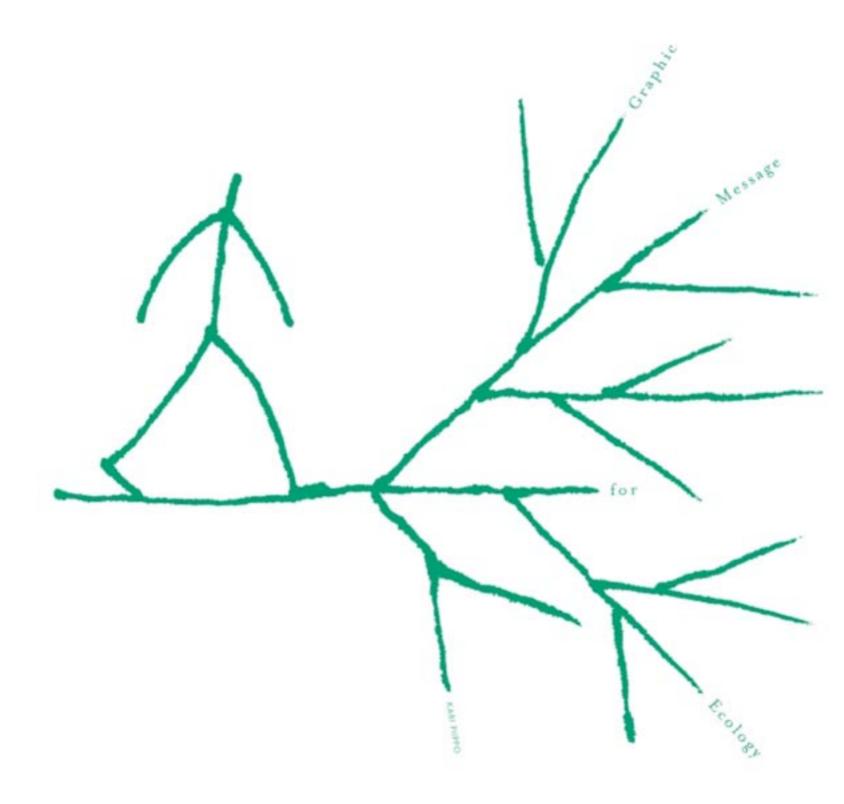


DNP Group Sustainability Report 2004 April 2003 - March 2004





Environment & Product Liability Division

Dai Nippon Printing Co., Ltd.

1-1, Ichigaya Kagacho 1- chome, Shinjuku-ku, Tokyo 162-8001, Japan Tel: +81-3-5225-8480 Fax: +81-3-5225-8489 http://www.dnp.co.jp/ Next issue scheduled for release in September 2005.



#### **Editorial Policy**

#### This year's report

- We have compiled descriptions of the production processes, the flow of materials, environmental impact, and products of each division.
- We have expanded coverage of corporate social responsibility efforts.
- This report has been composed according to the Ministry of the Environment's "Environmental Report Guidelines, 2003 Edition".
- We have continued to use the "Kensyou-Meidai Method" by Shin Nihon Environment and Quality Management Research Institute for the independent review of this report.

#### Scope of this report

 This report covers a total of 48 companies and 59 sites. This includes companies subject to consolidated reporting, i.e., all 45 domestic production companies, 1 domestic distribution company, and 1 in-house food service company, and 1 company subject to reporting according to the equity method.

#### Period covered in this report

• This report covers during the period April 2003 ~ March 2004.

#### Areas covered in this report

 The focus of this report is on environmental aspect with social part, and economic aspect also covered.

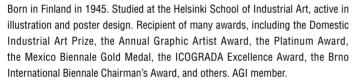
#### About the cover



In January 2000, 49 graphic designers and instructors from around the world were invited to participate in the "Graphic Message for Ecology Exhibition" held at two galleries managed by DNP, the "ggg" Gallery in Ginza, Tokyo, and the "ddd" Gallery in Doujima, Osaka. This exhibition was a contest for creating a visual message for ecology in the 21st Century. The cover art for this report is one of the entries in that exhibition, created by Kari Piippo, a graphic designer from Finland. The message incorporated by Piippo in this work is as follows:

#### We make choices in protecting both "nature" and our own environment.

#### Kari Piippo







ggg Graphic Message for Ecology Exhibition

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#### **Message from the President**



# Aiming for Sustainable Growth

Jaditali Etajima

Yoshitoshi Kitajima Chairman of the Board President & Chief Executive Officer

#### Realizing a Sustainable Recycling-oriented Society

The DNP Group has been seeking to achieve its environmental goals by promoting the development and sale of environmentally conscious products since 1999. In 2003, our sales of environmentally conscious products, mainly containers, packaging and construction materials, reached ¥140 billion. This is 4.6 times the ¥29.9 billion in sales of these products that we reached five years ago, so we have greatly exceeded our target amount.

Our corporate philosophy states that our goal is to "contribute to the creation of an intellectually active and rich 21st century society with emergent evolution". An "emergently evolving 21st century society" will be a society in which people with various differing sets of values accept each other and work together to stimulate the creation of hitherto unknown values. In such a society, the increasing need for environmentally conscious products will create new demand, in turn stimulating incentives for further business development. All employees of the DNP Group are making efforts to realize a sustainable "recycling-oriented society" by taking a creative approach to environmental issues both within and outside the company, and by making efforts to develop and create demand for products with a low environmental impact.

#### **Environmental Conservation Efforts**

The DNP Group engages in publishing, commercial printing, and the manufacturing of packaging materials, construction materials, and electronics parts, using paper, plastics, glass, and metal as raw materials. Our products are used in a wide variety of activities.

The printing industry is one that produces based on orders from customers, and is characterized by being both the processor of raw materials and an urban industry. Product development therefore requires the development of technologies that take into account not only the functions of these products, but also the needs of consumers for environmental conservation and product safety. In addition, the reduction and recycling of the waste products associated with the mass production of a wide array of products, as well as the preservation of the environment around production sites, are perennial issues.

We had an early start in our environmental efforts, leading the industry by establishing an Environmental Department dedicated to dealing with environmental issues in August 1972. We have taken an aggressive approach to dealing with

the promotion of the sale of environmentally conscious products, reducing industrial waste, preventing global warming, and reducing hazardous materials by constructing our own environmental management system, the Eco-Report System, in April 1993. These efforts were furthered by our creation in March 2000 of the DNP Group Environmental Committee. As a result, we have achieved striking results in the increase of sales of environmentally conscious products and improvement in the waste recycling rate. In addition, we have reduced the emissions of toluene, a PRTR-listed chemical that is of particular concern in the printing industry, to just 2,000 tons in 2003, down from more than 10,000 tons in 1999.

We have also been making positive efforts to disclose environmental information, both through our Environmental Reports, which we began publishing in 1998, as well as through the mass media. We are serious about taking the opinions of all of our stakeholders into consideration in implementing our environmental policies.

#### Improving Eco-efficiency

We redoubled our efforts to improve eco-efficiency in 2004. We are making efforts to identify and eliminate all inefficiencies in our production processes through our Production 21 Efforts. In addition, we are making progress in improving environmental performance in production by improving efficiency in the use of materials and energy, reducing the rate of waste of raw materials used, and reducing per-unit  $\text{CO}_2$  emissions.

The DNP Group is working to realize a sustainable recycling-oriented society. To that end, we pledge to disseminate environmentally conscious products, reduce the environmental impact of business activities through efficient environmental management, and fulfill our corporate social responsibilities as an emergently evolving 21st century enterprise.

— Contributing to the Creation of a Society with Emergent Evolution—

#### **Management Concept**

The DNP Group will contribute to the creation of an intellectually active, rich, 21st century society with emergent evolution.

#### **Business Vision**

We are fully conscious of its mission and responsibility to its customers as their active business partner, and through its "Production Solutions" and "Business Design Solutions" will resolve every issue by supplying both valuable products and services and original business models.

#### "Production Solutions"

The DNP Group is determined to be able to solve the issues involved in innovations in its customers business, as a partner in the process of its customers business, by supplying a combination of products and services.

#### "Business Design Solutions"

The DNP Group to go forward and solve the issues of its customers corporations and people in their lives through designing and operating diverse business models that discover new values.

#### **Corporate Culture**

#### **Corporate Conduct**

#### 1. Customers and People's Lives

We will aim to create values that our customers and people in their lives truly need and desire, conscious that each one of us is an individual member of an emergently evolving society.

#### 2. Observe, Listen and Think Carefully

We will detect and respond to what society truly needs correctly and speedily, carefully observing conditions in the market and sites of sales and production. We should be fully alert to the opinions and reactions of those places, and fully consider these in our response.

#### 3. Independence and Collaboration

We will work together in a spirit of collaboration, taking responsibility for and pride in ourselves as self-reliant professionals. By respecting the opinions that arise in an open atmosphere of collaboration between professional equals, we will foster mutual relations of trust.

#### 4. Speed and a Spirit of Challenge

We will strive both to respect the values of our coworkers as professionals with regard to time, and to maintain a spirit of challenge, so that we can always supply leading-edge products and services and play a major role in the evolution and development of society.

#### 5. Openness and Fairness

We will make positive efforts to win the appreciation of society for our philosophy, vision, and policy, and by taking action in a spirit of fairness as good corporate citizens, aim to become a company that is in tune with an emergently evolving society.

#### **Concept Phrase**

"P&I Solutions DNP"

# Society in the 21st century will be "emergently evolving"

Society in the 21st century will undergo a process of repeated and ongoing invigoration, in which, due to advances in information technology, people with diverse values will both recognize one another's differences and influence, stimulate one another, and thereby create new values.

The society newly energized by these values will in turn give rise to further new values through synergies with its individual members. As a result of repeated synergies between society and its parts, both society and its members will evolve and develop. This is what is meant by "emergent evolution."

"Emergent evolution," which refers to the creation of new values through the synergy between a society and the individuals of which it is composed and provides for conditions in which it is possible for one-plus-one to make three, or even five. This, we believe, will be one of the distinguishing features of the emergently evolving, 21st-century society.

We want to be a unique company whose combination of products, service, and business structure will be necessary to a 21st Century in which an emergently evolving society is developed.

#### Providing solutions that are a synthesis of P&I

The P in P&I Solutions is Printing Technology, which is the core technology that we have been developing in our 128 years of doing business. The I stands for IT (Information Technology), which is vital to our contributing to the development of 21st century society with emergent evolution through the 2 kinds of solution (production solutions / business design solutions).

We have been offering solutions to the challenges of our various customers by providing a synthesis of "P" and "I". Using our skill and knowhow, we are proving solutions that will give birth to new value for 21st century society with emergent evolution.



#### The DNP Brand

# DNP

The DNP mark now includes the implication that the DNP Group's unique printing technology and diversity of operations will enable it to contribute to the realization of an emergently evolving society.

In order to gain wider recognition in society of DNP's business activities, we will continue to make every effort to get DNP more widely known as a brand and used in society as a symbol of the DNP Group.

# Aiming to form group of professionals for the realization of society with emergent evolution

We believe that in order to contribute to the "realization of society with emergent evolution", we must ourselves be conscious of our relationship with society, and become more emergently evolving. In an emergently evolving enterprise, each individual must be a professional in his or own duties. We believe that each employee must maintain pride and develop their individuality, and work to bolster those with whom they work.

We have developed five keywords signifying our activity guideline for developing an emergently evolving corporate culture.

#### Contributing to an emergently evolving society

We believe that our mission is to offer new value that is tied to the future of society. Our desire is to contribute to society with emergent evolution through a richness of an intellectually enlivened 21st Century.

We are harnessing the overall power of our Group through "P&I Solutions DNP" to realize our philosophy. We are aiming to establish an emergently evolving corporate culture in which each individual can converse based upon his or dreams and ideals, and in which we gain the trust of society by acting as a good corporate citizen and engaging in fair business practices.

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#### > Company Name

Dai Nippon Printing Co., Ltd.

#### > Head Office

1-1, Ichiqaya Kaqacho 1-chome Shinjuku-ku, Tokyo 162-8001, Japan

Tel: +81-3-3266-2111

URL: http://www.dnp.co.ip/ E-mail: info@mail.dnp.co.jp

#### > Originally Founded October 1876

- > Established January 19, 1894
- > Capital ¥114.464 billion
- > Employees

9,159 (DNP parent company) 34,514 (consolidated companies for the printing business)

#### > Sales Offices 50 locations in Japan 18 locations overseas (including local affiliates)

> Main Plants (including affiliates) 34 domestic plants 7 overseas plants

> R&D Facilities 11 locations in Japan

#### 59 sites covered under this report

- 1 Hokkaido Dai Nippon Printing Co., Ltd. Plate-making/printing/bookbinding manufacturing of packaging
- 2 Head Plant, Hokkaido Coca-Cola Bottling Co., Ltd. Beverage manufacturing (BC Division)

#### Mivagi Se

3 Tohoku Dai Nippon Printing Co., Ltd. — Plate-making/printing/bookbinding/manufacturing of packaging

#### Fukushima Izumizaki, Nishi Shirakawa-gun

4 Izumizaki Plant, Dai Nippon Printing Technopack Co., Ltd.—Plate-making/printing plate/printing (Lifestyle

#### Tochigi Utsu

5 DNP Graphica Co., Ltd. — Printing/bookbinding (Information Communication Division)

#### Ibaraki Ush

6 Ushiku Plant, DNP Data Techno Co., Ltd. — Manufacturing of various types of plastic cards (Information

#### Saitama Otone Kita S

- 7 F.D.P. Dai Nippon Co., Ltd. Manufacturing of electronic parts for displays (Electronics Division)
- 8 Shiraoka Plant, Dai Nippon Offset Co., Ltd. Offset printing (Information Communication Division)
- 9 Kawaguchi Plant, Dai Nippon Offset Co., Ltd. Offset printing (Information Communication Division)
- 10 Tsuruse Plant, Ichigaya Publication Printing Operations Plate-making/printing plate/printing/bookbinding
- 11 Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd. Plate-making/printing plate/printing/processing
- 12 Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd. Plate-making/printing plate/printing/processing (Lifestyle and Industrial Supplies Division

13 Warabi Plant, Business Form Operations—Plate-making/printing/processing (Information Communication Division)

- 14 Sayama Plant, Dai Nippon Printing Technopack Co., Ltd.—Plate-making/printing plate/printing (Lifestyle
- 15 Dai Nippon Cup Co., Ltd. Molding or processing of various types of paper containers/processing (Lifestyle 16 Sayama Plant I M S. Dai Ninnon Co. Ltd. — Manufacturing of thermal transfer carbon ribbons (Lifestyle

17 Dai Nippon Printing Fine Electronics Co., Ltd./Kamifukuoka Plant, Dai Nippon Printing Precision Device Co., Ltd. — Manufacturing of electronic precision parts

**18 Kuki Plant, Ichigaya Publication Printing Operations**—Printing/bookbinding

#### nunication Division)

19 Dai Nippon Printing Fine Electronics Co., Ltd./Kuki Plant, Dai Nippon Printing Precision Device Co., Ltd. — Manufacturing of electron



- 20 Kashiwa Plant, Dai Nippon Polymer Co., Ltd. Molding, processing and printing of plastic containers (Lifestyle and
- 21 Dainippon Jushi Co., Ltd. Manufacturing and processing of synthetic resin films (Lifestyle and Industrial Supplies

#### Tokvo Shiniuku-ku

- 22 Ichinava Plant Ichinava Publication Printing Operations Plate-making/printing plate/printing/bookbinding (Information
- 23 DNP Facility Service Co., Ltd. Meal services, etc.
- 24 Enokicho Plant, Commercial Printing Operations—Plate-making/printing/bookbinding (Information Communication

25 SP Dai Ninnon Co., Ltd. — Manufacturing of various advertising and promotional materials (BC Division)

- 26 Akabane Plant, Ichigaya Publication Printing Operations Printing (Information Communication Division)
  27 Akabane Plant, Commercial Printing Operations Plate-making/printing/bookbinding (Information Communication
- 28 Dai Ninnon Seihon Co., Ltd. Bookbinding (BC Division)
- 29 DNP Logistics Co., Ltd. Packaging/shipping (BC Division)
- 30 Dai Nippon Hoso Co., Ltd. Processing of filling and packaging (BC Division) 31 D.N.K.Co., Ltd. — Printing and manufacturing of machine tools (BC Division)

32 D. T. Circuit Technology Co., Ltd. — Manufacturing of printed circuit boards (Electronics Division)

#### Kanagawa Tsuzuki-ku, Yokoha

33 Dai Nippon Printing Technopack Yokohama Co., Ltd. — Plate-making/printing plate/printing (Lifestyle and Industrial

34 Tokyo Plant, The Inctec Inc. — Manufacturing of ink, varnish, pigments and dyes (BC Division)

35 Sagami Yoki Co., Ltd. — Manufacturing of laminated tubes (Lifestyle and Industrial Supplies Division)

#### 36 Tokyo Plant, Dai Nippon Ellio Co., Ltd. — Printing and processing of metal sheets (Lifestyle and Industrial Supplies Saiwai-ku Kawasak

37 DT Fine Electronics Co., Ltd. — Manufacturing of semiconductor photomasks (Electronics Division)

#### Gifu Nakats

38 DNP Technopack Tokai Co., Ltd.—Manufacturing/printing/processing of packaging (Lifestyle and Industrial Supplies

#### Aichi Moriyama-ku Nagoya

39 Tokai Dai Ninnon Printing Co., Ltd. — Printing/bookbinding/manufacturing of packaging (BC Division)

40 Kyoto Plant, Dai Nippon Printing Fine Electronics Co., Ltd. — Manufacturing of electronic precision parts (Electronics Division)

# 41 Kvoto Plant. Dai Nippon Printing Technopack Kansai Co., Ltd. — Plate-making/printing plate/printing (Lifestyle and

#### 42 Tanabe Plant, Dai Nippon Printing Technopack Kansai Co., Ltd. — Plate-making/printing plate/

printing (Lifestyle and Industrial Supplies Division)

#### Nara Kawanishi Shiki-o

43 DNP Data Techino Kansai Co., Ltd. — Plate-making/printing/processing (Information Communication Division) Osaka Hiral

44 Kansai Plant, The Inctec Inc. — Manufacturing of ink, varnish, pigments and dyes (BC Division)

- 45 Neyagawa Plant, DNP Media Create Kansai Co., Ltd. Printing (Information Communication Division) **46 Kansai Plant, Dai Nippon Polymer Co., Ltd.**—Molding, processing and printing of plastic containers (Lifestyle and
- 47 Osaka Plant, Dai Nippon Ellio Co., Ltd. Printing and processing of metal sheets (Lifestyle and Industrial Supplies

48 Osaka Plant, DNP Media Create Kansai Co., Ltd.—Plate-making/printing plate/bookbinding (Information Communication

#### Hvogo Kita-ku, Kobe

49 Kobe Plant, Dai Nippon Printing Kenzai Co., Ltd. — Plate-making/printing plate/printing/ processing (Lifestyle and Industrial

**50 Ono Plant, DNP Media Create Kansai Co., Ltd.**—Plate-making/printing/bookbinding (Information Communication Division) Okayama Mitsu

- 51 Okayama Plant, I.M.S. Dai Nippon Co., Ltd. Manufacturing of sublimation transfer materials (Lifestyle and Industrial 52 Okayama Plant, Dai Nippon Printing Kenzai Co., Ltd. — Plate-making/printing plate/printing/processing (Lifestyle and
- 53 DNP Industrial Materials Co., Ltd. Okayama Plant—Manufacture of electronic parts, etc. (Lifestyle and Industrial Supplies

#### Hiroshima Mihar

54 Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd. — Manufacturing of electronic precision parts (Electronics Tokushima Tokushima

55 Shikoku Dai Nippon Printing Co., Ltd. — Plate-making/printing/manufacturing of packaging (BC Division) Fukuoka Kita-K

56 Advanced Colortech. Inc. — Manufacturing of color filters (Electoronics Division) 57 DAP Technology Co., Ltd. — Manufacturing of rear panels for plasma (Electoronics Division)

58 Fukuoka Plant, Kyushu Dai Nippon Printing Co., Ltd.—Plate-making/printing/bookbinding/manufacturing of packaging (BC Division)

59 Chikugo Plant, Kyushu Dai Nippon Printing Co., Ltd. — Plate-making/printing/bookbinding/manufacturing of

BC (Brother Company): Affiliate companies that manufacture products not related to the group's Information Communication | Lifestyle and Industrial supplies, and Electronics divisions or related to

#### Other Domestic Consolidated Affiliates

- Dai Nippon Art Co., Ltd., Dai Nippon Total Process Ichigaya Co., Ltd., Dai Nippon Uni Process Co., Ltd., Wakosya Co. Ltd. and Dai Ninnon Techtas Ichigaya Co. Ltd. are covered under a portion of the Ichigaya Plant, Ichigaya Publication Printing Operations
- Dai Nippon Butsuryu System Ichigaya Co., Ltd. is covered as a division of the plants under the Ichigava Publication Printing Operations (Ichigava Plant, Gotanda Plant Tsuruse Plant Kuki Plant and the Akahane Plant)
- DNP Media Create Co., Ltd. and Dai Nippon Butsurvu System Shoin Co., Ltd. are covered as a division of the Enokicho Plant, Commercial Printing Operations
- Dai Nippon Total Process BF Co., Ltd. is covered as a division of the Warabi and Nara Plants, Business Forms (BF) Operations
- DNP Techtas BF Co. Ltd. (plate-making & printing) is covered as a division of the Warahi Plant RF Operations
- Dai Nippon Micro Technica Co., Ltd. is covered as a division of the Kamifukuoka Plant, Dai Nippon Printing Fine Electronics Co., Ltd.
- Of the companies treated as consolidated companies under financial accounting practice, we excluded 9 companies without manufacturing divisions, such as DNP Trading Co. 1 td
- Of the non-consolidated subsidiaries to which the Equity Method applies, DAP Technology Co., Ltd., for its importance, has been treated as a consolidated affiliate.

#### Overseas Consolidated Manufacturing Affiliates

- DNP IMS (America) Corp. (US, processing thermal transfer ribbons)
- DNP Electronics America, LLC (US, manufacturing and sales of precision electronics parts)
- DNP Denmark A/S (Denmark, manufacturing and sales of precision electronics parts Tien Wah Press (Pte.) Ltd. (Singapore, plate-
- making/printing/bookbiding) PT DNP Indonesia (Indonesia, plate-making/printing/
- bookbiding, manufacturing and sales of packaging) DNP Photomask Europe S.p.A. (Italy, manufacturing and

sales of precision electronic parts), which began operations in October 2003, is in the process of preparing for data compilation, and will begin compiling data in 2004.

# We are making progress in reducing VOC emissions.

Kenji Noguchi
Kenji Noguchi
Director

Chairman of the DNP Group Environmental Committee



The DNP Group began publishing environmental reports in 1998. Our goal in doing so is to inform the public about our management policies concerning environmental issues, to report the details of the environmental impact caused by our business activities, and our approach, efforts, and results in reducing that environmental impact. We hope to gain the public's understanding of our environmental efforts in this way.

Our editorial policy in each year of publication has been to provide reliable and easily understood information. In the 2004 edition, we are providing information for each division concerning the flow of materials, the kinds and degree of environmental impact, efforts to reduce environmental impact, and the development of environmentally conscious products, so as to make the relationship between our environmental conservation efforts and production even easier to understand. As we have since 2002, we have again this year implemented a third-party review of the report, using the "Kensyou-Meidai Method", so as to ensure even greater reliability of the data included in the report. The 2004 edition also includes a "Social Responsibility Performance" section describing the corporate social responsibility efforts and results of the DNP Group. The title of the report has been changed to the "DNP Group Sustainability Report".

#### Main efforts made in 2003

The results of efforts to achieve the 2003 environmental targets are listed on pages 32 and 33.

With regard to one of the main themes for 2003, the development and sales of environmentally conscious products, while a 10% increase is listed as the 2003 target, this was broadly exceeded by an increase of 32%. We also made steady progress in reducing the amount of PRTR-listed substances emitted and/or transported. In particular, while the target for air emissions of toluene is listed as a reduction to 500 tons or less for the Group as a whole by March 2005, emissions for 2003 were reduced to 2,000 tons. Nevertheless, we were not able to post successful results regarding the reduction of materials waste or the reduction of emissions of greenhouse gases, due in part to an increase in the number of our

production sites. Currently we are making progress with our "Production 21 Efforts" for eliminating all inefficiency from our production processes, and we will continue to make efforts in 2004 to improve resource efficiency and reduce waste and greenhouse gas emissions despite the increase in production sites.

#### **Coming challenges**

The Air Pollution Control Law was revised in June 2006, with text added concerning the regulation of air emissions of VOCs (Volatile Organic Compounds). This revision is aimed at reducing SPM (Suspended Particulate Matter) and photochemical oxidants, with the national goal set at the reduction of VOC emissions from fixed sources by 30% by 2010 in comparison with 2000. The majority of ink used in printing uses VOCs as a quality improvement agent, therefore necessitating the use of collection or elimination equipment so as to reduce the VOC emissions into the air. We recognize that VOC measures are an urgent issue, and since 2002 we have instituted controls on all VOCs, not only those that are listed in Category 1 in the PRTR Law. We are taking this revision of the law as an opportunity to establish a target of 50% reduction of VOC emissions for the Group as a whole by 2005, and will redouble our efforts to achieve it.

# **Environmental Management System**



We implement the "Eco-Report System", which is an original management system based upon the Group environmental philosophy that is the foundation of our environmental efforts.

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#### The DNP Group's Environmental Philosophy

#### **Practice of environmental management**

Since the establishment of the Environment Department of DNP in 1972, the DNP group has promoted environmental conservation activities. In 1992 we established our Environmental Commitment. In 1993, we began full-fledged environmental management activities, following the establishment of our Eco-Reporting System, the group's original environmental management system. Furthermore, in March 2000 we strengthened our conservation activity promotion system with the establishment the DNP Environmental Committee. In May 2001, we made a fresh start, establishing the DNP Group's Vision for the 21st Century, and adopting a corporate philosophy of "the DNP Group will contribute to the creation of an intellectually active, rich, and 21st century society with emergent evolution."

At DNP group, we aim to develop a better relationship with society, functioning as a good corporate citizen, aiming to realize a recycling oriented society while becoming a better partner with extensive community involvement.

#### **The DNP Group's Environmental Philosophy**

In 1992 the DNP group adopted a commitment to the environment, declaring its intention to strive to protect the global environment and use resources effectively within the DNP group Code of Conduct, which is used as a guideline by all employees.

"We will make every effort to protect the prosperity and future of the human race by protecting the environment and using resources effectively."

