the

Power Generation Canadian Division

... providing power generation equipment and services to industry and the communities we live in.

Since the late 1800s, Westinghouse has been one of the world's leading suppliers of equipment used in the generation, distribution and application of electricity.

In 1903, George Westinghouse established his first manufacturing location outside of the United States in Hamilton, Ontario. Today, this facility, known as the Power Generation Canadian Division, has the distinction of being the oldest, continually-operating factory in the Westinghouse family. Although it is more than 80 years old, a recent $20 million modernization program has transformed the plant into one of the most comprehensive, up-to-date, heavy industrial turbine manufacturing facilities in the world.

The Hamilton factory has a proud history of turbine development and production — producing over 2,500 steam turbines and 150 gas turbines since commencing operations. As a result of this extensive experience and our proven leadership in the field of turbine engineering, our workforce is one of the most highly-skilled and respected in the industry.

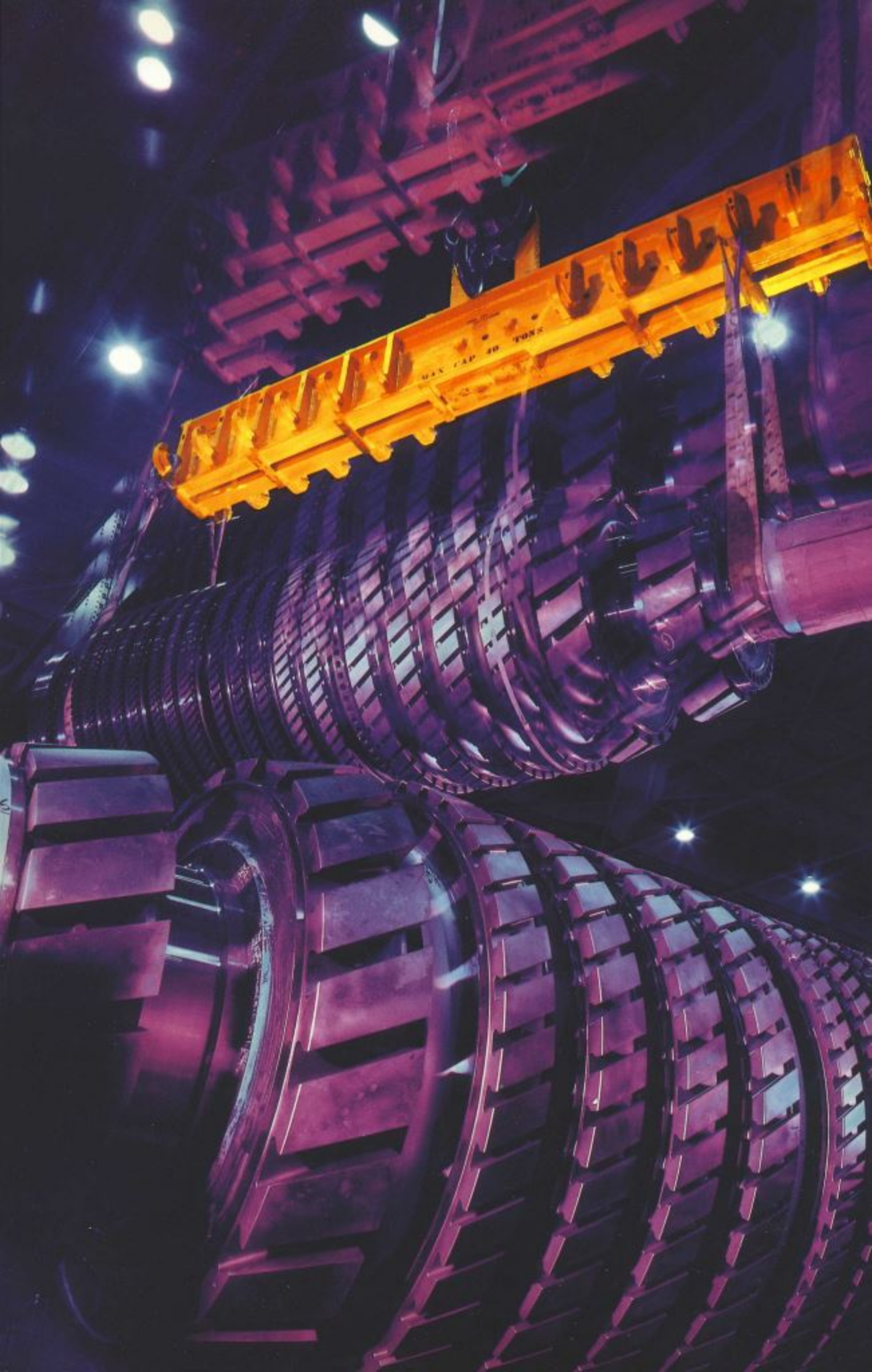
Our employees take pride in designing and manufacturing precision turbines which meet the most demanding quality standards. For this reason, Westinghouse turbines are renowned for their high efficiency, exceptional reliability and long service life. In total, our field service operation maintains a worldwide fleet of over 8,000 gas and steam turbines, some of which have been operating continuously for more than 70 years. Pulp and paper mills, petrochemical companies, oil refineries, natural gas and water pipelines, waste-to-energy firms, mines, hospitals, electric utilities and independent power producers all depend on Westinghouse gas and steam turbines.

