

Part 21 (PAR)

Event # 52055

<b>Rep Org:</b> CURTISS WRIGHT	<b>Notification Date / Time:</b> 06/30/2016 16:52 (EDT)
<b>Supplier:</b> TARGET ROCK, CURTISS-WRIGHT FLOW CO	<b>Event Date / Time:</b> 05/02/2016 (EDT)
	<b>Last Modification:</b> 06/30/2016
<b>Region:</b> 1	<b>Docket #:</b>
<b>City:</b> FARMINGDALE	<b>Agreement State:</b> Yes
<b>County:</b>	<b>License #:</b>
<b>State:</b> NY	
<b>NRC Notified by:</b> JOHN DEBONIS	<b>Notifications:</b> HAROLD GRAY R1DO
<b>HQ Ops Officer:</b> JEFF HERRERA	OMAR LOPEZ R2DO
<b>Emergency Class:</b> NON EMERGENCY	MICHAEL KUNOWSKI R3DO
<b>10 CFR Section:</b>	THOMAS HIPSCHEMAN R4DO
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	PART 21/50.55 REACTORS EMAIL

**PART 21 - INADEQUATE SWAGING AND ADHERENCE OF SILICONE O-RING AND SILICONE PAD IN SOFT SEAT MAIN DISC AND PILOT DISC ASSEMBLIES**

The following is a summary of the information from the email provided:

"[The] soft seat main disc and pilot disc assemblies are installed in certain process solenoid operated valves, some of which perform safety related functions such as containment isolation. These designs include a soft seat insert in the main and/or pilot disc that could loosen and potentially result in excessive leakage or failure of the valve to operate properly.

"Supplier:  
Target Rock, Business Unit of Curtiss-Wright Flow Control Corporation  
1966E Broadhollow Road, East Farmingdale, NY 11735

"Should you have any questions regarding this matter, please contact Michael Cinque, General Manager at (631) 293-3800.

"Plant Site Locations:  
Arkansas Nuclear One, Grand Gulf, Peach Bottom, Sequoyah, Browns Ferry, Hatch, Perry, Shearon Harris, Brunswick, Limerick, Pilgrim, South Texas, Dresden, Millstone, Quad Cities, Susquehanna, Duane Arnold, Nine Mile Point, River Bend, Three Mile Island, Fermi, Palo Verde, Saint Lucie, Watts Bar."

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IE19  
NR2



Valve Group – Target Rock  
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NID#16310  
June 30, 2016

Attn: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-001

Subject: 10 CFR Part 21 Report  
**Notification of a Defect, Inadequate Swaging and Adherence of Silicone O-ring and Silicone Pad in Soft Seat Main Disc and Pilot Disc Assemblies**

Dear Sir or Madam:

This letter provides notification of a defect in soft seated main disc and pilot disc assemblies provided in valves and as spare parts supplied by Target Rock (TR).

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

John DeBonis  
Director of Quality Assurance (Acting)

Michael Cinque  
General Manager

Target Rock, Business Unit of Curtiss-Wright Flow Control Corporation  
1966E Broadhollow Road  
East Farmingdale, NY 11735

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

See Attachment (1) for the identification of main disc and pilot disc assembly part numbers. Valve model numbers which contain the main disc or pilot disc assembly part numbers are also included therein.

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

Target Rock, Business Unit of Curtiss-Wright Flow Control Corporation  
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*(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.*

Soft seat main disc and pilot disc assemblies are installed in certain process solenoid operated valves, some of which perform safety related functions such as containment isolation. These designs include a soft seat insert in the main and/or pilot disc that could loosen and potentially result in excessive leakage or failure of the valve to operate properly.

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

On May 2, 2016, EDF Sizewell B notified TR that valve disassembly, performed as part of a root cause investigation of failure of a local leak rate test, identified a soft seat insert had loosened in the main disc assembly and a silicone pad had become partially dislodged in the pilot disc assembly.

*(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.*

The plant site locations identified in attachment (1) were supplied with valves or spare parts containing these and similar soft seat main disc or pilot disc assemblies.

*(vii) The 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 the action.*

Upon Sizewell B notification, TR reviewed inventory of the main disc and pilot disc assemblies. TR confirmed main disc assemblies from stock had a similar defect to that reported by Sizewell B, inadequate swaging, insufficient sealant and/or sharp pilot seat. The non-conforming main disc assemblies were removed from stock. All pilot disc assemblies from stock were inspected and found to be acceptable. However, some stock/un-installed silicone pads were found to be miss-shaped on the outside diameter. This condition may cause the pad to become partially dislodged from the pilot disc assembly's swaged construction. This condition can worsen when used in conjunction with a main disc assembly containing a sharp pilot seat.

