



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

AUG 3 1988

U.S. Capital
Storeroom House Office Building
Canal D Street, S.W.
Washington, D.C. 20515

Dear Sir:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

I have enclosed a copy of an invoice that identify your agency as the customer. These documents represent our review of a selection of records spanning the last two or three years from all of the companies. As other records are reviewed, we will provide any additional information that comes to light. However, since some of the companies have been in business for as many as 30 years, a full historical records search will not be possible.

The five California companies appear to sell surplus new as well as refurbished breakers. However, their refurbished equipment may be shipped in containers resembling original manufacturer containers.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Brian K. Grimes".

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

Enclosures:
As stated

8808230052

XA
2pp.

VIE R/r

U.S. Capital

- 2 -

AUG 5 1988

DISTRIBUTION:w/o Enclosures

- JTaylor
- JSlizek
- TMartin
- BGrimes
- JStone

MT
 DRIS:NRF
 JStone:tt
 7/27/88

[Handwritten signature]
 ADIR:DRIS
 BGrimes
 7/23/88

9/25

AUG 10 1988

Older P 4/25
-info
3/22

B. Y. James
Franklin

Mr. Frederick F. Franklin, P.E.
President
Professional Analytical and Consulting Engineers, Inc.
4325 Indeco Court
Cincinnati, Ohio 45241

Dear Mr. Franklin:

This letter is provided in response to your letter of July 15, 1988 in which you referred to a newspaper article stating that nuclear power plants may have bought used circuit breakers that were falsely labeled as new. Your letter indicates that even new North American circuit breakers are not properly designed to prevent short circuit fires, particularly in residential and commercial installations. Although you do not specifically mention any problems in nuclear power plants, we conclude that your concern extends to them also.

The information you submitted indicates that your research concentrated on 15- and 20-ampere circuit breakers. You note that most household short circuits result in a 150- to 400-ampere short and that the magnetic (quick) trips of North American circuit breakers may be set in excess of this range. You state that the thermal (slow) trip may require several seconds at 100 amperes. Further, you note that European breakers are designed to magnetically trip at lower ratings than North American breakers.

Our concern regarding the nuclear power plant circuit breakers that may have been falsely labeled as new, as mentioned in the newspaper article, is with their ability to function as they are supposed to do. As we understand it, your concern is with the designed magnetic trip settings of North American circuit breakers, particularly that they may not trip fast enough during a short circuit to prevent a household fire. We will attempt to address this concern as it may relate to nuclear power plants.

First, we note that the European-style breakers that you appear to be recommending have not been approved by Underwriters Laboratories, Inc. (UL). One of the reasons given by UL for this circumstance is that the interrupting ratings of European breakers are not sufficient for most North American applications. This fact would be particularly significant in a nuclear power plant where the protection of safety-related equipment is a primary concern.

Second, nuclear power plants have extensive fire protection, fire detection and fire mitigation requirements. These include:

- (1) Identification of fire hazards
- (2) Automatic fire detection systems
- (3) Automatic fire suppression systems

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Q/26

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- (4) Fire barriers and barricades
- (5) Separation of cables from combustible material
- (6) Onsite fire brigades
- (7) Personnel training and periodic surveillance of cables and equipment
- (8) Enclosure of cables and equipment

In addition to these requirements, nuclear plant regulations also require rigorous design and testing of electrical equipment and circuits to ensure a high level of reliability of safety systems. The design requires redundancy of electrical circuits and separation of the redundant circuits. Flame tests, in accordance with Institute of Electrical and Electronics Engineers Standard 383, are required to ensure that cables are fire resistant and will not propagate a fire. Thus, it is unlikely that a relatively low-amperage short circuit as you described would cause a significant fire. Finally, experience does not indicate that a fire hazard exists at nuclear plants because of low-amperage short circuits. Of greater concern are high-amperage faults that are not cleared and that may cause equipment damage or may propagate to other systems.

Finally, designing or setting circuit breakers to trip at five times the breaker ampere rating could result in spurious trips of the breakers during motor starting. Such a trip could disable safety equipment and safety systems when they are most needed to prevent or to mitigate an accident condition.

