NRC FORM 366 (7-77)

UPDATE REPORT - PREVIOUS REPORT DATED JULY 12, 1982

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: ① (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 LICENSEE CODE: S C H B R 2 ② LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 ③ LICENSE TYPE: 4 1 1 1 1 ④ CAT ⑤

CON'T 01 REPORT SOURCE: L ⑥ DOCKET NUMBER: 0 5 0 0 0 2 6 1 ⑦ EVENT DATE: 0 6 2 8 8 2 ⑧ REPORT DATE: 1 1 0 3 8 2 ⑨

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

On June 28, 1982, at approximately 1400 hours with the plant at refueling shutdown, "B" Main Steam (MS) Check Valve was discovered in a degraded condition. Inspection revealed that the set screws which lock the valve disc tail-piece to the rockshaft had loosened due to vibration. This allowed the shaft to move axially and partially slip out of one shaft bushing. This event is being reported pursuant to Technical Specification 6.9.2.a.9. "B" MS Check Valve was found closed, and therefore was demonstrated capable of performing its intended function, so there was no threat to the public health and safety.

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
C C ⑪	B ⑫	A ⑬	V A L V E X ⑭	C ⑮	A ⑯

⑰ LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
8 2	—	0 0 5	/	0 1	T	—	1

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS ㉒	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
F ⑱	Z ⑲	Z ⑳	Z ㉑	0 0 0 0	Y ㉓	N ㉔	A ㉕	S 0 7 5 ㉖

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ㉗

"A" and "C" MS Check Valves were inspected, and the set screws were found to be loose on both valve disc tail-pieces. All three valves have been modified to correct a past modification deficiency. This modification prevents excessive axial movement of the rockshaft. In addition, the tail-piece set screws have been staked to prevent loosening. These actions were completed on July 9, 1982. No further action is considered necessary.

FACILITY STATUS	% POWER	OTHER STATUS ㉚	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION ㉜
H ㉘	0 0 0 ㉙	N/A	B ㉛	INSERVICE INSPECTION

ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY ㉟	LOCATION OF RELEASE ㊱
Z ㉝	Z ㉞	N/A	N/A

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION ㊴
0 0 0 ㊲	Z ㊳	N/A

PERSONNEL INJURIES

NUMBER	DESCRIPTION ㊶
0 0 0 ㊵	N/A

LOSS OF OR DAMAGE TO FACILITY ㊸

TYPE	DESCRIPTION
Z ㊷	N/A

8211100388 821103
PDR ADOCK 05000261
S PDR

PUBLICITY

ISSUED	DESCRIPTION ㊺
N ㊹	N/A

NRC USE ONLY

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SUPPLEMENTAL INFORMATION

LER-82-005, REVISION 1

I. Cause Description and Analysis

On June 28, 1982, at approximately 1400 hours with the plant in refueling shutdown, "B" Main Steam (MS) Check Valve was discovered to be in a degraded condition. The MS Check Valves had undergone an In-Service Inspection in which the valves were usually verified to be seated by crawling the pipes. However, the degraded condition of "B" MS Check Valve was not discovered until the rockshaft end caps were removed for stamping of the shaft end with a position mark to facilitate future inspections. Upon removal of the end caps on "B" MS Check Valve, it was noted that one end of the rockshaft had partially slipped out of its bushing and was pinned against the end of the bushing. Disassembly and inspection of the valve revealed that the set screws which lock the valve disc tail-piece to the rockshaft had loosened, apparently due to vibration, and allowed the shaft to move axially, resulting in the above configuration.

This event is the result of a modification performed on the MS check valves in 1978. This modification, in addition to increasing the rockshaft diameter, modified the bushing retainer and end cap configuration. The modification to the bushing retainers and end caps increased the clearance between the end of the rockshaft and the end cap such that, if the set screws were to loosen, the rockshaft could slide out of the bushing on one end. This clearance is now identified as a deficiency of the modification.

The configuration of "B" MS Check Valve which resulted in this degraded condition was caused by a modification developed by CP&L personnel and is plant specific. However, subsequent investigation and design analysis by the valve vendor reveals that these same conditions could exist in an unmodified valve. Specifically, if the set screws loosened and the rockshaft moved axially to the most extreme position, the remaining bushing to shaft engagement would not provide sufficient bearing surface for continuous operation. The valve vendor is reporting this item under 10CFR21.

This event resulted in a condition which requires corrective measures to prevent operation in a manner less conservative than assumed in the safety analysis report and is being reported pursuant to Technical Specification 6.9.2.a.9.

"B" MS Check Valve was found closed, and therefore was demonstrated capable of performing its intended function. Thus, there was no threat to the public health and safety.

II. Corrective Action

An inspection of the remaining two MS Check Valves was performed, and the set screws were found to be loose on both valves. A modification has been implemented for all three valves. This modification consisted of replacing the damaged bushing and bushing retainer on "B" MS Check Valve and adding

a retaining block at each end of the rockshaft on all three valves. These retaining blocks reduce the clearance between the shaft end and the end cap and will prevent axial movement to the extent which would allow the rockshaft to slip out of its bushing.

Additionally, the tail-piece set screws, which also limit axial movement of the rockshaft, were replaced with longer set screws and machined to fit, thereby allowing the set screws to be staked without damage to the threads. This action will prevent the screws from loosening due to vibration.

All modification work was completed on July 9, 1982.

III. Corrective Action To Prevent Recurrence

The corrective actions described above are sufficient to prevent recurrence of this event. However, since the modification deficiency aspect of this event could potentially arise in future modification, this LER will be reviewed by on-site engineering personnel involved in modification development. This review was completed on September 1, 1982.

Additionally, the MS Check Valves will be routinely inspected during the next refueling outage with special attention being directed to the condition of the rockshaft/bushing configuration and the set screws.

No further action is considered necessary.