OIL & GAS DEVELOPMENT COMPANY LIMITED

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GAS PLANT FACILITY PROJECT

SCOPE & SPECIFICATIONS FOR FIRE FIGHTING EQUIPMENT

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ENAR PETROTECH SERVICES (PVT.) LIMITED

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1.0 INTRODUCTION

The Oil & Gas Development Company Limited (OGDCL) is developing its Gas Facility Plant. OGDCL has engaged ENAR Petrotech Services (Pvt.) Limited (ENAR) to carry out the Basic & detailed engineering for the Gas Plant Facility Project as well as to provide the procurement assistance and the overall project management consultancy of the project.

OGDCL has appointed ENAR Petrotech Services (Private) Limited (ENAR) as Engineering Consultant for providing engineering, project management, procurement assistance and site supervision consultancy services to ensure timely project completion complying with technical specifications

This specification covers the minimum requirements for the design, fabrication, inspection, testing, coating and supply of Fire Fighting Equipment for Gas Plant Facility Project.

1.1 Definitions

Terms used in this specification have the following meanings:

"Company" means "Oil and Gas Development Company Limited (OGDCL)"

"Engineering Consultant" shall mean "ENAR Petrotech Services (Pvt.) Limited"

"Supplier" means Entity with whom the Company will execute a Contract for supply of equipment/material as per this document

"Project" means "Gas Plant Facility Project"

1.2 Error or Omission

The review and comments by Company / Engineering Consultant on Supplier's or its manufacturer's drawings procedures or documents shall only indicate acceptance of general requirements and shall not relieve the Supplier of its obligations to comply with the requirements of this speciation and other referenced documents.

All deviations to this specification, other referred document or attachments shall be brought to the knowledge of the Company / Engineering Consultant in the bid. All deviations made during the design, procurement, manufacturing, testing and inspection shall be with written approval by the Company / Engineering Consultant prior to execution of work. Such deviations shall be shown in the documentation prepared by the Supplier.

1.3 Conflicting Requirements

In the event of any conflict, inconsistency or ambiguity between these documents, referred documents, codes & standards referenced in the documents the Supplier shall refer to the Company / Engineering Consultant whose decision shall prevail.

1.4 Language and Units of Measurement

The governing language shall be English language.
All referred quantities (temperature, pressure, flow rate, etc.) shall be expressed as per datasheet.

1.5 Order of Precedence

In case of conflict among this document, the referenced documents and the International Codes and Standards, the Supplier shall bring the matter to the Company/ Engineering Consultant attention for resolution and approval in writing.
The order of precedence shall be as follows:

1. Data Sheets of Equipments
2. This specification document and the referenced Documents
3. Referenced International Codes and Standards

In the event of any conflict of data or requirements in any of above documents, it is the Supplier's responsibility to resolve these conflicts and obtain Company/ Engineering Consultant's approval before proceeding with design, manufacture or purchase. In any case the most stringent requirement shall prevail. However, Company/ Engineering Consultant's interpretation shall be final.

1.6 Supplier's Responsibility

The Supplier shall do the detailed mechanical design, prepare detailed drawings, get the same approved from Company/ Engineering Consultant, arrange materials, manufacture and transport it after completion.

2.0 CODES AND STANDARDS

The Supplier shall ensure that all the Fire Fighting Equipment will comply with API RP-2001 along with following NFPA codes, this document, attached data sheets and specific industry accepted codes and standards.

NFPA Standards

NFPA 11	Standard for Low-, Medium-, and High- Expansion Foam
NFPA 12	Standard on Carbon Dioxide Extinguishing Systems
NFPA 13	Standard for the Installation of Sprinkler Systems
NFPA 15	Standard for Water Spray Fixed Systems for Fire Protection

API Standards

API 2021	Fighting Fires in and Around Flammable and Combustible Liquid Atmospheric Storage Tanks

ASME Standards

ASME Sec-II	Material
ASME B31.3	Process Piping

Other applicable ASME/ASTM/API/ISO standards etc.

