Mr. Forster Fournier
National Aeronautics and
Space Administration
Headquarters
600 Independence Avenue
Code HM
Washington, D.C. 20546

APR 12 1989

Dear Mr. Fournier:

SUBLECT: POTENTIALLY DEFECTIVE REFURBISHED ELECTRICAL EQUIPMENT

In our continuing investigation to identify the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants, we have discoverec additional invoices that specify your agency as the customer. Copies of these invoices are attached for your information and use. These documents result from our review of a selection of records spanning the last three or four years from companies supplying molded case circuit breakers listed in NRC Information Notice 86-46, a copy of which is enclosed for your information. As other records come to light, we will provide copies to your office as appropriate.

If there is any additional information you require, please call me or Mr. Walter Haass at (301) 492-3219.

Sincerely,

Original signed by
Brian K. Grimes

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
1. Invoices
2. NRC Information Notice 86-46
and Supplements 1 and 2

DISTRIBUTION: (w/o enclosures)

Central Files	KEccelston
VIB Reading (w/enclosures)	WHutchinson, OI
DRIS Reading (w/enclosures)	WMcNulty, OI-RV (w/enclosures)
JSniezek	PDR
FMiraglia	
BGrimes	
EBrach	
GCwalina	
WHaass (w/enclosures)	
JStone	

*SEE PREVIOUS CONCURRENCE PAGE.

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OFC	:VIB:DRIS	:SC:VIB:DRIS	:BC:VID:DRIS	:D:DRIS	:	:	:
NAME	:WPHaass:jh*	:GCCwalina*	:EWBrach*	:BKGrimes*	:	:	:
DATE	:04/03/89	:04/05/89	:04/05/89	:04/06/89	:	:	:

Ms. Marilyn S. Marton, Director
Administration, Office of Acquisition
and Grant Management
U.S. Department of Transportation
9100 400 Seventh Street, S.W.
Washington, D.C. 20590

APR 12 1989

Dear Ms. Marton:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED ELECTRICAL EQUIPMENT

In our continuing investigation to identify the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants, we have discovered additional invoices and orders that specify your agency as the customer. Copies of these invoices and orders are attached for your information and use. These documents result from our review of a selection of records spanning the last three or four years from companies supplying molded case circuit breakers listed in NRC Information Notice 88-46, a copy of which is enclosed for your information. As other records come to light, we will provide copies to your office as appropriate.

If there is any additional information you require, please call me or Mr. Walter Haass at (301) 492-3219.

Sincerely,

Original signed by
Brian K. Grimes

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
1. Invoices/Orders
2. NRC Information Notice 88-46
and Supplements 1 and 2

DISTRIBUTION: (w/o enclosures)

Central Files	KEccelston
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DRIS Reading (w/enclosures)	WMcNulty, OI-RV (w/enclosures)
JSniezek	PDR
FMiraglia	
BGrimes	
EBrach	
GCwalina	
WHaass (w/enclosures)	
JStone	

*SEE PREVIOUS CONCURRENCE PAGE.

OFC	:VIB:DRIS	:SC:VIB:DRIS	:BC:VIB:DRIS	:D:DRIS	:	:	:
NAME	:WPHaass:jh*	:GCCwalina*	:EWBrach*	:BKGrimes*	:	:	:
DATE	:04/03/89	:04/05/89	:04/05/89	:04/06/89	:	:	:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

July 8, 1988

NRC INFORMATION NOTICE NO. 88-46: LICENSEE REPORT OF DEFECTIVE REFURBISHED CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees of licensee reported information that defective refurbished electrical equipment, such as circuit breakers (CBs), may have been supplied to nuclear power plants. It is expected that recipients will review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

Pacific Gas and Electric Company (PG&E) has informed NRC that it placed a purchase order for 30 new, non-safety-related, molded-case, KHL 36125-type CBs manufactured by the Square D Company (Square D) with a local electrical distributor. These CBs were intended for use in non-safety-related applications at PG&E's Diablo Canyon Nuclear Power Plant.

According to PG&E, the distributor in turn placed the order with a local supplier who bid the lowest price and promised the quickest delivery. The CBs were delivered directly to the Diablo Canyon plant by the supplier; the distributor did not have an opportunity to inspect the CBs. Square D, aware of the purchase order, questioned its failure to receive an order for the unique vintage KHL 36125-type CBs. With PG&E's permission, Square D inspected the CBs and determined that PG&E had been given refurbished, rather than new, CBs. Square D tested and performed detailed examinations of the CBs, and the results reported by PG&E follow.

A. Physical Examination

The yellow side labels used on the CBs were suspect in that the CB model numbers were typed on the labels whereas authentic labels are preprinted. The CBs departed from normal appearance in other respects as well.

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The individual CB cases and each of the CB components appeared to be Square D products; however, the individual CBs incorporated components of different years of manufacture. Each CB bore evidence of having been opened and reassembled.

B. Electric Testing

Square D subjected the CBs to five electrical tests. None of the CBs complied with Square D or Underwriters' Laboratory (UL) specifications for all of the tests, and several of the CBs were out of tolerance on each of the tests. At least four of the CBs failed to trip under circumstances in which they are designed to trip.

Discussion:

In the past, there have been instances in which licensees purchased commercial-grade components, such as CBs, relays, trip units, and other electrical components, from electrical distributors and have received components that did not meet the original purchase order requirements. NRC has received additional information indicating that the problem of surplus or defective refurbished CBs may also apply to CBs sold under other manufacturers' names (e.g., General Electric, Westinghouse, ITE, Cutler Hammer, and Sylvania).

The electrical suppliers involved in refurbishing and sales of circuit breakers, including the Diablo Canyon, Square D circuit breakers, apparently include five California corporations. These companies are (1) General Circuit Breaker & Electric Supply, Inc., (2) MLC Electric Supply Co., Inc., (3) Pencon International, Inc., doing business as General Magnetics/Electric Wholesale, (4) California Breakers, Inc., and (5) Anti-Theft Systems, Inc., doing business as ATS Circuit Breakers and as AC Circuit Breaker-Electrical Supply.

NRC has an investigation and vendor inspection in progress at the above companies. On the basis of the information developed to date, a preliminary list of customers of the five companies including a list of nuclear utilities (where available) is provided in Attachment 1. Attachment 2 contains a list of original equipment manufacturers whose names may have been used on surplus or refurbished equipment sold as new equipment. The information included in Attachments 1 and 2 is only preliminary and is provided to assist licensees in reviewing the potential of having procured suspect electrical equipment at their facilities.

Licensees are reminded of the requirements to ensure that procured items meet the relevant specifications and codes and are suitable for the intended application. Licensees should consider, as a matter of prudence, the need to inquire of and to verify with their authorized distributors the sources of procured materials, equipment, and components. Licensees may meet these requirements by effectively implementing their quality assurance (QA) programs, particularly in the areas of vendor evaluations, vendor surveillances, receipt inspection, bench tests, and post-installation tests.

NRC is gathering additional information to determine what further actions are necessary. The primary purpose of this information notice is to alert addressees of the situation as soon as possible. The NRC is considering issuing a bulletin to followup on this information notice when the NRC has sufficient information to define requirements.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: K. R. Naidu, NRR
(301) 492-0980

Jaime Guillen, NRR
(301) 492-1170

Attachments:
1. Preliminary List of Customers (Intermediate Suppliers) of Suspect Electrical Equipment
2. Preliminary List of Original Equipment Manufacturers Whose Names May Have Been Used on Surplus or Refurbished Equipment Sold as New Equipment
3. List of Recently Issued NRC Information Notices

PRELIMINARY LIST OF CUSTOMERS (INTERMEDIATE SUPPLIERS) OF SUSPECT ELECTRICAL EQUIPMENT

Organization	Location	Nuclear Utility (if available)
Westinghouse Electric Supply Co. (WESCO)	St. Louis, MO; Boston, MA; Boise, ID; Atlanta, GA; Charlestor, SC; Panama, FL; Santa Clara, CA; Fresno, CA; Sacramento, CA; Shreveport, LA; Green Bay, WI; Elk Creek, IL; Albuquerque, NM; Mobile, AL; Ft. Worth, TX; Baton Rouge, LA; Birmingham, AL; East Hartford, CT; Kokomo, IN; Jackson, MS; Milwaukee, WI; Beaumont, TX; Nashville, TN; Skelton, WV; Albany, NY; Hartford, CT; Portland, ME; St. Paul, MN; Minneapolis, MN; other locations	
Power Conversion	Huntington Beach, CA	
Rockwell International	Los Angeles, CA	
Arkansas Power and Light	Little Rock, AR	ANO
Southern California Edison	San Clemente, CA; other locations	SONGS
Phoenix Electric	Phoenix, AZ	
Rensenhouse Electric	Topeka, KS	
Breaker and Control	Houston, TX	
General Electric Company	Baltimore, MD; Houston, TX; Landover, MD; Chantilly, VA; Emeryville, CA; Elmhust, IL	
Southern Electric Supply Company	Alexandria, LA	
Cleveland Electric Company		

PRELIMINARY LIST OF CUSTOMERS (INTERMEDIATE SUPPLIERS)
OF SUSPECT ELECTRICAL EQUIPMENT

Organization	Location	Nuclear Utility (if available)
Stokley Enterprises	Norfolk, VA	
Taylor Electric Company	Portland, OR	
Grayber	Ventura, CA; Atlanta, GA	
Hughes Aircraft.	El Segundo, CA	
Houstor Electric Distribution Company	Houston, TX	
ITE Electrical Products	Atlanta, GA; Knoxville, TN	
Knudson Corporation	Los Angeles, CA	
Georgia Power Company	Milledgeville, GA	

PRELIMINARY LIST OF ORIGINAL EQUIPMENT
MANUFACTURERS WHOSE NAMES MAY HAVE BEEN USED
ON SURPLUS OR REFURBISHED EQUIPMENT SOLD AS NEW EQUIPMENT

Manufacturer	Model Number	Equipment Description
Square D	B19.5; B22	Heater for overload relay
General Electric	12HGA11552	Auxiliary relay
Exide Company	NX400	
Spectro Inc.	VDDD14	Mercury lamps
Bussman Company	REN15	15-amp 250-V fuse
Bussman Company	NOS-30	30-amp 600-V fuse
(unknown)	FSN 5925-628-0641	Circuit breaker
Westinghouse	DB-50	Trip unit
Westinghouse	DB-25	400-amp circuit breaker
Westinghouse	HKB3150T	Trip unit
Westinghouse	KB3250F	Frame
Westinghouse	FB3020	Circuit breaker
Westinghouse	FB3070	Circuit breaker
Westinghouse	FB3050	Circuit breaker
Westinghouse	EHB3040	Circuit breaker
Westinghouse	EHB3025	Circuit breaker
Westinghouse	LBB3125	Circuit breaker
Westinghouse	HKA31250	Trip unit
Westinghouse	JA3700	Circuit breaker
Westinghouse	EHB2100	Circuit breaker
Westinghouse	CAH3200	Circuit breaker

PRELIMINARY LIST OF ORIGINAL EQUIPMENT
MANUFACTURERS WHOSE NAMES MAY HAVE BEEN USED
ON SURPLUS OR REFURBISHED EQUIPMENT SOLD AS NEW EQUIPMENT

Manufacturer	Model Number	Equipment Description
Westinghouse	225A	Navy trip units
ITE	EF-3B100	100-amp circuit breaker
General Electric	AK-2-75-3	Circuit breaker
General Electric	AK-2	Circuit breaker
General Electric	AK-3-50	Circuit breaker
General Electric	AK-3-75	Circuit breaker
General Electric	B; TDD; TFJ	Circuit breakers
General Electric	TCVVFS	Circuit breaker
ITE	ET; KA	Circuit breakers
Cutler Hammer	--	Circuit breakers
Zinsco/Sylvania	--	Circuit breakers
Bryant	--	Circuit breakers
Murry	--	Circuit breakers
Federal Pacific Electric Company	--	Circuit breakers

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-45	Problems In Protective Relay and Circuit Breaker Coordination	7/7/88	All holders of OLs or CPs for nuclear power reactors.
88-44	Mechanical Binding of Spring Release Device in Westinghouse Type DS-416 Circuit Breakers	6/24/88	All holders of OLs or CPs for nuclear power reactors.
88-43	Solenoid Valve Problems	6/23/88	All holders of OLs or CPs for nuclear power reactors.
88-42	Circuit Breaker Failures Due to Loose Charging Spring Motor Mounting Bolts	6/23/88	All holders of OLs or CPs for nuclear power reactors.
88-41	Physical Protection Weaknesses Identified Through Regulatory Effectiveness Reviews (RERs)	6/22/88	All holders of OLs or CPs for nuclear power reactors.
88-40	Examiners' Handbook for Developing Operator Licensing Examinations	6/22/88	All holders of OLs or CPs for nuclear power reactors.
88-39	LaSalle Unit 2 Loss of Recirculation Pumps With Power Oscillation Event	6/15/88	All holders of OLs or CPs for BWRs.
88-38	Failure of Undervoltage Trip Attachment on General Electric Circuit Breakers	6/15/88	All holders of OLs or CPs for nuclear power reactors.
88-37	Flow Blockage of Cooling Water to Safety System Components	6/14/88	All holders of OLs or CPs for nuclear power reactors.
88-36	Possible Sudden Loss of RCS Inventory During Low Coolant Level Operation	6/8/88	All holders of OLs or CPs for PWRs.

OL = Operating License
CP = Construction Permit

Ed Baker

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

JULY 21, 1988

NRC INFORMATION NOTICE NO. 88-46, SUPPLEMENT 1: LICENSEE REPORT OF DEFECTIVE REFURBISHED CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice supplement is being provided to present additional information regarding customers of the five California electrical suppliers discussed in NRC Information Notice (IN) No. 88-46 that may have supplied defective refurbished electrical equipment, such as circuit breakers (CBs), to nuclear power plants. It is expected that recipients will review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

IN 88-46 discussed a report by Pacific Gas and Electric (PG&E) that defective refurbished CBs were supplied to PG&E's Diablo Canyon Nuclear Power Plant by a California electrical supplier. The IN listed four other California companies involved in refurbishing and supplying possibly defective circuit breakers to nuclear power plants. In addition, the IN provided a preliminary list of customers of the five companies and a list of original equipment manufacturers whose names may have been used on surplus or refurbished equipment sold as new equipment obtained during NRC investigations and vendor inspections in progress at the subject companies.

Discussion:

The NRC has obtained additional information from its inspections and investigations related to this issue. Attachment 1 provides a list of shipments of circuit breakers to nuclear power plants or nuclear utilities by the subject electrical suppliers. This list was compiled based on a partial review of records obtained from the five California electrical suppliers discussed in IN 88-46. The majority of the sales were through distributors; however, direct sales and shipments to nuclear utilities have been identified. Except for certain sales to San Onofre for safety-related use, the safety classification of the electrical equipment as sold appears to be commercial grade.

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The NRC is continuing its investigations and review of records on this issue and, if warranted, a further generic communication will be issued.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: K. R. Naidu, NRR
(301) 492-0980

Jaime Guillen, NRR
(301) 492-1170

Attachments:
1. Shipments of Circuit Breakers to Nuclear Power Plants or Nuclear Utilities
2. List of Recently Issued NRC Information Notices

SHIPMENTS OF CIRCUIT BREAKERS TO NUCLEAR POWER PLANTS OR NUCLEAR UTILITIES

The following list represents shipments of circuit breakers to nuclear plants or utilities from five suppliers in the Los Angeles area. The majority were sold through distributors; however, direct sales to the utilities are identified. Except for the direct sales to San Onofre, classification of the circuit breakers as sold appears to be commercial grade.

