

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) H. B. Robinson SEG Plant, Unit No. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1	PAGE (3) 1 OF 13
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TITLE (4)

Steam Generator Snubbers

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)												
0	5	2	1	8	4	8	4	0	0	3	0	1	1	2	1	2	8	4	0	5	0	0	0

OPERATING MODE (9) POWER LEVEL (10) N I A	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)															
	20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)			
	20.406(a)(1)(i)				50.38(a)(1)				50.73(a)(2)(v)				73.71(c)			
	20.406(a)(1)(ii)				50.38(a)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
	20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)							
	20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)							
20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)

NAME Carson L. Wright	TELEPHONE NUMBER	
	AREA CODE 8 0 3	8 3 1 - 4 5 2 1 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD
B	A	B - S	N B	*	Y				

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

The twelve steam generator (S/G) snubbers were sent off-site for functional testing. Three snubbers, one from each S/G, were tested. Two snubbers were low on fluid. A rear monoball bearing failed at less than design load. It was learned that the bearing had been derated after manufacturing to less than the snubber's design load. The snubber manufacturer has submitted a 10CFR21 report on the bearing failure. Due to the generic structural problems with the snubbers, the remaining nine snubbers were not tested. All twelve S/G snubbers were rebuilt, satisfactorily tested, and then reinstalled. Subsequent testing of the S/G snubbers will be in accordance with Section 4.13 of the Plant's Technical Specifications.

*Baxter Fluid Power (Anker-Holth)

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
H. B. Robinson SEG Plant, Unit No. 2	0 5 0 0 0 2 6 1	8 4	— 0 0 3	— 0 1	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The twelve Anker-Holth snubbers (Model #21.12620.008 500 KIP Load Rating) were sent off-site for functional testing and refurbishment. This was the first time since commercial operation that the entire snubber assemblies were functionally tested. Previous inspection/testing, which occurred at refueling intervals, involved visual inspections for piston settings, reservoir level, seal leakage, and general external condition. The control valve block for the "A" steam generator (S/G) snubber bank was tested in 1982 due to a 1981 change to Technical Specifications which required the valve testing. The test was satisfactory.

Three snubbers, one from each S/G, were tested. While in the test stand under conditions simulating expected loading conditions, the following anomalies were observed in the three snubbers tested:

1. Two snubbers, 2011 and 2014, did not lock up because they were low on fluid.
2. The rear monoball bearing failed while snubber 2011 was under a load of 412,000 pounds force, and the monoball hole was subsequently deformed. The design load for these snubbers is 470,000 pounds force.
3. Snubber 2008 did not meet the lockup velocity requirement of 1 to 10 inches per hour. The tension and compression lockup velocities were 5.75 inches per minute and 4.7 inches per minute, respectively. Snubber 2008 did not meet the bleed rate requirement of 3 to 6 inches per hour. The tension and compression bleed rates were 0.25 inches per minute at 200,000 pounds force.

Due to the generic structural deficiency with the snubbers, no additional testing was performed on the remaining nine S/G snubbers prior to rebuilding all of the S/G snubbers.

Actions Taken

1. Low fluid level in the snubber may have resulted from the improper installation of the tubing between the control block and the fluid reservoir. The line from the reservoir should have split and connected at two locations on the control block, a check valve connection for make-up from the reservoir, and an orificed connection for return to the reservoir (See Attachment). The orificed connection was originally installed. However, the check valve and the tubing to the control valve for make-up were not installed, and its control valve connection was plugged.

Although no evidence exists, another possible explanation of low oil level is that, initially, the snubbers may not have been properly filled.

The snubbers were installed in 1970. In 1974, a snubber visual inspection program was implemented. Since the implementation of this program, there has been no evidence of an oil leak to explain the low oil levels in the snubbers. However, prior to the implementation of this inspection program, fluid may have leaked out of the snubbers and gone undetected. The single orificed connection between the reservoir and the control block would have prevented adequate make-up to the snubbers from the reservoir.

