Mike Strelbisky (center, left), Tallman Bronze and EAF Study Tour guide, presents a plaque of appreciation to Eduardo Altschuler (center, right), head of Tenaris University Industrial School.





# **2013 EAF** STUDY TOUR — BUENOS AIRES, ARGENTINA

AIST sponsored its first international Study Tour for its Electric Steelmaking Technology Committee (ESTC) on 3–9 November 2013 in Argentina. The Study Tour consisted of three plant tours plus a tour of Tenaris University, coinciding with the 19th IAS Steel Conference 2013. The events on Monday, 4 November began with a tour of Tenaris University followed by presentations from Stephan Ferenczy and Bob LaRoy, Steel Dynamics Inc.; Zane Voss, Nucor Steel–Decatur LLC; Laurent Chesseret, Vallourec & Sumitomo Tubos do Brazil; and Tenaris University personnel. Discussion topics included EAF chemical packages, EAF process and yield, and DRI quality and handling. Following the 2013 IAS Steel Conference were tours of Ternium Siderar and the ArcelorMittal Acindar Villa Constitucion Plant. "The EAF Study Tour of Argentina was a very interesting and informative trip for me. In each of the three mills we visited, there were many opportunities for technical discussions with our counterparts from Argentina about different areas of the process. The chance to discuss many of the same challenges that we face on a day-to-day basis with other producers, who may have a slightly different viewpoint or approach to a problem, was extremely valuable. In particular, the long history of DRI use at two of the mills prompted a lot of free and open discussion among the participants."

Zane Voss melt/cast metallurgist, Nucor Steel–Decatur LLC

#### TENARIS UNIVERSITY

Tenaris University's mission is to build and sustain Tenaris' competitive advantage by capturing, organizing, enriching and transferring knowledge assets across the company.

Key personnel are recruited from within the company and serve as instructors for Tenaris University. Tenaris University has six different locations that develop job-specific programs that teach steelmaking processes to salaried and hourly employees. This promotes training to more than 27,000 Tenaris employees regardless of their geographical location. Tenaris University also offers training to customers and suppliers to strengthen the knowledge for everyone involved in their steelmaking process. Carlos Cicutti, department manager, R&D Steelmaking - Argentina, hosted the tour of Tenaris University.

## TENARIS SIDERCA

Tenaris Siderca produces a complete range of seamless and welded tubular products. They offer three types of welded tubing: electric resistance welding, longitudinal submerged arc welding and spiral submerged arc welding. Cold drawing for pipes is available for diameter and wall thickness required for use in boilers, superheaters, condensers, heat exchangers and automobile production. Siderca possesses state-ofthe-art technology and is considered one of the most efficient and integrated tube mills in the world. It has an annual production capacity of 900,000 tons of seamless tubes and delivers a wide range of products for the energy market, the automotive sector and agro-industrial applications. Siderca's welded tubes capacity is 430,000 tons annually.

# 19TH IAS STEEL CONFERENCE 2013 – IRONMAKING, STEELMAKING, ROLLING AND STEEL PRODUCTS

The activities from Tuesday, 5 November to Thursday, 7 November included the 19th IAS Steel Conference 2013 in Rosario, Santa Fe, Argentina. Session topics included refractory materials, failure analysis and sustainable development. Presentations were given on the steelmaking, casting and rolling "The EAF Study Group tour of Argentina was an eye-opening experience for me. I got to see and discuss many tasks that we experience here in the U.S. on a different level. Technical discussions at the three mills we visited were very professional, and the hospitality was of the highest quality. This was a chance of a lifetime to experience what other companies are doing outside of the U.S. and to understand what impact they have on the world supply of steel. All three mills are investing in their plants' infrastructure every year with updated equipment and technology."

Bob LaRoy day melting supervisor, Steel Dynamics Inc. – Flat Roll Div.



1. EAF Study Tour group at Tenaris University. Dr. Carlos Cicutti (center, right), department manager, R&D Steelmaking — Argentina, welcomed the group to Tenaris University and Tenaris Siderca.

2. Mike Strelbisky (center, left), EAF Study Tour guide, presents a plaque of appreciation to Fernando Diaz (center, right), Tenaris Siderca meltshop manager. 3. The AIST EAF Study Tour met with IAS officials during the 19th IAS Steel Conference in Rosario, Santa Fe, Argentina (left to right): Marcelo Cinalli, IAS;

John Vasquez, Tenova; Alfredo Rabasedas, steelmaking senior manager, Ternium Siderar; Oscar Simaro, technical director, IAS; Pat Philbin, AIST; Michael Strelbisky, Tallman Bronze and EAF Study Tour guide; and Ernesto Rheinboldt, Tallman Bronze.

4. Mike Strelbisky (center, right) presents a plaque of appreciation to Alfredo Rabasedas (center, left), steelmaking senior manager, Ternium Siderar.



"The exchange of ideas and technical solutions to common problems was a highlight of the Argentina EAF Study Tour. While markets and end products may be dramatically different, the challenges faced in each meltshop was common and consistent with what we face in North America. Additionally, the Argentine scrap market forced the use of alternate iron units almost 40 years ago, and their experience handling and processing these materials into prime steel products was important to hear firsthand. The direct discussion between participants of the study tour has forged new relationships and contacts that will be invaluable for years to come. I'm looking forward to the next study tour - it's an excellent learning and benchmarking opportunity."

Stephan Ferenczy casting manager, Steel Dynamics Inc. – Flat Rolled Div. processes. During the conference, the Study Tour group met with IAS officials to discuss future joint activities between AIST and the IAS. There were 26 exhibitors participating in this conference.

#### TERNIUM SIDERAR

The afternoon of Thursday, 7 November involved a plant tour of Ternium Siderar, along with a panel discussion regarding operating issues. Ternium Siderar produces a wide range of flat rolled steel products in the construction, home appliance, container, food, energy and automotive markets. Siderar produces hot rolled, cold rolled, hot-dip galvanized, electrogalvanized, prepainted and tinplate steel sheet products. Siderar is Argentina's largest steelmaker, with a capacity of 2.8 million tons per year. Alfredo Rabasedas, steelmaking manager at Siderar S.A.I.C., and Ariel Rapetto, steelmaking manager, conducted a plant-wide tour for the group.

## ARCELORMITTAL ACINDAR, VILLA CONSTITUCION PLANT

The schedule for Friday, 8 November included a plant tour and technical

exchange at Acindar. Marco Antonio de M. Bosco, general manager and director, welcomed the AIST EAF Study Tour group. This tour included the steelmaking facilities, hot rolling mill, heat treatment processes and the MIDREX DRI facility. The group concentrated on DRI quality and handling, chemical energy programs and operational issues. Acindar started in 1942 in Rosario and celebrated its 70th anniversary last year. It is the largest producer of non-flat steel in Argentina, with a market share of more than 60%. Last year, production levels reached 1.7 million tons. Acindar has 2,800 employees.

## 2014 EAF STUDY TOUR

The 2014 EAF Study Tour will be held in Brazil on 15–23 November 2014 (tentative). Possible plant tour sites are Vallourec & Sumitomo Tubos do Brasil, Gerdau Villares Pindamonhangaba, Votorantim Siderurgia at Resende, CSN Longos and Gerdau Cosigua. Interested producer members should contact Nicole Mattern at nmattern@aist.org to inquire about further details.