TR investigated Work in Process, witnessing operations required to fabricate the main disc assembly, and identified inconsistencies between the manufacturing method and the requirements of the disc detail design drawing. TR also identified excessive wear of the assembly tooling.

TR has revised the operations traveler for the component, providing additional clarity to the technician and adding enhanced inspection requirements for the main disc assembly and for the assembly tooling. In addition, all existing tooling was inspected and replaced as required.

Several new main disc assemblies were processed in accordance with the revised operations traveler and new tooling under Engineering, Assembly & Test, and Quality Control, supervision. The disc assemblies yielded results in accordance with TR's design requirements.

TR has also performed cycle tests ranging from 1,200 to 12,000 cycles on five main disc assemblies having varying degrees of incomplete swaging, insufficient sealant and sharpness of the pilot seat in an attempt to replicate worst case assembly. Two pilot disc assemblies were used for the five test runs. The five main disc and two pilot disc assemblies passed all operational and leak tests. Testing did not create any loosened soft seat inserts in the main disc assembly or any loosened or damaged pads in the pilot disc assembly.

*(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.*

All un-installed parts should be returned to TR for re-inspection.


Any installed valves containing these parts should be reviewed and evaluated for history of leakage or operational testing anomalies. Many of these installed valves are subject to regular plant testing, such as 10CFR50 Appendix J. Good performance in this testing can provide reasonable assurance of an acceptable disc condition. Disc assembly condition can also be verified by inspection of the valve internals.

*(ix) In the case of an early site permit, the entities to whom an early site permit was transferred.*

Not applicable.

Should you have any questions regarding this matter, please contact Michael Cinque, General Manager at (631) 293-3800

Very Truly Yours,



Michael Cinque  
General Manager  
Target Rock, Business Unit of Curtiss-Wright Flow Control Corporation

cc: James White  
John DeBonis  
Steve Pauly  
Ed Bradshaw  
Nick Campanelli  
Joseph Simonetti

Attachment(s):

1. Attachment 1: List of Locations, Models, Main & Pilot Discs

Attachment # 1

**Plant Site Locations**

ARKANSAS NUCLEAR ONE	GRAND GULF	PEACH BOTTOM	SEQUOYAH
BROWNS FERRY	HATCH	PERRY	SHEARON HARRIS
BRUNSWICK	LIMERICK	PILGRIM	SOUTH TEXAS
DRESDEN	MILLSTONE	QUAD CITIES	SUSQUEHANNA
DUANE ARNOLD	NINE MILE POINT	RIVER BEND	THREE MILE ISLAND
FERMI	PALO VERDE	SAINT LUCIE	WATTS BAR

NOTE: Plants not subject to NRC regulation will be notified via separate correspondence

**Valve Model Numbers**

05A-005	75KK-213	76P-042	79BB-002	83AB-002	89K-010BB
05A-006	75KK-214	77GG-002	79Q-014BB	83AG-001	97BB-001
05A-007	75KK-216	77GG-007	79QQ-008	83AP-002	97BB-002
05A-008	76HH-001BB	77GG-008	79TT-001	83AU-001	98Z503-001
05Z541-001	76HH-007	77GG-010	80F-001	83AU-002	98Z503-002
07Z510-001	76HH-007BB	77GG-011	80N-001	83TT-001	
07Z535-001	76HH-011	77J-001BB	80Z-14-009	84DD-004BB	
12D-001	76HH-012	77J-001-SQN-1	81CC-201	84U-001	
72V-001	76HH-013	77JJ-002	81K-001	85U-001	
72V-002	76HH-013-1	77JJ-004	81MM-002	85U-003	
72V-003	76HH-021	77KK-002	81MM-005	85U-005	
73AA-001	76HH-023	77KK-003	81P-006	85U-006	
73FF-005	76L-001-3	77KK-004	82EE-001	85U-007	
75E-001	76P-001	77KK-005	82MM-002-1	86Z545-001BB	
75E-002	76P-002	77KK-006	82PP-001	87K-001	
75F-005	76P-026	77KK-011	82R-002	89K-003	
75F-008	76P-031	78E-008	82R-003	89K-003BB	
75F-010	76P-035	79AB-009	82VV-003BB	89K-004	
75KK-211	76P-036	79B-014	82VV-004BB	89K-004BB	
75KK-212	76P-037	79BB-001	83AB-001	89K-010	

**Main Disc Assembly Part Numbers**

102271-1	102271-1	202337-4	303200-1
100721-1	200391-1	203247-1	304051-1
100875-1	200425-1	204540-1	
100875-1	202336-1	204729-1	
100960-1	202337-1	300953-1	

**Pilot Disc Assembly Part Numbers**

100663-1
102231-1
102231-1
203054-1