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**TECHNICAL JOB
SPECIFICATION**

970/3

REVISION 0

DATE 05/04/2011

HIGH PRESSURE (HP) TRANSMISSION SYSTEMS

INSPECTION AND TEST INSTRUCTIONS



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QUALITY ASSURANCE PAGE

CHANGES LOG

REVISIONS LOG

Rev. No	Rev. Date	REASON FOR CHANGE	Made By	Approved By
0	05-04-2011	FIRST ISSUE	PQ DPT.	V.G.

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REFERENCE DOCUMENTS

Job Spec. No. 970/2
[Shop Inspection of Equipment and Materials for NGT Project]
EU DIRECTIVE 97/23/EC PED
[Pressure Equipment Directive]
EU DIRECTIVE 94/9/EC ATEX
[Equipment Explosive Atmospheres Directive]
EU DIRECTIVE 2006/42/EC
[Machinery]
EU DIRECTIVE 2004/108/EC EMC
[Electromagnetic Compatibility Directive]
EU DIRECTIVE 2006/95/EC LVD
[Low Voltage Directive]

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1.0 GENERAL INSTRUCTIONS

For the NATURAL GAS PROJECT the Inspector has the right to perform Inspection and expediting visits at Manufacturer/Vendors and/or Sub-Vendors works for the material purchased for the project.

However, the OWNER / OWNER Representative reserves reserves his right to perform visits at Manufacturer's/Vendor's and/or Sub-Vendors works for material purchased for the project.

The present document defines the Manufacturer's/Vendor's Scope of Shop Inspection in coordination with Inspector and it will be attached to all Material Requisitions of the PROJECT. It is designed to be used in conjunction with material requisition, project Specifications/Standards, **Job Spec. No. 970/2** and all applicable codes and EU Directives which define specific inspection tasks which Manufacturer/Vendor will perform.

The Manufacturer's/Vendor's and/or Sub-Vendor shall advise the following offices:

- a) Inspector (to be nominated at a later stage)
Inspection Department
Attention : Mr
Phone No. :
Fax No. :
- b) Purchaser
Authorized Representative
Attention : Mr
Phone No. :
Fax No. :

The Project Manager will act on behalf of Owner regarding the management of the inspection services.

Inspectable materials are defined in the **Job Spec. No. 970/2**.

Inspector shall have the right to reject unsatisfactory material and/or equipment at inspection either to the Manufacturer's/Vendor's or his Sub-Vendor's works.

Inspector shall have free entry to the Manufacturer's/Vendor's shops and to the shops of Sub-Vendor's.

Owner and/or Owner's Representative shall have free entry to the Manufacturer's/Vendor's shops and to the shops of Sub-Vendor's and all necessary assistance will be afforded to help them performing their inspection, including free use of Manufacturer's/Vendor's tests control equipment and instruments.

All expenses connected with inspection and testing, I.O. expenses (inspection fees, travel costs) caused of testing failure, a "Non Conformity" or a wrong Inspection notification, certificates and the other inspection documents required by the Material Requisition, Drawings, **Job Spec. No. 970/2** and this Job Specification shall be for the Manufacturer's/Vendor's account.

Within 3 weeks after the order placement. Manufacturer/Vendor shall forward a list of buyout items (material or equipment). The list [see Sub-Orders Status **form paragraph 5.0 (c)**] shall indicate which material has to be supplied by each Sub-Vendor together with the type of material which will be ordered.

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The list has to be forwarded to the offices of **paragraph 1.0** attention to "Project Manager" with the purpose to establish which material will be inspected at source of supply.

Sub-Orders for inspectable materials shall include the Inspection clause.

The inspection clause must clearly state that materials are to be inspected at the source by Inspector appointed inspector. Each sub-Order shall be identified with the following information:

- a. Owner's Contract No.
- b. Main Purchase Order No.
- c. Name and location of the place where the material is to be manufactured and inspected, as well as telephone no., fax. No, and Contact person.

Prior to the start of production the Manufacturer/Vendor is required to submit to the Project Manager the following:

- a. The list of purchased materials, latest 3 weeks after the Owner's order, including the relevant sub-orders, with all technical attachments.
- b. The production schedule.
- c. The Quality Plan including the testing & inspection plan, containing among other information the following:
 - Methods of testing & sampling & relevant documents procedures and Specifications
 - Responsibilities of activities for all involved parties, classified as Hold, witness, spot witness, Review Inspection Points.
- d. The Quality Manual of the Company's Quality System.

