



## RELEVANT PREVIOUS EXPERIENCE IN THE OIL SECTOR

## General Pre-qualification Documents

# DEXTRON RELEVANT PREVIOUS EXPERIENCE IN THE OIL SECTOR

## DEXTRON ENGINEERING LTD. CONTRACTS IN NIGERIA

### 1. INTRODUCTION

DEXTRON ENGINEERING LTD. is as a Company incorporated in Nigeria, with technical support from its parent company **DEXTRON LIMITED (UK)**. Dextron has implemented some important projects in Nigeria, mainly in the oil and electrical sectors, providing high-quality services on an E.P.C.M. (Engineering, Procurement, Construction and Management) basis.

**DEXTRON ENGINEERING LTD. carried out various activities for Turn-Around Maintenance and Rehabilitation Projects at Port Harcourt Refining Company between 1999 – 2002, as the Sub-contractor of CHROME CONSORTIUM, the General Contractor. The total value of these sub-contracts exceeded 100 Million US Dollars.**

The activities consisted in engineering, procurement, construction / installation and commissioning of the plant.

The Contract for Turn-Around Maintenance of PHRC had an initial value of over 100 Million US Dollars and was completed during the scheduled period, under the supervision of **Shell Manufacturing Services (PHRC consultant)**.

So far, the main projects implemented in the oil sector are as follows:

#### 1.1. PHRC TURN AROUND MAINTENANCE

***TURN AROUND MAINTENANCE Project of the Port Harcourt Refining Company and 60 Rehabilitation Projects (1999-2002)*** was a first and the most important step made by Dextron Engineering Ltd. in Nigerian Oil Industry.

In Joint Ventures with U.M.D. and H.G.A., DEXTRON ENGINEERING LTD. has prepared and executed during the time more or less all static equipment refurbishment and major civil activities, new investment projects from design till completion and commissioning and also maintenance works.

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A summary of the activities performed during the time by DEXTRON ENGINEERING LTD. is:

❖ **Exchangers, FCC**

- **Heat Exchangers bundles extraction using hydraulically operated extractors, cranes assisted and self propelled, according to the conditions existing in Port Harcourt Refining Company**
- **Cleaning using high pressure water pumps and multi-head cleaning machines, both inside and between the bundle tubes**
- **Testing the bundles, Replacement leaking tubes**
- **Re-insertion of bundles tubes in the heat exchangers, using the same equipment as for extraction**
- **Final testing**

❖ **Tanks (U.M.D. Joint Venture)**

- 10,000 CM Demineralised Water Tank and required pipes: full fabrication & execution, now under painting process;
- 40,000 CM Raw Water Tank: all fabricated locally. Execution is now performed. All painting, pipe work and equipment installation is Dextron / UMD work scope.

❖ **Reactors / Regenerators FCC**

- FCC Regenerator (16 R02) Air Grid renewed;
- FCC Regenerator Air Grid plenum chamber renewed;
- FCC Reactor (16 R01) shell patched.

❖ **Boilers**

- 70 B 02 & 70 B 03 were completely rehabilitated and the new super-heater was installed. A high level welding and piping work performance was required, to provide to neutral inspectors (SMS) and to Babcock Vendor Specialist the specific high quality work required for this type of refurbishment;
- 70 B 01 & 70 B 04. The rehabilitation was performed in similar conditions, but the workshop area was limited. The schedule was respected very strictly because the Refinery was already in function and any delay could have produced an emergency shut-down.

❖ **Huge scaffolding and painting work-scope were performed by Dextron / HGA J. V.:**

- 6 tanks with different levels;



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- 16 columns with more than 2,000 sqm painting. Scaffolding and around-equipment protection was very difficult because all activities were performed in same areas with many sensitive requirements around.
- many of other columns and drums positioned everywhere in Refinery;
- Huge heaters and their stacks (up to 75 m) painting.

