

## **PHASE 10 - SPARE PARTS AND EQUIPMENT**

The Ministry of Oil requirements for the Phase 10 Spare Parts and Equipment are itemised in the attachments to this report.

During the balance of Phase 10, the Ministry of Oil is planning to achieve a sustainable production rate for crude oil of between 3.6 to 4.0 million barrels per day (mbpd) to meet current and projected rates of oil exports whilst also satisfying the local demand for products and gas concurrent with acceptable standards of operation and reservoir control. The main activities to be undertaken during Phase 10 are:

1. Continued maintenance requirements
2. Continuation of the rehabilitation and repair of existing facilities
3. Sustaining the production capabilities of producing fields by ensuring sufficient surface installation operational capability and capacity, combined with increasing production where possible to compensate for continued reservoir depletion
4. Continued development of oil and gas fields to compensate for the natural decline in production rates of developed fields, and to attain targeted production levels.

These targets will be achieved as follows:

## **UPSTREAM**

### **NORTH (NOC) AND SOUTH (SOC) OIL COMPANIES**

- 1) Supply of equipment, materials and chemicals, and repair and major overhaul contracts to maintain the operations of existing plants, pipeline systems and terminals at current production rates with enhanced reliability.
- 2) The continuation of site work and projects to rehabilitate and revamp existing production, processing and pipeline networks to improve their efficiency and reliability.
- 3) The drilling and work-over of oil wells in producing fields.
- 4) Increasing the flexibility of storage, transportation and pumping facilities in the North and South.
- 5) Further provision of equipment to ensure personnel safety in the workplace.
- 6) Ensuring environmental protection by reducing air and water pollution to acceptable standards.
- 7) Provision of improved testing and engineering inspection programs.
- 8) Negotiation of technical service and consultancy contracts for surveying studies, well logging, evaluation and analysis of production systems.
- 9) Continuation of the following South Oil Company projects:
  - the rehabilitation of the Fao, Tuba and Zubair-2 Tank Farms,
  - water injection projects in North Rumailah, West Qurnah and Missan fields,
  - utilization of associated gas from West Qurnah and Zubair fields,
  - the partial development of the South Rumailah/Mishrif formation,
  - the first stage of West Qurnah and additional development of North Rumailah fields,

- The partial development of Majnoon, Bim Umar, Ratawi and Halfaya fields.
- 10) The continuation by the North Oil Company of the rehabilitation of the Iraqi/Turkish pipeline; phase 2 of the Khormala Dome project, and Jambur field gas production.

#### IRAQI DRILLING COMPANY (IDC)

Continuation of the program to rehabilitate existing rigs, plus the acquisition of new rigs in order to implement the drilling and well work-over programs of the North and South oil companies, as follows:

- maintenance of existing rigs with mud system pumps and accessories,
- supply of one new drilling rig, and two work-over rigs,
- required equipment for horizontal drilling,
- drill pipes and service/safety equipment,
- drilling camps and heavy trucks.

#### OIL EXPLORATION COMPANY (OEC)

Projects to allow initiation of lapsed oil and gas exploration, and to commence three-dimensional (3-D) seismic analyses of reservoirs resulting in improved reservoir management and control. Requirements include:

- seismic telemetry recording systems and one seismic processing system survey station,
- spare parts for existing equipment,
- material, equipment and software for geophysical and geological studies,
- service and safety equipment,
- non-destructive testing and laboratory equipment.

#### OIL PROJECTS COMPANY (SCOP)

The Oil Projects Company needs to improve and enhance its capabilities in order to undertake the development projects in the upstream sector of the industry. In particular attention has been paid to:

- consultancy and training projects,
- the provision of necessary construction machinery and associated spare parts,
- safety and servicing equipment,
- equipment and material for tender preparation and design drawing,
- training contracts,
- the improvement of project site management through a more efficient voice/data communications network.

#### DOWNSTREAM

The phase 10 objectives for this sector of the oil industry are to sustain and improve product production whilst adopting acceptable safety and operating standards; to meet current and projected demand and to achieve improved quality through the introduction of new technologies and practices.

The main requirements for the downstream operating companies include:

- 1) The gradual phasing out of lead in gasoline and improvement of octane rating to be achieved by:
  - supply of spare parts and equipment, materials, chemicals, replacement units and workshop facilities, and repair and overhaul service contracts to maintain current performance,
  - contracting for the supply, or completion of, isomerisation units in each of the three main refineries,
  - contracting for the supply of fluidized catalyst cracking plant (FCC) for the North (Beiji) refinery,
  - contracting and supply of a Zeolite reforming unit for the North (Beiji) refinery.
- 2) To reduce the sulphur content in diesel (gas oil) fuel from over 1% to the 300-500 ppm range (and ultimately 50 ppm) by:
  - completion and commissioning of de-sulphurisation units in both Mid (Daura) and South (Basrah) refineries,
  - rehabilitation and commissioning of the de-sulphurisation plant in the North (Beiji) refinery.
- 3) To improve feed water quality to boilers through the supply of reverse osmosis units, demineralisation plants and application of water treatment chemicals.
- 4) To improve wastewater quality through the supply of waste water treatment plants.
- 5) The continued rehabilitation of the Khor Al-Zubair LPG storage depot.
- 6) The utilization of North Rumailah/Mishrif associated gas.

