

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Rancho Seco Nuclear Generating Station										DOCKET NUMBER (2) 0 5 0 0 0 3 1 2				PAGE (3) 1 OF 0 9							
TITLE (4) Motor Operated Valves																					
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 None				DOCKET NUMBER(S) 0 5 0 0 0								
0	1	5	8	7	8	7	0	6	0	3	1	0	2	3	8	7	0	5	0	0	0
OPERATING MODE (9) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																			
POWER LEVEL (10) 0.100		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)							
		20.405(a)(1)(i)				50.36(c)(1)				X 50.73(a)(2)(v)				73.71(c)							
		20.405(a)(1)(ii)				50.36(c)(2)				X 50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
		20.405(a)(1)(iii)				X 50.73(a)(2)(i)				50.73(a)(2)(viii)(A)											
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)											
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)											
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Paul Lavelly, Supervisor, Independent Investigation/Reviews										TELEPHONE NUMBER 9 1 6 4 5 2 - 3 2 1 1											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS												
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR							
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO											

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

During present Cold Shutdown conditions and as a result of the program that was developed in response to IE Bulletin No. 85-03, "Motor Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings", the following problems with the MOVs have been identified.

1. Over Thrust Conditions
2. Brake Application
3. Undersize Power Cables to the Operators
4. Lack of Staking of Stem Nuts
5. Valve Internals Damage
6. Unqualified Operator Grease
7. Pickup/Dropout Voltage Out of Specification

These conditions have existed in part since initial plant operation. The original MOV design was adequate at that time but new state-of-the-art testing has resulted in identification of fundamental design problems. The assessment of the safety consequences of MOV problems is in process and will not be completed until all valve testing is complete. It should be noted that the District's commitment to correcting these past failings is exemplified by having included all the Motor Operated Valves, both safety and non-safety related, in the plant, in the pre and post restart refurbishment program, and not solely the 30 MOV's required by the NRC IE Bulletin 85-03.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1) Rancho Seco Nuclear Generating Station	DOCKET NUMBER (2) 0 5 0 0 0 3 1 2	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 7	— 0 0 6	— 0 3	0 2	OF	0 8

TEXT (If more space is required, use additional NRC Form 386A's) (17)

The results of the program that was developed in response to IE Bulletin No. 85-03, "Motor Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings" show the following problems with the MOVs.

1. The overthrust condition is exceeding allowable thrust limits in the valve or the operator in the open or close direction. The limits within the operator that can be exceeded involve the motor, spring pack, or entire operator.
2. Brake Application - The Dings brakes installed on several motor operators were rated for a minimum voltage of 90 percent. However, the District committed to have motor operators that would operate at a minimum voltage of 80 percent.
3. Undersize Cables - For worst case conditions there is inadequate DC voltage to SFV-30801 due to undersize cables (voltage drop is excessive).
4. Staking of Stem Nuts - A notice from the manufacturer required staking of the stem nuts. An inspection of as installed conditions showed that the stem nuts were not staked as required. As a result, some valve operations were not repeatable due to loose stem nuts.
5. Valve Internal Damage - An inspection of as installed conditions showed internal valve damage to valve discs and seats.
6. Grease - There are three grease related problems: 1) the use of non-qualified grease per the new environmental qualification requirements; 2) the mixing of various different greases which results in possible hardening of the grease; 3) the grease separates with time and has not been replaced as required.
7. Pickup/dropout voltages out of specification - Some starting contactor's pickup/dropout voltages are outside the manufacturer's design specification. This has the potential of precluding valve operation under degraded bus voltage conditions.

Attached Table 1 lists the MOVs, their safety functions and the problems, if any, that have been identified. These conditions are being reported pursuant to 10 CFR 50.73.a.2.i.(B), 50.73.a.2.v, and 50.73.a.2.vii.

Dates and approximate times of occurrences.

Some of these problems may have existed since initial plant startup in 1974.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Rancho Seco Nuclear Generating Station	050003112	87	006	03	03	OF	09

TEXT (If more space is required, use additional NRC Form 388A's) (17)

The fundamental cause(s) of each component or system failure or personnel error, if known.

The problems with the MOVs developed over time due to the following:

1. Valve manufacturers used conservative friction values in the design that resulted in non conservative conditions in actual operation.
2. Valves were purchased separately with motor operators "field-added" and this resulted in the incorrect application of some motor operators.
3. Repairs were made with what appeared to be like-for-like replacement parts without actual valve test data; this resulted in incorrect replacements.
4. The documentation on MOV configuration and records on rework activities (onsite or offsite) is lacking.
5. Valves were derated by the manufacturers but corrective action to address these derates was not taken.
6. The maintenance program was to have included staking of stem nuts and installation of the proper greases in response to NRC notices and/or vendor bulletins but was not fully implemented prior to the MOV program initiation.
7. When valves had leakage problems, the valves were repaired without determining the root cause of the problem.