### ❖ Rehabilitation Projects Nos.

- Rehabilitation Project # 1. Scope of works - Rehabilitation of F.C.C. Regenerator Air Grid and Fuel Gas Line
- Rehabilitation Project # 2. Scope of works - Rehabilitation of H<sub>2</sub>S Incinerator 17-HI-51.
- Rehabilitation Project # 15. Scope of works - Rehabilitation of Third Demin Train and One Additional Demin Water Storage Tank in NPHR.
- Rehabilitation Project # 16. Scope of works - Rehabilitation of Demineralization Water Plant and construction of Demineralization Water Tanks, including all required pipes and fittings.
- Rehabilitation Project # 23. Scope of works - Rehabilitation of Area 5, Old Port Harcourt Refinery, Water Treatment Facilities and NALCO Chemicals.
- Rehabilitation Project # 41. Scope of works - Rehabilitation of Caustic Soda Area.
- Rehabilitation Project # 58. Scope of works - Rehabilitation of Area 5, Old Port Harcourt Refinery, D.C.S.

Generally, we can mention:

- In all this activity, no major accident has happened;
- Procurement, fabrication / construction and commissioning were in Dextron Joint Venture's duty, together with the mobilization of an important number of Nigerians and Expatriate personnel;
- A large range of qualified workers was used for mechanical (stating and rotating equipments), electrical, instrumental activities. Thus, a number of seventeen highly qualified expatriate welding specialists have worked in conjunction with a few qualified Nigerians. Consequently, for the same kind of jobs, maximum of two expatriates and the remaining qualified Nigerian personnel would perform each particular job. This has been the case within the last four years;
- Particular equipments for this kind of activities are now the property of DEXTRON ENGINEERING LTD. (see List of Equipment Owned by Dextron in Nigeria). Other equipments from abroad can be reallocated in Nigeria within two months period.

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Dextron Engineering Ltd. can select and prepare for this Project some of the most important activities compatible with works requirements for THE NEW PROPOSED DEMINERALIZATION WATER PLANT, confirming its capacity for the required specific work.

## **1.2. NPDC OREDO FLOWSTATION – REALLOCATION AND UPGRADE PROJECT**

**PETRODESIGN S.A.**, a Romanian subsidiary Design Company of DEXTRON GROUP and very well known abroad due to its highly qualified design personnel, is implementing in Nigeria the Detailed Design and Engineering for **OREDO FLOWSTATION - Relocation and upgrade Project**, **client: NIGERIAN PETROLEUM DEVELOPMENT COMPANY.**

PETRODESIGN executed the designs including P&I Diagrams Plot Plans for:

- 2 refurbished tanks;
- 2 new tanks;
- Pipe line isometric drawings;
- Electrical drawings;
- Instrumental drawings.

***PETRODESIGN has been serving chemical, petrochemical & petroleum refining industry for over 55 years now, and employs around 150 staff personnel, as: management, engineering, designing and specialists.***

PETRODESIGN executed the Process Design and Engineering Design for a many similar jobs all around the world, as you may see in the section bellow – Specific Experience in this kind of Projects.



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### CHAPTER 2

#### DETAILS OF WORKS UNDERTAKEN BY DEXTRON GROUP

1.
  - i. **Name of project:** NPDC Flow station relocation & upgrade, Oredo, Nigeria.
  - ii. **Brief description of project:** The process, mechanical, electrical, instrumentation, utilities and civil works within the plant will be upgraded to facilitate the production of gas/condensate along with the current production of black oil. The upgrade process will introduce additional process equipment and facilities, which will be integrated with the existing plant and facilities.
  - iii. **Client:** Baywood Continental Ltd., Nigeria.
  - iv. **Scope of Works performed by DEXTRON GROUP:** Detail engineering (Process, Mechanical, Piping, Instruments, Civil, Hazop Study etc.) for increasing the capacity up to 10,000 BOPD crude oil and 60 mmscfd of gas, Technical assistance, Training, Witnessing of FAT.
  - v. **Date of award of contract:** May 2004
  - vi. **Contractual period for execution:** 4 months
  - vii. **Actual period of execution:** In progress
  - viii. **Reason for discrepancies:** Supplementary works
  - ix. **Nature of contract:** Lump-sum
  - x. **Referee:** Mr. Chris Baywood, president of Baywood Continental Ltd., Nigeria  
E-mail: [chrisbaywood@baywoodcontinental.com](mailto:chrisbaywood@baywoodcontinental.com)