The Supplier shall list other codes and standards to which his proposed design Complies. The Supplier's bid shall clearly identify any areas where the proposed Equipments would not meet these requirements.

3.0 SCOPE OF SUPPLY

The Supplier shall supply the Fire Fighting Equipment based on this document and attached Data sheets and Specifications. The supplier shall perform mechanical design, manufacture, painting, testing and preparation for shipment for Fire Fighting Equipment

in view of the requirements as detailed in relevant Data sheets and Specifications. Supplier shall also obtain approval from Company for bought out any component.

The Supplier shall ensure that all the components of Fire Fighting Equipment are NEW.

The equipments must be made up of standardized, readily available, readily serviceable, and highly reliable parts.

Supplier shall provide the General Arrangement drawings for all the equipments listed below with Part list and materials.

The Supplier shall supply the following equipment:

- Fire Hydrants (07 Nos.)
- Fixed Foam Water Monitor (03 Nos.)
- Water Monitor – Top Mounted on hydrant (16 Nos.)
- Hose Cabinets for Hydrant with accessories (22 Nos.)
- 2½ Gallon Water Fire Extinguisher (19 Nos.)
- 6.0 Kg Multipurpose Dry Chemical Extinguisher (08 Nos.)
- 3.5 Kg CO_2 Fire Extinguisher (10 Nos.)
- 12 Kg Multipurpose Dry Chemical Extinguisher (31 Nos.)
- 70 Kg Dry Chemical Mobile Extinguisher (04 Nos.)
- Mobile Foam Trolley (04 Nos.)
- Foam Concentrate (AFFF) (1500 Gallon)
- Jet Nozzle (06 Nos.)
- Hose Reels for Buildings (12 Nos.)
- Safety Shower & Eye Wash Combined (06 Nos.)
- Foam Top Pourer (70 GPM) (03 Nos.)
- Foam Generation Skid (01 Complete Set)
- Halotron Fire Extinguisher, Portable Type (4 Kg) (08 Nos.)

- Windsocks (04 Nos.)
- Aqueous Film Forming Foam Extinguisher 10 liters (10 Nos)

The following other equipment shall be supplied (stored at the fire station as a minimum requirement) in addition to the equipment and tools mounted on the fixed and mobile Fire Fighting equipment mentioned above.

- Fireman's Suits (non-asbestos & made of heat shield cloth) (10 Nos.)
- Full face Mask, helmet with visor & neck curtain, & safety boots (15 Nos.)
- Breathing apparatus (Self-contained, 30-minute duration) (06 Nos.)
- First Aid Box with medicines (10 Nos.)
- Safety Helmets (25 Nos.)
- Safety line and Harness (04 Nos.)
- Fireman AXE with belt & pouch (10 Nos.)
- Safety Goggles (25 Nos.)
- Miscellaneous Safety Signs (200 Nos.)
- Galvanized buckets (15 Nos.)
- Loudspeaker (04 Nos.)
- CO_2 recharging unit (1 set)
- Breathing air recharging unit (1 set)
- Powder extinguisher recharging tools (1 set)
- 2 ½'' hand hose expander (1 set)
- Portable pump for air foam concentrate (1 set)
- Fire Blanket (6 Nos)
- Rescue stretcher. (2 Nos)
  (Complete with restraining straps and integral lifting frame).
- Nameplates.
- Inspection and testing as called for in this specification document and its referenced specifications.
- Spares (Installation/Commissioning, Two years operation etc).
- Special Tool for Maintenance, testing and lifting etc.
- All necessary drawings, documentation and manuals.

4.0 ENVIRONMENTAL DESIGN CRITERIA

4.1 General

Unless otherwise stated on the data sheets, Equipment will be located in an open exposed area except equipment specified for Fire Station.

