

FORM 440

TO

L. P. King

# MEMORANDUM

BABCOCK & WILCOX

September 11, 1978

FROM  
LYNCHBURG, VA.

D. H. Roy

Larry,

The attached SPR's and SPR comment forms need to be closed out as soon as possible with Paul Perrone. Please meet with him as soon as you can to discuss your current position with respect to these valve problems and what action you are taking or needs to be taken to help assure that these problems do not become chronic.



DHR:rw

Attachments

cc: L. J. Stanek  
P. E. Perrone

GPU

Def. Exh. For ID 453

Pff. Exh. in Ev         

Charles Shapiro CSR  
Doyle Reporting Inc.

2/3/82  
G/A

8307070351 780911  
PDR ADOCK 05000289  
P HOL

318 09814

E15 9006

SPR Comment Form

To: L. K...

Comment  
SER. No. 43

SPR # 03-172

Title: Letter from the Firm (IP-2)

Date: 5/15/78

I have reviewed the above SPR/Resolution and have the following comments:

THIS SPR APPEARS TO BE ANOTHER  
LIMITED NOT FAILURE. - SEE  
MY SPR COMMENT FORM 041 TO YOU  
ON 5/11/78 (still open). WHAT IS ROOT  
CAUSE OF THESE FAILURES AND  
PERMANENT CORRECTIVE ACTION?

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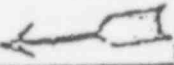
☐ Please consider these comments in your resolution; no reply to me is required.

☒ Please incorporate or resolve these comments. I would appreciate a  
reply by 5/15/78 indicating how these comments have  
been resolved. ✓

P. E. Perrone  
P. E. Perrone, Ext. 2105

SITE PROBLEM  
REPORT TRANSMITTAL

\*\*\*\* CLEARED \*\*\*\*

To: Change Control  For Distribution

S. H. Klein - Quality Assurance

Central Engineering Files

R. G. Burnley - Task Engineer(s)

C. D. Russell - Project Manager

File: 13-03-676

Contract No.: 620-00 03

SPR: 676

Title: Loss of Decay Heat  
Flow (LP-2)

Date: 7/18/78

Status Code: C

L. C. Rogers - MET. ED.

F. R. Faist - TOLEDO

J. R. Bohart - Intl. Support

B. A. Karrasch - Plant Integration

P. E. Perrone

W. M. Kelly

Attached is one copy of Site Problem Report No. 676 which was processed on Contract 620-00 03. Future contracts have been reviewed for the potential of a similar problem. This problem is/is not considered applicable to other contracts.

REMARKS: This SPR was transmitted on May 17, 1978 for information purposes,  
anticipating additional details to be sent from the site. No additional information  
is available, so the SPR is being closed.

Daniel H. Peterson

NUCLEAR SERVICE SUPPORT ENGINEER

CLEARED

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SITE PROBLEM REPORT		BABC & WILCOX	
PROBLEM IDENTIFICATION	CUSTOMER Duke Power Co.	ORIGINAL OR H.W. Pollock	DATE 5/5/78
	VENDOR B & W / Walworth	P.A. NO.	
	TITLE (MAX 30 CHARACTERS) Loss of Decay Heat Flow (LP-2)		PROBLEM CONTACT M. Harris
	DESCRIPTION OF PROBLEM:  See attached description of problem.		
RESOLUTION	STATUS-ACTION TO DATE, INCLUDING PERSONS CONTACTED:  Decay heat flow established.		
	FURTHER ACTION RECOMMENDED BY SITE PERSONNEL:  Replace LP-2 stem and limit torque operating nut. Make other repairs as necessary when plant conditions permit removing the valve from service.		
	RESOLUTIONS:  This SPR has remained open until this date awaiting additional information concerning the mode of failure of this valve. Since writing the SPR, H.W. Pollock has left B & W and it is expected that no additional details will be forthcoming. This SPR is therefore being closed.		
	PREPARED BY Dainoff/Chiberson	DATE 7/18/78	APPROVED BY DATE
COMPLETION	REVIEWED BY	DATE	
	COST CATEGORY <input type="checkbox"/> NORM <input type="checkbox"/> OTHER		FIELD CHANGE REQ <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	F.C.A. NO. OR- NA		SIGNIF. DEFICIENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	SITE COMPLETION REPORT:  INFORMATION ONLY		
			DEVIATIONS: <input type="checkbox"/> NONE SPR REV NO. <input type="checkbox"/> DATE COMPLETED: COMPLETED BY CONFIDENTIAL DATE

