

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

July 14, 1994

NRC INFORMATION NOTICE 94-50: FAILURE OF GENERAL ELECTRIC CONTACTORS
TO PULL IN AT THE REQUIRED VOLTAGE

Addressees

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

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees that some full-voltage magnetic reversing controllers manufactured by General Electric Electrical Distribution & Control (GE ED&C) contained contactors with incorrect coils that would not close the contacts under degraded voltage conditions. 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 are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

In November 1993, at Nine Mile Point Unit 2, as a result of testing certain motor operated valves (MOV) in the high pressure core spray system, plant personnel found that the controllers for four of the MOV motors would not pull in (contactors would not close) at 80 percent of rated voltage as specified in the procurement documents. In all, six CR209D type controllers in the same Division III motor control center were affected. The licensee determined that this condition could have prevented the system from performing its safety function and reported the circumstances to the NRC in accordance with Part 21 of Title 10 of the Code of Federal Regulations (10 CFR Part 21). These controllers had a National Electrical Manufacturers Association (NEMA) rating.

Discussion

Niagara Mohawk Power Company, the licensee for Nine Mile Point, purchased the high pressure core spray system and the associated electrical components from GE Nuclear Energy (GE NE). This included the motor control center which was manufactured for GE NE by GE ED&C. The requirement in the GE NE purchase specification, that NEMA size 1, 2 and 3 controllers in the switchgear should be capable of closing at 80 percent of rated voltage, was a plant interface requirement.

A test procedure performed during plant startup showed that the minimum voltage at which the contactors in these controllers would pull in was greater

9407070279

updated on 7/14/94

PDR I&E

Notice 94-050 940714

JFO
11 ID+R-11c

than 80 percent of rated voltage, but the test procedure did not contain this acceptance criterion and no corrective action was taken. Consequently, if a design-basis accident occurred and system voltage was degraded, these contactors may not have actuated and closed the contacts to operate the affected valves. In this circumstance, the current drawn by the coils remains high and may cause the control power fuse(s) to blow as happened during some of the testing at Nine Mile Point Unit 2.

GE NE informed the NRC that the contactors for the six controllers at Nine Mile Point Unit 2 had been assembled at the GE ED&C factory with standard coils designed to close the contacts at 85 percent of rated voltage. The part number for the standard coil is "15D222G22" which is the part number the licensee reported stamped on the contactor coils. GE NE indicated that a special coil with a 75-percent pull-in rating would have been needed to meet the 80-percent pull-in rating specified in the procurement documents for the affected NEMA size 2 contactors and that the part number for this special coil would have been "55-523759G022." However, this part number is not (and was not) listed in the applicable GE ED&C commercial catalog (currently Catalog No. GEP-1260).

In the GE ED&C catalog, a two-digit suffix at the end of the part number for NEMA-rated contactors, starters, or controllers, specifies the coil voltage rating. At the time that the controllers for the affected MOVs were ordered, the suffix "22" indicated a standard coil for a voltage and frequency rating of 115-120 Vac/60 hertz or 110 Vac/50 hertz that would pull in at 85 percent of rated voltage. However, the suffix "22" is no longer used. Currently, this dual voltage and frequency rating is specified by the suffix "02" and still refers to a standard coil designed to pull in at 85 percent of rated voltage. The suffix "02" was formerly used to specify a nominal 120 Vac/60 hertz coil.

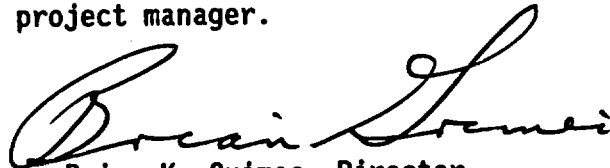
GE NE stated that, if a coil rated to pull in at 75 percent of rated voltage is required, that requirement and the special coil part number or the coil suffix to the catalog number of the contactor, starter, or controller being procured from GE NE (if available) should be included in the procurement documents sent to GE NE. GE NE also stated that GE ED&C does not normally provide this information nor normally supply coils rated to pull in at 75 percent of rated voltage to its commercial customers. However, licensees are responsible for ensuring that procurement documents specify or reference applicable requirements and that purchased material and components conform to the requirements in the procurement documents.

