



Nuclear Division
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October 4, 2023

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Subject: Interim Notification Report for Potential Part 21,
NRC Event No. ML23233A169

Dear Sir or Madam:

This letter is being provided as a follow up to a notification on a failure of a Curtiss Wright (CW) supplied Tyco (Agastat) safety related relay. The relay is identified as Agastat Part Number E7102PELL004, Mfg serial number 16120301, CW tag # CJ583101, CW S/N 02.

Duke Energy notified CW on June 22, 2023 of the failure via letter. The Duke letter and background information is provided with this notification. Per Duke non-conformance details N.C. contacts 4 and 6 were found sticking in the open position. The contacts were cycled several times by Duke and eventually broke free. The relay was returned to CW for evaluation, however CW could not duplicate the failure.

The relay was subsequently returned to the OEM (TYCO) for their evaluation. TYCO tested the relay with and without the LL auxiliary switch option and could not duplicate the failure. In all tested conditions, the relay performed within manufacturer specifications, and with no contact binding. TYCO's evaluation is attached.

As the noted failure could not be reproduced by Curtiss-Wright or TYCO there is no evidence of part malfunction and thus no further evaluation or notification applies.

Sincerely:

Tim Franchuk
Director, Quality Assurance
Curtiss-Wright Nuclear Division, Cincinnati Operations
513-201-2176
TFranchuk@CurtissWright.com



Catawba Nuclear Station

Duke Energy
CN01VP | 4800 Concord Road
York, SC 29745

RA-23-0158

June 20, 2023

Curtiss-Wright Nuclear Division
(Qualtech NP)
4600 East Tech Drive
Cincinnati, Oh 45245

Attention: Tim Franchuk, Quality Assurance Director, tfranchuk@curtisswright.com

Subject: Duke Energy Carolinas, LLC (Duke Energy)
Catawba Nuclear Station, Units 1 and 2
Request for Curtiss-Wright Determination of 10 CFR 21 Reportability
Catawba Nuclear Condition Report (NCR) 02475101

RE: Agastat Relay model E7000
Part number E7012PELL004

The purpose of this letter is to formally notify Curtiss Wright of a discovery by Duke Energy concerning the above described relay. For your convenience the associated Nuclear Condition Report describing the as found condition is attached to this letter.

It is possible that 10 CFR 21 may require Curtiss Wright, as the supplier, to make a report to the NRC. Therefore, Duke Energy requests that Curtiss Wright review this issue against the reporting criteria of 10 CFR 21 and take appropriate action to assure that Curtiss Wright complies with 10 CFR 21 with respect to this issue. Duke Energy requests that Curtiss Wright replies to this letter indicating ownership of the evaluation process and provide documentation of its conclusions relative to 10 CFR 21 reportability for our records within 30 days of receipt of this letter. Please contact Josh Stewart of Catawba Engineering at (803)701-4277 or Joshua.Stewart@duke-energy.com to arrange shipment of failed components if necessary.

Please direct any questions to Ari Tuckman of Catawba Regulatory Affairs at (803) 701-3771.

Sincerely,

Mandy B. Hare
Nuclear Support Services Manager
Catawba Nuclear Station

Letter from Duke Energy to Curtiss Wright
RA-23-0158
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bxc:

M.B. Hare
S.E. Andrews
A. Linker
J. Stewart
A. Beekman



Duke Energy

ACTION REQUEST - 02475101

Action Request Details

Type : NCR **Orig Date** : 06/06/2023 08:13 **Discovery Date** :
Subject : New Agastat relay did no pass bench calibration

Description

While performing bench calibration task 20481991-04 for relay JC in 2ELCP0329, new Agastat relay was obtained from warehouse under MR #15772704. Contacts 4 and 6 are a normally closed contact and were found to be open, cycled relay several times and contacts 4 and 6 eventually indicated a normally closed contact. Contacts 4 and 6 seem to be getting hung up or stuck, this indicates a problem with the contacts and I feel uncomfortable using this relay in a safety related circuit. ==> Immediate Actions Taken: Yes. stopped bench calibration and created new MR to obtain a new relay ==> Other Actions Needed: No. ==> Present Elsewhere: No.

Notes

Priority : S3 **Report To** : INV **Status** : APPROVED 06/19/2023
Severity : C **Due Date** : 06/05/2024 **Event Date** :
Originator : JSSHUMA **Originator Group** :
Facility : CN **Department** : 20787 **Organization** :
Owed To : **Owed To Group** : NSCPIC
Owed To Fac : CN **Department** : **Discipline** :

Action Request Status History

<u>Updated Date</u>	<u>Updated By</u>	<u>AR Status</u>	<u>AR Due Date</u>
06/06/2023	JSSHUMA	INPROG	06/05/2024
06/06/2023	JSSHUMA	H/APPR	
06/19/2023	JCCONST	PRE-APRV	
06/19/2023	JCCONST	APPROVED	

Action Request Attributes

<u>Request Attribute</u>	<u>Values</u>	<u>Reqd</u>	<u>Date</u>
1A POTL OPER/REPORT	N		06/06/2023
Name : JAMES S SHUMAKER			
<u>Request Attribute</u>	<u>Values</u>	<u>Reqd</u>	<u>Date</u>
2E MAINT RULE APPLIC	N	N	06/06/2023
Name : JOSHUA R STEWART			
<u>Request Attribute</u>	<u>Values</u>	<u>Reqd</u>	<u>Date</u>

JCCONST, 6/19/23 - OSDD# 0223227 has a qty of 1 each on hold. UTC# 0030155638

(CST 06/15/23)

Issue - Safety Related Agastat relay did not perform as expected when checked out from inventory, but prior to field installation.