Description of Problem

5-4-78 - Unit shutdown (for OTSG tube repairs). Operators attempted to perform an Engineering Safeguards Test on the DH System, which involved cycling LP-1 and LP-2 (DH isolation valves). The DH valve lineup was changed prior to this operation so that flow would not be lost during the test.

1045 - Valve LP-22 was shut but would not re-open. DH flow was lost as result of improper valve lineup by operator (i.e., LP-95 throttled and LP-13 closed, vice LP-13 open and LP-95 closed). Repeated attempts to re-open the valve were unsuccessful. Attempts to re-establish flow in the "switchover" mode were unsuccessful. Reactor core temperature increased to approximately 2210°F, and at 1730 operators finally succeeded in establishing cooling flow with LPI pump (from the BWST). The lower manway and handhole covers had been removed from the B-OTSG as part of tube repair work and the water overflowed into the building basement, (approximately 44,000 gallons). The Reactor Building filled with steam from the near - 220°F water.

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SPR Comment Form

To: L. F. K.

Comment  
SER. No.

641

SPR # 411 - 404 - 01

Title: FOR MERRY VALVE OPERATOR MURDER

Date: 5/1/73

I have reviewed the above SPR/Resolution and have the following comments:

1. Resolution does not determine cause of failure of stem nuts.
2. The proposed resolution which implies leaving as is if no problems occur is waiting until another failure to know if there is a problem.
3. Why does the c.c. meter make a difference in the applied load? Is it controlled by a torque wrench?

☐ Please consider these comments in your resolution; no reply to me is required.

☒ Please incorporate or resolve these comments. I would appreciate a reply by 5/1/73 indicating how these comments have been resolved.

P. E. Perrone 5/1/73  
P. E. Perrone, Ext. 2105

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# SITE PROBLEM REPORT

47425 BASCOCK & WILCOX SPR #404, Rev. 0

CUSTOMER Teledo Edison Company	ORIGINATOR F.R. Faist 3/27/78	DEV. NO. 13	CONF. NO. 620-0014	SPR NO. 404	REV. NO. 01
VENDOR Limiterque/Velan	P.A. NO. 022614IS	PART NO. / TASK NO. 28/041/001	GROUP NO.	SEQ. NO.	
TITLE (MAX 30 CHARACTERS) Pwr. Spray Vlv Operator Motor			PROBLEM CONTACT F. R. Faist <i>F.R. Faist</i>		

PROBLEM IDENTIFICATION

DESCRIPTION OF PROBLEM: During the course of investigating the valve stem nut failure (SPR #404, Rev. 0), an apparent discrepancy in limiterque motor horsepower rating was noted. Discussions with B&W Engineering (S. Lamanna) indicated that a 1 hp motor should have been supplied with the operator. The original motor received on site was a 1.6 hp motor. It was changed out by TECO (SPR #322). Motor nameplate data is attached. The mode of failure of the stem nut was probably due to excessive torque. A larger operator motor will result in more torque.

## STATUS-ACTION TO DATE, INCLUDING PERSONS CONTACTED:

S. Lamanna, J. Lauer, B&W, aware of problem. B. Beyer (TECO) was informed of discrepancy.

## FURTHER ACTION RECOMMENDED BY SITE PERSONNEL:

1. Confirm size motor that should be on operator.
2. If changed to 1.6 hp motor, provide details.

## RESOLUTION:

SEE LETTER FROM S.A. LAMANNA TO G.L. HARRIS, DATED 4-14-78 (SECRET 3 & 4).

