

To: Distribution

From: F. G. Jeanson/K. W. Birck
Date: February 6, 1986

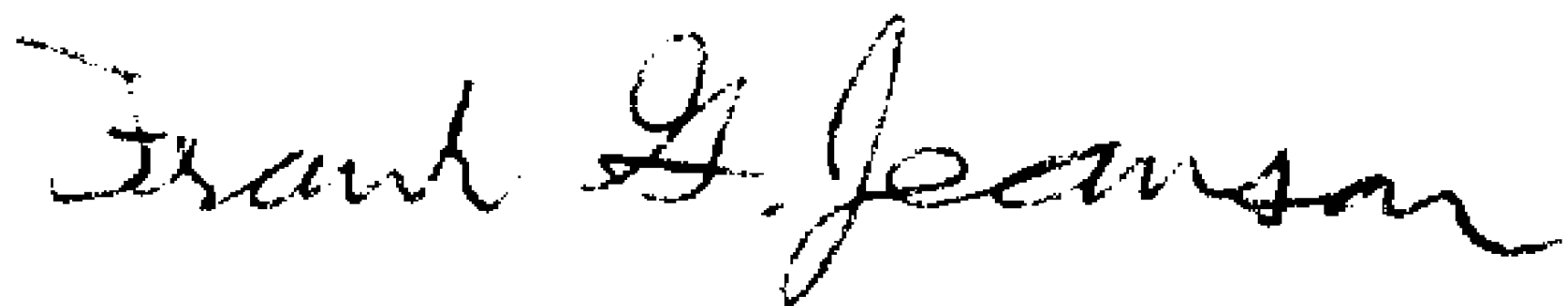
Subject: REMOTE OPERATING VALVES/VCM PUMP PRESSURE RELIEF

VISTA

Interoffice
Communication

Attached is a letter defining the Remote Operating Valves Status and a Class "A" design for VCM Pump Pressure Relief.

A review meeting of these projects will be held on Wednesday, February 12 at 10:00 a.m. in the conference room. Both projects will be reviewed at the same time since they are related. Please bring any comments on these projects to the review meeting.



Frank G. Jeanson
Process Engineer



Kenneth W. Birck
Process Engineer

ATTACHMENT
/aeb

To: J. Friend

From: F. G. Jeanson
Date: January 31, 1986

Subject: REMOTE OPERATING VALVES - STATUS

VISTA

Interoffice
Communication

Presently, the Remote Operating Valves project is in the mechanical design stage. Several changes have been made to this design since the class "A" was issued in September of 1983. A design addendum was issued in December of 1983 that provided for position switches on seven additional valves. A letter was issued in October of 1985 that described additional changes to the design. These changes include:

- (1) additional interlocks to protect equipment affected when the remote operated valves are shut;
- (2) four additional remote operated valves for the equalization lines in both modules;
- (3) limit switches and panel indication for the five remote operated valves located at the sphere.

In addition, for safety considerations, new valves that accommodate flange mounted actuators must be purchased to replace the existing valves that accommodate bonnet mounted actuators. The original design called for reuse of existing valves that accommodate bonnet mounted actuators. These changes and additions were estimated by the Mechanical Department to overrun the initial AFE amount of \$130M by \$40M. A review meeting was held to discuss these changes in November of 1985. Since the review meeting, three issues have been looked into and include:

- (1) Providing the remote operated valves that did not have panel pushbuttons with local handswitches so that they could be cycled periodically for testing purposes. This has been added to the design.
- (2) Providing all the remote operated valves with panel indication of OPEN/CLOSED position. This is addressed in this letter.
- (3) Providing the valves that are specified to have limit switches with the new type of GO limit switch. This is addressed in this letter.

OPTION 1	Total Cost	\$170M
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OPTION 2	Total Cost	\$190M
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OPTION 3	Total Cost	\$230M
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Option 2 is recommended because:

- VAB.0001104955

Remote Operating Valves - Status
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- (b) If a valve closes by itself, the valves that would affect other equipment are interlocked.
- (c) Limited panel space is available, especially with BASF improvements.
- (3) A procedure to cycle these valves regularly could be set up and would provide a high confidence level in the operation of these valves in an emergency.

A review meeting will be held to discuss these options.

