

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

March 30, 1992

NRC INFORMATION NOTICE 92-24: DISTRIBUTOR MODIFICATION TO CERTAIN
COMMERCIAL-GRADE AGASTAT ELECTRICAL RELAYS

Addressees

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

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to part modifications and serial number changes that authorized distributors (ADs) have made to commercial-grade Agastat Series 7000 electrical relays. These alterations may affect the subsequent dedication of the relays for safety-related use. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

On April 22, 1991, after being informed by Spectrum Technologies USA, Incorporated, (Spectrum) that nameplate labels for Agastat Series 7000 relays could have been altered, the NRC staff performed a review of the manufacture and distribution of those relays. Agastat relays are manufactured by the Amerace Corporation (Amerace), Livingston, New Jersey, and its commercial-grade relays are distributed by its authorized distributors. In early 1991, Spectrum ordered six Agastat Model 7032 PBB commercial-grade relays from the Westinghouse Electric Supply Company (WESCO). Spectrum specified in the purchase order that the relays be traceable to the manufacturer Amerace and that the relays be from the same lot and date code. Spectrum included these requirements because Spectrum intended to dedicate the relays for safety-related use. WESCO ordered the relays from an authorized Amerace distributor, Control Components Supply (CCS), Short Hills, New Jersey. However, the relays did not have the required traceability to Amerace because of modifications that CCS made to the relays, and because of changes CCS made to the serial number nameplates the relays may not have been from the same production lot.

Amerace representatives have told the NRC that its authorized distributors are allowed to modify its commercial-grade relays to comply with a customer's specific requirements. Those modifications may include changing the electrical

9203230145 ZA

4/13 ID#R-11C

coil module for different voltage level applications, adding or changing the electrical contact assembly module, or changing the time duration disc and wafer.

Amerace personnel have also told the NRC that

- (1) The first four digits of the serial number indicate the year and week of manufacture. The next four digits in the serial number designate the sequential order of relay assembly for a particular week. For example, Agastat Model 7012 PC, serial number (S/N) 91161875, was the 1,875th relay to be assembled the 16th week of 1991 at the Amerace Corporation, Livingston, New Jersey facility. Amerace used similar marking systems for its subassembly coil and contact modules.
- (2) When an AD modifies a commercial-grade 7000 series relay, the AD should install a new nameplate label with the original S/N containing an "F" prefix. For example, an AD could change the contact and coil modules appropriately in the above Model 7012 PC relay and yield a Model 7014 QE relay. However, the S/N on the nameplate should be changed to F91161875. The F designator would indicate that the relay had been "field" modified. The NRC staff determined that Amerace did not contractually state this policy to its ADs (see NRC Inspection Report No. 99900296/91-01). After the NRC performed its review, Amerace issued a notification letter to its ADs stating this policy. Attachment 1 is a copy of the Amerace notification letter.
- (3) Before performing the final calibration, test, and acceptance of the 7000 series relays, Amerace heat stabilizes each relay by maintaining it at a specific temperature for 4 hours. This heat stabilization mates the timing disc with the ceramic timing wafer to prevent timing drift and to ensure repeat accuracy. The process also stress-relieves the nonmetallic parts. Amerace requires that its 7000 series relays be stabilized again after they are modified such as by changing the timing disc. To comply with the Agastat model number that was ordered, CCS changed the timing discs of the six relays that were supplied to Spectrum. However, the staff found no evidence that the relays had been restabilized.

Discussion

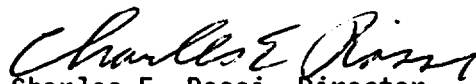
From October 1991 through January 1992, the NRC staff conducted several meetings with representatives of Amerace and CCS. The NRC staff found that, when CCS modifies an Agastat 7000 Series relay, CCS typically removes the Amerace installed label, assigns the relay a new number, types the new serial number and other relevant information on a blank label, and affixes the new label to the modified relay. However, the blank labels that the NRC staff observed at the CCS facility do not contain the F prefix to indicate that the 7000 Series Agastat relays were modified. The NRC staff found that CCS had disassembled, modified, and reassembled the six relays discussed herein. However, the labels affixed by CCS did not contain the required F prefix, and the labels did not contain the original Amerace serial number. CCS had assigned new serial numbers which indicated that the relays were manufactured in 1991 to reflect

that the relays had been modified by CCS in 1991. However, Amerace personnel informed the NRC that the six relays had been manufactured in 1989.