Although we do not anticipate any significant problems at nuclear power plants from the types of short circuits you described, we appreciate the insight you have provided regarding this phenomena and will consider it in our ongoing safety reviews. We thank you for your concern.

Sincerely,

Original signed by
 Thomas E. Murley

Thomas E. Murley, Director
 Office of Nuclear Reactor Regulation

SEE PREVIOUS CONCURRENCE

IFC	:SELB/DEST*	:SC/SELB/DEST*	:BC/SELB/DEST*	:ARM/PPMB*	:SAD/DEST*	:D/DEST*	:ADT*
NAME	:AToalston:ct	:JEKnight	:FRosa	:BCalure	:ATHadani	:LShao	:TMartin
DATE	:8/ 1 /88	:8/ 2 /88	:8/ 2/88	: 8/4/88	:8/ 5 /88	:8/ 5/88	:8/ 8 /88
IFC	:NRR/DD	:NRR/D	:	:	:	:	:
NAME	:JStezek	:Murley	:	:	:	:	:
DATE	:8/ 10 /88	:8/10/88	:	:	:	:	:

- (1) Identification of fire hazards
- (2) Automatic fire detection systems
- (3) Automatic fire suppression systems
- (4) Fire barriers and barricades
- (5) Separation of cables from combustible material
- (6) Onsite fire brigades
- (7) Personnel training and periodic surveillance of cables and equipment
- (8) Enclosure of cables and equipment

In addition to these requirements, nuclear plant regulations also require rigorous design and testing of electrical equipment and circuits to ensure a high level of reliability of safety systems. The design requires redundancy of electrical circuits and separation of the redundant circuits. Flame tests, in accordance with Institute of Electrical and Electronics Engineers Standard 383, are required to ensure that cables are fire resistant and will not propagate a fire. Thus, it is unlikely that a relatively low-amperage short circuit as you described would cause a fire. Finally, experience does not indicate that a fire hazard exists at nuclear plants because of low-amperage short circuits. Of greater concern are high-amperage faults that are not cleared and that may cause equipment damage or may propagate to other systems.

Also, designing or setting circuit breakers to trip at five times the breaker ampere rating could result in spurious trips of the breakers during motor starting. Such a trip could remove safety equipment and safety systems when they are most needed to prevent or to mitigate an accident condition.

Although we do not anticipate any problems at nuclear power plants from the types of short circuits you described, we appreciate the insight you have provided regarding this phenomena and will consider it in our ongoing safety reviews. We thank you for your concern.

Sincerely,

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

*SEE PREVIOUS CONCURRENCE

OFC	:SELB/DEST*	:SC/SELB/DEST*	:BC/SELB/DEST*	:ARM/PPMB*	:SAD/DEST	:D/DEST	:ADT
NAME	:AToalston:ct	:JEKnight	:FRosa	:BCalure	:ATHadani	:Shao	:TMartin
DATE	:8/ 1 /88	:8/ 2 /88	:8/ 2 /88	: 8/4/88	:8/ 5 /88	:8/ 5 /88	:8/ 8 /88

OFC	:NRR/DD	:NRR/D	:	:	:	:	:
NAME	:JSniezek	:TMurley	:	:	:	:	:
DATE	:8/ /88	:8/ /88	:	:	:	:	:

- (a) Identification of fire hazards
- (b) Automatic fire detection systems
- (c) Automatic fire suppression systems
- (d) Fire barriers and barricades
- (e) Separation of cables from combustible material
- (f) Onsite fire brigades
- (g) Personnel training and periodic surveillance
- (h) Enclosure of cables and equipment

In addition to the fire protection requirements, nuclear plant regulations require rigorous design and testing of electrical equipment and circuits to assure a high reliability of safety systems. The design requires redundancy of electrical circuits and separation of the redundant circuits. Flame tests, in accordance with IEEE Standard 383, are required to ensure that cables are fire resistant and will not propagate a fire. Thus, it is unlikely that a relatively low amperage short circuit as described by you would propagate into a fire. Finally, experience does not suggest a fire hazard at nuclear plants due to low amperage short circuits. Of greater concern are high amperage faults which are not cleared and which may result in equipment damage or may propagate to other systems.