As we move into the 21st century, the goal of the Power Generation Canadian Division is to become recognized in the power generation industry worldwide as the *supplier of preference* for gas and steam turbines, components and services.

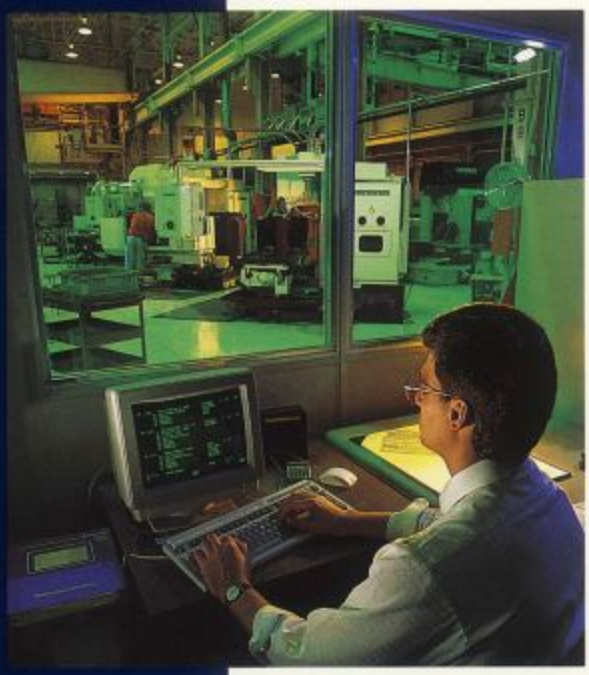
We believe we will accomplish this goal by focusing on achieving superior customer satisfaction through a dedication to Total Quality.

Over the years, the Westinghouse name and logo have symbolized Quality. You can be sure... if it's Westinghouse.

Established by George Westinghouse in 1903, the Power Generation Canadian Division is the only manufacturer of heavy industrial gas and steam turbines in Canada.



a world class manufacturing facility



The Power Generation Canadian Division is a highly-efficient, computer-aided manufacturing facility capable of producing turbines which meet the most exacting standards in the industry.

Spread out over an eight hectare (20 acre) site, the factory contains more than 46,000 square metres (half a million square feet) of manufacturing space, fully equipped with machinery specially designed for turbine production and service.

In 1990, our division became part of the Power Generation Business Unit's *Great North American Factory*. This integrated manufacturing operation consists of a headquarters operation in Orlando, Florida and five manufacturing sites:

- Fort Payne, Alabama
- Pensacola, Florida
- Charlotte, North Carolina
- Winston-Salem, North Carolina
- Hamilton, Ontario

By pooling the diverse skills, technologies and product experience of each plant, we are able to offer our customers an expanded range of products and services, along with shortened lead times.

top: *Computerized production control systems manage the flow of work through the plant and ensure orders are shipped on time.*

bottom: *Located at the western tip of Lake Ontario, 48 kilometres (30 miles) southwest of Toronto, Ontario and 104 kilometres (65 miles) north of Buffalo, New York, the plant is ideally situated in the heart of Ontario's most populated region and in close proximity to many major U.S. industrial centres.*

high-efficiency gas turbines

Combining innovative design techniques with sophisticated computer-controlled machine tools, the Power Generation Canadian Division produces a line of high-efficiency gas turbines suited for a wide range of applications.

Westinghouse single shaft and two shaft industrial gas turbines, operating in simple cycle or teamed with a steam turbine in a combined cycle, have a proven record of operational efficiency and reliability.