The NRC also found that CCS does not heat stabilize the 7000 Series Agastat relays that it modifies, although Amerace has stated that the heat stabilization treatment is necessary on modified 7000 series relays to ensure repeat accuracy and to relieve the stress to nonmetallic parts. The NRC staff reviewed CCS's customer list and found that the list contained the names of 25 NRC nuclear power plant licensees and several other Amerace ADs.

This information suggests that consecutive serial numbers on commercial-grade Agastat relays, obtained through an authorized distributor, may not ensure traceability to a particular production lot. Amerace has stated that its ADs do not heat stabilize the 7000 series relays after they are modified. As discussed in NRC Inspection Report No. 99900296/91-01, Amerace told the NRC that there are differences between its Class 1E qualified relays and its commercial-grade 7000 series relays, such as design control, internal components, and the level of inspection that is applied. Similar differences may exist between commercial-grade components and the safety-related product line of other manufacturers. The availability of a safety-related product line is often an indicator of substantive differences from the commercial-grade product. In any case, it is important that information relied on when upgrading commercial-grade components for use in safety-related applications be supported by objective evidence of quality to support the suitability of use of the component.

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 Office of Nuclear Reactor Regulation (NRR) project manager.



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

Technical contact: Joseph J. Petrosino, NRR
(301) 504-2979

Attachments:

1. Amerace Letter on Field Modifications of Agastat Relays
2. List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
92-23	Results of Validation Testing of Motor-Operated Valve Diagnostic Equipment	03/27/92	All holders of OLs or CPs for nuclear power reactors and all vendors of motor-operated valve (MOV) diagnostic equipment.
92-22	Criminal Prosecution and Conviction of Wrongdoing Committed by A Commercial-Grade Valve Supplier	03/24/92	All holders of OLs or CPs for nuclear power reactors.
92-21	Spent Fuel Pool Reactivity Calculations	03/24/92	All holders of OLs or CPs for nuclear power reactors.
92-20	Inadequate Local Leak Rate Testing	03/03/92	All holders of OLs or CPs for nuclear power reactors.
92-19	Misapplication of Potter & Brumfield MDR Rotary Relays.	03/02/92	All holders of OLs or CPs for nuclear power reactors.
92-18	Potential for Loss of Remote Shutdown Capability during A Control Room Fire	02/28/92	All holders of OLs or CPs for nuclear power reactors.
92-17	NRC Inspections of Programs being Developed at Nuclear Power Plants in Response to Generic Letter 89-10	02/26/92	All holders of OLs or CPs for nuclear power reactors.
92-16	Loss of Flow from the Residual Heat Removal Pump during Refueling Cavity Draindown	02/25/92	All holders of OLs or CPs for nuclear power reactors.
92-15	Failure of Primary System Compression Fitting	02/24/92	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

Attachment 1
IN 92-24
March 30, 1992
Page 1 of 1

NO:	92-1
DATE:	January 1992
PAGE NO:	1 OF 1


UPDATE

AGASTAT®

Industrial Controls

TO: AUTHORIZED AGASTAT DISTRIBUTORS
FROM: MIKE BHOJWANI
SUBJECT: AGASTAT 7000 SERIES - FIELD MODIFICATIONS

Occasionally, coils or switchblock assemblies on AGASTAT Series 7000 timers are changed in the field. These field changes by our authorized distributors are necessary to better service our end customers. Instructions for changing coils, etc. are clearly defined on Installation and Operation Data Sheet P/N 39999-03. Please ensure the label P/N 38010-01 enclosed with the replacement kits is filled out correctly to reflect the new catalog number. Please note, the serial number must be exactly the same as on the original unit except the number will be prefixed by an "F" indicating field modifications were made. Non-adherence of this procedure will void all factory warranties.



Mike R. Bhojwani
Senior Product/Market Manager

MRB:cip

cc: Internal Distribution



AMERACE CORPORATION
INDUSTRIAL ELECTRICAL PRODUCTS
530 W. MT. PLEASANT AVENUE
LIVINGSTON, NJ 07039
(201) 992-8400

that the relays had been modified by CCS in 1991. However, Amerace personnel informed the NRC that the six relays had been manufactured in 1989.

The NRC also found that CCS does not heat stabilize the 7000 Series Agastat relays that it modifies, although Amerace has stated that the heat stabilization treatment is necessary on modified 7000 series relays to ensure repeat accuracy and to relieve the stress to nonmetallic parts. The NRC staff reviewed CCS's customer list and found that the list contained the names of 25 NRC nuclear power plant licensees and several other Amerace ADs.

