DYNAMIC ENGINEERING & AUTOMATION
Leader in Energy Technologies

ATLAS METAL
36 MMBTU/H@6 PSIG
SNG (LPG AIR MIX) PROJECT BY DEA

Dynamic Engineering & Automation

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15/12/2013

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Installation, Commissioning and Startup of state of the art Synthetic Natural Gas - SNG (LPG Air Mix) Plant at Atlas Metal, Karachi

PROJECT DETAILS

Date of Completion:	**December 14, 2013**
OEM:	**KGE, Korea**
Location:	**D-181, Central Avenue, S.I.T.E., Pakistan**
Designed by:	**M/s Korea Gas Engineering, Korea**
Plant Capacity:	**36 MMBTU/H @ 6 PSIG**

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Equipments for SNG (LPG AIR MIX) Plant

The SNG Plant we have setup at Atlas Battery consist of different modules. The major components include:

- **LPG Feed Pump**
- **LPG Vaporizer**
- **SNG Blender**
- **Actuation System**
- **Control Panel**

LPG Feed Pump

LPG Feed Pump Technical Specification:

- **Item No : FP-001**
- **Capacity : 72 Liter/min , Fluid gas : LPG liquid**
- **Pressure Test Pressure : 24 barg, Pressure Range : 1-5 barg**
- **Volts : 220/380 ,KW : 2.2, HZ : 50, r/min : 2880 , Amp : 9.2/5.3**
- **Bypass Relief valve specification Range : 0.1 - 0.7 Mpa**
- **Pressure Transmitter Specification: Range=0 – 25 bar , o/p signal=4 – 20mA, Power Supply: 24vdc**

LPG Vaporizer:

LPG Vaporizer Technical Specification:

- Item No: VA- 001
- Capacity : 900 kg/hr , Fluid Gas : LPG ,
- Design Pressure : 18 barg ,
- Design Temperature : 55 °C.,
- Pressure Test Pressure : 24 barg ,
- Heating Source : Gas Fire Heaters

SNG Blender

SNG Blender Technical Specification:

- Item No: SB - 001
- Capacity: 630 Nm3/hr
- Fluid Gas: LPG & Air
- Design Pressure: 10 barg,
- Design Temperature: 50 °C. ,
- Pressure Test Pressure: 13 barg
- SNG Pressure: 6 psi
- OEM: Korea Gas Engineering, Korea

General Purpose Pressure Transmitter Blender Portion:

Air Line

- **Range : 0 – 40 psi**
- **O/P Signal : 4 – 20mA**
- **Power Supply : 24vdc**

SNG Line

- **Range : 0 – 40 psi**
- **O/P Signal : 4 – 20mA**
- **Power Supply : 24vdc**

LPG Line

- **Range : 0- 40 psi**
- **O/P Signal: 4 – 20mA**
- **Power Supply : 24vdc**

LPG Mass Flow Meter

- **Line Size 50**
- **Fluid : LPG**
- **Flow Range : 0 -420Nm3/h**
- **Temperature & Pressure: -20 to 50 °C. & 3 bar**
- **Power Supply : Dc 24v/AC 100 -240v**
- **O/P Signal : 4 – 20mA**

Air Mass Flow Meter

- **Fluid : Air**
- **Line Size 50A**
- **Flow Range : 0 -420Nm3/h**
- **Temperature & Pressure: -20 to 50 °C. & 3 bar**
- **Power Supply : Dc 24v/AC 100 -240v**
- **O/P Signal : 4 – 20mA**

Actuation System

- **Pressure Transmitter**
- **Actuators : Pressure Required 7 bar**
- **Pressure Gauges**

Control Panel For SNG Supply System

① DIGITAL VOLT METER
② DIGITAL AMPERE METER
③ BUZZER
④ SQUARE LAMP (ALARM)
(PT101 LOW, PT201 LOW
PT301 HIGH, PT301 LOW
EMERGENCY STOP
PT102 HIGH, PT102 LOW
TE301 H.H, TE301 L.L
FEED PUMP FAULT)
⑤ HMI TOUCH MONITOR
⑥ OPERATION ON
⑦ OPERATION OFF
⑧ EMERGENCY SWITCH
⑨ BUZZER STOP

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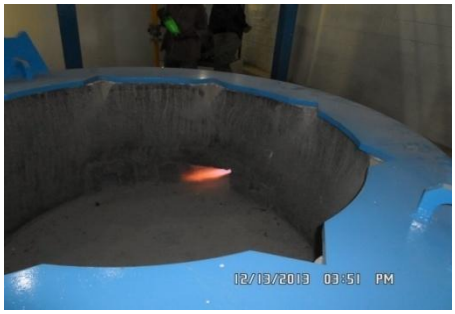
Commissioning



Shown picture of Furnaces which are burning with SNG supply

Work Done During Commissioning:

i) **Filling of Glycol and Water in Vaporizer Tank**
ii) **Electrical Connection Testing Through Control Panel one by one**
iii) **Heater Temperature test , H1=60°C, H2=62°C, H3=64°C** (Vaporizer in Auto mode)
iv) **Auto Actuation System (Set in Auto Mode ,NG&SNg)**
v) **Blender (Set in Auto Mode) output is 6psi**
vi) **Feed Pump (Set in Manual Mode)**