Troika Inspection Service
Your Quality Solution Partner

Report No.: TIS-PSI-150100

INSPECTION REPORT

To:	XXXX	Attn:	XXXX
From:	XXXX	**Report Date:**	XXXX

Project No.:	:	XXXXX
Vendor Name	:	XXX Valve Group Co., Ltd
Factory Name	:	XXX Valve Group Co., Ltd
Factory Address	:	XXXXX
Order No. / PO No.	:	XXXXX
Product description:	:	Cryogenic Valve
Inspection Date:	:	XXXXX

01.0 Scope of Inspection:
(Brief description of details of inspections, tests etc. carried out/witnessed)

Equipment description:	Cryogenic Valve	
I.T.P. line number	Inspection Activity	Results
NA	Checking the status of the valves	☐ Accepted without deviation ☐ Accepted with deviation ☐ Reject
NA	Witness cryogenic test	☐ Accepted without deviation ☐ Accepted with deviation ☐ Reject

Remark: for this visit we just reported the findings;

2.0 Reason for visit

The purpose of this visit is to check the status of valves in work shop and witness the cryogenic test, also push supplier to repair the leakages valves as soon as possible;

3.0 Documentation used

DOCUMENT NUMBER	REV. No.	TITLE	Approval Status
V-P227538-USI-0070-DR-0004	3	Planta de GNL, ESR y CISTERNAS	By purchaser
V-P227538-USI-0069-DR-0004	3	Planta de GNL, ESR y CISTERNAS	By purchaser
TEST CRIOGENICO BS 6364, 1984	NA	Specification for Valves for cryogenic service	By purchaser
	NA	Table	By purchaser

4.0 Details of inspection performed

4.1 Status of the valves on XXX, 2015

After the inspector arrived at XXX work shop we checked the quantity and the status per valves and listed as below:

1" 800 LB

1. Total 11 pieces in PO and the inspector found 11 pieces stowed in ware house;
2. Total three pieces were accepted by client's inspector; (No. T141100629, T141100620 and T141100630) and the remained ones were waiting for changing the seat PCTF and testing again;

3/4" 800 LB

1. Total 4 pieces in PO and all of them were stowed in work shop;
2. XXX explained that 2 pieces were accepted by client's inspector (No. T141100616 and T141100619);
   The remained two pieces were waiting for changing the seat PCTF and tested again;
   Note: in Table only one piece with No. T141100636 was accepted by client's inspector;

1 1/2" 800 LB

1. Total 1 piece in PO, it is tested during this visit;
2. During this visit on XXX, 2015 the inspector found XXX separated it at their work shop; this one had been changed the seat PCTF while during cryogenic test on XXX, 2015there was no leakage at begin but after turning the stem, the leakage was found and the test result was failed; during checking after separated we found there were some scratch on the ball, XXX had machined one new ball for this valve, on XXX, 2015 they assembled and test it again**;** for time limited the inspector cannot witness the test process and after finished testing at night XXX inform us by phone and also send some testing photos to us, the test result is acceptable;

2" 150 LB

1. Total 4 pieces in PO and all of them were stowed in work shop; ;
2. One piece had finished changing the seat and the inspector also witnessed the assembling and seal testing process (in normal temperature), the test result is acceptable; XXX did the cryogenic test on XXX, 2015 and the test result is failed;
3. Three pieces were separated and waiting for changing the seat PCTF;

6" 150 LB

1. Total 2 pieces in PO;
2. All of them were separated and waiting for changing the seat PCTF;

2" 300 LB

1. Total 7 pieces in PO and all of them stowed in ware house;
2. All of 7 pieces were separated and waiting for changing the seat PCTF;

4" 300 LB

1. Total 2 pieces in PO; and all of them stowed in work shop;
2. One piece 6214022 was changed the seat but after test it was failed;
3. One piece 6214022 was separated and waiting for changing the seat PCTF;

4.3 Witness the cryogenic test:

On XXX, 2015 when the inspector arrived at XXX work shop there is shortage of liquid nitrogen, so the cryogenic test was not done. After the inspector pushed XXX manager the nitrogen is ready at noon of XXX, 2015; for time limited the inspector just witnessed the cryogenic test for one piece of 2” 150 LB compared with 2 pieces as plan (one piece for 2” 150 LB and one piece 1 1/2” 800 LB), the 1 1/2” 800 LB was tested by XXX and they declared that the test result is acceptable;