This information suggests that consecutive serial numbers on commercial-grade Agastat relays, obtained through an authorized distributor, may not ensure traceability to a particular production lot. Amerace has stated that its ADs do not heat stabilize the 7000 series relays after they are modified. As discussed in NRC Inspection Report No. 99900296/91-01, Amerace told the NRC that there are differences between its Class 1E qualified relays and its commercial-grade 7000 series relays, such as design control, internal components, and the level of inspection that is applied. Similar differences may exist between commercial-grade components and the safety-related product line of other manufacturers. The availability of a safety-related product line is often an indicator of substantive differences from the commercial-grade product. In any case, it is important that information relied on when upgrading commercial-grade components for use in safety-related applications be supported by objective evidence of quality to support the suitability of use of the component.

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 Office of Nuclear Reactor Regulation (NRR) project manager.

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

Technical contact: Joseph J. Petrosino, NRR
(301) 504-2979

Attachments:

1. Amerace Letter on Field Modifications of Agastat Relays
2. List of Recently Issued NRC Information Notices

*SEE PREVIOUS CONCURRENCES

D/DOEA:NRR	*C/OGCB:DOEA:NRR*RPB:ADM
CE Rossi	CHBerlinger TechEd
03/24/92	03/13/92 03/04/92
*OGCB:DOEA:NRR*VIB:DRIS:NRR	*SC/VIB:DRIS:NRR *C/VIB:DRIS:NRR *D/DRIS:NRR
JBirmingham JPetrosino	UNorrholm BGrimes
03/10/92 02/19/92	02/24/92 02/26/92
DOCUMENT NAME: IN 92-24	

The NRC also found that CCS does not heat stabilize the 7000 Series Agastat relays that it modifies. Amerace has stated that the heat stabilization treatment is necessary on modified 7000 series relays to ensure repeat accuracy and to relieve the stress to nonmetallic parts. The NRC staff reviewed CCS's customer list and found that the list contained the names of 25 NRC nuclear power plant licensees and several other Amerace ADs.

This information suggests that consecutive serial numbers on commercial-grade Agastat relays, obtained through an authorized distributor, may not ensure traceability to a particular production lot. Amerace also stated that heat restabilization of modified relays is important to stress relieve nonmetallic parts and to ensure the repeat accuracy of the 7000 Series Agastat relays. However, Amerace stated that its ADs do not heat stabilize the 7000 series relays after they are modified. As discussed in NRC Inspection Report No. 99900296/91-01, Amerace told the NRC that there are differences between its Class 1E qualified relays and its commercial-grade 7000 series relays, such as design control, internal components, and the level of inspection that is applied. Licensees are reminded that information relied on to upgrade components for use in safety-related applications must be supported by objective evidence of quality to support the suitability of use of the component. The NRC will examine closely the basis for using commercial-grade components in safety-related applications, particularly when a safety-related product line is available from the manufacturer.

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

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

Technical contact: Joseph J. Petrosino, NRR
(301) 504-2979

Attachments:

1. Amerace Letter on Field Modifications of Agastat Relays
2. List of Recently Issued NRC Information Notices

Document Name: AGASTAT IN

*SEE PREVIOUS CONCURRENCES

D/DOEA:NRR	C/OGCB:DOEA:NRR	*RPB:ADM
CERossi	CHBerlinger	TechEd
03/ /92	03/13/92	03/04/92
*OGCB:DOEA:NRR	*VIB:DRIS:NRR	*SC/VIB:DRIS:NRR
JBirmingham	JPetrosino	UNorrholm
03/10/92	02/19/92	02/20/92
		BNorrholm
		BGrimes
		02/24/92
		02/26/92

The NRC also found that CCS does not heat stabilize the 7000 Series Agastat relays that it modifies. Amerace has stated that the heat stabilization treatment is necessary on modified 7000 series relays to ensure repeat accuracy and to relieve the stress to nonmetallic parts. The NRC staff reviewed CCS's customer list and found that the list contained the names of 25 NRC nuclear power plant licensees and several other Amerace ADs.

This information suggests that consecutive serial numbers on commercial-grade Agastat relays, obtained through an authorized distributor, may not ensure traceability to a particular production lot. Amerace also stated that heat restabilization of modified relays is important to stress relieve nonmetallic parts and to ensure the repeat accuracy of the 7000 Series Agastat relays. However, Amerace stated that its ADs do not heat stabilize the 7000 series relays after they are modified. Amerace told the NRC that there are differences in the manufacturing processes for its Class 1E qualified relays and its commercial-grade 7000 series relays such as design control, internal components, and the level of inspection that is applied. Licensees are reminded that information relied on to upgrade components for use in safety-related applications must be supported by objective evidence of quality to support the suitability of use of the component. The NRC will examine closely the basis for using commercial-grade components in safety-related applications, particularly when a safety-related product line is available from the manufacturer.