RESOLUTION

PREPARED BY <i>James J. Rice</i>	DATE 4-19-78	APPROVED BY	DATE
REVIEWED BY <i>M. R. Sullivan for H. J. Lauer</i>	DATE 4-19-78	<i>J. A. Lauer</i>	4-20-78
COST CATEGORY <input type="checkbox"/> NORM <input type="checkbox"/> OTHER <input type="checkbox"/>		FIELD CHANGE REQ <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
F.C.A. NO. 04- N/A		SIGNIF. DEFICIENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

COMPLETION

## SITE COMPLETION REPORT:

SOM Letter #375, copy attached, written to the customer on 6/2/78. This clears the SPR.

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## DEVIATIONS:

<input checked="" type="checkbox"/> NONE	SPR REV NO. <input type="checkbox"/>
DATE COMPLETED: 6/2/78	
COMPLETED BY F. R. Faist <i>F.R. Faist</i>	DATE 6/2/78
F. R. Faist <i>F.R. Faist</i>	6/2/78
SHEET 1 OF 3	

318 09900

E15 9012



Description of Problem:

1. The valve motor operator was changed out on RC-EV2 during the week of May 15, 1977. This was done by TECO Maintenance without consulting B&W. TECO Maintenance said the motor was found burnt out while conducting a survey of limit torque operators. The replacement motor has the following nameplate data:

Replacement Motor Data

Valve RC-2  
ID 710744CZ  
Start 25 ft. lbs.  
Run 5 ft. lbs.  
H.P. 1.6  
Type P  
Frame B56  
Amps 7.6/3.8  
Volts 220/440  
Insulation Class H  
Duty 15 min.

Radiation Insulation

Amp. Temp. 40°C

Original Motor Data

RC-2  
107<sup>h</sup> -CZ  
25 ft. lbs.  
5 ft. lbs.  
1.6  
P  
B56  
Not on nameplate  
220/440  
Class H  
15 min.

H Radiation

40°C

2. Although the nameplate data is the same as the original motor, a review of the suitability of the 40°C ambient temperature should be performed for this valve motor application.

JZA:mlf  
5/26/77

Telecopy to Frank Hannell, 5/26/77.

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2 of 3



MEMORANDUM

THE BABCOCK & WILCOX COMPANY

Bobby Harris

L. P. King

J. A. Lauer

O. Putzger

Stephen A. Lamanna

CUST.

TECO

FILE NO. OR REF.

SUBJ.

SPR # 404-01

NSSS-14

DATE

4 / 19 / 78

RC-11V2 is a 2 1/2" VELAN Globe Valve with a SMB-00-15 Torque Limiter Operator. The valve was purchased on BEW order No 02261445 and a Velan No P-35216. The limiter order no. was 360190 (4-3-72)

The Velan Drawing # P 35216-4 shows the valve was supplied to TECO with a 1.0 HP motor. All records at BEW Lynchburg and Torque Limiter show that the valve operator was supplied with a 1.0 HP motor. There is no way that BEW Lynchburg or Torque Limiter can determine how or why the valve operator now has a 1.6 HP motor.

The 1.6 HP motor will theoretically supply 15 to 20% more load at the same torque switch set point.

In my opinion if the valve is functioning properly and the extra load does not damage the valve, it would leave it as is. If the larger motor is causing problems, the torque switch can be changed from a setting of 1.5 to 1.0 which would reduce the load to 83% of 1.5 setting. ( $1.6 \times .83 = 1.33 \text{ HP}$ )

Stephen A. Lamanna

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COUNSEL ONLY

3 of 3

318 0992

E15 9014

SPR Comment Form

To: L.P. King

Comment  
SER. No. 024

SPR # 14 -386

Title: ELUIMATIC RELIEF VALVE MODIFICATIONS

Date: 11/17/77

I have reviewed the above SPR/Resolution and have the following comments:

- Why don't the mods to the valve made in the field require a field change?
- Should these mods be incorporated on other valves to prevent similar failure

☒ Please consider these comments in your resolution; no reply to me is required.

☒ Please incorporate or resolve these comments. I would appreciate a reply by 1/17/78 indicating how these comments have been resolved.