The six controllers whose contactors would not close under the degraded voltage conditions required in the purchase specification had been installed at Nine Mile Point Unit 2 during initial plant construction. Because test procedures failed to verify that the contactors would close at the minimum expected voltage for design basis conditions, this condition remained uncorrected for several years. Testing these or other electromagnet-operated devices at minimum expected voltage (and under certain circumstances, maximum expected temperature) should detect incorrect or inadequately wound coils and also coils that are degraded. GE ED&C stated that all of their contactors with standard coils are tested at 85 percent of rated voltage. However, that

testing may not verify individual plant requirements. Further, not all manufacturers of electromagnet-operated devices test all production units. Some manufacturers may test on a random sample basis and only at nominal or rated voltage. The licensee for Nine Mile Point Unit 2 has replaced the controllers in the four affected MOVs with Gould controllers designed to pull in at 75 percent of rated voltage.

The condition described above may affect other plants. In NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," the NRC requested licensees and holders of construction permits to conduct reviews and verifications of the design and performance of certain MOVs and to take appropriate corrective actions. As part of their response to GL 89-10, some licensees have found that the degraded voltage condition for certain MOVs is less than 80 percent of rated voltage, which is lower than the capability of the GE standard 85 percent coil. Contactors that are not designed to close at the appropriate degraded voltage and tested to verify that capability may be unable to operate those MOVs if degraded voltage conditions occur.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.



Brian K. Grimes, Director
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
(301) 504-2980

Stephen Alexander, NRR
(301) 504-2995

Leonard Cheung, RI
(610) 337-5296

Attachment:
List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
94-49	Failure of Torque Switch Roll Pins	07/06/94	All holders of OLs or CPs for nuclear power reactors.
94-48	Snubber Lubricant Degradation in High-Temperature Environments	06/30/94	All holders of OLs or CPs for nuclear power reactors.
94-13, Supp. 1	Unanticipated and Unintended Movement of Fuel Assemblies and other Components due to Improper Operation of Refueling Equipment	06/28/94	All holders of OLs or CPs for nuclear power reactors.
94-47	Accuracy of Information Provided to NRC during the Licensing Process	06/21/94	All U.S. Nuclear Regulatory Commission Material Licensees.
94-46	NonConservative Reactor Coolant System Leakage Calculation	06/20/94	All holders of OLs or CPs for nuclear power reactors.
94-45	Potential Common-Mode Failure Mechanism for Large Vertical Pumps	06/17/94	All holders of OLs or CPs for nuclear power reactors.
94-44	Main Steam Isolation Valve Failure to Close on Demand because of Inadequate Maintenance and Testing	06/16/94	All holders of OLs or CPs for nuclear power reactors.
94-43	Determination of Primary-to-Secondary Steam Generator Leak Rate	06/10/94	All holders of OLs or CPs for pressurized water reactors.
94-42	Cracking in the Lower Region of the Core Shroud in Boiling-Water Reactors	06/07/94	All holders of OLs or CPs for boiling-water reactors (BWRs).

OL = Operating License
 CP = Construction Permit

testing may not verify individual plant requirements. Further, not all manufacturers of electromagnet-operated devices test all production units. Some manufacturers may test on a random sample basis and only at nominal or rated voltage. The licensee for Nine Mile Point Unit 2 has replaced the controllers in the four affected MOVs with Gould controllers designed to pull in at 75 percent of rated voltage.

The condition described above may affect other plants. In NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," the NRC requested licensees and holders of construction permits to conduct reviews and verifications of the design and performance of certain MOVs and to take appropriate corrective actions. As part of their response to GL 89-10, some licensees have found that the degraded voltage condition for certain MOVs is less than 80 percent of rated voltage, which is lower than the capability of the GE standard 85 percent coil. Contactors that are not designed to close at the appropriate degraded voltage and tested to verify that capability may be unable to operate those MOVs if degraded voltage conditions occur.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager. Original signed by

Brian K. Grimes
 Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
 (301) 504-2980

Stephen Alexander, NRR
 (301) 504-2995

Leonard Cheung, RI
 (610) 337-5296

Attachment:
 List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	RVIB:DRIL	RVIB:DRIL	RVIB:DRIL	C/VIB:DRIL	D/DRIL:NRR
NAME	KNaidu*	SAlexander*	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	06/02/94	02/04/94	02/04/94	02/07/94
OFFICE	TECHED	C/EELB:DE	OGCB:DORS	C/OGCB:DORS	D/DORS:NR R
NAME	RSanders*	CBerlinger*	JBirmingham*	RDennig*	BKGrimes
DATE	06/14/94	06/09/94	06/22/94	06/22/94	07/7/94