Today we face the serious issue of how to protect the global environment. Due to the dramatic economic growth of recent years, our ecosystem is being destroyed through the depletion of the ozone layer, global warming, increasing volumes of industrial waste, and the careless consumption of natural resources. As a result, our earth's circulatory system is beginning to be affected. These problems, together with the rapid depletion of natural resources, should be a source of concern, since they threaten our daily life and may even stifle economic growth. We will act aggressively in addressing environmental issues, using our comprehensive technological resources to safeguard the prosperity and future of the human race. (Excerpt from the DNP Group's Codes of Conduct)

#### **The DNP Group's Environmental Policies**

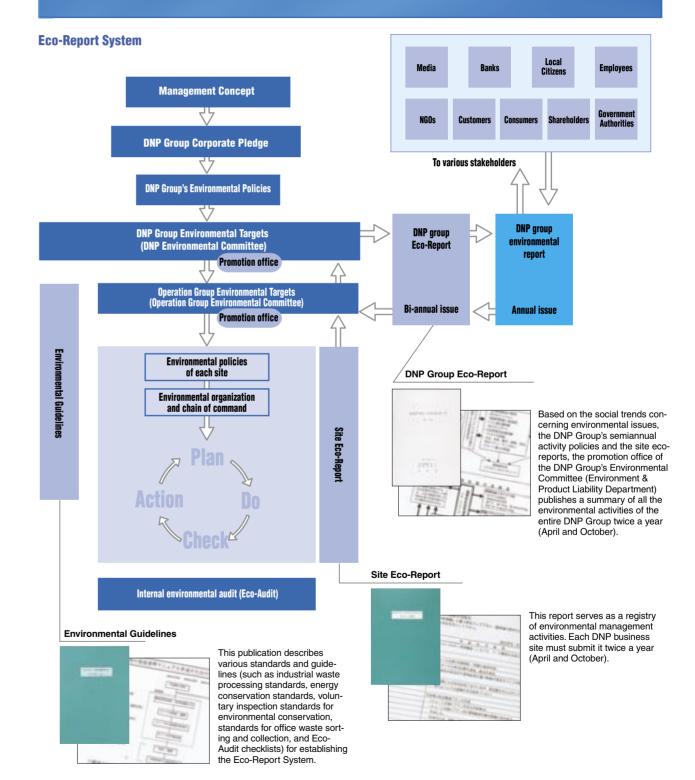
The DNP Group's efforts are directed towards the continuous prosperity of a world economy with limited resources and for the development of a society that recirculates resources. The DNP Group is making every effort to minimize the impact our business operations have on the environment, and this includes compliance with environmental laws and regulations as well as recognizing the relationship that each of our business activities has to the environment.

- 1 Each member of the DNP Group establishes and periodically reviews its own environmental policies and environmental targets, and puts into effect continuous improvement of its activities and the prevention of environmental pollution.
- 2 For all construction projects, and before designing and commissioning new facilities, we carry out a full and detailed environmental survey to assess the impact that the project will have on the environment, to make proper efforts to protect the environment.
- 3 When carrying out research, development and design for a new product, we consider the impact of the product on the environment throughout its life cycle, including the ordering of raw materials, production, distribution, use, and disposal. We give special consideration to energy conservation, resource conservation, and reducing the use of harmful chemicals.
- 4 When purchasing raw materials, stationery, and equipment, we choose items that are ecologically-friendly and easy to
- 5 In manufacturing a product, we aim to comply with environmental laws and regulations, and moreover we set up more stringent standards to reduce the emissions of pollutants into the air, watershed, and soil, and to prevent unpleasant odors, noise, vibration, and land subsidence. We are constantly improving facilities, techniques and manufacturing processes to promote the targets of energy conservation, resource conservation and the reduction of industrial waste.
- 6 When generating waste from business operations, we strive to achieve zero emissions by separating and recycling waste as much as possible.

#### **DNP Group's Environmental Management: The "Eco-Report System"**

Developed by the DNP group as a means of achieving the group's environmental targets, the Eco-Report System is an original environmental management system that forms the basis of the group's environmental management activities. The DNP group practices ongoing group-wide environmental activities, incorporating ISO 14001-certified systems that take into account the characteristics of each business domain, based on our Eco-Report environmental management system. PDCA (Plan->Do->Check->Action) is developed over biannual cycle using three tools- the DNP Group Eco-Report, the Site Eco-Report, and the Environmental Guidelines- and is directly connected to the making of continuous improvements. Also, we are expanding the effort themes from challenges that focus on manufacturing plants to include items such as development and sales of environmentally conscious products and green purchasing. Our aim is to be clearly recognized as an enterprise that practices real environmental management in contributing to the realization of a recycling society.

**Environmental Management System** 



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#### **DNP Group's Environmental Management System (EMS)**

#### **Environmental Policies and Targets**

The DNP Group's environmental policies and targets are decided by the DNP Group's Environmental Committee at its head office and reviewed on a regular basis in light of global and customer trends, and the status of companywide activities.

The policies and targets specified herein are widely communicated throughout the company from the head office's promotion office to the environmental committee and promotion office in each operations.

The environmental committee of each operations then establishes its own policies and targets based on those passed down from the head office and in consideration of business trends. It then carries out specific activities based on each division's policies and targets.

#### **Implementing Activities at the Site**

When implementing specific activities, each site conducts environmental management activities as stipulated in the DNP Group's environmental guidelines. Activities are recorded monthly in a Site Eco-Report. On a six month basis, results are assessed and targets are set for the next six month period. In addition, site activities are audited once a year to ascertain if they comply with legal regulations and to see the achievement of targets for the overall Group. This is done to ensure the improvement of environmental management activities.

#### Flow for the Disclosure of Environmental Information

The head office's promotion office publishes DNP Group Eco-Report covering companywide activities twice a year, based on changes in social environmental trends and the Site Eco-Reports from each operations. This is the Group's white paper on environmental activities. Following publication of the report, management goes out to each site to resolve problems at a particular site or the positioning of each problem within the Group for the purpose of mutually understanding environmental information and pinpointing important issues that exist among operations. The paper also supports the sharing of information and ascertaining future key topics. Furthermore, once a year, this DNP Group Sustainability Report is published to inform of our environmental management activities over the past year.

#### **Environmental Committee**

August 28, 2003

DNP Group environmental accounting report 2002

March 26 2004

- DNP Group Chemical Management Standards
- · Reduction target of total VOC emissions
- Decision of eco-efficiency target

- Produced Site Eco-Report for term ending Sept. 2003 (Record of site activities from Apr. to Sept. 2003)
- Produced Site Eco-Report for term ending March 2004 (Record of site activities from Oct. to Mar. 2003)
- Environmental audit "Eco-Audit" implemented
- Released DNP Eco-Report No. 21

(Record of site activities from Apr. to Sept. 2003)

Released DNP Eco-Report No. 23
 (Record of site activities from Oct. to Mar. 2003)

Past Eco-Reports (22 issues in the past)



#### **Example of improvement of Eco-Report system**

We have used "ENASUS", environmental accounting software, since 2002 for compiling environmental costs for each year. This makes it easy to ascertain the total cost for each environmental effort, and also allows for prompt compilation.

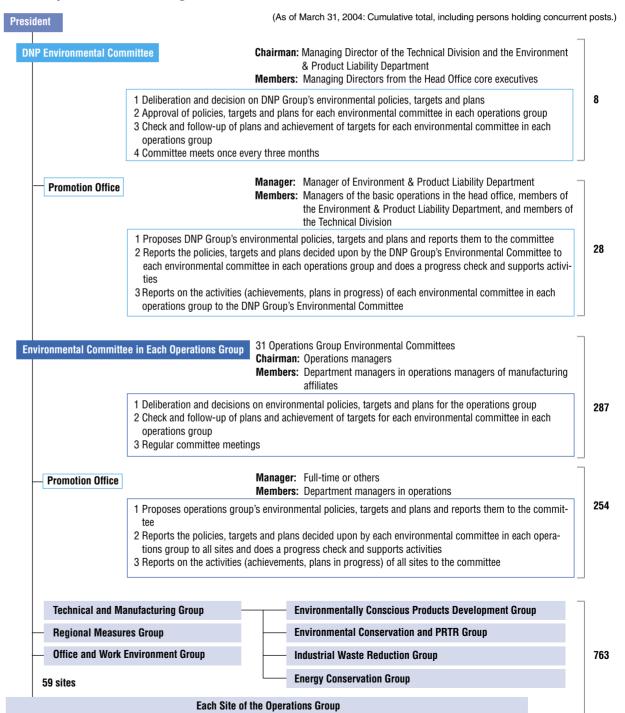




#### **Management Activities — Groupwide Environmental Management System**

The DNP group environmental management organization comprises the DNP Environmental Committee, which oversees the activities of the entire group, the environmental committees of each operation group, and promotions offices which are placed under each committee. The DNP Environmental Committee comprises Managing Directors from the Head Office core executives. The committee determines the environmental policy and targets for the entire DNP group while taking into account social trends and activities of each business area, discusses and resolves proposal plans, and checks the state of progress of plans and targets. The items determined by the Environmental Committee are relayed through the promotions offices (Head Office), to the environmental committees of each operations group, where they are implemented taking into account the characteristics of each business area, the results of which are compiled into Site Eco-Reports.

#### **DNP Group Environmental Management Structure**



13

In 2003, there were 33 items mentioned in the "Eco-Audit" as "Improvement Required", which is the strictest category. This is 12 fewer such items than in last year's audit.

180

#### **Internal Environmental audit (Eco-Audit) Results**

The Eco-Audit was conducted at 55 sites in 2003 (in comparison with 54 in the previous year). Of the sites designated for disclosure in this report (please refer to pages 4 and 5), trial audits were conducted at Advanced Colortech, Inc. and DAP Technology Co., Ltd. The audit of D.T. Circuit Technology Co., Ltd. was postponed. The Production Division of DNP Facility Service Co., Ltd. was not conducted, with an audit of the Food Service Division conducted in accordance with HACCP.

The audit resulted in 33 items noted as *Improvement Required*, which is 12 fewer such items than in last year's audit (45 last year, 93 two years ago). 259 *Improvement Examination or Consideration* notifications were issued, 18 fewer than last year (241 last year, 246 two years ago).

Certain Improvement Required items, such as insufficient labeling in waste storage areas or lack of change notification for designated facilities, were items in conflict with legal requirements.

Sites for which Improvement Required or Improvement Examination or Consideration notifications were issued are required to submit Correction Measures Performed report forms, and confirmation is being made that corrective measures have been taken regarding notification items.

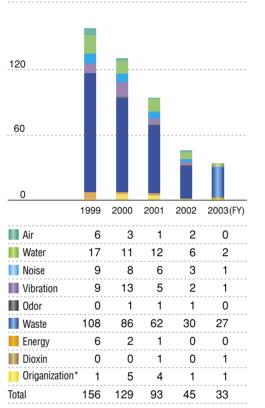


Examining paperwo



Inspection

#### Number of Notifications Issued for "Improvement Required" in Eco-Audits (Number issued)



\*Pollution prevention organization



Inspection

#### Type of Notifications and Corrections Issued in Eco-Audit

Type of Notifications	Corrections
Improvement required:	Submission of written description of correction measures performed or improvement plan
Improvement consideration & examination:	Submission as necessary of written description of results of consideration/examination or improvement plan

#### 2003 Eco-Audit Performance

Number of sites audited:	55 sites
Number of attendees at sites:	414 persons
Cumulative auditor number:	119 persons
Cumulative auditing hours:	576 hours
Number of qualified Eco-Auditors:	92 persons

#### **Eco-Audit Contents**

#### **Compliance Audit**

#### **Document Audit**

- Site location
- Type of waste
- Type & number of statutory facilities
- Energy consumption
- Exhaust and wastewater channels
- Changes in facilities, production processes since the last audit
- Applicable laws
- State of improvement of notifications of deficiencies in previous audit
- State of submission of statutory notifications, reports and changes
- Frequency of measurement; validity of measured data
- Changes in management personnel due to internal transfers

#### On-site Inspections

- Site location and relationship with surrounding sites
- Conformity to statutory facility document audit (type, number, scale, etc.)
- State of management of individual facilities and equipment, existence of abnormalities
- · Emergency containment in case of abnormality or emergency
- Site picture taking

#### **Operations Audit**

#### Confirmation of validity of site policy and established targets

- Performance in previous term
- Consistency with DNP group policy
- Continuity with performance in previous term
- Validity of established targets

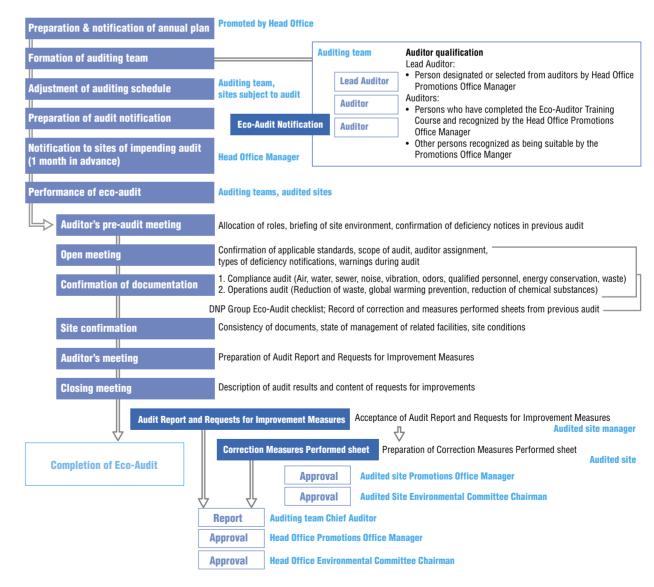
#### Confirmation of validity of implementation programs

- · Consistency between targets and programs
- Effectiveness of the programs
- Possibility of the programs
- Possibility of fulfillment of the programs
- · Promotion system and schedule

# Confirmation of achievement of implementation items, performance and targets

- Records of activities performed
- State of progression of the programs
- Effects of the programs, performance of indicators and achievement of targets

#### **Steps in Eco-Audit**



#### **Environmental Education**

The DNP group performs environmental education, with separate courses for different employee ranks, job categories and function. The courses cover internal and domestic trends concerning environmental problems, knowledge and laws, as well as DNP's conservation efforts. We provide this education to improve our employees' awareness of environmental matters and to provide the opportunity to gain the knowledge and management know-how required to achieve environmental targets.

#### **Environmental Education implemented in 2003**

In 2003, we implemented group study programs such as "Dealing with the Environment", which is a training program for new hires (354 in attendance), and "DNP's Environmental Response", a technical seminar for technicians (198 in attendance). We also held a network learning program accessible from individual computer terminals, entitled "Environmental Issues and Business" (2,055 participants). Three courses were offered via "CAPA", the distance learning program: "Earth-Friendly Environmental Seminar", "You Can Understand ISO 14001: An Introduction", and "LCA and Environmental Labels" (15 participants).

"Eco-Report Training" is conducted at each site in May and November for persons responsible for the environment. Topics taken up this year were "Hazardous Substance Management" and "VOC Reduction Measures", with the latest information concerning the activities of electronics manufacturers and the DNP Group concerning hazardous substance management, and VOC regulatory trends and measures (total of 1,001 participants).



Trainings a	nd Cours	Year began	Total participants 🔠
Course name:	nployees Joining the Company: Environmental Activity Overall (required) Basic environmental knowledge and conservation efforts of All new employees; upon entering the company	<b>1994</b> the DNP group	2,871
	How DNP Deals with the Environment (required) Basic knowledge of the environment issue, its impact and im Technicians; at the 2nd year of employment	<b>1997</b> aprovement mean	<b>2,080</b> ns such as environmental preservation equipment
	ar: Environment (optional) Environmental laws and regulations Technicians; at irregular intervals	1999	104
	g: Environmental Issues and Business (required) Environmental information to be used when presenting cust Employees with more than 2 years experience in the sales ar		
Description:	Course: various courses offered each year (optional) Primer on ISO 14001 and LCA All employees of DNP Group	_	<b>15</b> (in FY2003)
	ing: Environmental Issues of the Group (required) Domestic & international trends in environmental issues, revergets, new targets, issues concerning specific sites Site members and factory-related personnel of the operation Eco-Report		, •
Course name:	communications:  Risk Communications (required)  Evaluating health risks of chemical substances, methods of Site members of the operations group environmental commit		

# **Special Features: Environmental Efforts of Each Division**



We are posting the materials flow that makes it possible to understand the environmental impact of the DNP Group overall. We have also divided our business into three areas, and have made it easy to understand the environmental impact and details of the work done in each area.

<b>Contents</b>	The Overall Environmental Impact of the DNP Group	16
	Information Communication Division	18
	Lifestyle and Industrial Supplies Division	22
	Electronics Division	28

#### The Overall Environmental Impact of the DNP Group

The DNP group produces a wide range of consumer items by using raw materials, including paper, film, plastic, metals (steel and aluminum) and ink.

Each division in the DNP group has its own particular characteristics. For example, the Information Communication Division uses a lot of paper and produces a large amount of unusable materials. The Lifestyle and Industrial Supplies Division uses a lot of auxiliary materials (solvents) and releases large amounts of greenhouse gases. The Electronics Division consumes large amounts of water, accounting for some 60% of the total consumed by the DNP group.

Furthermore, when measured in terms of environmental impact per unit of production, consumption of main raw materials per unit of production in the Information Communication

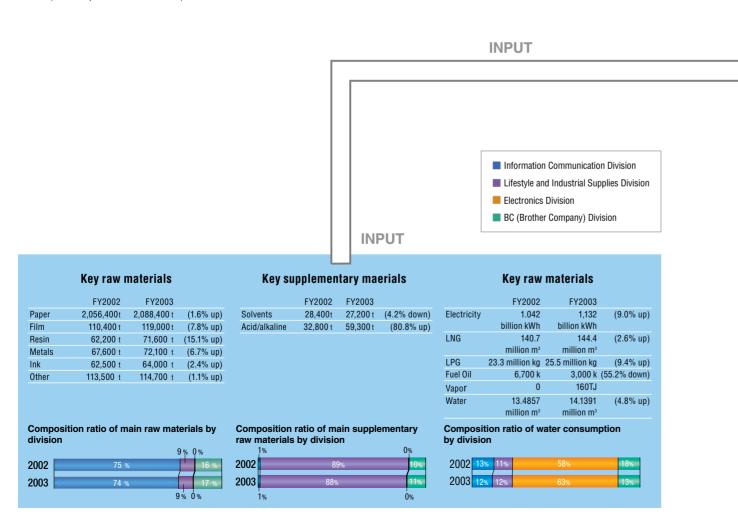
Division is large, while consumption of water and emissions of wastewater per unit of production in the Electronics Division is large. In addition, when measuring unusable materials per unit of production, there is little difference between divisions, while the in the Lifestyle and Industrial Supplies Division, emissions of greenhouse gas per unit of production is relatively large.

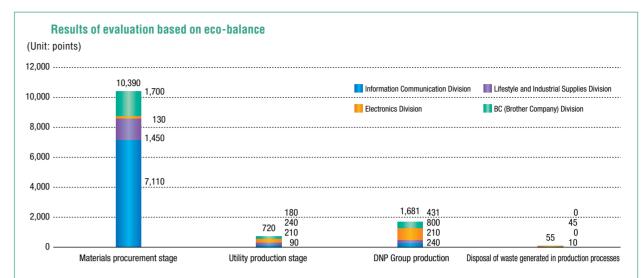
In 2003, We proceeded to install deodorizing equipment for our incinerators and solvent recovery equipment as countermeasures against foul odors at our facilities. Also, the IMS Dai Nippon Co., Ltd. Sayama Plant has switched from fuel oil to municipal gas. This has resulted in less use of fuel oil and reduced SOx emissions. We have also reduced the volume of waste produced and the final disposal volume through efficient production and effective use of waste products.

Environmental impact per unit of production by division (t/¥million)

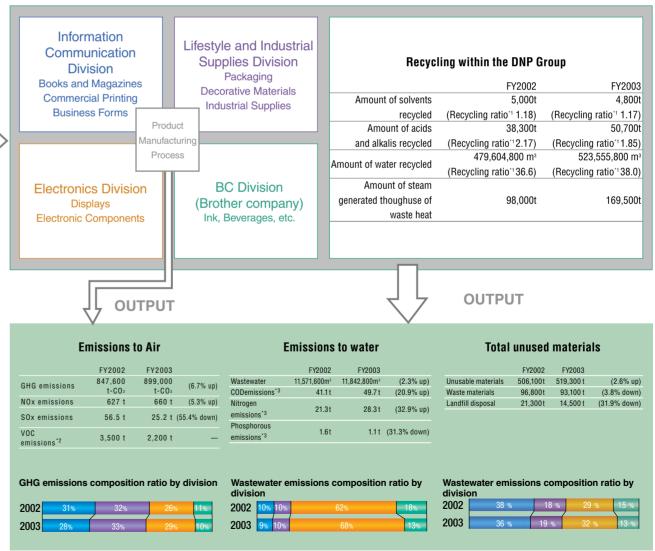
	Information	Lifestyle &		
Impact/Division	Communication	Industrial Supplies	Electronics	BC
Key raw materials	16.3	6.1	0.3	5.7
Unusable materials	1.9	1.4	2.0	0.8
Water consumption	17.1	24.3	109.2	22.5
Wastewater	11.5	16.5	98.4	18.7
GHG emissions	2.6	4.2	3.2	1.1

<sup>\* &</sup>quot;Production" is indicative of business activity, and represents the total amount of added-value for companies subject to disclosure in this report.





This is a comparison of environmental impact at each stage- the materials procurement stage, utility production stage, DNP Group production, and disposal of waste generated in production processes- using "business eco-balance" theory that applies the product LCA (life cycle assessment) methodology. The uniform indicators employed are those developed by the LCA Japan Forum. The results show that the environmental impact at the materials procurement stage is great, and that efficient production that reduces losses at the DNP Group production stage is important.



1 Recycling ratio is calculated as (input amount + amount reused) / input amount. Steam generation amount and solvents contained within ink have been excluded)

17

 $^{\rm ^{12}}$  VOCs listed in Category 1 in the PRTR Law. Total VOC volume in 2003 was 19,100 tons.

<sup>&</sup>lt;sup>13</sup> Amounts given for COD, nitrogen and phosphorous are based on emissions into wastewater channels to which the Water Pollution Control Law applies.

#### **Information Communication Division**

The Information Communication Division produces printed publications, such as weekly magazines and other documents; commercial printing, such as catalogs, posters, and flyers; and business form printing, such as stock certificates. product vouchers, bank deposit books, continuous business form, and various types of cards.

The environmental impact of this division was reduced due to the closure of the Gotanda Plant Ichigaya Publication Printing Operations that resulted from the integration of the production structure.

cling rate is high because paper constitutes almost of the raw material used. 99% of the wastepaper and other waste emissions from the plants are recycled. Another characteristic

of this Division is that much of the solvent used is recycled. Toluene is used as the ink solvent in the gravure printing used in publishing, and the solvent that evaporates during the printing process is collected through the use of activated charcoal. etc. Because we use only toluene that is not mixed with any other solvents in our gravure printing used in publishing, we are able not only to reuse the collected toluene in our own printing processes, but can sell a portion of it to other companies as well.

Facilities used in production processes that are covered A special characteristic of this Division is that the recythe film making process that specially designated by the Water Pollution Control Law and Sewerage Law, such as automatic film development cleaning equipment (equipment for developing and fixing photographic film for proofing, which is what the printing plates are based on), automatic printing plate development cleaning equipment with light-sensitive film attached (equipment for developing the plates used in offset printing), surface preparation equipment using acid or alkalis (equipment for preparing separate plate surfaces for plates used in gravure printing), and electroplating equipment (for chrome or copper plating of plates used in gravure printing). In the printing process, the printing press itself is equipment specified by the Noise Regulation Law and the Vibration Regulation Law. In addition to these, there are also compactors, blowers, and boilers.







Personal mails

Waste plastic

Scrap metal

Waste oil

Sludge

Other

100

#### **Explanation of Information Communication Division Processes**

The following is an explanation of the production process for magazines, which are representative of the printed material produced by this Division.



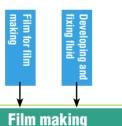


Plate making

Amount effectively 185 600 t (2.3% down) 181 300 t utilized 4 900 t 3.900 t (20.4% down) Reduction onsite Reduction offsite 3,600 t 2,800 t (22.2% down) 1,200 t (20.0% down) Final disposal amount 1,500 t

FY2002

195.600 t

FY2003

189.200 t (3.3% down)

Waste disposal

Total waste generated



# **Printing**

After the "cutting" and "olding" processes,

order, cut, and the book is completed.

Amount effectively utilized

Reduction onsite

#### Bookbinding **Finished product**

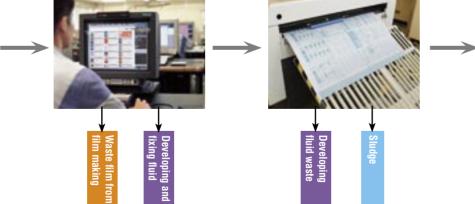
We receive copy from the publisher, such as manuscript instructions, writing, photographs,

**Receipt of copy** 

We use computers to create the copy, photo, and illustration layout according to the manuscript instructions, and create the DTP data.

We print out a 4-color (black, blue, red, yellow) version from the DTP data.





Main materials			
	FY2002	FY2003	
Paper	1,550,000 t	1,559,800 t	(0.6% up)
Film	2,600 t	2,200 t	(15.4%down)
Ink	23,600 t	22,900 t	(3.0% down)

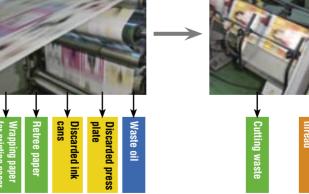
Main secondary materials			
	FY2002	FY2003	
Solvent	300 t	200 t	(34% down)
Acid / alkalis	100 t	100 t	(No change)

Utilities					
	FY2002 FY2003				
Electric	296.9 million kWh	286.6 million kWh	(3.5% down)		
Municipal gas	56.6 million m³	55.3 million m³	(2.3% down)		
LPG	4.7 million kg	4.8 million kg	(2% up)		
Fuel oil	100k	100 k	(No change)		
Water	1,691,600m <sup>3</sup>	1,661,800m <sup>3</sup>	(1.8% down)		

The paper passes through the printing press, and printing is made in the following order: black, blue, red, yellow.



the printed material is the pages are bound in



Air emissions				
	FY2002	FY2003		
GHG emissions	258,500t-CO <sub>2</sub>	251,700t-CO <sub>2</sub>	(2.6% down)	Wastewa
NOx emissions	200 t	200 t	(No change)	COD em
SOx emissions	1.0 t	1.0 t	(No change)	Nitrogen
VOC emissions*	1.000 t	400 t	(60% down)	emission
			, ,	Phospho

VOCs listed in Category 1 in the PRTR Law. Total VOC volume in 2003 was 1,600 tons.

Emissions into water				
	FY2002	FY2003		
Nastewater	1,183,700m <sup>3</sup>	1,113,100m³	(6.0% down)	
COD emissions	0.2 t	0.1 t	(50% down)	
Nitrogen emissions	0.2 t	0.1 t	(50% down)	
Phosphorous emissions	0 t	0 t	(No change)	

FY2002 2,200 t	FY2003 2,800 t
2,200 t	2,800 t
7,500 t	8,200 t
660,500m³	169,613,000m <sup>3</sup>
E	,,,,,

Amount recycled

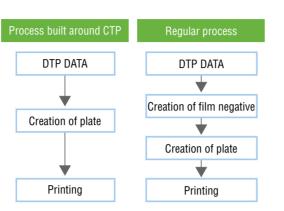
#### R&D concerning environmental issues at Information Communication Division: Direct plate making

The DNP Group develops technologies for environmental impact reduction, such as prepress operation efficiency and printing process stabilization, at its Technology Development Center Manufacturing Technology Laboratory. One example is the use of digital data. The majority of the manuscripts that are provided by publishing companies has been created by computer. "Direct plate making", which generally takes the form of CTP (Computer to Plate) in which manuscript data is transferred directly to the printing plate, does not require the middle stage process of film making, and is geared toward curbing the wasting of film, solvent, and developing fluid. It also obviates the need for photolithography machines for creating film negative plates, which saves energy.