Additional requirements to the above will include:

- supply of chemicals and catalysts to improve plant efficiency and product quality,
- repair of existing plants, including supply of replacement rotating machinery, boilers, vessels and electrical control systems,
- improvements to the flexibility of product storage, power generation, gas treatment and control systems,
- provision of safety equipment,
- reduction in air and water pollution,
- technical service and consultancy contracts covering study, evaluation and analyses of systems to produce better performance, enhanced production and increased product quality.

#### TRANSPORTATION & DISTRIBUTION (PL, GF & SADOP)

The overall Phase 10 objectives for this sector of the industry are to create improved flexibility in the distribution network through the inspection, testing and completion of pipeline systems and storage networks; improved LPG bottling and dispensing facilities and the continued replacement of damaged LPG cylinders, and the improvement of fuel supply to existing and planned electric power generation stations.

Common requirements of the three companies comprising this sector include:

- the supply of spare parts and equipment, materials, chemicals, replacement units and workshop facilities, and repair and overhaul service contracts to maintain current performance,
- the supply of 1,000,000 LPG cylinders, fuel dispersants and loading arms to improve LPG and products distribution,
- the continuation of the existing program to improve and revamp product pumping stations,
- the enhancement of product and LPG storage and flexibility of pipeline networks,
- the improvement of general, testing and engineering inspection services,
- the completion of the provision of all aspects of personnel safety equipment
- the completion of facilities to ensure environmental protection by reducing air and water pollution to acceptable standards.

Additionally, the pipeline network will be upgraded as follows:

- phase 3 of the national 14" products pipeline from Kurkh to Diwaniyah,
- new "flexibility" line running between the National Gas Grid line and the 18" gas line associated with the Rumailah - Haditha oil pipelines,
- replacement line to feed crude oil to the Nassiriyah power station,
- fuel pipelines for Salahddin, Anbar and North power stations,
- revamping and upgrading of the overall control system for power stations and their connecting pipelines replacement storage tanks,
- expansion on the underground LPG storage facility in Kirkuk,
- implementation of underground product storage facilities in Kirkuk region,
- expansion of surface LPG storage capacity.

## OIL TRAINING INSTITUTES

Continuation of the program to equip oil-training institutes commenced under phase 9, in order to develop medium-level technical personnel. Requirements include:

- various training simulators,
- oil testing laboratory equipment,
- equipment and apparatus for training purposes,
- interactive audio-visual training aids.

## PROJECT CLASSIFICATION CODES

In order to classify the Ministry of Oil requirements into projects the same classification system as phase 9 has been adopted for the distribution plan, as follows:

08-10-XX-YY-ZZZZ, in which

08	= Oil Sector
-10	= Phase 10
-XX	= Company Code
-YY	= Project Code
-ZZZZ	= Specific Sector Code Item Number

**FUND ALLOCATION AND COMPANY CODES:**

<u>COMPANY</u>	<u>CODE</u>	<u>ALLOCATION</u>
<u>Upstream</u>		
North Oil Company	01	US\$ 110,000,000
South Oil Company	02	US\$ 170,000,000
Iraq Drilling Company	03	US\$ 20,000,000
Oil Projects Company	04	US\$ 30,000,000
Oil Exploration Company	05	US\$ 20,000,000
<u>Downstream</u>		
North Refinery Company	06	US\$ 30,000,000
Midland Refinery Company	07	US\$ 40,000,000
South Refinery Company	08	US\$ 45,000,000
North Gas Company	09	US\$ 20,000,000
South Gas Company	10	US\$ 20,000,000
<u>Transportation &amp; Distribution</u>		
Gas Filling Company	11	US\$ 40,000,000
Oil Pipelines Company	12	US\$ 35,000,000
Oil Products Distribution Co	13	US\$ 15,000,000
<u>General</u>		
Training Institutes	14	US\$ 5,000,000
<b>Total</b>		<b>US\$ 600,000,000</b>

**PROJECT CODES:**

01. "Maintenance & Operations"
02. "Rehabilitation and revamping of existing plant"
03. "Sustaining and enhancement of production capabilities"
04. "Safety and environmental protection"
05. "Service and plant equipment"
06. "Testing, engineering, inspection, studies and laboratories"
- 07 - 99. "New development projects"