

CONTROL BLOCKS: | \_ | i | l | l | l | l | ①

5 1 C T M N S 2 2 0 0 - 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5  
8 9 LICENSE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE JO 57 CAT 58

L 6 0 5 0 0 0 3 3 6 7 0 5 0 7 8 1 8 0 3 2 2 8 3 9  
60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

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2 With the plant in hot standby, a mechanical snubber not previously included on the

3 IEB 81-01 Evaluation List was discovered. A cold shutdown was initiated. All safety

4 related pipe stress problems were reviewed for mechanical snubber identification

5 and listing. During the review mechanical snubbers previously classified as

6 non-safety related were reclassified as safety related. Similar event:

7 RO-50-336/81-11/3X-1.

SYSTEM CODE X X (11)		CAUSE CODE B (12)	CAUSE SUBCODE B (13)	COMPONENT CODE S U P P O R T (14)		COMP. SUBCODE D (15)	VALVE SUBCODE Z (16)
EVENT YEAR 8 1 (17)			SEQUENTIAL REPORT NO. 0 1 8 (18)		OCCURRENCE CODE 0 3 (19)	REPORT TYPE X (20)	REVISION NO. 2 (21)
ACTION TAKEN A (22)	FUTURE ACTION Z (23)	EFFECT ON PLANT C (24)	SHUTDOWN METHOD A (25)	HOURS 0 2 7 5 (26)	ATTACHMENT SUBMITTED Y (27)	NPRD-4 FORM SUB. Y (28)	PRIME COMP. SUPPLIER A (29)
CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (30)				COMPONENT MANUFACTURER 1 1 3 7 (31)			

10 The previous listing did not include mechanical snubbers on small diameter  
11 pipe or non-safety related portions of piping systems. Stroke testing of  
12 all safety related mechanical snubbers was completed. 39 of 110 snubbers  
13 failed to stroke and were replaced.

FACILITY STATUS		% POWER			OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION		
1	5	6	28	0	0	0	29	N/A	C	31	Non-routine test inspection
ACTIVITY RELEASED		CONTENT OF RELEASE			AMOUNT OF ACTIVITY			LOCATION OF RELEASE			
1	6	2	33	2	34	N/A		N/A			
PERSONNEL EXPOSURES		NUMBER		TYPE		DESCRIPTION					
1	7	0	0	0	37	2	38	N/A			
PERSONNEL INJURIES		NUMBER		DESCRIPTION							
1	8	0	0	0	40	N/A					
DES OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION							
1	9	2	47	N/A							
						8304050385 830322 PDR ADOCK 05000336 S PDR					

PUBLICITY		ISSUED		DESCRIPTION		45	
2	0	Y	44	Local radio stations and newspapers notified.			

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**NRC USE ONLY**

## ATTACHMENT TO LER #81-018/3X-2

## Event description and probable consequences:

During a plant "Hot Standby" condition, dimensional inspection of safety related pipe hangers inside containment containing International Nuclear Safeguards Co. mechanical snubbers was being performed to obtain information for snubber changeout at the next cold shutdown.

This inspection revealed several INC mechanical snubbers installed on small diameter piping. These snubbers were determined to be safety related and had not previously been identified. Refer to Table I attached.

Further review revealed that other mechanical snubbers, previously identified as seismic Class II, were safety related. Refer to Table II attached. A cold shutdown was initiated to allow snubber stroke testing and replacement as required. Refer to Tables I, II and III attached for a listing of snubbers tested, test results and piping systems affected. No technical specification action statements were entered as a result of snubber testing and replacement. Table IV attached is a summary of all the INC mechanical snubbers tested during this outage.

Discovery of the "Frozen" snubber condition questions the ability of the snubber to perform its design function, i.e. Allow pipe movement during changing thermal conditions and provide a restraining force during a seismic event. Also, the "Frozen" snubber may have produced unexpected loads on their respective piping systems during changing thermal conditions.

## Cause description and corrective actions:

The previous listing of mechanical snubbers did not include a review of small diameter piping. Small diameter pipe was originally determined to be "Chart Hung" pipe, therefore, no snubbers would be installed. A review of safety related pipe stress problems indicates that several small diameter pipe systems were "Analyzed" designs containing snubbers. This review also revealed that other portions of piping systems containing mechanical snubbers previously determined to be non-safety related were in fact safety related.

All safety related piping stress problems were reviewed for mechanical snubber identification and listing. Most mechanical snubbers previously classified as non-safety related were reclassified as safety related. The plant was placed in a cold shutdown and all safety related mechanical snubbers inside and outside containment were stroke tested.

All snubbers that failed to stroke were replaced with mechanical snubbers manufactured by Pacific Scientific Company. Each piping system containing a frozen snubber was stress analyzed to determine the loads produced by the frozen snubber on the piping system as the system expanded or contracted due to changing thermal conditions. Several areas of possible overstress were identified. Subsequent inspection of these areas did not reveal any detrimental effects due to the frozen snubbers.