In offset printing, by using press plate color tone data to preset the ink supply amount, there is little printing necessary for color tone adjustment at the outset of the printing process, which makes it possible to save on ink, paper and energy while cutting waste.

In order to smooth out this series of processes, research is being conducted at DNP into using printer output to confirm the image on the computer screen, the page format, and the color tone when creating the original print. We also look into ways to conduct uniform control of color tone amongst the printed materials created in various media.

In addition, we also perform basic research into providing for a more stable printing process.





CTP output machine

# Digital Data Device for Measuring Image Area DIGI-DEMIA

This is a system that uses CTP digital data and greatly increases efficiency in color control of multicolor offset printing. It analyzes CTP data and calculates the optimal ink amounts for each area. Ink amounts are automatically

preset at the outset of printing, improving color control efficiency and reducing waste and energy usage.

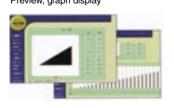
Output view screen

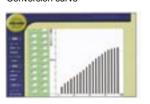


DEMIA data output screen



Conversion curve







#### **Environmentally Conscious Products: Information Communication Division**

# Environmentally conscious magazines, pamphlets, educational booklets

(Use of recycled materials)

These are publications that use 100% recycled paper from used magazines and newspapers. These publications are not only environmentally friendly in terms of using recycled paper, but also are printed with low-environmental impact soy ink and non-VOC ink, and using printing processes that emit no toxic fluids and use no water.

#### **Environmentally conscious calendars**

(Use of recycled materials / no need for separation of components)

These calendars use recycled paper and soy ink, and are made without any metal or plastic components.

# "Eco Cut-outs" (Eliminating need to separate)

These are point-of-purchase displays that use part of the original packaging box as a base. Because they contain no veneer or metal parts, the displays can be easily disposed of and recycled, with no need to separate into different materials.

#### Recycled Paper "S-Mail"

(Using recycled materials)

As a new addition to our lineup of "S-Mail" products, special postcards that can be used for invoices and invoice breakdowns, etc., we have developed recycled paper S-Mail products. The new products are available in 70% and 100% recycled paper versions, each of which has acquired the Eco-Mark.

#### **PET-G Cards**

(Chlorinated organic compounds not used)

These cards are made of amorphous copolyester (PET-G), which does not emit chlorinated gas even when burned, and breaks down into water and  $\text{CO}_2$ .

#### **Eco-Fit Bank Books**

(Using recycled materials)

These bank books are made entirely of recycled paper and are printed with soy ink. Up until now, all but the cover was made of recycled paper, but these are the first bank books in Japan using recycled paper for the covers as well.

#### **Environmentally-conscious Ink**

(VOC-free)

The DNP group develops and manufactures environmentally-conscious ink. During FY 2002, shipments showed an increasing tendency towards use of soybean oil ink in offset and newspaper printing, and a trend towards water based inks in gravure printing, both of which are helping to prevent air pollution and improve working environments around printing presses.











tures packaging materials (packaging materials and containers for food, beverages, candies, household items, and medical supplies, etc.), construction materials (interior and exterior materials for housing and furniture, decorative metal paneling, film for displays, electrode materials for lithium-ion rechargeable batteries, etc.).

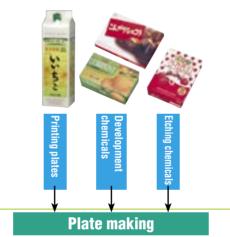
This division is characterized by the consumption of a ing, coating and laminating. The inks used in these processes contain large amounts of a wide variety of solvents, which VOCs. The main measure used to reduce VOC emissions is to recycle. As a means of making effective use of such waste

The Lifestyle and Industrial Supplies Division manufac- incineration, and the heat generated through incineration is used to create steam for use in the drying process. Heat emissions are also similarly used in the incineration furnace itself. Accordingly, the division is also characterized by recovery of large amounts of heat, as well as substantial emissions of GHG. etc.), and industrial supplies (printer ribbons, anti-reflective Furthermore, as a measure against VOCs, we have been making progress in switching to the use of water-based ink and installing solvent recovery equipment at some sites.

Another particular characteristic of this Division is that the large amount of solvents in processes such as gravure print- final disposal amount is high. The division uses a wide range of raw materials, including paper, plastic films, plastic and metal (aluminum). These materials are combined into the various when heated and dried produce a printed coating on the print- coatings and laminates that provide the level of performance ing surface. As a result, solvents are released within the plant demanded from our products. Therefore, the waste emitted itself and into the atmosphere, necessitating measures against from this division are composite materials, which are difficult

#### **Explanation of Lifestyle and Industrial Supplies Division Processes**

The following is an introduction to our paper container manufacturing process:



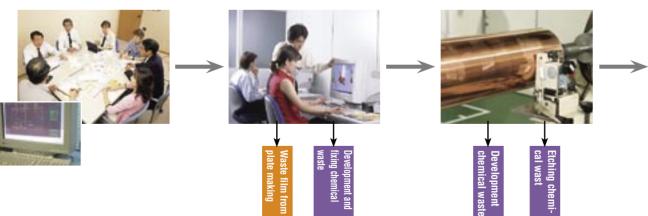
#### **Planning and Design**

We plan the form and materials according to the product information and the desired specifications, and create the design using a CAD

The text, photo, and illustration layout is produced on a computer, and the data is created.

Film-making

We use the data to create the various color plates to be used in printing. In gravure printing there are also machine engraving and



	Main materials		Main secondary materials				Utilities				
	FY2002	FY2003			FY2002	FY2003			FY2002	FY2003	
Paper	183,000 t	181,600 t	(0.7% down)	Solvent	25,300 t	24,100 t	(4.7% down)	Electric	344.4	379.7	(10.2% up)
Film	83,700 t	91,900 t	(9.8% up)	Acid / alkalis	100 t	400 t	(300% up)		million kWh	million kWh	
Plastic	58,100 t	68,000 t	(17.0% up)					Municipal gas	22.2 million m <sup>3</sup>	24.5 million m <sup>3</sup>	(10.4% up)
Metal	38,700 t	39,800 t	(2.8% up)					LPG	18.6 million kg	20,600 million kg	(10.8% up)
Ink	33,700 t	36,000 t	(6.8% up)					Fuel oil	4,500 k	1.000 k	(78% down)
								Water	1,538.6 m <sup>3</sup>	1,720.0m³	(11.8% up)

materials, we recover the heat generated in onsite incineration ("thermal recycling"), or have the materials converted to solid fuel by outside contractors.

Nevertheless, thermal recycling is impossible for materials containing polyvinyl chlorides so the final disposal amount is high. We made progress in reducing this amount in 2003 through effective use of substitute materials and material separation. The environmental facilities used in the manufacturing processes of this Division are the same as those for the Information Communication Division.

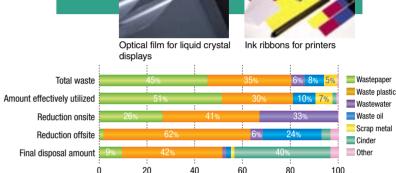
The DNP Industrial Materials Co., Ltd. Okayama Plant and Tsuruse Plant, as well as DNP Technopack Tokai Co., Ltd. were added to this Division in 2003, increasing the Division's overall environmental impact. Atmospheric SOx emissions were reduced, however, because the I.M.S. Dai Nippon Co., Ltd. Sayama Plant switched from fuel oil to municipal gas.

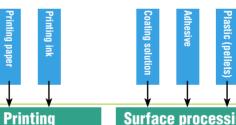
#### Waste disposal

	FY2002	FY2003	
Total waste generated	96,600 t	98,900 t	(2.4% down)
Amount effectively utilized	68,600 t	76,600 t	(11.7% down)
Reduction onsite	19,000 t	16,000 t	(15.8% down)
Reduction offsite	3,000 t	2,000 t	(33.3% down)
Final disposal amount	6,000 t	4,300 t	(28.3% down)

Beverage packaging Food packaging ■ Decorative Materials Flooring for homes ■ Industrial Supplies

■ Packaging





The paper passes through the printing press, and printing is made in the following order: black, blue, red, yellow, special colors.

# **Surface processing**

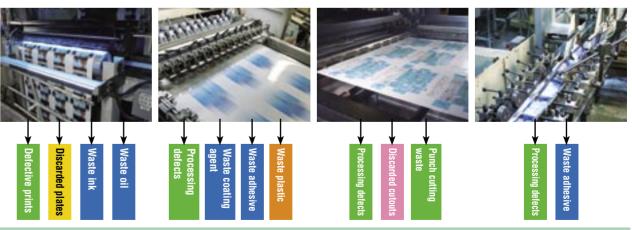
Varnish is applied to the surface for protection and beautification.

#### Punching

The processed printed materials are punched out into expanded carton forms

After being punched out, adhesive is applied and the forms are folded into cartons

**Pasting and assembly** 



	Air emissions			Emissions into water				Amount recycled			
2 FY2003			FY2002	FY2003			FY2002	FY2003			
2 294,700 t-CO2	(7.8% up)	Wastewater	1,050,000m <sup>3</sup>	1,171,600m <sup>3</sup>	(11.6% up)	Solvent	1,400 t	1,400 t			
t 214 t	(6.5% up)	COD emissions	0.2 t	3.5 t		Steam generated through	73,600 t	140,700 t			
t 8.1 t	(79.7% down)	Nitrogen emissions	0 t	0.5 t		waste heat recovery					
t 1,200 t	(42.9% down)	Phosphorous emissions	0 t	0 t		Water	157,549,400m <sup>3</sup>	142,301,600m <sup>3</sup>			
)	D <sub>2</sub> 294,700 t-CO <sub>2</sub> t 214 t t 8.1 t	02 294,700 t-C02 (7.8% up) t 214 t (6.5% up) t 8.1 t (79.7% down)	Day 294,7001-CO2	03 294,700 t-C02   (7.8% up)   Wastewater   1,050,000m <sup>3</sup>     t	Da 294,700 t-CO2   (7.8% up)   Wastewater   1,050,000m³   1,171,600m³   t   214 t   (6.5% up)   COD emissions   0.2 t   3.5 t   0.1 t   8.1 t   (79.7% down)   Nitrogen emissions   0.1 t   0.5 t   0.5 t   1,200 t   (42.9% down)   Phosphorous   0.1 t   0.1 t   0.5 t   0	Day 294,7001-CO2   (7.8% up)   Wastewater   1,050,000m³   1,171,600m³   (11.6% up)   t   214 t   (6.5% up)   COD emissions   0.2 t   3.5 t   0.5 t	Da 294,700 t-C02   (7.8% up)   Wastewater   1,050,000m³   1,171,600m³   (11.6% up)   Solvent     t   214 t   (6.5% up)   COD emissions   0.2 t   3.5 t   Steam generated through     t   8.1 t   (79.7% down)   Nitrogen emissions   0 t   0.5 t   waste heat recovery     t   1,200 t   (42.9% down)   Phosphorous   0 t   0 t   Water	Doc 294,7001-C0;   (7.8 wp)   Wastewater   1,050,000m³   1,171,600m³   (11.6 wp)   Solvent   1,400 t			

#### LCA (Life Cycle Assessment) efforts in the packaging area

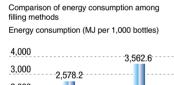
Containers and packaging are subject to special attention by consumers. We use LCA methods to gain an objective comparison of products through numerical values for items such as energy used and air emissions over the course of the products' life cycles. This data is useful in the development of environmentally conscious products, and we also provide this information to consumers

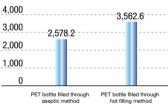
The following is an introduction to the steps used in conducting LCA.

In the manufacturing of beverages sold in PET bottles, the beverages are sterilized though filling at high temperatures (hot filling). In the "aseptic filling system for PET bottles"

developed by DNP, the beverage content is immediately chilled after a short high-temperature and filled into a sterilized bottle with a sterilized cap in an aseptic room. This makes filling at room temperature possible. This process has the special characteristic of permitting the forming of the bottle and the filling of contents on the same production line, because the bottles are supplied to the filling plant in a pre-formed condition ("test tube" PET bottle master form prior to bottle shaping). As the graphs below (left and middle) show, when these two systems are compared through LCA, the "aseptic filling system" provides significant reduction of energy consumed and greenhouse gas emissions.

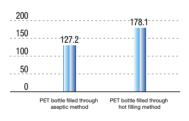
# Through completion of the PET bottle beverage in the aseptic filling system by using blow molding on PET bottle that is in test





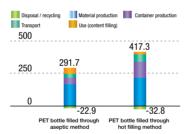
Note 1) This covers the period from material production though disposal/recycling.

#### Comparison of greenhouse gas emissions Energy consumption (CO2 - kg per 1.000 bottles)



Note 1) This covers the period from material Note 2) Filling speed: 600 bottles/minute

#### Results of beverage container impact assess-(Unit: points per 1,000 bottles)



## Note 2) Filling speed: 600 bottles/minute

#### Participation in LCA research

The National Institute of Advanced Industrial Science and Technology Research Center for Life Cycle Assessment, an independent administrative corporation, developed the "LIME (Life Cycle Impact Assessment Method Based on Endpoint Modeling" in conjunction with the LCA Project as one method for assessing life cycle impact. In order to examine whether this method is applicable to the DNP Group's LCA, we participated with the Research Center and Nikkei Business Publications a joint "LCIA Special Research Committee", which guided the "Beverage Container Impact Assessment". Some of the results of that research are shown in the graph above (right). We also participated as the industry representative in the Japanese government's Plastic Waste Management Institute Corp.'s "Plastic product LCA investigative research (commissioned by the Ministry of Economy, Trade and Industry)". The thesis centered on "the contribution of plastic products to sustainable development", and in the area of packaging a quantitative analysis of based on LCA methodology was made with "shell bottles and refillable pouches (reuse)" as the case examples.

#### Development of environmentally conscious products

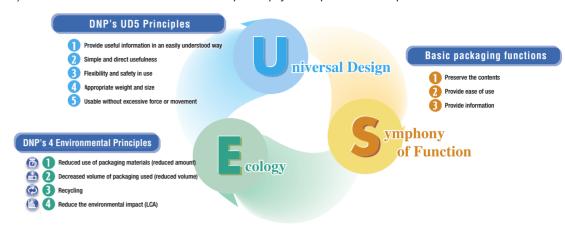
We are making efforts in the area of packaging to develop environmentally conscious packaging and containers based on the "4 environmental principles of packaging: (reduced amount, reduced volume, recycling, and LCA)". Examples of products employing our packaging design philosophy, "USE -FULL", are shown on the following page.

In terms of environmentally conscious materials, we made progress in every area in developing technologies and products using bio-plastics, which are receiving a great deal of attention. We will continue to gather data about this area. and make efforts to develop uses and applications in packaging materials.

In our efforts to provide information to consumers, we participated in the "Packaging Products for Living Exhibition 2003" held by Japan Packaging Technology Association, Inc., and the "Ecoproducts Exhibition 2003" held by the Japan Environmental Management Association for Industry and the Nihon Keizai Shimbun.

#### Design policy in the packaging area

DNP aims for "USE-FULL" packages in our packaging design efforts. USE-FULL means "useful" (convenient and beneficial). USE-FULL was coined to reflect the U-S-E philosophy and express the concept of FULLness.



#### Environmentally Conscious Products —— Packaging

#### Inorganic Barrier (IB) Film





The DNP group manufactures packaging-use clear vapor-deposit barrier film that is free of chlorine compounds, a source of dioxin. The film has been used as packaging for foods, toiletries and other daily goods that require packing with barrier qualities.



#### Elbow Pouches (2) (1)





Elbow pouches are liquid refill packs that are easy to open and pour. The pouches help to conserve resources by enabling reuse of the original container, and shrink to a compact size after use.







HI-CUP is a double-walled heat insulated cup made of recycled paper. After use, the cup can be easily crushed into a small size.



#### Paper Trays





Our paper trays can be used for food dishes and frozen foods, etc, and are microwave safe. The outer cover of the trays can be printed on, and give a better finish than printed plastic trays. After use, the trays can be easily crushed into a small size.



#### Back-in Box (BIB) 🛅 😭





Back-in boxes are containers are cardboard boxes that containing an inner plastic bag. The box and bag sections can be separated and folded both before and after use, greatly helping to reduce storage space and improving recyclability.



# Measures taken in the decorative materials area to prevent "sick house syndrome"

The DNP Group is working with base material manufacturers, adhesive manufacturers, and fabrication companies to control formaldehyde emissions and provide construction materials that fulfill the requirements of the Building Standard Law.

The Building Standard Law, which was revised July 1, 2003, mainly aims to regulate the construction materials used in buildings and make ventilation equipment compulsory, with the goal of keeping indoor concentrations of the chemicals that cause "sick house syndrome" below the guideline values. The two chemicals covered by the regulations at this time are formaldehyde and chlorpyrifos. The use of chlorpyrifos (used in termite extermination) is prohibited, and formaldehyde (used in plywood and wallpaper adhesives) is subject to the following limitations:

- (1) Interior finish limitations;
- (2) Ventilation equipment requirements;
- (3) Use under roofs.

#### Home Constraction Materials Analysis and Evaluation Center

The Home Constraction Materials Analysis and Evaluation Center was established in response to the "sick house syndrome" problem, so as to evaluate the environmental functions of products used in interiors and to construct a structure for measuring the VOCs (Volatile Organic Compounds) emitted from building materials. It not only measures the functions of our company's products, but also handles requests from other companies, and therefore constitutes a new area of business. More than 100 requests from external sources for measurement and analysis are already being handled.

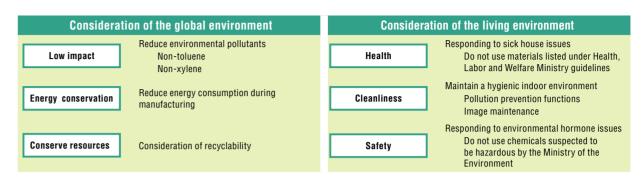
The Home Constraction Materials Analysis and Evaluation Center is regulated under JIS 1901, and the processes and technology used for measuring VOC emissions from building materials have received third-party ISO/IEC 17025 certification (Certification date: April 25, 2003/Certification organization: The Japan Accreditation Board for Conformity Assessment (JAB)/Certification number: RTL01330). This makes it the first small-chamber method VOC emissions testing lab to receive such certification in Japan. Acquisition of this certification demonstrates the thorough controls and technical abilities of our quality system.



#### ISO/IEC 17025 Summary Items required concerning technical abilities Items required for thorough control corresponding to the types of testing contracted by the testing laboratory 4.1 Organization 5.1 General 4.2 Quality system 5.2 Personnel 4.3 Document control 5.3 Equipment and environmental conditions 4.4 Confirmation of contents of request and estimate forms and 5.4 Confirmation of testing and calibration methods and/or validity of methods 4.5 Testing and calibration sub-contracting contracts 5.5 Facilities 4.6 Purchase of services and/or supplies 5.6 Traceability of measurements 4.7 Service provided to clients 4.8 Complaints 5.8 Handling of testing and calibration items 4.9 Control of nonconforming testing and calibration 5.9 Guaranty of testing and calibration quality 4.10 Correction process 5.10 Reporting of results 4.11 Prevention process 4.12 Record control 4.13 Internal auditing 4.15 Management review

#### Basic concept behind environmentally conscious products in the decorative materials

We have consideration of global environmental conservation and the living environment as our guiding principle in developing products in the decorative materials area that take the environment into consideration in every process, from production through distribution, use and disposal.



Consideration of the lifecycle of a product

Consideration at the production and distribution stages

Consideration at the product use stage

Consideration at the product disposal stage

#### **Environmentally conscious products – Construction materials**

#### Safmare

Original decorative paneling for "olefin-based" finishing and building that makes it possible to create spaces that meet demands for "health", "cleanliness" and "safety".



#### Poweregos / Cleanegos

High-functioning "paper-based" decorative sheets for use in kitchen cabinets, closets, and building that are superior in terms of abrasion resistance and stain resistance.



#### HT Floor

Olefin-based flooring that allows realization of next generation quality and rapidly improved functionality.



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#### Clerio (Erio steel sheet)

Decorative steel sheet for ornamental bath walls that do not contain PVC and are printed directly without the use of film.



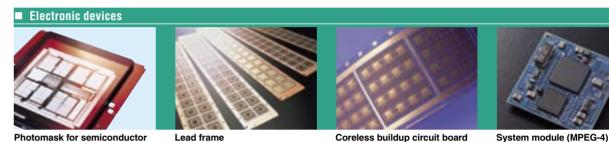
The Electronics Division applies photographic plate making technology to the manufacturing of display products (such as LCD color filters, Braun tube TV shadow masks<sup>-1</sup>, backboards for plasma TVs, and projection TV screens) and electronic devices (such as photomasks and lead frames<sup>-2</sup> for semiconductors). This Division is characterized by consumption of large amounts of water and acid. The acid is used in etching when producing shadow masks and lead frames, while water is necessary for cleaning. The Division makes effective use of waste acid, recycling it for reuse both onsite and through outside contractors.

In 2003, in addition to strengthening of the production structure at the Mihara Plant, DAP Technologies Co., Ltd. and Advanced Colortech Co., Ltd. were added to this Division. This resulted in an increase in overall environmental impact. Nevertheless, as a result of efforts to make effective use of the

sludge emitted from the wastewater treatment facility, there was a marked decrease in the final disposal amount.

- Shadow mask: An electronic device used in plate making with fixed pore size and pitch so that the electron beams that correspond to the three primary colors (red, green, blue) released from an electron gun contained within the color picture receiver each hit the fluorescent body only.
- Lead frame: The connecting terminals of a semiconductor chip, which perform a number of functions, including connection of the chip with an external devices, release of heat, maintenance and protection of the chip.









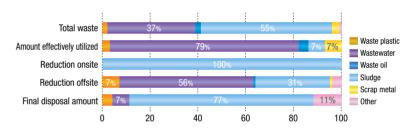
Production line for LCD color

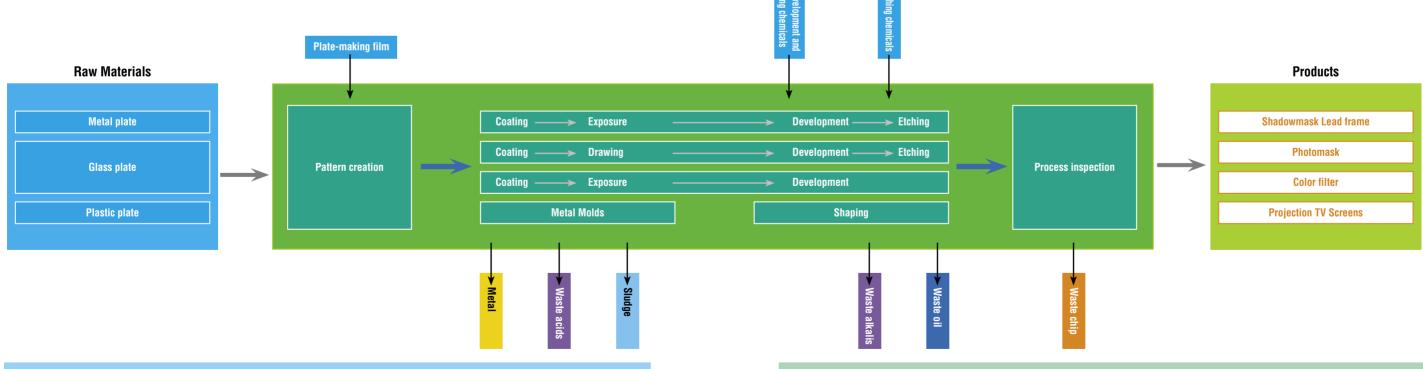


Production line for photomasks for semiconductors

#### Treatment of unused materials

	FY2002	FY2003	
Total unused materials	142,200 t	168,600 t	(18.6% up)
Effective use	61,400 t	76,500 t	(24.6% up)
Reduction on site	65,900 t	78,000 t	(18.4% up)
Site volume reduction	3,100 t	3,600 t	(16.1% up)
Landfill	11,800 t	7,900 t	(33.1% down)





Main materials		Main secondary materials				Utilities					
	EVOCAC EVOCAC					FY2002	FY2003				
	FY2002	FY2003			FY2002	FY2003		Flootrio	247.3	328,900	(33.0%)
Film	6,600 t	4,900 t	(25.6% down)	Acid / alkalis	32,700 t	58,800 t	(79.8%)	Electric	million kWh	million kWh	(33.0%)
Metal	14,200 t	15,400 t	(8.5% up)					Municipal gas	52.4 million m <sup>3</sup>	54,600 million m <sup>3</sup>	(4.2%)
Glass	2,200 t	6,600 t	(200% up)					Vapor	0	169TJ	
								Water	7,878,400 m <sup>3</sup>	8,852,900m <sup>3</sup>	(12.4%)

Air emissions **Emissions into water Amount recycled** FY2002 FY2003 FY2002 FY2003 FY2002 FY2003 38,300 t 7,154,900 m<sup>3</sup> 7,979,500 m<sup>3</sup> (11.5% up) Acid / alkalis 50,700 t GHG emiss 221,700 t -CO<sub>2</sub> 262,400 t -CO<sub>2</sub> (18.4%) Wastewater NOx emissions 162 t 189 t (16.7%) COD emissions 30.0 t 36.1 t (20.3% up) Water 150,181,900m<sup>3</sup> 186,005,900m<sup>3</sup> 0 t (no charge) Nitrogen emissions 25.5 t (37.8% up) VOC emissions\* 0 t 0 t (no charge) 0.9 t (25.0% up)

<sup>1</sup> VOCs listed in Category 1 in the PRTR Law. Total VOC volume in 2003 was 100 tons.

#### Research and development for environmental concerns

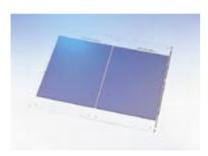
Product development and process improvement in the Electronics Division mainly take place in the Display Components Operations Display Components Lab and in the Electronic Components Operations Electronic Components Lab.

In the area of display products (such as Braun tube TV shadow masks, LCD color filters, and projection TV screens), a black matrix that does not use chrome has been developed for LCD color filters. A black matrix is used to improve color filter contrast, and therefore functions to create a stripe pattern that fills in the gaps between the R (red), G (green), and B (blue) color filters. Up until the majority of black matrices used have been chrome-type that use photo etching technology to make high-precision, high-definition processing possible. In consideration of the environment, we developed a black matrix that uses photolithography technology and does not use chrome (acrylic resin-coated product), and we continue to work to develop its technical advantages.

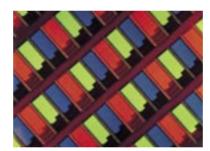
In the area of decreasing the environmental impact of manufacturing processes, we eliminated the use of all chemicals listed in Category 1 in the PRTR Law from the production lines for projection TV screens. In the area of color filter production, while the inefficient use of optical plastic in the

spin method used in the coating process had been a problem because it created a high volume of waste, we have developed a coating process employing the die-coating method, which has reduced the amount of optical plastic used, and further reduced waste.

