



**HELLENIC GAS
TRANSMISSION
SYSTEM OPERATOR**

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**TECHNICAL JOB
SPECIFICATION**

OA-3

REVISION 1

DATE 22/09/2011

LIQUEFIED NATURAL GAS PLANTS

**LNG STORAGE TANKS
INSTRUMENTATION –
RESPONSIBILITY & SCOPE**

QUALITY ASSURANCE PAGE

CHANGES LOG

- Changes in para 2.4 F

REVISIONS LOG

1	22-09-2011	DESFA COMMENTS	PQ DPT	VG
0	03-06-2011	FIRST ISSUE	PQ DPT	VG
Rev. No	Rev. Date	REASON FOR CHANGE	Made By	Approved By

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- 1.0 GENERAL**
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REFERENCE DOCUMENTS

DESFA Job Spec. – F3

[Fixed water spray system for LNG storage tanks]

DESFA Job Spec. – F4

[Nitrogen purging requirements for LNG storage tanks]

DESFA Job Spec. – F6

[Dry chemical extinguishing system for LNG storage tanks relief valves]

DESFA Job Spec. – N-01

[Heating system for LNG storage tanks]

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1.0 GENERAL

- 1.1 This specification defines the extent and responsibility for the design, supply, installation and testing of Instrumentation associated with LNG Storage Tanks.
- 1.2 The general philosophy for the control and monitoring of the terminal is for high integrity systems, with minimum manning in a single central control room.
- 1.3 The CONTRACTOR is deemed to have experience in the design, supply and installation of instrumentation and monitoring devices associated with LNG Storage Tanks.

2.0 SCOPE OF SUPPLY

- 2.1 The CONTRACTOR is responsible for the supply and installation of instrumentation, monitoring and control devices mounted within the CONTRACTORS battery limits, except where specifically otherwise defined.
- 2.2 The CONTRACTOR is responsible for the detailed design and interfacing all such instrumentation with the central control room equipment supplied by the OWNER.
- 2.3 There shall be a single instrument signal marshalling area, at grade, at the edge of the CONTRACTORS battery limits, which shall form the physical interface between the OWNER and CONTRACTOR. All cable, cable supports, junction boxes, accessories, their supply, location, installation and testing & commissioning, shall be the responsibility of the CONTRACTOR, unless specifically excluded.
- 2.4 The instrumentation supplied and wired to the marshalling area (junction box) by the CONTRACTOR, shall include, but no be limited to the following:

A) Fire Protection

Signals for Dry Chemical Extinguishing System (Reference DESFA Spec.— F6)

Signals for Fixed Water Spray System (Reference DESFA Spec. – F3)

B) Tank Heating

Signals from Temperature Detectors (Reference DESFA Spec. – N-01)

- C) Tank Level – Temperature – Density monitor system (LTD) shall be supplied by the Contractor as a complete system including control room equipment except cabling between the marshalling area junction box and control room).

D) Fire and gas detection

Fire, gas and LNG spill detectors and manual break glass units shall be free

issued to the Contractor. The Contractor shall mount these devices within his battery limits and provide wiring up to the marshalling area junction box including the supply of marshalling area junction box.

- E) The vibration switches shall be supplied and integrated in the pump by the pump manufacturer. The instrument connection box (marshalling area junction box) for the vibration switches shall be integrated on a top assembly, incorporating pump removal gland and electrical / instrument penetration seals supplied by pump manufacturer.

Pump manufacturer shall supply also cables interconnecting the pump and the instrument connection box.

Installation shall be performed by CONTRACTOR according to instructions of Pump Manufacturer.

- F) Level Gauging

The level gauging systems and the interface unit(s) inside control room for communication with a DCS system will be supplied by CONTRACTOR. Cabling from tanks up to the marshalling area junction boxes will be supplied by CONTRACTOR. Cabling between the marshalling area junction box and control room will be provided by the CONTRACTOR.

- G) Purging System

CONTRACTOR should provide all necessary instrumentation as per **DESFA Spec. F4**.

Wired up to the marshalling area junction boxes, for transmission to the DCS.

- H) Monitoring System for "Civil Section"

CONTRACTOR should provide all necessary instrumentation as per "Technical Volume Civil Section".

Wired up the marshalling area junction boxes.

- 2.5** The Closed Circuit Television cameras will be supplied free issue by the OWNER for mounting by the CONTRACTOR. The CONTRACTOR shall be responsible for defining the optimum location position. Cameras will be provided to monitor the relief valves and tank top piping.

3.0 EUROPEAN STANDARDS and EUROPEAN DIRECTIVES

All equipment shall comply with the referenced European standards and European Directives in the individual equipment specifications.