



Press release

November 15, 2017

NIPPON STEEL & SUMIKIN ENGINEERING CO., LTD.

NSENGI Acquires Dry Desulfurization and Denitrification System Business from SHI New Agreement to Strengthen the Steel Plants Business in Environmental Areas

NIPPON STEEL & SUMIKIN ENGINEERING CO., LTD. (Representative Director and President: Shinichi Fujiwara; Head Office: Shinagawa-ku, Tokyo; hereinafter, "NSENGI") is pleased to announce that it has reached an agreement with Sumitomo Heavy Industries, Ltd. (Representative Director, President and CEO: Shunsuke Betsukawa; hereinafter, "SHI") on the transfer of dry desulfurization and denitrification system^{*1} business.

NSENGI is engaged in the sales of steel plants for applications such as ironmaking, steelmaking, rolling and processing to steel companies in Japan and abroad. The steel industry has traditionally been making active capital investment for environmental and energy-saving measures, and NSENGI has an extensive track record in coke dry quenching systems for coke ovens, waste gas heat recovery systems, gas purification systems and dust collection systems, among others. The acquisition of dry desulfurization and denitrification system business will fill the gap in offerings for sinter plants in NSENGI's product lineup.

SHI's research and development for its dry desulfurization and denitrification system technology based on activated coke dates back to the 1960s. Various improvements have been made over the years, including improved performance of activated coke and the addition of a denitrification function, and the technology has been applied to the flue gas emitted by coal-fired boilers, sinter plants, municipal waste incinerators, cement kilns and so on. The technology is firmly established today, with ten systems delivered in Japan and three overseas. The first desulfurization system for a sinter plant was delivered to Nippon Steel Corporation's (currently Nippon Steel & Sumitomo Metal Corporation) Nagoya Works in 1987.

As environmental regulations become increasingly stringent around the world, steel plants are placing greater emphasis on flue gas treatment measures. As a leading company in environmental and energy-saving technology for the steelmaking process, NSENGI is determined to help create a sustainable society by fully leveraging its global network and promoting the use of high-quality and highly reliable dry desulfurization and denitrification systems.

[For more information, please contact below]

Public Relations Section, Corporate Social Responsibility & Public Relations Dept.

URL: <https://www.eng.nssmc.com/english/contact/index.html>

*1 Advantages and processes of a dry desulfurization and denitrification system

1. Advantages

- Multifunctional capability and a small footprint

The system can independently remove sulfur oxides (SO_x), nitrogen oxides (NO_x), dust and dioxin all at once, and it requires less space than a system employing a wet process. It can also remove sulfuric acid mist (SO₃) and other substances of environmental concern more efficiently than other methods via adsorption treatment.

- Advanced treatment

The system can keep the emission concentration of substances of environmental concern at a sufficiently low level.

- Minimum water usage

This system employs a dry process for flue gas treatment, making it suitable for areas where it is difficult to secure service water.

- Recovery of useful by-products

Concentrated sulfuric acid, gypsum and other useful by-products are recovered from the SO_x contained in flue gas.

2. Processes

- The activated coke placed in the adsorber slowly moves down in a vertical direction. As it moves down, the activated coke comes into contact with flue gas, which flows in a horizontal direction, and adsorbs SO_x and other substances of environmental concern.
- The activated coke that has adsorbed substances of environmental concern is heated in the regenerator under an inert atmosphere to release (desorb) SO_x. The SO_x is finally recovered as concentrated sulfuric acid, gypsum and other useful by-products.
- The activated coke that has released (desorbed) the substances of environmental concern is then screened to separate the activated coke powder and sent back to the adsorber to be reused.