This Quality Plan will be submitted to the Project Manager for approval by it shall be nominated in the applicable Contract. This Quality Plan will be used as a control by Manufacturer/Vendor (sub - Vendor), confirming the completion of the work, ensuring & monitoring that all required inspection activities have been performed.

Manufacturer's/Vendor's and/or Sub-Vendor's WPS, PQR, Welders Qualification Records must meet the requirements of the Material Requisition. The above documents must be submitted for approval by Inspector before the start of welding.

A Project Pre-inspection meeting will be arranged with the participation of Manufacturer/Vendor (or Sub-Vendor), Inspector and Owner (if wishes so) at Manufacturer's/Vendor's (or Sub-Vendor's) premises after the submittance of the Manufacturer's/Vendor's "Quality Control Plan".

The purpose of the pre-inspection meeting is to ensure that the Manufacturer/Vendor has full knowledge of the required services in accordance with the applicable codes and specifications with the following agenda:

- a) Review of the requirements of the Material Requisition.
- b) Review of the "Fabrication & Inspection Schedule".
- c) Detailed review & agreement of the "Quality Plan".
- d) Quality assurance & control of main sub vendors.
- e) Inspection communication and reports.

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No delivery of raw materials or beginning of production will be accepted by the Owner prior to the pre - inspection meeting or in the absence of Inspector.

2.0 INSPECTION PROCEDURES TO BE FOLLOWED DURING MANUFACTURE

2.1 PROGRESSIVE INSPECTION

Progressive Inspection will be carried out during the shop fabrication.

The Inspector has free entry to fabricator shops to carry out inspections at various stages of fabrication and to monitor Manufacturer/Vendor compliance with defined quality requirements (Material Requisition), to observe the application of procedures.

The Inspector shall advise the Manufacturer/Vendor regarding the several stages of fabrication that will require inspection on the basis of the "Quality Control Plan".

The Manufacturer/Vendor shall submit "inspection notification" for each inspection activity (hold point, witness point and spot witness point) to the offices of **paragraph 1.0**, in accordance with the instructions of "Notice for Inspection" of **paragraph 5.0(e)**.

Any mill tests and certificates required by the Material Requisition must have been given to the Inspector at the time of the relevant inspection in accordance with the "Quality Control Plan" (**see point 2.4**).

The completed equipment or item shall be also inspected prior to painting and preparation for shipment as it is defined in the "Quality Control Plan".

The Inspector is entitled to reject any material or activity that is not of acceptable quality and workmanship, or fails to comply with the project specifications and other technical requirements of the Material Requisition (Non Conformity Report).

Acceptance or rejection of material and/or workmanship will be given in writing by Inspector after each Interim or Final inspection.

In case of a rejection notice (Non Conformity Report) Inspector will give detailed reasons for the rejection.

Manufacturer/Vendor must take action immediately by eliminating all causes of rejection to the full satisfaction of the inspector. Manufacturer/Vendor shall also obtain Inspector's **permission** before commencing any repairs, which may affect equipment integrity and operation (Resolution of the "Non Conformity Report").

2.2 INSPECTION NOTIFICATION DATE

Notification of readiness for inspection (or pre-inspection meeting) shall be given ten (10) working days prior to the inspection date, however in the category of FABRICATED ITEMS notification has to be given at the beginning of the fabrication.

2.3 WAIVER OF INSPECTION

Vendor will be advised of those items for which inspection is waived by Inspector.

Anyway Manufacturer/Vendor and his Sub-Vendor shall release copies of mill test certificates and/or other Inspection documents as required in the Material Requisition.

2.4 TEST CERTIFICATES AND MATERIAL CERTIFICATION (INSPECTION DOCUMENTS)

Manufacturer/Vendor shall release to the Owner and/or Owner's Representative before the time of the relevant inspection, in accordance with the "Quality Control

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Plan, original copies of any mill and/or other required from Material Requisition Inspection documents. The above documents must be included in the "Inspection Data Book" in accordance with the instructions of **paragraph 4.0 & 5.0**.