These problems result from the lack of an in-place program to ensure proper MOV design and post-installation configuration control. The original MOVs design was adequate at that time but new state-of-the-art testing has resulted in identification of fundamental design problems. The corrective maintenance program did not develop long term solutions to generic valve problems, but only provided short term repair.

The failure mode (undesirable state of a system or component) mechanism (i.e., Immediate cause) and effect (the consequence or major concern resulting from the failure) of each failed component, if known.

Attached Table 1, lists the MOVs, their safety function and the problems, if any, that have been identified. Table 1 represents the status of the test program as of September 30, 1987. It can be deduced from Table 1, that valves which see high pressure service with comparatively small bore piping are much more susceptible to the over-thrust problem than are large bore, low pressure valves. This is due, in part, to the need for large operators and the limited thrust values for the small bore valves.

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

The Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER.

All motor operators are Limitorque Corporation NRC LER Manufacture Code L200.

See Table 1 for valve manufactures and NRC LER Code.

The method of discovery of each component or system failure or procedural error (testing, investigating, troubleshooting, tour, observation).

These MOV problems were identified by 27 related Occurrence Description Reports resulting from the testing program developed in the response to IE Bulletin No. 85-03.

An Assessment of the safety consequences and implications of the event.

The assessment of the safety consequences of MOV problems is continuing and will not be completed until all valve testing is complete. All MOVs required during the Decay Heat System outage were evaluated and 1) declared operable by virtue of being released for interim use; 2) determined acceptable, or 3) placed in a fail safe condition.

All MOVs required for the current operating configuration have been evaluated and are 1) operable by virtue of being released for interim use; 2) determined to be acceptable, or 3) placed in a fail safe condition.

A description of any corrective actions planned as a result of the event including those to reduce the probability of similar event occurring in the future.

The corrective action program for the MOVs is described in the May 16, 1986 and November 5, 1986 letters from JE Ward to Martin on "Response to IE Bulletin No. 85-03; Motor Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Setting" and the September 1, 1987 submittal on "Motor Operated Valve Program." As stated in November 5, 1986 letter, "all MOV Refurbishment Program work on the thirty IE Bulletin 85-03 MOVs and all other safety related MOVs will be completed prior to restart." Upon completion of the MOV program as described in these letters, the District will provide a final report detailing the results. The final report will address an assessment of the safety consequences for the as found configuration. The final report will be submitted within 60 days of completion of the MOV refurbishment program or January 14, 1988, whichever is sooner, as required by IE Bulletin No. 85-03.

The MOV configuration control program is being developed and implemented to provide guidance to ensure that the MOV design requirements are well documented and maintained. The additional MOV requirements developed from this extensive program will be formally implemented in the preventive and corrective maintenance programs. These programs will be in place and formally implemented prior to restart from the present outage.

TABLE 1
MOV TEST PROGRAM RESULTS
(SEPTEMBER 30, 1987)

