

CATEGORY 1

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

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SUBJECT: Part 21 rept re missing spacers from standard SMB-00 torque switch assemblies. Caused by defective lot received from Limitorque facility. Replaced or repaired defective assemblies by addition of spacer.

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Donald C. Cook Plant, Units 1 and 2
Docket Numbers 50-315 and 50-316
Operating Licenses DPR-58 and DPR-74

This fax serves as a report of a 10 CFR Part 21 defect, reported under 10 CFR 21.21.d.3.i.

Description of Event

On January 8, 1997, while installing a new torque switch assembly for motor operated valve 2-MMO-421, it was noted that a spacer appeared to be missing from the torque switch. An inspection of all the standard SMB-00 torque switches assemblies remaining in stock determined that they were all missing a spacer. These torque switch assemblies were part of a group of 7 received from Limitorque for general use at DC Cook under ASP 18787. A condition report was written to investigate if this was a new design.

On January 12, 1997, 2-WMO-728, West Essential Service Water (ESW) Supply to the 2CD Emergency Diesel Generator (EDG) Heat Exchanger Shutoff Valve, failed to fully close during performance of routine surveillance **2 OHP 4030.STP.027CD, "CD Diesel Generator Operability Test". Investigation of the failure on January 14, 1997 discovered that the torque switch assembly installed on the valve was also missing a spacer. The valve was declared inoperable, however the valve was still capable of performing its design basis function of opening, therefore, the operability of the 2CD Diesel Generator was not affected.

On January 14, 1997, in evaluating the failure of 2-WMO-728 and the effects of the missing spacer on the torque switch assembly, it was determined that the lack of the spacer allows the torque switch shaft to rotate slightly along the shaft length. This shaft rotation allowed the torque switch contacts to open. With the closed torque switch contacts open, the actuator control circuit will not allow the actuator to run in the closed direction and therefore will not allow the valve to fully close. The actuator control circuit uses only the closed set of contacts and therefore the open operation is not affected.

In the investigation, it was determined that 2-CMO-415, the Component Cooling Water (CCW) to Miscellaneous Header Shutoff Valve for Train A, had received one of the torque switch assemblies from the lot of 7 which

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were missing the spacer. Because the operability of the valve could not be assured, it was declared inoperable. As the defective assembly had been installed in September of 1996, it was determined that a 10CFR50.72(b)(1)(ii)(B) ENS call for a condition outside the design basis was appropriate. The ENS call was made on January 14, 1997 at 1650 hours.

The fourth defective torque switch assembly was found to have been installed in 1-WMO-754. With the exception of the 2-CMO-415, all the valves in which the defective assemblies had been installed had either an "open" safety function (2-WMO-728 and 1-WMO-724) or were a BOP valve (2-MMO-421), and thus their operability was not in question.

During the investigation of this event, an operability evaluation was performed for 2-CMO-415. The valve was found to have been successfully tested under dynamic conditions during the September 1996 to January 1997 interval and that the defective torque switch assembly would not have kept the valve from performing its design basis function of closing. Therefore, the valve had never been inoperable. The ENS notification was retracted on February 22, 1997.

Cause of Event

The defective lot of 7 received from Limitorque apparently resulted from a manufacturing/assembly error at the Limitorque facility.

Effect of Failure on Plant Operations

The double pole torque switch is a standard configuration for American Electric power and is used extensively at the DC Cook Plant in SMB-00 actuators. The 7 assemblies supplied under ASP 18787 were placed in open stock for use in the next valve requiring one. Therefore, the 3 torque

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switch assemblies in open stock could have been used in any number of safety related applications with unknown results. The failures in the 4 valves in which they were installed did not result in any safety impact, however, this could not be guaranteed for all other SMB-00 valve actuators in the plant due to the large variety of applications for the assembly. Because it is not possible to definitively evaluate all possible applications for significant safety hazard, it was conservatively decided to submit this event as a Part 21.

Corrective Action

All 4 of the defective assemblies which were installed have been either replaced, or repaired by addition of a spacer. All 7 assemblies were returned to Limitorque for evaluation on March 10, 1997. Limitorque has not been able to predict when their evaluation might be complete.