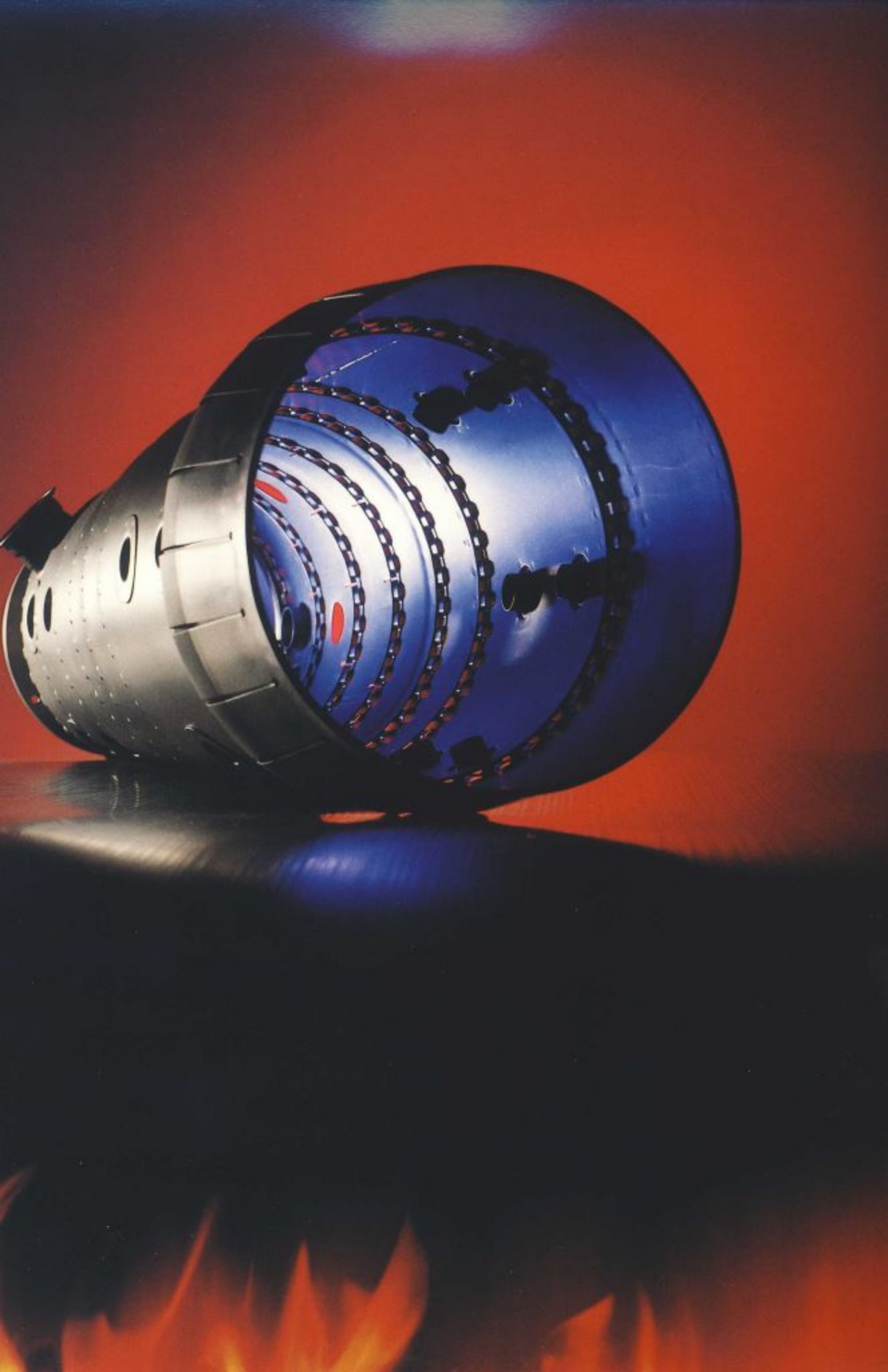
All engines are warrantied against defects in design, materials and construction. In addition, all aspects of the unit's performance such as power output, heat rate and exhaust emissions are guaranteed.

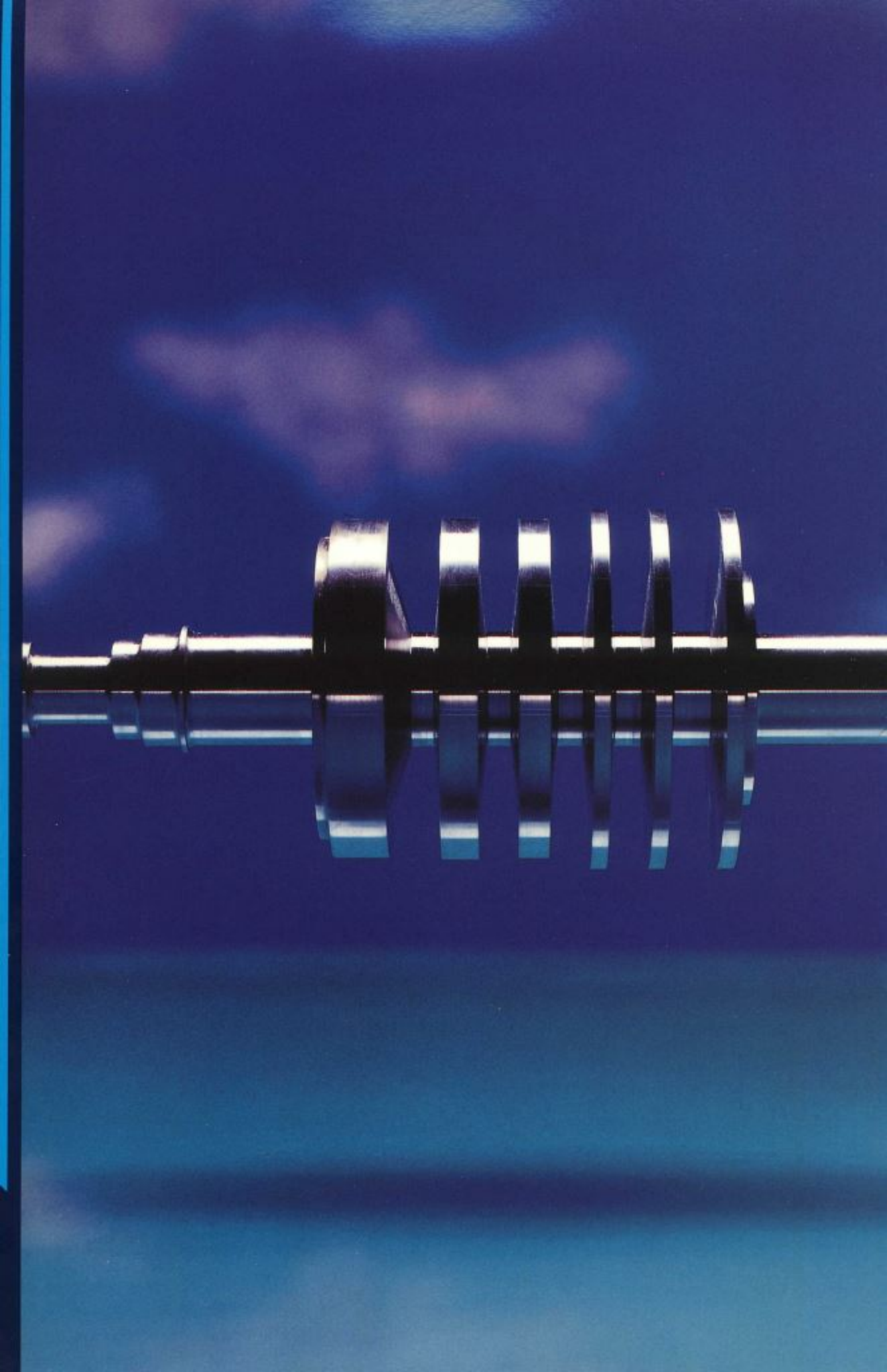
Fuel systems, manufactured to operate using customer-specified fuels, are designed to meet rigorous worldwide emissions standards.