<u>Valve Numbers</u>	<u>Valve Manufacturer</u>	<u>NRC LER Code</u>	<u>Safety Function</u>	<u>Problem(s)*(1)(2)(3)</u>
HV-20515	Anchor/Darling Valve Co.	A391	MFW Isol.	No Problem
HV-20516	Anchor/Darling Valve Co.	A391	MFW Isol.	No Problem
HV-20517	Velan Valve	V085	ADV Isol.	No Problem
HV-20518	Velan Valve	V085	ADV Isol.	No Problem
HV-20521	Borg Warner	B350	T&V Isol.	No Problem
HV-20522	Borg Warner	B350	T&V Isol.	No Problem
HV-20569	Velan Valve	V085	Steam Supply to AFW Turbine	Over Thrust- Operator Motor
HV-20581	Pacific Valves	P032	AFW Injection Isol.	No Problem
HV-20582	Pacific Valves	P032	AFW Injection Isol.	Bent Stem
HV-20596	Velan Valve	V085	Steam Supply to AFW Turbine	Over Thrust - Operator Motor
HV-22007	Velan Valve	V085	Non-Safety	Over Thrust-Valve Wedge
HV-22008	Velan Valve	V085	Non-Safety	Over Thrust-Valve Wedge
HV-23004	Fischer Control	F130	Non-Safety	Over Thrust-Valve
HV-26007	Velan Valve	V085	HPI Suction (Piggyback)	No Problem
HV-26008	Velan Valve	V085	HPI Suction (Piggyback)	No Problem
HV-26105	Anchor/Darling Valve Co.	A391	LPI Suction (After LOCA)	No Problem
HV-26106	Anchor/Darling Valve Co.	A391	LPI Suction (After LOCA)	No Problem
HV-31826	Anchor Valve	A395	AFW Cross Tie	Under Thrust-Operator
HV-31827	Anchor Valve	A395	AFW Cross Tie	Under Thrust-Operator
SFV-20577	Anchor Valve	A395	AFW Injection Isol.	Under Thrust-Operator
SFV-20578	Anchor Valve	A395	AFW Injection Isol.	Under Thrust-Operator
SFV-22005	Velan Valve	A085	RCS Isol. (SFS Signal)	Over Thrust-Valve Wedge
SFV-22006	Velan Valve	V085	RCS Isol. (SFS Signal)	Over Thrust-Valve Wedge
SFV-22023	Anchor Valve	A395	RB Isol. (SFS Signal)	Over Thrust-Operator
SFV-22025	Anchor Valve	A395	RCS Isol. (SFS Signals)	No Problem
SFV-23538	Anchor Valve	A395	Makeup Pump Suction Isol.	No Problem
SFV-23604	Anchor Valve	A395	Normal makeup Isol.	No Problem
SFV-23616	Velan Valve	V085	Seal Injection Isol.	Over Thrust-Operator
SFV-23645	Velan Valve	V085	HPI Pump Recirc Isol.	No Problem

* The lack of staking of stem nut problem applies to each operator.

(1) Valves which indicate "Valve" after "Over Thrust" condition are valve component limited. Valves which indicate "operator" after "over thrust" condition are valves with an operator-limited overthrust condition.

(2) "Not yet Tested" refers to not yet having performed empirical MOVATs operator performance tests.

(3) "Braking" refers to Ding brakes installed in operator at start of IEB 85-03 program.

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(SEPTEMBER 30, 1987)

<u>Valve Numbers</u>	<u>Valve Manufacturer</u>	<u>NRC LER Code</u>	<u>Safety Function</u>	<u>Problem(s)*(1)(2)(3)</u>
SFV-23646	Velan Valve	V085	HPI Pump Recirc. Isol.	No Problem
SFV-23809	Velan Valve	V085	HPI Injection/Isol.	Over Thrust-Valve
SFV-23810	Velan Valve	V085	HPI Injection/Isol.	Over Thrust-Operator
SFV-23811	Velan Valve	V085	HPI Injection/Isol.	Over Thrust-Valve
SFV-23812	Velan Valve	V085	HPI Injection/Isol.	Over Thrust Operator
SFV-24004	Velan Valve	V085	Seal Return Isol.	No Problem
SFV-25003	Aloyco	A200	BWST Suction	Cracked Yoke, Braking
SFV-25004	Aloyco	A200	BWST Suction	Cracked Yoke, Braking
SFV-30801	Gimpel	A200	Steam Supply for AFW Turbine	No Problem
				Min. Voltage out-of specification
FV-20529	Anchor Valve	A395	Main FDW Isol.	Over thrust-Operator Motor
FV-20530	Anchor Valve	A395	Main FDW Isol.	Over thrust-Operator Motor
FV-24019	Velan Valve	V085	Non-Safety	No Problem
FV-24020	Velan Valve	V085	Non-Safety	No Problem
FV-24021	Velan Valve	V085	Non-Safety	No Problem
FV-24022	Velan Valve	V085	Non-Safety	No Problem
FV-33011A	Posi-Seal	P304	Non-Safety	No Problem
FV-33011B	Posi-Seal	P304	Non-Safety	No Problem
FV-33011C	Posi-Seal	P304	Non-Safety	No Problem
FV-33011D	Posi-Seal	P304	Non-Safety	No Problem
FV-33011E	Posi-Seal	P304	Non-Safety	No Problem
FV-33011F	Posi-Seal	P304	Non-Safety	No Problem
FV-33011G	Posi-Seal	P304	Non-Safety	No Problem
FV-33011H	Posi-Seal	P304	Non-Safety	No Problem
FV-33011J	Posi-Seal	P304	Non-Safety	No Problem
FV-33012A	Posi-Seal	P304	Non-Safety	No Problem
FV-33012B	Posi-Seal	P304	Non-Safety	No Problem
FV-33012C	Posi-Seal	P304	Non-Safety	No Problem
FV-33012D	Posi-Seal	P304	Non-Safety	No Problem
FV-33012E	Posi-Seal	P304	Non-Safety	No Problem
FV-33012F	Posi-Seal	P304	Non-Safety	No Problem
FV-33012G	Posi-Seal	P304	Non-Safety	No Problem
FV-33012H	Posi-Seal	P304	Non-Safety	No Problem
FV-33012J	Posi-Seal	P304	Non-Safety	No Problem
FV-36060	Crane Valve	C684	Non-Safety	No Problem
FV-36543	Crane Valve	C684	Non-Safety	Over Thrust-Valve
FV-95421	Pratt, Henry	P340	Non-Safety	No Problem
HV-20001	Velan Valve	V085	DHS/RCS Isol.	No Problem
HV-20002	Velan Valve	V085	DHS/RCS Isol.	No Problem
HV-20003	Rockwell MFG	R340	Dump to Sump	No Problem
HV-20005	Anchor Valve	A395	DHS/RCS Isol.	No Problem
HV-20006	Anchor Valve	A395	DHS/RCS Isol.	No Problem