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All INC mechanical snubbers installed on hangers that support safety related piping systems have been replaced with mechanical snubbers manufactured by Pacific Scientific Company.



## ATTACHMENT TO LER #81-018/3X-2

TABLE I

## SMALL DIAMETER PIPE MECHANICAL SNUBBERS

SNUBBER IDENT. *	INC	TEST DATE	PIPING
	MODEL		
	#	RESULT	
FSK-M-02-024 DP.23	1	5/6/81 ACC	Main Steam
FSK-M-02-025 DP.125	1	5/6/81 ACC	Main Steam
FSK-M-02-025 DP.125	1	5/6/81 ACC	Main Steam
FSK-M-02-027 DP.190	1	5/6/81 ACC	Main Steam
FSK-M-02-026 DP.307	1	5/6/81 REJ	Main Steam
FSK-M-02-023 DP.158	1	5/6/81 ACC	Main Steam
FSK-M-02-022 DP.109	1	5/6/81 ACC	Main Steam
FSK-M-02-030 DP.253	1	5/6/81 ACC	Main Steam
FSK-M-02-022 DP.107	1	5/7/81 ACC	Main Steam
SK-M-1016 DP.215	1	5/7/81 ACC	Main Steam
SK-M-1016 DP.208	1	5/7/81 REJ	Main Steam
FSK-M-02-097 DP.402	1	5/13/81 REJ	Main Steam
FSK-M-17-095 DP.501	1	5/7/82 REJ	CVCS
FSK-M-17-095 DP.34	2	5/7/81 REJ	CVCS
FSK-M-17-103 DP.411	1	5/6/81 ACC	CVCS
FSK-M-17-013 DP.38	1	5/11/81 ACC	CVCS
FSK-M-15-029 DP.537	1	5/7/81 ACC	HPSI
FSK-M-15-021 DP.781	1	5/7/81 ACC	HPSI
FSK-M-32-012 DP.152	1	5/7/81 REJ	Reactor Coolant

\*Snubbers S/N are not  
available - Snubbers  
are identified by piping  
dwg. and data point.

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TABLE II

"NEW" SAFETY RELATED MECHANICAL SNUBBERS

HANGER #	INC S/N	INC MODEL #	TEST DATE RESULT	PIPING SYSTEM
414001	002262	3	5/10/81 ACC	Reactor Coolant Sys.
414001	002289	3	5/10/81 ACC	Reactor Coolant Sys.
414002	002271	3	5/10/81 ACC	Reactor Coolant Sys.
414002	002259	3	5/10/81 ACC	Reactor Coolant Sys.
414006	61	2	5/10/81 ACC	Reactor Coolant Sys.
414006	67	2	5/10/81 ACC	Reactor Coolant Sys.
414009	18229	3	5/10/81 ACC	Reactor Coolant Sys.
414009	002251	3	5/10/81 ACC	Reactor Coolant Sys.
414016	59	2	5/10/81 REJ	Reactor Coolant Sys.
414016	66	2	5/10/81 ACC	Reactor Coolant Sys.
414018	270	1	5/10/81 ACC	Reactor Coolant Sys.
414018	274	1	5/10/81 ACC	Reactor Coolant Sys.
414021	88	2	5/10/81 ACC	Reactor Coolant Sys.
414021	103	2	5/10/81 REJ	Reactor Coolant Sys.
414024	68	2	5/10/81 REJ	Reactor Coolant Sys.
414024	102	2	5/10/81 ACC	Reactor Coolant Sys.
414025	415	2	5/10/81 ACC	Reactor Coolant Sys.
414025	416	2	5/10/81 ACC	Reactor Coolant Sys.
414027	81	2	5/10/81 ACC	Reactor Coolant Sys.
414027	100	2	5/10/81 ACC	Reactor Coolant Sys.
414029	76	2	5/9/81 ACC	Reactor Coolant Sys.
414029	87	2	5/9/81 ACC	Reactor Coolant Sys.
414029	88	2	5/9/81 ACC	Reactor Coolant Sys.
414029	109	2	5/9/81 ACC	Reactor Coolant Sys.
414032	80	2	5/9/81 REJ	Reactor Coolant Sys.
414032	101	2	5/9/81 ACC	Reactor Coolant Sys.
414033	138	2	5/10/81 REJ	Reactor Coolant Sys.