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2. i. **Name of project: Turn-Around Maintenance and Rehabilitation Projects at Port Harcourt Refining Company Limited.**
- ii. **Brief description of project:** Turn-Around Maintenance of Old and New Port Harcourt Refineries, including static, dynamic, electric and instrumentation equipment and civil works.
- iii. **Client:** Chrome Consortium, the General Contractor for the project
- iv. **Scope of Works performed by DEXTRON GROUP through its Nigerian subsidiary, DEXTRON ENGINEERING LTD.:** Maintenance and repairs of static equipment (reactors, columns, drums, vessels, heat exchangers, flare, piping, valves) in Areas 1, 2 and 3 and civil works at Port Harcourt Refining Company Ltd.
- v. **Date of award of contract:** 20.07.2000
- vi. **Contractual period for execution:** 2 months
- vii. **Actual period of execution:** 2 months
- viii. **Reason for discrepancies:** None
- ix. **Nature of contract:** Lump-sum
- x. **Referee:** Engr. Luca Nicolae, Technical Director Chrome Consortium, 228B Muri Okunola Street, Victoria Island, Lagos, Nigeria, Tel.: +234-1-4617288, Fax: +234-1-2622314, E-mail: [chrometech@hyperia.com](mailto:chrometech@hyperia.com)





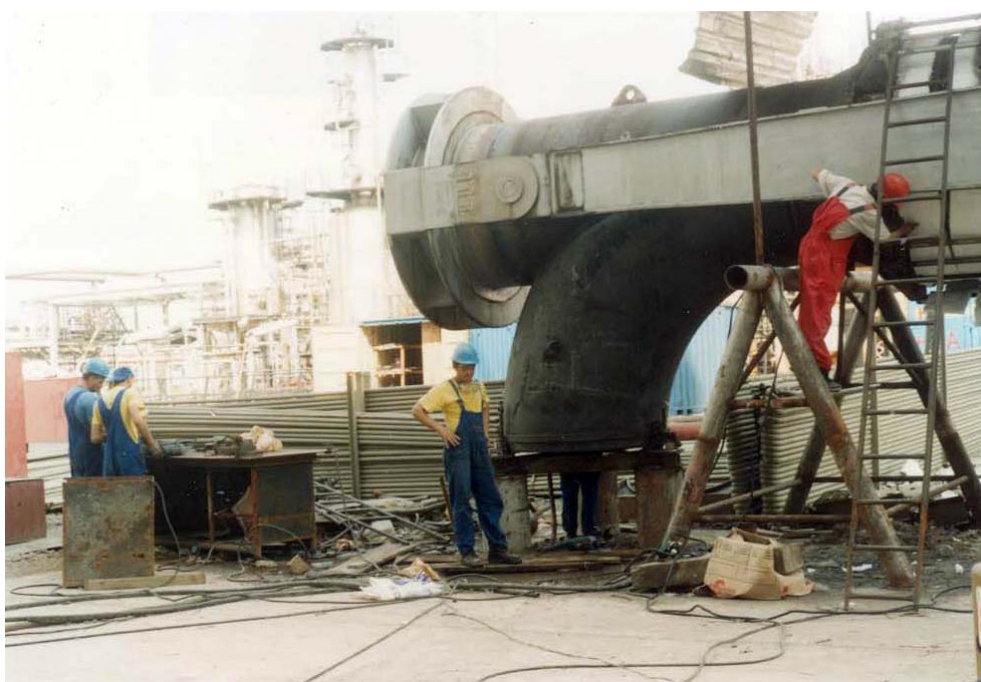


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3. i. **Name of project: Rehabilitation of FCC Regenerator Air Grid in Port Harcourt Refining Company.**
- ii. **Brief description of project:** Replacement of FCC Regenerator air grid and flue gas line
- iii. **Client:** Chrome Consortium, the General Contractor for the project
- iv. **Scope of Works performed by DEXTRON GROUP:** Engineering and design, procurement and expediting, dismantling of old air grid and flue gas line, execution of 90” window in reactor’s shell, installation of new air grid and flue gas line, closing by welding of window, refractory works, civil works.
- v. **Date of award of contract:** November 2000
- vi. **Contractual period for execution:** 6 months
- vii. **Actual period of execution:** 6 months
- viii. **Reason for discrepancies:** None
- ix. **Nature of contract:** Lump-sum
- x. **Referee:** Eng. Pacurariu Teodor, Rehabilitation Projects Manager, Chrome Consortium, PHRC LIFE CAMP, PORT HARCOURT, Nigeria, Tel.: +234-80-33168252, E-mail: tpacurariu@hotmail.com







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4.
  - i. **Name of project:** Rehabilitation of Power Plant Steam Boilers 70 B02 & 70 B03 at Port Harcourt Refining Company.
  - ii. **Brief description of project:** Replacement of superheaters and leaking tubes, repair of metallic structures, repair/replacement of insulation and refractory, repair/replacement of valves, repair/replacement of damaged instruments, overhaul of soot blowers.