Air intake filtration systems are also tailor-made to accommodate the variances in climatic and environmental conditions particular to each installation.

top: *The Power Generation Canadian Division develops and manufactures complete CW251 gas turbines for customers throughout the world.*

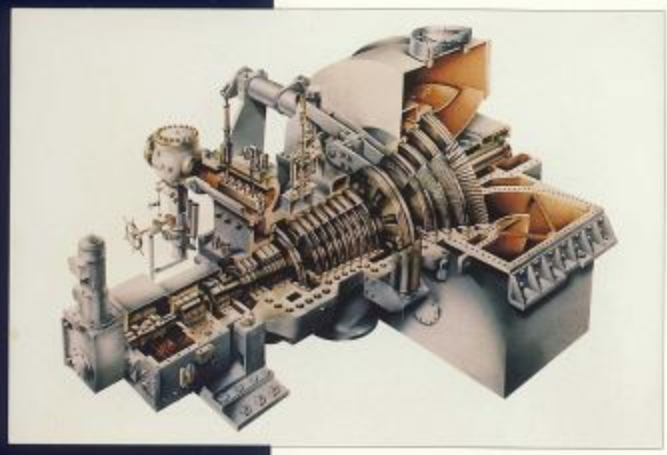
bottom: *As a member of the Westinghouse* ***Great North American Factory****, the Power Generation Canadian Division manufactures components for the model W501D5. This highly-efficient engine, marketed with a generator and all auxiliary support systems as the "EconoPac", is nominally rated at 100 megawatts.*

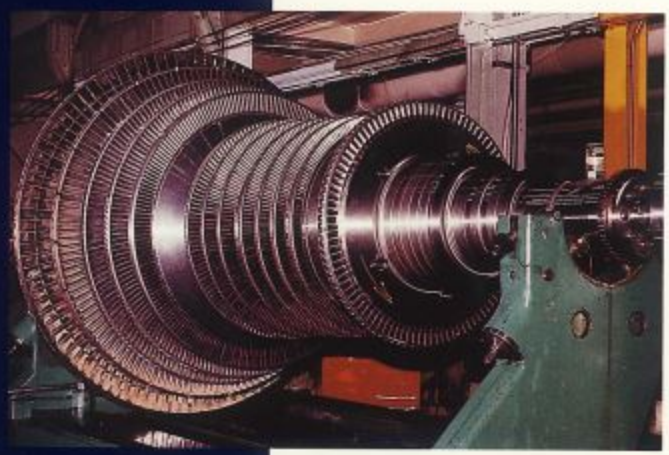




top: *Operating in conjunction with a generator, steam turbines manufactured by the Power Generation Canadian Division produce up to 70 megawatts.*

bottom: *Steam turbines, some dating back to the early 1900s, are routinely repaired, modernized and upgraded in our factory to take advantage of the latest turbine technology.*





In 1896, Westinghouse built th first steam turbine in North America. Since that time, we ha established an impressive record of achievement in steam turbine desig and production, and have earned a solid reputation as an industry leade

Today, the Power Generation Canadian Division manufactures condensing, back-pressure, extracti or induction steam turbines which produce up to 70 megawatts. Multi-stage steam turbines and boiler feed pump turbines, custom designed to accommodate each customer's requirements, provide efficient drive for both mechanical applications and power generation.

To ensure the continued, efficie operation of both Westinghouse and other manufacturers' steam turbines Westinghouse offers customers a cos effective package of support services These services include regular maintenance and parts replacement as well as overhaul, rerate, and modernization programs.