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
 (301) 504-2980

Stephen Alexander, NRR
 (301) 504-2995

Leonard Cheung, Region I
 (610) 337-5296

Attachment:
 List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	RVIB:DRIL	RVIB:DRIL	RVIB:DRIL	C/VIB:DRIL	D/DRIL:NRR
NAME	KNaidu*	SAlexander*	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	06/02/94	02/04/94	02/04/94	02/07/94
OFFICE	TECHED	C/EELB:DE	OGCB:DORS	C/OGCB:DORS	D/DORS:NRR
NAME	RSanders*	CBerlenger*	JBirmingham	RDennig	BKGrimes
DATE	06/14/94	06/09/94	06/22/94	06/22/94	06/ /94

OFFICIAL RECORD COPY

DOCUMENT NAME: CNTCTR85.JLB

temperature) would not only fail to detect an incorrect coil, but may also fail to detect inadequately wound or degraded coils, even if the correct coils were ordered and coils of the correct part number were received. Although GE ED&C has stated that all of their contactors with standard coils are tested at 85 percent of rated voltage, this may not verify individual plant requirements. Also, not all manufacturers of electromagnet-operated devices test all production units. Some testing is on a random sample basis and then only at nominal or rated voltage. Niagara Mohawk has since replaced the GE controllers for HPCS loads that must operate in an accident (the four MOVs) with the type of Gould controllers used elsewhere in the plant that are designed to pull in at 75 percent of rated voltage.

In addition, in NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," the NRC requested licensees and holders of construction permits to conduct reviews and verifications of the design and performance of certain MOVs and to take appropriate corrective actions. As part of their response to GL 89-10, some licensees have found that the degraded voltage condition for certain MOVs is less than 80 percent of rated voltage. Various conditions have been discovered that could render safety systems inoperable under degraded voltage conditions, including excessive voltage drop over long cable runs and power supply or control power transformer taps set incorrectly. Contactors that are not designed to close at the minimum voltage expected and tested to verify that capability may be unable to operate those MOVs if degraded voltage conditions occur.

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the persons listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
 (301) 504 2980
 Stephen Alexander, NRR
 (301) 504-2995
 Leonard Cheung, Region I
 (610) 337 5296

Attachment:
 List of Recently Issued NRC Information Notices
 *See previous concurrence

OFFICE	RVIB:DRIL	RVIB:DRIL	RVIB:DRIL	C/VIB:DRIL	D/DRIL:NRR
NAME	KNaidu*	SAlexander*	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	06/02/94	02/04/94	02/04/94	02/07/94
OFFICE	TECHED	C/EELB:DE	OGCB:DORS	C/OGCB:DORS	D/DORS:NRR
NAME	<i>Rbanders</i>	CBerlinger*	JBirmingham		BKGrimes
DATE	06/14/94	06/09/94	06/ /94	06/ /94	06/ /94

Also, not all manufacturers of electromagnet-operated devices test all production units. Some testing is on a random sample basis and then only at nominal or rated voltage. Niagara Mowhawk has since replaced the GE controllers for HPCS loads that must operate in an accident (the four MOVs) with the type of Gould controllers used elsewhere in the plant that are designed to pull in at 75 percent of rated voltage.

In addition, in NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," the NRC requested licensees and holders of construction permits to conduct reviews and verifications of the design and performance of certain MOVs and to take appropriate corrective actions. As part of their response to GL 89-10, some licensees have found that the degraded voltage condition for certain MOVs is less than 80 percent of rated voltage. Various conditions have been discovered that could render safety systems inoperable under degraded voltage conditions, including excessive voltage drop over long cable runs and power supply or control power transformer taps set incorrectly. Contactors that are not designed to close at the minimum voltage expected and tested to verify that capability may be unable to operate those MOVs if degraded voltage conditions occur.

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the persons listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
 (301) 504 2980
 Stephen Alexander, NRR
 (301) 504-2995
 Leonard Cheung, Region I
 (610) 337 5296

Attachment:
 List of Recently Issued NRC Information Notices

*See previous concurrence

**INCORPORATE
 GE COMMENTS*

OFFICE	RVIB:DRIL	RVIB:DRIL	RVIB:DRIL	C/VIB:DRIL	D/DRIL:NRR
NAME	KNaidu*	SAlexander	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	05/02/94	02/04/94	02/04/94	02/07/94
OFFICE	TECHED	OGCB:DORS	OGCB:DORS	C/OGCB:DORS	D/DORS:NRR
NAME	RSanders*	CBerlinger	JBirmingham	AKugler	BKGrimes
DATE	01/28/94	06/9/94	05/ /94	05/ /94	05/ /94

voltage conditions. It was determined that the contactor coils do not conform to paragraph 4.1.2.3 of Purchase Specification 21A9301AZ in which GE specifies the technical requirements of the size 1, 2 and 3 contactors in the HPCS switchgear. This paragraph states that the coils of the contactors should be capable of pulling in with no more than 80 percent of the rated voltage applied. GE informed the NRC that coils designed to pull in at 75 percent of the rated voltage are available for its NEMA Size 2 contactors. NMP2 has since replaced the GE NEMA Size 2 contactors.