Plant or Utility	Items (Qty)	Date	Sold to and Purchase Order Nos.	Invoice[1]	Company[2]
Palisades	W EB3020 (2)	9/14/87	WESCO Lansing, MI PO3255-B7089	I 10995	ATS
Harris	ITE EF3B125(2)	2/9/88	WESCO, Raleigh, NC	WO 24781	CAL BKR
	ITE EF3B125(2)	3/2/88	POs DS3645-DD171	WO 25377	CAL BKR
	ITE EF3B125(6)	3/14/88	DS3645-DB047	WO 25811	CAL BKR
Dresden	3W FA 2100 (2)	12/21/87	WESCO Elmhurst, IL	I 14174	MLC
Quad Cities	W EH 2050 (3)	1/18/88	WESCO Davenport, IA D/55106-259401	I 14673	MLC
	3W EH2070 (1)	3/10/88	WESCO Davenport, IA SD5106-MD31010	Unknown	GEN BKR
Connecticut Yankee	W MFB 3050 (3)	8/12/87	Economy Elect Manchester, CT DSDB127-995428	I 12585	MLC
Mark BE0590	W STARTER CONTROLS A2DDM1CAC (13)	6/25/87	DE157-730176	I 11752	•
	A2D1K1CA (8)		•		•
	A2D1K2CA (4)		•		•
	AM13A (6)		•		•
	W MFD 3020 (12)	6/16/87	DE167-740072	I 11760	•
Braidwood	W MA3600 (1) w/ bell alarm	7/15/88	WESCO Elmhurst, IL	I 07721	•
Ginna	W FA3125 (3)	9/26/84	WESCO Rochester, NY 93095	I 30501	GEN MAG
	W EA2090 (3)	•	•	I 30371	•
	W FA3125 (3)	•	•	•	•
Clinton (Baldwin Associates)	SD 00220 (10)	7/18/84	WESCO Peora, IL 91586	I 29708	•
Rancho Seco (SMUD)	W JB3100 (2) W/LINE & LOAD LUGS	8/8/84	WESCO Sacramento, CA 90629	I 29971	•
	FPE NEF433030 (1)	3/6/87	SMUD RAB70356713	I 27290	GEN BKR

Plant or Utility	Items (Qty)	Date	Sold to and Purchase Order Nos.	Invoice[1]	Company[2]
SONGS	GE 7ED134D30NL (1)	6/10/88	Southern Ca. Edison 88D68300	I 102174	ECD
	IT 8D78D30	6/9/88	88D68023	I 102103	ECD
Lilco	FPE NF631100(2)	6/12/86	Graybar Hauppauge, NY(540-BLP901363)	I 7297	MLC
Mississippi Power Co.	W F202D (1)	1/30/86	WESCO, Mobile, AL DS-3725-B60176	I 5585	MLC
PG&E	W EW210D (1)	3/5/86	AMFAC, Stockton, CA D7232-89B0	I 6076	MLC
	FPE NE224060(2)	4/11/88	CED, San Luis Obispo, CA 7605DB7444D	I 15793	MLC
	W NHC38DDF (1)	1/28/88	7605-D763670	I 14829	MLC
	GHCBDD (1LOT)	"	"	"	"
	LUGS (3)	"	"	"	"
	ITE EE3BD50(1)	11/3/87	7605D-761160	I 13783	"
	EE3PC3D (1)	"	"	"	"
	W EB3D50 (1)	10/2/87	7605-D2091900	I 13323	"
	FPE NE224100 (2)	5/13/88	7605-DB7976D	I 16309	"
Detroit Ed.	IT EW3E100 (1)	3/18/88	Detroit Ed. Monroe Pwr plant (190501)	I 11510	ATS
	SD 9B9316 (2)	11/23/87	Splane Electric Detroit, MI(111275)	WO 02160	ATS
CECo	IT EF350	6/3/87	Graybar Melrose Pk, IL (328W502114CS)	I 10684	ATS
	W E (4)	12/22/87	WESCO Davenport, IA W55106-258143	I 31999	GEN BKR
Consumers Power Co.	W MDEA2D3D (1)	3/30/88	WESCO Lansing, MI DS3255-14766	I 11530	ATS
Southern Cal. Edison	IT FD3B225 (1)	4/22/88	SCE Construction Forces (1170531)	I 34435	AC BKR
	IT EE3B070 (3)	"	1170551	I 34436	"
	EE2B100 (1)	"	"	"	"
	EE2B050 (2)	"	"	"	"
	EE2B030 (1)	"	"	"	"
	GE 7EF134015 (1)	6/15/78	GESCO El Monte, CA	I 11734	MLC
	W EB203D (2)	5/2/88	Southern Ca. Edison M1238007	I 3015B6	ECD
	SD SBW-12 CONTACTOR (1)	1/28/88	2004B013	I 1003B4	"
	SD LO-3 CONTACTOR(1)	"	"	"	"
VEPCO	IT EF3HD50 (1)	6/9/88	Electrical Suplrs Norfolk, VA 1410Q34998	WO 28849	CAL BKR

Plant or Utility	Items (Qty)	Date	Sold to and Purchase Order Nos.	Invoice[1]	Company[2]
Carolina Power & Light	IT EF3B125 (2)	2/9/88	WESCO Raleigh, NC DS3645-B0171	WO 24781	CAL BKR
	EF3B125 (2)	2/26/88	"	WO 25377	"
	EF3B040 (6)	3/11/88	DS3645-D8047	WO 25811	"
Omaha Pub. Pwr Dist	GE THEF136[illegible]1100(2)	1/22/85	GESCO Omaha, NE B66D7	I 31695	GEN MAG
Boston Ed.	W EH2050 (1)	3/18/85	WESCO Boston, MA	I 32348	GEN MAG
Arkansas Power & Light	IT E42B020 (2)	1/28/88	Treadway Elect. Little Rock, AR 1217D	WO 24372	CAL BKR
	IT QJ2B200 (2)	1/28/88	1215D	WO 24373	"
	GE TEB122015WL (1)	1/28/88	1216D	WO 24376	"
	IT QJ2B200 (2)	2/2/88	1245D	WO 24505	"
	W MCP3310DDR (4)	2/17/88	1329D	WO 25104	"
	IT QJ2B200 (2)	2/24/88	1357D	WO 25268	"
	GE TEB132090WL (1)	3/1/88	1391D	WO 25485	"
	W MCP4315SDCR (2)	3/1/88	1392D	WO 25529	"
	W BAB3060H (1)	3/11/88	1464D	WO 25913	"
	SD FAL3650-16M (2)	3/31/88	1589D	WO 26447	"
	IT QJ2B200 (2)	4/8/88	1637D	WO 26707	"
	IT QP1B020 (2)	5/6/88	1754D	WO 27676	"
	GE TE111015 (1)	5/18/88	1805D	WO 28164	"
	IT QJ2B200 (2)	6/7/88	1869D	WO 28757	"
	GE TED134060WL (1)	6/16/88	1930D	WO 29038	"
	W 656D14BG03 (1) MOTOR OPERATOR	3/15/88	1480D	I 52997	"
	IT QJ2B200 (2)	6/7/88	1869D	I 53437	"
	GE TEB122050WL (1)	6/30/88	1995D	I 54164	"
	GE THED136100WL (1)	11/30/87	9975D	WO 22497	"
	GE TED126050 (1)	7/15/87	9324D	WO 18318	"
	IT QJ3B200 (3)	7/31/87	9369D	WO 18774	"
	IT QJ2B200 (3)	7/31/87	9369D	WO 18774	"
	GE THED136060WL (2)	8/7/87	9430D	WO 19041	"
	IT QJ3B200 (1)	8/13/87	9473D	WO 19245	"
	GE THGB2120 (3)	8/7/87	9430D	WO 19041	"
	IT QJ3B200 (6)	8/16/87	9424D	WO 19042	"
	IT QJ2B200 (10)	8/16/87	9424D	WO 19042	"

Plant or Utility	Items (Qty)	Date	Sold to and Purchase Order Nos.	Invoice[1]	Company[2]
Florida Power Corp.	IT JL3B400 (2)	12/23/87	149278	WO 23293	CAL BKR
Houston Power & Light	IT HE9B040 (4)	8/20/87	Aucoin & Miller Houston, TX 0153721	WO 19474	CAL BKR

Notes:

1 I - invoice; WO - work order

2 ATS - ATS Circuit Breakers, Inc
CAL BKR - California Breakers, Inc.
ECD - Electro Components Distributors
GEN BKR - General Circuit Breakers and Electrical Supply, Inc.
GEN MAG - General Magnetics/Electric Wholesale
MLC - MLC Electric Supply Co.
AC BKR - AC Circuit Breaker - Electrical Supply

3 Shipped to final destination from the distributor

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-51	Failures of Main Steam Isolation Valves	7/21/88	All holders of OLs or CPs for nuclear power reactors.
88-50	Effect of Circuit Breaker Capacitance on Availability of Emergency Power	7/18/88	All holders of OLs or CPs for nuclear power reactors.
88-49	Marking, Handling, Control, Storage and Destruction of Safeguards Information	7/18/88	All holders of OLs or CPs for nuclear power reactors and all other licensed activities involving a formula quantity of special nuclear material.
88-48	Licensee Report of Defective Refurbished Valves	7/12/88	All holders of OLs or CPs for nuclear power reactors.
88-47	Slower-Than-Expected Rod-Drop Times	7/14/88	All holders of OLs or CPs for PWRs.
88-46	Licensee Report of Defective Refurbished Circuit Breakers	7/8/88	All holders of OLs or CPs for nuclear power reactors.
88-45	Problems In Protective Relay and Circuit Breaker Coordination	7/7/88	All holders of OLs or CPs for nuclear power reactors.
88-44	Mechanical Binding of Spring Release Device in Westinghouse Type DS-416 Circuit Breakers	6/24/88	All holders of OLs or CPs for nuclear power reactors.
88-43	Solenoid Valve Problems	6/23/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

December 30, 1988

NRC INFORMATION NOTICE NO. 88-46, SUPPLEMENT 2: LICENSEE REPORT OF DEFECTIVE REFURBISHED CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice supplement is being provided to present additional information regarding the supply of surplus or refurbished electrical equipment such as circuit breakers (CBs) to nuclear power plants as discussed in NRC Information Notice (IN) No. 88-46 including Supplement 1. It is expected that recipients will review this information for applicability to their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

Information Notice No. 88-46 discussed a report by Pacific Gas and Electric (PG&E) that defective refurbished CBs were supplied to PG&E's Diablo Canyon Nuclear Power Plant by a California electrical supplier. Supplement No. 1 to IN 88-46 provided a list of shipments of circuit breakers to nuclear power plants or nuclear utilities by five California companies that may have supplied defective refurbished electrical equipment.

The NRC has conducted followup inspections and investigations at selected CB distributors and at companies suspected of selling used or refurbished circuit breakers. Additionally, nuclear utility sales information related to potentially refurbished CBs has been voluntarily provided to the NRC by distributors of electrical equipment. This information is summarized in Attachment 1. Several utilities identified in the Attachment have already been contacted by the NRC concerning specific licensee procurements and disposition of the equipment involved.

The NRC staff does not have any specific information on the condition of the equipment provided by these companies; however, the activities observed at some of the companies visited by the NRC were not considered sufficient to assure breaker functionality and quality.

ATTACHMENT 1

Shipments Of Circuit Breakers/Electrical Equipment To Nuclear Power Plants/Utilities

Utility/Plant	Item Description (1)	Date of Transaction	Distributor	Supplying Company (2)	Comments
Alabama Power (Farley)	GE AK 2A25 2	February 6, 1987	GE Supply	Rosen S-711	Alabama Power Co. P.O. 62816
Arkansas Power and Light	SD KA 36200 1	April 6, 1988	Treadway Electric	CAL BKR 26530	
	ITE QJ28200 1	March 30, 1988	Treadway Electric	CAL BKR 26357	Non nuclear application
Arizona Power (Palo Verde)	GE TEC 36050 ST 12RA 1	January 31, 1986	GE Supply.	GEN BKR 22824	
(Palo Verde)	GE THED 136100WL 1	January 31, 1986	GE Supply	GEN BKR 23316	
(Palo Verde)	GE THED 136050WL 2	February 12, 1986	GE Supply	GEN BKR 22953	
(Palo Verde)	GE THED 136045WL 1	February 12, 1986	GE Supply	GEN BKR 25476	
	With Shunt Trip 1	February 12, 1986	GE Supply	GEN BKR 25476	

Utility/Plant	Item Description[1]	Date of Transaction	Distributor	Supplying Company[2]	Comments
(Dresden)	W FA 2050 4	September 16, 1986	WESCo, Elmhurst, Illinois	HLC 08355	
	CH 10177H13 3	February 8, 1988	GE Supply, Shorewood, Illinois	AAKER 000668	
	CH 10177H21 Heaters 6	February 8, 1988	GE Supply, Sherwood, Illinois	AAKER 000668	
	CH 10177H32 Heaters 10	February 8, 1988	GE Supply Joliet, Illinois	AAKER 00666	
	CH 10177H1036 Heaters 7				
	CH 10177H1049 Heaters 6				
Commonwealth Edison (La Salle)	FED Pacific 2P125 6	January 15, 1987	GE Supply	Midwest	
Connecticut Yankee Atomic Power Plant (CYAPP)	W Starters A200MICAC 2	August 20, 1987	Economy Electric Manchester	HLC 12718	
	W HFB3050	August 12, 1987	Economy Electric Manchester	HLC 12585	

ATTACHMENT 1

Utility/Plant	Item Description[1]	Date of Transaction	Distributor	Supplying[2] Company	Comments
Louisiana Power and Light	GE THED136150 4	June 11, 1985	GE Supply Baton Rouge	MCCB 1803	
Sacramento Municipal Utility District (Rancho Seco)	GE THED 124015WL 2	February 12, 1987	GE Supply Sacramento	CAL BKR	
Carolina Power and Light	GE TFI36090 1	January 3, 1985		Voyten	CP&L P.O. [illegible] 11501
Commonwealth Edison (Braidwood)	MFR Unknown 500HP250 1	January 27, 1986	Liberty Motor Chicago, Illinois	Voyten	Reportedly used for training
Toledo Edison (Davis-Besse)	GE AK-3A-25 2	April 19, 1988		NSSS	Toledo Edison P.O. 01685857
Niagara Mohawk Power Corp. (Nine Mile Point)	ITE Various types/sizes 475	Different Dates		NSSS	P.O.'s 59085, 59047, 59886 NSSS obtained breakers from several companies involved in refurbishment activities.
Duquesne Light Co.	W JL3-8125 4 JL3-8070 4	April 10, 1987	Stone & Webster	NSSS	Stone & Webster P.O. 28V-66040