In the area of electrical devices (such as photomasks and lead frames), the majority of efforts are being made toward reducing the environmental impact of the production processes. One example is the manufacture of photomasks without the use of organic solvents. Photomasks are plates used in baking LSI circuit patterns onto silicon wafer surfaces, and are manufactured using optical plastic (photo resist). Optical plastic, which is made of polymers, melts easily, and the most commonly used type employs organic solvent because of ease of coating and drying. Nevertheless, for the sake of the environment we have made the switch to the non-solvent type that uses an aqueous solution. This not only reduces the environmental impact on the production environment at the manufacturing site, but also reduces exhaust and effluent emissions into the general environment. In addition to this, we are also developing small-scale production facilities that provide better clean room energy conservation, as well as repair technologies using mechanical processes that do not use toxic gases in the repairing of photomasks



LCD display color filter



Blow-up photo of a color filter



Photomask

# **2003 Environmental Performance**



We have included more details about the reduction of environmental pollutants, especially VOCs (Volatile Organic Compounds). We have also improved the accuracy of our explanation concerning PRTR.

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## **Results and Evaluations of Environmental Conservation**

The DNP Group has set environmental goals based on our environmental policy that are appropriate to our business activities, and we have been making steady progress. The following are the results achieved in 2003 regarding the goals set by the Environmental Committee in March 2002.

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( ) Broadly achieved doar (	Acmeyed doar or are in a Stead	v ireno iowaro acinevino doai	X GOALHOLACHIEVED

Theme	Goal (Year in which goal is to be achieved)	2003 results	Evaluation Pa	ge on which is described
Development and ale of environmentally conscious products	Increase the sales of environmentally conscious products by 10% annually in comparison to the previous year (annually)	2002 sales: ¥101.9 billion 2003 sales :¥140.4 billion Comparison with 2002: 38% increase	0	p48
PRTR	Reduce air emissions of toluene by 500 tons annually for the Group as a whole (2004)	Air emissions in 2000: 8,376 tons Air emissions in 2002: 3,151 tons Air emissions in 2003: 2,003 tons Comparison with 2000: 76% decrease	0	p36
	Reduce emissions and transport amount of chemicals listed in Category 1 in the PRTR Law (with the exception of toluene) by 50% in comparison with 2000 (2004)	Emissions / amount transported in 2000: 1,220 tons Emissions / amount transported in 2002: 870 tons Emissions / amount transported in 2003: 712 tons Comparison with 2000: 42% decrease	0	p36
Global warming prevention	Maintain the 2000 level of greenhouse gas emissions (2010)	2000 emissions: 867,000 tons 2002 emissions: 842,000 tons 2003 emissions: 899,000 tons Comparison with 2000: 103.7%	×	p41
	Maintain total energy consumption at 2000 levels (2010)	2000 total energy consumption: 18,500 TJ 2002 total energy consumption: 18,100 TJ 2003 total energy consumption: 19,300 TJ Comparison with 2000: 104.3%	×	p41
	Reduce per unit energy consumption (energy consumption converted to fuel oil consumption/total production) by 15% in comparison with 1990 (2010)	1990 per unit: 4.10 TJ/¥100 million 2002 per unit: 3.94 TJ/¥100 million 2003 per unit: 4.19 TJ/¥100 million Comparison with 1990: 2.2% increase	×	p41
	Reduce per unit CO <sub>2</sub> emissions (CO <sub>2</sub> emissions /total production) by 20% in comparison with 1990 (2010)	1990 per unit: 198,000 tons CO <sub>2</sub> /¥100 million 2002 per unit: 177,000 tons CO <sub>2</sub> /¥100 million 2003 per unit: 187,000 tons CO <sub>2</sub> /¥100 million Comparison with 1990: 5.6% increase	0	p41
Reduction of industrial waste	Reduce per unit waste emissions (Waste emissions /total production) by 40% in comparison with 2000 (2005)	2000 per unit: 0.312 tons/¥100 million 2002 per unit: 0.211 tons/¥100 million 2003 per unit: 0.202 tons/¥100 million Comparison with 2000: 35.3% reduction Comparison with 2002: 4.3% reduction	0	p38
	Reduce total waste generation by 25% in comparison with 2000 (2005)	Total waste generation in 2000: 646,000 tons Total waste generation in 2002: 506,000 tons Total waste generation in 2003: 519,000 tons Comparison with 2000: 19.7% reduction Comparison with 2002: 2.6% increase	×	p38
	Achieve zero emissions at 20 sites (2005)	Achieved at 7 sites 28 sites at 1% or less emissions going to final disposal site	0	p38
	Reduce waste generation rate (total waste generation/total materials input) by 20% in comparison with 2000 (2005)	2000 waste generation rate: 17.7% 2002 waste generation rate: 15.1% 2003 waste generation rate: 14.8% Comparison with 2000: 16.4% reduction Comparison with 2002: 2.0% reduction	0	p38
	Achieve 80% recycling rate (recycling amount/total waste generation) (2005)	2000 recycling rate: 71.9% 2001 recycling rate: 74.2% 2002 recycling rate: 77.6% 2003 recycling rate: 78.8% Comparison with 2002: 1.2 point improvement	0	p38

Theme	Goal (Year in which goal is to be achieved)	2003 results	Evaluation	Page on which it is describe
Environmental conservation	Maintain a maximum concentration of air emissions covered by regulations that is 70% or less of the regulatory standards (2005)	2001 target achievement rate (voluntary target): 92% 2002 target achievement rate (voluntary target): 93% 2003 target achievement rate (voluntary target): 95%	0	p45
	Maintain a maximum concentration of wastewater emissions covered by regulations that is 70% or less of the regulatory standards (2005)	2001 target achievement rate (voluntary target): 83% 2002 target achievement rate (voluntary target): 89% 2003 target achievement rate (voluntary target): 92%	0	p45
	Maintain a noise level within site perimeters that is 95% or less of the regulatory standard (2005)	2001 target achievement rate (voluntary target): 45% 2002 target achievement rate (voluntary target): 47% 2003 target achievement rate (voluntary target): 60%	×	p45
	Maintain a maximum odor level within site perimeters that is 70% or less of the regulatory standard (2005)	2001 target achievement rate (voluntary target): 100% 2002 target achievement rate (voluntary target): 100% 2003 target achievement rate (voluntary target): 100%	0	p45
	Make the rate of separation and collection of wastepaper 65% or better in comparison with municipal waste (annually)	2001 target achievement rate (voluntary target): 91% 2002 target achievement rate (voluntary target): 89% 2003 target achievement rate (voluntary target): 90%	0	p45
Office environment	Increase the purchasing rate for products covered by our own company standards (Purchasing Division Green Purchasing Standards) of the total amount of materials and supplies purchased by 2.5% in comparison with the previous year (annually)	2001 wastepaper separation and collection rate: 60.7% 2002 wastepaper separation and collection rate: 62.3% 2003 wastepaper separation and collection rate: 68.4%	0	p40
Green purchasing	Increase the purchasing rate of environmentally certified products, such as those labeled with the Eco-Mark, of the total amount supplies (office supplies and equipment) by 3% in comparison with the previous year (annually)	2001 Green materials purchasing rate: 15.9% 2002 Green materials purchasing rate: 18.6% 2003 Green materials purchasing rate: 24.3% Comparison with 2002: 5.7% increase	0	p47
	Reduce per unit CO <sub>2</sub> emissions (CO <sub>2</sub> emissions /transport weight/transport distance) by 5% in comparison with 2000 (2010)	2001 Green supplies purchasing rate: 9.1% 2002 Green supplies purchasing rate: 12.5% 2003 Green supplies purchasing rate: 11.8% Comparison with 2002: 0.7% decrease	×	p47
Reduction of environmental impact of transport	Reduce per unit amount of fuel used for transport (amount of fuel used/sales) by 20% in comparison with 2000 (2010)	2000 per unit CO <sub>2</sub> emissions: 115 t-CO <sub>2</sub> / ton kilometer 2002 per unit CO <sub>2</sub> emissions: 85 t-CO <sub>2</sub> / ton kilometer 2003 per unit CO <sub>2</sub> emissions: 79 t-CO <sub>2</sub> / ton kilometer Comparison with 2000: 31% decrease Comparison with 2002: 7% decrease		p43
	Reduce per unit amount of fuel used for transport (amount of fuel used/sales) by 20% in comparison with 2000 (2010)	2000 per unit amount of fuel used for transport: 83,000 I/¥100 millio 2002 per unit amount of fuel used for transport: 78,000 I/¥100 millio 2003 per unit amount of fuel used for transport: 78,000 I/¥100 millio Comparison with 2000: 6% decrease Comparison with 2002: 0% decrease	n	p43

In making per unit calculations, "production" (amount of business activity) represents the total amount of added-value.

#### **Reducing Environmental Pollutants**

We are making efforts to monitor and reduce emissions of environmental pollutants so as to conserve both the global and local environments. We are working to reduce atmospheric pollutants, such as air contaminants, ozone depleting chemicals, SOx (sulfur oxide), NOx (nitrous oxide), and VOCs (Volatile Organic Compounds), as well as water pollutants, such as COD (Chemical Oxygen Demand), nitrogen, and phosphorous.

In 2003, we were able to reduce emissions of air pollutants such as dichloromethane, dioxins, SOx, and VOCs, but ozone-depleting chemicals were at 2002 levels, and NOx emissions increased. We were able to reduce emissions phosphorous into public waters, but emissions of COD and nitrogen increased.

#### Impact on the atmosphere

#### Atmospheric contaminants

The DNP Group uses dichloromethane, which under the Air Pollution Control Law is considered a "priority substance" requiring reduction efforts. Dichloromethane is mainly used as a cleaner in the printing process, and we have been making progress in reducing its use by switching to cleaning equipment using aqueous solutions or to substitute chemicals. As a result, our total air emissions for 2003 were 3.6 tons.

Trichloromethane was completely eliminated in 1996, while tetrachloromethane was in 1997.

In the case of dioxins, we eliminated small-scale incinerators, in which incineration is difficult to control, by 2002, so as to reduce the emissions stemming from waste incineration. As a result, we reduced atmospheric emissions of dioxins by 7% in comparison with 2000. Currently, all of our active incinerators are large-scale thermal recovery incinerators that fulfill the 2002 regulations. We have six of these nationwide.

#### Ozone-depleting substances

In the case of ozone-depleting substances, although we do use air conditioners that employ coolant containing CFC-11<sup>-1</sup> and CFC-12, we reduced by three the number of air conditioners filled with this coolant in 2003, and currently have 14 on active duty. We are also making progress in eliminating chemicals in the production process that have been designated toxic, such as chlorinated organic solvents and other sub-

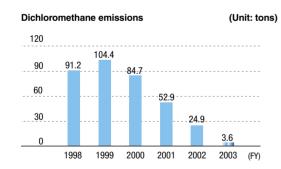
stances with a high ozone-depletion factor, and as a result the use of HCFC-141b\*2 CFC-substitute has been increasing since 1999. This substance has a comparatively low ozone-depletion effect, but at the same time it is a chemical that requires regulation from the standpoint of global warming prevention. Therefore, the DNP Group is making progress in reducing emissions of HCFC-141b into the atmosphere. In 2003 there was end to what had been a trend toward switching to substitute chemicals, and atmospheric emissions were at the same level as in 2002.

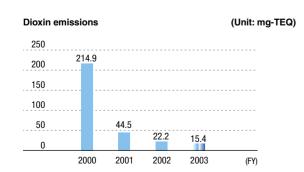
The use of 1,1,1-trichloroethane, which was banned by the Montreal Protocol on Substances that Deplete the Ozone Layer, was ceased in 1994.

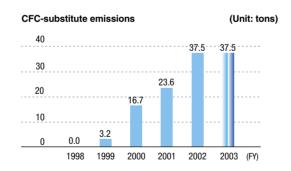
\*1: Chlorofluorocarbons \*2: Hydro chlorofluorocarbons

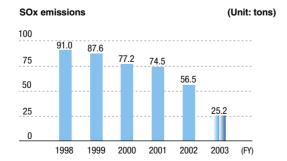
#### SOx (sulfur oxide) and NOx (nitrous oxide)

SOx and NOx are emitted in conjunction with electric and fuel consumption in the production process. The DNP Group has been working to reduce the emissions of these in smoke and soot by switching from fuel oil to municipal gas, improving combustion facilities, and energy conservation. By switching our boilers from fuel oil to municipal gas in 2003, we reduced SOx emissions levels to 33% of those in 2000. At the same time, there was an increase in the amount of municipal gas consumed, and electrical power consumption also increased due to an expansion of our scale of production, so there was an increase in NOx emissions.









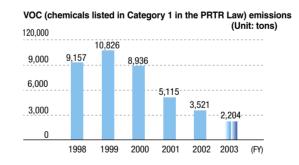
#### VOCs (Volatile Organic Compounds)

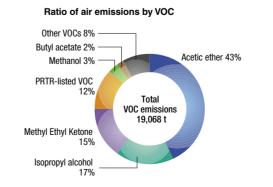
Substances as ink solvents, fixers, and cleaners are broadly used in the printing process and contain toluene and xylene, which are VOCs. These VOCs have been found to create photochemical oxidants and suspended particulate matter (SPM\*3) when released into the air, and their emission into the air is regulated. \*3 Suspended Particulate Matter

The DNP Group has been making progress in reducing emissions of PRTR-listed VOCs through separation using combustion equipment and the use of absorbers for their collection and reuse. We are also making efforts such as switching to low-environmental impact substitutes and water-based materials. In 2003, through our progress in separation of toluene and other VOCs, we were able to reduce air emissions of these compounds by 1,317 tons (37%) in comparison with 2002.

We have also been making efforts to monitor and reduce emissions into the environment of PRTR-listed VOCs. Our total VOC emissions were 19,068 in 2003, but most of this amount consisted of three chemicals- acetic ether, isopropyl alcohol, methyl ethyl ketone- that are used as solvents in the printing process. We will continue to make improvements so as to meet our goal of reducing air emissions by half by 2005.

# Nitrogen emissions (Unit: tons) 800 600 546:1 617.1 621.6 620.4 626.7 660.3 400 200 0 1998 1999 2000 2001 2002 2003 (FY)





#### Impact on water

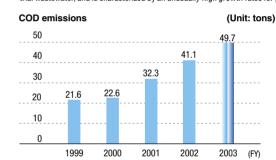
#### Impact on water

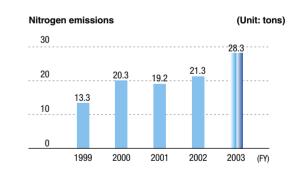
We use wastewater treatment facilities to decontaminate and reduce the pollution load of wastewater, emitted from our production lines and dining areas, which contains organic substances. In 2003, because of the increase in the production volume of processes in the Electronics Division that produce wastewater with a comparatively high organic and nitrogen content, there was an increase in organic compounds per unit of wastewater, causing overall COD waste volume emissions after wastewater processing to increase by 8.6 tons.

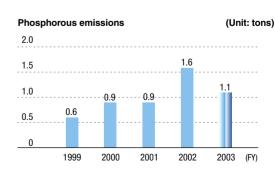
#### Nitrogen and phosphorous

We have been using wastewater treatment facilities and waterpurifier tanks to decontaminate wastewater from our plants and offices as a means of preventing the eutrophication 4 of public waters. In 2003, just as was the case with COD, the increase in the production volume of processes that produce wastewater with nitrogen content caused an increase in nitrogen per unit of wastewater, resulting in 7 tons more nitrogen emissions than in 2002. At the same time, we switched to non-phosphorous detergent at plants which produce a high volume of wastewater, reducing phosphorous emissions by 0.5 tons in comparison with 2002.

\*4 Eutrophication is a problem affecting water quality in closed coastal water areas and lakes. This is caused by nitrogen and phosphorous content in residential and industrial wastewater, and is characterized by an unusually high growth rates for plankton.







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We are making efforts to reduce the emissions into air and water, as well as the transport as waste, of chemicals listed in Category 1 of the PRTR Law \*, with the aim of limiting the environmental impact of chemicals that are used in the production process. We broadly reduced the environmental impact of chemicals in 2003 by, for example, reducing atmospheric emissions of toluene (which constitutes 90% of the total of PRTR-listed chemical emissions) by 1,148 tons (36.4%) in comparison with the previous year.

\* The PRTR Law is "a law enacted to promote the monitoring and control of emissions into the environment of designated chemicals."

#### Targets

- > toluene by the DNP group to 500 tons/year To reduce air emissions of
- > transfers of items designated as Class I Chemical Substances (except law to 50% of the FY 2000 level by FY 2004To reduce emissions and toluene) under the PRTR

#### Results

- > Air emissions of toluene in 2003 were 2,003 tons, which represents a reduction of 36.4% in comparison with 2002 (and a reduction of 76.1% in comparison with 2000).
- > Emissions and transport amount of chemicals listed in Category 1 in the PRTR Law (with the exception of toluene) totaled 712 tons, a reduction of 18.2% in comparison with 2002 (and a reduction of 41.6% in comparison with 2000).

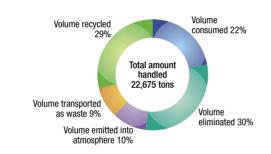
The cumulative results for PRTR-listed chemicals in 2003 are as shown in the table on page 37. There was a 4% increase in the amount handled to the previous year, to 22,675 tons (37 chemicals, 36 plants), because of an expansion in the range of data compilation. Of this, 2,204 tons, or 10% of the total, was emitted into the air, while there were zero emissions to soil.

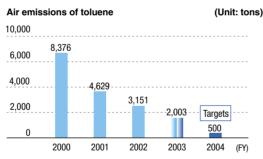
The majority of chemical air emissions are volatile organic compounds used in ink solvents employed in the printing process. Of these, air emissions of toluene constituted 91% of the total, or 2,003 tons (25 plants).

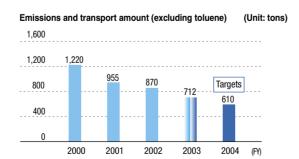
The DNP Group set a goal of 500 tons or less annually of air emissions of toluene for the Group as a whole by 2004, and the reduction plan, which is based upon treatment through gas collection and elimination, is moving forward. Progress was made in 2003 through the installation of elimination equipment and strengthening of disposal capabilities, resulting in a decrease in comparison with 2002 of 1,148 tons (36%). Currently, emissions from January through March 2004 represents a decrease of 1,509 tons on a year-to-date basis. Also, in 2003 emissions and transport volume of Category 1 chemicals other than toluene were 712 tons, representing a reduction to 58% of 2000 results, which was accomplished by switching to substitutes and other methods.

Note: Chemicals subject to reporting: Due to an expansion in the range of data compilation under the PRTR Law, chemicals of which 1 ton or more are handled on an annual basis are covered. Also, four additional sites- the DNP Industrial Materials Company, Ltd. Tsuruse Plant, DNP Technopack Company Tokai, Advanced Colortech Company, and DNP Technologies Company - became subject to data compilation.

#### Emissions and transport of all subject chemicals by volume







#### Solvent processing facilities







Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd. Chikugo Plant, Kyushu Dai Nippon Printing Co., Ltd. Tokai Dai Nippon Printing Co., Ltd.

#### Chemical Substances subject to PRTR Law

Unit: t (dioxins: mg-TEQ)

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Substance	Handled	Emissions to air	Emissions to public waters		Transferred as waste	Recycled	Consumed	Removed
Zinc compound (water-soluble)	6.6	0.0	0.0	6.6	0.0	0.0	0.0	0.0
Bis (2-ehtylhexyl) adipate	1.1	0.0	0.0	0.0	0.1	0.0	0.9	0.0
Monoethanolamine (2-aminoethanol) 25.6	0.0	0.0	1.2	24.4	0.0	0.0	0.0	0.0
Isophorone Diisocyanate	20.9	0.0	0.0	0.0	0.0	0.0	20.9	0.0
Bisphenol A	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Ethylbenzene	241.5	5.7	0.0	0.0	11.3	51.0	85.1	88.4
Ethylene Glycol	15.8	0.0	0.0	0.0	0.1	0.0	4.6	11.0
Ethylene Glycol Monoethyl Ether	28.8	3.3	0.0	0.0	3.8	0.0	5.4	16.3
Ethylene Glycol Monomethyl Ether	422.6	130.3	0.0	0.0	40.8	0.0	147.0	104.5
ε-Caprolactam	17.1	0.0	0.0	0.0	1.2	0.0	15.9	0.0
Xylene	340.4	15.4	0.0	0.0	18.8	86.9	95.9	123.5
Silver And Its Compound (Water-Soluble)	9.5	0.0	0.0	0.2	0.0	1.9	0.0	7.3
Chromium And Chromium (III) Compounds	81.7	0.0	0.0	0.0	35.8	26.7	19.2	0.0
Hexavalent Chromium	55.6	0.0	0.0	0.0	0.9	0.1	26.0	28.7
Cobalt And Its Compounds	506.1	0.0	0.0	0.0	9.1	91.6	405.4	0.0
2-Ethoxyethyl Acetate	4.4	2.3	0.0	0.0	0.0	0.0	2.1	0.0
Inorganic cyanide compound	1.2	0.0	0.0	0.0	0.3	0.0	0.0	0.9
1, 1-Dichloro-1-Fluoroethane	37.5	37.5	0.0	0.0	0.0	0.0	0.0	0.0
Dichloromethane	5.0	3.6	0.0	0.0	0.0	0.0	0.0	1.4
Dioxins	-	15.4	0.0	0.0	157.6	0.0	0.0	0.0
Copper Salts (Water-Soluble)	434.0	0.0	0.0	0.1	151.3	197.0	74.1	11.5
1,3,5-trimethylbenzene	14.1	1.3	0.0	0.0	0.0	5.5	1.4	5.9
Toluene	15,212.8	2,002.9	0.0	0.0	1,638.2	2,893.9	2,356.9	6,320.8
Lead and its compound	124.0	0.0	0.0	0.0	68.0	40.0	16.0	0.0
Nickel	3,800.9	0.0	0.0	0.0	0.0	2,113.3	1,636.0	51.6
Nickel Compounds	1,163.6	0.0	0.0	0.0	116.7	1,046.6	0.2	0.0
Hydrazine	2.2	0.0	0.3	0.0	0.0	0.0	0.0	2.0
Hydroquinone	9.8	0.0	0.0	9.8	0.0	0.0	0.0	0.0
Di-n-butyl phthalate	4.0	0.0	0.0	0.0	0.0	0.0	3.9	0.1
Bis (2-Ethylhexyl) Phthalate	36.4	0.1	0.0	0.0	1.6	0.0	26.3	8.4
Trimellitic Anhydride	13.1	0.0	0.0	0.0	0.6	0.0	12.5	0.0
Boron and its compound	3.2	0.0	0.0	0.0	1.3	0.0	1.9	0.0
Octylphenol ether	5.0	0.0	0.0	0.1	0.0	0.0	4.9	0.0
Poly (Oxyethylene) Nonylphenyl Ether	6.1	0.0	0.0	0.0	0.1	0.0	5.9	0.0
Formaldehyde	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Manganese And Its Compounds	14.9	0.0	0.0	0.8	2.6	3.7	7.8	0.0
Molybdenum and its compound	1.4	0.0	0.0	0.0	0.0	0.0	1.4	0.0
Total	22,669.4	2,203.9	0.3	18.8	2,127.0	6,558.2	4,978.6	6,782.3

Compiled for substances with volume handled 1 tons or more, according to the expansion of scope under the PRTR Law

#### **Efforts toward Resource Recycling: Waste Reduction**

We make efforts to reduce waste and increase efficiency in our production processes, so as to contribute to the building of a sustainable recycling society. There was a slight increase in waste in 2003 due to an expansion of our lines of business, but our efficiency indicators, in particular per unit waste emissions, showed improvement.

Targets To achieve the following targets by FY 2005:

- > Reduce waste emissions per unit of production (Waste emissions/production) by 20% from the FY 2000 level.
- > Reduce the amount of unusable materials generated by 10% from the FY 2000 level.
- > Achieve zero emissions at 20 sites.
- Reduce the unused product generation ratio (unused product generation amount/total material inputs) by 20% from the FY 2000 level.
- > Achieve a recycling ratio (Recycle amount/unused product generation amount).

#### Result

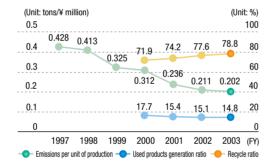
- > Per unit waste in 2003 was 0.20 tons/¥100 million, in comparison with .312 tons/¥100 million in 2002, signifying a 35.3% decrease. "Production" is indicative of business activity, and represents the total amount of added-value for companies subject to disclosure in this report.
- > The total waste generation in 2003 was 519,000 tons, in comparison with 646,000 in 2000, signifying a 19.7% decrease. Nevertheless, due to an increase in the number of sites subject to reporting, there was an increase of 13,000 tons in comparison with 2002.
- > In 2003, the Dai Nippon Polymer Company Kashiwa Plant and Dai Nippon Jushi Company achieved zero emissions. Due to the closure of the Ichigaya Publication Printing Operations Gotanda Plant, there was a total of seven zero emissions sites. There were 28 sites with 1% or less emissions going to the final disposal site, with four of these added since 2002.
- > The waste generation rate in 2003 was 14.8%, marking a 16.4% achievement over the 2000 rate of 17.7%.
- > The 2003 recycling rate was 78.8%, roughly at the target level.

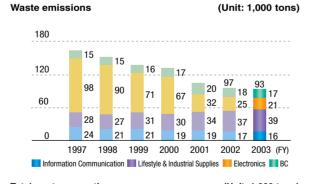
# Examples of the efforts being made by the DNP Group to achieve the environmental targets

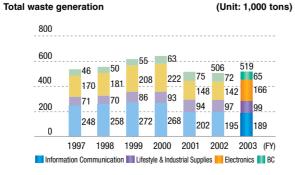
Our efforts to reduce the amount of waste generated and improve per unit emissions are tied to our "Production 21 Efforts" underway at our manufacturing sites. These are the efforts carried out for the "Cost Structure Reforms" outlined in the DNP Group's "Vision for the 21st Century". They were initiated in 2002, with the aim of eliminating all inefficiencies from our manufacturing processes. Stated precisely, they are efforts to improve the non-defective rate and shorten lead times.

Our efforts to achieve zero emissions (reducing the use of final disposal sites) and improving recycling so that processing of waste generated in our production processes does not involve the use of final disposal sites depend upon our selection of waste disposal contractors who conduct thorough separation and make effective use of waste at the sites where it is generated. In real terms this means converting wastepaper to raw material for papermaking, converting waste plastic, sludge, and incinerator ash to raw materials for cement, converting waste plastic or wastepaper unsuitable for papermaking into RPF (Refuse Plastic and Paper Fuel), distillation recovery of waste oil, and scrap metal recovery. The main challenge in the area of improving recycling is the effective utilization of waste plastic containing chlorides, such as PVCs. While it is possible to develop raw materials from plastics that do not contain chlorides, the use of final disposal sites in areas where substitute materials cannot be used is unavoidable.

#### Per unit waste emissions Waste generation rate / recycling rate







**Keiichi Otsuka** General Affairs Section

#### We have reduced the amount of waste per unit!

Efforts at DNP Technopack Yokohama Co., Ltd.

Our plant conducts uniform manufacturing of all types of paper containers. Recycling of the paper used to make paper containers is difficult, because of its multi-layered construction. Therefore, until recently it has been treated as waste. We worked together with the paper companies to come up with a recycling method for this paper, and as a result are able to use it effectively as raw material for paper. This has had a great effect on reducing the volume of waste.