4.2 Site, Environmental & Utility Design Data

Fire Fighting Equipments shall be designed for outdoor location with utility & site conditions and NEQs as given in Site, Environment & Utility Design Data (0102-A-1000).

5.0 MATERIAL

Material for firefighting equipments shall be designed and fabricated in accordance with ASME/ASTM/NFPA standard. All material shall be new & best quality. Material grades which are equivalent to ASME/ASTM shall be quoted with equivalency chart showing chemical and mechanical properties.

6.0 DESIGN REQUIREMENT

The Supplier shall be responsible for the design, supply of all required materials, fabrication, testing, painting, shipment and transportation of the Fire Fighting Equipment in accordance with this document & referred Data Sheets.

The Supplier shall design Fire Fighting & Equipment according to good industry and well recognized practices. All Equipment shall have fire rating suitable for Gas Processing Plant Application.

The Supplier shall submit Fire Fighting Equipment dimensional drawings and technical specifications for company's review prior to finalization of design.

Firefighting equipment shall be corrosion resistant.

7.0 INSPECTION, TESTING AND CERTIFICATION

7.1 General

Inspection, testing and certification shall comply with the requirements as detailed in this Specification, other referenced specifications and Datasheets.

Firefighting equipment will be subjected to inspection by Company or Engineering Consultant, to extent decided prior to order. Inspection shall include verification of equipment dimensions, examination of the test data and checking preparation for shipment.

The Supplier shall submit an inspection procedure and report/certificates for review of Company.

7.2 Inspection and Testing

The approval of any work by the Company and the release of equipment for shipment shall in no way relieve the Supplier of any responsibility for carrying out the provisions of this Specification.

7.3 Equipment Performance Tests

The complete assembly test shall be given at the Supplier's works. The testing shall address all minimum performance requirements for the equipments to prove the performance.

The Supplier shall be required to submit a full testing procedure covering the full extent of testing on the completed assembly and shall be complete with all equipment test procedures and check lists. The Supplier shall be responsible for providing all necessary utility services to conduct the tests.

8.0 PERFORMANCE GUARANTEE

The Supplier will warrant the supplied Fire Fighting Equipment to be free of defects in material and workmanship, and that it is of adequate size and capability to fulfill the design and operating conditions specified in the datasheet. The Supplier shall replace and install, without cost to the Company, any materials, supplies, or equipment which fails under design conditions due to defects in material or workmanship, if the defect is observed and/or such failure occurs within warranty period. Acceptance of this order will signify acceptance of all conditions of this guarantee.

9.0 PAINTING AND PREPARATION FOR SHIPMENT

Painting, protective coatings and the procedures used for the preparation of surfaces shall be as specified in the Specification Doc. No. 0102-GS-9523.

Packing and Preservation shall be suitable for transportation of materials and equipment during their handling, inland transportation and storage at site for up to 6 months in an uncovered and unheated location. Fire Fighting Equipment shall account for the fragility and physico-chemical/ mechanical damages of items. Detailed requirements for Packing & Protection of Material and Equipment are indicated in Doc. No. 0102-GS-9524.
All Loose parts etc. shall be properly tagged to allow easy identification/site assembling.

Unpainted surfaces shall be protected from corrosion during shipment and subsequent outdoor/indoor storage by coating with a rust preventative.

10.0 SPARES

The supply of Fire Fighting Equipment shall include the commissioning spare and list of recommended two years operational spares.

10.1 Commissioning Spares

The Supplier shall provide commissioning spares of the Fire Fighting Equipment. These are the spares parts and other materials needed to adequately cover the

requirement of installation, day to day maintenance for the Fire Fighting Equipment during the Construction phase and Commissioning stages, including start up and testing.

10.2 Two Years Operational Spares

Supplier shall recommend and provide list of spare parts needed for two (02) years of Operation.