ATTACHMENT 1

Utility/Plant	Item Description[1]	Date of Transaction	Distributor	Supplying Company[2]	Comments
Niagara Mohawk Power Co.	W HLM3800T 2	November 6, 1987	MCCB	MCCB	Niagara Mohawk P.O. #349422LL
Pacific Gas and Electric	ITE 1193 60 amp 1	August 11, 1986	Graybar Oakland, California	Panelbd	
Yankee Electric	W F3100N 2	April 9, 1988	Panelbd	Panelbd	
South Carolina Electric and Gas	ITE EF2-B030 2	January 8, 1986	Capitol Electric Columbia, South Carolina	Rosen	
Pacific Gas and Electric	W MA3500 1	January 8, 1986	WESCo Sacramento, California	Rosen	
Sacramento Municipal Utility District	Unknown			Rosen	Listed as a customer on accounts receivable list
Toledo Edison	Unknown			Rosen	Listed as a customer on accounts receivable list
Yankee Electric	Unknown			Rosen	Listed as a customer on accounts receivable list
Southern California Edison	W EH2015 1	March 9, 1988		Luckow	
Southern California Edison	W EH2015 1	March 17, 1988		Luckow	

Utility/Plant	Item Description[1]	Date of Transaction	Distributor	Supplying[2] Company	Comments
Carolina Power and Light (Brunswick)	GE TED 113020 1	July 16, 1987	Graybar Wilmington, North Carolina	MCCB	
Duke Power (Catawba)	W EHB2100 1 1A,1B Aux Contact 1	November 13, 1987	WESCo Charlotte, North Carolina	MCCB	
Duke Power (Catawba)	W EHB2100 1 W 1A,1B Aux Contact (1)	November 12, 1987	WESCo Charlotte, North Carolina	MCCB	
Niagara Mohawk Power Company	W HL3800T 2	November 6, 1987		MCCB	
Sacramento Municipal Utility District (Rancho Seco)	GE TED 1360 OWL 1	February 3, 1988	GE Supply Sacramento, California	MCCB	
Florida Power	SD 999330 1	May 17, 1988	Moyer Electric Tampa, Florida	MCCB	

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-101	Shipment of Contaminated Equipment between Nuclear Power Stations	12/28/88	All holders of OLs or CPs for nuclear power reactors.
88-100	Memorandum of Understanding between NRC and OSHA Relating to NRC-licensed Facilities (53 FR 43950, October 31, 1988)	12/23/88	All major nuclear materials licensees and utilities holding CPs and OLs.
88-99	Detection and Monitoring of Sudden and/or Rapidly Increasing Primary-to-Secondary Leakage	12/20/88	All holders of OLs or CPs for PWRs.
88-98	Electrical Relay Degradation Caused by Oxidation of Contact Surfaces	12/19/88	All holders of OLs or CPs for nuclear power reactors.
88-97	Potentially Substandard Valve Replacement Parts	12/16/88	All holders of OLs or CPs for nuclear power reactors.
88-96	Electrical Shock Fatalities at Nuclear Power Plants	12/14/88	All holders of OLs or CPs for nuclear power reactors.
88-95	Inadequate Procurement Requirements Imposed by Licensees on Vendors	12/8/88	All holders of OLs or CPs for nuclear power reactors.
88-94	Potentially Undersized Valve Actuators	12/2/88	All holders of OLs or CPs for nuclear power reactors.
88-93	Teletherapy Events	12/2/88	All NRC medical licensees.
88-92	Potential for Spent Fuel Pool Draindown	11/22/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. Forster Fournier
National Aeronautics and Space Administration
600 Independence Avenue, Code HM
Washington, DC 20546

Dear Mr. Fournier:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

-- IN 88-48 and Supplement 1, Licensee Report of Defective Refurbished Valves

-- IN 88-97 and Supplement 1, Potentially Substandard Valve Replacement Parts

-- IN 89-18, Criminal Prosecution of Wrongdoing Committed by Suppliers of Nuclear Products or Services

-- IN 89-21, Changes in Performance Characteristics of Molded-Case Circuit Breakers

-- IN 89-22, Questionable Certification of Fasteners

-- IN 89-39, List of Parties Excluded from Federal Procurement or Non-Procurement Programs

-- IN 89-45 and Supplement 1, Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts

-- IN 89-56, Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers

-- Bulletin 88-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

8909110073 3pp

A/42

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

Addressees listed below

September 1, 1989

Mr. Forster Fournier
Mr. Robert Barber
Mr. George Rodney
Mr. R. Kunihiro
Mr. Walter P. Engle
Ms. Teresa King
Mr. Fred Fiege
Mr. Alphonso Barr
Mr. Dana Lakeman

Dear Sir/Madam:

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Original signed by
Brian K. Grimes

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

DISTRIBUTION:
VIB Reading
BKGrimes
GCwalina
DCD/RIDS Code IE:09
DRIS Reading
EWBrach
WHaass

*Previously concurred.

[DANA LETTER]

OFC	:VIB:DRIS*	:SC:SPS:VIB*	:C:VIB:DRIS	:D:DRIS:NRR	:	:
NAME	:Whaass:nrp	:GCwalina	:EWBrach	:BKGrimes	:	:
DATE	:08/29/89	:08/29/89	:8/31/89	: 9/1/89	:	:

OFFICIAL RECORD COPY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

July 17, 1988

NRC INFORMATION NOTICE NO. 88-48: LICENSEE REPORT OF DEFECTIVE REFURBISHED VALVES

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert licensees to potential problems with refurbished valves. It is expected that recipients will review this information for applicability to their facilities and consider action, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

In April 1988, Pacific Gas and Electric (PG&E) informed the NRC about a potential problem concerning Vogt 2-inch valves (Vogt Figure No. SW 10111), which were leaking steam at the bonnet and packing. According to PG&E, the valves were purchased from a local supply company in May 1986 and installed in non-safety-related applications. Although the supply company is now out of business, additional information was obtained by PG&E that indicated that the valves, although supplied as new, were actually shipped from CMA International of Vancouver, Washington, a valve salvage supply house. Henry Vogt Company examined the valves at the Diablo Canyon plant and determined that it had not manufactured the valves. The valves at Diablo Canyon had square flanges, and all Vogt-manufactured valves have round flanges.

Discussion:

NRC again stresses the importance of the licensee's role in ensuring that procurement activities for both safety-related and non-safety-related components and materials are given attention commensurate with their importance. Had an adequate review of the source of the valves been performed, this problem would have been identified and salvage valves would not have been installed.

On the basis of discussions with Vogt representatives, these valves would not be appropriate as replacement valves in safety-related applications. These valves are full-port design; that is, the valve port is the same size as the

inside diameter of the pipe. Vogt valves designed and sold for safety-related use are standard-port design; that is, the valve port is slightly smaller than the inside diameter of the pipe. Vogt representatives were not aware of any full-port design valves sold for safety-related applications to nuclear power plants.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Edward T. Baker, NRR
(301) 492-3221

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-47	Slower-Than-Expected Rod-Drop Times	7/14/88	All holders of OLs or CPs for PWRs.
88-46	Licensee Report of Defective Refurbished Circuit Breakers	7/8/88	All holders of OLs or CPs for nuclear power reactors.
88-45	Problems In Protective Relay and Circuit Breaker Coordination	7/7/88	All holders of OLs or CPs for nuclear power reactors.
88-44	Mechanical Binding of Spring Release Device in Westinghouse Type DS-416 Circuit Breakers	6/24/88	All holders of OLs or CPs for nuclear power reactors.
88-43	Solenoid Valve Problems	6/23/88	All holders of OLs or CPs for nuclear power reactors.
88-42	Circuit Breaker Failures Due to Loose Charging Spring Motor Mounting Bolts	6/23/88	All holders of OLs or CPs for nuclear power reactors.
88-41	Physical Protection Weaknesses Identified Through Regulatory Effectiveness Reviews (REPs)	6/22/88	All holders of OLs or CPs for nuclear power reactors.
88-40	Examiners' Handbook for Developing Operator Licensing Examinations	6/22/88	All holders of OLs or CPs for nuclear power reactors.
88-39	LaSalle Unit 2 Loss of Recirculation Pumps With Power Oscillation Event	6/15/88	All holders of OLs or CPs for BWRs.
88-38	Failure of Undervoltage Trip Attachment on General Electric Circuit Breakers	6/15/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

August 24, 1988

NRC INFORMATION NOTICE NO. 88-48, SUPPLEMENT 1: LICENSEE REPORT OF DEFECTIVE REFURBISHED VALVES

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice supplement is being provided to present additional information regarding the valves discussed in Information Notice 88-48. It is expected that recipients will review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

Information Notice 88-48 discussed information from Pacific Gas and Electric (PG&E) about a potential problem with 2-inch valves that were leaking steam at the bonnet and packing.

The NRC received a letter from the Henry Vogt Machine Company (Vogt Company), dated August 1, 1988, stating its position on the Diablo Canyon valve matter and providing additional information on the distinguishing features of its valves. The letter received from the Vogt Company is attached. The letter also indicates the Vogt Company belief that the Diablo Canyon valves were counterfeit and not refurbished Vogt valves and corrects a reference to the Vogt figure number in the original information notice.

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PDR I&E Notice 88-048

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Edward T. Baker, NRR
(301) 492-3221

Attachments:
1. Henry Vogt Machine Co. letter dated 8/1/88
2. List of Recently Issued NRC Information Notices

HENRY Vogt MACHINE CO.
INCORPORATED
P O Box 1918 - LOUISVILLE, KY 40201-1918 - U.S.A.

August 1, 1988

United States Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. Charles E. Rossi, Director
Division of Operational Events Assessment

Dear Sir:

We are in receipt of NRC Information Notice No. 88-48.

After careful review of the notice, we wish to bring the following points to your attention:

1. We believe the title "Licensee Report of Defective Refurbished Valves" is misleading. The valves are counterfeit; we do not believe them to be refurbished.

2. In the third paragraph, you refer to "Vogt Figure No. SW 12111". The valves at Diablo Canyon were actually stamped "SW-13111". Vogt series SW-13111 is a full port design as indicated in your "Discussion".

These valves, including forgings and parts of construction, were not manufactured by Henry Vogt Machine Co. The outward appearance of the counterfeit valves is so drastically different from the Vogt series SW-13111 that any person knowledgeable of our product or examining the product to the Vogt drawing would have spotted the difference immediately. For example:

1. Vogt valves have round bonnet flanges; the counterfeit valves have square bonnet flanges.

2. Vogt series SW-13111 uses a hex head cap screw to join the body and bonnet; the counterfeit valves use a stud/nut combination.

3. A number of the counterfeit valves have "swing gland bolting", a design never used on Vogt SW-13111 valves.

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4. Vogt valves have the name "Vogt" forged onto the side of the body; the counterfeit valves have "Vogt" stamped on the side after an obvious grinding removed the true identity of the material (forging or casting) manufacturer.

5. The end-to-end dimension of the counterfeit valve is shorter than Vogt series SW-13111.

Vogt has manufactured many valves for use in both safety related and non-safety related applications in nuclear power plants. Valves meeting ASME Section III or 10CFR50 are not stamped with a series number such as SW-13111. The valves are identified by the drawing to which the valves were built.

We are concerned that there be no confusion within the industry between valves furnished by Vogt and the counterfeit valves purchased by Pacific Gas & Electric for use at Diablo Canyon. Your cooperation in amending Notice No. 88-48 would be most appreciated.

Yours very truly,

Barbara Bronger

Barbara Bronger, Manager
Nuclear Products Group

bb

cc: Mr. Harold Morgesun
Mr. Guy Jolly

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-68	Setpoint Testing of Pressurizer Safety Valves with Filled Loop Seals Using Hydraulic Assist Devices	8/22/88	All holders of OLs or CPs for nuclear power reactors.
88-67	PWR Auxiliary Feedwater Pump Turbine Overspeed Trip Failure	8/22/88	All holders of OLs or CPs for nuclear power reactors.
88-66	Industrial Radiography Inspection and Enforcement	8/22/88	All NRC industrial radiography licensee
88-65	Inadvertent Drainages of Spent Fuel Pools	8/18/88	All holders of OLs or CPs for nuclear power reactors and fuel storage facilit
88-64	Reporting Fires in Nuclear Process Systems at Nuclear Power Plants	8/18/88	All holders of OLs or CPs for nuclear power reactors.
88-63	High Radiation Hazards from Irradiated Incore Detectors and Cables	8/15/88	All holders of OLs or CPs for nuclear power reactors, research reactors and test reactors.
88-62	Recent Findings Concerning Implementation of Quality Assurance Programs by Suppliers of Transport Packages	8/12/88	All holders of NRC quality assurance program approval for radioactive material packages.
88-61	Control Room Habitability - Recent Reviews of Operating Experience	8/11/88	All holders of OLs or CPs for nuclear power reactors.
88-60	Inadequate Design and Installation of Watertight Penetration Seals	8/11/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

December 16, 1988

NRC INFORMATION NOTICE NO. 88-97: POTENTIALLY SUBSTANDARD VALVE REPLACEMENT PARTS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees about reports concerning the manufacture and distribution of valve replacement parts for Masoneilan-Dresser Industries (M-D) valves that were determined not to be genuine M-D parts and possibly are substandard. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On October 21, 1988, Consumers Power Company (CPCo) submitted a 10 CFR Part 21 report to the NRC regarding valve internals for M-D valves that were found not to be manufactured by an authorized M-D manufacturer. CPCo reported that it had identified approximately 65 questionable valve internals (e.g., valve stems, plugs/discs, cages, seat rings, and retainer pins) after an M-D field service representative pointed out that several valve internal parts for an M-D turbine bypass valve at CPCo's Palisades Nuclear Plant were not genuine M-D parts.

Discussion:

During the 1986 Palisades refueling outage, CPCo sent the subject turbine bypass valve to an M-D authorized facility for refurbishment after experiencing leakage problems with the valve. CPCo also sent to the M-D authorized facility the valve replacement parts since the parts were in-stock items at the Palisades warehouse. After the valve was refurbished and reinstalled, CPCo continued to experience leakage problems with the valve. However, CPCo decided to continue operating with the leakage and to wait until the 1988 refueling outage to resolve the problem.

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During the 1988 refueling outage, CPCo decided to perform the valve refurbishment at the Palisades plant and requested onsite technical support from M-D. During the valve disassembly process, the M-D field service representative pointed out that some of the valve internals had different dimensional and metallurgical characteristics from typical M-D parts. The installed parts had been provided by CPCo and installed in the bypass valve at the authorized M-D facility during the 1986 outage. The M-D representative also identified additional valve internal parts in the Palisades warehouse that he stated were different from typical M-D parts. CPCo believes that all the parts came from the same purchase order. Subsequent CPCo investigations determined that the authorized M-D distributor procured some of the valve parts from manufacturers that are not authorized to make M-D parts.

On November 18, 1988, M-D transmitted a letter to the NRC regarding this issue (Attachment 1) indicating that a potential for malfunction of M-D valves exists if parts manufactured by unauthorized companies are installed.

The 10 CFR Part 21 notification submitted by CPCo, the attached M-D letter, and the NRC staff reviews have brought into question the ability of a valve to perform its safety-related function when internal parts are substandard to the valve manufacturer's authorized replacement parts. Accordingly, addressees may wish to review whether they have an adequate basis for accepting valve replacement parts, especially those purchased for safety-related applications, and to contact the appropriate manufacturers or distributors to confirm the authenticity of any questionable parts.

No specific action or written response is required by this information notice. If you have any questions regarding this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: Joe Petrosino, NRR
(301) 492-0979

Jaime Guillen, NRR
(301) 492-1170

Attachments:
1. Letter to NRC from M-D
2. List of Recently Issued NRC Information Notices

Masoneilan DRESSER

MASONEILAN NORTH AMERICAN OPERATIONS
85 Bodwell Street • Avon, Massachusetts 02322
508/586-4600 • Telex 92-4410

November 18, 1988

Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. Brian Grimes
Director, Division of Reactor
Inspection and Safe Guards

Subject: 10CFR21 Report Masoneilan Valve Parts Deficiencies
Docket 50-255 License DPR-20-Palisades

Dear Mr. Grimes:

This letter is to inform the USNRC of the potential for counterfeit Masoneilan parts being supplied to Commercial Nuclear facilities.