We are also making reductions through a project initiated through the DNP Group's "Production 21 Efforts". Through the "Yield Improvement Project" we have standardized manufacturing conditions so as to reduce printing losses and work stoppages due to error. Through the "Planning Loss Improvement Project" we have minimized blank paper losses that increase when layout becomes complicated. Through the "Warehouse/Work In Progress Curtailment Project" we have reduced waste due to excess production.

As a result of these efforts, waste generated per unit in 2003 was 0.484, in comparison to 0.612 in 2000. This signifies a reduction of 21%.

Koji Ueda Commercial Printing Group, Production 21 Promotion Division, Standardization Promotion Group

#### We have reduced the waste generation rate!

Efforts at Dai Nippon Printing Co., Ltd. Commercial Printing Operations Enoki Plant

Our plant conducts commercial printing of catalogs, pamphlets, and other printed materials. There are various "losses" of input materials that occur during production, and these create a substantial amount of "waste".

In order to reduce this sort of waste, our plant is promoting "Improvement of the Non-Defective Rate" and "Promotion of Digitalization" as its main "Production 21 Efforts" throughout the plant.

In real terms, this means we have enlisted the participation of all employees in every unit in the printing process, from the manuscript to the making of proofs, in order to cut losses (paper losses) generated in the offset printing process. We have also succeeded in reducing proofing film waste and developing fluid waste, which previously had been generated in large volume, by promoting the digitalization of the proof making process. As a result, the waste generation rate in 2003 was reduced by 3.9 points in comparison with 2000, signifying a broad decrease.

# VI VI

Fujio Kitagawa General Affairs Section, General Affairs Department

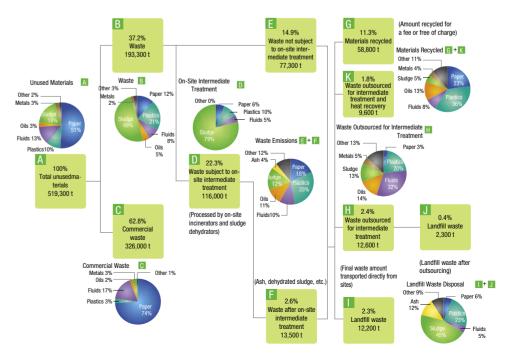
#### We have improved the recycling rate!

Efforts at Dai Nippon Printing Kenzai Co., Ltd. Tokyo Plant

Our plant manufactures decorative coating paper and chemical decorative film, which are decorative materials used in housing construction.

In 2000 our recycling rate was stuck at 55%, with a final disposal site usage rate of 36.2%. Analysis of the reasons for lack of progress in recycling showed that separation was not being executed properly, with wastepaper and waste plastic being wrapped into the same roll, and plastic containing PVC being mixed in with other plastic.

In response to this we established a separation system whereby separation is performed at the site where the waste is generated, with separate storage sites for wastepaper and waste plastic. We also installed rolling and cutting equipment, and by completely separating wastepaper and waste plastic we made the waste usable as cement firing fuel and RPF (Refuse Plastic and Paper Fuel). The recycling rate in 2003 was 87.8%, with a final disposal site usage rate of 7.4%, representing a broad improvement in comparison with 2000. We are continuing efforts toward our 2004 goals of 92% and 4%, respectively.



We are making efforts to separate office waste and collect wastepaper, so as to contribute to the building of a sustainable recycling society. Despite an increase in the number of sites subject to reporting, we have attained our 65% wastepaper collection rate\* for the first time in three years.

Wastepaper collection rate = amount of wastepaper collected / (amount of wastepaper collected + general waste amount (excluding cans, bottles, garbage))

We are making efforts to separate and collect wastepaper at every site, and in 2003 we collected 1,579 tons. We were able to ascertain the amount of general waste and obtain accurate collection rates for 29 sites, which is two more than in 2002, and tallied a collection amount of 1,231 tons with a collection rate of 68,4%. The amount collected at the large-scale Ichigava Publication Printing Operations site increased, while the waste amount from the Enoki Commercial Printing Operations site decreased, resulting in the improved collection rate.

2000	2001	2002	2003
959	1,015	1,074	1,231
118	125	154	165
781	740	770	930
22	78	65	65
39	72	86	71
510	657	651	569
1,470	1,672	1,725	1,800
65.3%	60.7%	62.3%	68.4%
13	25	27	29
	959 118 781 22 39 510 1,470 65.3%	959         1,015           118         125           781         740           22         78           39         72           510         657           1,470         1,672           65.3%         60.7%	959         1,015         1,074           118         125         154           781         740         770           22         78         65           39         72         86           510         657         651           1,470         1,672         1,725           65.3%         60.7%         62.3%

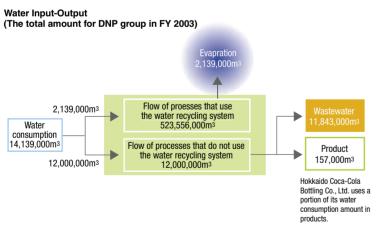


#### **Efforts toward Resource Recycling: Water recycling**

#### Efforts toward resource recycling: Water recycling

Total water use for the Group as a whole was 14,139,000 m<sup>3</sup> in 2003. This breaks down to 157,000 m<sup>3</sup> consumed in product manufacturing, 11,843,000 m<sup>3</sup> discharged as wastewater into sewers, with the remainder of 2,139,000 m<sup>3</sup> emitted into the atmosphere as steam. 523,556,000 m<sup>3</sup> was recycled<sup>\*1</sup> for heating or cooling of manufacturing equipment, the air conditioning of buildings, and in product cleaning, resulting in a 38-fold water usage ratio<sup>2</sup> (an increase of 1.4-fold over the previous year).

- "1 Much of the water usage is for the heating or cooling of manufacturing equipment, the air conditioning of buildings, and in product cleaning, so the majority of plants are proceeding with the use of recycled water through a closed system. The amount of recycled water is counted as the amount that flows through heat exchangers and cleaning equipment in these closed systems in one year.
- \*2 Water usage ratio = (amount consumed + wastewater amount + amount of recycled water) / amount of water used.



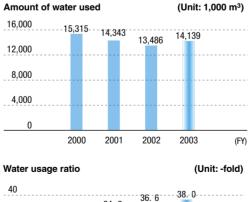
#### **Use of Rainwater**

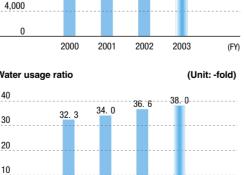
The DNP group promotes effective use of rainwater collected from office building roofs. In FY 2002, total of 4,818 m<sup>3</sup> of rainwater was used by the C&I building and DNP Logistics Co., Ltd. building, located in Tokyo, which use rainwater as flush water in 37.6% of company toilets.

#### Rainwater Consumption and Utilization Ratio

FY	2000	2001	2002	2003
Used in toilets (m³)	14,380	16,070	12,830	10,630
Rainwater consumption (m <sup>3</sup> )	6,210	4,850	4,820	4,660
Rainwater utilization ratio (%)	43	30	38	44

Rainwater utilization ratio (%) = (Rainwater utilization amount / water flush amount) ×100





2001

#### **Measures against Global Warming**

We are making efforts toward the prevention of global warming, such as seeking to prevent greenhouse gas emissions by installing energy-saving equipment and switching to different fuels. Due to the increase in sites subject to reporting, each of the target indicators worsened in 2003, but if the increase due to the increase in sites is taken into consideration, we are in fact continuing to achieve our targets for greenhouse gas emissions and energy

#### **Targets**

- To achieve the following by FY 2010:
- > To maintain greenhouse gas emissions at the FY 2000 level.
- > To maintain energy consumption at the FY 2000 level
- > To reduce energy consumption per unit of production by and CO2 emissions per unit of production by 15% and 20% respectively, against a base year of FY 1990.

#### Results

- > The greenhouse gas emissions amount was 899,000 tons, an increase of 3.7% (approximately 32,000 tons) in comparison with 2000.
- > The energy consumption amount was 19,300 TJ (terajoules), an increase of 4.3% (approximately 800 TJ) in comparison with 2000.
- > Per unit energy consumption was 4.19 TJ/¥100 million, and increase of 2.2% in comparison with 1990. Per unit CO<sub>2</sub> emissions were 187 tons/¥100 million, a decrease of 5.6%.

Note: All figures for greenhouse gas emissions amounts indicate conversion to CO2 in tons.

Heat values are TJ (terajoules) = joules 1012

#### Calculation methods for greenhouse gases and energy consumption

Greenhouse gas emissions are calculated in this report according to the Ministry of the Environment's "Guideline for calculation of greenhouse emissions from businesses" (completed in July 2002), with past data also recalculated. The six greenhouse gases specified according to the Kyoto Protocol are subject to monitoring. There were no emissions of HFC, PFC, or SF<sub>6</sub> in 2003. The calculation method used for energy consumption is the same as that used last year.

Transitions in Emissions of Greenhouse Gases (Unit: 1.000 tons)

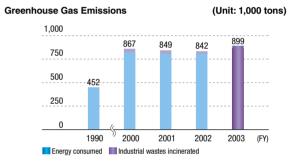
Fiscal year	1990	2000	2001	2002	2003
CO <sub>2</sub> (ton)	452	866	848	841	898
CH <sub>4</sub> (CO <sub>2</sub> ton)	-	0.1	0.1	0.1	0.1
N20 (CO <sub>2</sub> ton)	-	1.0	0.9	0.7	0.8
Total	452	867	849	842	899

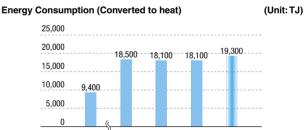
#### Method of calculating energy consumption per unit of production and CO<sub>2</sub> emissions per unit of production

Energy consumed per unit of production = Energy consumption amount (TJ) / production (¥100 million)

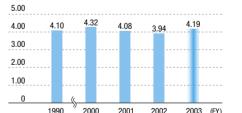
CO<sub>2</sub> emissions per unit of production = CO<sub>2</sub> (1,000 tons) emitted through consumption of energy (fuel, electricity) / production (¥100 million)

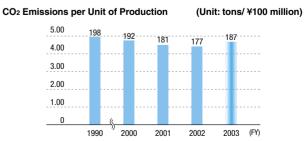
Production indicates the amount of business activity. For this factor, we use the total value added amount of affiliates subject to disclosure in this report.











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#### Reduction of CO<sub>2</sub> from Transport Operations: The efforts of DNP Logistics Co., Ltd.

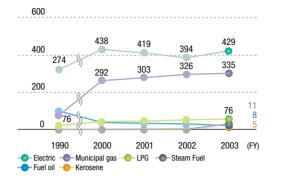
Greenhouse gas emissions due to energy consumption (Unit: CO<sub>2</sub> 1,000 tons)

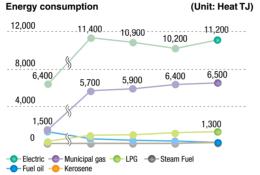
#### Four sites were newly included for coverage in 2003: DNP Technopack Tokai, Company, Ltd. (manufacturing, printing, and processing of packaging), which bought into in 2002; Advanced Colortech, Company, Ltd. (a maker of color filters); a newly constructed DAP Technologies Company, Ltd. plant (a manufacturer of backboards for plasma display panels); the DNP Industrial Materials Company, Ltd. Tsuruse Plant (a manufacturer of electrical parts). Also, the closure of the Ichigaya Publication Printing Operations Gotanda Plant caused it to be removed from coverage.

Changes in 2003

Because of the addition of the first four sites listed above. along with the removal of the last, on balance there was an increase in the target indicators. Were the added portions excluded, greenhouse gas emissions would have been 850,000 tons, a 2.0% (approximately 170,000 tons) reduction in comparison with 2000, and energy consumption would have been 18,300 TJ, a 1.1% (200 TJ) reduction in comparison with 2000. meeting the targets.

There were no large, new facilities, such as cogeneration systems, introduced in 2003 that had a great reducing effect. Our efforts to control emissions of greenhouse gases consisted in switching from fuel oil to municipal gas, updating air conditioning systems, and developing and operating under energy control standards.





#### We have reduced greenhouse gas emissions.

Dai Nippon Printing Company, Ltd. Information Media Supplies Operations / IMS Dai Nippon Co., Ltd. Sayama Plant



Yuichi Izumi Information Media Supplies Operations



**DNP Facility Services** 

Our plant makes thermal transfer ribbons used in printers. We converted our four fuel oilburning boilers to municipal gas, and began operating them in May 2003. We also updated our air conditioners, and as a result our CO2 emissions went from 11.800 tons in 2002 to 8,700 tons in 2003, a decrease of 3,100 tons (26%). Our switch to municipal gas also allowed us to broadly cut emissions of NOx and SOx, which are atmospheric pollutants. Our goal is to create an environmentally friendly plant, and we are continuing to make progress in our environmental conservation efforts, especially in our greenhouse gas measures, by installing energy-saving equipment and practicing thorough energy conservation.



DNP Logistics Co., Ltd., which all of the transport needs of the DNP Group, is a general transport company with around 200 trucks. It is based in the Tokyo area, but covers the entire area from Northeast Honshu to Kyushu, In 2003, DNP Logistics broadly reduced its per unit CO<sub>2</sub> emissions by 31% in comparison with 2000, although its per unit amount of fuel used for transport was reduced by only 6%. CO<sub>2</sub> emissions have been reduced by 24%.

Target- We will attain the following 2000 comparison targets by 2010:

- > Reduce per unit CO2 emissions (CO2 emissions/ transport ton kilometer\*) by 5%.
- > Reduce per unit amount of fuel used for transport (amount of fuel used/sales) by 20%.
- \* Transport ton kilometer = E (cargo amount X distance traveled)

#### Improving the transport situation at the Sayama and Yokohama sites

In 2001, Sayama and Yokohama were selected as model sites for efforts to improve the transport situation through the use of digital tachometers, with the result of further progress in reducing CO2 emissions. A comparison of 2003 with 2000 revealed a proportionate 16% reduction, with a fuel use amount of 60 kl, and CO2 emissions volume of 172 tons.



Responding to diesel vehicle regulations

We have completed our response to the diesel vehicle regulations enacted since October 2003 by 8 municipalities in the Tokyo area. We are proceeding with our response in the Kansai region.

#### CO2 emissions amount and per unit data

Fiscal year	2000	2001	2002	2003	Comparison with 2000
Transport ton kilometers (1 million tons / kilometer)	53.18	55.65	55.47	58.53	
Amount of fuel used (kl)	2,299	1,997	1,764	1,743	
Sales (Yen 100 million)	27.60	25.74	22.65	22.44	
CO <sub>2</sub> emissions amount (tons)	6,120	5,310	4,700	4,630	(▲24%)
CO <sub>2</sub> emissions amount (tons)	115	96	85	79	(▲31%)
Per unit amount of fuel used for transport	83	78	78	78	(▲6%)

#### Fuel reductions through transport situation improvements at the Savama and Yokohama sites

, oayama c	iiiu i oko	iiuiiiu sit	00		
2000	2001	2002	2003		
)					
1,050.9	979.8	880.3	849.8	1	
955.3	917.1	846.9	849.1	2	
(kl)					
225.3	190.2	145.8	145.2	3	
219.8	195.6	178.2	172.0	4	
4.66 5	5.15	6.04	5.85		1÷3
4.35 6	4.69	4.75	4.94		2÷4
en converted to	2000 fuel	economy			
	210.0	188.9	182.2	7	1÷5
	211.0	194.7	195.4	8	2÷6
kl)					
	19.8	43.1	37.0	9	7-3
	15.4	16.5	23.4	10	8-4
	35.2	59.6	60.4	11	
6)					
	9.5	22.8	20.3	9÷	7×100
	7.3	8.5	12.0	10÷	8×100
	8.4	15.5	16.0	11÷(7+8	)×100
107.9	170.2	172.2			
	2000 1,050.9 955.3 (kl) 225.3 219.8 4.66 5 4.35 6 en converted to	2000 2001 ) 1,050.9 979.8 955.3 917.1 (kI) 225.3 190.2 219.8 195.6  4.66 5 5.15 4.35 6 4.69 en converted to 2000 fuel 210.0 211.0 (kI) 19.8 15.4 35.2 (6) 9.5 7.3 8.4	2000 2001 2002  1,050.9 979.8 880.3 955.3 917.1 846.9  (kl) 225.3 190.2 145.8 219.8 195.6 178.2  4.66 5 5.15 6.04 4.35 6 4.69 4.75 en converted to 2000 fuel economy 210.0 188.9 211.0 194.7  kl) 19.8 43.1 15.4 16.5 35.2 59.6  9.5 22.8 7.3 8.5  8.4 15.5	1,050.9 979.8 880.3 849.8 955.3 917.1 846.9 849.1 (kt) 225.3 190.2 145.8 145.2 219.8 195.6 178.2 172.0  4.66 5 5.15 6.04 5.85 4.35 6 4.69 4.75 4.94 en converted to 2000 fuel economy 210.0 188.9 182.2 211.0 194.7 195.4 (kt) 19.8 43.1 37.0 15.4 16.5 23.4 35.2 59.6 60.4 (6) 9.5 22.8 20.3 7.3 8.5 12.0 8.4 15.5 16.0	2000 2001 2002 2003  1,050.9 979.8 880.3 849.8 1 955.3 917.1 846.9 849.1 2  (kt) 225.3 190.2 145.8 145.2 3 219.8 195.6 178.2 172.0 4  4.66 5 5.15 6.04 5.85 4.35 6 4.69 4.75 4.94  en converted to 2000 fuel economy 210.0 188.9 182.2 7 211.0 194.7 195.4 8  kt) 19.8 43.1 37.0 9 15.4 16.5 23.4 10 35.2 59.6 60.4 11  6) 9.5 22.8 20.3 9÷ 7.3 8.5 12.0 10÷ 8.4 15.5 16.0 11÷(7+8

#### Switch to hybrid vehicles

We have around 500 vehicles at our offices nationwide for our sales representatives to use when visiting customers. The first stage will be to switch 40 of the 100 company cars we keep in the Tokai region to low-environmental impact hybrid vehicles. We will then proceed to do so nationwide after observing the results of the first stage.

#### **Environmental Risk Management**

In addition to keeping track of trends in environmental regulations that apply to group operations, and maintaining compliance, in an effort to maintain even stricter environmental controls, the DNP group has established its own voluntary standards (water, air, odors, noise and vibration), as well as its own voluntary quidelines (chemical substance management, measures against ground contamination, etc.), which are strictly observed. Furthermore, the group promotes risk management, making efforts to prevent foreseeable accidents and emergencies, establishing emergency response systems and performing drills in preparation for emergency situations.

There were some annual measurement categories in which we failed to meet our voluntary standards in 2003, and improving this situation will be a challenge for us going forward. We have carried out improvements, such as, in the area of air pollution measures, switching from fuel oil to natural gas and performing burner maintenance. Water quality measures we have taken include maintaining the functionality of our wastewater treatment equipment and installing isolation valves on final discharge tanks, and reviewing the leakage prevention embankments surrounding tanks. We have taken measures against noise and vibration such as monitoring and making improvements at sources of noise based upon voluntary measurements, and installing noise barriers. We have also implemented antiodor measures, such as installing additional deodorizing equipment and working to prevent odor generation. We have also provided for the unlikely occurrence of an emergency by conducting emergency drills for appropriate action in the event of a municipal gas leak or an effluent discharge or leak. We are also engaging in proper storage and control in prescribed areas of electrical equipment containing PCBs. We must nevertheless give consideration the single accident that occurred in 2003, which was the leak of approximately 50 liters of solvent at the Ichiqaya Publication Printing Operations Ichiqaya Plant.

#### **Compliance with Applicable Laws and Regulations**

The DNP group makes a continual effort to detect abnormalities at an early stage and prevent incidents of pollution in order to minimize environ-mental damage and the economic impact sustained as a result, as well as the risk of a loss of social trust arising from such incidents.

The DNP group constantly monitors trends in environmental laws and regulations, noting their applicability to our business operations and prod-ucts. We have implemented notification and educational measures to ensure that our employees are well versed in the following laws and regulations, positioning them as items that apply directly to managerial procedures. In addition, when deemed necessary, we establish our own voluntary standards, which are even more stringent than national laws, and ensure compliance though daily monitoring and measuring activities. Furthermore, the DNP group performs on a regular basis its own environmental audits, which confirm the state of our risk management and compliance.

#### Major Laws and Regulations

Law Voluntary S	tandards
Basic Environment Law	
Basic Law for Establishing a Recycling-Based Society	
aw Regarding the Promotion of the Utilization of Recycled Resources	_
Law for Promotion of Sorted Collection and Recycling of Container and Packaging	S
Naste Management and Public Cleansing Law	*
aw Concerning the Promotion of the Measures to Cope with Global Warming	l
aw Concerning Rational Use of Energy	*
Air Pollution Control Law	*
Nater Pollution Control Law	*
aw for Special Measures for the Conservation of the Environment of the Seto Inland Sea	*
Sewerage Law	*
Voise Regulation Law	*
/ibration Regulation Law	*
Offensive Odor Control Law	*
Soil Pollution Control Law	*
aw Concerning the Protection of the Ozone Layer through the Regulation of Specified Substances and Other Measures	*
aw Concerning the Recovery and Destruction of Fluorocarbons	
aw Concerning Special Measures against Dioxins	*
aw Concerning the Improvement of Pollution Prevention Systems n Specific Factories	*
aw Concerning Special Measures against PCB Waste	
aw Concerning the Reporting of the Release into the Environment of Specific Chemical Substances and Promoting Improvements in Their Management	*
aw Concerning Regulation of Pumping-Up of Ground Water for Use in Building	
-actory Location Law	
ocal Regulations	*



Fan soundproof wallTo Plant, Dai Nippon Printing

Kenzai Co., Ltd.



#### Main improvements made in 2003 Main air pollution measures

Burner maintenance Burner maintenance Installation of deodorizing equipment and heat recovery equip-Boiler idling / discontinuance Changing of catalysts in exhaust treatment equipment Installation of exhaust treatment equipment Installation of economizers Emergency response drills Main noise measures Noise measurement Background noise measure-

Measures against noise coming from building windows Measures against noise from exhaust fans

Measures against noise from outside units of air conditioners Installation of noise barriers Installation of anti-noise

Installation of automatic doors Repair of wall ioints Regulations on equipment operating hours Main vibration measures

Vibration measurement Compressor inspection and maintenance Maintenance of the printing press drive motors

Main water quality measures Change to direct plate making Cleaning of dining hall grease

Discontinuance of underground oil Change of solvent cleaner

Installation of wastewater treatment facilities Change septic tank filter medi-

Replacement of ion-exchange resin Installation of leakage preven-

tion embankments Installation of leakage retaining

Installation of isolation valves on final discharge tanks

Inspection of oil absorbenting stallation of nitrogen and phosphor measuring equipment Calibration of measuring

Emergency response drills

Main odor measures Odor measurement Maintenance of deodorizing equipment

Testing of functionality of deodorizing equipment Measuring of deodorizing effi-

ciency

Cleaning of deodorizing equip-Changing of deodorizing equipment catalysts

Installation and updating of

#### **Monitoring and Measurement of Environmental Effects**

In our efforts to conserve the environment in the areas surrounding our plants and prevent our plant operations from being a source of environmental pollution, we have established voluntary standards that exceed the requirements of the laws and regulations concerning air, water, odors, noise, and vibration. In 2003, we saw improvements in each of the five environmental categories, and 90% of the overall data for air, water, odors, and vibration surpassed our voluntary standards. Nevertheless, although we showed a broad improvement of 13 points over the previous year in attaining our voluntary standards for noise, but showed less improvement in the comparative figures for all four other categories.

**Targets** We aim to achieve the following targets by FY 2005:

- > To keep maximum densities of air emissions subject to emissions regulations at 70% of the required standard or less.
- > To keep maximum densities of wastewater discharges subject to wastewater regulations at 70% of the required standard or less.
- > To keep the maximum density of odors at our site perimeters at 70% of the required standard or less.
- > To keep the maximum level of noise and vibration at our site perimeters at 95% of the required standard or less.

> As shown in the table below, 2003 marked improvement over 2002 in attaining our targets in every category. There was a broad improvement of 13 points over the previous year in terms of noise reduction, but we showed less improvement in the comparative figures for all four other environmental categories.

The table below exhibits the achievements we made in FY 2003.

Item	Voluntary Standards (Targets)	The voluntary standard achievement ratio in FY 2002	The voluntary standard achievement ratio in FY 2003	Improvement
Air	Under 70% of legal standards	93%	95%	7
Water	Under 70% of legal standards	89%	92%	
Noise	Under 95% of legal standards	47%	60%	
Vibration	Under 95% of legal standards	100%	100%	<b></b>
Odor	Under 70% of legal standards	89%	90%	

The voluntary standard achievement ratio is determined by multiplying the indexes measured for air, water, odors, noise and vibrations in plants subject to regulations (total measured indexes) by the target attainment indexes for each item

Air: Ratio of voluntary standard achievement index number against total measured index number for SOx, particulate, NOx and dioxin.

Water: Ratio of voluntary standard achievement index number against total measured index number for pH, COD, SS etc. (excluding water temperature)

Noise: Ratio of time zones in which voluntary standards were achieved out of the total number of times zones in which measurements were taken (daytime, morning, evening & night)

Vibration: Ratio of time zones in which voluntary standards were achieved out of the total number of times zones in which measurements were taken (daytime, night)

Odors: Ratio of voluntary standard achievement index number against total measured index number for emissions duct odor density, perimeter fence odor density and number of substances for which density measurements were taken

\* State of compliance with emissions duct regulations also included in odor measurement data

For items in which measurements were not taken in the previous year, and in which targets were not achieved according to the most recent deemed these as not achieving targets in the fiscal year concerned.

#### Regulatory infringements / accidents / complaints

Although we do our best to comply with all environmental laws and regulations, over the past three years there has been one discharge of effluent into a river, and one accident involving a leakage of solvent.

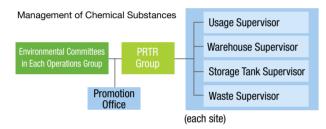
There are no ongoing legal disputes involving environmental issues. We have unfortunately had some complaints from areas neighboring our plants concerning noise and odors. Whenever we receive such complaints we launch a thorough investigation into the cause of the problem, and work to make improvements to prevent a recurrence.

Date of occurrence	Name of site	Summary
	Kyushu Dai Nippon Printing Co., Ltd.	Due to an error on the part of the contractor, a hose disconnected from a collection truck during the collection of wastewater from the plant, resulting
	Fukuoka Plant	in a discharge of effluent into a river. The effluent consisted of water for cleaning printing plates, water used for dampening in the printing proces and small amount of lubricant. After the accident occurred, based upon instructions from the authorities we took emergency measures by putting place sandbags and an oil fence, and commenced operations to clean up the effluent that was floating on the surface of the river. After the accide we revised procedures for in-plant operations by outside contractors, and also revised the communication structure to be used in the unlikely ever of an effluent discharge. We also overhauled our emergency equipment to be used to minimize environmental pollution in such cases.
March 29, 2004	Ichigaya Publication Printing Operations Ichigaya Plant	There was an accident involving the leakage of ink dilution solvent, which was caused by deterioration in a pipe fitting in a gravure ink pipe. The worksite alarm was sounded immediately after the leak occurred, and the ink supply pump was shut down. Nevertheless, approximately 50 liters ink leaked outside the premises. Sand and other materials were immediately laid to absorb the solvent, and while a portion did flow into the guttee there was no leakage into the main sewer. After the accident occurred, we took measures to prevent any expansion of the leakage, and we file accident reports with both the local fire department and the water bureau. We proceeded to take measures against recurrence under the guidance the fire department.