The contactors with coils that were unable to pull in at degraded voltage conditions as required by the purchase specifications had been installed to operate safety-related MOVs during initial construction. This condition remained undetected for many years and could exist at other plants. This situation could have been avoided if (1) the coil catalog specification had been compared to the purchase specification and the appropriate coil had been chosen as part of the review for the suitability of application required by Appendix B of Title 10 of the Code of Federal Regulations, Part 50, (10 CFR Part 50, Appendix B), Criterion III, "Design Control," and (2) the correct coils were verified to be installed and then bench tested to verify performance at degraded voltage conditions in accordance with Criterion VII of 10 CFR Part 50, Appendix B, "Control of Purchased Equipment and Services."

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contact: Kamalakar R. Naidu, NRR
 (301) 504 2980
 Stephen D. Alexander, NRR
 (301) 504 2995
 Leonard S. Cheung, Region I
 (215) 337 5296

Attachment: List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	VIB/DRIL	VIB/DRIL	VIB/DRIL	DRIL/NRR	TECH EDITOR	GCB
NAME	KNaidu*	GCwalina	LNorrholm	CERossi	Ray Sanders	
DATE	2/3/94	2/4/94	2/4/94	2/7/94	1 /28 /94	/ /94
COPY	YES NO	YES NO	YES NO	YES NO	NO	YES NO

OFFICE	DOR/NRR
NAME	BGrimes
DATE	/ /94
COPY	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: G:\NAIDU/GE

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the persons listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR
 (301) 504 2980

Stephen Alexander, NRR
 (301) 504-2995

Leonard Cheung, Region I
 (610) 337 5296

Attachment:
 List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	RVIB:DRIL	RVIB:DRIL	RVIB:DRIL	C/VIB:DRIL	D/DRIL:NRR
NAME	KNaidu*	SAlexander	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	05/26/94	02/04/94	02/04/94	02/07/94

OFFICE	TECHED	C/EELB:DE	OGCB:DORS	C/OGCB:DORS	D/DORS:NRR
NAME	RSanders*	CBerlinger	JBirmingham	AKugler	BKGrimes
DATE	01/28/94	05/ /94	05/ /94	05/ /94	05/ /94

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the persons listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Technical contacts: Kamalakar Naidu, NRR (301) 504 2980 Leonard Cheung, Region I (215) 337 5296
Stephen Alexander, NRR (301) 504-2995

Attachment:
List of Recently Issued NRC Information Notices
*See previous concurrence

OFFICE	RVIB:DRIL:NRR	RVIB:DRIL:NRR	C/VIB:DRIL:NRR	D/DRIL:NRR
NAME	KNaidu*	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	02/04/94	02/04/94	02/07/94
TECHED	C/EELB:DE:NRR	OGCB:DORS:NRR	C/OGCB:DORS:NRR	D/DORS:NRR
RSanders	CHBerlinger	JLBirmingham	AJKugler	BKGrimes
01/28/94	03/ /94	03/ /94	03/ /94	03/ /94

OFFICIAL RECORD COPY

DOCUMENT NAME: CONTACTR.JLB

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the persons listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Technical contact: Kamalakar R. Naidu, NRR
(301) 504-2980

Stephen D. Alexander, NRR
(301) 504-2995

Leonard S. Cheung, Region I
(215) 337-5296

Attachment:
List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	RVIB:DRIL:NRR	RVIB:DRIL:NRR	C/VIB:DRIL:NRR	D/DRIL:NRR
NAME	KNaidu*	GCwalina*	LNorrholm*	CERossi*
DATE	02/03/94	02/04/94	02/04/94	02/07/94

TECHED	OGCB:DORS:NRR	C/OGCB:DORS:NRR	D/DORS:NRR
RSanders	JLBirmingham	AJKugler	BKGrimes
01/28/94	03/1/94	03/ /94	03/ /94

OFFICIAL RECORD COPY

DOCUMENT NAME: CONTACTR.JLB

Comments from Tom Scarborough, EMEB, have been incorporated

*Joe Birmingham
504-2829*

degraded voltage conditions. It was determined that the contactor coils do not conform to paragraph 4.1.2.3 of Purchase Specification 21A9301AZ in which GE specifies the technical requirements of the size 1, 2 and 3 contactors in the HPCS switchgear. This paragraph states that the coils of the contactors should be capable of pulling in with no more than 80 percent of the rated voltage applied. GE informed the NRC that coils designed to pull in at 75 percent of the rated voltage are available for its NEMA Size 2 contactors. NMP2 has since replaced the GE NEMA Size 2 contactors.