On October 21, 1988, a 10CFR21 report was filed to the USNRC by Consumers Power (ref. Docket 50-255, License DPR-20 Palisades Plant). In that report, valve parts purported to be of Masoneilan manufacture were in fact manufactured by unauthorized sources. These counterfeit parts were supplied by an authorized Masoneilan representative in violation of Masoneilan policy and on their own initiative. These parts were not manufactured to Masoneilan standards and the potential for subsequent valve malfunction exists. All identified parts have been segregated and are being replaced.

Because of this unauthorized action, an evaluation must be performed by the plant licensees, to determine if this is an isolated occurrence.

In this case, Non-Q parts procured commercially were dedicated into Q valves. On site service by Masoneilan personnel identified several parts of other than Masoneilan manufacture.

Counterfeit parts identified at this plant were:

- Plug stem
- Stem to plug anti-rotation pin
- Seat ring

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SUBJECT: 10CFR21 Report Masoneilan Valve Parts Deficiencies

PAGE 2

In addition the potential for additional counterfeit parts exists in the realm of turned machine parts such as:

- Valve plugs
- Bushings
- Cages
- Packing box components

Counterfeit machined parts are often difficult to distinguish from original equipment parts.

An independent investigation by Masoneilan is under way to determine if similar circumstances have occurred with other Masoneilan representative organizations. We are auditing the Manufacturer's representatives with a significant installed base of Masoneilan valves in Nuclear Power facilities in various geographical territories.

Our concern is for the potential of other similar circumstances in Nuclear Power facilities.

Very truly yours,
MASONEILAN-DRESSER INDUSTRIES

W.T. Allen

W.T. Allen
Quality Manager
Masoneilan North American Operations

WTA/mk

cc: L.W. Kinderman
J.E. Conway
R. Cameron

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-96	Electrical Shock Fatalities at Nuclear Power Plants	12/14/88	All holders of OLs or CPs for nuclear power reactors.
88-95	Inadequate Procurement Requirements Imposed by Licensees on Vendors	12/8/88	All holders of OLs or CPs for nuclear power reactors.
88-94	Potentially Undersized Valve Actuators	12/2/88	All holders of OLs or CPs for nuclear power reactors.
88-93	Teletherapy Events	12/2/88	All NRC medical licensees.
88-92	Potential for Spent Fuel Pool Draindown	11/22/88	All holders of OLs or CPs for nuclear power reactors.
88-91	Improper Administration and Control of Psychological Tests	11/22/88	All holders of OLs or CPs for nuclear power reactors and all fuel cycle facility licensees who possess, use, import, export, or transport formula quantities of strategic special nuclear material.
88-90	Unauthorized Removal of Industrial Nuclear Gauges	11/22/88	All NRC licensees authorized to possess, use, manufacture, or distribute industrial nuclear gauges.
88-89	Degradation of Kapton Electrical Insulation	11/21/88	All holders of OLs or CPs for nuclear power reactors.
88-88	Degradation of Westinghouse ARD Relays	11/16/88	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

April 28, 1989

NRC INFORMATION NOTICE NO. 88-97, SUPPLEMENT 1: POTENTIALLY SUBSTANDARD VALVE REPLACEMENT PARTS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This supplement is being provided to update information concerning potential problems resulting from the manufacture and distribution of valve replacement parts that may be substandard. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On October 21, 1988, Consumers Power Company (CPCo) submitted a 10 CFR Part 21 report to the NRC regarding valve internals for Masoneilan-Dresser Industries (M-D) valves that were found to be manufactured by companies not authorized to manufacture M-D valve parts. The M-D valve internal replacement parts were procured as non-safety-related from Sample-Webtrol Controls Incorporated (S-W), Livonia, Michigan, an authorized M-D sales representative. S-W records indicate that all of the parts were manufactured by and procured from either Cor-Val or Control Valve Specialists, Incorporated (CVS), both of whom are located in Houma, Louisiana. Some of the parts were found to be dimensionally and, in some cases, metallurgically incorrect.

On December 22, 1988, CPCo updated its October 21, 1988, 10 CFR Part 21 report. CPCo identified an additional 13 parts that were not genuine M-D parts. These parts were procured by CPCo from H. H. Barnum, the M-D authorized sales representative that preceded S-W. Six valve plug retaining pins were found to have undersized expanded diameters. Five of the six pins were supplied to H. H. Barnum by the M-D Houston facility, although M-D could not determine the manufacturer. Seven valve seat rings were found to be dimensionally incorrect. Two of the seven seat rings were manufactured by CVS; however, the manufacturer of the remaining five has not been determined.

IN 88-97 Sup 1

On March 8, 1988, discussions with M-D and CPCo personnel revealed that 15 additional M-D valve internal replacement parts (out of 239 parts inspected) recently were found to be nonconforming. CPCo procured the parts from either S-W Controls or H. H. Barnum. Twelve of the fifteen nonconforming parts were identified by either tags or packaging that indicated the parts originated from the M-D Norwood, Massachusetts, facility. The origin of the remaining three nonconforming parts has not been determined. At this time, the manufacturer of the 15 nonconforming parts has also not been determined.

Discussion:

From a review of the circumstances, it appears that potentially substandard valve internal replacement parts may possibly enter the nuclear parts supply system either directly from secondary source manufacturers (e.g., CVS and Cor-Val) or from the distribution centers of original equipment manufacturers. In the examples discussed, a licensee ordered parts for safety-related applications as commercial grade and failed to adequately verify that the parts would perform their function. The authorized distributor procured the parts from both the original equipment manufacturer and secondary sources without ensuring, in all cases, that the parts were equivalent. In addition, the original equipment manufacturer purchased parts from subcontractors and did not adequately verify that the parts would fulfill their function.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Joseph J. Petrosino, NRR
(301) 492-0979

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-42	Failure of Rosemount Models 1153 and 1154 Transmitters	4/21/89	All holders of OLs or CPs for nuclear power reactors.
89-41	Operator Response to Pressurization of Low-Pressure Interfacing Systems	4/20/89	All holders of OLs or CPs for nuclear power reactors.
88-75, Supplement 1	Disabling of Diesel Generator Output Circuit Breakers by Anti-Pump Circuitry	4/17/89	All holders of OLs or CPs for nuclear power reactors.
89-40	Unsatisfactory Operator Test Results and Their Effect on the Requalification Program	4/14/89	All holders of OLs or CPs for nuclear power reactors.
89-39	List of Parties Excluded from Federal Procurement or Non-Procurement Programs	4/5/89	All holders of OLs or CPs for nuclear power reactors.
89-38	Atmospheric Dump Valve Failures at Palo Verde Units 1, 2, and 3	4/5/89	All holders of OLs or CPs for nuclear power reactors.
89-37	Proposed Amendments to 40 CFR Part 61, Air Emission Standards for Radionuclides	4/4/89	All U.S. NRC licensees.
89-36	Excessive Temperatures in Emergency Core Cooling System Piping Located Outside Containment	4/4/89	All holders of OLs or CPs for nuclear power reactors.
88-86, Supp. 1	Operating with Multiple Grounds in Direct Current Distribution Systems	3/31/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

February 22, 1989

NRC INFORMATION NOTICE NO. 89-18: CRIMINAL PROSECUTION OF WRONGDOING COMMITTED BY SUPPLIERS OF NUCLEAR PRODUCTS OR SERVICES

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to inform licensees of the results of criminal prosecution of cases of wrongdoing the NRC referred to the U.S. Department of Justice. The information notice also reminds licensees and their suppliers of the penalties that could result from the intentional violation of regulatory requirements. In particular, both the supplier as a company and individual employees could be subject to criminal prosecution by the U.S. Department of Justice if they intentionally violate regulatory requirements or commit any other type of regulatory-related wrongdoing. It is expected that recipients will review this information notice and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

During 1982 and 1983, Tube-Line Corporation sold substantial quantities of steel products to nuclear power plants. The products were represented as being made of nuclear-grade steel, but they were actually of low quality commercial-grade steel. The actual quality of these products was discovered during an evaluation of the physical properties of a sample while some of the products were being used to fabricate a modification for the Oconee nuclear power plant. Further investigations disclosed that three Tube-Line Corporation officials had represented the products as being of nuclear-grade steel and had falsified or consented to falsify the required certifications. During September and October 1988, Tube-Line Corporation and the three officials pled guilty to charges of conspiracy (a violation of 18 USC 371) and mail fraud (a violation of 18 USC 1341). In response to these guilty pleas, the corporation was fined. Additionally, the corporation president, Mr. Joseph Romanelli, was fined, sentenced to 5 years' probation, and also ordered to perform community service. The other two corporate officials, Mr. Ealan Wingate and Mr. Vernon Anderson, were each fined, sentenced to a community treatment center and to 3 years' probation, and ordered to perform community service.

Power Inspection, Incorporated (PI), performed eddy-current testing (ECT) services on safety-related equipment at the Palisades and Beaver Valley Unit 1 nuclear power plants during 1984. In September 1985, the NRC received an allegation that PI had falsified a calibration certification for the ECT equipment. A subsequent NRC inspection substantiated the allegation. In October 1988, both PI and its president pled guilty to making a false statement to the NRC (a violation of 18 USC 1001). In response to these guilty pleas, the corporation was fined and required to make monetary restitution to Duquesne Light Company. The corporation president, Mr. Krishna Kumar, was also fined, ordered to make monetary restitution to Duquesne Light Company, and sentenced to 3 years' probation.

Discussion:

All personnel involved in NRC-regulated activities (including suppliers and vendors) have a responsibility to comply with NRC regulatory requirements. The NRC expects and demands compliance with its regulatory requirements. As noted in the two situations discussed, the NRC will seek criminal prosecution of wrongdoers if there is intentional or willful violation of its regulatory requirements.

The NRC expects all personnel involved in NRC-regulated activities, including supplier employees, to be completely candid and cooperative with NRC personnel during the licensing and inspection process. The regulatory process functions on the premise that suppliers will, at all times, provide accurate information to the NRC and its licensees in a timely manner. Violations of NRC requirements caused by intentional acts or efforts to impede the regulatory process may subject wrongdoers to criminal prosecution. As evidenced by the cases described in this information notice, criminal sanctions may include a fine and/or imprisonment.

Addressees may wish to distribute copies of this information notice to their employees and suppliers.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Edward T. Baker, NRR
(301) 492-0959

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-17	Contamination and Degradation of Safety-Related Battery Cells	2/22/89	All holders of OLs or CPs for nuclear power reactors.
89-16	Excessive Voltage Drop in dc Systems	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-15	Second Reactor Coolant Pump Shaft Failure at Crystal River	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-14	Inadequate Dedication Process for Commercial Grade Components Which Could Lead to Common Mode Failure of a Safety System	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-13	Alternative Waste Management Procedures in Case of Denial of Access to Low-Level Waste Disposal Sites	2/8/89	All holders of NRC specific licenses.
89-12	Dose Calibrator Quality Control	2/9/89	All NRC medical licensees.
89-11	Failure of DC Motor-Operated Valves to Develop Rated Torque Because of Improper Cable Sizing	2/2/89	All holders of OLs or CPs for nuclear power reactors.
89-10	Undetected Installation Errors In Main Steam Line Pipe Tunnel Differential Temperature-Sensing Elements at Boiling Water Reactors.	1/27/89	All holders of OLs or CPs for BWRs.
89-09	Credit for Control Rods Without Scram Capability in the Calculation of the Shutdown Margin	1/26/89	All holders of OLs or CPs for test and research reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

February 27, 1989

NRC INFORMATION NOTICE NO. 89-21: CHANGES IN PERFORMANCE CHARACTERISTICS OF MOLDED-CASE CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees to an observed practice in which vendors make changes to the performance characteristics of molded-case circuit breakers without making any corresponding revisions to the breaker part number. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

During several inspections performed by the NRC, it was discovered that manufacturers of molded case circuit breakers frequently altered the time-current characteristic curves pertaining to a particular style or type of breaker. These changes were made without changing the part number of the breaker and often without any specific notification to the customer. The changes identified during the NRC inspections ranged from very minor alterations to the thermal portion of the curves to major alterations to the magnetic instantaneous trip portion of the curves. One change for ITE-type 100-amp breakers involved the movement of the instantaneous band from 600-1000 amps to 1200-2000 amps. Although product literature usually contains the appropriate curves, the curves are not routinely provided with the breakers.

Discussion:

As a result of these changes, many licensees who procure replacement breakers by part number only are receiving breakers with performance characteristics that may be different from those assumed in the original plant design. If the breakers are not analyzed for performance characteristics, upon installation these breakers potentially could degrade the electrical protection system and/or cause premature tripping upon the energizing of vital safety-related systems. Additionally, many perceived failures of circuit breakers detected

during pre-installation or routine testing may actually be the result of unknown changes in time-current characteristic curves. One way to ensure that the breakers purchased conform to a particular curve would be to reference the specific curve (including the applicable revision) as part of the purchase requirements. If the breaker was no longer manufactured to meet the specifications of that specific curve, the new curve would have to be analyzed for its effect on the overall system.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: J. B. Jacobson, NRR
(301) 492-0996

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-73, Supplement 1	Direction-Dependent Leak Characteristics of Containment Purge Valves	2/27/89	All holders of OLs or CPs for nuclear power reactors.
89-20	Weld Failures in a Pump of Byron-Jackson Design	2/24/89	All holders of OLs or CPs for nuclear power reactors.
89-19	Health Physics Network	2/23/89	All holders of OLs or CPs for nuclear power reactors, and the following fuel facilities: Nuclear Fuel Services of Erwin, General Atomic, UNC Montville, B&W LRC Lynchburg, and B&W Lynchburg.
89-18	Criminal Prosecution of Wrongdoing Committed by Suppliers of Nuclear Products or Services	2/22/89	All holders of OLs or CPs for nuclear power reactors.
89-17	Contamination and Degradation of Safety-Related Battery Cells	2/22/89	All holders of OLs or CPs for nuclear power reactors.
89-16	Excessive Voltage Drop in dc Systems	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-15	Second Reactor Coolant Pump Shaft Failure at Crystal River	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-14	Inadequate Dedication Process for Commercial Grade Components Which Could Lead to Common Mode Failure of a Safety System	2/16/89	All holders of OLs or CPs for nuclear power reactors.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

March 3, 1989

NRC INFORMATION NOTICE NO. 89-22: QUESTIONABLE CERTIFICATION OF FASTENERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees to a possible problem with the certification of fasteners (bolts, nuts, and studs) furnished by Hardware Specialty Company, Incorporated (HSC) of Long Island City, New York. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

During 1981 and 1982, Ebasco Services Incorporated and Louisiana Power and Light Company issued purchase orders (POs) to HSC for fasteners for use at the Waterford Nuclear Power Plant. Based on a review of certificates of compliance (C of Cs) and certified material test reports (CMTRs), it was determined that HSC purchased commercial grade fasteners from intermediary suppliers who obtained the material from foreign and domestic suppliers and manufacturers. HSC certified that the material met the requirements of Section III of the ASME Boiler and Pressure Vessel Code without performing applicable verification activities or upgrade testing. Additionally, stainless steel fasteners may not have been properly solution annealed as evidenced by the fact that tensile properties in test reports are high for heat treated material and the Brinell hardness numbers exceed the maximum specified for SA-193 BB Class 1 material. In addition, Charpy impact tests were not performed on fasteners greater then one inch as required by paragraphs NB-2311 and NC-2311 of ASME Section III, 1977 Edition, Summer 1979 Addenda, which were invoked in the pertinent POs. It should be noted that the POs did not contain test temperatures for conducting the impact tests. This material was sold to the Waterford site in the early 1980s. The above information was discovered during an NRC inspection at HSC during the period of February 7-10, 1989. Attachment 1 lists organizations known to have approved HSC as a supplier of fasteners to ASME Section III or Appendix B to 10 CFR 50 requirements during the 1980-1985 time frame. This list is not all inclusive. It is important for licensees to note that HSC reportedly started supplying fasteners to the nuclear industry in 1979, but has been in business since 1932.