#### Chemical control and response to potential emergencies

We have established the "DNP Group Chemical Control Standards" for the monitoring and control of toxic chemicals, including raw materials, and to ensure product safety and environmental conservation pertaining to chemicals. Controls on 29 chemicals are implemented based upon three categories, "Purchasing prohibited", "Inclusion in products prohibited", and "Inclusion in products controlled". We are making progress in our efforts at full achievement by December 2004 of our targets regarding chemicals listed in the "Inclusion in products prohibited" category.

The DNP group uses solvents and chemicals during the manufacturing process. Whenever these products are delivered or treated as waste after use, there remains the danger of spillages. In order to address this situation, we have established a "Chemical Substances Management Guide" outlining the proper treatment of chemical substances, and are striving to reduce accidents, installing retaining walls and emergency shutoff systems at chemical receiving areas, and installing double-walled storage tanks, etc.



Furthermore, to minimize the pollution in the event of an accident, we have installed emergency materials and perform emergency training.

#### **DNP Group Chemical Control Standar**

Purchasing prohibited: 10 chemicals These are chemicals that may not be contained in any raw materials we purchase.

nclusion in products prohibited: 6 chemicals These are chemicals that may not be contained in amounts above a prescribed level in any DNP products.

Inclusion in products controlled: 13 chemicals
These are chemicals for which inclusion in DNP product
is monitored.

#### Chemical Substances Management Guide (Contents)

- I. Establishing a Chemical Substance Management System
- II. Monitoring Amount of Chemical Substances Handled
- III. Implementing Chemical Substance Management
- 1. Examining Facilities
- 2. Managing Waste that Contains Chemical Substances
- 3. Restricting Emissions through Facilities Improvement
- 4. Management by Production Process
- 5. Proper Usage
- IV. Preparing for Accidents and Emergencies
- V. Education and Training

#### Emergency Training (Performed in FY 2002)









t, DNP Data Techno Co., Ltd. Sayama Plant, IMS Dai Nippo

bbe Plant, Dai Nippon Printing Kenzai Co., Ltd.

Co., Ltd. Tokyo Plant, The Inctec Inc

Category	Site	Content of drill
Air pollution Prevention	DNP Datatechno Ushikyu Plant	Municipal gas leak response drill
	Dai Nippon Printing Precision Devices Mihara Plant	Acid gas and municipal gas leak response drill
	IMS Dai Nippon Okayama Plant	Gas leak / Fire response drill
Water pollution prevention	Dai Nippon Printing Precision Devices Mihara Plant	Water yard crack response drill; leak during chemical delivery response drill; effluent leak into river response drill
	DNP Datatechno Ushikyu Plant	Incompletely treated or untreated wastewater discharge dril
	Dai Nippon Printing Construction Materials Kobe Plant	Solvent or ink leak response drill
	Dai Nippon Printing Construction Materials Okayama Plant	Solvent or ink leak response drill
	IMS Dai Nippon Sayama Plant	Vehicle fuel leak response drill
	IMS Dai Nippon Okayama Plant	Extra high voltage substation oil leak response drill
	Tokai Dai Nippon Printing	Leak response drill
	The Inctech Tokyo Plant	Effluent leak response drill, ink leak response drill
Ground pollution prevention	DT Circuit Technologies	Chemical disposal facility problem response drill

#### Soil and Groundwater Contamination and Reduction Measures

The DNP group ensures that ground surveys be performed whenever a site that has used a hazardous substance or decides to abolish certain facilities as specified in the Water Contamina-tion Prevention Law. Furthermore, we also make it a rule that in the event that ground contamination is discovered, the site must notify the governor of the prefecture concerned and perform appropriate measures such as removal of the contaminated ground under the supervision. In FY 2002 we performed ground and groundwater examinations of the sites listed here, all of which were confirmed to be free of contamination. We conducted an inspection, based upon the "Municipal Environment Protection Ordinance of Tokyo", of the former site of the Ichigaya Publication Printing Operations Gotanda Plant. The results showed soil contamination at the

Sites inspected for soil and groundwater pollution in 2003						
Groundwater Inspection Dai Nippon Printing Construction Materials, Tokyo Plan						
	Kami Fukuoka Plant (Electronics Division)					
	Kuki Plant (Electronics Division)					
Dai Nippon Printing Fine Electronics, Kyoto Plant						

Dai Nippon Printing Precision Devices, Mihara Plant Tokai Dai Nippon Printing

Dai Nippon Printing Construction Materials, Okayama Plant

(Former) Ichiqaya Publication Printing Operations, Gotanda Plant

standard and 1.6~8.3 times the soluble content standard for lead, 1.1~1.7 times the soluble content standard for arsenic, and 1.4 times the soluble content standard for fluorine. We commenced to conduct a cleanup operation under the guidance of the municipal authorities. All other inspections confirmed that no pollution had occurred at other sites.

site of the former loading dock of 1.1~1.6 times the content

#### Storage of toxic materials

PCBs are currently in storage at 26 sites. There was an increase of 17 units to 273 total in 2003. The PCBs are contained in oil that was extracted from transformer equipment that is no longer in use. The PCBs are stored in special contain-ers in special storage rooms, and are managed under the strictest of conditions in accordance with applicable regulations to ensure prevention of leakage or loss. Each site makes sure the PCBs are stored in the appropriate manner, performing daily inspec-

tions and making regular reports to the authorities, and confirming storage conditions in annual internal audits.



PCB storage Enokicho Plant, Commercial Printing Operations

#### **Promotion of Green Purchasing**

We promote green purchasing of general supplies, such as raw materials for products and office supplies and equipment, so as to reduce the environmental impact in the business area upstream. We were unable to meet our targets for general supplies in 2003, but we broadly exceeded our target for raw materials with a 5.7% increase over the previous year.

#### **Targets**

Soil Inspection

- > Increase the purchasing rate for products covered by our own company standards (Purchasing Division Green Purchasing Standards) of the total amount of materials and supplies purchased by 2.5% in comparison with the previous year.
- > Increase the purchasing rate of environmentally certified products, such as those labeled with the Eco-Mark, of the total supplies (office supplies and equipment) by 3% in comparison with the previous year.

Note: Products covered by our own company standards (Purchasing Division Green Purchasing Standards) are as follows:

Paper: Paper containing recycled pulp, non-wood pulp paper, ECF / TCF pulp paper (paper that is made from non-chlorine bleached pulp). Ink: Soy ink, water-based ink, and non-toluene ink (ink that does not contain toluene); substitute solvent, recycled solvent.

Manufacturing supplies: 32 sites falling under the jurisdiction of the DNP Purchasing Division are the focus of accumulation of Eco-mark products, processed materials and recycled materials.

#### Results

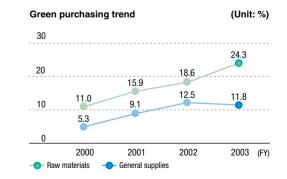
> We exceeded our target for eco-friendly raw materials with a 5.7% increase over the previous year, but had a 0.7% decrease in purchases in general supplies.

#### Raw materials (paper, ink, and manufacturing supplies)

We increased the amount of ECF and TCF pulp paper, and are making progress in switching to soy ink and water-based ink. In the area of manufacturing supplies, we increased the use of processed materials and recycled materials.

#### General supplies (office supplies and equipment, etc.)

As a result of a reduction in the product unit price and an increase in the list of eco-friendly products registered on the list at the Purchasing Division's homepage, the purchasing value represented an increase over 2002. The purchasing rate decreased, however, by 0.7% in comparison with 2002.



#### **Development and Sale of Environmentally-Conscious Products**

In order to reduce the environmental impact throughout the product lifecycle, we have been promoting the development and sale of environmentally conscious products by establishing an "Environmentally Conscious Product Development Guidelines". This is based on "Consideration of the Lifecycles of Products and Services", which is contained in the Green Purchasing Network's "Basic Green Purchasing Principles" (revised June 12, 2001). Sales of environmentally conscious products totaled ¥140.4 billion, an increase of 38% over the previous year and broadly exceeding our target.

#### **Target**

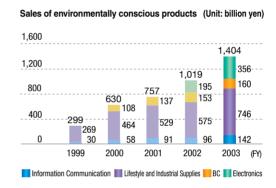
> Increase the sales of environmentally conscious products by 10% annually in comparison to the previous year.

#### Results

> Sales of environmentally conscious products totaled ¥140.4 billion in 2003, an increase of 38% over the previous year (¥101.9 billion), achieving our target.

Sales of environmentally conscious products in 1999, the first year in which data were compiled, were ¥29.9 billion. Sales have steadily increased since then because of our planning, development, and offering of the products to our customers, and reached ¥140.4 billion in 2003.

The Information Communication Division has strongly increased its sales of products containing recycled paper and soy ink, as well as of cards that contain no polyvinyl chlorides. The Lifestyle and Industrial Supplies Division has had a strong showing for its products that contain no chlorinated materials, and for products that are now made of paper instead of plastic, as well as its products that use reduced amounts of raw materials and products that use water-based ink. The Electronics Division made a big contribution to the increase in Group sales with its sales of products containing no heavy metals, and also of its products that are made without using organic solvents in the manufacturing process. In addition, there was an increase in the sales of magazines made through methods that improve recyclability.



#### **Environmentally Conscious Products Development Guideline**

Reduction of Environmental Pollutants (Refer to p. 21, 25, 27, 30) Elimination of ozone-depleting substances, heavy metals and organic chloride compounds

Curbing of air emissions of greenhouse gases, nitrogen oxides, etc. during life cycle

#### Examples:

- Products that do not contain organic solvents
- Adoption of raw materials that do not contain chlorine
- Printed matter using soy oil ink
- Adoption of raw materials that do not use heavy metals such as chrome and lead

Conserving resources and energy (Refer to p. 30)

Restrictions on use of metal resources and fossil fuels Examples:

- Lightweight products
- Products and systems that conserve energy during life cycle

Adoption of sustainable resources (Refer to p. 25)

Use of sustainable resources

#### Examples:

- Products that use non-wood based paper
- Paper products that were formerly made of plastic

Able to be used long term (Refer to p. 27)

Consideration of ease of repair and parts replacement, length of maintenance and repair services, expansion of functions, etc. Example:

Card that can display updated information

Reusability (Refer to p. 25)

Products designed to be taken apart for cleaning, refilling, etc; development of recovery and reuse systems that are easy for the purchaser to use.

Example:

Refillable containers

Recyclability (Refer to p. 21, 25)

Consideration of whether product uses easy-to-recycle material, whether it has been designed to break down and/or separate easily according to material, whether there exists a recovery/recycle system that can be used easily by the purchaser

Use of recycled materials (Refer to p. 21)

Frequent use of recovered/recycled parts Examples:

- Printed matter using 100% recycled paper
- Products that use paper as shock absorber
- Products that use recycled plastic

Easy to treat and dispose of (Refer to p. 21, 25)

Consideration such that product causes minimum impact when incinerated or landfilled

#### Examples:

- Products that break down easily into base materials
- Products that use plastic that breaks down naturally

# **Environmental Data**



We promote the disclosure of PRTR information for each of our sites throughout the nation. We are also working to provide more thorough environmental impact information for our overseas sites.

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	Acquisition of ISO 14001 and Forest Certification	
	Activities at Overseas Sites	56

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#### **Environmental Accounting**

# DNP practices environmental accounting, a highly effective tool for promoting and evaluating the effects of environmental conservation activities

#### Objectives

#### Use as an environmental management tool

- Environmental accounting produces a breakdown of environmental conservation costs as that can be used as a reference for determining the effectiveness of environmental conservation activities.
- Environmental accounting data is used to determine the cost of individual environmental facilities, the Group's overall budget for environmental conservation, and the amount of investment in environmental activities.
- Environmental accounting is used to monitor and evaluate the effects and achievements of activities performed throughout the year in order to ensure continuous improvement in our environmental performance.

#### Use as a tool for communicating with society

- Environmental accounting provides the means for public release of our environmental conservation efforts and their results.
- The reception to concerning our environmental accounting reports as received from shareholders, clients, and local communities we use as a reference for improving our approach to environmental conservation.

#### Basis for calculation of environmental accounting information

#### Period covere

April 1, 2003 through March 31, 2004 (Environmental conservation facilities are those considered as of March 31, 2004)

#### Scope of coverage

Environmental accounting was applied to the companies designated for consolidated accounting purposes, including the group's domestic manufacturing companies (45 companies and 59 sites), one distribution company and one meal catering company, but excluding nine other companies, including those related to trading, real estate sales, teaching material sales and software development.

#### Monetary unit

All monetary figures are expressed in millions of yen, rounded off to the nearest million

#### **Announcement format**

The format for presentation this fiscal year is the Comprehensive Benefits Comparison Format as set forth in the Ministry of the Environment's "Environmental Accounting Guidelines, FY2002." Environmental conservation equipment and sales of environmentally sound products are also shown.

#### Basis for costs of environmental conservation activities

- The environmental conservation costs include depreciation expenses for investments. Depreciation is applied in accordance with corporate tax law regulations.
- Personnel costs for full-time workers were calculated at the average labor costs per person, while personnel costs for workers holding two or more posts were calculated at 1/10 or 1/5 the average personnel cost per person, depending on the worker's assigned duty.
- R&D costs are the total costs incurred by our 11 R&D centers (10 in FY2000 and 2001) in the development of environmentally sound products and manufacturing equipment.

#### Basis for benefits of environmental conservation activities

- DNP uses consumption per added-value as an indicator for the volume of resources (energy and water) spent on business activities, as well as for the volume of waste materials and CO<sub>2</sub> emissions. Furthermore, the DNP group uses the added-value total of the company concerned as an indicator of the volume of business activities, given that companies within the group perform product transactions. The added-value amount is calculated pursuant to the "Management Analysis of Japanese Corporations" issued by the Ministry of the Economy, Trade and Industry.
- The recycle rate of waste materials represents the percentage of the weight of unwanted plant-generated materials that were recycled on- and off-site.
- Benefits of up/downstream costs are the effects of reduced CO<sub>2</sub> emissions when disposing of containers or packaging.
- Benefits of environmental impact of transportation are the benefits of reduced CO<sub>2</sub> emissions during transportation of products by the distribution companies included in DNP's consolidated accounting.

#### Basis for economic benefits of environmental conservation measures

- We have calculated the benefits of energy- and resource-saving efforts using the following formula:
   (Energy consumption per added-value amount or waste processing cost per
- added value of benchmark period those of this period) value-added amount
   Calculation of business activity amount was performed using the added-value amount indicated in Item 1 of the above benefit calculation basis
- For unit consumption, we used energy costs/added-value amount and waste disposal costs/added value amount.
- For the benchmark period, the consumption or cost per value is the overall average of the three years prior to this fiscal year. In calculating unit consumptions for the benchmark period, however, the energy cost was adjusted to this fiscal year's price level due to dramatic price fluctuations.

#### **Results of Our Environmental Accounting**

#### **Environmental conservation cost**

(Unit: ¥ millions)

Elivirollillelitai coli	Servation	6021				(Unit: ¥ millions)
Category	Exp	ense	Inves	tment	Details of major efforts	Refer to:
Galegory	FY2002	FY2003	FY2002	FY2003		neiei tu.
Business area costs						
Pollution prevention costs	663	1,208	2,267	2,760	Changing fuel (to LPG), adding deodorizing equipment and waste treatment facilities	34-37, 44
Global environmental conservation costs	1,332	246	1,000	1,158	Controlling room temperature and lighting, adding inverters to electrical equipment and implementing co-generation systems	22, 41, 42
Resource recycling costs	382	97	3,076	3,261	Sort-and-recycle; zero-emission (using RPF as cement material) Use of recycled water	38, 40
(Total business area costs)	2,377	1,552	6,343	7,180		
Up/downstream costs			194	181	Designing environmentally friendly products; bearing container and packaging recycle costs	24-27, 30
Administration costs			2,014	2,189	Cost of ISO 14001 judging and registration fees; environmental measurement costs; cost of preparing environmental reports	55
R&D costs			1,872	2,411	Research and development of environmentally sound products and production methods	20, 24, 26, 30
Social activity costs			14	12	Planting of trees and landscape gardening outside the plant site; supporting activities of environmental conservation organizations*	68
Env. remediation costs			0	23		47
Total	2.377	1,552	10,437	11,996		

\*Includes ¥400,000 for WWF and ¥200,000 for Japan Greenery Research and Development Center

#### **Environmental conservation costs to total costs ratio**

(UI						
Category	Category Consolidated total costs Ra		Ratio	Details of major environmental conservation costs	Refer to:	
In-period investment	73,789	1,552	2.22%	Solvent and exhaust gas recovery and refining equipment, water recycling system, etc.	36, 37, 44	
In-period R&D costs	24,097	2,411	9.26%	Non-vinyl chloride decorative sheets, de-chlorinating barrier film, biodegradable plastic, aqueous ink	20, 24, 26, 30	

#### Environmental benefits of environmental conservation activities

				Index valu	IP.	(UIIII.)	¥ millions
Details of benefits Category of index showing benefits		FY2002	FY2003	Difference	Remarks	Refer to	
efits o	of costs incurred at th	e area of business	112002	112000	Dinoronoo		
	fits arising from supp						
Supplied energy		Energy consumption (TJ)		19,300	1,200	All consumed energy was converted into average value in calories	41
		Added-value unit consumption for the above (TJ/100 million yen)	3.94	4.19	0.25	Energy reduced by 0.25TJ per 100 million yen in added value	41
- [:	Supplied water	Water usage (in thousands of tons)	13.486	14,139	653	Year-on-year reduction of 6.0%	40
		Added-value unit consumption for the above (1,000 ton/100 million yen)	2.94	3.07	0.13	Water reduced by 130 m <sup>3</sup> per 100 million yen	40
-  -	Supplied main raw materials (paper, plastic, metal, etc.)	Supplied amount (in thousands of tons)	2,473	2,530	57	Total weight of paper, plastic, ink and metals	16
		Amount of unwanted materials generated/supplied amount (%)	15.1	14.8	-0.3	Ratio of unwanted materials that are main raw materials	38, 39
	ovements in environr						
	Emissions to the	SOx emission (tons)	56.5	25.2	-31.3	Calculated from fuel used	34
-   -	atmosphere	NOx emission (tons)	626.7	660.3	33.6	Calculated from supplied energy	35
		Emissions of negative environmental impact substances (354 PRTR substances) (tons)	3,521	2,204	-1,317	Total of 12 substances subject to be reported	37
	Discharges to water areas	COD discharge (tons)	41.1	49.7	8.6	Calculated from the amount of discharged water and average concentration	35
		Discharges of environmentally hazardous substances (354 PRTR substances) (tons)	0	0.3	0.3	One substance discharged in FY2002(Hydrazine)	37
	Discharges of waste	Generated unwanted materials (1,000 tons)	506.1	519.3	13.2	Including unwanted materials other than main raw materials	38, 39
- [1	materials	Discharged waste materials (1,000 tons)	96.8	93.1	-3.7	Total waste subcontracted to waste disposal company	38, 39
		Added-value unit consumption for the above (1,000 ton/1 million yen)	0.211	0.202	-0.009	Waste materials reduced by 25kg per million yen in added value	38, 39
		Recycle rate (%)	77.6	78.8	1.2	Including heat recovered on site	38, 39
		Amount of pollutants transferred or released (of 354 substances subject to PRTR Law) (tons)	2,290	2,146	-144	Total for 21 substances reported	37
- [	Emissions of greenhouse- gasses	Emissions of greenhouse- gasses (1,000 t-CO <sub>2</sub> )	842	899	57	Including amounts emitted by incinerators and drying furnaces.	41
		Added-value unit consumption (ton/100 million yen)	183	195	12	Reduction of 12-ton emissions per 100 million yen	41
	of upstream/downstr						
Bene	fits related to goods	produced by business activities					
-   1	CO <sub>2</sub> emissions at the time of product disposal.	CO <sub>2</sub> emissions (1,000 t-CO <sub>2</sub> )	384.0	369.6	-14.4	Emitted at incineration and recycling of used containers and packaging	24
		CO <sub>2</sub> emissions / volume of products shipped	1.48	1.45	-0.03	CO <sub>2</sub> emissions per ton of products reduced by 0.03ton	24
er env	ironmental conserva	tion benefits					
Impr	ovements in environr	nental impact of transportation					
Ī		CO <sub>2</sub> emitted during product transportation (tons)	4,700	4,630	-70	CO <sub>2</sub> emissions reduced by 70 tons	43
		CO <sub>2</sub> emitted during transportation: CO <sub>2</sub> /(Weight × Distance) (ton/million ton·km)	85	79	-6	CO <sub>2</sub> emissions reduced by 11 tons for each ton of goods transported 1 million km	43

#### Economic benefits of environmental conservation activities

Economic benefits of environmental conservation activities							¥ millions)
Details of benefits				Index valu	е		
			FY2002	FY2003	Difference	Remarks	Refer to:
(1)	Increased sales						
	Economic benefits of R&D	) costs					
		Sales of environmentally friendly products	101,926	140,424	38,498	37.8% increase from FY2002	48
(2) Increased income							
	Benefits of resource recyc	cling costs					
		Business income from recycling unwanted materials	1,080	2,359	1,279	Saleable unwanted materials increased	38, 39
(3)	Cost savings						
Benefits of global environmental conservation and resource recycling costs							
L		Saving energy costs by energy conservation	1,503	-301	-1,804	Energy cost unit consumption substantially improved.	41, 42
		Saving waste-materials processing costs by resource conservation	650	391	-259	Processing cost unit consumption improved by reducing the volume of waste generated	38, 39

#### **Evaluation of 2003 environmental accounting performance data**

#### Environmental conservation costs and environmental conservation measures

- The investment for environmental facilities in 2003 was ¥825 million (34.7%) less than the previous year. Large-scale investment included catalytic deodorizing equipment and solvent recovery equipment for reduction of atmospheric emissions of VOCs. These accounted for 70% of the total.
- The total amount of environmental conservation costs was 15% higher than
  the previous year. Research and development costs increased by ¥539 million
  (a 29% increase over the previous year) due to aggressive efforts in research
  and development of environmentally conscious products and low-environmental impact production methods.
- Of the ¥181 million in upstream / downstream costs, ¥177 million consisted of payments made to the Japan Packaging Recycling Association for recycling consignment fees.

#### Environmental conservation benefits

- Approximately ¥1 billion was invested in equipment for solvent recovery, elimination in 2003, and air emissions of PRTR-listed substances were reduced by 1.317 tons.
- SOx emissions were reduced by 56% due to conversion to LNG fuel.
- Although waste emissions increased by 13,200 tons due to an increase in the number of sites, thanks to progress in waste generation controls and recycling at each site there was a decrease in the waste amount of 3,700 tons, and the waste per ¥1 million of added value decreased by 9 kg.

Due to an increase in the number of sites subject to reporting, there were
increases in the energy consumption, water use, NOx emissions, and greenhouse gas emissions. When the range of sites covered is the same as last year,
the figures for these are 18,100TJ, 13,000t, 626.8t, and 844,000t, respectively,
lower than last year.

#### Economic benefits of environmental conservation measures

- Sales of environmentally conscious products increased by 37.8% in comparison with the previous year, broadly exceeding the target with a 10% increase.
- Business revenue increased by ¥1.279 billion in comparison with the previous year due to recycling of waste.
- The cost reduction benefit is calculated according to item (7) on the previous page, "Basic Items in the Calculation of Environmental Accounting Data". In 2003, the added value amount increased 0.5% in comparison to the standard time period (3-year average for the period 2000~2003), but the waste per unit improved. While the range was lower in comparison with the previous year, a reduction effect was obtained. At the same time, per unit energy consumption worsened, and there was no economic effect obtained from cost reduction.

#### Future challenges

- VOC emissions regulations will go into effect in two years, so our ongoing installation of solvent recovery equipment and elimination equipment will continue.
- We will continue to make efforts through "Production 21" to eliminate all waste from production processes, improving eco-efficiency.