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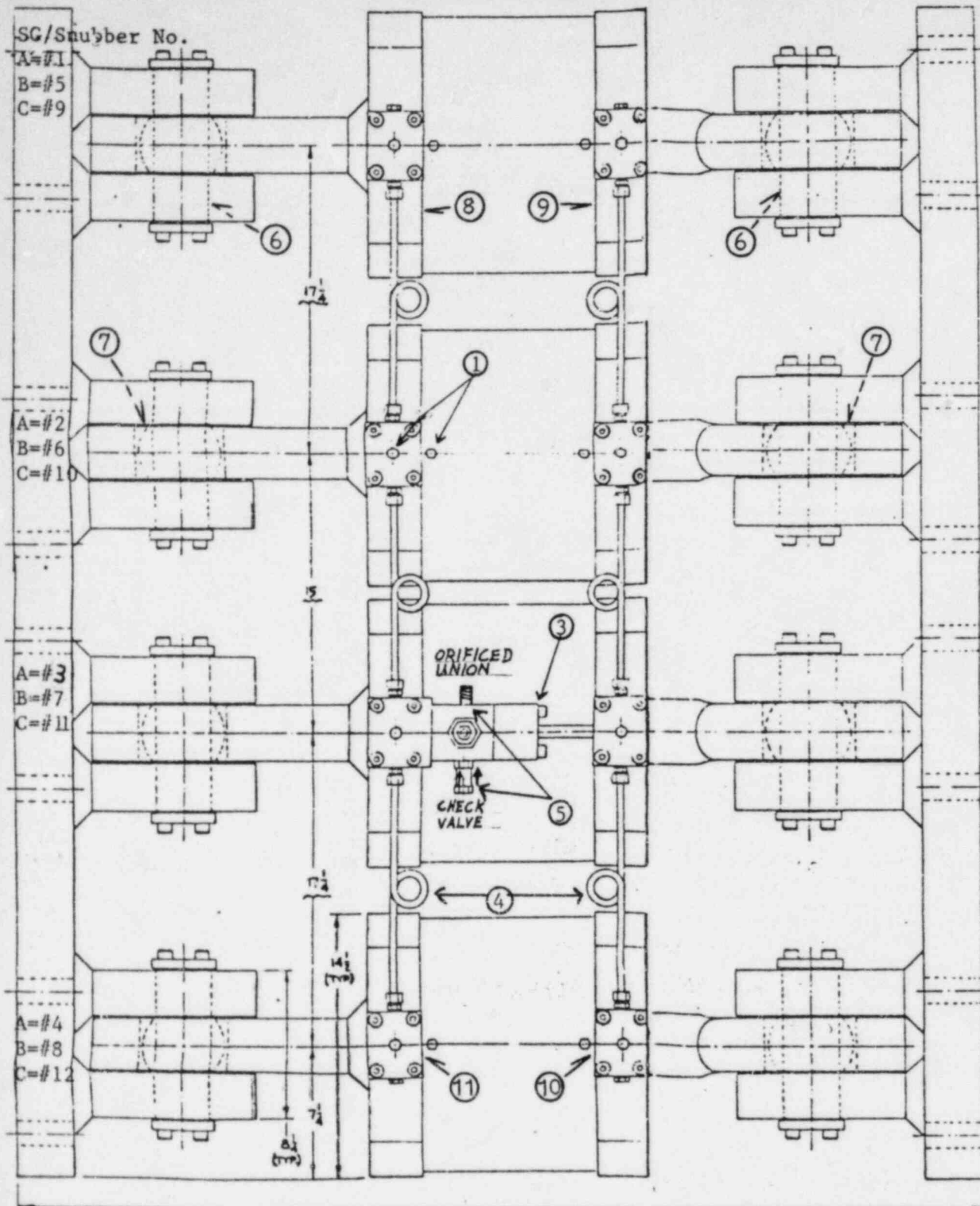
The fluid supply tubing between the control block and the reservoir has subsequently been reinstalled per the snubber manufacturer's requirements to ensure proper reservoir to snubber flow.

This snubber arrangement, snubbers sharing one control block and one external fluid reservoir, is unique to the steam generator snubbers.

