

Part 21 (PAR)

Event # 51988

Rep Org: CURTISS WRIGHT	Notification Date / Time: 06/08/2016 09:27 (EDT)
Supplier: STRUTHERS-DUNN	Event Date / Time: 06/08/2016 (EDT)
	Last Modification: 07/08/2016
Region: 3	Docket #:
City: CINCINNATI	Agreement State: Yes
County:	License #:
State: OH	
NRC Notified by: TIMOTHY FRANCHUK	Notifications: BILLY DICKSON R3DO
HQ Ops Officer: JEFF HERRERA	FRANK ARNER R1DO
Emergency Class: NON EMERGENCY	ANTHONY MASTERS R2DO
10 CFR Section:	JOHN KRAMER R4DO
21.21(a)(2) INTERIM EVAL OF DEVIATION	PART 21/50.55 REACTORS EMAIL
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	

PART-21 REPORT - NONCONFORMANCE ON STRUTHERS-DUNN RELAY FOR PSEG NUCLEAR LLC

"This letter serves as an interim report in accordance with 10 CFR 21.21 pertaining to a potential deviation associated with Struthers-Dunn relays P/N B255XCXPFHSC125V supplied to PSEG Nuclear LLC. Based upon information obtained from PSEG, a defect may exist with the reset coil of the Struthers-Dunn relay listed above. Preliminary observations indicate the reset coil had shorted (opened) during operation, and that no other sub-components of the relay are believed to be associated with this failure. PSEG is aware of Curtiss-Wright's investigation into this failure.

"Evaluation of reportability in accordance with 10 CFR Part 21 is not able to be completed within the 60-day evaluation period due to the need for additional time to collect and evaluate the necessary information. It is currently expected that the evaluation of this defect will be completed by July 22, 2016."

POC: Timothy Franchuk
 Director, Quality Assurance
 4600 East Tech Drive
 Cincinnati, Ohio 45245
 (513) 528-7900

The licensee indicated that the current list of affected plants are being evaluated.

*** UPDATE ON 07/08/16 AT 1511 EDT FROM MARGIE HOVER TO BETHANY CECERE ***

The following is excerpted from the submitted report:

IE19
 NRR

"Struthers-Dunn Relay P/N: B255XCXP125V. Note that the original interim report identified the part number as B255XCXPFHSC125V, which contains designators 'FHSC', which are an internal Curtiss-Wright numbering scheme."

"The following facilities were supplied the components:

Salem Nuclear Generating Station/Hope Creek Generating Station
Total Quantity: 104

Wolf Creek Generating Station
Total Quantity: 10

"Evaluation: Findings as a result of the Curtiss-Wright Failure Analysis indicated that the reset coil failure was linked to the magnet wire insulation, the coil winding process, and the attachment of the coil leads to the magnet wire

"Corrective Action: Struthers-Dunn has revised their reset coil assembly procedure such that the reset coil receives two wraps of insulation tape prior to laying the magnet wire terminations which are then soldered to the relay leads which connect to the pins at the base of the relay. Based on testing by Struthers-Dunn this two wrap process greatly increases dielectric strength which should eliminate the failure modes identified. Affected relays were returned to Struthers-Dunn to have the reset coil replaced using the revised reset coil assembly method. After the coils have been replaced they are sent to Curtiss-Wright Nuclear Division to be re-dedicated prior to being returned to the end user."

Notified the R1DO (Bower), R4DO (Drake), and Part 21 Group (via email).



Fax Cover Sheet

To:
Fax Number: 13018165151
Subject: 10 CFR Part 21 Struthers-Dunn Relay Report, Event No.: ML16162A679

From: "Hover, Margie" <mhover@curtisswright.com>
Fax#: 855-305-6216

Date: 07/08/16 03:06:29 PM

Total Pages: 6 including this cover page

Memo: Good afternoon:

Attached is the final report for Event No.: ML16162A679.

Please forward all questions and/or comments to Tim Franchuk, tfranchuk@curtisswright.com.