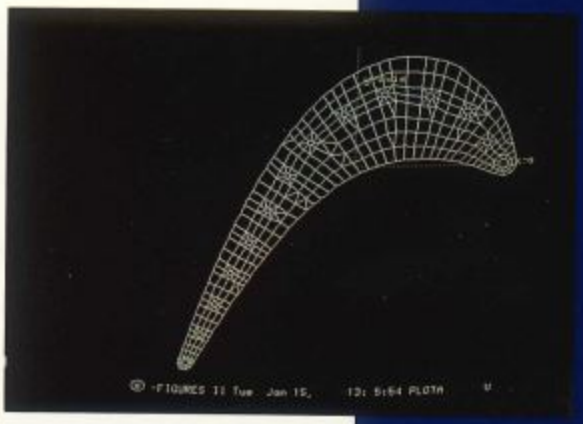
custom-designed steam turbines

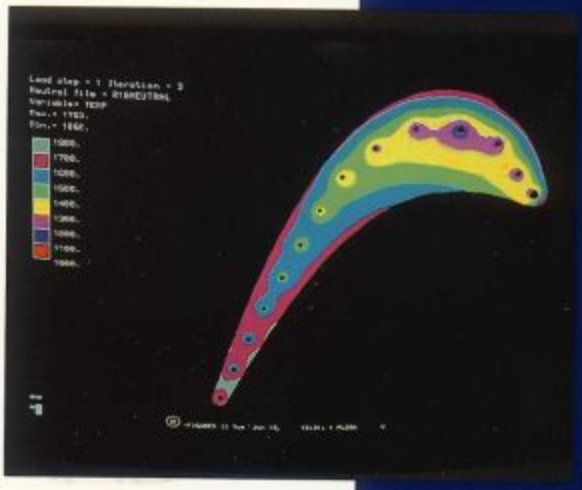
innovators in turbine design

Housed in the same facility as our factory, the Engineering Department designs turbines with manufacturing in mind. This integration of the design and manufacturing process creates an ideal environment for continuous product innovation.

The Engineering Department is staffed with professional engineers experienced in turbine design, development and service. Their expertise covers a wide range of disciplines including mechanical and aerodynamic design, heat transfer, metallurgy, controls, emissions and project management.

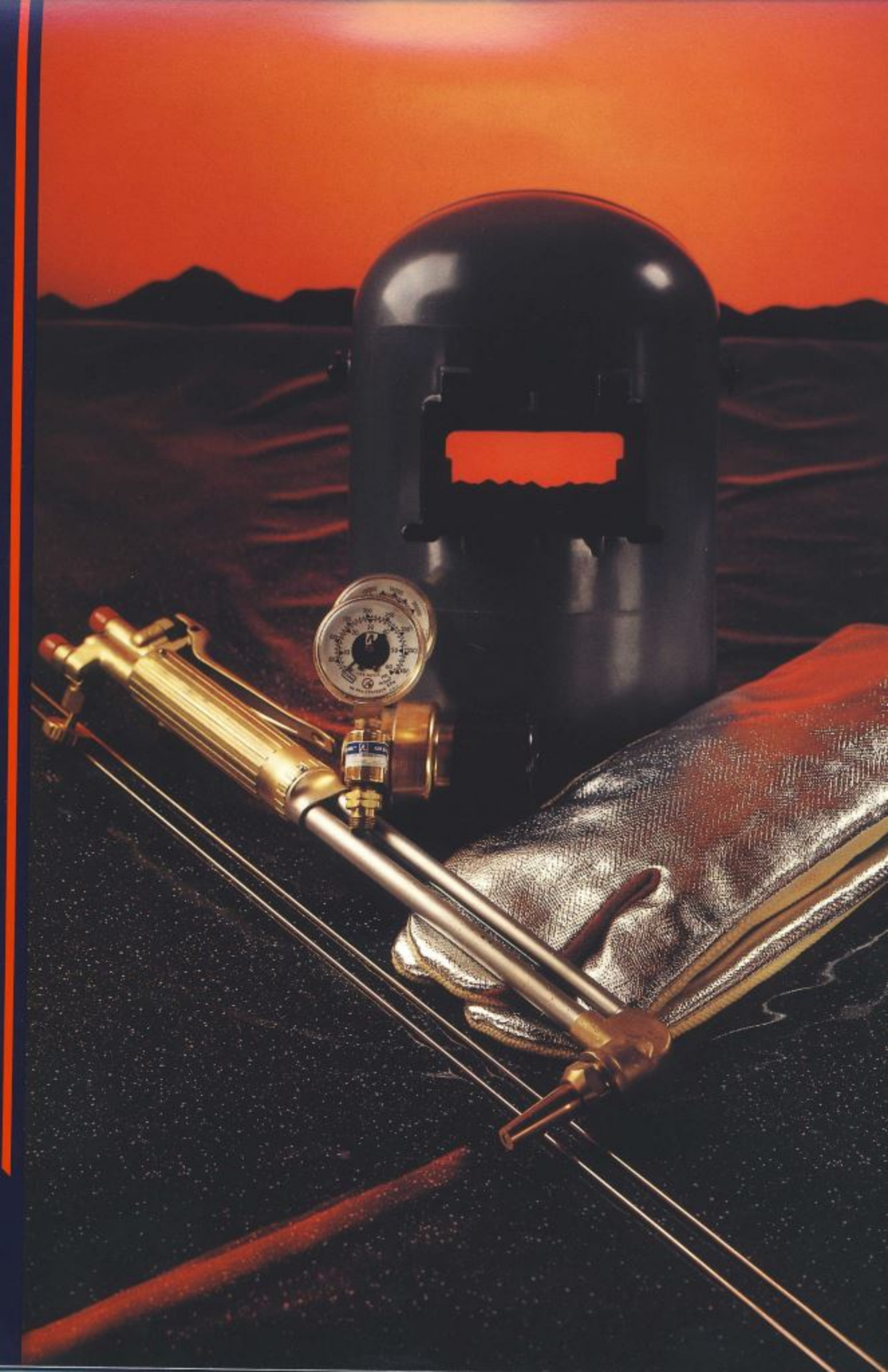
To assist in the design of complex turbine components, assemblies and systems, the Engineering Department makes extensive use of computers. Advanced interactive graphics capabilities coupled with powerful supercomputers allow our engineers to mathematically model all turbine design parameters.