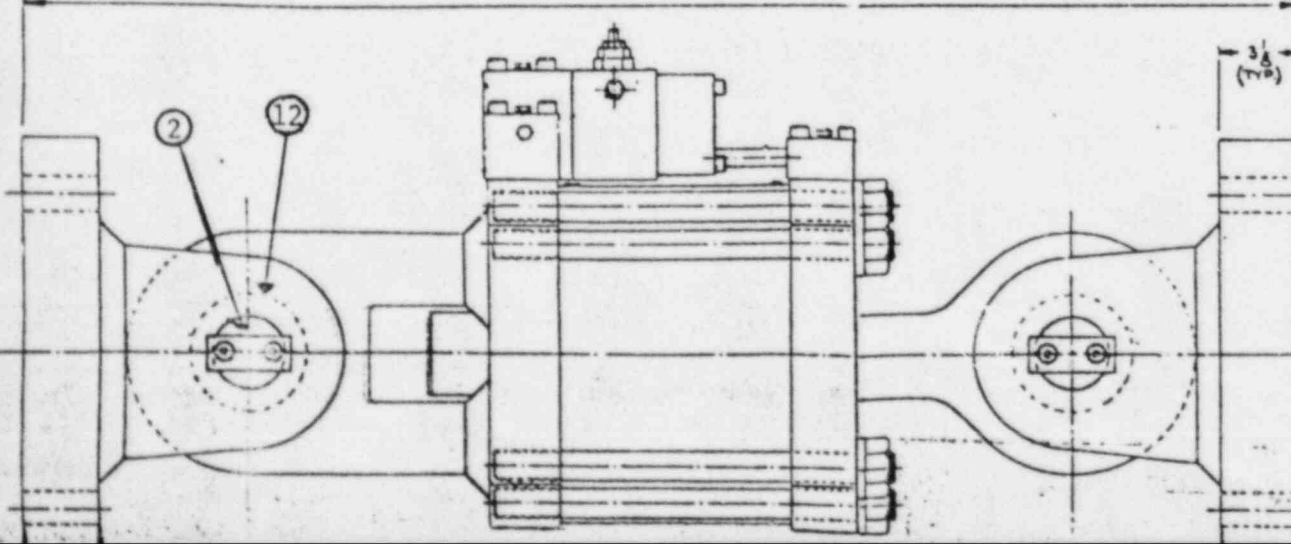
2. The snubber manufacturer, Baxter Fluid Power (Anker-Holth), has submitted a 10CFR21 report on the failure of the rear monoball bearing on snubber 2011. Subsequent to the snubbers' installation, the bearing rating had been revised downward to less than the snubber design load. The load at which the failure occurred (412,000 lbf.) is greater than the load imposed on the steam generator by a seismic event or an RCS line break. However, a main steam line break could impose a load greater than the failure load which would have resulted in probable bearing failure and plastic deformation of the front and/or rear mounting clevis. This failure could have allowed excessive movement of the steam generator

The snubbers front and rear attachment clevises and spherical bearings were replaced with components designed for the maximum faulted load, 470,000 lbf.

3. The snubber assemblies were functionally tested satisfactorily per the original specifications following the snubber and valve block rebuild. The original specifications were reviewed and deemed acceptable by the Plant's architectural Engineer. Subsequent testing of the S/G snubbers will be in accordance with Section 4.13 of the Plants Technical Specifications.



Steam Generator



<u>Identification No.</u>	<u>Component Name</u>	<u>Size</u>
1	Bleeder Plugs	$\frac{1}{4}$ in. hex. socket
2	Pin Retainer Plates	$\frac{1}{2}$ in. hex. socket
3	Control Valve	
4	Tubing Connections	5/16 in.
5	Control Valve Supply Ports	5/16 in.
6	Clevis Pin	-
7	Bearing Spacer Ring	-
8	Rear Head Block	-
9	Front Head Block	-
10	Front Port Block	-
11	Rear Port Block	-
12	Rear Monoball Bearings	-