Sincerely,

Margie Hover

Document Control Supervisor

Nuclear Division

Curtiss-Wright

4600 East Tech Drive, Cincinnati, OH, 45245, UNITED STATES


T: 513.201.2101

mhover@curtisswright.com | www.curtisswright.com/NuclearDivision

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 <p>Nuclear Division 4600 East Tech Drive, Cincinnati, OH 45245 T: 513.528.7900 F: 513.528.4537</p>			<p>DOCUMENT TRANSMITTAL</p> <p>QTNP3752</p>				<p>CONTRACT N/A</p> <p>P.O. NUMBER N/A</p>		
<p>TO: NRC'S DOCUMENT CONTROL DESK U.S. REGULATORY COMMISSION WASHINGTON, DC 20555-0001</p> <p>ATTN: HOO HOC (301) 816-5151</p> <p>PROJECT: _____</p>				<p>ACTION</p> <ol style="list-style-type: none"> 1. For Approval 2. Final Documents for Record 3. For Information Only 4. For Preliminary Use 5. For Your Use 6. Revised as Requested 		<p>LEGEND</p> <ol style="list-style-type: none"> A. Approved-Released for Construction B. Approved as noted- Resubmit- Construction may proceed C. Not approved- Resubmit D. _____ 		<p>STATUS</p>	
DOCUMENT/ DRAWING NUMBER		REV.	NO. OF PRINTS/ COPIES	NO. OF SEPIAS	<input type="checkbox"/> DRAWINGS <input type="checkbox"/> SPECIFICATION <input type="checkbox"/> OTHER		<input checked="" type="checkbox"/> REPORTS <input type="checkbox"/> PROCEDURE		L E G E N D
N/A		N/A	1		10 CFR PART 21 REPORT REGARDING DISPOSITION OF A NONCONFORMANCE ON STRUTHERS-DUNN RELAY PART NUMBER B255XCXP125V FOR PSEG NUCLEAR LLC, EVENT NO.: ML16162A879			2	
<p>REMARKS PLEASE EMAIL MARGIE HOVER CONFIRMATION OF RECEIPT mhover@curtisswright.com. THANK YOU.</p>						<p>PLEASE ACKNOWLEDGE RECEIPT BELOW AND RETURN A SIGNED COPY</p> <p>RECEIVED BY _____</p> <p>DATED _____</p> <p>In order to avoid delays in the project these documents must be returned by: _____</p>			
BY		<u>Margie Hover</u>		DATE:		<u>7/8/2016</u>			
		DOCUMENT CONTROL		PAGE:		<u>1 of 1</u>			

**CURTISS -
WRIGHT**

4600 East Tech Drive
Cincinnati, Ohio 45245
(513) 528-7900

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

SUBJECT: 10 CFR PART 21 REPORT REGARDING DISPOSITION OF A NONCONFORMANCE ON
STRUTHERS-DUNN RELAY PART NUMBER B255XCXP125V FOR PSEG NUCLEAR LLC.
Event No.: ML16162A679

The attachment to this letter provides a report in accordance with 10 CFR 21.21 pertaining to a potential deviation associated with Struthers-Dunn relays P/N B255XCXP125V supplied to PSEG Nuclear LLC.

A copy of the report will be mailed to our affected nuclear customers.

If you have any questions pertaining to this information, please contact Timothy Franchuk, Director of Quality Assurance, at 513-201-2176.

Sincerely,



Timothy Franchuk
Director, Quality Assurance
Nuclear Division
Curtiss-Wright

cc: Regional Administrator, USNRC, Region III

Attachment to Letter Dated July 7, 2016
Page 1 of 2

10 CFR PART 21 REPORT REGARDING DISPOSITION OF A NONCONFORMANCE ON STRUTHERS-DUNN RELAY PART NUMBER B255XCXP125V FOR PSEG NUCLEAR LLC

This report is being provided as a final report in accordance with 10 CFR 21.21

(i) Name and address of the individual or individuals information the Commission.

Timothy Franchuk
Director, Quality Assurance
Nuclear Division
Curtiss-Wright
4600 East Tech Drive, Cincinnati, OH 45245

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Struthers-Dunn Relay P/N: B255XCXP125V. Note that the original interim report identified the part number as B255XCXPFHSC125V, which contains designators "FHSC", which are an internal Curtiss-Wright numbering scheme.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

Curtiss-Wright, Nuclear Division.

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

PSEG has reported a failure of the reset coil within the Struthers-Dunn relay.

(v) The date on which the information of such defect or failure to comply was obtained.

The discovery date of the deviation that requires evaluation is April 8, 2016, based on the date PSEG alerted Curtiss-Wright of the potential defect within the reset coil

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

Address

PSEG Nuclear LLC
Nuclear Business Unit
Materials Center
Alloway Creek Neck Road
Hancocks Bridge, NJ 08038
Total Quantity: 104.

Address

Wolf Creek Generating Station
1550 Oxen Lane, N.E.
Wolf Creek Generating Station
Total Quantity: 10

Attachment to Letter Dated July 7, 2016

Page 2 of 2

vii) The evaluation and corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete.