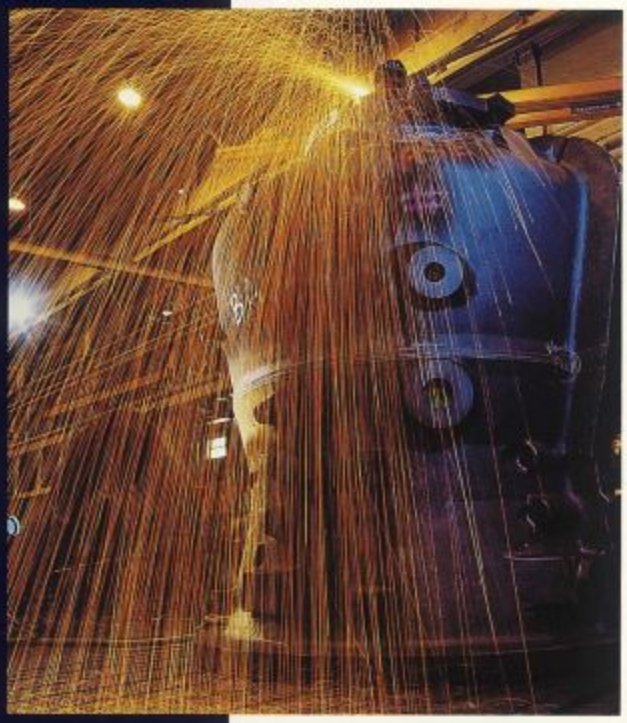


top: *Finite element models, created on computer aided design (CAD) systems, depict stress, vibration and temperature patterns on turbine blades.*

bottom: *Interactive graphics capabilities enable engineers to analyze the temperature pattern on a cross section of a turbine blade.*



extensive fabrication facilities



Working from castings, bar stock, pipe and plate, our Fabrication Shop produces turbine components ranging from huge turbine compressor cylinders to complex small items such as inner diffusers and seal housings.

These components, made from carbon steel or the latest high-temperature alloys, are joined together by welders experienced in the following welding processes:

- Tungsten inert gas welding
- Shielded metal arc welding
- Gas metal arc welding
- Flux cored arc welding
- Submerged arc welding with automated twin wire feed

Heat treating and stress relief capabilities include nine furnaces which can heat components to 690°C (1,275°F).

The structural soundness of fabricated components is verified using the latest non-destructive testing techniques including X-ray, ultrasonic, dye penetrant and magnetic particle inspection. These tests ensure components produced by the Power Generation Canadian Division will perform in a satisfactory manner under the extreme conditions typical of a turbine in operation.

top: *X-ray quality welds are quickly performed on a CW251 gas turbine compressor combuster cylinder using an improved submerged arc welding process with automated twin wire feed.*

bottom: *Non-destructive testing methods including ultrasonic, magnetic particle, dye penetrant and X-ray are used to verify the integrity of the components manufactured in the Fabrication Department.*

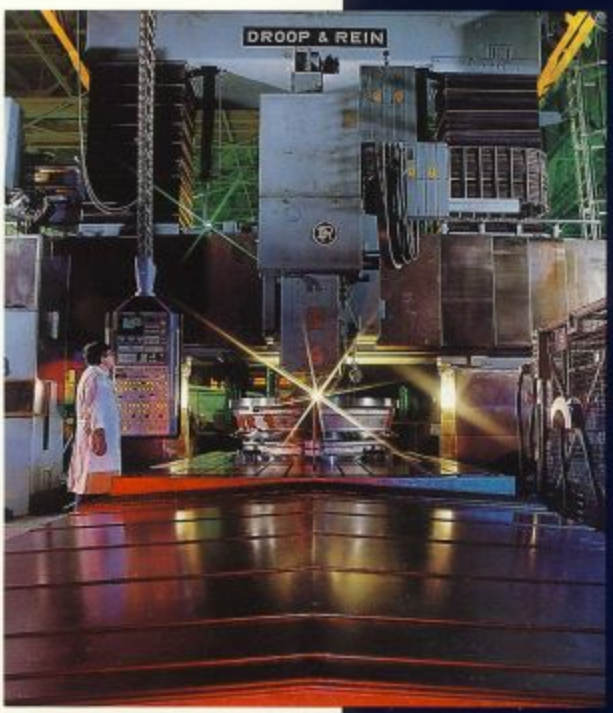
computer-controlled metal removal

Our medium and heavy machining areas contain sophisticated equipment capable of machining components up to 4.9 metres (16 feet) high and 4.3 metres (14 feet) in diameter.

Among the modern machine tools found in our factory are computer numerically controlled (CNC) lathes, boring mills, and machining centres equipped with automatic tool changing capabilities.