The NRC inspection at HSC indicates that material supplied by HSC during 1980 met customer requirements. A list of HSC nuclear customers in 1988/1989 is provided in Attachment 2. The documents for the material supplied between 1983 and 1987 were not reviewed in sufficient detail to conclude whether problems exist with the material provided by HSC during this period.

Discussion:

The NRC inspections at the Waterford site and HSC have brought into question the validity of C of Cs and CMTRs issued by HSC for the fasteners that they supplied. Accordingly, licensees may wish to review procurements from this vendor to ensure that appropriate bases exist for the use of HSC supplied material. Licensees and other purchasers may wish also to review the adequacy of audits performed on vendors and vendor approval processes in light of this information. (See also IN No. 88-35, "Inadequate Licensee Performed Vendor Audits").

In addition, it is important for licensees to note that Section III of the ASME Boiler and Pressure Vessel Code requires that, when working with material suppliers and manufacturers that are not Quality System Certificate (QSC) Holders, the only parties permitted to survey, approve, and order Section III material from them are QSC and N-type certificate holders.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Ray Cilimberg, NRR
(301) 492-3220

Attachments:
1. List of Organizations that Approved Hardware Specialty Company
2. List of Hardware Specialty Company Nuclear Customers in 1988/1989
3. List of Recently Issued NRC Information Notices

LIST OF ORGANIZATIONS THAT APPROVED HARDWARE SPECIALTY COMPANY

UTILITIES/VENDORS	AUDIT APPROVAL DATE
Niagara Mohawk	1985
Maine Yankee	1985
Virginia Power	Pre 9/1980
Louisiana Power and Light	1981
Ebasco	1981
Alabama Power	1981
Hayward Tyler	10/15/80
Jamesbury Valve	Pre 9/1980
Ryerson Steel	Pre 9/1980
Baltimore Gas and Electric	11/13/80
Texas Utilities	05/20/81
Morrison Knudson	11/10/81
Indiana and Michigan Electric Company	05/19/81
Pennsylvania Power and Light	12/15/81
American Electric Power	1981
Rockwell	1980
Continental Power (Marble Hill)	1981

LIST OF HARDWARE SPECIALTY COMPANY NUCLEAR CUSTOMERS IN 1988/1989

Arizona Power

Bechtel - Limerick

Bechtel - South Texas

Boston Edison

Carolina Power & Light

Consolidated Edison

Georgia Power

General Public Utilities

Gulf States

Long Island Lighting

New York Power Authority

Niagara Mohawk

Philadelphia Electric

Stone & Webster

Sulzer Pump

Virginia Power

Yankee Atomic

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-21	Changes to Performance Characteristics of Molded-Case Circuit Breakers	2/27/89	All holders of OLs or CPs for nuclear power reactors.
88-73, Supplement 1	Direction-Dependent Load Characteristics of Containment Pump Motors	2/27/89	All holders of OLs or CPs for nuclear power reactors.
89-20	Weld Failures in a Pump of Byron-Jackson Design	2/24/89	All holders of OLs or CPs for nuclear power reactors.
89-19	Health Physics Network	2/23/89	All holders of OLs or CPs for nuclear power reactors, and also following fuel facilities: Nuclear Fuel Services of Erwin, General Atomic, NRC Rockville, B&W LOC Lynchburg, and B&W Lynchburg.
89-18	Criminal Prosecution of Wrongdoing Committed by Suppliers of Nuclear Products or Services	2/22/89	All holders of OLs or CPs for nuclear power reactors.
89-17	Contamination and Degradation of Safety-Related Battery Cells	2/21/89	All holders of OLs or CPs for nuclear power reactors.
89-16	Excessive Voltage Drop in DC Systems	2/16/89	All holders of OLs or CPs for nuclear power reactors.
89-15	Second Reactor Coolant Pump Shaft Failure at Crystal River	2/16/89	All holders of OLs or CPs for nuclear power reactors.

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NUCLEAR REGULATORY COMMISSION
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WASHINGTON, D.C. 20555

April 5, 1989

NRC INFORMATION NOTICE NO. 89-39: LIST OF PARTIES EXCLUDED FROM FEDERAL PROCUREMENT OR NON-PROCUREMENT PROGRAMS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is provided to alert addressees to a United States General Services Administration (GSA) data system that provides information on parties (manufacturers, vendors and contractors) that have been excluded from receiving Federal contracts or assistance. It is expected that licensees will review the information for applicability to their procurement practices and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Discussion:

Over the past several months, there has been an increasing NRC concern focusing on the potential for poorly manufactured or fraudulent/counterfeit parts being used in the nuclear industry. This notice provides information on the GSA data systems that have been established to assist users when procuring components or when selecting a contractor.

The GSA publishes a document entitled, "List of Parties Excluded from Federal Procurement or Non-Procurement Programs." This document, published monthly and supplemented weekly, provides a consolidated compilation of companies found to have been party to a variety of violations of Federal regulations including fraud, antitrust infractions, embezzlement, theft, forgery, bribery, false statements, and other offenses indicating a lack of business integrity. It can be purchased by annual bulk subscription by contacting the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The telephone number is (202) 783-3238.

The document consists of two sections. The first section, "Parties Excluded From Procurement Programs," lists contractors that are excluded government-wide, unless noted, from Federal procurement and/or sales programs. Such an exclusion

may be based on the administrative debarment or suspension of a contractor by an agency in accordance with Federal Acquisition Regulation (FAR) 9.4, Federal Property Management Regulation (FPMR) 101-45.6, GPO Instructions 110, 11A, or U.S. Postal Service (PS) Publication 41. An exclusion may also be the result of action by a Federal agency under the authority of statute, executive order, or regulation applying to the procurement programs.

The second section, "Parties Excluded From Non-Procurement Programs," lists persons (individuals and entities) excluded government-wide, unless otherwise noted, from certain types of Federal financial and nonfinancial assistance and benefits. An exclusion may be based on an administrative debarment or suspension by any Federal agency or the voluntary exclusion of a person under regulations implementing Executive Order 12549. This section also includes actions under the authority of a statute, another executive order, or a regulation applying to non-procurement programs.

A listing of Cause and Treatment Codes is provided in the document to indicate the type of action taken against a party, the authority under which action was taken, and the party's status determination.

Licensees may wish to establish whether their suppliers or contractors are listed and take appropriate actions to establish adequate confidence in the quality of products or services procured from such companies.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Edward J. Butcher /for

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: W. Haass, NRR
(301) 492-3219

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-38	Atmospheric Dump Valve Failures at Palo Verde Units 1, 2, and 3	4/5/89	All holders of OLs or CPs for nuclear power reactors.
89-37	Proposed Amendments to 40 CFR Part 61, Air Emission Standards for Radionuclides	4/4/89	All U.S. NRC licensees.
89-36	Excessive Temperatures in Emergency Core Cooling System Piping Located Outside Containment	4/4/89	All holders of OLs or CPs for nuclear power reactors.
88-80, Supp. 1	Operating with Multiple Grounds in Direct Current Distribution Systems	3/31/89	All holders of OLs or CPs for nuclear power reactors.
89-35	Loss and Theft of Unsecured Licensed Material	3/30/89	All U.S. NRC byproduct, source and special nuclear material licensees.
89-34	Disposal of Americium Well-Logging Sources	3/30/89	All holders of an NRC specific license authorizing well-logging activities.
89-33	Potential Failure of Westinghouse Steam Generator Tube Mechanical Plugs	3/23/89	All holders of OLs or CPs for PWRs.
89-32	Surveillance Testing of Low-Temperature Overpressure-Protection Systems	3/23/89	All holders of OLs or CPs for PWRs.
89-31	Swelling and Cracking of Hafnium Control Rods	3/22/89	All holders of OLs or CPs for PWRs with Hafnium control rods.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

May 8, 1989

NRC INFORMATION NOTICE NO. 89-45: METALCLAD, LOW-VOLTAGE POWER CIRCUIT BREAKERS REFURBISHED WITH SUBSTANDARD PARTS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees to the discovery of defects in metalclad, low-voltage power circuit breakers, including missing, nonstandard, and substandard parts, and improper assembly and misadjustment. It is expected that recipients will review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The NRC has learned of the discovery of defects in metalclad, low-voltage, power circuit breakers which had been installed at the Quad Cities nuclear power plant. The breakers had missing, nonstandard, and substandard parts that were identified during maintenance at the General Electric (GE) switchgear service shop in Hammond, Indiana. The breakers were GE type AKF-2-25, DC field discharge breakers used as anticipated transient without scram (ATWS) breakers for the reactor coolant recirculation pump motor-generators.

Commonwealth Edison Company (CECo) purchased the AKF-2-25s for Quad Cities from the Satin American Corporation. In a recent inspection at Satin American, the NRC reviewed the records pertaining to these breakers. The Quad Cities purchase order and the Satin American invoice and shipping documents indicated that the breakers were purchased as commercial grade equipment. The shipping documents contained no certifications and described the breakers only by model number and serial number. Satin American's inspection and testing records for the breakers indicated that they had been taken from the vendor's stock of reportedly new breakers and only inspection and testing was documented before they were shipped to Quad Cities. Satin American's catalog defines "new" as

never used and obtained from the manufacturer. The catalog classifies as "unused" those breakers that have never been used, but were obtained from sources other than the manufacturer. However, the vendor's stock is obtained from various sources, and consists predominantly of ostensibly never-used surplus switchgear. The information available at the time of the inspection did not establish clear traceability to the source of these breakers, nor could the circumstances under which they were purchased be confirmed.

Records at Quad Cities reviewed thus far indicate that only routine maintenance had been performed on the breakers at the plant. The deviations were discovered by the GE Hammond Switchgear Service Shop during the course of their overhaul of the breakers for Quad Cities. The NRC has not determined who was responsible for the condition of the AKF-2-25s at Quad Cities or why these conditions remained undetected during intervening maintenance activities.

Discussion:

Some of the deviations found by the GE Hammond service shop in one of the AKF-2-25s from Quad Cities were apparently the result of either substandard or improper materials, poor quality workmanship and/or substitution of non-standard parts and misrepresentation of condition and/or quality.

Deviations in one of the breakers' nameplates were reported to have initially alerted GE to the possibly refurbished condition of the breaker. On an AKF-type breaker, the nameplate should have included an "Inspected by" stamp, a "GEK" instruction book number, and the serial number should have included the "ATL" designation for the GE facility in Atlanta that modifies AK breakers, built in Burlington, Iowa, to the AKF configuration. The nameplate on this AKF breaker was missing the inspection stamp and the instruction book number, and its serial number did not have the "ATL" designation. Also, the nameplate was loosely fastened by two improperly installed rivets.

During disassembly and inspection, GE identified the lower stud, the lower pivot shims, the moving contact springs, a cam follower, and some moving contact arms as nonstandard, non-GE parts. The paint was reported as being a glossy nonstandard type, of excessive thickness, and had been applied in locations where a potential to jam the mechanism existed, particularly the closing coil plunger assembly and the E-frame. Several layers of hand-cut black electrical insulation paper were found under the center stationary contact mounting block where one thickness of insulation paper and machined steel lower pivot shims would normally be installed. The mounting block is fastened to the breaker frame with two machine screws and two dowel pins. In one of the AKF-2-25s, the dowel pins were missing. The flat or leaf spring type contact arm spring laminations are supposed to be machine stamped from copper-plated spring steel, whereas the breaker was found to contain springs made of untempered copper and mild steel that appeared to have been roughly

cut from sheet metal stock by hand with a hacksaw and metal shears. Also, these breakers have boomerang-shaped cam follower arms in the contact mechanism cut or stamped from stock about 1/8-inch thick. The arms contain a machined slot of conforming shape. In genuine GE parts, the inside edge of the slot at the elbow where the angle changes is machined to a point; whereas, on the cam followers found in the Quad Cities breaker, this point was rounded off to about a 1/4-inch radius. This could impair the breaker function, possibly causing the mechanism to jam. Additionally, the closing coil, which appeared to have been rewound, was cracked, and the leads exited the windings in a manner inconsistent with GE standard practice.

During the inspection at Satin American, NRC inspectors examined about 20 of the AK-type breakers in the Satin American warehouse that had been obtained reportedly as unused surplus materia' and found only one or two of the nameplates exhibiting the inspection stamp. In addition, breakers were found with nameplates missing most of the normal data, and one had two serial numbers. The NRC is continuing its inquiry into this matter; however, similar to the Quad Cities case, available information did not establish traceability to the source of these breakers.

Although it has not been determined what party or parties are responsible for the deviations identified on the Quad Cities AKF-2-25 ATWS breaker, it is clear that breaker failures or malfunctions could result from the types of deviations observed and that users of these and other breakers must exercise appropriate controls when procuring commercial grade components. A properly implemented commercial grade dedication program for circuit breakers would include measures to ensure that the component design is suitable for the application, that the component is traceable to the original manufacturer, and that the component, when received, is adequately inspected and tested to verify all critical characteristics. Such a program would identify many of the deficiencies described above.

In addition, licensees are responsible for assuring that all maintenance and refurbishment and/or modification of equipment is performed properly by qualified personnel (including contractors) using correct parts and materials and that all required retests are properly conducted and evaluated.

The NRC is particularly interested in obtaining information on these or other types of circuit breakers that have been found with deficiencies similar to those described in this notice. Documentation, in as much detail as practicable, of any such circuit breaker deficiencies discovered, especially in cases where a breaker may have been improperly serviced or refurbished is important. Licensees may communicate the availability of information of this type by telephone to the NRC technical contact listed below.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: S. Alexander, NRR
(301) 492-0995

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-44	Hydrogen Storage on the Roof of the Control Room	4/27/89	All holders of OLs or CPs for nuclear power reactors.
88-82, Supp. 1	Torus Shells with Corrosion and Degraded Coatings in BWR Containments	5/2/89	All holders of OLs or CPs for BWRs.
89-43	Permanent Deformation of Torque Switch Helical Springs in Limitorque SMA-Type Motor Operators	5/1/89	All holders of OLs or CPs for nuclear power reactors.
88-97, Supp. 1	Potentially Substandard Valve Replacement Parts	4/28/89	All holders of OLs or CPs for nuclear power reactors.
89-42	Failure of Rosemount Models 1153 and 1154 Transmitters	4/21/89	All holders of OLs or CPs for nuclear power reactors.
89-41	Operator Response to Pressurization of Low-Pressure Interfacing Systems	4/20/89	All holders of OLs or CPs for nuclear power reactors.
88-75, Supplement 1	Disabling of Diesel Generator Output Circuit Breakers by Anti-Pump Circuitry	4/17/89	All holders of OLs or CPs for nuclear power reactors.
89-40	Unsatisfactory Operator Test Results and Their Effect on the Requalification Program	4/14/89	All holders of OLs or CPs for nuclear power reactors.
89-39	List of Parties Excluded from Federal Procurement or Non-Procurement Programs	4/5/89	All holders of OLs or CPs for nuclear power reactors.
89-38	Atmospheric Dump Valve Failures at Palo Verde Units 1, 2, and 3	4/5/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

July 6, 1989

NRC INFORMATION NOTICE NO. 89-45, SUPPLEMENT 1: METALCLAD, LOW-VOLTAGE POWER CIRCUIT BREAKERS REFURBISHED WITH SUBSTANDARD PARTS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice supplement is being provided to present additional information regarding the supply of surplus or refurbished circuit breakers and related electrical equipment to nuclear power plants as discussed in NRC Information Notice No. 89-45. It is expected that recipients will review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

NRC Information Notice No. 89-45 discussed a General Electric (GE) type AKF-2-25 metalclad, low-voltage power circuit breaker (field discharge configuration) from the Quad Cities nuclear power plant found to be refurbished with nonstandard and substandard parts.

