

REFERENCE PROJECTS

ETHYLENE PROPYLENE LPG AMMONIA



PROJECT

Project name:

Ammonia Storage Terminal

Country:

Varna, Bulgaria

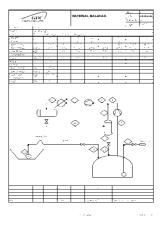
Client:

adapt for Oiltanking

Year: 2000

GOC project:

7001



PROJECT DESCRIPTION

Terminal to import Ammonia by ships Marine unloading system @ $15,00 \text{ m}^3/\text{h}$ Refrigerated storage tanks @ $2 \times 15,500 \text{ m}^3$

Send out system including

Discharge to production plant @ 37.5 to/h

Rail tank car loading @ 61 to/h

PROJECT PHASES

Technical/commercial study

GOC

Process

DISCIPLINES

Mechanical & rotating equipment

Commercial

GOC

Technical study

WORK SCOPE

costing of plant equipment



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PROJECT

Ethylene Terminal

Project name:

Country:

Petroquimica Triunfo, Brazil

Client:

Whessoe Oil & Gas

<u>Year:</u>

2000

GOC project:

7003

PROJECT DESCRIPTION

Ethylene storage system as part of a production plant

Refrigerated storage tank @ 1 x 7,100 m³

Ethylene BOG compressor

Ethylene vaporizer Methanol system

Send out system including

Discharge to production plant 25 m³/h @ -104 °C

PROJECT PHASES

Technical/commercial study

GOC

Process

DISCIPLINES

Mechanical & rotating equipment

Commercial

GOC

Technical review

WORK SCOPE

Costing study



PROJECT

Project name:

Salalah Gas Pipeline

Country:
Oman
Client:

ILF & Partners

Year: 2000

GOC project:

7004

PROJECT DESCRIPTION

LPG extraction plant as part of the Salalah Gas Pipeline in Oman

including

Dehydration system Gas treatment unit Compression unit

Cryogenic gas processing unit

Fractionation system
Product storage
Loading unit

PROJECT PHASES

Technical study

GOC

Process

DISCIPLINES

Mechanical & rotating equipment

Commercial

GOC

Technical review of outline documents

WORK SCOPE

Site selection review



PROJECT

Project name:

LPG Terminal DMCC

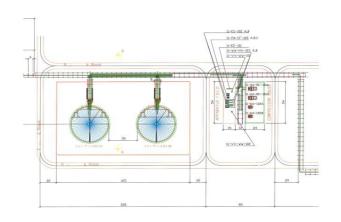
Country:
India
Client:

Whessoe Oil & Gas

<u>Year:</u> 2001

GOC project:

7006



PROJECT DESCRIPTION

LPG import terminal in India to import Propane or Butane

Marine unloading system, design flow rate 1000 t/h

Refrigerated storage tanks, 2 x 25,000 m³

BOG reliquefaction system LPG blending system LPG Heater system Safety system

Instrumentation & control

Piping & valves Utility system Flare System

PROJECT PHASES

GOC

Tender phase

DISCIPLINES

Process

Mechanical & rotating equipment

Electrical & instrumentation

Commercial

Tanks

Piping & valves

GOC WORK SCOPE

Pre-bid assistance

Process design

Process description

Layout

Costing of equipment



PROJECT

Project name:

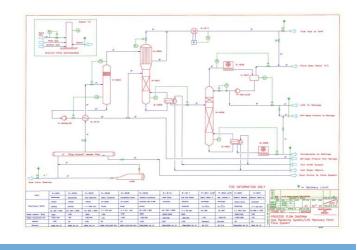
LPG Recovery Plant

Country:
Poland
Client:
ILF

Year: 2001

GOC project:

7008



Piping & valves

PROJECT DESCRIPTION

LPG Recovery Plant for Wladyslawowo CHP Project

Slug catcher Deethanizer Debutanizer Cold separator Condenser

Feed cooler Reflux pumps Transfer pumps Reboiler

Flare system

PROJECT PHASES

Tender phase

GOC	Process

DISCIPLINES Mechanical & rotating equipment

Electrical & instrumentation

Commercial

GOC WORK SCOPE

Pre-bid assistance Process design

Process flow diagram Sizing of equipment Costing of equipment



PROJECT

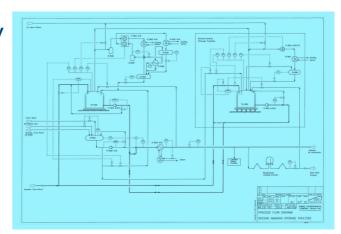
Project name:

Ammonia Storage Facility

<u>Country:</u> Middle East <u>Client:</u> UK

Year: 2001

GOC project: 7009/7013/7014



PROJECT DESCRIPTION

New Ammonia storage facility within an existing production plant

Refrigerated storage tank, 5,000 mt

Reliquefaction system Send out system Safety system

Instrumentation & control

Piping & valves Utility system

Interface with existing system

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P	Н	A	S	E	S	

Tender phase

GOC

Process

Tanks

DISCIPLINES

Mechanical & rotating equipment

Piping & valves

Electrical & instrumentation

GOC WORK SCOPE

Pre-bid assistance

Process design

Commercial

Process flow diagram Sizing of equipment Costing of equipment



PROJECT

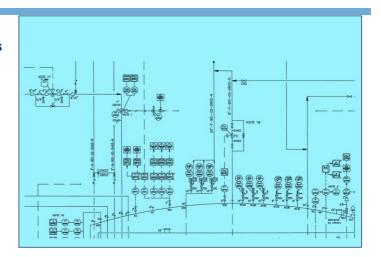
Project name:

PPC Off-site Facilities

Country:
Middle East
Client:
adapt for
Intecsa-Uhde

Year:

2003 - 2004 *GOC project:* 7031/7037/7057



PROJECT DESCRIPTION

LPG storage facility within a grassroot petrochemical complex

Refrigerated storage tank for Propane, 120,000 m³ Refrigerated storage tank for Butane, 60,000 m³

Tank instrumentation Tank safety valves

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D	н	Λ	C	Ē	C	

Engineering

GOC

Process

DISCIPLINES

Electrical & instrumentation

Safety

GOC

Sizing of tank safety valves

WORK SCOPE

Design, engineering for tank instrumentation

Inquiry specification for instrumentation and valves



PROJECT

Project name:

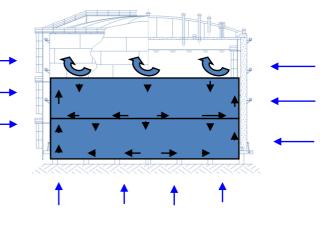
PPC Off-site Facilities

Country:
Middle East
Client:
adapt for
Intecsa-Uhde

<u>Year:</u> 2004

GOC project:

7037



PROJECT DESCRIPTION

LPG storage facility within a grassroot petrochemical complex

Refrigerated storage tank for Propane, 120,000 m³ Refrigerated storage tank for Butane, 60,000 m³

Tank instrumentation Tank safety valves

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Engineering

GOC

Process

DISCIPLINES

Electrical & instrumentation

Safety

GOC

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WORK SCOPE

Roll-over study



PROJECT

Project name:

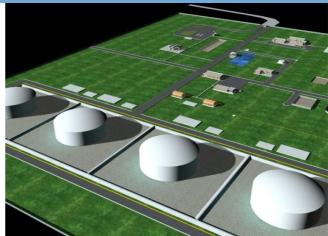
LPG Terminal, La Libertad

Country:
Ecuador
Client:
adapt for
Dragados

Year: 2005

GOC project:

7045 Source: Dragados



PROJECT DESCRIPTION

Propane and Butane unloading and storage

Marine unloading facilities

1 x 21,000 m 3 DWST single containment tank for Propane 1 x 47,000 m 3 DWST single containment tank for Butane

BOG handling Send out pumps

LPG Send out system with static mixer, LPG Heater and LPG booster pumps

Flare system

Instrumentation and control

Utility system

PROJECT PHASES

Tender

GOC

Process

DISCIPLINES

Electrical & instrumentation

Safety

GOC

Functional technical specification

WORK SCOPE

Costing study



PROJECT *Project name:*

Panipat Naphta Cracker

<u>Country:</u> India

Client:

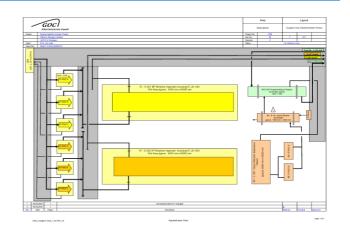
Larsen & Toubro Ltd.

for IOCL

Year: 2005

GOC project:

7054



PROJECT DESCRIPTION

Ethylene storage and transfer system including $2 \times 21,600 \text{ m}^3$ full containment tank for Ethylene

Ethylene BOG compression system

Ethylene emergency vaporization system

Ethylene pumping system

Propylene storage and transfer system including $2 \times 15,600 \text{ m}^3$ full containment tank for Propylene

Propylene BOG compression system

Propylene heating system

PROJECT
PHASES

Pre-bid assistance

Costing study

GOC DISCIPLINES	Process Mechanical & rotating equipment Electrical & instrumentation Safety	Tanks
GOC WORK SCOPE	Process engineering Tank engineering	



PROJECT

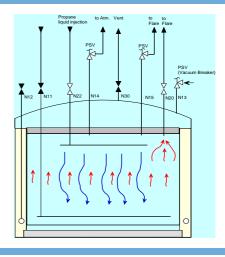
Project name:

PPC Off-site Facilities

<u>Country:</u>
Middle East
<u>Client:</u>
adapt for
Intecsa-Uhde

<u>Year:</u> 2005 <u>GOC project:</u>

7057



PROJECT DESCRIPTION

LPG storage facility within a grassroot petrochemical complex

Refrigerated storage tank for Propane, 120,000 m³ Refrigerated storage tank for Butane, 60,000 m³

Tank instrumentation Tank safety valves

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Engineering

GOC

Process

DISCIPLINES

Electrical & instrumentation

Safety

GOC

WORK SCOPE

Purge and cool-down procedure for refrigerated tanks



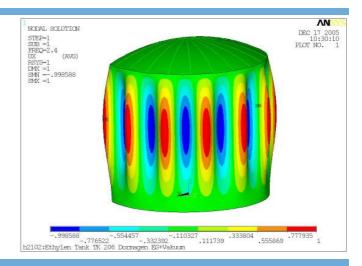
PROJECT

Project name:

Ethylene storage tank

<u>Country:</u> Germany <u>Client:</u> Ineos

<u>Year:</u> 2005/2006 <u>GOC project:</u> 7056



PROJECT DESCRIPTION

Existing Ethylene storage tank within a Ethylene production plant

1 x 4,000 m³ single containment tank for Ethylene

Ethylene send out system with

Ethylene pumps installed in a pump cellar below ground level.

Ethylene vaporizer system

PROJECT PHASES	Technical and commercial study	
GOC DISCIPLINES	Process Mechanical & rotating equipment Electrical & instrumentation Safety	Tanks
GOC WORK SCOPE	Detailed study to upgrade the safety lever Process engineering Tank engineering Process engineering Tank engineering Costing study	l of the Ethylene tank.