualified breakers. Attachment C includes a summary of installation and subsequent replacement of breakers purchased during the January 1, 1983, to August 1, 1988, time period.

NRC REPORTING REQUIREMENTS:

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

Actions Requested Item 1--PSC's records were researched to identify all CBs stored as spares for safety-related applications at FSV. A physical walkdown was performed to verify these records. 64 CBs were identified in PSC's stock. This sample is greater than the required minimum of 50. The purchase orders for these CBs were researched for traceability. For those CBs that were purchased without traceability to the CBM, the suppliers were contacted to request their assistance in providing the needed traceability. Attachment A identifies the number, manufacturer, model number, and, to the extent possible, the procurement chain for all those CBs identified as stored for safety-related stock.

Actions Requested Item 2--All non-traceable CBs that were purchased and installed between August 1, 1983, and August 1, 1988, were installed in non safety-related applications or have been previously replaced with environmentally qualified CBs. Installation locations are summarized in Attachment C. An analysis for justifying continued operation is not required. The items in question were installed in non safety-related applications and would not affect the safe shutdown or safe operation of the plant.

Actions Requested Item 3--PSC has no non-traceable CBs, purchased after August 1, 1983, installed in safety-related applications. Traceability could not be established for 80 percent of the stored CBs. Although not required, PSC will perform testing, per Attachment 1 of NRC Bulletin 88-10, on the non-traceable CBs purchased after January 1, 1983, that are maintained as spares for safety-related applications. This list of CBs is included as Attachment B. This testing provides reasonable assurance that these CBs will perform their safety functions.

Actions Requested Item 4--Attachment C displays the required traceability of installed CBs purchased between January 1, 1983, and August 1, 1988. The number, manufacturer, model number, and, to the extent possible, the procurement chain for these CBs is also shown in Attachment C.

Actions Requested Item 5--No non-traceable CBs, purchased after August 1, 1983, are installed in safety-related applications, and therefore no further action is required.

Actions Requested Item 6--PSC has documented the information generated while performing the actions requested in items 1, 2, 3, 4, and 5. PSC will maintain this documentation for a period of 5 years after the completion of the testing requirements.

Actions Requested Item 7--See PSC Response la.

NRC REPORTING REQUIREMENTS:

2. All holders of operating licenses are required to submit a report that summarized 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.

PSC RESPONSE 2:

All installed non traceable CBs, purchased after August 1, 1983 were found to be installed in non safety-related applications. No testing is required to be performed per the bulletin. However, testing is being conducted in accordance with Attachment 1 of NRCB 88-10 for non traceable breakers currently being stored for safety-related applications and purchased after January 1, 1983.

NRC REPORTING REQUIREMENTS:

3. All holders of construction permits are required to provide a written report by April 1, 1989.

PSC RESPONSE 3:

This requirement applies to holders of construction permits only and is not applicable to PSC.

NRC REPORTING REQUIREMENTS:

4. All holders of construction permits are required to submit a report that summarizes the results of tests conducted in accordance with items 3 and 5 of the actions requested.

PSC RESPONSE 4:

This requirement applies to holders of construction permits only and is not applicable to PSC.

If you have any questions concerning the information provided in this letter, please contact Mr. M. H. Holmes at (303) 480-6960.

Very truly yours,

R. O. Williams, Jr. Sr. Vice President,

Mulilland

Nuclear Operations

ROW/TDM/KLB/RRD/kam

Attachments

cc: Regional Administrator, Region IV ATTN: Mr. T. F. Westerman, Chief

Projects Section B

Mr. Robert Farrell Senior Resident Inspector Fort St. Vrain

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

In the Matter	>
Public Service Company of Colorado Fort St. Vrain Unit No. 1) Docket No. 50-267
AFF	DAVIT
That he is Senior Vice President Service Company of Colorado, the the information presented in the contents thereof, and that the	first duly sworn, deposes and says: t, Nuclear Operations, of Public the Licensee herein, that he has read to attached letter and knows the estatements and matters set forth to the best of his knowledge, R. O. Williams, Jr. Senior Vice President Nuclear Operations
STATE OF Colorado COUNTY OF Denver	-}
Subscribe and sworn to before me, 31st day of March	a Notary Public on this, 1989.
	Delores Romero Notary Public

My commission expires January 6, 1993.