Also, designing or setting circuit breakers to trip at five times the breaker ampere rating could result in spurious trips of the breakers during motor starting requirements. Such a trip could remove safety equipment and safety systems when they are most needed to prevent or mitigate an accident condition.

Although we do not foresee any immediate concern at nuclear plants resulting from the types of short circuits described by you, we appreciate the insight you have provided regarding this phenomena, and will consider it in our ongoing safety reviews. We thank you for this contribution to our knowledge.

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Y 20217

FC	:SELB/DEST	:SC/SELB/DEST	:BC/SELB/DEST	:ARM/PPMB	:SAD/DEST	:D/DEST	:ADT
AME	:Aston:ct	:JEKnight	:FRosa	:B. Calver	:ATHadani	:LShao	:TMartin
ATE	:8/1/88	:8/2/88	:8/2/88	:8/4/88	:8/ /88	:8/ /88	:8/ /88

FC	:NRR/DD	:NRR/D	:	:	:	:	:
AME	:JSniezek	:TMurley	:	:	:	:	:
ATE	:8/ /88	:8/ /88	:	:	:	:	:

Distribution:

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SELB Rdg.

NRC PDR

A. Toalston (PF)

J. E. Knight

F. Rosa

NRC Editor

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T. Martin

J. Sniezek

T. Murley

B. Grimes

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J. Norberg

F. Gillespie

S. Ebnetter

August 18, 1988

Ms. Ida M. Ustad, Director
Office of GSA Acquisition Policy
and Regulations
Room 4026
18 and F Streets, N.W.
Washington, D.C. 20405

Dear Ms. Ustad:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices and orders have been found that identify GSA and certain other government agencies as the customer. By separate correspondence, the NRC has also provided copies of this material to affected agencies, as noted in the enclosed list. A copy of each invoice and order is enclosed. These are in addition to the copies sent to you by letter dated August 1, 1988.

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. List of Agencies Informed
- 2. Invoices/Orders

Distribution: (w/o enclosures)

- JTaylor
- JSniezek
- TMartin
- BGrimes
- JStone
- WHaass (w/enclosures)
- WMcNulty, RV (w/enclosures)
- KEccelston
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- WIB R/F

2/27

OFC	: VIB:DRIS:NRR	: VIB:DRIS:NRR	: C-VIB:DRIS	: D:DRIS:NRR	:	:
NAME	: WHaass:mgc	: Urotapovs	: BBrach	: BGrimes	:	:
DATE	: 08/16/88	: 08/16/88	: 08/17/88	: 08/17/88	:	:

8808250140 1p

August 18, 1988

Defense Logistics Agency
Headquarters, DLA-QL
Cameron Station
Alexandria, Virginia 22304-6100

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices and orders have been found that identify military facilities and NASA as customers. A copy of each invoice and order is enclosed. These are in addition to the copies sent to you by letter dated August 1, 1988. Copies of the enclosed material have been sent, as appropriate, to the Commander, U.S. Army Material Command, the U.S. Department of Energy (NE-60), Headquarters U.S. Air Force (USAF/LEYS), and NASA, Associate Administrator, SRM and QA. The Defense Logistics Agency may wish to coordinate its efforts with the four agencies.

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:
Invoices/Orders

Distribution: (w/o enclosures)

- JTaylor
- JSniezek
- TMartin
- BGrimes
- JStone
- WHaass (w/enclosures)
- WMcNulty, RV (w/enclosures)
- KEccelston
- Central Files
- PDR
- DRIS R/F (w/enclosures)
- WIB R/F

~~880824023~~ 1p.

Q/28

OFC	: VIB: DRIS: NRR	: VIB: DRIS: NRR	: C: VIB: DRIS	: D: DRIS: NRR	:	:
NAME	: WHaass:mgc	: PPolakov	: BBrach	: BGrimes	:	:
DATE	: 08/17/88	: 08/17/88	: 08/17/88	: 08/17/88	:	:



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 18, 1988

Mr. Charles M. Bishop, APS-130
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Mr. Bishop:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, one additional request for quotation (RFQ) has been found that identifies your agency as the potential customer.

