

Viewpoint for improvement

Our Efforts in 2003

In fiscal 2003, Nitto Denko challenged a variety of environment and safety activities, including the reduction of organic solvent emissions, comprehensive energy-saving strategies, measures against static electricity that may cause fires, and activities to raise the awareness of its danger. The following are only a part of such activities.



ESCO business, Onomichi Plant



Deodorizing furnace of factory No.9, Kameyama Plant



Seminar at Taiwan Adhesive Tape Industrial Organization



Nitto Group International Meeting

Promoting energy saving by introducing the ESCO^{*1} business of Hitachi at the Onomichi Plant

Aiming for the achievement of the energy-saving target (environmental voluntary plan for fiscal 2003-2005), Nitto Denko introduced the ESCO business of Hitachi into the Onomichi Plant. Cooperatively with Hitachi, Ltd., we conducted a number of investigations and reviews and started to introduce the equipment in fiscal 2003, subsidized by NEDO^{*2}. In the first phase of the engineering work, we will 1) improve effectiveness in the deodorizing furnace, 2) introduce a highly efficient turbo freezing machine, and 3) add pre-cooling coils for air conditioners, aiming at approximately a 9% reduction of annual energy consumption in the Onomichi Plant.

For the second phase (fiscal 2004), we plan 1) to further improve the effectiveness in the deodorizing furnace and 2) to introduce a co-generation system. When introducing all these measures are completed, approximately a 12% energy reduction is estimated.

We are all filled with a sense of mission to complete these energy-saving activities. Furthermore, this is the largest-ever energy-saving practice subsidized by NEDO, and we find it most challenging.

^{*1} ESCO: It stands for Energy Service Company and means a business to improve energy efficiency. Each company offers a comprehensive services including its technology, equipments, human resources, and the funds required for energy saving and receives a part of the benefit obtained through the energy savings from the customer in compensation for the service.

^{*2} NEDO: New Energy and Industrial Technology Development Organization (Independent administrative institution)



In front of Deodorizing furnace under construction

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▶ Reducing CO₂ emissions by introducing a regenerative deodorizing furnace at the Kameyama Plant

At the site of the Kameyama Plant, a new liquid crystal-related factory started its operations in the latter half of fiscal 2003. The plant has been regarded as the major production base of Nitto Denko's electronics products and mostly produces electrical circuit materials and semiconductor-encapsulating materials. The new factory added liquid crystal-related products to its lineup.

The new factory produces polarizing films used mostly for liquid-crystal display televisions and PCs and retardation films. A new deodorizing furnace was built simultaneously with the completion of the new factory to reduce the direct emission of organic solvent used in this process to the air.

We chose a regenerative furnace consuming less energy, as well as LNG, a representative clean energy, for fuel, thus contributing to the reduction of CO₂ and SO_x emissions. The deodorizing furnace is only an example. It would be our pleasure if you would realize that such small

efforts in every production base accumulated to reduce a substantial amount of environmental impact.



The new deodorizing furnace

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▶ Receiving the commendation for Nitto's anti-static electricity seminars by Taiwan Adhesive Tape Industrial Organization

Electrostatic discharge is one of the most critical issues at the production sites handling organic solvent. Volatile gas may catch fire from static electricity, and it is resulting in an accidental fire. The Nitto Denko Group focuses our efforts on providing measures for the static protection. To be specific, we install static eliminators to remove static electricity, and operate the safety patrol whether each section has established a ground for its equipment.

These activities were recognized by the Taiwan Adhesive Tape Industrial Organization, and we were invited to deliver a lecture on the "Mechanism of fire caused by static electricity and measures against it" in both 2002 and 2003. In April of this year, we were commended for our contribution to the organization. We feel highly honored by the commendation.

It would be our utmost pleasure that our effort could communicate the importance of static protection to as

many people as possible and contribute to the reduction of fire and explosion tragedies caused by static electricity in this industry.



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▶ Holding the Nitto Group International Meeting to respond to rapid globalization

In November and December 2003, all responsible staff from the environment and safety divisions and quality assurance divisions in the group companies outside Japan got together at the headquarters in the Osaka and Toyohashi plants. The environment and safety global meeting and the quality assurance global meeting were organized to share information and to improve the quality of activities at each base to respond to the rapid globalization required in our business.

Staff from seven companies in six nations attended the global meeting and eight companies in six nations attended the quality meeting to report the current status of activities and issues at each base and to discuss the future activities with earnestness. These two global meetings will be held annually.



[The Environment and Safety Global Meeting]

Date: From Nov. 19 to Nov. 21, 2003

Participants: Japan domestic plants, Major Japan domestic group companies, Major overseas group companies

The overseas group companies participated in the conference were the following:

NITTO DENKO (SHANGHAI SONG JIANG) CO., LTD. / TAIWAN NITTO DENKO CO., LTD. / NITTO DENKO ELECTRONICS (MALAYSIA) SDN. BHD. / NITTO DENKO MATERIAL (THAILAND) CO., LTD. / PERMACEL / NITTO EUROPE N.V. / TAIWAN NITTO OPTICAL CO., LTD.

[The Quality Assurance Global Meeting] **Date:** Dec. 10, 2003

Participants: Japan domestic plants, Major Japan domestic group companies, Major overseas group companies

The overseas group companies participated in the conference were the following:

NITTO DENKO (SHANGHAI SONG JIANG) CO., LTD. / TAIWAN NITTO DENKO CO., LTD. / NITTO DENKO ELECTRONICS (MALAYSIA) SDN. BHD. / NITTO DENKO MATERIAL (THAILAND) CO., LTD. / PERMACEL / HYDRANAUTICS / NITTO EUROPE N.V. / TAIWAN NITTO OPTICAL CO., LTD.