In conducting followup inspections at utilities that have procured circuit breakers of this type and other related electrical equipment from Satin American Corporation, the NRC has learned of the existence of other equipment from Satin American, refurbished with nonstandard and possibly substandard parts and fabrication methods, some of which may contain latent defects resulting from the introduction of nonstandard materials and components. These defects may not be readily detectable by means of normal inspection and testing, and the nature of the defects is such that they could render the equipment inoperable without warning.

Discussion:

Recent information, received in the course of the NRC's review and inspections of refurbished electrical equipment, indicates that GE EC-type, series overcurrent trip devices (particularly EC-1 and EC-2A) commonly used in GE

AK-type, low-voltage power circuit breakers, and supplied by a vendor other than the original manufacturer, may have been represented as new or original equipment. Documentation such as "certificates of certification" stated that the trip devices were "duplicates" of "identical" equipment originally supplied, when in fact, they were refurbished. Many were fitted with irregular nameplates and nonstandard and substandard parts. The trip devices were supplied primarily during the period 1983 through 1987. These electromechanical devices are presently used in Class 1E DC electrical systems because the newer solid-state devices use current transformers as sensors which do not operate on DC. They are also used in safety-related AC electrical systems that may be exposed to the harsh radiation environments of design-basis accidents. Solid-state trip devices have limited capability to withstand the effects of accident radiation doses greater than 10,000 rads or to function properly under the conditions of high accident radiation dose rates.

Of particular concern is the fact that, in addition to irregular nameplates and refurbishments not in accordance with the manufacturer's specifications, some of the units could be considered potentially defective as a result of the use of nonstandard parts and questionable refurbishing methods. Specifically, disassembly and detailed examination of trip units supplied to Nine Mile Point, Unit 1, by Satin American revealed that some trip units were modified, apparently to alter their trip characteristics, by (1) substituting series coils with nonstandard numbers of turns, (2) changing instantaneous trip springs and/or varying the number of active spring turns and/or adjusting tension to compensate, and (3) altering longtime trip characteristics by such practices as using nonstandard longtime trip calibration springs, apparently enlarging the bleed orifices in the dashpot pistons and/or substituting pistons (the markings of some of which were found to be incorrect for the nameplate longtime trip characteristic and current rating) or using other than the original dashpots to obtain different time delays. Additionally, in some trip units examined, the samples of oil taken from the dashpots exhibited some variance from their expected color and odor, indicating that the mechanical modifications may have been complemented by the use of nonstandard dashpot oils (of yet undetermined composition, viscosity, and compatibility) to aid in obtaining the desired longtime trip characteristics.

Aside from the issue of representation of refurbished equipment as original, such modifications constitute the introduction of potential latent defects into equipment, already of indeterminate quality, that would not be readily detected by normal field testing and inspection and which could result in degraded trip unit performance, inability to be adjusted properly, or failure to operate entirely.

Attachment 1 identifies differences that have been observed between several characteristics of construction of refurbished series overcurrent trip devices as supplied by Satin American and original ones from GE. Some of these attributes, identified by an asterisk (*), can often be observed without removing an installed trip unit from its circuit breaker (although the breaker may have to be racked out) and the rest may be observed by removing only the trip unit cover. These attributes may be used to identify refurbished units, although they, in themselves, may not all represent defects.

Attachment 2 tabulates differences between various attributes of irregular nameplates found on some refurbished series overcurrent trip devices supplied by Satin American and authentic ones from GE. These differences may also be used to identify refurbished units.

Addressees are cautioned that although the differences described in Attachments 1 and 2 may be used to identify refurbished units from one vendor, each characteristic should be considered, since not all refurbished units will exhibit all of the differences that have been identified. Therefore, the lack of some of the differences described, or variations on them, should not be considered sufficient evidence to conclude that a given trip unit has not been refurbished.

The NRC is particularly interested in obtaining information on circuit breakers and related electrical equipment supplied by Satin American or others in which differences or deficiencies have been found that are similar to those described in IN 89-45 and this supplement. Of special interest is information on recent procurements. Documentation, in as much detail as practicable, of any such differences or deficiencies discovered, especially in cases in which a piece of equipment may have been improperly serviced or refurbished, is important. Licensees may communicate information of this type by telephone to one of the technical contacts listed below.

No specific action or written response is required by this information notice supplement. If you have any questions about this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: S. D. Alexander, NRR
(301) 492-0995

U. Potapovs, NRR
(301) 492-0984

Attachments:
1. Observed Differences in Original and Refurbished Trip Device Construction
2. Observed Differences in Authentic and Irregular Trip Device Nameplates
3. List of Recently Issued NRC Information Notices

OBSERVED DIFFERENCES IN ORIGINAL AND REFURBISHED TRIP DEVICE CONSTRUCTION

This attachment identifies differences that have been observed between several characteristics of construction of refurbished series overcurrent trip devices as supplied by Satin American and original ones from GE. Some of these attributes, identified by an asterisk (*), can often be observed without removing an installed trip unit from its circuit breaker (although the breaker may have to be racked out) and the rest may be observed by removing only the trip unit cover. These attributes may be used to identify refurbished units.

	COMPONENT	ORIGINAL GE	REFURBISHED
*1.	Magnetic structure pole-piece laminations	Fastened with rivets	Fastened with split pins (also called roll-pins)
*2.	EC-2A dashpot fasteners	Riveted to frame	Bolted to frame with nuts and machine screws
3.	Longtime calibration spring (EC-2A)	Half near adjusting thumbwheel is painted; color corresponds to rating range.	Slightly larger diameter and not painted
4.	EC-2A instantaneous trip adjusting spring	Usually 8 active turns and 1 inactive turn, unpainted[1]	> 9 active turns, painted including screw adjusting nut or < 8 active turns
*5.	Paint on magnetic structure and/or frame	Flat black, even and smooth	Glossy, drips, may be applied over rust
6.	Dashpot lever arm shaft rubber oil seal boots	Secured with two wraps of copper wire, ends twisted since 1984	May still use old style pinch/spring type "hose" clamps
7.	Longtime trip dashpots	Cast aluminum alloy body - unfinished	Body may have been sandblasted
*8.	Square, flat cardboard series coil insulators	Usually bears handwritten instantaneous trip setting marking and the tester's rubberstamp	Often shows no marking or is a used insulator, inverted so original marks are hidden
*9.	EC-1 trip setting or calibration plates	Factory set for longtime and short-time characteristics, bright aluminum, coarse stamped characters	Replacement plates stamped to work on refurbished unit, matte finish, finer stamped characters
*10.	Series coil: condition, number of turns, lug type, and position	Uniform amber "varnish" insulation, number of turns correct for current rating[1]	Discolored/darkened; may appear recoated, overheated; may have wrong lug pattern or number of turns

Note 1: Consult technical documentation and/or the manufacturer for specific functional and construction specifications of [illegible]

OBSERVED DIFFERENCES IN AUTHENTIC AND IRREGULAR TRIP DEVICE NAMEPLATES

This attachment tabulates differences between various attributes of irregular nameplates found on some refurbished series overcurrent trip devices supplied by Satin American and authentic ones from GE. These attributes can usually be observed without removing an installed trip unit from its circuit breaker (although the breaker may have to be racked out). These differences may be used in conjunction with Attachment 1 to identify refurbished units.

	ATTRIBUTE	AUTHENTIC GE	IRREGULAR NAMEPLATE
1.	Finish on EC-1 nameplates	Bright brushed aluminum	White anodized/matte-finished aluminum
2.	Finish on EC-2A nameplates	White anodized finish often lacquered	Similar finish, but not lacquered
3.	"INSPECTED" block stamps (made at GE Plainville, CT factory prior to about 1984)	Unique, single-line closed figure/shape[1] (not used on new units made after 1984 at GE Atlanta, GA factory)	Blank or stamp figure made by reorienting and/or superimposing one standard stamped character on another
4.	Shop or work order number (only on trip units made in GE Atlanta factory, 1984 on)	Letters "ATL-" followed by unique five-digit number usually stamped in upper left corner[1]	Not seen on refurbished trip units with irregular nameplates
5.	Date code (should not appear on plates with shop order number)[1]	Stamped, 2-ltr code on top line between catalog "NO." and type designation, year ltr different weight from month letter.	Present on most EC-2As, missing on many EC-1s examined, year and month letters same weight
6.	"NO." block (catalog part or drawing number)	0549D0497G-1 printed on EC-2As of this design	May be stamped onto irregular nameplates
7.	"NO." block	"NO." corresponds to type and unique "NP" (nameplate) number for each design[1]	Numbers may not correspond correctly or be valid at all
8.	"NO." block	"8"s in "NO." block on EC-1s appear as: "8" e.g., 2380685G-1	Plain figure "8"s
9.	Frequency symbol "CY"	Printed on EC-1s	Stamped
10.	Stamped characters	Darkened with paint	Darkened with grease
11.	EC-1 trip setting calibration plates	Coarse stamped numbers	Finer numbers, graduations closer spaced
12.	EC-2A type designation	"EC-2A" printed	"A" suffix stamped

Note 1: Consult manufacturer for identification of valid date codes, catalog numbers (and corresponding nameplate numbers), inspection stamps, and shop order numbers

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-55	Degradation of Containment Isolation Capability by a High-Energy Line Break	6/30/89	All holders of OLs or CPs for nuclear power reactors.
89-54	Potential Overpressurization of the Component Cooling Water System	6/23/89	All holders of OLs or CPs for nuclear power reactors.
89-53	Rupture of Extraction Steam Line on High Pressure Turbine	6/13/89	All holders of OLs or CPs for nuclear power reactors.
88-45, Supp. 3	Licensee Report of Defective Refurbished Circuit Breakers	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-52	Potential Fire Damper Operational Problems	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-51	Potential Loss of Required Shutdown Margin During Refueling Operations	5/31/89	All holders of OLs or CPs for nuclear power reactors.
88-88, Supp. 1	Degradation of Westinghouse ARD Relays	5/31/89	All holders of OLs or CPs for nuclear power reactors.
89-50	Inadequate Emergency Diesel Generator Fuel Supply	5/30/89	All holders of OLs or CPs for nuclear power reactors.
89-49	Failure to Close Service Water Cross-Connect Isolation Valves	5/22/89	All holders of OLs or CPs for nuclear power reactors.
89-48	Design Deficiency in the Turbine-Driven Auxiliary Feedwater Pump Cooling Water System	5/22/89	All holders of OLs or CPs for nuclear power reactors

OL = Operating License
CP = Construction Permit

Copy to all VIB staff

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

July 20, 1989

NRC INFORMATION NOTICE NO. 89-56: QUESTIONABLE CERTIFICATION OF MATERIAL SUPPLIED TO THE DEFENSE DEPARTMENT BY NUCLEAR SUPPLIERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to alert addressees to a possible problem with the certification of material furnished by Meredith Corporation, Pressure Vessel Nuclear (PVN) and Alloy & Carbon Steel Company, Incorporated (ALLOY) of Hillside, New Jersey. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On May 4, 1989, the U.S. Department of Justice, District of New Jersey, issued information that corporate officers for PVN and ALLOY were indicted for their alleged roles in selling commercial-grade steel as military-grade steel which was used to build and repair U.S. Navy submarines and surface ships. The 27-count indictment rendered on May 4, 1989, by a Newark Federal Grand Jury, charges the defendants, some of whom are presently employees of PVN, with substituting commercial-grade steel for military-grade steel and fraudulently documenting the substitutions as meeting military specifications. From April 1984 through August 1985 the defendants allegedly caused nonconforming steel to be shipped to Department of Defense contractors. The defendants allegedly falsely marked and stenciled steel, created false documentation bearing the letterhead of various companies, falsely altered manufacturer issued certified material test reports (CMTRs), caused fraudulent chemical and physical test certificates to be prepared for tests that had not been performed, and prepared false certificates of conformance (C of Cs) for steel that did not conform to purchase requirements. Attachment I contains a copy of OVERT ACTS from the indictment that identifies faulty documents, heat numbers, and manufacturers' names.

Discussion:

During NRC inspections of PVN conducted the weeks of November 2, 1988 and February 1, 1989, three examples of material supplied to ASME Section III requirements without adequate basis were discovered. In all three cases PVN purchased stock material and sold it as meeting the requirements of Section III without performing the upgrade testing required by NCA-3867.4(e). In addition, it was also noted that PVN had altered CMTRs received from American Tank and Fabricating Company (ATF). On material ATF had purchased from an ASME Quality Systems Certificate (QSC) holder as stock material and subsequently sold to PVN, PVN had removed ATF's name from the "Sold To" and "Shipped To" blocks of the CMTR and inserted PVN's name and address. Based on the indication that the material was purchased directly from an ASME QSC holder, the customer would not be looking for upgrade testing results nor suspect the material was not in conformance with code requirements.

On June 13 and 14, 1989, Virginia Power conducted an audit of PVN. The audit examined a sample of purchase orders which consisted of 16 safety-related purchase orders, encompassing 30 individual line items of various types of safety-related materials. The 16 safety-related purchase orders were issued between September 1, 1988 and May 4, 1989. From the sample of 30 line items, Virginia Power auditors determined that in 3 cases PVN purchased material from unapproved suppliers and in 17 cases PVN supplied commercial grade material. In all 20 cases, PVN certified that the material met all the requirements of Virginia Power's purchase orders, including Appendix B to 10 CFR 50. However, there is no indication that PVN took any action to determine that the materials supplied were suitable for safety-related applications prior to certifying the material met the requirements of Appendix B.

Addressees may wish to review nuclear procurements from these vendors to ensure that appropriate bases exist for the use of PVN or ALLOY supplied material. Further, addressees may wish to contact the steel mills identified as the manufacturer of the procured materials to confirm traceability of the material and to inform one of the NRC technical contacts listed below of any materials identified as not originating from the manufacturer indicated in the documentation or having material properties different from those indicated in the documentation. The NRC is interested in obtaining information on material supplied by PVN or ALLOY in which discrepancies have been found that are similar to those described above or in the indictment described in Attachment 1. The NRC is particularly interested in discrepancies discovered as a result of independent verification testing of chemical and mechanical properties and information on recent procurements.