Attachment A

NRCB-88-10 CIRCUIT BREAKER REVIEW CBs IN SAFETY-RELATED STOCK

STK.	MODEL NUMBER	IN STK.	DATE PURCHASED	P.O. NUMBER	MFG.	SUPPLIER	TRACEABILITY
1741104	EF3-A025	5	08/31/82	N-4270	ITE	DENVER DIST., INC.	TRACEABILITY INCOMPLETE PACKING SLIP FROM GOULD TO DDI
1741104	EF3-A025	2	05/25/81	N-3535	ITE	DENVER DIST., INC.	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982
1741105	EF3-A030	2	09/10/79	N-2670	ITE	DENVER DIST., INC.	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982
1741107	EF3-H050	2	10/17/86	H-7044	ITE	GLASCO ELECTRIC	TRACEABLE PACKING SLIP FROM SIEMENS-ALLIS TO ELECTRIC SUPPLY AND A PACKING SLIP FROM ELECTRIC SUPPLY TO GLASCO. ALL TRACEABLE BY P.O. NUMBER.
1741110	EF3-A100	1	03/10/76	N-0785	ITE	DENVER DIST., INC.	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982
1741115	EF3-A005	2	02/09/79	N-2314A	ITE	RYALL ELECTRIC	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1984
1741131	EH3-3010	3	02/06/80	N-2716B	ITE	RYALL ELECTRIC	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1984
1741133	EH3-B040	1	11/01/77	N-1606	ITE	GOULD INC.	TRACEABLE WAREHOUSE COPY OF PO HAS PACKING SLIP FROM GOULD
1741134	EH3-B040	1	04/26/85	N-6138	ITE	DENVER DIST., INC.	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982
1741135	EH3-B050	1	04/15/83	N-4588	ITE	ELLIOTT ELECTRIC	NO TRACEABILITY LETTER FROM CRESENT (ELLIOTT) SAYING THAT THIS WAS A STK. ITEM AND THAT THEY ARE ITE DISTRIBUTORS THAT BUY FROM ITE ONLY.
1741138	EF3-B080	4	10/10/85	N-6551	ITE	DENVER DIST., INC.	TRACEABLE PACKING SLIP FROM SIEMENS-ALLIS TO DENVER DISTRIBUTORS
1741139	EH3-B090	2	02/12/80	N-2861	ITE	RYALL ELECTRIC	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1984
1741145	EHB-2020	2	08/06/87	N-7993	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741155	HFB-3030	2	06/29/87	N-7301	WESTINGHOUSE	WESTINGHOUSE	C OF C, PART 21 SEISMIC AND ENVIRONMENTAL QUAL. REPORT

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STK.	MODEL	IN STK.	DATE PURCHASED	P.O. NUMBER	MFG.	SUPPLIER	TRACEABILITY
1741156	HFB-3040	1	06/29/87	N-7301	WESTINGHOUSE WESTINGHOUSE		C OF C, PART 21 SEISHIC AND ENVIRONMENTAL QUAL. REPORT
1741157	HFB-3070	2	06/29/87	N-7301	WESTINGHOUSE	WESTINGHOUSE	C OF C, PART 21 SEISMIC AND ENVIRONMENTAL QUAL. REPORT
1741158	EB-1020	6	01/05/87	N-7532B	WESTINGHOUSE WESCO		NO TRACEABILITY
1741159	Q0115HM	3	04/20/87	N-7532B	SQUARE D	WESCO	NO TRACEABILITY
1741160	FHL26015BC	2	03/23/87	N-7532	SQUARE D	WESCO	NO TRACEABILITY
1741161	Q0120HM	5	09/02/87	N-7761	SQUARE D	WESCO	NO TRACEABILITY
1741162	EH1B020	2	08/28/87	N-7812	TELEMECANIQUE	ELECTRIC SUPPLY	TRACEABLE WAREHOUSE COPY OF PO HAS PACKING SLIP FROM TELEMECANIQUE WITH PSC P.O. NUMBER INCLUDED
1741163	TED134020	2	08/28/87	N-7852	G. E. G. E. SUPPLY CO.		NO TRACEABILITY G. E. SUPPLY TURNED THIS OVER TO THEIR LEGAL DEPARTMENT.
1741164	HFB3030	2	09/02/87	N-7761	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741165	FJ63-B125	2	08/28/87	N-7812	TELEMECANIQUE ELECTRIC SUPPLY		TRACEABLE PACKING SLIP FROM TELEMECANIQUE TRACEABLE TO PSC P.O. NUMBER
1741166	HKA-2100	2	06/03/88	N-8304	WESTINGHOUSE	WESTINGHOUSE	C OF C, PART 21
1741167	HKA-2070	1	06/03/88	N-8304	WESTINGHOUSE	WESTINGHOUSE	C OF C, PART 21
1741168	HRA-2175	1	06/03/88	N-8304	WESTINGHOUSE	WESTINGHOUSE	C OF C, PART 21
1741170	HFB-2015	1	01/15/88	N-8481	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741171	TED134100WI	. 1	12/18/87	N-8481	G. E.	WESCO	NO TRACEABILITY
1741172	EB1015	1	01/15/88	N-8:31	WESTINGHOUSE	WESCO	NO TRACEABILITY

Attachment B

NRCB-88-10 CIRCUIT BREAKER REVIEW CBs IN SAFETY-RELATED STOCK NOT TRACEABLE TO COMS TO BE TESTED (PURCHASED BETWEEN JANUARY 1, 1983, AND AUGUST 1, 1988)