TABLE 1
MDV TEST PROGRAM RESULTS
(SEPTEMBER 30, 1987)

<u>Valve Numbers</u>	<u>Valve Manufacturer</u>	<u>NRC LER Code</u>	<u>Safety Function</u>	<u>Problem(s)*(1)(2)(3)</u>
HV-20560	Anchor Valve	A395	Main Steam Isol.	No Problem, Braking
HV-20565	Anchor Valve	A395	Main Steam Isol.	No Problem
HV-20570	Rockwell MFG	R340	Main Steam Isol.	No Problem
HV-20571	Rockwell MFG	R340	Main Steam Isol.	No Problem
HV-20583	Rockwell MFG	R340	Non-Safety	No Problem
HV-20584	Leslie Co	L170	Non-Safety	No Problem
HV-20585	Allis Chalmers	A180	Non-Safety	No Problem
HV-20586	Allis Chalmers	A180	Non-Safety	No Problem
HV-20597	Anchor Valve	A395	Main Steam Isol.	No Problem, Braking
HV-20598	Anchor Valve	A395	Main Steam Isol.	No Problem, Braking
HV-20609	Rockwell MFG	R340	S.G. Crossover	No Problem
HV-20610	Rockwell MFG	R340	Lines-Cond.	No Problem
HV-20611	Velan Valve	V085	Isol.	No Problem
HV-21505	Velan Valve	V085	POW Open-Isol.	No Problem
HV-21510	Velan Valve	V085	Non Safety	No Problem
HV-21514	Kerotest MFG	K085	Sample Cold Leg	No Problem
HV-21515	Kerotest MFG	L085	Non-Safety	No Problem
HV-21516	Kerotest MFG	L085	Non-Safety	No Problem
HV-21517	Velan Valve	V085	Non-Safety	No Problem
HV-21907	Velan Valve	V085	Non-Safety	No Problem
HV-21908	Velan Valve	V085	Non-Safety	No Problem
HV-21909	Velan Valve	V085	Non-Safety	No Problem
HV-21922	Velan Valve	V085	Non-Safety	No Problem
HV-22105	Velan Valve	V085	Non-Safety	Under Thrust-Operator-Open
HV-22006	Velan Valve	V085	Non-Safety	No Problem
HV-23801	Velan Valve	V085	Long Term Cooling	No Problem
HV-23802	Rockwell MFG	R340	Long Term Cooling	No Problem
HV-26011	Velan Valve	V085	Non-Safety	No Problem
HV-20612	Rockwell MFG	R340	Non-Safety	No Problem
HV-26037	Fisher Control	F130	DH Cooler Bypass	No Problem
HV-26038	Fisher Control	F130	DH Cooler Bypass	No Problem
HV-26046	Anchor Valve	A395	DH Cross Tie	No Problem
HV-26047	Anchor Valve	A395	DH Cross Tie	No Problem
HV-26511	Velan Valve	V085	Non-Safety	No Problem
HV-26512	Velan Valve	V085	Non-Safety	Under Thrust-Operator
HV-26513	Velan Valve	V085	Non-Safety	No Problem
HV-26514	Velan Valve	V085	Non-Safety	Over Thrust-Operator
HV-26515	Velan Valve	V085	Non-Safety	No Problem
HV-26516	Velan Valve	V085	Non-Safety	No Problem
HV-26517	Velan Valve	V085	Non-Safety	No Problem
HV-26518	Velan Valve	V085	Non-Safety	No Problem
HV-30123	Rockwell MFG	R340	Non-Safety	No Problem
HV-30124	Leslie Co	L170	Non-Safety	No Problem
HV-32243	Anchor Valve	A395	Main Steam Isol.	Over Thrust-Valve, Braking