Addressee audits of material manufacturers and suppliers which include a review of the basis for certifications provided by vendors and the supporting tests and records of traceability can prevent problems such as those discussed above. Addressees may wish to review the adequacy of previous vendor audits and their general vendor approval process in light of Information Notice No. 88-35, "Inadequate Licensee Performed Vendor Audits" and the above information.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate regional office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: Ramon Cilimberg, NRR
(301) 492-3220

Ed Baker, NRR
(301) 492-0959

Attachments:
1. Overt Acts
2. List of Recently Issued NRC Information Notices

OVERT ACTS

In furtherance of the conspiracy and to effect the illegal objects thereof, the following overt acts were committed:

TODD SHIPYARD PURCHASE ORDER NUMBER SF-16373

1. On or about June 18, 1985, defendant Alloy received an order from Todd Shipyard ("Todd"), specifically Todd Purchase Order SF-16373, which called for, among other items, two pieces of steel plate with dimensions 3/8" x 96" x 240" and 3/8" x 96" x 120", Specification MIL-S 22698 Grade HT.

2. On or about June 20, 1985, defendant Thomas Syms issued Alloy Purchase Order Number 5318 to Levinson Steel Company for, among other items, two pieces of American Society of Testing Materials ("ASTM") A588 plate with dimensions 3/8" x 96" x 240" and 3/8" x 96" x 240".

3. On or about June 25, 1985, defendant Alloy received the steel from Levinson for Purchase Order Number 5318.

4. In or about June 1985, defendant Alloy received Certified Mill Test Reports indicating that the 3/8" plate mentioned in the preceding paragraphs was manufactured to ASTM A588 specifications, heat number F00402, by United States Steel Corporation.

5. On or about June 27, 1985, defendant Louis Mikosh signed a Certificate of Test, which he caused to be supplied to Todd, that indicated the three-eighths inch steel plate was produced by Phoenix Steel Corporation to MIL-S-22698,

Grade MT specification, heat number 95372, knowing full well that this was a false and fraudulent statement.

CRAFT MACHINE WORKS ORDER NUMBER 2P18708-7

6. In or about December 1984, defendant PVN received an order from Craft Machine Works ("Craft"), order number 2P18708-7, which called for, among other items, the following pieces of steel:

SPECIFICATION	DIMENSIONS	HEAT NUMBER
MIL-S-16113	1"x96"x120"	401N7311
MIL-S-16113	1 1/2"x96"x120"	411S3321

7. On or about December 13, 1984, defendant Hamilton Vasquez signed PVN's sales order number 01527 indicating that PVN was shipping steel of military specification in fulfillment of the Craft order.

8. In or about December 1984, defendant PVN issued Certified Mill Test Reports to Craft for the military specification steel described in Overt Act 6 when in fact the defendant PVN had shipped commercial grade steel to Craft.

9. In or about March 1985, Craft notified defendant PVN that independent testing performed on the steel shipped to Craft indicated that the PVN supplied steel was deficient as military specification steel.

10. On or about March 18, 1985, defendant William Lanza answered Craft's letter and offered to have the steel retested.

11. In or about June 1985, defendant Hamilton Vasquez traveled to Newport News, Virginia to arrange for new testing of the disputed steel but no test was performed.

TIM SHULER & ASSOCIATES PURCHASE ORDER NUMBER 401

12. On or about October 15, 1984, Tim Shuler & Associates ("Tim Schuler") ordered from defendant Alloy on purchase order number 401, among other items, 130 pieces of 3" x 3" x 1/4" x 20' steel angles, with military specification MIL-S-22698B, Grade AH36T.

13. On or about November 12, 1984, defendant Alloy shipped Tim Shuler 130 pieces of structural steel, each piece measuring 3" x 3" x 1/4" x 20', bearing heat number 81672 and purporting to be MIL-S-22698B, Grade AH36T Class U.

14. On or about November 12, 1984, defendant Louis Mikosh signed an Alloy Certificate of Test certifying that the 130 pieces of steel bearing heat number 81672 was military specification steel and that the certificate of test was a true copy of a test report on file at Alloy when, in fact, he knew that certification was false and fraudulent and a forgery.

15. On or about November 12, 1984, defendant Alloy provided Tim Shuler Associates with a forged and fraudulent Atlantic Steel Company Certified Mill Test Report for heat number 81672 falsely certifying that the steel Alloy was providing to Tim Shuler was military specification steel when, in truth and in fact, it was commercial grade steel.

DIVERSIFIED METALS INC. ORDER NUMBER 1548

16. On or about May 3, 1984, Diversified Metals placed an order with defendant PVN on purchase order number 1548 for 25 pieces of 3/8" x 4" x 20' steel bars, with military specification MIL-S-20166B, Grade HT.

17. On or about May 2, 1984, PVN issued a purchase order number 8573 to Azco Steel Company, for 25 pieces of 3/8" x 4" x 21' flat bar, commercial specification ASTM A588.

18. On or about May 4, 1984, defendant Dean Lanza signed a PVN Certificate of Test certifying that 25 pieces of steel bearing heat number A1053 was military specification steel and that the certificate of test was a true copy of a test report on file at PVN when, in fact, he knew that certification was false and fraudulent.

19. On or about May 4, 1984, defendant PVN provided Diversified Metals with a forged and fraudulent Atlantic Steel Company Certified Mill Test Report for heat number A1053 falsely certifying that the steel PVN was providing to Diversified Metals was military specification steel when, in truth and in fact, it was commercial grade steel.

BLANK DOCUMENTS

20. During the period of this Indictment, defendant Louis Mikosh, improperly and wrongly kept blank Atlantic Steel Company Certified Mill Test Reports in his office which he periodically caused to be forged so to falsely certify commercial grade steel was military specification steel.

21. During the period of this Indictment, defendant Louis Mikosh improperly and wrongly kept blank American Bureau of Shipping documents in his office which he periodically caused to be forged so to certify that steel he was shipping complied with ABS standards.

All in violation of Title 18, United States Code, Section 371.

COUNT 4

1. Paragraphs 1, and 3 through 13 of Count 1 of this Indictment are realleged and incorporated as though set forth in full herein.

2. On or about May 30, 1985, in Hillside in the District of New Jersey and elsewhere, the defendants

LOUIS MIKOSH and
ALLOY & CARBON STEEL, INC.

in a matter within the jurisdiction of a department and agency of the United States, that is, the United States Department of Defense and the United States Navy, did knowingly and willfully make and use and cause to be made and used a false, fictitious and fraudulent statement and representation and did make and use and cause to be made and used a false writing and document knowing the document and writing contained a false, fictitious and fraudulent statement and entry in that the defendants provided a forged Bethlehem Steel Certified Mill Test Report to Colonnas Shipyard knowing full well that the heat number and specification listed thereon were not the true heat number and specification for the steel shipped to Colonnas Shipyard.

In violation of Title 18, United States Code, Sections 1001 and 2.

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-45, Supp. 1	Metalclad, Low-Voltage Power Circuit Breakers Refurbished With Substandard Parts	7/6/89	All holders of OLs or CPs for nuclear power reactors.
89-55	Degradation of Containment Isolation Capability by a High-Energy Line Break	6/30/89	All holders of OLs or CPs for nuclear power reactors.
89-54	Potential Overpressurization of the Component Cooling Water System	6/23/89	All holders of OLs or CPs for nuclear power reactors.
89-53	Rupture of Extraction Steam Line on High Pressure Turbine	6/13/89	All holders of OLs or CPs for nuclear power reactors.
88-46, Supp. 3	Licensee Report of Defective Refurbished Circuit Breakers	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-52	Potential Fire Damper Operational Problems	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-51	Potential Loss of Required Shutdown Margin During Refueling Operations	5/31/89	All holders of OLs or CPs for nuclear power reactors.
88-88, Supp. 1	Degradation of Westinghouse ARD Relays	5/31/89	All holders of OLs or CPs for nuclear power reactors.
89-50	Inadequate Emergency Diesel Generator Fuel Supply	5/30/89	All holders of OLs or CPs for nuclear power reactors.
89-49	Failure to Close Service Water Cross-Connect Isolation Valves	5/22/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

Copy to all VIB Sta

OMB No.: 3150-0011
NRCB 88-10, Supplement 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

August 3, 1989

NRC BULLETIN NO. 88-10, SUPPLEMENT 1: NONCONFORMING MOLDED-CASE CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

The purpose of this bulletin is to inform addressees that based on a preliminary review of responses to NRC Bulletin No. 88-10, the NRC staff has determined that many responses do not adequately satisfy the provisions of Bulletin No. 88-10 and that some addressees may need to take additional actions. This supplement also provides specific examples of common deficiencies identified during the preliminary review of responses.

Description of Circumstances:

NRC Bulletin No. 88-10 was issued on November 22, 1988, to request that addressees take actions to provide reasonable assurance that molded-case circuit breakers (CBs) purchased for use in safety-related applications perform their safety functions. In addition, the bulletin required that addressees submit certain information to the NRC regarding CBs that could not be traced to the circuit breaker manufacturer (CBM).

An NRC staff review of the written reports submitted by addressees in accordance with Bulletin No. 88-10 revealed several common deficiencies. In addition, the NRC staff has received requests for positions on specific issues that were not explicitly addressed in Bulletin No. 88-10. The NRC analyses and positions on these issues are provided in this supplement.

During the preparation of this supplement, the NRC received comments from the National Electrical Manufacturers Association (NEMA) and the Nuclear Management and Resources Council (NUMARC). NEMA reaffirmed its position that neither the tests delineated in Bulletin No. 88-10, a visual inspection, nor a combination of testing and inspection, are adequate to ensure the performance of nontraceable CBs. Similarly, NUMARC raised concerns about and advised against the use of nontraceable CBs from known refurbishers, regardless of whether

or not they have passed the tests delineated in Bulletin No. 88-10. However, the NRC judgement on the adequacy of bulletin testing to justify continued use of nontraceable CBs remains as stated in Bulletin No. 88-10.

NRC Positions:

1. If CBs are traceable to an original plant construction order and the CBs were received prior to August 1983, there is reasonable assurance that the CBs are acceptable and no additional traceability is required.

2. Visual inspection and physical examination of the CBs by the CBM is not considered adequate to meet the requested traceability provisions of Bulletin No. 88-10. Although visual inspection and physical examination by the CBM may provide a reasonable basis that the CBs have not been opened or altered in a substantial way, there is no reasonable assurance that the CBs have not been previously used or subjected to service conditions that may have adversely affected the performance capabilities of the CBs.

3. Item 4 of the actions requested in Bulletin No. 88-10 applies only to CBs that were purchased and installed after August 1, 1983.

4. If an addressee identifies any CBs as nontraceable during the review requested by Bulletin No. 88-10, it should take appropriate corrective actions as required by Criterion XVI of 10 CFR Part 50, Appendix B. As part of these corrective actions, the NRC expects addressees to assess the acceptability of all installed safety-related CBs that were procured under the same purchase orders as the nontraceable CBs.

5. In an effort to limit the number of nonconforming CBs in safety-related systems, nontraceable CBs that were installed or are being maintained as stored spares as of August 1, 1988, and that successfully pass all tests specified in Attachment 1 of Bulletin No. 88-10 are considered acceptable for use only as replacements for safety-related CBs that are found to be nontraceable during the review requested by Bulletin No. 88-10. These breakers may not be used as safety-related replacements during other activities such as planned plant modifications or routine maintenance.

6. For CBs stored as spares that were not procured directly from the CBM, each individual CB should be reviewed in order to establish proper traceability, regardless of the number of CBs.

7. All safety-related CBs from the same procurement order are considered traceable provided that 1) the order was procured directly from a CBM having a quality assurance program in accordance with 10 CFR Part 50, Appendix B, 2) the CBM has been audited by the addressee in accordance with Appendix B, 3) the CBs were ordered as safety-related, and 4) documented evidence has been furnished to the addressee, such as a

certificate of compliance. However, if safety-related CBs were procured from a vendor other than the CBM, a certificate of compliance by itself is not considered an adequate basis for establishing traceability. In such cases, traceability of individual procurement orders should be established through the review of procurement or shipping records back to the CBM. Telephone discussions with the CBM or vendor are not acceptable for establishing a basis for traceability. Traceability to a warehouse facility controlled by the CBM is considered equivalent to traceability to the CBM.

Actions Requested:

In response to the aforementioned circumstances, addressees are requested to perform the following actions within 90 days from the receipt of this bulletin:

1. Review written reports submitted to the NRC in accordance with Bulletin No. 88-10 and verify that the responses meet the bulletin provisions as clarified by this supplement.

2. Prepare and retain documentation for possible audit that indicates that item 1 of the actions requested has been performed as requested.

Reporting Requirements:

Addressees are required to provide a written report documenting any appropriate corrections to previous responses to Bulletin No. 88-10.

The NRC may conduct inspections at selected nuclear power plant sites in order to verify that issues associated with Bulletin No. 88-10, and as clarified by this supplement, have been adequately resolved.

The written reports required above shall be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, under oath or affirmation under the provisions of Section 182a, Atomic Energy Act of 1954, as amended. In addition, a copy shall be submitted to the appropriate Regional Administrator.

This request is covered by Office of Management and Budget Clearance Number 3150-0011, which expires December 31, 1989. The estimated burden hours, which includes the original bulletin requests, is 1,000 to 10,000 person-hours per plant response, including assessment of these requirements, searching data sources, testing, analyzing the data, and preparing the required reports. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Records and Reports Management Branch, Division of Information Support Services, Office of Information Resources Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555; and to the Paperwork Reduction Project (3150-0011), Office of Management and Budget, Washington, D.C. 20503.

If you have any questions regarding this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate NRC regional office.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contacts: Uldis Potapovs, NRR
(301) 492-0984

Jaime Guillen, NRR
(301) 492-1170

Attachment: List of Recently Issued NRC Bulletins

LIST OF RECENTLY ISSUED NRC BULLETINS

Bulletin No.	Subject	Date of Issuance	Issued to
89-02	Stress Corrosion Cracking of High-Hardness Type 410 Stainless Steel Internal Preloaded Bolting in Anchor Darling Model S350W Swing Check Valves or Valves of Similar Design	7/19/89	All holders of OLs or CPs for nuclear power reactors.
89-01	Failure of Westinghouse Steam Generator Tube Mechanical Plugs	5/15/89	All holders of OLs or CPs for PWRs.
88-08, Supplement 3	Thermal Stresses in Piping Connected to Reactor Coolant Systems	4/11/89	All holders of OLs or CPs for light-water-cooled nuclear power reactors.
88-07, Supplement 1	Power Oscillations in Boiling Water Reactors	12/30/88	All holders of OLs or CPs for BWRs.
88-11	Pressurizer Surge Line Thermal Stratification	12/20/88	All holders of OLs or CPs for PWRs.
88-10	Nonconforming Molded-Case Circuit Breakers	11/22/88	All holders of OLs or CPs for nuclear power reactors.
88-05, Supplement 2	Nonconforming Materials Supplied by Piping Supplies, Inc. at Folsom, New Jersey and West Jersey Manufacturing Company at Williamstown, New Jersey	8/3/88	All holders of OLs or CPs for nuclear power reactors.
88-08, Supplement 2	Thermal Stresses in Piping Connected to Reactor Coolant Systems	8/4/88	All holders of OLs or CPs for light-water-cooled nuclear power reactors.