A copy of the RFQ is enclosed. This is in addition to the copies sent to you by letter dated August 1, 1988.

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

Sincerely,

A handwritten signature in cursive script that reads "Brian K. Grimes".

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

Enclosure: Request for Quotations

~~8808250118~~ Lp.

9/29

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

Dear Mr. Engle:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices and orders have been found that identify Navy Department organizations/activities as the customer. A copy of each invoice/order is enclosed. These are in addition to the copies sent to you by letter dated July 29, 1988.

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

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

Enclosures:
Invoices/Orders

Distribution: (w/o enclosures)

JTaylor
JSniezek
TMartin
BGrimes
JStone
WHaass (w/enclosures)
WMcNulty, RV (w/enclosures)
KEccelston
Central Files
PDR
DRIS R/F (w/enclosures)
VIB R/F

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9/30

FC	: VIB: DRIS: NRR	: VIB: DRIS: NRR	: C: VIB: DRIS	: D: DRIS: NRR	:	:
AME	: WHaass:imgc	: UPotapovs	: BBrach	: BGrimes	:	:
ATE	: 08/16/88	: 08/16/88	: 08/17/88	: 08/17/88	:	:

August 18, 1988

Mr. James H. Newton
U.S. Coast Guard
Office Symbol G-AS-4
Room 8304
2100 2nd Street, S.W.
Washington, D.C. 20593-0001

Dear Mr. Newton:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices have been found that identify your agency as the customer. A copy of each invoice is enclosed. These are in addition to the copies sent to you by letter dated August 1, 1988.

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:
Invoices

Distribution: (w/o enclosures)

JTaylor
JSrizek
TMartin
BGrimes
WHaass (w/enclosures)
JStone
WMcNulty, RV (w/enclosures)
KEccelston
Central Files
PDR
WIB R/F
DRIS R/F (w/enclosures)

~~8808250210~~ LP

2/31

OFC	: VIB: JRR: NRR	: VIB: DRIS: ARR	: C: VIB: DRIS	: D: DRIS: NRR	:	:
NAME	: WHaass: mgc	: UPotapovs	: BBrach	: BGrimes	:	:
DATE	: 08/16/88	: 08/16/88	: 08/17/88	: 08/17/88	:	:



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 18, 1988

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

Dear Mr. Barber:

SUBJECT POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing review of the records obtained from the five California companies, additional invoices and orders have been found that identify DOE facilities as customers. A copy of each invoice is enclosed. These are in addition to the copies sent to you by letter dated August 1, 1988.

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

Sincerely,

A handwritten signature in cursive script that reads "Brian K. Grimes".

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

Enclosure: Invoices/Orders

~~8808310193~~ 1p.

Q/32



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 18, 1988

Mr. George Rodney,
Associate Administrator,
SRM & QA
Code O
NASA Headquarters
Washington, D.C. 20540

Dear Mr. Rodney:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices have been found that might involve either NASA or your contractors. A copy of each invoice is enclosed. These invoices are in addition to the copies sent to Mr. Forster Fournier by letter dated August 1, 1988.

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

Sincerely,

A handwritten signature in cursive script that reads "Brian K. Grimes".

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

Enclosure: Invoices/orders

880826 0150 2p.

Q/33
27



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

August 18, 1988

Colonel Brannan
Headquarters U.S. Air Force
(USAF/LEYS)
Pentagon
Washington, D.C. 20330-5130

Dear Colonel Brannan:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices and orders have been found that identify an Air Force organization/activity as the customer. A copy of each invoice is enclosed.

These invoices are in addition to the copies sent to you by letter dated August 1, 1988.

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

Sincerely,

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

Enclosure:
Invoices/Order

~~8808250316~~ dp

4/34

August 18, 1988

Mr. Hershel Taylor
U.S. Postal Service
475 L'Enfant Plaza, S.W.
Room 1012
Washington, D.C. 20260

Dear Mr. Taylor:

SUBJECT: POTENTIALLY DEFECTIVE ELECTRICAL EQUIPMENT

In our continuing reviews of the records obtained from the five California companies, additional invoices and orders have been found that identify your agency as the customer. A copy of each invoice is enclosed. These are in addition to the copies sent to you by letter dated August 1, 1988.

