



Petrochemical Project

Oxo Alcohol Complex Completed in Malaysia



TEC has completed an oxo alcohol unit (capacity of 250,000 tons per year), a phthalic anhydride unit (40,000 tons per year), and a plasticizer unit for final product manufacture (100,000 tons per year) at an oxo alcohol complex for BASF PETRONAS Chemicals Sdn. Bhd. (BPC) situated in the Gebeng-Kuantan Industrial Estate, in Pahang State on the east coast of Malaysia. All facilities are operating smoothly.

TEC was the leader in the consortium that was awarded the project order in December 1998 from BPC, a joint venture between BASF, of Germany, and PETRONAS, of Malaysia. In line with TEC's transnational business structure, Toyo Thai Corporation Ltd. (TTCL), its affiliate in Thailand, handled detailed design based on a basic design from BASF as well as procurement services, excluding parts transportation.

Petrochemical Project

Ethylene Plant with Expanded Capacity Operating Smoothly in Thailand



TEC's ethylene plant capacity expansion project for Rayong Olefins Co., Ltd. (ROC), at the Map Ta Phut Industrial Estate, Rayong, Thailand, reached mechanical completion in July 2001. The project was completed without any accidents or mishaps in 1.7 million working-hours following the start-up of construction in June 2000.

For the project, TTCL handled detailed design, local procurement, intercontinental transportation, and construction under TEC's transnational business structure.

The project was to expand the annual production capacity of the olefin plant from 600,000 tons of ethylene and 300,000 tons of propylene, which was completed by TEC in 1998, to 800,000 tons of ethylene and 400,000 tons of propylene. Operations have continued smoothly since the completion of capacity expansion in August 2001.

Refinery Project

TEC Awarded Order to Modernize Refinery in Brazil

TEC, with the cooperation of Nissho Iwai Corporation, was awarded a contract by PETROBRAS, the national oil company in Brazil, for a planned large-scale refinery modernization project at the REFAP Refinery in Rio Grande do Sul, in south Brazil. The project includes the installation of a residual fluidized catalytic cracking unit (RFCC: 44,000 BPSD), a gas oil hydrodesulfurization unit (HDT: 25,000 BPSD), and a delayed coker unit (12,600 BPSD) as well as utility and off-site facilities. TEC will undertake detailed design and the procurement of equipment and materials. Work is slated for completion in the fourth quarter of 2003.

The planned modernization project has three principal goals: to enable the processing of heavy-grade crude oil produced in Brazil; to enhance added value at the plant by increasing the production of gasoline and other products and improving quality; and to address environmental needs in reducing sulfur content in products. TEC has received a string of major orders from PETROBRAS in recent years, and the current order attests to the Company's solid track record.

Chemical Project

Order for Fertilizer Plant in Iran

Led by TEC, an international consortium with Chiyoda Corporation and Petrochemical Industries Design and Engineering Company (PIDEC), an Iranian engineering firm, and with the cooperation of Mitsui & Co., Ltd., has received an order for a fertilizer plant project from Petrochemical Industries Development Management Co. (PIDMCO), a wholly owned subsidiary of National Petrochemical Corporation (NPC), of Iran.

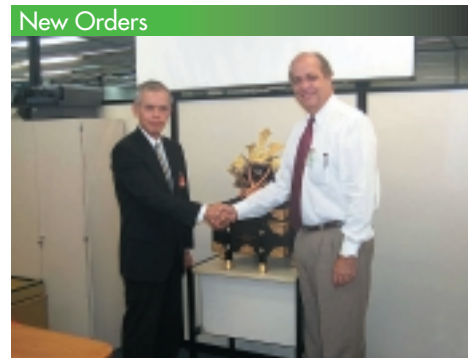
The facility, to be constructed in a petrochemical complex under planning by NPC in the Bandar Assaluyeh region, will use natural gas feedstock from the South Pars Gas Field situated offshore in the Bandar Assaluyeh region. With a capacity of 2,050 tons per day of ammonia and 3,250 tons per day of urea, the plant will be the largest of its type in the world. TEC's participation in the project covers basic and detailed design, the procurement of equipment and materials, and technical assistance on a turnkey contract basis. The plant is scheduled for completion in mid-2004.

This is the first time that TEC and Chiyoda have been awarded jointly a contract for a major overseas project. The close alliance between the two companies and their complementary strengths, as well as TEC's extensive track record in fertilizer plant construction and experience in Iran, contributed to securing the order.

Refinery Project

U.S. FCC Project on Schedule for Completion in January 2003

On October 20, 2000, TEC was awarded a contract to build a 30,000 BPSD fluidized catalytic cracking (FCC) unit and a Merox Unit in Washington State, the United States, for PHILLIPS 66 Company, a division of Phillips Petroleum Company. The Merox Unit was completed on schedule in 10 months. The whole project is proceeding smoothly and will be completed on schedule in January 2003.



New Orders
 Mr. Fernando Almeida Biato, General Manager, PETROBRAS (right) and Mr. Ogami, Managing Director of Overseas Business Headquarters, TEC (left) at the signing of the contract



New Orders
 Mr. Namatzadeh, Director General, NPC (front row, right) and Mr. Hirose, CEO/President, TEC (front row, third from right) at the signing of the contract



Project Under Way
 Merox Unit