Resubmitted on 19
Fax Cover Sheet

Part 21

P21 97191

Date: March 10, 1997

To: NRC Operations Center
301/816-0550
Fax: 301/816-5151

From: Mary Beth Depuydt
616/465-5901, x1589
FAX: 616/466-2905

Total # of Pages: 4, including cover page

POWER REACTOR

EVENT NUMBER: 31922

FACILITY: COOK		REGION: 3		NOTIFICATION DATE: 03/10/97		
UNIT: [1] [2] []		STATE: MI		NOTIFICATION TIME: 11:25 [ET]		
RX TYPE: [1] W-4-LP, [2] W-4-LP				EVENT DATE: 03/10/97		
				EVENT TIME: 00:00 [EST]		
NRC NOTIFIED BY: MARY BETH DEPUYDT				LAST UPDATE DATE: 03/10/97		
HQ OPS OFFICER: JOHN MacKINNON						
EMERGENCY CLASS: NOT APPLICABLE				NOTIFICATIONS		
10 CFR SECTION:						
CDEG 21.21(c) (3) (i) DEFECTS/NONCOMPLIANCE				VERN HODGE, RVIB NRR		
UNIT	SCRAM CODE	RX CRIT	INIT PWR	INIT RX MODE	CURR PWR	CURR RX MODE
1	N	N	0	REFUELING	0	REFUELING
2	N	Y	100	POWER OPERATION	100	POWER OPERATION

EVENT TEXT

STANDARD SMB-00 TORQUE SWITCHES ASSEMBLIES REMAINING IN STOCK DETERMINED THAT THEY WERE ALL MISSING A SPACER.

ON JANUARY 8, 1997, WHILE INSTALLING A NEW TORQUE SWITCH ASSEMBLY FOR MOTOR OPERATED VALVE 2-MMO-421, IT WAS NOTED THAT A SPACER APPEARED TO BE MISSING FROM THE TORQUE SWITCH. AN INSPECTION OF ALL THE STANDARD SMB-00 TORQUES SWITCHES ASSEMBLIES REMAINING IN STOCK DETERMINED THAT THEY WERE ALL MISSING A SPACER. THESE TORQUE SWITCH ASSEMBLIES WERE PART OF A GROUP OF 7 RECEIVED FROM LIMITORQUE FOR GENERAL USE AT DC COOK UNDER ASP 18787. A CONDITION REPORT WAS WRITTEN TO INVESTIGATE IF THIS WAS A NEW DESIGN.

THE DEFECTIVE LOT OF 7 RECEIVED FROM LIMITORQUE APPARENTLY RESULTED FROM A MANUFACTURING ASSEMBLY ERROR AT THE LIMITORQUE FACILITY.

THE DOUBLE POLE TORQUE SWITCH IS A STANDARD CONFIGURATION FOR AMERICAN ELECTRIC POWER AND IS USED EXTENSIVELY AT THE DC COOK PLANT IN SMB-00 ACTUATORS. THE 7 ASSEMBLIES SUPPLIED UNDER ASP 18787 WERE PLACED IN OPEN STOCK FOR USE IN THE NEXT VALVE REQUIRING ONE. THEREFORE, THE 3 TORQUE SWITCH ASSEMBLIES IN OPEN STOCK COULD HAVE BEEN USED IN ANY NUMBER OF SAFETY RELATED APPLICATIONS WITH UNKNOWN RESULTS. THE FAILURES IN THE 4 VALVES IN WHICH THEY WERE INSTALLED DID NOT RESULT IN ANY SAFETY IMPACT, HOWEVER, THIS COULD NOT BE GUARANTEED FOR ALL OTHER SMB-00 VALVE ACTUATORS IN THE PLANT DUE TO THE LARGE VARIETY OF APPLICATIONS FOR THE ASSEMBLY. BECAUSE IT IS NOT POSSIBLE TO DEFINITELY EVALUATE ALL POSSIBLE APPLICATIONS FOR SIGNIFICANT SAFETY HAZARD, IT WAS CONSERVATIVELY DECIDED TO SUBMIT THIS EVENT AS A PART 21.

(Continued on next page)

FACILITY: COOK

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ALL 4 OF THE DEFECTIVE ASSEMBLIES WHICH WERE INSTALLED HAVE BEEN EITHER REPLACED, OR REPAIRED BY ADDITION OF A SPACER. ALL 7 ASSEMBLIES WERE RETURNED TO LIMITORQUE FOR EVALUATION ON MARCH 10, 1997. LIMITORQUE HAS NOT BEEN ABLE TO PREDICT WHEN THEIR EVALUATION MIGHT BE COMPLETE.

COPY OF PART 21 SENT TO VERN HODGE.