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:
Invoices/Orders

Distribution: (w/o enclosures)

JTaylor
JSniezek
TMartin
BGrimes
JStone
WHaass (w/enclosures)
WMcNulty, RV (w/enclosures)
KEccelston
Central Files
PDR
DRIS R/F (w/enclosures)
VIB R/F

~~8808240328~~ Lp.

Q/34

Handwritten initials/signature

OFC	: VIB: DRIS: NRR	: VIB: DRIS: NRR	: C: VIB: DRIS	: D: DRIS: NRR	:
NAME	: WHaass, mgc	: UPotapovs	: BBrach	: BGrimes	:
DATE	: 08/16/88	: 08/16/88	: 08/17/88	: 08/17/88	:



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D C 20555

August 18, 1988

Arizona Air National Guard
1560 East Valencia
Tucson, Arizona 85706

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

I have enclosed a copy of an invoice that identifies your agency as the customer. This document results from our review of a selection of records spanning the last two or three years from all of the companies. As other records are reviewed, we will provide any additional information that comes to light. However, since some of the companies have been in business for as many as 30 years, a full historical records search will not be possible.

The five California companies appear to sell surplus new as well as refurbished breakers. However, their refurbished equipment may be shipped in containers resembling original manufacturer containers.

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

Sincerely,

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

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

8808250273 4p.

Q/36



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 18, 1988

Washington Suburban Sanitary
Commission
Purchasing Office
4101 Lloyd Street
Hyattsville, Maryland 20781

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

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

Sincerely,

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

~~880826 0223~~ 1p.

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

9/38



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

August 18, 1988

New York Air National Guard
Schenectady County Airport
A.N.G. Road
Building 25 B.C.E.
Scotia, New York 12302

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

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

Sincerely,

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

~~8808260173~~ LP

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

Q/39



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 18, 1988

Arizona National Guard
5636 East McDowell
Building 101
Phoenix, Arizona 85660

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

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

Sincerely,

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

~~8809010208~~ lp.

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

9/40



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

August 18, 1988

University of Missouri
125 General Services Boulevard
Columbia, Missouri 65211

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

I have enclosed a copy of a statement that identifies your agency as the customer. This document results from our review of a selection of records spanning the last two or three years from all of the companies. As other records are reviewed, we will provide any additional information that comes to light. However, since some of the companies have been in business for as many as 30 years, a full historical records search will not be possible.

The five California companies appear to sell surplus new as well as refurbished breakers. However, their refurbished equipment may be shipped in containers resembling original manufacturer containers.

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

Sincerely,

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

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

~~8808250110~~ 2p.

ALY



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

August 18, 1968

State Military Department
Camp Withy Conbe
Building 515
Clackamas, Oregon 97015

Dear Sir or Madam:

SUBJECT: POTENTIALLY DEFECTIVE REFURBISHED CIRCUIT BREAKERS

The enclosed Nuclear Regulatory Commission (NRC) Information Notice (IN) 88-46 describes the circumstances under which defective refurbished electrical equipment may have been supplied to nuclear power plants. Our continuing investigation of the five circuit breaker companies identified in the IN shows that the companies have shipped breakers to a number of government facilities and agencies. Our review of a sample of invoices indicates that generally the breakers are sold to a distributor, and it was only the occasional shipment direct to the end user that permitted us to identify the final government destination.

I have enclosed a copy of an invoice that identifies your agency as the customer. This document results from our review of a selection of records spanning the last two or three years from all of the companies. As other records are reviewed, we will provide any additional information that comes to light. However, since some of the companies have been in business for as many as 30 years, a full historical records search will not be possible.

The five California companies appear to sell surplus new as well as refurbished breakers. However, their refurbished equipment may be shipped in containers resembling original manufacturer containers.

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

Sincerely,

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

Enclosures:

1. NRC Information Notice (IN) 88-46
2. Invoice

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9/42

Defense Logistics Agency
Headquarters, DLA-QL
Cameron Station
Alexandria, Virginia 22304

APR 12 1989

Dear Sir/Madam:

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)

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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.

Q/47

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

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