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"NEW" SAFETY RELATED MECHANICAL SNUBBERS

HANGER #	INC S/N	INC MODEL #	TEST DATE RESULT		PIPING SYSTEM
414033	N/A	2	5/10/81	REJ	Reactor Coolant Sys.
414035	176	1	5/11/81	REJ	Reactor Coolant Sys.
514001	002152	4	5/10/81	ACC	Reactor Coolant Sys.
411003	002272	3	5/11/81	REJ	Feedwater
411009	60	2	5/11/81	REJ	Feedwater
411009	104	2	5/11/81	REJ	Feedwater
411016	002264	3	5/11/81	REJ	Feedwater
411045	54	2	5/11/81	REJ	Feedwater
411045	64	2	5/11/81	ACC	Feedwater
411062	105	2	5/11/81	REJ	Feedwater
411062	72	2	5/11/81	REJ	Feedwater
513008	147	1	5/11/81	REJ	Main Steam
513036	625	1	5/11/81	REJ	Main Steam
513040	141	2	5/11/81	ACC	Main Steam
513041	272	1	5/11/81	ACC	Main Steam
513042	None	1	5/11/81	ACC	Main Steam
60026	1502	2	5/11/81	REJ	Feedwater
60025	001627	2	5/11/81	REJ	Feedwater



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TABLE III

"OLD" SAFETY RELATED MECHANICAL SNUBBERS

HANGER #	INC	INC	TEST DATE		PIPING SYSTEM
	S/N	MODEL #	RESULT		
310022	44	2	5/9/81	REJ	Safety Injection
410007	42	2	5/9/81	ACC	Safety Injection
410092	36	2	5/8/81	REJ	Safety Injection
510004	107	2	5/9/81	REJ	Safety Injection
507002	002257	3	5/9/81	REJ	Safety Injection
507002	002253	3	5/9/81	REJ	Safety Injection
408001	32	2	5/9/81	REJ	Reactor Coolant Sys
408002	24	2	5/9/81	ACC	Reactor Coolant Sys
408002	33	2	5/9/81	ACC	Reactor Coolant Sys
408003	22	2	5/9/81	ACC	Reactor Coolant Sys
408003	19	2	5/9/81	ACC	Reactor Coolant Sys
408004	31	2	5/9/81	REJ	Reactor Coolant Sys
408004	143	1	5/9/81	REJ	Reactor Coolant Sys
408005	83	2	5/9/81	ACC	Reactor Coolant Sys
408005	94	2	5/9/81	ACC	Reactor Coolant Sys
408009	21	2	5/10/81	ACC	Reactor Coolant Sys
408009	20	2	5/10/81	ACC	Reactor Coolant Sys
408009	140	2	5/10/81	ACC	Reactor Coolant Sys
408010	38	2	5/10/81	ACC	Reactor Coolant Sys
408010	47	2	5/10/81	ACC	Reactor Coolant Sys
408010	48	2	5/10/81	ACC	Reactor Coolant Sys
408010	120	2	5/10/81	ACC	Reactor Coolant Sys
408011	28	2	5/10/81	ACC	Reactor Coolant Sys
408011	30	2	5/10/81	ACC	Reactor Coolant Sys
408012	40	2	5/10/81	ACC	Reactor Coolant Sys
408012	46	2	5/10/81	ACC	Reactor Coolant Sys
410037	37	2	5/8/81	ACC	Reactor Coolant Sys

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"OLD" SAFETY RELATED MECHANICAL SNUBBERS

HANGER #	INC	MODEL	TEST DATE		PIPING SYSTEM
	S/N	#	RESULT		
410037	41	2	5/8/81	ACC	Reactor Coolant Sys
410040	39	2	5/8/81	ACC	Reactor Coolant Sys
410046	27	2	5/8/81	REJ	Reactor Coolant Sys
410049	45	2	5/8/81	ACC	Reactor Coolant Sys
410054	34	3	5/8/81	ACC	Reactor Coolant Sys
410059	002819	2	5/8/81	REJ	Reactor Coolant Sys
410062	002260	3	5/7/81	REJ	Shutdown Cooling
410062	002258	3	5/7/81	REJ	Shutdown Cooling
416016	160	1	5/9/81	ACC	Containment Spray
416016	161	1	5/9/81	ACC	Containment Spray
416021	162	1	5/9/81	ACC	Containment Spray
416022	165	1	5/9/81	ACC	Containment Spray
416032	90	2	5/8/81	ACC	Containment Spray
416032	71	2	5/8/81	ACC	Containment Spray
502035	002294	3	4/28/81	REJ	LPSI/CS Common
502026	411	1	4/28/81	REJ	LPSI/CS Common
402090	149	M	4/30/81	REJ	LPSI/CS Common
402090	159	M	4/30/81	ACC	LPSI/CS Common
402107	53	2	4/30/81	ACC	LPSI/CS Common



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TABLE IV

SUMMARY OF MECHANICAL SNUBBER TESTING

Total # of snubbers tested = 110

Total # of failures = 39

1 of 2 INC Model "M" failed to stroke  
10 of 31 INC Model "1" failed to stroke  
21 of 62 INC Model "2" failed to stroke  
7 of 14 INC Model "3" failed to stroke  
0 of 1 INC Model "4" failed to stroke