3.0 RESPONSIBILITY OF Q.C./Q.A. REQUIREMENTS

The Inspector Monitoring is neither intended to replace nor substitute for the Quality Control/ Quality Assurance requirements that were placed on Manufacturer's/Vendor's performance of their contractual duties.

It is Manufacturer/Vendor responsibility to ensure that all materials used in the manufacture of equipment comply with the requirements of the Material Requisition and all the applicable EU Directives.

4.0 INSPECTION DATA BOOK / INSTRUCTIONS FOR PREPARATION AND SUBMISSION

The Manufacturer's "Inspection Data Book" is the complete collection of all certificates, test reports, inspection authority documents and any other document relevant to testing activities performed during the supply, according to the Purchase Order and the relevant technical requirements.

The "Inspection Data Book" forms a part of the supply and shall be issued by Manufacturer/Vendor for each equipment item or material ordered. ~~by Owner~~. The "Inspection Data Book" shall be prepared per piece of equipment if the Purchase Order groups several pieces under the same item; one "Inspection Data Book" (including the books of components) for each package unit and machine and one Inspection Data Book for each lot of material delivered for bulk materials (i.e. piping, instruments, etc.) for each Material Requisition.

All parts of the "Inspection Data Book" shall be filled-in during fabrication or production by Manufacturer/Vendor in accordance with the instruction contained herein and as per any specific project instructions and completed at the final test. The Inspector, shall on principle, check and stamp documents as they are available after each inspection or testing.

The "Inspection Data Book" contents shall be in accordance with the attached instructions that shall be considered as a guideline **[paragraph 5.0 (a)]**. Final approval of the "Inspection Data Book" contents shall be given by Inspector.

At the final test, the shall check the Manufacturer's "Inspection Data Book" for the completeness and correctness; each "Inspection Data Book" shall have an index and the sheets shall be progressively numbered.

The cover page of the "Inspection Data Book" shall be a photocopy of the attached herein form **[paragraph 5.0 (b)]**. Manufacturer/Vendor shall fill-in all the requested information and the Owner and/or Inspector shall sign and stamp the cover sheet. At this point only, the "Inspection Data Book" shall be considered accepted by Owner.

All Material Certificates shall be covered by a "Material Certificates" Index completed in accordance with the attached "Sample" as per **paragraph 5.0 (d)**.

Manufacturer/Vendor shall forward to Purchaser offices (**address in paragraph 1.0**) **six (6) copies** of the "Inspection Data Book" as defined in this Job Specification.

Any delay in the supply of the "Inspection Data Book" by Manufacturer/Vendor shall be considered as **non-compliance** with purchase order requirements and reason for no final payment approval.

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5.0 **ATTACHMENTS**

The following documents are attached to the present Job specification "Inspection and Test Instructions" and shall be submitted to Purchaser offices (address in **paragraph 1.0**) during the relevant inspection activities:

- a) **"Contents of Inspection Data Book"**.
- b) Cover page of **"Inspection Data Book"**.
- c) **"Form SUB-ORDER STATUS"**.
- d) Sample of **"Materials Certificates"** Index.
- e) Sample of **"Notice for Inspection"**.

Note: The above mentioned documents will be finally reviewed by the Owner / Owner's representative, after the contract award.

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CONTENTS OF INSPECTION DATA BOOK

