

Operating Results of Goodfellow EFSOP® at Riva, Verona, Italy

Authors:

Marcello Pozzi, Joseph Maiolo

Tenova Goodfellow Inc. 170-7070 Mississauga Road, Mississauga, ON L5N 7G2
(Canada), Email: goodfellow@ca.tenovagroup.com

Davide Masoero, Vittorio Scipolo

Tenova 20149 Milano, Via Monterosa, 93 –(Italy), Email: meltshops@techint.it

Nicola Veneri

Riva Acciaio S.p.A 37133 Verona, Via Lungadige Antonio Galtarossa 21/c, (Italy)

SUMMARY

Tenova, formerly Techint Technologies, is a leading world-wide supplier of advanced technologies, products and services for the metal and mining industries. Tenova Goodfellow Inc. (TGI), formerly Techint Goodfellow Technologies Inc., has developed the Goodfellow Expert Furnace System Optimization Process (EFSOP®), which uses continuous extraction and analysis of EAF off-gases to dynamically optimize the chemical energy usage within the furnace. The benefits of the Goodfellow EFSOP® system are increased process knowledge, lower conversion costs, and increased productivity.

In November 2005, Tenova installed and commissioned two state-of-the-art Goodfellow EFSOP® systems for Riva Acciaio S.p.A for their Verona meltshop. This dual system installation represented the first Goodfellow EFSOP® installation in the Italian market. These new systems were installed on each of the two 80 ton Tenova EAFs at RIVA, Verona plant and incorporated continuous off-gas based closed-loop process control. Process analysis of the furnace operation commenced immediately after installation and commissioning of the EFSOP® system. Ultimately process optimization included changes to the carbon/oxygen and methane practice, fume system adjustments, electrical practice adjustments and closed-loop control of oxygen, methane and injected carbon. This paper outlines the path to EAF optimization and the benefits achieved at RIVA, Verona by using the Goodfellow EFSOP® system.

KEY WORDS

EFSOP®, Off-gas analysis, combustion optimization, electric arc furnace, dynamic control.

INTRODUCTION

The Riva Group consists of several companies operating in the iron and steel production industry and related activities. It is the outright industry leader in Italy, the 4th in Europe, and 11th in the world. This position was attained over half a