The NRC is concerned that ^{The} ~~contactors~~ ^{as required by} with coils that were unable to pull in at degraded voltage conditions and that did not meet the purchase specifications had been installed to operate safety-related MOVs during initial construction, and that this condition remained undetected for many years and could exist at other plants. This situation could have been avoided if (1) the coil catalog specification had been compared to the purchase specification and the appropriate coil had been chosen as part of the review for the suitability of application required by Appendix B of Title 10 of the Code of Federal Regulations, Part 50, (10 CFR Part 50, Appendix B), Criterion III, "Design Control," and (2) the correct coils were verified to be installed and then bench tested to verify performance at degraded voltage conditions in accordance with Criterion VII of 10 CFR Part 50, Appendix B, "Control of Purchased Equipment and Services."

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support

Office of Nuclear Reactor Regulation

Technical contact: Kamalakar R. Naidu, NRR
 (301) 504 2980
 Stephen D. Alexander, NRR
 (301) 504 2995
 Leonard S. Cheung, Region I
 (215) 337 5296

Attachment: List of Recently Issued NRC Information Notices

*See previous concurrence

OFFICE	VIB/DRIL	VIB/DRIL	VIB/DRIL	DRIL/NRR	TECH EDITOR	GCB
NAME	KNaidu*	OCWaltona	LNo...	CERossi	Ray Sanders	
DATE	2/3/94	2/4/94	2/4/94	2/17/94	1/28/94	1/94
COPY	YES NO	YES NO	YES NO	YES NO	NO	YES NO

OFFICE	DOR/NRR
NAME	BGrimes
DATE	/ /94
COPY	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: G:\NAIDU/GE

degraded voltage conditions. It was determined that the contactor coils do not conform to paragraph 4.1.2.3 of Purchase Specification 21A9301AZ in which GE specifies the technical requirements of the size 1, 2 and 3 contactors in the HPCS switchgear. This paragraph states that the coils of the contactors should be capable of pulling in with no more than 80 percent of the rated voltage applied. GE informed the NRC that coils designed to pull in at 75 percent of the rated voltage are available for its NEMA Size 2 contactors. NMP2 has since replaced the GE NEMA Size 2 contactors.

The NRC is concerned that contactors with coils that were unable to pull in at degraded voltage conditions and that did not meet the purchase specifications had been installed to operate safety-related MOVs during initial construction, and that this condition remained undetected for many years and could exist at other plants. This situation could have been avoided if (1) the coil catalogue specification had been compared to the purchase specification and the appropriate coil had been chosen as part of the review for the suitability of application required by Appendix B of Title 10 of the Code of Federal Regulations, Part 50, (10 CFR Part 50, Appendix B), Criterion III, "Design Control," and (2) the correct coils were verified to be installed and then bench tested to verify performance at degraded voltage conditions in accordance with Criterion VII of 10 CFR Part 50, Appendix B, "Control of Purchased Equipment and Services."

This information notice requires no specific action or written response. If you have any questions and the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

Brian K. Grimes, Director
 Division of Operating Reactor Support
 Office of Nuclear Reactor Regulation

Technical contact: Kamalakar R. Naidu, NRR
 (301) 504 2980
 Stephen D. Alexander, NRR
 (301) 504 2995
 Leonard S. Cheung, Region I
 (215) 337 5296

Attachment: List of Recently Issued NRC Information Notices

OFFICE	VIB/DRIL	VIB/DRIL	VIB/DRIL	DRIL/NRR	TECH EDITOR	GCB
NAME	KNaTou	GChLima	LNorrholm	CERossi	RAYSAWERS	
DATE	2/1/94	2/3/94	1/94	1/94	2/28/94	1/94
COPY	YES NO	YES NO	YES NO	YES NO	NO	YES NO

OFFICE	DOR/NRR
NAME	BGrimes
DATE	/ /94
COPY	YES NO