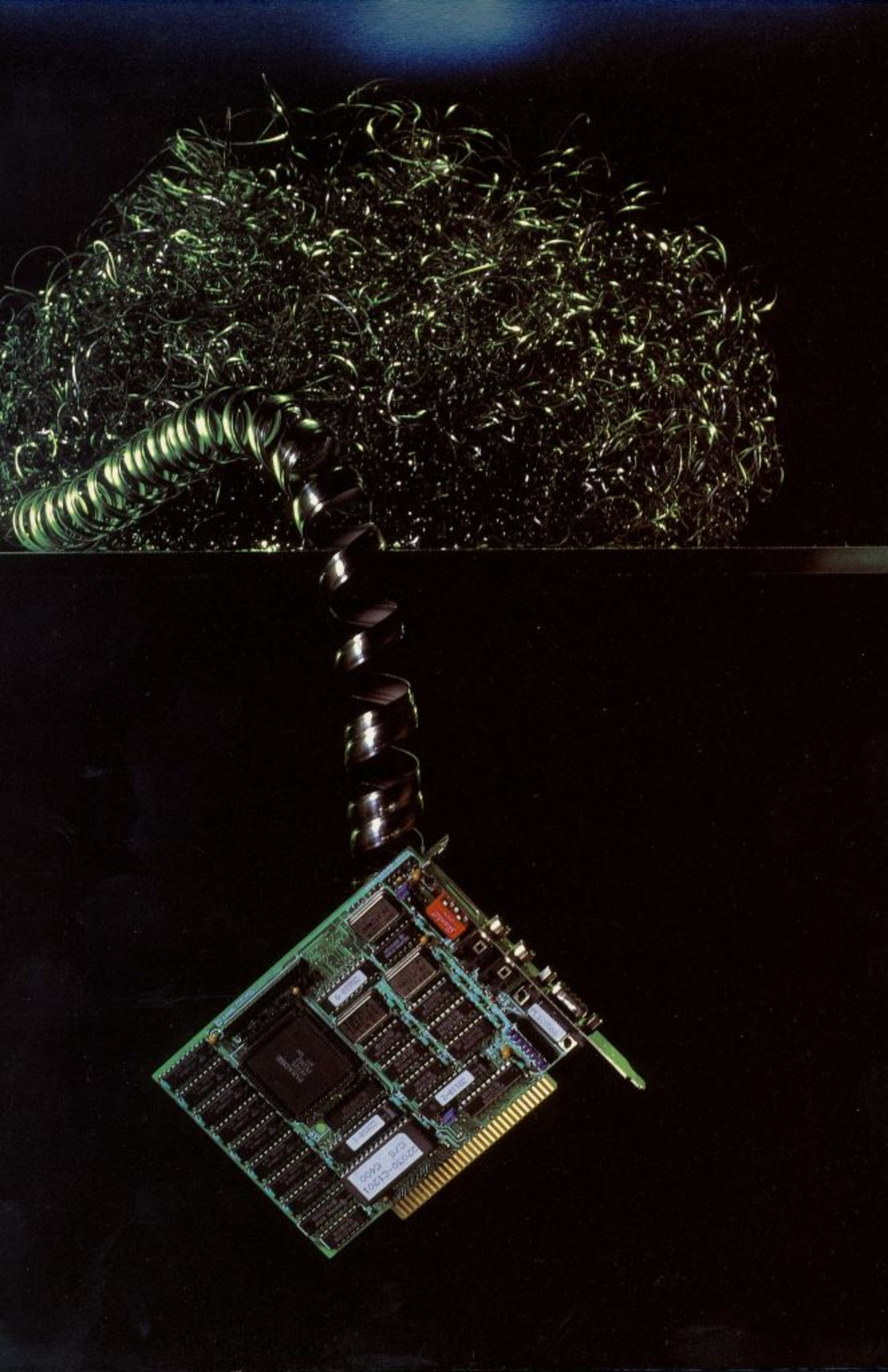
Our highly skilled and experienced machinists turn, drill, grind, bore, mill, shape, broach and curvic grind components to tolerances measured in tenths of thousandths of an inch. These components are made of a variety of materials ranging from common carbon steel to the latest superalloys.

Our world-class blade manufacturing facility produces rotating and stationary blades for gas and steam turbines. Using state-of-the-art CNC machining centres, stainless steel blades are accurately machined into the intricate, aero-dynamically-designed shapes required for efficient turbine operation.



top: *Metal-to-metal surfaces are machined to a precision finish by the computer numerically controlled planomill.*

bottom: *The teeth on turbine discs are machined to within tenths of thousandths of an inch by the largest curvic grinding machine in the world.*

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state-of-the-art quality control

To guarantee quality workmanshi and customer satisfaction, the Pow Generation Canadian Division has implemented an advanced Quality Assurance Program. The Quality Management Institute regularly audits stringent standards required by this program and has rated them second onl to those used in the nuclear industry.

The Quality Assurance Program governs all stages of the manufacturing cycle. Source and receiving inspections ensure that suppliers of components or raw materials adhere to our demanding quality standards in their own operation

Throughout the manufacturing of sub-assemblies, conformance to specifi tolerances is established using conventional or computer-controlled devices, capable of measuring to one te thousandth of an inch. This degree of accuracy is necessary to ensure the flawless assembly of the more than 15,0 complex elements which make up a Westinghouse gas or steam turbine.

In our specialized test facilities, computerized sensors monitor and repo the data gathered from completely assembled gas turbines operating under full load and steam turbines running at ten per cent beyond their normal operating speed. Ongoing analysis of thi readily accessible test data has allowed engineers to pioneer significant advance in turbine design and manufacturing technologies.

top: *Computerized strain gauges accurately measure the tension applied on each turbine spindle bolt.*

bottom: *The Power Generation Canadian Division is equipped with specially-designed facilities for testing completely assembled gas and steam turbines.*

superior parts and services

The Power Generation Canadian Division maintains a worldwide fleet of over 8,000 gas and steam turbines. As part of our continuing commitment to our customers, we maintain a well-stocked inventory of renewal parts and offer a comprehensive range of technical services.

