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## FINAL REPORT

In-Plant Training Programme for Engineers  
and Technicians of the TOBRUK Oil Refinery  
in the Petrochemical Complex Brazi-ROMANIA

Accordingly and as per the aims of the Project No. SF/LIB/88/ool - Contract No. 89/118, ROMCONSULT have organized and conducted at the Petrochemical Complex Brazi, ROMANIA, an in-plant training programme for eight (8) specialists/ participants from the Tobruk Oil Refinery (G.H.Mohamed, G.A. Farag, B.S. Said, A.S. Mohamed, K.G. El-Sharif, F.A. Housein, F.S. Abdelkarim, El-Mabruk B. Housein).

Given the aims of the Contract, ROMCONSULT have rendered all the services and facilities necessary to carry out the Project.

For each participant from Tobruk Oil Refinery was prepared "SYLLABI PROGRAMME FOR THEORETICAL AND PRACTICAL TRAINING" (which was agreed by UNIDO-Viena) in conformity with Terms of Reference (Annex C).

### 1. L E C T U R E S

Theoretical course (in Petrochemical Complex Brazi and Petroleum and Gaz Institute Ploiesti) was delivered in lectures dealing mainly with problems concerning the practical aspects underlining the necessity of thoroughly getting acquainted to the practical side of each problem.

The mentioned lectures were given in English, at the Petroleum and Gaz Institute - Ploiesti by professors having different

specialities, namely, Prof.doc.eng. A. Pavel for mechanical aspects, Prof.doc.eng. V. Tescan came up with problems dealing mainly with the distillation and the refining of the petroleum fractions, lecturer doc.eng. Maximiliana Patrascu presented problems connected to heat transfer and industrial equipment, doc.eng. O. Georgescu dealt with corrosion problems throughout the world, printing out as well the specific corrosion problems in Brazi, eng. L. Filotti, who presented aspects concerning catalytic reforming and gasoline hydrofination.

These lectures were followed by discussions connected to the similar problems and aspects existent in the Tobruk Refinery.

## 2. In-PLANT TRAINING

The practical activity was in accordance to the programme approved by UNIDO-Viena and was thus intended to meet the requirements of each trainee according to one's speciality in acquiring practical knowledge on the operation and management of several plants.

Thus after the general introductory safety training and the visiting of the main plants in Brazi Refinery (Vacuum and Atmospheric Distillation Unit, Catalytic Reforming Unit, Catalytic Cracking Unit), the Libyan specialists followed in detail the operating procedures of the various units in the refinery and got acquainted to the overhaul and maintenance works as well.

During the overhaul of the catalytic reforming plant, the specialists were present at the sheet-down of the unit, the catalyst regeneration and the reactors' unloading operations, they inspected the inside of the reactors, the columns, the furnaces, the vessels, the heat exchangers, they were told the main procedures for carrying out the non-destructive test of a welding seam, they were confronted to problems revealed by the inspection (namely corrosion, distorsion problems).

Ali Mohamed was personally present at the ray and ultrasonic inspections and he was informed about the inspection planning of the static and dynamic equipment too.

After the overhaul the specialists were presented in detail the flow sheets of the two plants-catalytic reforming and gasoline hydrofination together with the start up, shut-down, emergency shut-down operations.

The Materials' specialist was given some information concerning the raw materials quality, materials supplied to the complex, number of the spare parts, the supply made (direct or through other supply bases), warehouse organization aspects, the registering system of the received materials, information on the technico-material activities carried out in Brazi Petrochemical Complex.

For safety fire signalling and washing devices were presented together with the special devices for putting out the fire (all types of extinguishers), spare parts for the platform hydrants, devices with water and foam for putting out and stifling the fire.

For the Oil Movement representatives: they were provided with blending formulas used in Brazi Petrochemical Complex and they were given some advice in order to obtain the desired type of known and gas-oil.

There were also some discussions concerning the products storage and transporting, the TEL blending with gasoline, the way in which are calibrated the barrels containing final products.

Concerning the characterization of the Libyan specialists we should state the following :

### 3. GENERAL ASPECTS

Generally speaking they have showed special interest in getting acquainted to the practical and theoretical aspects presented and in saying this we take into consideration both the attendance at the in-plant training and lectures and the way in which the specialists have taken part in discussions following the training and the lectures.

We note a good general professional qualification with the specification that knowledge in the field of petroleum processing was needed.

Throughout the period the Libyan specialists were willing to co-operate and from the discussions we had with them, we could realize that they have succeeded in a period of time relatively short to acquire useful knowledte in the field of refinery processing.

We are ready to solve all the small problems which encountered the first group also to organize and conduct in good conditions at the Petrochemical Complex Brazi in - plant training programme for the second libyan group. For the future we should receive in advance a list containing the name of participants, the speciality of each trainee separately so we can get the necessary approvals in time.

### 4. LEAVING CONDITIONS

During their training in Romania, the Libyan group was provided with appartments for each family separately together with all the other necessary facilities and they had at their disposal a bus wide took them in Brazi and back home.

We have organized and provide in good conditions the facilities and services (local transport, accommodation, medical assistance, special foods etc.) of the light

trainees and their family.

## 5. CONCLUSIONS

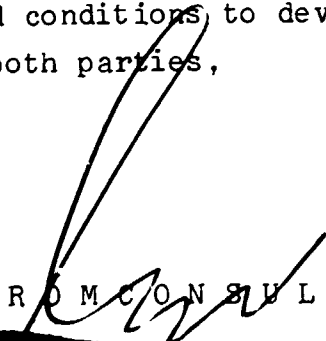
Concluding, we appreciate that the main purpose of the training programme was implemented in accordance with the conditions of contract No. 89/118 and with terms of reference (Annex C). We have rendered all the services and facilities necessary to carry out the contract.

We have provided all the facilities and services required by the contract for the execution of the Project No. SF/LIB/88/001.

For future we need to have in due time all details about the name and speciality of specialist/participants from the Tobruk Oil Refinery.

We are ready to take all necessary steps and to provide direct technical support, facilities and services for other specialists from the Tobruk Oil Refinery.

We hope that there are good conditions to development our cooperation in interes of both parties,

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