*P. E. Perrone*  
P. E. Perrone, Ext. 2105

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# SITE PROBLEM REPORT

BASCO 2 WILCOX SPR #285

CUSTOMER Toledo Edison Company	ORIGINATOR F.R. Faist	DATE 11/2/77	DOC. NO. CONT. NO. 13-620-0014	SPR NO. 285
VENDOR Crosby	P.A. NO. 023 090 IS		PART NO./TAG NO. 28/041/005	GROUP NO. 1
TITLE (MAX 30 CHARACTERS) Electronic Relief Valve Modification			PROBLEM CONTACT J. E. Anderson	

## DESCRIPTION OF PROBLEM:

See attached sheet.

PROBLEM IDENTIFICATION

STATUS-ACTION TO DATE, INCLUDING PERSONS CONTACTED: Lynb. Engineering is aware of the problem. T. D. Murray and B. R. Beyer, TECo, are also aware of the problem.

FURTHER ACTION RECOMMENDED BY SITE PERSONNEL: 1. Lynb. Engineering should review Crosby installation, operating and maintenance instructions No. I - 1115, Sect. 4.2 with the Crosby vendor to determine if these instructions will give the proper pilot valve stem adjustment when actuated. 2. Engineering to provide additional recommendation and concurrence with action taken.

RESOLUTION: *Engineering agrees with recommendations as per communication with Mr. Dick Ahlstrom. The instruction manual section 4.2 will be revised by Crosby. B&W will be given copies of the revised pages for the I.M. Steve Sammons.*

RESOLUTION

PREPARED BY <i>Doug Halsted</i>	DATE 11-4-77	APPROVED BY <i>J. A. Lauer</i>	DATE 11-7-77
<i>F. R. Faist &amp; K. E. Olson</i>	DATE 11-7-77		
COST CATEGORY <input type="checkbox"/> NORM <input checked="" type="checkbox"/> OTHER	FIELD CHANGE REQ <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	F.C.A. NO. 00- N/A	SIGNIF. DEFICIENT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

COMPLETION

SITE COMPLETION REPORT: SOM Letter #352, copy attached was written to TECo. Instruction manual is correct and will not be revised. Additional adjustment check provided. Eng. concurred with Crosby/TECo actions.

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DEVIATIONS: <input checked="" type="checkbox"/> NONE	SPR REV NO. 1
DATE COMPLETED: 3/24/78	
COMPLETED BY F. R. Faist	DATE 3/24/78
F. R. Faist	
CHECK	7

318 09914

E15 9016

Babcock & Wilcox

SPR #386  
620-0014  
11/2/77

Description of Problem:

On 10/13/77, the electromagnetic relief valve was tested after the completion of repairs as outlined in SPR #369. The valve was cycled six times successfully. On the seventh test cycle the pilot valve did not close. The ERV was isolated and permitted to cool down while waiting for Crosby representatives.

Crosby rep., Walt Conroy, arrived and the pilot valve assembly was removed from the main valve. Disassembly of the pilot valve revealed that the pilot valve stem had stuck open due to the close tolerance causing a binding condition between the O.D. of the stem and the I.D. of the pilot valve nozzle. Also, a small metal particle was found in the pilot stem/nozzle area. Subsequent cleaning of the inlet piping to the ERV revealed this same type of metal particles.

The Crosby representative furnished a detailed drawing of the pilot valve stem requiring a diameter of .374. This was changed to read .373 diameter .372.

by the Crosby rep., and the stem was modified accordingly by TECO Maintenance under the direction of the Crosby rep. This modification resulted in opening the clearance between the stem and the nozzle thus eliminating the binding. The nozzle was also reamed out with a reamer the same size, no material was removed.

All parts were cleaned and assembled. The solenoid linkage was adjusted to drop the adjustment bolt more squarely on the disc actuator. In addition, the adjustment bolt was positioned to move the pilot valve stem off the seat a maximum of .125". It had been moving off the seat some .375".

The pilot valve was tested without pressure by actuating the solenoid three times. The valve was tested again twice with 5 or 6 seconds between tests. This was followed by testing the valve five more times assuring actuation each time by a one minute delay between tests. The valve was tested with a pressure of 1100 psig on the second and third occasion.

JEA:nlf

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318 0995

E15