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

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

Technical contact: Joseph J. Petrosino, NRR
(301) 504-2979

Attachments:

1. Amerace Letter on Field Modifications of Agastat Relays
2. List of Recently Issued NRC Information Notices

Document Name: AGASTAT IN
*SEE PREVIOUS CONCURRENCES

OGCB:DOEA:NRR	*VIB:DRIS:NRR	*SC/VIB:DRIS:NRR	*C/VIB:DRIS:NRR	*D/DRIS:NRR
JBirmingham	JPetrosino	UPotapovs	LNorrholm	BGrimes
03/10/92	02/19/92	02/20/92	02/24/92	02/26/92

they are modified.

series relays after modification, Amerace told the NRC that there are ^{relays are different from its} differences between its Class 1E qualified and commercial-grade 7000 series relays. Licensees are reminded that information relied on to upgrade components for use in safety-related applications must be supported by objective evidence of quality to support the suitability of use of the component. The NRC will examine closely the basis for ^{using} use of commercial-grade components in safety-related applications, particularly when a safety-related product line is available from the manufacturer.

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

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

Technical contact: Joseph J. Petrosino, NRR
(301) 504-2979

Attachments:

1. Amerace Letter on Field Modifications of Agastat Relays
2. List of Recently Issued NRC Information Notices

Document Name: AGASTAT IN
*SEE PREVIOUS CONCURRENCES

OGCB:DOEA:NRR	*VIB:DRIS:NRR	*SC/VIB:DRIS:NRR
JBirmingham	JPetrosino	UPotapovs
03/ /92	02/19/92	02/20/92

C/OGCB:DOEA:NRR	RPB:ADM
CHBerlinger	TechEd JM <i>in qm</i>
03/ /92	03/ 4 /92
*C/VIB:DRIS:NRR	*D/DRIS:NRR
LNorrholm	BGrimes
02/24/92	02/26/92

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

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

Technical Contact: Joseph J. Petrosino, NRR:DRIS
(301) 504-2979

Attachments:

1. Amerace Letter
2. List of Recently Issued NRC
Information Notices

OFFICIAL RECORD COPY

DOCUMENT NAME: A:\AGASTAT.IN:WP50

OFC:	RIS-1:VIB	SC RIS-1:VIB	BC VIB:DRIS
NAME:	JPetrosino	UPotapovs	LNorrholm
DATE:	2/19/92*	2/20/92*	2/24/92*

DIR:DRIS
BCrimes
2/26/92

OFC:	BC OGCB:DOEA	DIR:DOEA
NAME:	CBerlinger	CERossi
DATE:	2/ /92	2/ /92

* See previous concurrence

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

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

Regulation

Technical Contact: Joseph J. Petrosino, NRR:DRIS
(301) 504-2979

Attachments:

1. Amerace Letter
2. List of Recently Issued NRC
Information Notices

DOCUMENT NAME: A:\AGASTAT.IN:WP50

OFC:	RIS-1:VIB	SC RIS-1:VIB	BC VIB:DRIS	DIR:DRIS
NAME:	JPetrosino	UPotadovs	LNorholm	BGrimes <i>un</i>
DATE:	2/19/92*	2/20/92*	2/24/92	2/ /92

* See previous concurrence

Technical Contact: Joseph J. Petrosino, NRR:DRIS
(301) 504-2979

Attachments:

1. Amerace Letter
2. List of Recently Issued NRC
Information Notices

OFFICIAL RECORD COPY

DOCUMENT NAME: A:\AGASTAT.IN:WP50

OFC:	RIS-1:VIB	SC RIS-1:VIB	BC VIB:DRIS	DIR:DRIS
NAME:	JPetrosino	UPotadovs	LNorrholm	BGrimes
DATE:	2/19/92	2/20/92	2/ /92	2/ /92

DISTRIBUTION

VIB/DRIS R/F
Central Files
PDR
JPetrosino (2)
UPotapovs
LNorrholm
BKGrimes
DMatthews
BLetts
CBerlinger

OFC : DRIS-1/VIB: SC:RIS-1/VIB :BC:VIB/DRIS :DIR:DRIS: OI/NRR :DOEA/NRR

NAME: JPetrosino: UPotapovs :LNorrholm :BKGrimes: BLetts :CBerlinger

DATE: 12/27/92 : / /92 : / /92 : / /92: 1/10/92 : / /92

OFFICIAL RECORD COPY

DOCUMENT NAME: A:\NOTICE.WP

NOVA MAIL Q1/VA
VISIT TO CES
SCHEDULED 1/22-23/92