# **DNP Group PRTR Data by Site**

# The following data was reported to the national authorities as the amounts of PRTR-designated chemicals handled by the DNP group in FY2003

	Substance			1			Emissions		Tra	nsferred	it: Tons/yea
Substance name	No.	CAS No.	Handling	Consumed	Disposed	Air	Waterways	Soil	Sewage	Waste	Recycled
skinson Dient Jakinson Bubli	Mary Dailer	O						0011	Toomago	Wasto	
chigaya Plant, Ichigaya Publi		• .		-		-					
Silver and its water soluble compour		7761-88-8	9.5	0.0	7.3	0.0	0.0	0.0	0.2	0.0	1
Chromium & chromium (III) compo			1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0
lexavalent chromium compounds	69	7778-60-9	1.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0
1,1 Dichloro-1-fluroethane	132	1717-00-6	23.2	0.0	0.0	23.2	0.0	0.0	0.0	0.0	0
Vater soluble copper salts	207	100.00.0	11.5	0.0	11.4	0.0	0.0	0.0	0.1	0.0	0
Toluene	227	108-88-3	180.6 40.0	0.0	0.0	106.4	0.0	0.0	0.0	18.7 0.0	55
Lead and its compound  Hydroquinone	230 254	123-31-9	9.8	0.0	0.0	0.0	0.0	0.0	9.8	0.0	40.
nyuroquinone	234	123-31-9	9.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	
Tsuruse Plant, Ichigaya Public	ation Printi	ing Operation	s 311 Chik	umazawa Mivo	nshi-machi Iri	ıma-nun Saitama	Pref 354-8558				
Zinc compound (water-soluble)	1	7646-85-7	6.6	0.0	0.0	0.0	0.0	0.0	6.6	0.0	C
Hexavalent chromium compounds	69	7040-03-7	4.8	0.0	4.6	0.0	0.0	0.0	0.0	0.3	0
1,1 Dichloro-1-fluroethane	132	1717-00-6	6.5	0.0	0.0	6.5	0.0	0.0	0.0	0.0	Ö
Water soluble copper salts	207	-	65.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	63
Toluene	227	108-88-3	3,120.5	0.0	0.0	283.0	0.0	0.0	0.0	128.7	2,708
Hydrazine	253	302-01-2	2.2	0.0	2.0	0.0	0.3	0.0	0.0	0.0	0
Kuki Plant, Ichigaya Publicatio	on Printing	Operations 1	I-5, Kiyoku-c	cho, Kuki-shi, S	Saitama Pref.	346-0035					
1,1 Dichloro-1-fluroethane	132	1717-00-6	1.6	0.0	0.0	1.6	0.0	0.0	0.0	0.0	(
Enokicho Plant, Commercial P	rinting Ope	erations 7, En	okicho, Shin	juku-ku, Tokyo	162-8620						
1,1 Dichloro-1-fluroethane	132	1717-00-6	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	(
DNP Graphica Co., Ltd. 1062-8	3, Oaza Honjo	, Nishikata-macl	ni, Kamitsuga	a-gun, Tochigi	Pref. 322-060	06					
1.1 Dichloro-1-fluroethane	132	1717-00-6	1.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	(
1,3,5-trimethylbenzene	224	108-67-8	1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	
· · · ·											
Osaka Plant, DNP Media Crea	te Kansai C	o., Ltd. 3-12	-32, Tamatsu	ı, Higashinari-l	ku, Osaka 537	'-0023					
1,1 Dichloro-1-fluroethane	132	1717-00-6	1.9	0.0	0.0	1.9	0.0	0.0	0.0	0.0	(
Warabi Plant, Business Forms	Operations	s 4-5-1, Nishiki	i-cho, Warab	i-shi, Saitama	Pref. 335-000	05					
Xylene	63	1330-20-7	1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0
Dichloromethane	145	75-09-2	1.4	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0
Dioxins	179	-	-	0.0	0.0	0.34mg-TEQ	0.0	0.0	0.0	37.21mg-TEQ	(
Toluene	227	108-88-3	21.5	0.0	21.3	0.2	0.0	0.0	0.0	0.0	(
DNP Data Techino Kansai Co.,	Ltd. 712-1	10, Oaza Toin, Ka	awanishi-cho	, Shiki-gun, Na	ara Pref. 636-	0293					
Toluene	227	108-88-3	9.9	0.0	9.0	0.6	0.0	0.0	0.0	0.3	(
Ushiku Plant, DNP Data Techn	o Co., Ltd.	1650-70, Okub	ara-cho, Ush	niku-shi, Ibara(	gi Pref. 300-1	283					
Xylene	63	1330-20-7	1.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0
Dai Nippon Printing Technopa	ck Yokoham	na Co., Ltd. :	3500, Ikebe-	cho, Tsuzuki-k	u, Yokohama-	-shi, Kanagawa Pre	ef. 224-0053				
Xylene	63	1330-20-7	1.1	0.0	0.3	0.0	0.0	0.0	0.0	0.7	0
Dioxins	179	_	-	0.0	0.0	0.0	0.0	0.0	0.0	40mg-TEQ	0
Toluene	227	108-88-3	646.2	0.0	568.7	2.9	0.0	0.0	0.0	74.7	(
Di-n-butyl phthalate	270	84-74-2	2.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	(
Sayama Plant, Dai Nippon Pri	nting Techn	iopack Co., Lt	<b>d.</b> 591-10,	Higashikubo,	Kamihirose, S	Sayama-shi, Saitan	na Pref. 350-132	11			
Chromium & chromium (III) compoi	unds 68	_	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.5	(
Hexavalent chromium compounds	69		1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.2	
Water soluble copper salts	207		18.8	16.5	0.0	0.0	0.0	0.0	0.0	2.3	
Toluene	227	108-88-3	974.9	0.0	705.3	198.0	0.0	0.0	0.0	71.7	(
Dai Nippon Cup Co., Ltd. 591-	·10, Higashikı	ubo, Kamihirose	, Sayama-shi	i, Saitama Pref	. 350-1321						
Toluene	227	108-88-3	13.6	0.0	0.0	10.4	0.0	0.0	0.0	3.2	(
zumizaki Plant, Dai Nippon P	rinting Tech	nopack Co., I	Ltd. 7, Chul	kaku Kogyo Da	ınchi, İzumiza	ıki-aza, Ooaza, Izur	mizaki-mura, Nis	hishirakav	wa-gun, Fuku	shima Pref. 969-01	01
Hexavalent chromium compounds	69	_	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	(
Dioxins	179	-	-	0.0		0.001136mg-TEQ	0.0	0.0	0.0	2,201mg-TEQ	(
Nater soluble copper salts	207	_	21.1	21.0	0.0	0.0	0.0	0.0	0.0	0.1	(
Toluene	227	108-88-3	1,766.0	0.0	658.4	505.4	0.0	0.0	0.0	602.2	C
DNP Technopack Tokai Co., Lt	<b>d.</b> 646-3, Na	asubigawa, Nkat	sugawa-shi,	Gifu Pref. 509	-9132						
oluene	227	108-88-3	121.6	0.0	0.0	113.6	0.0	0.0	0.0	7.9	
			.21.0	0.0	5.0	110.0	3.0	5.0	0.0	1.0	

	Subotones						Emissien		l		it: Tons/yea
Substance name	Substance No.	CAS No.	Handling	Consumed	Disposed	Air	Emissions Waterways	Soil	Sewage	ansferred Waste	Recycled
Tokyo Plant, Dai Nippon Printin	ng Kenzai C	o., Ltd. 311	, Chikumazav	wa Miyoshi-ma	chi Iruma-gu	ın, Saitama Pref. 3	354-8558				
Bis(2-ehtylhexyl) adipate	9	103-23-1	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0
thyl-benzene	40	100-41-4	3.2	0.0	0.8	1.9	0.0	0.0	0.0	0.4	0.0
thylene glycol monoethyl ether	44	110-80-5	5.2	0.0	1.4	3.1	0.0	0.0	0.0	0.7	0.0
thylene glycol monomethyl ether	45	109-86-4	209.8	0.0	52.8	128.6	0.0	0.0	0.0	28.4	0.0
psilon-caprolactam	61	105-60-2	7.8	6.7	0.0	0.0	0.0	0.0	0.0	1.0	0.0
(ylene Hexavalent chromium compounds	63 69	1330-20-7	10.5 1.1	0.0	2.2 0.2	7.1	0.0	0.0	0.0	1.2 0.0	0.0
Dichloromethane	145	75-09-2	3.6	0.9	1.4	2.2	0.0	0.0	0.0	0.0	0.0
Toluene	227	108-88-3	167.5	0.0	73.1	71.9	0.0	0.0	0.0	22.6	0.0
Bis (2-ethylhexyl) phthalate	272	117-81-7	6.6	5.7	0.0	0.0	0.0	0.0	0.0	0.9	0.0
1,2,4-Benzenetricarboxylic 1,2-anhyd	ride 300	552-30-70	2.3	2.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Kobe Plant, Dai Nippon Printin	-										
1,2,4-Benzenetricarboxylic 1,2-anhyd	ride 300	552-30-70	3.6	3.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Okayama Plant, Dai Nippon Pri		-				-					
thyl-benzene	40	100-41-4	7.5	0.0	6.4	0.0	0.0	0.0	0.0	1.0	0.0
thylene glycol monoethyl ether thylene glycol monomethyl ether	44	110-80-5	5.0	0.0	4.3 51.6	0.0	0.0	0.0	0.0	0.7 8.2	0.0
tnylene glycol monometnyl etner Cylene	45 63	109-86-4 1330-20-7	60.1 20.5	0.0	17.6	0.3	0.0	0.0	0.0	2.7	0.0
oluene	227	108-88-3	71.1	0.0	61.4	0.1	0.0	0.0	0.0	9.3	0.0
Bis (2-ethylhexyl) phthalate	272	117-81-7	2.0	0.0	1.8	0.0	0.0	0.0	0.0	0.3	0.0
Tokyo Plant, Dai Nippon Ellio C	o., Ltd. 4	013, Nakatsu, A	ikawa-cho, A	Aiko-gun, Kana	gawa Pref. 24	43-0303					
Ethyl-benzene	40	100-41-4	108.1	0.0	58.7	2.6	0.0	0.0	0.0	5.7	41.1
Xylene	63	1330-20-7	142.5	0.0	70.6	4.4	0.0	0.0	0.0	9.5	58.0
1,3,5-trimethylbenzene	224	108-67-8	7.1	0.0	3.0	0.1	0.0	0.0	0.0	0.0	4.1
Toluene	227	108-88-3	27.0	0.0	4.2	0.5	0.0	0.0	0.0	1.0	21.3
Bis (2-ethylhexyl) phthalate	272	117-81-7	7.1	2.3	4.7	0.0	0.0	0.0	0.0	0.1	0.0
Osaka Plant, Dai Nippon Ellio (											
Ethyl-benzene Yulono	40	100-41-4	32.2	0.0	22.1	0.2	0.0	0.0	0.0	0.0	10.0
(ylene	63 224	1330-20-7 108-67-8	61.4 4.3	0.0	32.2 2.9	0.3	0.0	0.0	0.0	0.0	28.9
1,3,5-trimethylbenzene Foluene	224	108-67-8	5.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	1.4 1.7
Bis (2-ethylhexyl) phthalate	272	117-81-7	4.7	2.7	2.0	0.2	0.0	0.0	0.0	0.0	0.0
Tokyo Plant, Dai Nippon Printin	ng Kenzai C	o., Ltd. 311	, Chikumazav	wa, Mivoshi-ch	o, Iruma-qur	n, Saitama Pref. 35	54-8558				
Toluene	227	108-88-3	20.5	0.0	0.0	18.7	0.0	0.0	0.0	1.8	0.0
Okayama Plant, DNP Industrial	Materials	Co., Ltd. 64	2-8, Ugaki, N	Mitsu-cho, Mits	su-gun, Okaw	vayama Pref. 709-	2121				
Ethylene glycol monoethyl ether	44	110-80-5	3.5	0.0	2.4	0.1	0.0	0.0	0.0	1.0	0.0
Cobalt and its compounds	100	7440-48-4	480.1	395.3	0.0	0.0	0.0	0.0	0.0	8.0	76.8
Toluene	227	108-88-3	254.1	0.0	175.8	5.4	0.0	0.0	0.0	72.9	0.0
Manganese and its compounds	311	7439-96-5	5.5	2.9	0.0	0.0	0.0	0.0	0.0	0.5	2.1
Kyoto Plant, Dai Nippon Printin											
Chromium & chromium (III) compou		7440-47-3	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.4
Hexavalent chromium compounds	69	1333-82-0	2.6	1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	227	108-88-3	1,123.4	0.0	969.3	62.5	0.0	0.0	0.0	91.6	0.0
Tanabe Plant, Dai Nippon Print	_	•							0.0	04 540 750	
Dioxins	179	100 00 2	92.2	0.0	74.4	14.725mg-TEQ	0.0	0.0	0.0	61.516mg-TEQ	0.0
Toluene Di-n-butyl phthalate	227 270	108-88-3 84-74-2	82.2 1.2	0.0 1.1	74.4 0.1	0.4	0.0	0.0	0.0	7.4 0.0	0.0
Sayama Plant, I.M.S. Dai Nipp	on Co. Ltd	501-2 Higg	shikuho Kon	nihirosa Savar	na-shi Saita	ma Pref 350-120	1				
Jayanna Frant, 1.M.S. Dar Hipp Toluene	227	108-88-3	901.1	0.3	753.1	41.2	0.0	0.0	0.0	106.5	0.0
Formaldehyde	310	500-00-0	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Okayama Plant, I.M.S. Dai Nip	pon Co., Li	<b>td.</b> 642-8, Ua	aki, Mitsu-ch	o, Mitsu-gun.	Okawayama I	Pref. 709-2121					
Toluene	227	108-88-3	2,011.1	4.2	1,667.9	37.2	0.0	0.0	0.0	235.9	66.0
Kamifukuoka Plant, Dai Nippon	Printing F	ine Electroni	cs Co., Ltd	./Dai Nippoi	n Printing F	Precision Device	e Co., Ltd. 2-	2-1, Fukuo	ka, Kamifuk	uoka-shi, Saitama P	ref. 356-8507
2-Aminoethanol	16	141-43-5	25.6	0.0	0.0	0.0	0.0	0.0	1.2	24.4	0.0
thylene glycol monoethyl ether	44	110-80-5	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
Chromium & chromium (III) compou			42.9	17.5	0.0	0.0	0.0	0.0	0.0	15.5	9.9
Hexavalent chromium compounds	69		3.2	0.5	2.7	0.0	0.0	0.0	0.0	0.0	0.0
Cobalt and its compounds	100		2.7	1.2	0.0	0.0	0.0	0.0	0.0	0.8	0.7
Water soluble copper salts	207	7440.00.0	144.8	0.0	0.0	0.0	0.0	0.0	0.0	144.8	0.0
Nickel Nickel compounds	231 232	7440-02-0	210.3 65.1	157.7 0.0	0.0	0.0	0.0	0.0	0.0	0.0 65.1	52.5 0.0
Manganese and its compounds	311		7.3	2.8	0.0	0.0	0.0	0.0	0.0	2.0	1.6
ganooo ana no oompoundo	011		7.0	L.U	0.0	5.0	0.0	0.0	0.0	2.0	1.0

53

Ethylene alycol

Ethylene glycol monoethyl ether

Water soluble copper salts

Cobalt and its compounds

2-Enthoxyethyl acetate

Nickel compounds

Hexavalent chromium compounds Inorganic cyanide compound

Hexavalent chromium compounds

Hexavalent chromium compounds

Water soluble copper salts

Water soluble copper salts

Water soluble copper salts

Isophorone-di-isocyanate

Ethylene glycol monoethyl ether

Cobalt and its compounds

Bis (2-ethylhexyl) phthalate

Boron and its compound

Manganese and its compounds

molybdenum and its compound

Ethylene glycol monomethyl ether

Octylphenol ether

Nonylphenyl ether

Ethyl-benzene

Xylene

Ethylene glycol

Epsilon-caprolactam

1,3,5-trimethylbenzene

Lead and its compound

Boron and its compound

Bis (2-ethylhexyl) phthalate

Poly (oxyethylene) nonylphenyl ether

Silver and its water soluble compounds 64

Chromium &chromium (III) compounds 68

1,2,4-Benzenetricarboxylic 1,2-anhydride 300

2-Enthoxyethyl acetate

Ethylene glycol monomethyl ether

Dioxins

Toluene

Bisphenol A

Ethyl-benzene

Ethylene glycol

E-caprolacatam

Toluene

Hexavalent chromium compounds

Chromium & chromium (III) compounds 68

# **Acquisition of ISO 14001 and Forest Certification**

The DNP group is carrying out group-wide environmental management through its Eco-Report System, an independent, practical environmental management system. In addition, we are also striving to acquire ISO 14001 certification, giving priority to sites that need certification and taking into account the demands of our clients.

#### **Target**

(Unit: Tons/year)

0.3

0.0

0.0

0.0

0.0

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51.6

3.0

23.1

0.3

0.6

35.9

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Kuki Plant, Dai Nippon Printing Fine Electronics Co., Ltd./Dai Nippon Printing Precision Device Co., Ltd. 1-5, Kiyoku-cho, Kuki-shi, Saitama Pref. 346-0035

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227 108-88-3 192.3 0.0 164.2

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Otone Plant, Dai Nippon Printing Precision Device Co., Ltd. 1-317-6, Toyonodai, Ootone-machi, Kita Saitama-gun, Saitama Pref. 349-1148

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236.9

207 143-74-8 7.2 7.1 0.0

226.0

2.1

492.2

20.9

2.2

5.5

138.1

7.8

74.3

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2.2

5.0

14.6

1.6

1.5

474.0

4.9

5.9

8.3

2,072.8

Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd. 73-1, Obara, Nutanishi-cho, Mihara-shi, Hiroshima Pref. 729-0473

107-21-1

110-80-5

7440-47-3

7789-09-5

7440-48-4

111-15-9

43

100

231

69

227

101

227

272

308

309

Kansai Plant, The Inctec Inc. 1-33-1, Kasugakitamachi, Hirakata-shi, Osaka 573-0137

224

227

309

DAP Technology Co., Ltd. 5-1-1, Makiyama, Tobata-ku, Kitakyushu-shi, Fukuoka Pref. 804-8520

Tokyo Plant, The Inctec Inc. 450, Aoto-cho, Midori-ku, Yokohama-shi, Kanagawa Pref. 226-0022 27 4098-71-9

Chromium & chromium (III) compounds 68 7440-47-3 10.6 0.7 0.0

Hokkaido Dai Nippon Printing Co., Ltd. 11-1-1, Kita 7 Jo Higashi, Higashi-ku, Sapporo 065-0007

Tohoku Dai Nippon Printing Co., Ltd. 3-5-1, Nigatake, Miyagino-ku, Sendai, Miyagi Pref. 983-0036

Tokai Dai Nippon Printing Co., Ltd. 3-902, Seko, Moriyama-ku, Nagoya-shi, Aichi Pref. 463-8543

108-88-3

108-88-3

108-88-3

100-41-4

107-21-1

110-80-5

109-86-4

105-60-2

111-15-9

108-88-3

117-81-7

552-30-

9036-19-5

9016-45-9

100-41-4

107-21-1

109-86-4

105-60-2

108-67-8

108-88-3

117-81-

9016-45-9

1330-20-7

1330-20-

Chikugo Plant, Kyushu Dai Nippon Printing Co., Ltd. 200, Ojino-cho, Chikugo-shi, Fukuoka Pref. 833-0032

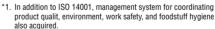
> To acquire ISO 14001 certification at 30 sites by FY2005.

#### Results

> By the end of FY2003, we achieved ISO 14001 certification of a total of 18 systems at 20 sites.

#### Acquisition of ISO 14001 certification (for 18 systems at 20 sites as of March 31, 2004)

	Site name	Date acquired	Certifying body
1	Okayama plant, Information Media Supplies Operations	Nov. 1997	JIA-QA*2
2	Mihara plant, Display Components Operations	Jul. 1998	DNV*3
3	DNP Facility Service Co., Ltd.*1	Apr. 2000	JIC-QA*4
4	Okayama plant, Decorative Materials Operations	Jul. 2000	JIA-QA
5	Tokai Dai Nippon Printing Co., Ltd.	May 2001	JIA-QA
6	Sayama plant, Dai Nippon Printing Technopack Co., Ltd.	Dec. 2001	DNV
7	Kobe plant, Decorative Materials Operations	Jan. 2002	JIA-QA
8	Tokyo plant, The Inctec Inc.	Jan. 2002	JCQA*5
9	Kansai plant, The Inctec Inc.	Jan. 2002	JCQA
10	Utsunomiya plant, The Inctec Inc.	Jan. 2002	JCQA
11	Ushiku plant, Business Forms Operations	Mar. 2002	DNV
12	DNP Technopack Tokai Co., Ltd.	Mar. 2002	JCQA
13	Tien Wah Press (Pte.) Ltd.	May 2002	PSB*6
14	Chikugo plant, Kyushu Dai Nippon Printing Co., Ltd.	Jun. 2002	DNV
15	Kyoto plant, Erectronic Components Operations	Jul. 2002	DNV
16	Sayama Plant, Information Media Supplies Operations	Oct. 2002	JIA-QA
17	DNP Media Create Kansai Co., Ltd.	Mar. 2003	JIA-QA
18	Advanced Colortech Co., Ltd.	Jan. 13, 2004	JCQA
19	Tokyo Plant, Decorative Materials Operations	Jan. 27, 2004	JIA-QA
20	Kami Fukuoka Plant, Electronic Components Operations	Mar. 25, 2004	AJA*7



- \*2 .IIA-OA: Janan Gas Appliances Association OA Center
- \*4. JIC-QA: JIC Quality Assurance Ltd.
- \*5. JCQA: Japan Chemical Quality Assurance Ltd.

  \*6. PSB: Certification Pte, Ltd. (Singapore)
- \*7 A.IA: Registrars I td

#### While "S-mail Recycled Paper Type" has received the Eco Mark, certification for the following environmental labels has also been acquired.

	-		
Certification Type	Certification Limits	Date acquired	Certifying body
CoC of the FSC*1	Tokai Dai Nippon Printing Co, Ltd.	Oct. 2002	SGS <sup>*2</sup>
CoC of the FSC	Commercial Printing Operations	Aug. 2003	SGS
CoC of the FSC	Kansai: HQ, Plant No. 1, Plant No. 1 (Neyagawa), Plant No. 2 (Ono), DNP Media Create Co, Ltd.	Sep. 2003	SGS
CoC of PEFC*3	Packaging Operations	Jan. 2004	JIA
EDP*4	Standard ink ribbon for dye sublimation card printer (2 product types); ID-3BP (250 screen/PS core); ID-3BP (250 screen/ABS core)	Mar. 2003	JIA

<sup>\*1</sup> FSC: Forestry Stewardship Council Chain of Custody)



Advanced Colortech Co, Ltd.



Tokyo Plant, Decorative



Components Operations

<sup>\*2</sup> SGS IGS Janan Co. Ltd.

<sup>\*3</sup> European Forest Certification Program PEFC (Program for the Endorsement of Forest Certification Scheme) Chain of Custody standards

<sup>\*4</sup> Sweden Environmental Management Association Environmental Product Declaration

#### **Activities at Overseas Sites**

The DNP Group conducts production operations in Southeast Asia, Europe, and North America. We comply with all local regulations, and our operations at those sites take the environment into consideration through our efforts to reduce waste and promote recycling.

#### Tien Wah Press (Pte.) Ltd. (Established October 1949)



Located to the west of Singapore, Tien Wah Press (Pte.) Ltd. performs offset printing and bookmaking, its main products being children's picture books and high-quality documents bound for American and European markets. The site obtained ISO 14001 in May 2002, the first overseas site in the DNP group to do so. Under a policy of Environment, Safety and Health (ESH), the company strives to reduce industrial waste and recycle wastepaper that arises during the production process. In addition to ISO 14001, the company has also obtained OHSAS 18001 certification.

Key Environmental	Impact Items	(FY2003)	
Energy consumption	Electricity	18,673	MWH
Waste generation	Emitted	6,236	tons
	Recycled	5,576	tons
	Landfill	660	tons
Chemical substance		54.6	tons

#### P.T DNP Indonesia (Established February 1972)



Located within the Progadon industrial park in the suburbs of Jakarta, P. T. Dainippon Printing Indonesia prints mainly food product wrapping and toiletries destined for markets in Indonesia, Southeast Asia and Oceania using both gravure and offset printing. Through a private recycler, the company recycles waste products that arise during the course of production such as paper, empty cans and copper. Furthermore, as it uses liquid chemicals such as developer in the course of making printing plates, the company treats such liquids at a wastewater treatment plant before releasing.

Key Environmental Impact Items (FY2003)							
Energy consumption	Electricity	25,406	MWH				
	Diesel	1,087	kL				
	LNG	11,195	$m^3$				
Waste generation	Emitted	5,084	tons				
	Recycled	2,925	tons				
	Landfill	843	tons				
Chemical substance		54.6	tons				

#### DNP Denmark A/S (Established January 1989)



Located in the Karlslunde industrial park of the Gleve region in the outskirts of Copenhagen, DNP Denmark A/S manufactures large screens for use in rear projection TVs, mainly for the European market. The production process involves the following steps: The process starts with the casting stage, where acrylic lacquer is injected into a metal mold that is hardened with heated water. In the following "surfacing stage," the acrylic sheet is coated with a UV hardened resin. Finally, the sheets are cut and packaged before being shipped. The factory has a waste incinerator.

Key Environmenta	l Impact Iten	ns (FY2003)	
Energy consumption	Electricity	22,62	MWH
	LNG	192,900	m³
Waste generation			
Emitted		353	tons
Incinated on-site		47	tons
Commercial was	te	221	tons
Landfill		86	tons
Chemical substance		54.6	tons

#### DNP Electronics America, LLC (Established July 2001)



Located in East Lake industrial park in Chulavista, a suburb of San Diego in California, 10km north of the Mexican boarder, DNP Electronics America, LLC manufactures and sells screens for rear projection TVs. Production began in April 2002. Production processes carried out by the factory include coating acrylic sheets with of UV-hardening resin, surfacing through metal molds, cutting to the specified size, packaging and shipping. Following the completion of construction, the plant invested some \$16,000 on beautification of the factory grounds.

Key Environmental Impact Items (FY2003)							
Energy consumption	Electricity	3,206 MWH					
	LNG	26,738 m <sup>3</sup>					
Waste generation	Recycled	959.8 tons					
	Landfill	6.8 tons					
Chemical substance		54.6 tons					

#### DNP IMS (America) Corp. (Established July 1995)



Located in the International Business Park in Concorde, North Carolina, Dai Nippon IMS (America) Corp finishes barcode- and facsimile-use thermal transfer ribbons that have been made in Japan. Processes performed by the company include slitting to the final product size, assembly, packaging and shipment.

Key Envir	onmental	Impact Ite	ems (FY2003)	
Energy con	sumption	Electricity	26,91	MWH
		LNG	6,150	m³
Waste gene	eration	Landfill	71	tons
Chemical s	ubstance		1.2	tons

# **Social Performance**



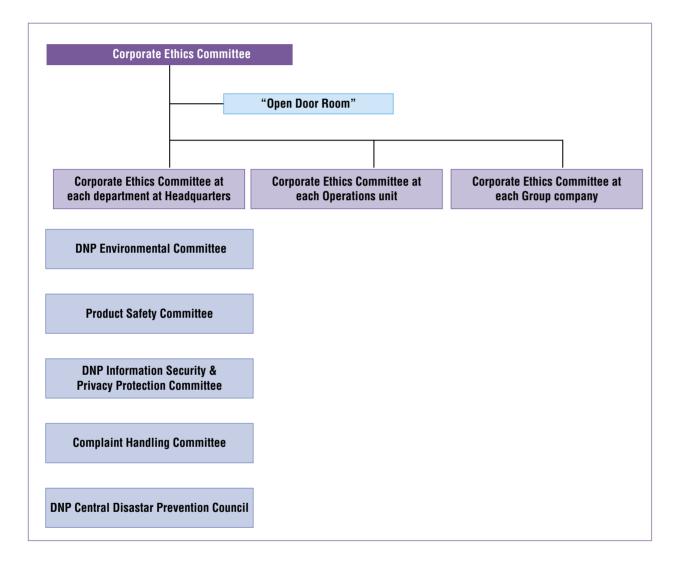
We have referred to the structure and system for compliance with the law and ethics. Now we would like to talk about our personnel, labor, and educational systems that are designed to enable our employees to become independent-thinking profe ssionals, and to nurtur an emergently evolving organization and culture. We will also introduce our efforts for information security, protection of personal information, and product safety, together with SRI-related information and corporate philanthropy.

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#### **Compliance with Laws and Ethics**

In 1992, we established the Dai Nippon Printing Group Corporate Pledge. This document makes it clear that we will operate in compliance with all laws and social ethics. In addition, we established the Corporate Ethics Committee as the overall Group organization for the promotion of corporate ethics and transparent business practices. The members of the Corporate Ethics Committee, which is made up of Directors in Charge from each department at Headquarters, meet at regular monthly meetings to determine policies regarding themes involving business ethics. There are also separate committees for dealing with important individual themes, such as the environment and information security.



#### **Honest Efforts**

One of the management objectives of the DNP Group for 2004 is Honest Efforts. "Honest" in this case is meant to represent not merely a sincere and straightforward approach, but also high-quality management that entails self-management, a sense of responsibility, sound morality, adherence to principles, and a strong sense of purpose. The way to attain this is to build a corporate structure based on

thorough self-management, with a strong sense of purpose and responsibility.

A corporate structure with a strong ethical foundation provides for a fresh atmosphere within the company and vitality throughout the company, and allows the company to earn the trust of society. The DNP Group will continue to take a positive approach toward corporate ethics with the goal of creating such a corporate structure.

In order to make ethical Corporate practices a reality, each individual employee must be made sufficiently aware of the importance of ethical Corporate practices, and must make this awareness part of their everyday activities. We continually and arduously drive home the importance of Corporate ethics so as to entrench them more firmly in the minds of our employees.

In addition, we believe that systems and structures for preventing regression must be incorporated in the management structure. We have outlined some of these efforts below.

#### 1. Systematization of corporate ethics training

We have systematized corporate ethics training so as to ensure that each em ployee maintains continuous ethical awareness. Employees can enroll in corporate ethics training as often as they wish.

#### Specific training for organizational units

It is necessary to tailor the content of corporate ethics training to the particular characteristics of each unit, so that employees can see corporate ethics issues as applicable to their work. Therefore, in November 2003 we started self-directed ethics training at all organizations. Under this system, we have the top management at the units, such as Directors in Charge, function as instructors, so that they can directly provide those under them with guidelines and solutions for main challenges facing their units.

