



Rental Power

> Case History

Indian Oil Corporation Ltd., India



**Power
Generation**

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Where:

Indian Oil Corporation's Guwahati Refinery in the northeastern state of Assam, India

What:

A prime Rental Power system producing 5 MW of continuous power on a 24/7, 365 basis

Purpose:

To provide power during the period required to acquire a new turbine power plant

Primary choice factors:

Experience of Cummins Power Generation and ability to overcome delivery challenges and 90-day project lead time

Indian Oil Corporation Ltd.'s Guwahati Refinery powered by 5 MW of Rental Power

ASSAM, INDIA — Located in the northeastern Indian state of Assam, the Guwahati refinery was the first public-sector refinery in the country. It was built with Romanian collaboration and was inaugurated by the first prime minister of India, Pandi Jawaharlal Nehru, on January 1, 1962. As one of the refineries of Indian Oil Corporation Ltd. (IOCL), the facility had a capacity of 0.75 MMTPA, which was subsequently increased to 1.0 MMTPA. Power for the refinery's operations was provided by steam turbines that had become old and unreliable. In the 24- to 30-month period required to acquire a new turbine power plant, the refinery contracted with Cummins Power Generation Inc. for 5 MW of Rental Power.

IOCL a major company in India

Indian Oil Corporation Ltd. is involved in both the refining and distribution of petroleum products and is the only Indian company included in the Fortune 500 list. As of April 1, 2002, IOCL was reported to own and operate 10 of India's 18 refineries with a combined share of India's oil refining capacity (38.15 million metric tons per annum) of over 41 percent.



The Guwahati Refinery's old steam turbine system required upgrade to a new turbine system that would require 24 to 30 months to acquire, creating the need for a temporary prime power system.

Expanded capabilities for the refinery

The Guwahati Refinery processes only indigenous crude oil from the Assam oil fields. With its main secondary unit, a cooking unit, the refinery produces middle distillates and heavy ends, supplying these products to northeastern India and Siliguri in West Bengal. The addition of a hydro-treatment facility, which will improve the quality of high-speed diesel oil produced at Guwahati, is under implementation.

Rental Power meets the need for uninterrupted power

IOCL determined that the Guwahati refinery required 3 MW of 6.3 kV power for essential utilities. That power needed to be continuous and reliable, 24 hours a day, 365 days a year, without interruptions for regular maintenance or any other event. To meet this need, IOCL floated an open tender. The project was awarded to Cummins Power Generation due, in part, to the excellent support of the company's local service office.

IOCL desired 3 MW of 6.3 kV power on a 24/7, 365 days basis without any interruption, even for regular maintenance or breakdown.

In order to ensure the availability of this power, Cummins Power Generation proposed a power system consisting of five 1 MW auto-synchronized Rental Power units. The HT generator sets were powered by Cummins KTA 50 G3 engines. The five units were proposed in order to reserve one set as a standby unit



IOCL's Guwahati Refinery required delivery and set up of the temporary power system within 90 days of placing the order, a challenge that was met by Cummins Power Generation.

for use during routine maintenance or any equipment breakdowns. The temporary power system included a synchronizing panel and step-up transformer (415/6.3 kV) that fed 5 MW of continuous power to IOCL and the Assam State Electricity Board (ASEB) grid.

Project challenges included time and location

To meet the refinery's power needs, IOCL required that the project be completed within 90 days of the date of the order. Geography was also an obstacle to delivering the Rental Power sets, because Guwahati is located in a remote and distant corner of India. The terrain of Assam state, known as a land of hills and valleys and of the mighty River Brahmaputra, can be difficult to traverse. Politics also created an obstacle due to insurgency activities that posed security risks to both men and machines.

Successful project keeps refinery running

The Guwahati Refinery Rental Power project was completed by Cummins Power Generation within the agreed-upon 90-day schedule. In addition, the HT power issue was taken care of by providing the step-up transformer that created the 6.3 kV power the refinery needed. The refinery's demand for uninterrupted power was met by the innovative solution of providing 1 MW of the five Rental Power units as standby.

For more information about Rental Power or other energy solutions, contact your local Cummins Power Generation distributor or visit www.cumminspower.com/rental.

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