TECHNOLOGY TRANSFER

Even the most modern and efficient plants and equipment need skilled operations and maintenance in order to achieve the desired results. Over the years Tenova HYL has developed specific programs and practices in on-site facilities at Ternium steel mills, and has successfully transferred this technology to a wide range of companies all over the world.

A standing Tenova principle is commitment to client support, an added value on all products and services. By assuring excellent technology transfer not only for equipment but also for operations and maintenance, Tenova HYL has won the trust and loyalty of its customers.

STEELMAKING TECHNOLOGIES AND SERVICES

Tenova HYL steelmaking technologies and services can be divided into two main business areas:

- Operation and Maintenance Training & Technical Assistance
- Maintenance System Implementation

These areas in turn can be applied to any of the six steel areas: ore mining and pelletizing operations; to DR plants; product handling; roll mills and new technologies; casting, heating and rolling; and finished products. In addition, they include maintenance, sales and marketing functions. In short, Tenova HYL expertise covers the full range of requirements for any operation, for both blue- and white-collar personnel.

TECHNOLOGY TRANSFER

Tenova HYL, the pioneer of modern direct reduction, develops and supplies leading-edge DR technologies leveraging long-standing research & development activities in both ironmaking and steelmaking. Originally part of a steel company, Tenova HYL also uses its vast knowledge and skills to provide technologies, training and technical services in every area of the steelmaking industry for companies worldwide.

Tenova HYL offers expert training and technical assistance for:

- Mining and pelletizing operations
- Direct reduction plants
- Pelletization, sintering and casting
- Long and flat steel rolling and heat treatment
- Finished products

Tenova HYL services are used by steelmaking plants all around the world to support Tenova equipment installations as well as after-manufacturing requirements.
The aim is to get the trainees involved in and knowledgeable about the steelmaking process. This training is organized according to the needs of the customer. It can be divided into modules for: Melt Shop, Caster, Hot Strip Mill, Finishing, Cold Mill, Reheating, Quality, Maintenance/Repair, and Distribution. Each course in these areas is organized for every customer. The courses, together with test sessions, allow Tenova HYL to assess the most suitable position for the trainee on the basis of his or her expertise required.

Tenova HYL training and technical assistance comprises four main areas of services, to optimize response to the level of expertise required. Each can be tailored to meet the necessary requirements.

FUNDAMENTAL TRAINING

This training is organized according to the needs of the customer. It can be divided into modules for Melt Shop, Caster, Hot Strip Mill, Finishing, Cold Mill, Reheating, Quality, Maintenance/Repair, and Distribution. Each course in these areas is organized for every customer. The courses, together with test sessions, allow Tenova HYL to assess the most suitable position for the trainee on the basis of his or her expertise required.

Tenova HYL training and technical assistance comprises four main areas of services, to optimize response to the level of expertise required. Each can be tailored to meet the necessary requirements.

PRACTICAL TRAINING

Practical training is provided in plants in Mexico (Xalisco), and involves three different stages. This is a very specific type of training, provided by instructors who are highly specialized in their particular field. Practical training is conducted in the following stages:

Theoretical Training: The trainees study the theory relating to steelmaking processes, equipment and practices together with safety issues. Theory is practiced in a classroom setting and reinforced directly at the plant, as on site training. Shadow training: The shadow training consists of observing the plant operations, where business follows the normal day-to-day operations of Tenova HYL personnel.

Cold Simulation: The trainees have their first opportunity to include practical plant operation under control conditions set to simulate a normal operational scenario.

During this period, Tenova specialists test all equipment for operation. After the plant has started up, Tenova HYL provides a period of technical assistance on operations. This includes personnel by Tenova HYL, during the technical support period and for the first months after the start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

For upgrades and plant modifications, it helps customers attain desired learning curve after start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

STEEL PLANT OPERATIONS Service

Tenova HYL offers a complete range of services across the entire steelmaking process, which includes all activities performed by Tenova HYL during the technical support period and for the first months after the start-up. This includes personnel by Tenova HYL, during the technical support period and for the first months after the start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

For upgrades and plant modifications, it helps customers attain desired learning curve after start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

For each area, Tenova HYL provides teams of technical assistance specialists, working shoulder to shoulder with customer personnel, to provide support and guidance.

OPERATION & TECHNICAL ASSISTANCE Services provided by Tenova HYL specialists to offer support for Maintenance System implementation.

Tenova HYL offers a complete range of services. The service covers definition of a maintenance system, implementation of an effective Maintenance System, a period of technical assistance on operations, and technical support period and for the first months after the start-up. This includes personnel by Tenova HYL, during the technical support period and for the first months after the start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

For upgrades and plant modifications, it helps customers attain desired learning curve after start-up. For new plants, the service ensures rapid achievement of the desired learning curve after start-up.

For each area, Tenova HYL provides teams of technical assistance specialists, working shoulder to shoulder with customer personnel, to provide support and guidance.

The technical assistance teams include operations, maintenance, quality assurance, procurement and material management, systems specialists, working shoulder to shoulder with customer personnel.