  - iii. **Client:** Chrome Consortium, the General Contractor for the project
  - iv. **Scope of Works performed by DEXTRON GROUP:** For each boiler, dismantling of boiler casing, removal of air ducts and piping, insulation and refractory, pressure test and inspection, dismantling of headers, removal of superheaters, installation of new ones, dismantling of vaporizing banks panels and damaged tubes, extraction of tubes ends from vaporizer drums, preparation of drums bores for expansion, installation and expansion of new tubes, pressure test, installation of air ducts and piping, restoration of metallic structures, and casing, installation of internals inside steam drum, installation of burners, boxing-up of boiler, civil works.
  - v. **Date of award of contract:** August 2000
  - vi. **Contractual period for execution:** 18 months
  - vii. **Actual period of execution:** 21 months
  - viii. **Reason for discrepancies:** Inability of PHRC to supply materials
  - ix. **Nature of contract:** Lump-sum
  - x. **Referee:** Eng. Pacurariu Teodor, Rehabilitation Projects Manager, Chrome Consortium, PHRC LIFE CAMP, Port Harcourt, Nigeria, Tel.: +234-80-33168252, E-mail: tpacurariu@hotmail.com





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5. i. **Name of project: Tank Replacement and Upgrade, Chevron Nigeria Ltd.**
- ii. **Brief description of project:** Erecting tanks, general maintenance for equipments, flow station construction and pumping station, repair of metallic structures, repair/replacement of valves, repair/replacement of damaged instruments, overhaul of soot blowers.
- iii. **Client:** Chevron Nigeria Ltd., 2 Chevron Drive, Lekki Peninsula, PMB 12825 Lagos.
- iv. **Scope of Works performed by DEXTRON GROUP:** Erecting/Rehabilitating 3 tanks, dismantling of 1 existing tank, general maintenance for equipments, construction of a flow station, construction of a pumping station, repair of metallic structures, repair/replacement of valves, repair/replacement of damaged instruments, overhaul of soot blowers.
- v. **Date of award of contract:** December 2005
- vi. **Status:** Tank 5 completed, tank 3 is presently ongoing.
- vii. **Contractual period for execution:** 18 months initial scope.
- viii. **Nature of contract:** Lump-sum
- ix. **Participation:** Joint venture - Baywood Continental/Dextron Engineering Ltd.
- x. **Designer:** Petrodesign S.A. Romania
- x. **Supervisor:** Third Part inspector (neutral supervisor), not nominated yet
- xi. **Referee:** Mr. Raymond G. Moravek, Chevron Texaco USA, Tel.: +1 713 432 3457, E-mail: [RGMO@ChevronTexaco.com](mailto:RGMO@ChevronTexaco.com)