STK.	MODEL NUMBER	IN STK.	DATE PURCHASED	P.O. NUMBER	MFG.	SUPPLIER	TRACEABILITY
1741134	EH3-B040	1	04/26/85	N-6138	ITE	DENVER DIST., INC.	NO TRACEABILITY NO RECORDS PAST 1982
1741135	EH3-2050	1	04/15/83	N-4588	178	ELLIOTT ELECTRIC	NO TRACEABILITY LETTER FROM CRESENT (ELLIOTT) SAYING THAT THIS WAS A STK. ITEM AND THAT THEY ARE ITE DISTRIBUTORS THAT BUY FROM ITE ONLY.
1741145	EHB-2020	2	08/06/87	N-7993	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741158	₩B-1020	6	01/05/87	N-7532B	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741159	Q0115HM	3	04/20/87	N-7532E	SQUARE D	WESCO	NO TRACEABILITY
1741160	FHL26015BC	2	03/23/87	N-7532	SQUARE D	WESCO	NO TRACEABILITY
1741161	Q0120HM	5	09/02/87	N-7761	SQUARE D	WESCO	NO TRACEABILITY
1741163	TED134020	2	08/28/87	N-7852	G. E.	G. E. SUPPLY CO.	NO TRACEABILITY G. E. SUPPLY TURNED THIS OVER TO THEIR LEGAL DEPARTMENT.
1741164	HFB3030	2	09/02/87	N-7761	WESTINGHOUSE	WESCO	NO TRACE BILITY
1741170	HFB-2015	1	01/15/88	N-8481	WESTINGHOUSE	WESCO	NO TRACEABILITY
1741171	TED334100WL	1	12/18/87	N-8481	G. E.	WESCO	NO TRACEABILITY
1741172	EB1015	1	01/15/88	N-8481	WESTINGHOUSE	WESCO	NO TRACEABILITY

A TOTAL OF 27 CIRCUIT BREAKERS TO BE TESTED

Attachment C

NRCB-88-10 CIRCUIT BREAKER REVIEW CBS INSTALLED FROM SAFETY-RELATED STOCK WHICH WERE PURCHASED AFTER JANUARY 1, 1983

CODE		NUMBER	DATE PURCHASED	NUMBER	MFG.		LOCATION INSTALLED/REMARKS
1741101	1	EF3-A010	03-16-85	N-6036	ITE	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982 DENVER DIST., INC.	EBASCO TEST PANEL
1741102	1	EF3-B015	10-10-85	N-6551	ITE	VENDOR HAS NO RECORDS	k-9203-X (STANDBY GENERATOR 1A)
1741102	1	EF3-B015	10-10-85	N-6551	ITE	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982 DENVER DIST., INC.	DIRECT CHARGE-84067 WORK DONE PER SSR-8750863
1741102	1	BF3-B015	10-10-85	N-6551	ITE	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1982 DENVER DIST., INC.	SYSTEM 75 C-7546 (AUXBOILER ROOM EXHAUST FAN
1741102	1	EF3-B015	04-12-85	N-6138	ITE	VENDOR HAS NO RECORDS	S-7306 (EVAP COOL BLDG AH UNIT)
1741107	1	EF3-#050	10-17	n-7044	1 B	TRACEABLE PACKING SLIP FROM SIEMENS-ALLIS TO ELECTRIC SUPPLY AND A PACKING SLIP FROM ELECTRIC SUPPLY TO GLASCO. ALL TRACEABLE BY P.O. NUMBER	N-9229A (REACTOR PLANT MCC 1A) DIRECT CHARGE-67873 SSR-86504933

			DATE PURCHASED				LOCATION INSTALLED/REMARKS
			10-17-86			TRACEABLE PACKING SLIP FROM SIEMENS-ALLIS TO ELECTRIC SUPPLY AND A PACKING SLIP	AUXILIARY ELECTRICAL SYSTEM SYSTEM 92 N-9251 (TURBINE PLANT MCC 6) DIRECT CHARGE-02363 WORK DONE PER SSR-8750413
1741107	1	EF3-H050	10-17-86	N-7044	ITE	PACKING SLIP FROM SIEMENS-ALLIS TO ELECTRIC SUPPLY AND A PACKING SLIP	SYSTEM 44 E-4401 (BLDG. DOMESTIC WATER HEATER) DIRECT CHARGE-99210 WORK DONE PER SSR-87501987
1741107	1	EF3-H050	10-17-86	H-7044	ITE	PACKING SLIP FROM	N-9250 (TURBINE PLANT MCC 5) DIRECT CHARGE-83514 CN-2006 PG. G6
1741107	1	EF3-H050	10-17-86	N-7044	ITE	PACKING SLIP FROM	N-9232 (REACTOR PLANT MCC 6) DIRECT CHARGE-76277 WORK DONE PER CN-2704
1741132	1	EH3-B020	6-28-83	N-4758	ITE	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1984	
1741132	1	EH3-B020	6-28-83	N-4758	ITE	NO TRACEABILITY VENDOR HAS NO RECORDS PAST 1984	PORTABLE AIR UNIT (TOOL) DIRECT CHARGE-86642 NON SAPETY