Evaluation: Findings as a result of the Curtiss-Wright Failure Analysis indicated that the reset coil failure was linked to the magnet wire insulation, the coil winding process, and the attachment of the coil leads to the magnet wire

Corrective Action: Struthers-Dunn has revised their reset coil assembly procedure such that the reset coil receives two wraps of insulation tape prior to laying the magnet wire terminations which are then soldered to the relay leads which connect to the pins at the base of the relay. Based on testing by Struthers-Dunn this two wrap process greatly increases dielectric strength which should eliminate the failure modes identified. Affected relays were returned to Struthers-Dunn to have the reset coil replaced using the revised reset coil assembly method. After the coils have been replaced they are sent to Curtiss-Wright Nuclear Division to be re-dedicated prior to being returned to the end user.

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

The observed failures are believed to be attributed to a cumulative effect from discrepancies noted in the coil's magnet wire insulation, the coil winding process, and human error during fabrication. Since the failures could not be traced back to a specific, single issue, there is no specific test that could be developed / employed to filter for this failure. Currently there have been only three confirmed failures, all with one specific reset coil model (125VDC) and one specific date code (1526). As no one specific issue could be identified as the root cause, Curtiss-Wright has conservatively established a time frame of concern as January 1st 2015 to May 31st 2016. This brackets reset coils made approximately six months prior to the failed date code up to the official date of the process change made by Struthers-Dunn. Purchasers are being advised to conduct their own evaluation to determine if a defect, which could create a substantial safety hazard, exists.

From: [Hover, Margie](#)
To: [Hoc, HOO X](#)
Subject: [External_Sender] 10 CFR Part 21 Struthers-Dunn Relay Report, Event No.: ML16162A679
Date: Friday, July 08, 2016 4:08:18 PM
Attachments: [10 CFR Part 21 Struthers-Dunn Relay Report, Event No. ML16162A679.pdf](#)

Good afternoon:

Attached is a scanned copy of the above referenced documentation along with transmittal QTNP3752 being submitted by Timothy Franchuk.

Please confirm receipt by signing, dating and returning the Document Transmittal accompanying the attached documentation to Margie Hover, mhover@curtisswright.com.

Sincerely,

Margie Hover

Document Control Supervisor

Nuclear Division

Curtiss-Wright

4600 East Tech Drive, Cincinnati, OH, 45245, UNITED STATES

T: 513.201.2101

mhover@curtisswright.com | www.curtisswright.com/NuclearDivision

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**CURTISS-
WRIGHT**

Nuclear Division
4600 East Tech Drive, Cincinnati, OH 45245
T: 513.528.7900 | F: 513.528.4537

**DOCUMENT
TRANSMITTAL
QTNP3752**

CONTRACT
N/A

P.O. NUMBER
N/A

TO: NRC'S DOCUMENT CONTROL DESK
U.S. REGULATORY COMMISSION
WASHINGTON, DC 20555-0001
ATTN: HOO HOC
(301) 816-5151
PROJECT: _____

ACTION	LEGEND	STATUS
1. For Approval 2. Final Documents for Record 3. For Information Only 4. For Preliminary Use 5. For Your Use 6. Revised as Requested	<input checked="" type="checkbox"/> REPORTS <input type="checkbox"/> PROCEDURE	A. Approved-Released for Construction B. Approved as noted-Resubmit- Construction may proceed C. Not approved- Resubmit D. _____

DOCUMENT/ DRAWING NUMBER	REV.	NO. OF PRINTS/ COPIES	NO. OF SEPIAS	<input type="checkbox"/> DRAWINGS <input type="checkbox"/> SPECIFICATION <input type="checkbox"/> OTHER	<input checked="" type="checkbox"/> REPORTS <input type="checkbox"/> PROCEDURE	L E G E N D
N/A	N/A	1		10 CFR PART 21 REPORT REGARDING DISPOSITION OF A NONCONFORMANCE ON STRUTHERS-DUNN RELAY PART NUMBER B255XCXP125V FOR PSEG NUCLEAR LLC, EVENT NO.: ML16162A679		2

REMARKS **PLEASE EMAIL MARGIE HOVER CONFIRMATION OF RECEIPT mhover@curtisswright.com. THANK YOU.**

PLEASE ACKNOWLEDGE RECEIPT BELOW AND RETURN A SIGNED COPY

RECEIVED BY _____
DATED _____

BY Margie Hover DATE: 7/8/2016
DOCUMENT CONTROL
PAGE: 1 of 1

In order to avoid delays in the project these documents must be returned by: _____



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Nuclear Business Unit
Materials Center
Alloway Creek Neck Road
Hancocks Bridge, NJ 08038
Total Quantity: 104

Address

Wolf Creek Generating Station
1550 Oxen Lane, N.E.
Wolf Creek Generating Station

Total Quantity: 10

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