CONTENTS OF INSPECTION DATA BOOK	EQUIPMENT AND / OR MATERIAL CATEGORIES												
	A.	B				c	D	E	F				
		b1	b2	b3	b4	X	X	X	f1	f2	f3	f4	f5
1. Index.	X	X	X	X	X		X	X	X	X	X	X	X
2. Manufacturer Data Report.	X		X			X	X	X	X			X	
3. Material Summary Report	X	X	X	X		X		X	X	X	X		X
4. Material's Certificates and / or Test Reports.	X	X	X	X	X		X	X	X	X	X	X	
5. Material Identification Plan.	X	X	X	X	X				X	X	X	X	X
6. Mechanical Test Reports on Produce Coupons.	X		X			X*		X*	X				
7. Welding Key Form.	X	X	X*			X*		X*	X	X			
8. Welding Procedure Specification.	X	X	X*			X*		X*	X	X			
9. Procedure Qualification Records.	X	X	X*			X*		X*	X	X			
10. Welder's Performance Qualifications.	X	X	X*			X*		X*	X	X			
11. N.D.E. Operators Qualifications.	X	X	X*			X*		X*	X	X			
12. Non Destructive Test Reports.	X	X	X*			X*		X*	X	X			
13. Heat Treatment Chart (if any).	X		X*			X*		X*	X				
14. Hydrostatic and / or Pressure Test Reports.	X	X	X	X		X		X*	X	X	X	X	X
15. Visual and Dimensional Test Reports.	X	X	X	X	X	X	X	X	X	X	X	X	X
16. Inspection Authority Certificate and / or Reports.	X		X						X				
17. Name Plate Print.	X		X						X				
18. As Built Construction Drawings.	X		X						X				
19. Balancing Test Reports.		X								X			
20. Running Test Reports.		X		X			X	X		X		X	X
21. Performance Test Reports.		X		X			X	X		X			
22. Operational Test Reports and / or Certificate.							X	X				X	
23. Explosion Proof Certificate.					X		X	X				X	
24. General Acceptance Certificate.					X		X	X					
25. Wiring Diagram.							X					X	
26. Noise Test Report (if requested).		X					X						
27. Type Test Certificates.												X	
28. Refractory Certificated (if applicable).	X					X			X				
29. Sandblasting / Painting Certification.	X								X				
30. Calculation Sheets.	X		X						X				
31. Welding Consumables Certificates.	X								X				
32. Quality Control Plan (if applicable).	X	X	X	X	X	X	X	X	X	X	X	X	

(*) Where applicable

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CONTENTS OF INSPECTION DATA BOOK

	EQUIPMENT AND / OR MATERIAL CATERGORIES									
	A	B	C	D	E	F				
CONTENTS OF INSPECTION DATA BOOK		b1 b2 b3 b4	x	x	x	f1 f2 f3 f4 f5				
33. EC Declaration of Conformity	x	x x x x x	x	x	x	x x x x x				
34. CE Mark Copy.	x	x	x x	x	x	x x x x x				
35. Release Notice.	x	x x x x	x x	x	x	x x x x x				

Remarks : A) P. V. & H.E., HEATERS, TOWER, REACTORS etc., TANK etc.

B) PUMPS, COMPRESSORS, TURBINES, DRIVERS, etc. b1. Main Equipment b2. Auxiliary Pressure Equipment b3. Auxiliary Machinery b4. Instrumentation

C) PIPING, FITTINGS, VALVES, STRUCTURES, etc.

D) ELECTRICAL

E) INSTRUMENTATION

Including Safety and Control Valves

F) PACKAGES

f1. p.v., h.e. Twers

f2. Machinery

f3. Connecting Piping

f4. Electrical & Instrumentation

f5. Assembled Unit

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INSPECTION DATA BOOK

No..... Rev.....

MANUFACTURER/VENDOR:

EQUIPMENT / MATERIAL DESCRIPTION - ITEM No. :

SUPPLIER JOB NUMBER : _____

SUPPLIER Q.C. SIGNATURE :

SUPPLIER STAMP

PROJECT :

OWNER :

CONTRACT :

MATERIAL REQUISITION : Rev. :

PURCHASE ORDER : Rev. :

CHECKED ON

By : -----

INSPECTOR :
I.O. :

INSPECTOR STAMP:

THE PRESENT BOOK IS COMPOSED BY SHEETS NUMBERED FROM TO

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**"SAMPLE" NOTICE FOR
INSPECTION**

From : COMPANY'S NAME
 Person's Name (Project or Q.C.) Date
 Fax No / e-mail

To : INSPECTOR
 Attention
 Fax No

c.c. : 1) PURCHASER'S NAME : -----
 Attention -----
 Fax No -----

2) OWNER
 Attention
 Inspection Coordinator
 Fax No

PROJECT : -
CONTRACT No : -
MANUFACTURER/VENDOR (Name & Job No): -
P.O. No./M.R. No. : -

EQUIPMENT DESCRIPTION / ITEM No.

We hereby confirm that Witness Inspection can be performed as follows:

- INSPECTION DATE / DURATION** -----
- INSPECTION PLACE/ADDRESS** -----
- PERSON TO BE CONTACTED** -----
- TELEPHONE / FAX / e-mail** -----
- INSPECTION ACTIVITIES** -----
- TYPE / PART OF EQUIPMENT** -----
- QUALITY PLAN Step No:** -----

PROJECT or Q.C. MANAGER