

NX

## Crompton Greaves

When design automation becomes a competitive necessity

### Industry

Power

### Business challenges

Compete with local and multinational companies for a share of India's growing power market

Ensure customer satisfaction through on-time product delivery

### Keys to success

An automated, knowledge-based design process

Communication with customers and vendors based on 3D models

### Results

Overall mechanical design cycle time reduction of 33 percent

Substantial cost savings due to reduction in design lead time

Lower expenditures for rework caused by design mistakes

**A knowledge-based solution ensures quality and on-time delivery – essential elements for success in India's power industry**

### Fast, error-free designs win business

For more than 68 years, Crompton Greaves Ltd. has been synonymous with electricity in India. A pioneering leader since 1937 in the management and application of electrical energy, Crompton Greaves, today, is India's largest private sector enterprise, extensively engaged in designing, manufacturing and marketing high technology electrical products and services related to power generation, transmission, distribution as well as executing turnkey projects.

The company is customer centric in its focus and it is the single largest source for a wide variety of electrical equipment and products. Furthermore, the company is emerging as a first choice global supplier for high quality electrical equipment.

In the late 1990s, India's power transformer industry evolved into a fiercely competitive environment when several giant Indian and multinational companies competed to grab a lion's share of the rapidly growing power market. Because power transformers are customized to suit each customer's requirements, and manufacturing processes are similar among all competitors, the ability to quickly respond with customized design solutions is critical to winning business. In the face of competition this keen, technical departments equipped with traditional design and



analytical tools became a liability, causing companies to miss their delivery deadlines. Older design tools also involved a great deal of manual intervention, risking errors that resulted in dissatisfied customers and expensive rework.

### NX automates power transformer design

In this business environment, Crompton Greaves found it imperative to implement a customized, state-of-the-art solution for design automation and optimization. Management saw this as key to achieving higher quality levels and faster cycle times. After evaluating several high-end CAD options, the company chose the NX™ software design solution on the basis of its open architecture and its support for knowledge-based design – key elements,

## Solutions/Services

NX  
[www.siemens.com/nx](http://www.siemens.com/nx)

## Customer's primary business

Crompton Greaves is engaged in designing, manufacturing and marketing high technology electrical products and services related to power generation, transmission and distribution as well as executing turnkey power, rail and engineering projects.

[www.cglonline.com](http://www.cglonline.com)

## Customer location

Mumbai  
India



they believed, for creating a customized design system.

The Technology department introduced NX in an area that designs tanks and external fabricated items. This area had previously been a bottleneck in the transformer design process, using 2D CAD to create manufacturing drawings and a process that was 100 percent manual. After familiarizing himself with NX and attending a brief training session, Mr. B. Murali Mohan, deputy general manager of the CG-Pauwels Transformer Technology Center and project manager for design automation, created a customized design solution built on NX, called ELECTRA.

Some of ELECTRA's capabilities include modules that interactively: place intelligent library components into an assembly along with its associated intelligent user-defined features (UDFs); move the assembled component to the desired position and location; allow designers to vary the geometry of any component or assembly; and delete selected components and clean the assembly of unused expressions, UDFs and any other associated attributes. There are also templates for creating frequently used tank shapes using NX top-down design capabilities and a library containing a host of expression-driven and standard components used in power transformers. This highly customized approach allows a focus on product design rather than software operations. It also promotes uniformity and standardization in design

practices, as well as fosters faster learning and high designer morale.

## Customers respond positively

Crompton Greaves has found NX to be a very powerful tool for power transformer design. Along with the ability to automate much of the design process, NX also provides strong visualization functionality and the ability to share data with suppliers using lightweight JT™ data formats.

The company has experienced a 33 percent time reduction in the mechanical design cycle since implementing NX. This includes a 70 percent reduction in the time needed to design standard components and a 30 percent reduction for nonstandard component design. Errors attributed to poor visualization, mechanical interferences and mismatch of assemblies have gone down to practically nil, reducing the cost of rework due to design mistakes.

Customers have been highly impressed with Crompton Greaves' new design process, particularly the improved accuracy in design information and the better understanding they gain from seeing presentations in 3D. Vendors are excited about the improved presentations, the quality and precision in the manufacturing drawings and the increase in their productivity attributed to these factors. Crompton Greaves has found that a high degree of design automation, based on the advanced technology of NX, is keeping the company on par with the industry's best.

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