OL = Operating License
CP = Construction Permit

Crowley
9P4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

August 16, 1989

NRC INFORMATION NOTICE NO. 89-59: SUPPLIERS OF POTENTIALLY MISREPRESENTED FASTENERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice is being provided to inform addressees of the names of suppliers and/or manufacturers of suspected counterfeit fasteners that were identified as a result of information reported in response to NRC Bulletin No. 87-02, "Fastener Testing To Determine Conformance With Applicable Material Specifications," and Supplements 1 and 2 thereto. Information is also provided on a Grand Jury indictment, dated June 27, 1989, of AIRCOM Fasteners, Incorporated, for allegedly providing nonconforming and falsely identified fasteners to Comanche Peak, the Department of Defense, and other customers. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

On November 6, 1987, the NRC issued Bulletin No. 87-02 to all holders of operating licenses or construction permits for nuclear power reactors in order to determine whether counterfeit fasteners were a concern in the nuclear power industry. The bulletin requested addressees to determine whether fasteners obtained for use in their facilities met the chemical and mechanical specifications stipulated in the procurement documents by sampling typical studs, bolts, cap screws, and nuts. The bulletin also required addressees to provide the names of suppliers and manufacturers of the fasteners. The NRC staff has compiled the information submitted by the addressees and determined that some fasteners supplied to the nuclear industry may have been misrepresented or counterfeit.

A summary of the fastener testing data can be found in NUREG-1349, "Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02." The NUREG summarizes the data according to licensee, manufacturer, supplier, and fastener specification. NUREG documents can be obtained from:

1. The Superintendent of Documents, U.S. Government Printing Office, Post Office Box 37082, Washington, D.C. 20013-7082.

2. The National Technical Information Service, Springfield, Virginia 22161.

Discussion:

Over the past several years, the presence of counterfeit fasteners has been identified throughout various industries, associations, and Federal agencies. These fasteners have been mismarked to indicate a material content and composition different from the actual bolt content.

The primary problem has been with SAE J429 Grade 8.2 fasteners that were marked and sold as Grade 8. Grade 8 refers to the highest standard strength achieved in the manufacture of bolts and hex cap screws. Grade 8 bolts are medium carbon alloy steel, quenched and tempered at a minimum temperature of 800° F. The carbon content is between 0.28 and 0.55 weight percent with no specification for boron. Grade 8 fasteners are heat treated to achieve a hardness of 33 to 39 on the Rockwell C scale. Grade 8.2 fasteners are low carbon martensite steel, fully killed, fine grain, and quenched and tempered at a minimum temperature of 650° F. Grade 8.2 bolts have a carbon content of 0.15 to 0.25 weight percent and a minimum of 0.0005 weight percent boron. Grade 8.2 fasteners are heat treated to achieve a hardness of 35 to 42 on the Rockwell C scale.

Two concerns arise with regard to the use of Grade 8.2 fasteners in Grade 8 applications. The first concern is the failure of Grade 8.2 bolts from relaxation under load at elevated temperatures. Because of the lower tempering temperature, Grade 8.2 bolts will relax at a lower temperature than Grade 8 bolts. Secondly, industry experience has shown that bolts with hardness values exceeding 39 on the Rockwell C scale are prone to embrittlement if not properly processed during manufacture. In certain applications, the use of mismarked Grade 8.2 bolts in Grade 8 applications could result in failure.

The mismarking and selling of SAE J429 Grade 5.2 as Grade 5 fasteners is similar to the Grade 8 issue. Grade 5 and Grade 5.2 fasteners are both tempered at a minimum temperature of 800° F; therefore, relaxation at elevated temperatures is not a problem for these bolts. However, the mismarking of the bolts is indicative of product substitution which may extend to other, more critical products.

The companies listed below have been identified from addressee responses as providing suspected counterfeit fasteners to the nuclear industry.

Supplier Name	Address
Bennett Bolt Works	Unknown
Bolts & Nuts, Inc.	Chattanooga, Tennessee
Glasser & Associates	El Cerrito, California
Knoxville Bolt & Screw	Knoxville, Tennessee
Metal Fastener Supply	Decatur, Alabama
Phoell Manufacturing Co.	Minneapolis, Minnesota
Service Supply Co.	Unknown
Southeastern Bolt & Screw	Chattanooga, Tennessee
Sure-Loc, Inc.	Charlotte, North Carolina
Victory Bolt, Inc.	Knoxville, Tennessee

On June 27, 1989, a Fort Worth, Texas, Grand Jury handed down an indictment of AIRCOM Fasteners, Incorporated, of Arlington, Texas, and Yamaguchi-Seisakusho Company, Limited, of Japan, for allegedly providing nonconforming and falsely identified fasteners to Comanche Peak and other customers.

The indictment further alleges that false, fictitious, and fraudulent documents were made and caused to be made at AIRCOM for delivery to the Department of Defense, Peterbilt Motors Company, and Texas Utilities at Comanche Peak Nuclear Power Plant to execute and cover up the scheme, including certificates of conformance, certified material test reports, laboratory reports, metallurgical reports, plating certificates, gage certifications, heat treat certifications, purchase orders, vendor quote sheets, correspondence, invoices, quality assurance records, and affidavits.

As a result of the above information and the indictments identifying alleged record falsification and misrepresentation, addressees may wish to review nuclear procurements from these vendors to ensure that appropriate bases exist for the use of fasteners that they may have supplied for safety-related applications or to be upgraded for use in safety-related applications. Further, it is important for addressees performing audits of fastener manufacturers and suppliers to include a review of the basis for certifications provided by vendors and the supporting tests and records of traceability. Addressees may wish to review the adequacy of previous vendor audits and their general vendor approval process in light of this information (reference Information Notice No. 88-35, "Inadequate Licensee Performed Vendor Audits").

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate NRR project manager.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Gregory C. Cwalina, NRR
(301) 492-3221

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-58	Disablement of Turbine-Driven Auxiliary Feedwater Pump Due to Closure of One of the Parallel Steam Supply Valves	8/3/89	All holders of OLs or CPs for PWRs.
89-57	Unqualified Electrical Splices in Vendor-Supplied Environmentally Qualified Equipment	7/26/89	All holders of OLs or CPs for nuclear power reactors.
89-56	Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers	7/20/89	All holders of OLs or CPs for nuclear power reactors.
89-45, Supp. 1	Metalclad, Low-Voltage Power Circuit Breakers Refurbished With Substandard Parts	7/6/89	All holders of OLs or CPs for nuclear power reactors.
89-55	Degradation of Containment Isolation Capability by a High-Energy Line Break	6/30/89	All holders of OLs or CPs for nuclear power reactors.
89-54	Potential Overpressurization of the Component Cooling Water System	6/23/89	All holders of OLs or CPs for nuclear power reactors.
89-53	Rupture of Extraction Steam Line on High Pressure Turbine	6/13/89	All holders of OLs or CPs for nuclear power reactors.
88-46, Supp. 3	Licensee Report of Defective Refurbished Circuit Breakers	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-52	Potential Fire Damper Operational Problems	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-51	Potential Loss of Required Shutdown Margin During Refueling Operations	5/31/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON D.C. 20555

June 8, 1989

NRC INFORMATION NOTICE NO. 88-46, SUPPLEMENT 3: LICENSEE REPORT OF DEFECTIVE REFURBISHED CIRCUIT BREAKERS

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose:

This information notice supplement is being provided to present additional information regarding the supply of surplus or refurbished electrical equipment such as circuit breakers (CBs) to nuclear power plants as discussed in NRC Information Notice (IN) 88-46 including Supplements 1 and 2. It is expected that recipients will review this information for applicability to their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

Information Notice No. 88-46 discussed a report by Pacific Gas and Electric (PG&E) that defective refurbished CBs were supplied to PG&E's Diablo Canyon Nuclear Power Plant by a California electrical supplier. Supplement 1 to IN 88-46 provided a list of shipments of CBs to nuclear power plants or nuclear utilities by five California companies that may have supplied defective refurbished electrical equipment.

The NRC conducted followup inspections and investigations at selected CB distributors and at companies suspected of selling used or refurbished circuit breakers. Plant-related information obtained from these sources was summarized in Supplement 2 to IN 88-46.

During an inspection at the Prairie Island Nuclear Generating Plant (PINGP) conducted October 25-November 4, 1988, NRC identified that 16 General Electric Company (GE) THEF 136050 CBs had been purchased by PINGP from Lakeland Engineering Equipment Company of Minneapolis, who in turn, obtained these CBs from Bud Ferguson's Industrial Control and Supply, Inc. (BF) of Whittier and Lake Forest, California and had them shipped directly to PINGP. The packing slip/invoice from BF indicated that one of the breakers was new and that 15 were

used. Visual inspection of seven of the CBs located in PINGP warehouse showed that six of the breakers were in boxes with labels that appeared to be reproductions of original GE labels. Most of the breakers showed scratches and tool marks on the casings and screw heads consistent with used or refurbished equipment.

Subsequent detailed examination of seven of these CBs by GE confirmed that five CBs had counterfeit rating labels and all seven had counterfeit U/L labels. The breakers were tested for thermal performance, calibration and dielectric strength. Two of the breakers failed to meet the acceptance criteria. Two CBs were then opened and inspected internally and showed no evidence of tampering or counterfeit parts.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate NRC regional office.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: K. R. Naidu, NRR
(301) 492-0980

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
89-52	Potential Fire Damper Operational Problems	6/8/89	All holders of OLs or CPs for nuclear power reactors.
89-51	Potential Loss of Required Shutdown Margin During Refueling Operations	5/31/89	All holders of OLs or CPs for nuclear power reactors.
88-88, Supp. 1	Degradation of Westinghouse ARD Relays	5/31/89	All holders of OLs or CPs for nuclear power reactors.
89-50	Inadequate Emergency Diesel Generator Fuel Supply	5/30/89	All holders of OLs or CPs for nuclear power reactors.
89-49	Failure to Close Service Water Cross-Connect Isolation Valves	5/22/89	All holders of OLs or CPs for nuclear power reactors.
89-48	Design Deficiency in the Turbine-Driven Auxiliary Feedwater Pump Cooling Water System	5/22/89	All holders of OLs or CPs for nuclear power reactors.
89-47	Potential Problems With Worn or Distorted Hose Clamps on Self-Contained Breathing Apparatus	5/18/89	All holders of OLs or CPs for nuclear power reactors and fuel facilities.
89-46	Confidentiality of Exercise Scenarios	5/11/89	All holders of licenses for fuel cycle facilities and byproduct material licensees having an approved emergency response plan.
89-45	Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts	5/8/89	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON D C 20555

September 1, 1989

Mr. Robert Barber, Director
Division of Compliance Programs
U.S. Department of Energy
Mail Stop EH-34
Germantown, Maryland 20874

Dear Mr. Barber:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

-- IN 88-48 and Supplement 1, Licensee Report of Defective Refurbished Valves

-- IN 88-97 and Supplement 1, Potentially Substandard Valve Replacement Parts

-- IN 89-18, Criminal Prosecution of Wrongdoing Committed by Suppliers of Nuclear Products or Services

-- IN 89-21, Changes in Performance Characteristics of Molded-Case Circuit Breakers

-- IN 89-22, Questionable Certification of Fasteners

-- IN 89-39, List of Parties Excluded from Federal Procurement or Non-Procurement Programs

-- IN 89-45 and Supplement 1, Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts

-- IN 89-56, Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers

-- Bulletin 88-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

Q153

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D C 20555

September 1, 1989

Mr. George Rodney
National Aeronautics and Space Administration
Code Q, SR&T & QA
Washington, DC 20546

Dear Mr. Rodney:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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-- IN 89-45 and Supplement 1, Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts

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-- Bulletin 88-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

A/54

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-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. R. Kunihiro
U.S. Department of Defense
Standardization Division
5203 Leesburg Pike, Suite 1403
Falls Church, Virginia 22041

Dear Mr. Kunihiro:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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Q/45

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Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. Walter P. Engle
U.S. Department of Energy
NE-60
Washington, DC 20585

Dear Mr. Engle:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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-- IN 89-56, Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers

-- Bulletin 88-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

A156

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-56 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Ms. Teresa King
Policy Advisor for Small Purchases
U.S. Coast Guard
2100 2nd Street, SW
Mail Stop G-CPM-3
Washington, DC 20593-0001

Dear Ms. King:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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-- IN 89-45 and Supplement 1, Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts

-- IN 89-56, Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers

-- Bulletin 89-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

Q147

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. Fred Fiege
Office of Inspector General
U.S. Department of Energy
Forrestal Building, OIG-43
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Fiege:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to you on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

-- IN 88-48 and Supplement 1, Licensee Report of Defective Refurbished Valves

-- IN 88-97 and Supplement 1, Potentially Substandard Valve Replacement Parts

-- IN 89-18, Criminal Prosecution of Wrongdoing Committed by Suppliers of Nuclear Products or Services

-- IN 89-21, Changes in Performance Characteristics of Molded-Case Circuit Breakers

-- IN 89-22, Questionable Certification of Fasteners

-- IN 89-39, List of Parties Excluded from Federal Procurement or Non-Procurement Programs

-- IN 89-45 and Supplement 1, Metalclad, Low-Voltage Power Circuit Breakers Refurbished with Substandard Parts

-- IN 89-56, Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers

-- Bulletin 88-10 Supplement 1, Nonconforming Molded-Case Circuit Breakers

-- IN 89-59, Suppliers of Potentially Misrepresented Fasteners

Q/48

-- NUREG-1349, Compilation of Fastener Testing Data Received in Response to NRC Compliance Bulletin 87-02

-- IN 88-46 Supplement 3, Licensee Report of Defective Refurbished Circuit Breakers

Should you have any questions on the above, please call me or Mr. Walter F. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. Alphonso Barr, Manager
Industrial Division
Federal Aviation Administration
800 Indepenoence Avenue, SW, ALG-1
Washington, DC 20591

Dear Mr. Barr:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to your Mr. Fred Gilmore on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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Q/59

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Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 1, 1989

Mr. Dana Lakeman, Manager
Production Certification Branch
Federal Aviation Administration
800 Independence Avenue, SW, AIR-220
Washington, DC 20591

Dear Mr. Lakeman:

SUBJECT: POTENTIALLY DEFECTIVE PARTS AND REFURBISHED EQUIPMENT

As discussed in prior correspondence to your Mr. Fred Gilmore on substandard vendor products, the Nuclear Regulatory Commission is continuing its efforts to identify the circumstances and specific instances in which defective parts and equipment may have been supplied to nuclear power plants. Some of the vendors who are the subject of NRC review also provide parts, equipment, and material to other industries and, for this reason, NRC is attempting to continue to keep other federal agencies informed of our activities in this area. To keep you apprised of our activities since the last transmittal to you, we are enclosing copies of the following information notices, bulletin, and NUREG report for your use and information:

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Q/60

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Should you have any questions on the above, please call me or Mr. Walter P. Haass at (301) 492-3219.

Sincerely,

Brian K. Grimes, Director
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:
As stated

Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

September 9, 1974

Mr. James G. Keppler
Regional Director
Directorate of Regulatory
Operations - Region III
U.S. Atomic Energy Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Response to Regulatory Operations Bulletin 74-8 for Dresden, Quad-Cities, Zion and LaSalle County Stations, AEC Dockets 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373 and 50-374

Dear M. Keppler:

Your letter of August 2, 1974 enclosed DRO Bulletin 74-8 which requested that we review the above referenced plants to determine if ITE Type HE-3 molded case circuit breakers are used. This letter is to inform you that these breakers have not been installed on Class IE equipment for Dresden, Quad Cities or Zion Station. The equipment for LaSalle County Station has not yet been purchased.

Very truly yours,

L. D. Butterfield, Jr.
Nuclear Licensing Administrator
Pressurized Water Reactors

SEP 12 1974

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