TABLE 1
MOV TEST PROGRAM RESULTS
(SEPTEMBER 30, 1987)

<u>Valve Numbers</u>	<u>Valve Manufacturer</u>	<u>NRC LER Code</u>	<u>Safety Function</u>	<u>Problem(s)*(1)(2)(3)</u>
HV-35033	Walworth	V085	Non-Safety	No Problem
HV-35034	Walworth	V085	Non-Safety	No Problem
HV-35043	Velan Valve	V085	Non-Safety	Overthrust
HV-35069	Rockwell MFG	R340	Main Steam Isol.	No Problem
HV-35070	Rockwell MFG	R340	Main Steam Isol.	No Problem
HV-35108	Anchor Valve	A395	Aux. Steam Lines Isol.	No Problem
HV-36050	Anchor/Darling Valve Co.	A391	Aux. Steam Lines Isol.	No Problem
HV-36051	Anchor/Darling Valve Co.	A391	Non-Safety	No Problem
HV-43010	BIF	B250	Non-Safety	No Problem
HV-43011	BIF	B250	Non-Safety	Not yet Tested
HV-43012	BIF	B250	Non-Safety	No Problem
HV-43401	BIF	B250	Non-Safety	No Problem
HV-43402	BIF	B250	Non-Safety	No Problem
HV-43504	BIF	B250	Non-Safety	No Problem
HV-43603	BIF	B250	Non-Safety	No Problem
HV-43606	BIF	B250	Non-Safety	No Problem
HV-43607	BIF	B250	Non-Safety	No Problem
HV-52017	American Warming & Ventilating	A340	Non-Safety	No Problem
HV-52018	American Warming & Ventilating	A340	Non-Safety	No Problem
HV-53620	Anchor/Darling Valve Co	A391	Hyd. Recombiner Hookup	No Problem
HV-53621	Anchor/Darling Valve Co	A391	Hyd. Recombiner Hookup	No Problem
HV-53622	Anchor/Darling Valve Co	A391	Hyd. Recombiner Hookup	No Problem
HV-53623	Anchor/Darling Valve Co	A391	Hyd. Recombiner Hookup	No Problem
HV-98307	Velan Valve	V085	Non-Safety	No Problem
PV-21509	Velan Valve	V085	Non-Safety	No Problem
PV-21520	Velan Valve	V085	Non-Safety	Valve Damage, Not yet Tested
SFV-26005	Velan Valve	V085	LPI	No Problem, Braking
SFV-26006	Velan Valve	V085	LPI	No Problem, Braking
SFV-26016	Allis Chalmers	A180	Decay Heat Coolers-Supply Water	No Problem
SFV-26017	Allis Chalmers	A180	Decay Heat Coolers-Supply Water	No Problem
SFV-26018	Allis Chalmers	A180	Decay Heat Coolers-Supply Water	No Problem

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SFV-26019	Allis Chalmers	A180	Decay Heat Coolers-Supply Water	No Problem
SFV-26039	Fisher Control	F130	LPI Injection	No Problem
SFV-26040	Fisher Control	F130	LPI Injection	No Problem
SFV-29015	Velan Valve	V085	Spray Additive Isol.	No Problem
SFV-29016	Velan Valve	V085	Spray Additive Isol.	No Problem
SFV-29107	Velan Valve	V085	CBS Injection	No Problem
SFV-29108	Velan Valve	V085	CBS injection	No Problem
SFV-46203	Fisher Control	F130	R.B. Isol. (CCW)	No Problem
SFV-46907	Velan Valve	V085	R.B. Isol. (CCW)	No Problem
SFV-50005	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50006	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50007	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50008	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50009	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50010	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50011	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-50012	Fisher Control	F130	R.B. Cooling Water Supply	No Problem
SFV-53504	Allis Chalmers	A180	R.B. Purge Isol.	No Problem
SFV-53603	Fisher Control	F130	R.B. Purge Isol.	No Problem, Braking
SFV-53605	Allis Chalmers	A180	R.B. Purge Isol.	No Problem
SFV-60001	Velan Valve	V085	R.B. Purge Isol.	No Problem
SFV-60003	Anchor Valve	A395	R.B. Purge Isol.	No Problem
SFV-66308	Velan Valve	V085	R.B. Purge Isol.	No Problem
SFV-70001	Kerotest MFG	K085	Sampling Isol.	No Problem
SFV-70003	Kerotest MFG	K085	Sampling Isol.	No Problem
SFV-72501	Velan Valve	V085	Gas Sample R.B. Isol. SFS Signal	No Problem