F. G. Jeanson
Process Engineer

ATTACHMENTS
aeb

cc: JWW, DWH, CWT, MLN, SCH, VEM, JGC, AHS, REP, KSA, SKG, RBN,
RAF

NEW MODULE (See P & I Diagram No. GP-D5M3-42-3-D)

TABLE I

<u>Valve No.</u>	<u>Size</u>	<u>Limit Switch</u>	<u>Panel Indication</u>	<u>Reason for Not Having Panel Indication</u>
CV-701	8"-150	Exist.	Exist.	
CV-818	4"-150	Exist.	Exist.	
CV-892	2"-150	Exist.	Exist.	
CV-893	2"-150	Exist.	Exist.	
CV-899	2"-150	New	--	Limit Switch signal will be tied into the Modicon to shut-off the VCM transfer pumps at the sphere and the RVCM charge pumps if CV-899 closes. Also, the equipment listed will not start if CV-899 is closed.
CV-900	2"-150	--	--	If CV-900 located in west RVCM receiver recovery line closes simultaneously with CV-902, pressure will build in the receivers and will then cause pressure to build on the discharge of the compressors resulting in slow recovery. There is also a high pressure alarm and shut-down on discharge of compressors.
CV-901	6"-150	New	--	Limit Switch signal will be tied into the Modicon to shut-off the RVCM charge pumps if CV-901 closes. Also, the pumps will not start if CV-901 is closed.
CV-902	2"-150	--	--	If CV-902 closes simultaneously with CV-900, pressure will build in the receivers and will then cause pressure to build on the discharge of the compressors resulting in slow recovery. There is also a high pressure alarm and shut-down on discharge of compressors.
CV-903	6"-150	New	--	Limit Switch signal will be tied into the Modicon to shut-off the RVCM charge pumps if CV-903 closes. Also, the pumps will not start if CV-903 is closed.
CV-904	2"-150	--	--	If CV-904 located on vent line for both receivers closes, pressure will build in the receivers and will then cause pressure to build on the discharge of the compressors resulting in slow recovery. There is also a high pressure alarm and shut-down on discharge of compressors.
CV-905	2"-150	New	--	Limit switch signal will be tied into the Modicon to shut-off the recovery compressors and vacuum pumps if CV-905 closes. Also, the equipment listed will not start if CV-905 is closed.
CV-906	1"-150	--	--	If CV-906 located in equalization line from FVCM pumps and FVCM filters closes, equipment will not be affected. Equipment listed is protected by relief valves or will be by VCM PPR design.
CV-909	1"-150	--	--	If CV-909 located in equalization line from RVCM pumps and filter closes, equipment will not be affected. Equipment listed is protected by relief valves or will be by VCM PPR design.

SPHERE (See P & I Diagram No. GP-D5M3-42-1-D)

CV-601	6"-150	New	New
CV-602	6"-150	*New	New
CV-603	4"-150	*New	New
CV-604	3"-150	New	New
CV-606	1½"-150	New	New

* Wesco Limit Switch Already Bought.

OLD MODULE (See P & I Diagram No. GP-D5M3-42-2-D)

TABLE II

Valve No.	Size	Limit Switch	Panel Indication	Reason for Not Having Panel Indication
CV-301	8"-150	*New	--	Limit switch signal to be tied into Modicon will shut-off FVCM and RVCM pumps if CV-301 closes. Also, the equipment listed will not start if CV-301 is closed.
CV-418	3"-150	Exist.	Exist.	
CV-492	2"-150	Exist.	Exist.	
CV-493	2"-150	Exist.	Exist.	
CV-501	3"-150	New	--	Limit switch signal to be tied into Modicon will shut-off VCM transfer pumps at sphere and the RVCM charge pump if CV-501 closes. Also, the equipment listed will not start if CV-501 is closed.
CV-502	1"-150	--	--	If CV-502 located in incinerator feed line closes, flow to the incinerator will be shut off and pressure will build in the receivers. Have both flow and pressure indication on control panel.
CV-503	2"-300	*New	--	Limit switch signal to be tied into Modicon will shut-off VCM collect tank pumps if CV-503 closes. Also, the equipment listed will not start if CV-503 is closed.
CV-504	2"-150	--	--	If CV-504 closes, it will not affect the emission recovery system since the collect tank also provides back-pressure for this system.
CV-505	4"-300	New	--	Limit Switch signal will be tied into the Modicon to shut-off the RVCM charge pumps if CV-505 closes. Also, the pumps will not start if CV-505 is closed.
CV-506	2"-150	--	--	If CV-506 closes, it will not affect the emission recovery system since the collect tank also provides back-pressure for this system.
CV-507	2"-150	*New	--	Limit switch signal to be tied into Modicon will shut-off VCM collect tank pumps if CV-507 closes. Also, the equipment listed will not start if CV-507 is closed.
CV-508	3"-150	New	--	Limit Switch signal will be tied into the Modicon to shut-off the RVCM charge pumps if CV-508 closes. Also, the pumps will not start if CV-508 is closed.
CV-509	1½"-150	--	--	If CV-509 located in equalization line from FVCM charge pumps and filters closes, equipment will not be affected since it is protected by relief valves or will be by VCM PPR design.
CV-510	1"-150	--	--	If CV-510 located in equalization line from RVCM filter closes, RVCM filter will not be affected since it is protected by a relief valve.

* Wesco Limit Switch Already Bought.