2” 150 LB cryogenic test result:

Side A:

Pressure (Mpa)	Leakage (ml/min)	Pressure (Mpa)	Leakage (ml/min)
0.5	100	1.0	100
1.5	160	2.2	355

Side B

Pressure (Mpa)	Leakage (ml/min)	Pressure (Mpa)	Leakage (ml/min)
0.5	95	1.0	185
1.5	315	2.2	620

Torque: 180 N.m/ 100 N.m (first open/close); 100 N.m/ 100 N.m (final open/close)
The test result is fail;

1 1/2" 800 LB
The test result supplied by XXX The Max. Leakage is 20 ml/min, and the torque is 260 N.m and 150 N.m; It is acceptable;

5.0. Result of Inspection

☐ Accepted without deviation ☐ Accepted with deviation (See Punch list) ☐ Reject (See the deviation for Rejection) ☒ Report the findings

6.0. Quality Records reviewed and attached:

NA

7.0 Progress Status

For 1 1/2" 800 LB valve passed the cryogenic test,XXX will go ahead for the valves in PO PC14-1.116.

As the inspector know XXX had revised the drawing and they added some part on the seat, they will repair the other valves as they had done on 1 1/2" 800LB; the inspector will follow it by phone to check whether they have enough added part in their warehouse and how many days they need to machine, assemble and test these valves. We will try to push them.

For the valves in PO the manufacturer has not found good way to solve this problem, but they are trying to contact with engineer from other manufacturer which has cryogenic valve experience.

8.0 Next Forecasted Inspection Date:

TBA

9.0 Attendees

- Mr. Zhou XXX engineer
- Ms. Kelly XXX sales
- Mr. XXX TIS inspector on behalf of XXX

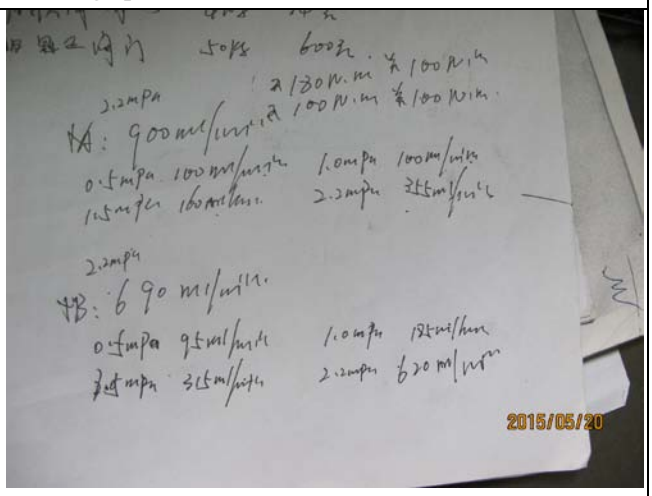
Any deviation & PUNCH attached : Yes ☐ No ☒	Punch No.: NA
IRN attached : Yes ☐ No ☒,	IRN No.: NA

10. Photo Report

	
Showing the finished valves; 1” 800lb	Showing the finished valves; 1” 800lb
	
Showing the finished valves; 1” and 3/4” 800lb	Showing marking on the valves;
	
Showing the valves waiting for assembling; 2” 300LB	Showing the valves waiting for assembling; 6” 150LB

	
Showing the valves parts waiting for assembling;	Showing valves finished testing; 4” 300LB
	
Showing valves parts waiting for assembling 2”	Showing 1 1/2” valve is ready for cryogenic test;
	
Showing assembling valve 2” 150LB;	Showing the inside condition clean and no oil;

	
Showing assembling valve 2” 150LB;	Showing seal test for the assembled 2” 150lb valve in normal temperature;
	
Showing the test pressure;	Showing the test result no bubble;
	
Showing witness the cryogenic test for 2” 150Lb	Showing the test pressure for 2” 150Lb;

	
Showing the leakage for 2” 150Lb;	Showing the leakage for 2” 150Lb;
	
Showing torque test;	Showing open and close 20 times;
	
Showing the temperature of the valve for 2” 150 LB;	Showing the test record for 2: 150 LB;

	
Showing test result supplied by XXX for 1 1/2” 800Lb;	Showing test result supplied by XXX for 1 1/2” 800Lb;

Prepared by : XXXX **Signed: XXXX** **Date: XXXX**	**Reviewed by : XXXX**