All spare parts furnished by Supplier shall be wrapped and packaged so that they will be preserved in original as-new conditions of storage to be anticipated and shall be properly tagged and coded so that later identification as intended for equipment usage
would be facilitated. They shall be packaged separately, clearly marked as "Spare Parts". Packing lists shall be furnished so that the parts can be handled without Uncrating if desired.

11.0 QA/QC & CERTIFICATION

The Supplier shall show that an effective system of Quality Assurance is in operation, for both products and services, which generally complies with ISO 9001 or equivalent. The Supplier and his Sub-Suppliers shall be ISO 9001 certified.

The Supplier shall submit, with his Proposal, a copy of his Quality Manual for review by Company/ Engineering Consultant.

The Supplier shall ensure that all inspection, test and certification records for Fire Fighting Equipment and materials, procured by the Company, test and inspection records for the Supplier's fabrications, required by legislation, codes, standards and specifications, or otherwise required are provided, safely stored and available on request.

12.0 DOCUMENTATION REQUIREMENT

12.1 Use of the English Language

All documents shall be written in the English Language.

12.2 Documents to be submitted with the Bid

The bidder shall submit the following details on the Fire Fighting Equipment with the bid:

Technical Documents:

- Name of Fire Fighting Equipment Supplier and country of manufacturing.
- Materials of construction of Fire Fighting Equipment.
- Dimensional drawings of Fire Fighting Equipment showing weight and other details.
- Table of compliance / exception and deviations, if any.
- Performances guarantee statement
- A preliminary production schedule of the Fire Fighting Equipment including design, engineering, manufacturing, factory testing etc. Also indicate delivery dates for all Sub-Supplier's items.
- Document submission schedule.
- Spare parts (Commissioning, Two years etc).
- Quality Manual and Quality Control Plan.
- Typical Inspection and Test Plan.
- Supplier Data Sheet.

Financial Documents:

- Price breakup of all the Fire Fighting Equipment.
- Schedule of Deliveries.
- Comments or exceptions/contractual deviations to ITB.

12.3 Final Documentation

All items in the dossier shall be numbered and bound in an A4 four post binder; Contents shall include but not be limited to the following (as applicable)

1. Front cover sheet detailing
    - P.O. No.
    - Project Title
    - Equipment Title
    - Equipment Item No.

2. Index
3. Company/ Engineering Consultant Release Note
4. Purchase Order
5. A list of all applicable codes, standards and specifications
6. Final signed quality plan
7. All "As-built" drawings

All above documents two (02) sets shall be submitted in clearly labeled 4 ring white Hard cover binders. All documents smaller and larger than A4 shall be inserted into A4 pre-punched, top-opening plastic wallets with the project document number/title block clearly visible to the front.

13.0 REFERENCED DOCUMENTS

1. Datasheet for Hose Box for Hydrant (0102-DS-1771).
2. Datasheet for Fixed Foam Water Monitor (0102-DS-1772).
3. Datasheet for Fire Hydrants (0102-DS-1773).
4. Datasheet for Combined Water Monitor Top Mounted on Hydrant (0102-DS-1774).
5. Datasheet for 3.5 Kg CO_2 Fire Extinguisher (0102-DS-1775).
6. Datasheet for 6 Kg Multipurpose Dry Chemical Extinguisher (0102-DS-1776).
7. Datasheet for 12 Kg Multipurpose Dry Chemical Extinguisher (0102-DS-1777).
8. Datasheet for Foam Concentrate (0102-DS-1778).
9. Datasheet for Miscellaneous Items (0102-DS-1779) (Sheet 1 of 2).
10. Datasheet for Miscellaneous Items (0102-DS-1779) (Sheet 2 of 2).
11. Datasheet for 70 Kg Dry Chemical Extinguisher (0102-DS-1780)
12. Datasheet for 2½ Gallon Water Fire Extinguisher (0102-DS-1781)
13. Specification for Painting & Protective Coating (0102-GS-9523).
14. Specification for Packing and Protection of Equipment (0102-GS-9524).
15. Specification for Steel Structure (0102-STA-4000).