• FIELD SERVICES
Starting with the technical direction provided during the installation and start-up of new equipment, our Field Service personnel continually work to ensure that all our customers' service requirements are met. Whether dealing with a planned inspection, a maintenance outage, or an emergency requiring quick attention to return a unit to service, our team of engineers and technicians have the training and expertise to handle the job.

• RENEWAL PARTS
Renewal parts are specially designed for installation into existing engines. To meet our customers' emergency needs, critical components can be shipped promptly from our well-stocked parts warehouse.

• OVERHAUL AND MODERNIZATION PROGRAMS
As part of a dedicated effort to extend the life and improve the performance of existing power generation and mechanical drive equipment, Westinghouse regularly provides customers with information about design improvements and upgrades. Modernization programs allow our customers to take advantage of the latest developments in turbine technology.

• RERATE PROGRAMS
Rerate programs can be custom designed to address changes in output power, rotational speed, steam conditions, operational efficiency, materials of construction and design philosophy.

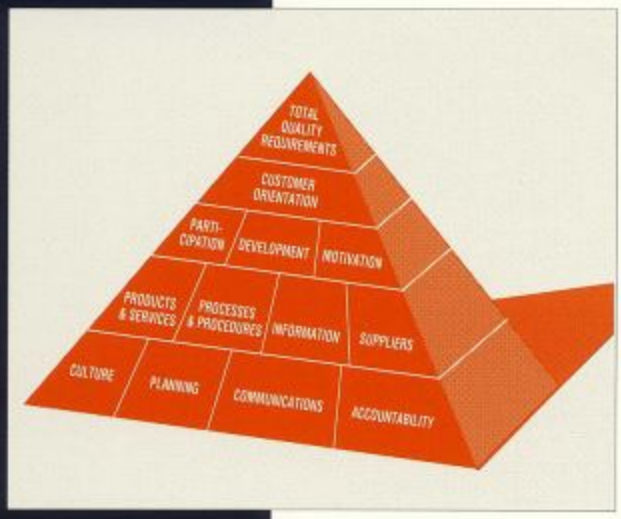
• CUSTOMER TRAINING
Technical training courses, covering the theory, operation and maintenance of turbines, are offered either at the customer's location or at the Hamilton facility.

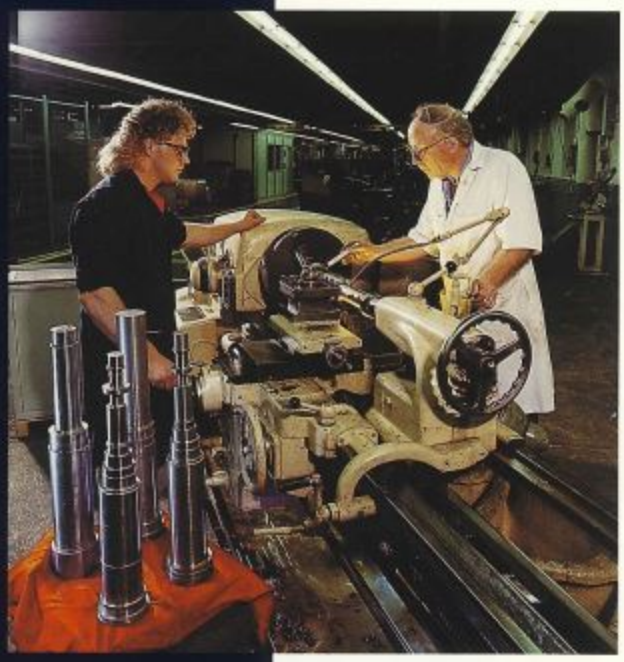
top: *Experienced, professional field staff can be dispatched quickly to a customer's site to deal with any emergency.*

bottom: *Customers may register their operators for courses in turbine maintenance and operation.*

top: *The Power Generation Canadian Division strives to achieve Total Quality by focusing on the twelve Conditions of Excellence.*

bottom: *Experienced instructors regularly conduct hands-on training and upgrading sessions in our on-site machine training centre.*





People are, undeniably, the Power Generation Canadian Division's most valuable resource. We are very proud of the fact that our skilled workforce is made up of some of the mos experienced people in the turbine industry.

To maintain our level of expertise, w provide employees with a wide range of training opportunities. Our training centr consists of classrooms, complete with personal computers, to support state-of-the-art skills development. Experienced instructors also conduct hands-on training or upgrading sessions for machinists in ou on-site machine training centre.

The combination of the expertise of our people and our plant-wide dedication to achieving Total Quality is, ultimately, our customers' best assurance of our ability to provide superior products and services.

a workforce committed to total quality

PGCD

Power Generation Canadian Division

The Power Generation Canadian Division exists to provide value to our customers through leadership in the manufacture and service of world class power generation equipment.

We will accomplish this through a commitment to Total Quality, empowerment of our people and continuous improvement in all that we do.

We will conduct ourselves with openness and integrity to our stakeholders — our customers, shareholders, employees, suppliers and communities.

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