NCAQ Currently, the issue represents a Potential Part 21 condition. 10CFR21 is a regulatory process that ensures defects and noncompliance items which could create a substantial safety hazard will be reported to the NRC and the industry. Once it is determined an actual Part 21 condition exists, this NCR will either be rescreened, or a new NCR written to address the CAQ condition of 10CFR21.

Resolution

Assignment 01 has been generated to perform Part 21 Discovery Checklist

Material has been returned to warehouse and is quarantined. It will be shipped back to OEM if they accept ownership of Part 21 Evaluation; otherwise the station will perform the evaluation and subsequent inspection/testing of the degraded relay. This is being tracked via the Part 21 assignment in this NCR.

Time/Point of Discovery Date: 6/6/2023

Basis for determination that Evaluation is required:

While performing bench calibration per work order 20481991-04 for relay JC in 2ELCP0329, new Agastat relay was obtained from warehouse under MR #15772704 (Cat ID 356258 - UTC # 0030155638). The relay is a Model E7000 – Part Number E7012PELL004. The bench test is performed in accordance with IP/O/A/3816/013 Section 7.1 (Bench Calibration, Setup and Maintenance of Agastat 7000, E7000, SCB, SCC, and SSC Series Timers). Contacts 4 and 6 are a normally closed contacts and were found to be open. Maintenance cycled the relay several times and contacts 4 and 6 eventually indicated a normally closed contact. Contacts 4 and 6 seem to be getting hung up or stuck, this indicates a problem with the contacts.

Based on the as found condition of the normally closed contacts and the inability of the contacts to change state to the closed condition during the initial cycling of the relay it was determined that a potential Part 21 defect may exist and needs to be evaluated.



Response Owner: Jawed, Muhammad M		TECHS Reference: Request: N/A Action: N/A Notification: N/A RMA 2116888161		TE Connectivity Part Number(s): 1-1423169-4	
Customer: Curtiss Wright		Customer Reference:		Customer Issue Date: 08/10/2023	
Customer Contact: Timothy Franchuk		Customer Phone: 513.201.2176		Contact E-mail: tfranchuk@curtisswright.com	
Complaint Status: Final Response		Samples Available: Sample Available		Affected Quantity: 1	
Trace Data:				Product Name: E7012PELL004	

Complaint Description:
 Customer stated that:

 "We have a relay (S/N 16120301) that we need help evaluating for a potential 10 CFR part 21 notification. The 4 & 6 contacts are sticking, and this same issue was identified on a different relay in 2018, so we're asking for Tyco to inspect the relay and see if any determination can be made."

Discipline 1 - Organize and Plan			
Name	Company - Title	Phone	Email
MUHAMMAD JAWED	TE Sr. Quality Engineer	+1-828-845-5990	muhammad.jawed@te.com

Discipline 2 - Describe the Problem
Problem Description:
 Customer stated that:

 "We have a relay (S/N 16120301) that we need help evaluating for a potential 10 CFR part 21 notification. The 4 & 6 contacts are sticking, and this same issue was identified on a different relay in 2018, so we're asking for Tyco to inspect the relay and see if any determination can be made."

Discipline 3 - Containment Plan
Additional containment activities/comments:
 Please return in the original form and packaging at the below address:

 ATTN: RMA Returns
 TE Connectivity
 1396 Charlotte Hwy,
 Fairview, NC 28730, USA

Discipline 4 - Describe the Cause
Occurrence (How the problem was created):
 Upon the receipt of the sample, we evaluated the relay and tested it as follows:

 Without the "LL" auxiliary switch option, the relay was tested for continuity. At the neutral position, upon energizing at

25-Sep-2023

Request: N/A

Action: N/A

This Corrective Action Report (CAR) is based upon TE Connectivity's understanding of pertinent data and may be subject to further investigation. It is offered as a courtesy to TE Connectivity customers to assist in the identification of a root cause and the institution of a corrective action plan. This CAR shall not be used for any other purpose, nor be disclosed to unauthorized third parties without the prior written consent of TE Connectivity. This CAR is issued without acknowledgement of any liability or obligation.



nominal coil voltage of 125VDC, the contacts switched without any sticking or delay. Continuity was checked multiple times and it was ensured that the contacts are not sticking. The relay was then tested for Repeat Accuracy. When the knob was set at 40 seconds, the relay switched contacts at the following times:

- 1. 43.25
- 2. 43.07
- 3. 43.22

The Repeat Accuracy was found to be 0.21% which was well within specification.

The relay was tested again for continuity and Repeat Accuracy, this time with the "LL" option and it performed as per its intended function.

Additionally, the contacts 4/6 and 3/5 were tested for contact resistance and all were found to be within specification (under 20 mohms against the spec of 1 ohm)

We have not been able to find any evidence of contacts sticking during our testing at the nominal coil voltage.

Discipline 5 - Permanent Corrective Action Plan

Corrective Action(s) Occurrence:
N/A

Discipline 6 - Verification of Corrective Action

Verification Method and Results Occurrence:
N/A

Discipline 7 - Prevention of Recurrence

Lessons Learned:
N/A

Discipline 8 - Communicate Success

Comments:
Operations – Marie Manzo
Manufacturing – Justin Canterbury
Product Engineering – James Aakhus
Quality - M Jawed

25-Sep-2023

Request: N/A

Action: N/A

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