#### Regular training according to stage of employment

We ensure that employees receive step-by-step corporate ethics training by creating a corporate ethics curriculum in which training is given at the various stages of employment, such as upon entry into the company, after appointment to the officer level, etc. This promotes awareness of the importance of corporate ethics

#### Visiting seminars conducted by Headquarters supervisors

Supervisors from Headquarters conduct visiting seminars on important themes when necessary, providing a backup for the specific training for organizational units' regular training according to stage of employment.

#### 2. "Open Door Room"

Group employees are able to consult and discuss concerns about corporate ethics with the Corporate Ethics Committee, and the members of the secretariat in charge provide a prompt response.

We have also taken steps to strengthen our consultation system by establishing an "Open Door Room", where employees can go to discuss matters that are difficult to talk about with their superiors. We make certain to ensure the anonymity of the employee and the content of the matters discussed, so that the employee will not suffer any repercussions within their organization.

#### 3. Target management system

The DNP Group incorporates corporate ethics factors into the management of work targets. When employees set their work targets and conduct mid-term evaluations of their work results, they certify the honesty of their work activities through discussions with superiors.

#### 4. Self-inspection for compliance

In order to establish a corporate culture of compliance with laws and rules, every organization within the Group functions in the spirit "maintaining compliance ourselves within our organization". Each organization is required to conduct self-checking to ensure that there are problems connected with relevant laws and rules in the performance of the organization's work, and they also are required to have measures in place for prompt rectification if problems exist

The Corporate Ethics Committee thereby promotes a system for self-improvement, with each business unit performing self-inspection twice annually based upon a checklist composed by each supervisory unit at Headquarters. The results of the self-inspections are integrated into themes for the Group as whole by the Headquarters supervisory units, and these themes are then promptly woven into the companywide measures and policies by the Headquarters Corporate Ethics Committee.

59

#### **Relations with Customers and Trading Partners**

#### Information security and privacy protection

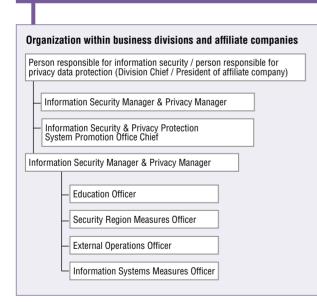
The business of the DNP Group involves being entrusted with important information about our customers and consumers. We maintain a strong understanding of information security in our provision of products and services, and have accumulated much know-how in that field.

While provision of superior products and services is a given, we are working to make our information security system even stronger, and to respond to the demand from society for information security, as represented by Privacy Protection. We will continue henceforth to offer "P&I Solutions" based on a foundation of strong information security and Privacy Protection.

#### Information security and privacy protection structure

We established the DNP Information Security & Privacy Protection in April 2002, and have been developing our information security management structure, including those of affiliate companies, towards the establishment of an information security management system.

# DNP Information Security & Privacy Protection Committee



#### **Results of efforts**

#### Staff training through network learning

- May 2000: Privacy Protection Training (Part 1) begins, attended by approximately 10.000 employees
- Feb. 2002: Privacy Protection Training (Part 2) begins, attended by approximately 9,400 employees
- Sep. 2002: Information Security Training begins, attended by approximately 17.000 employees

#### Internet Business Emergency Response Training (lecture & exercise)

Begun in March 2003, attended by approximately 2,000 employees from the Business Planning Division

#### **Information Security Training for Technicians**

Feb. 2004: Privacy Protection Training Regional Pre-press Technicians, attended by approximately 20 employees

#### **Nationwide Conference for Information Security Issues**

- Jul. 2003: Explanation of Privacy Protection Law for Promotion Staff
- Nov. 2003: Nationwide Privacy Protection Conference for Promotion Staff
- Dec. 2003: Central Control Virus Measures
  Software Installation Nationwide Conference for Promotion
- Mar. 2004: Nationwide Privacy Protection Conference for Promotion Staff

#### **Efforts for Privacy Protection**

- Apr. 1999: Establishment of System for Promotion of Information Security & Privacy Protection
- Dec. 1999: Company Rules based on the JIS Q 15001 Privacy Protection Rules & Guideline established
- Jan. 2000: CP established in sections handling personal data- acquisition of Privacy Mark begun

#### **Acquisition of certification**

#### Divisions that have acquired the Privacy Mark

- · Dai Nippon Printing Co., Ltd., Business Forms Operations
- Dai Nippon Printing Co., Ltd., IPS Operations
- Dai Nippon Printing Co., Ltd., C&I Operations
- · DNP Digitalcom Co., Ltd.
- DNP Logistics Co., Ltd.
- Dai Nippon Uniprocess Co., Ltd.
- DNP Media Create Kansai Co., Ltd.
- Tokai Dai Nippon Printing Co., Ltd.
- DNP Information Systems Co., Ltd.

#### ■ Acquisition of BS7799 and ISMS certification

- DNP Facility Service Co., Ltd.
- DNP Information Systems Co., Ltd.
- DNP Digitalcom Co., Ltd. (ISMS only)

#### Product Safety

The DNP Group has made environmental conservation and product safety its top priorities. We have constructed a PL management system that spans all Group companies, and we are promoting product safety for the Group as a whole.

#### 1. Basic Policy

Products will of course be in conformity with all laws and regulations, and we will fulfill our corporate social responsibility by making products that exceed customer hopes and demands for safety.

#### 2. Product safety organization

"Product Safety Committees" for the promotion of product safety were established in November 1994 in Headquarters and each business department and Group company.

#### 3. Product Safety Clarification

The Product Safety Committees in each business department and Group company will establish "Standards for Product Safety Assurance Efforts" and "Product Safety Standards for Each Product Handled" according to the guidelines for product safety measures established by the Headquarters Product Safety Committee. They will make efforts to clarify the product safety measures and ensure product safety.

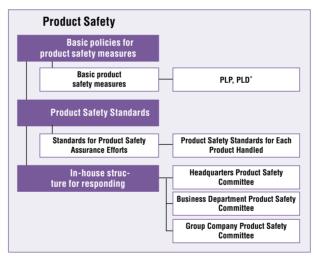
#### 4. PL (Product Safety) Management

PL measures must be continuous rather than one-time efforts. Therefore, PL Risk Checks will be conducted when new products are developed, when claims are issued, and once annually for each product line.

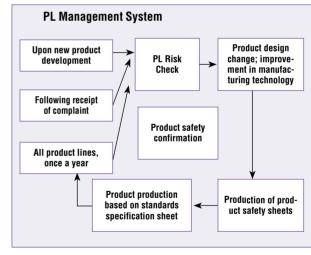
Products or production technologies found to be at risk for deficiencies based upon the results of the PL Risk Checks will be subject to design revision and technological improvement in order to eliminate risk, and the results will be used in drawing up and documenting product safety standards. These documented product safety standards will then be employed as the standards for ensuring product safety. To date 402 such product safety standard documents have been created.

#### 5. PL Training

We have been performing PL training programs since 1994 and have performed computer network-based training through since 2000. A total of 3,660 employees have completed network-based training.



PLP: Product Liability Prevension; PLD: Product Liability Defence



#### Efforts to Universal Design (UD)

The DNP Group provides a wide range of products for use by general consumers. Given that packages are products that consumers actually grasp when using, the DNP Packaging

Division has established five rules for universal design (UD) under which it develops and proposes new products.

The DNP concept of UD:

Packages designed to be a pleasure to use by all who handle them

Rule 1. Clear, easy-to-understand expression of required information
Rule 2. Simple, intuitive utility
Rule 3. Flexibility and safety during use
Rule 4. Appropriate weight and size
Rule 5. Able to be opened with minimum force or movement

Be of a shape that enhances the attractiveness of the product
 Be easy to separate and dispose of

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We will make our contributions to society in our capacity as professionals. The following are our personnel and labor efforts for supporting those contributions.

#### **Personnel and Employment Guideline**

Our goal is for each of our employees to be an independently functioning professional with a sense of responsibility and self-confidence. They shall strive to develop and achieve self-realization so as to face challenges positively and resolutely. The company will seek to provide an environment and organization that will support the development and self-realization of individual employees, and will nurture an emergently evolving structural climate and culture that will allow each of our employees to display the fullest of their abilities as professionals.

#### 1. Nurturing an emergently evolving structural climate and culture

#### Hirin

The DNP Group pursues a fair hiring and selection process by offering "Open & Fair" opportunities to persons sharing our

vision and wishing to work with us and achieve self-realization. We also take a positive approach to offering internships.

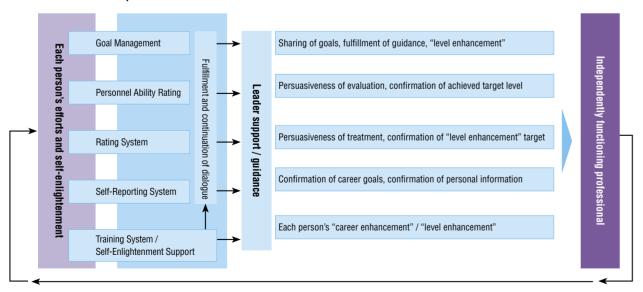
Measure	Content	Results
Internship (implemented jointly with Group companies)	The offering of work experience opportunities in response to requests from schools and students wishing to experience the workings of a real company. This is not directly connected to actual hiring.	Aug. – Sep. 2003 39 themes 78 persons

#### ■ The importance of dialogue

We believe that it is necessary for each employee to develop as an independently functioning professional and to evolve emergently together so as to continue to contribute to an emergently evolving society. Free and frank "dialogue" among employees is essential to making this a reality, and as a company we seek to create a "location" and an "environment" that supports this kind of "dialogue".

"Dialogue" is also given emphasis in the structuring of the personnel system. For example, we eliminated (in 2002) the "officer system" that is associated with hierarchy, so as to allow our employees to make progress in evolving emergently together through dialogue.

#### Actual measures and policies



#### 2. Aiming to become an "independently functioning professional"

We believe that it is important for each employee to engage in self-enlightenment and think about their own career, to select the work they aspire to, and to continue to broaden their field of work. In order to support each individual employee in these efforts, we have established a personnel system

by which employees can select the work they wish to do. We have also created a system for the promotion of acquisition of specialist skills, technical skills and qualifications, as well as an evaluation and treatment system.

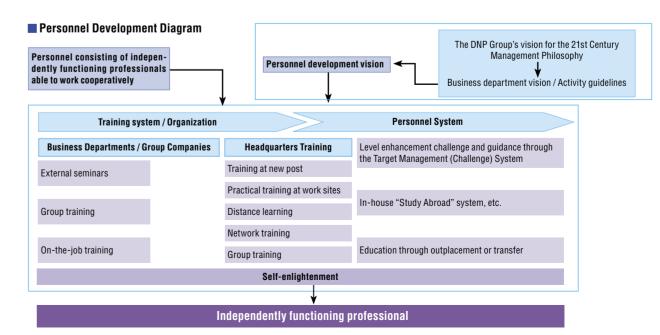
#### Actual measures and policies: The various personnel systems

Measure	Content	Results
Personnel Solicitation System	People with skill and experience who wish to challenge new business, new product development, and work that requires specialist knowledge are free to apply.	The finding of personnel and self- realization. A cumulative total of 169 per- sons had made the change by Mar. 2004.
In-house Venture System	Solicit persons wishing to start up a business, and create business by starting an independent company (our company owns 51%). Tied in with the training system (about 20 employees participate annually), supported by the company.	CP Design Consulting Co, Ltd. Apr. 2002; M's Communicate Co, Ltd. (female company president) Sep. 2003
In-house "Study Abroad"System	The employee takes a temporary posting in a different department to gain experience and improve skill in work, and then is returned to his or her original worksite.	Has been systematized through adoption of proposals in employee training; improvement of each employee's work skills
System for Encouragement of Qualification Acquisition	Provision of funding to encourage employees to attempt to acquire specialist knowledge, technical skills, and qualifications necessary to work. (approximately 80 qualifications, maximum ¥100,000)	Increase in the number of employees holding qualifications for specialist knowledge or technical skills, especially in the IT field.
Meister System	Bestowing of titles upon employees that have valuable skills in the production area, providing recognition of acquisition of specialist skills and training of successors. The company president presents a certificate of recognition, and a stipend is provid	Cumulative total of recognitions pre- sented through Mar. 2004: 41
Specialist Work System	Special treatment of employees who are particularly recognized both within and outside the company as having a high degree of specialist expertise.	Mar. 2004: 10 employees recognized
Ranking / Compensation System	Ranking is evaluated according to current role and results. Monthly salary and bonus standards are interlocked, while seniority is excluded from evaluation.	

#### Actual measures and policies: Training system for support of employees seeking to enhance their careers

The goal is to have each employee design his or her own career, and be able to work cooperatively with people both in and outside the company as an independently functioning professional with a sense of responsibility and self-confidence. The company supports employee career design by putting together a varied and practical training program for the development of the basic skills needed in each area, the acquisition

of specialist knowledge, human skills, conceptual skills, etc. For managers and leaders we also conduct practical training for deepening the understanding of the personnel and training system and career development, as well as the enhancement of communication and corroboration skills, so as help them bring out the best from those working under them.



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#### 3. A free, vigorous and pleasant work environment

#### 1. Making for a workplace where it is easy to get the job done

In contributing to the realization of a free, vigorous, emergently evolving society, we believe that it is important to develop a pleasant working environment where employees respect

each other's opinions. Therefore, we believe that aiming toward self-realization while making one's best efforts, without regard to sex, disability, or age, is very important.

#### Actual measures and policies: Developing the workplace environment

System / organization	Content	Results
Hiring of alternative persons	Achievement of the legally mandated hiring rate for the disabled predicated upon the "normalization"* concept, and the nurturing of a desire to work together with the ablebodied. Also, provision of the necessary training for workplace leaders.	Hiring rate for 2003: 1.82%
Hiring of the aged	Persons over the retirement age who wish to continue to work may, after consultation with the company, remain active as "Senior Staff".	44% of those subject to this program elected to do so in 2003.
Support of childcare and nursing care	This system provides support over and above what is legally mandated. We are currently looking into providing even more support.	Recipients of support in 2003: 42 employees

<sup>\*</sup> Normalization: Persons with disabilities function in society in the same way as others in a way that is normal for society.

#### 2. Fulfillment of personal life and family life

We believe that, in order for employees to reach their full potential as professionals, it is important for them to consider their own life plan and career plan so as to have a full personal life, and it is therefore important to achieve a balance in the time spent at work and the time spent in self-realization and enriching one's personal life. At the same time it is important to respect the time of people around one as a valuable resource. We refer to this as the "new way of working", and everyone, as well as the company itself, is working in various ways to develop and realize this concept.

In addition, we have established the "Total Health Support System" for the Group as a whole in our efforts to support employees helping themselves to "create sound mental and physical health for employees and their families". We do this so that everyone can maintain the best condition in both mind and body



Model smoking area in compliance with the Guideline

#### Actual policies and measures: Support system for personal and family life

System / organization	Content	Results
Employment System	A flexible employment system incorporating a flex time system and a discretionary labor system corresponding to the special characteristics of each employee's job.	This applies to 75% of employees overall.
Consultation Office	Consultation with specialists about topics such as housing (financial planning, housing selection, design, construction), legal issues (inheritance, family, accidents), taxes, sexual harassment, etc.	Cases in 2003: 847
Life Planning Consultation Office	Provides information about individual post-retirement planning, about topics such as pension, employment insurance, living, lifetime education, etc.	Guidance recipients in 2003: 580
Life Planning Progress System	A joint labor-management program whereby informational magazines are distributed, seminars are held, and other activities are sponsored.	Distribution of Design Book to 45-year-olds; Preparation Guidance for 55-year-olds.
Mutual Relief Association	Continuous creation of independent structures for mutual relief efforts funded jointly by the company and the labor unions.	Condolence and congratulatory allowances, various loans, scholarships (tuition and annual support), and other activities jointly run within the Group.
Operation of health management system	Construction of a "health examination management system" on the company intranet, making it possible to access one's own health examination results, including past results, via a personal computer.	Reception rate in 2003: general checkup at 99.0%; special testing, $99.8\%$
Smoking policy	Smoking policy conducted based on the Group Guideline at each worksite for the purpose of preventing non-smokers from being subjected to secondhand smoke.	Creation and implementation of "DNP Group Smoking Policy Guideline" that stipulates standards for separate smoking areas and smoking regulations.
Health Consultation Office; Telephone Health Consultation; Mental Health Consultation Office; Nutrition Consultation; Exercise Consultation	A consultation system set up for employees and their families to provide advice from medical specialists about concerns and worries related to disease or medical therapy. It also provides support for health maintenance through Nutrition Consultation and Exercise Consultation.	Total consultations (Telephone Health Consultation (including families), Mental Health Consultation, Nutrition Consultation, Exercise Consultation) through January - December 2003: 4,579

#### 3. Creating a safe and pleasant work environment

We have developed our own health and safety activities with the goal of creating a safe and pleasant work environment for each employee. We take a serious approach toward maintaining a health and safety structure in which all employees

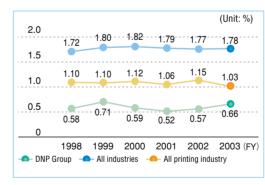
are involved as our basic policy for supporting the creation of a pleasant workplace environment in which it is easy to get the job done and a living environment that includes the family, so that all employees can feel secure while working.

#### Actual measures and policies

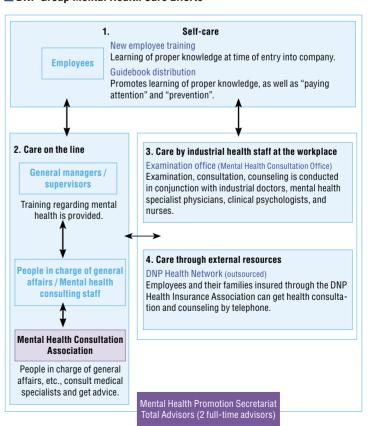
Measures	Content	Results
Structure	Through joint labor-management cooperation, a "Central Health and Safety Committee" has been created within Headquarters to deliberate and implement health and safety activities. Each business department and Group company has a similar structure. We are also establishing company-wide standards and guidelines.	Determination of the DNP Group's annual health and safety guidelines. Each business department and Group company then determines the policy for each worksite based upon these guidelines, taking into account the particular characteristics of each site. Main standards and guidelines established are:  1. Improvement of the workplace environment  • Workplace environment standards  • Guideline for prevention of workplace noise  • Smoking policy guideline  2. Work accident prevention  Guideline for the prevention of work accidents due to equipment, etc.
Skill enhancement	Promotion, mainly implemented by the Health and Safety Committee, of enhancement of staff skills necessary to the effectiveness of the Health and Safety Committee in conducting activities corresponding to the particular characteristics of each workplace.	Promotion of acquisition of qualifications by the Safety Manager, Work Foreperson, Chemical Manager, and others Increasing the Mental Health Consultation Staff. 37 persons as of March 2003 Increasing the number of participants in courses for expertise in restricted work and special courses. Participants during January - December 2003: 168 Training of production line managers, new employee education. Participants during January - December 2003: 729
Accident prevention	Through joint labor-management cooperation, Conduct analysis of causes of accidents, develop activities for the prevention of accidents involving rotors, which are cited as a major cause of workplace accidents. Also, re-evaluate the work standards documents for high-risk work, such as non-stationary work, and work to prevent reoccurrences or similar accidents by putting work sequences that do not create accidents into practice.	Maintain a workplace accident rate that is low in comparison to all industries, as well as to the printing industry as a whole. January - December 2003 accident occurrence rate (work stoppage frequency rate)*: 0.66%

<sup>\*</sup>Work stoppage frequency rate: Number of victims of accident resulting in work stoppage / man-hours of work (1 million man-hour units)

#### ■ Workplace accident rate (work stoppage)



#### ■ DNP Group Mental Health Care Efforts



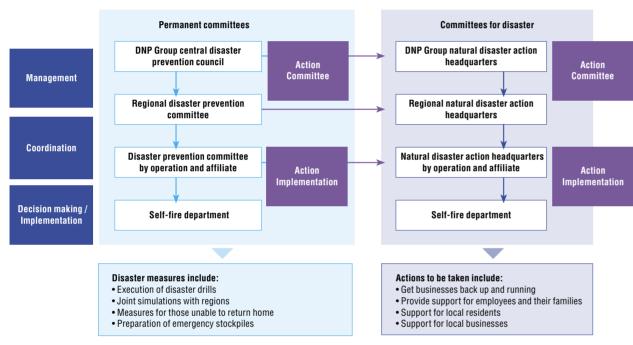
#### 4. A secure working environment (disaster management structure)

The DNP Group has established a Natural Disaster Response Network and a Central Disaster Prevention Plan for ensuring the safety of our employees in the event of a natural disaster, getting our businesses back up and running, and providing support to families and local residents, and pursues its disaster prevention policy based upon these. "Disaster Prevention Committees" have been established at the Central and Regional Business Department and Group Companies as the organizations driving the natural disaster, and in the event of a disaster these organizations automatically change to action centers. Actual disaster prevention measures, immediate disaster response measures, and disaster prevention

recurrence measures are driven by six action subgroups: the Human Measures Subgroup, the Building Measures Subgroup, the Property Measures Subgroup, the Business Measures Subgroup, and the Public Relations Measures Subgroup, and the Regional Measures Subgroup.

Also, by shoring up the Emergency Communications Network System (disaster wireless systems at 29 business sites in the Kanto area, satellite phone facilities at 42 sites nationwide), we are able to provide prompt and appropriate assistance not only for the business affected by the disaster, but also regional residents and businesses.

#### ■ DNP Group natural disaster organization



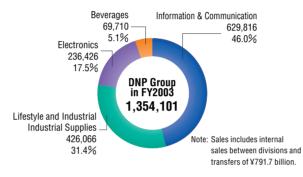
# Geostationary satellite

#### **Relations with Investors and Shareholders**

The DNP Group is involved in a broad range of businesses, from Information Communications businesses, such as publishing/commercial printing, business forms, to Living/Industrial businesses, such as packaging materials, decorative materials, and industrial supplies, to Electronics businesses, such as display components and electronic components. The 2003 consolidated financial results reflect an increase in the severity of the management environment due to ongoing worries about printing demand, increases in raw materials prices, and a decrease in order prices caused by stiffening competition. The DNP Group worked hard against this backdrop to develop its business aggressively and push through its twin reforms of business structure reform and cost structure reform. As a result, consolidated sales were ¥1.3541 trillion (an increase of 3.4% over the previous year), consolidated operating income of ¥102.4 billion (an increase of 14% over the previous year), consolidated ordinary profits of ¥97.2 billion (an increase of 10.2% over the previous year), and current term net profits of ¥52.9 billion (an increase of 84.1% over the previous year).

#### 2003 Overall management situation

#### Consolidated sales by division (Unit: ¥millions)

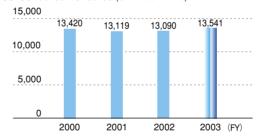


#### Number of employees

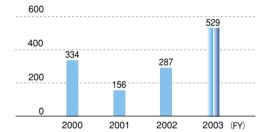
	DNP only	DNP consolidated*	
2004.3.31	9,159	34,514	
2003.3.31	9,737	35,182	
2002.3.31	10,352	34,868	

 $<sup>^{\</sup>star}$  Total of consolidated companies with the printing operation

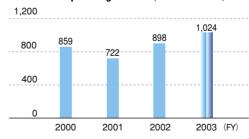
#### Consolidated net sales (Unit: ¥100 millions)



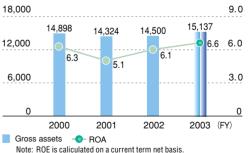
#### **■ Current term net profit** (Unit: ¥100 millions)



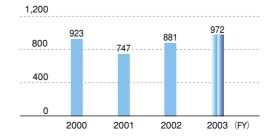
#### ■ Consolidated operating income (Unit: ¥100 millions)



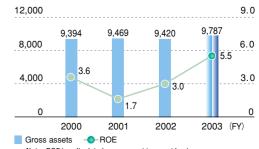
#### Gross assets (Unit: ¥100 millions) and ROA (Unit: %)



#### Consolidated ordinary profit (Unit: ¥100 millions)



#### ■ Shareholders' equity (Unit: ¥100 millions) and ROE (Unit: %)

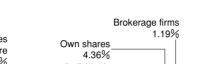


Note: ROE is caliculated on a current term net basis.

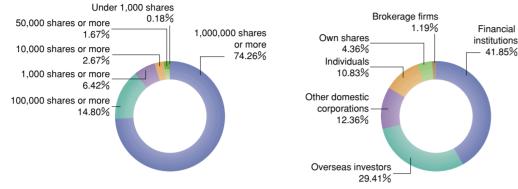
# **Share information**

Total number of shares issued: 759.480.693 hareholders at term-end: 33.505 Dividend: ¥21

#### ■ Distribution according to number of shares held



Distribution by shareholder



■ Major shareholders	Shares (1,000's)	Voting rights (%)
The Master Trust Bank of Japan (account in trust)	52,378	7.26
Japan Trustee Services Bank, Ltd. (account in trust)	41,685	5.78
Dai-Ichi Mutual Life Insurance Company	34,646	4.80
Mizuho Bank, Ltd.	22,580	3.13
Nippon Life Insurance Company	22,075	3.06
State Street Bank and Trust Company	20,524	2.84
The Chase Manhattan Bank NA London SL Omnibus Account	18,778	2.60
Mizuho Corporate Bank	15,242	2.11
Morgan Grenfell & Company, Ltd.	12,615	1.75
Mellon Bank Treaty Clients Omnibus	10,625	1.47

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- As of March 31, 2004, DNP holds 23,174 regular shares (0.22% share of voting rights) of Mizuho Financial Group, the holding company of Mizuho Bank, Ltd. and Mizuho Corporate Bank
- In addition to the above, DNP holds 33,107,705 own shares. These include 1,000 shares which, despite the record of the share registry, are not actually held by DNP.

# OPICS

#### Seventh place in Integrex Inc.'s Third Corporate Social Responsibility Survey

Integrex Inc. provided our company with a report on the results of its third "Integrex Questionnaire". This questionnaire is for evaluation of corporate management integrity from the point of view of the Social Responsibility Investment (SRI). It is conducted for companies listed in the 1st and 2nd sections of Tokyo Stock Exchange with regard to items such as management transparency, top management commitment, and the management system.

#### DNP's overall evaluation

Among respondent companies	7 <sup>th</sup> out of 877
Within the industry	<b>1</b> st
Among TSE 1st section companies	4th out of 502

#### Hokkaido Coca-Cola Bottling Co, Ltd. (group company)

Among respondent companies	38th out of 877
Within the industry	6 <sup>th</sup>
Among companies not listed in TSE 1st section	1st out of 315

In addition, DNP is recommended for investment with regard to SRI by Ethibel (Belgium) and FTSE

#### **Relation with Society**

The DNP Group is engaged in deeply original philanthropy based on our motto, "Long-lasting and close to our core business." Given that our core business is printing, we seek mainly to promote graphic arts through our philanthropic efforts, so that new creative arts can contribute to the evolution of the graphic reproduction arts as a cultural art form and gain status, and also so as to offer new artistic development and imagination to society. We are also focused on providing information about our environmental conservation efforts, and also to supporting our customers in their environmental communications.

#### Philanthropic efforts

# ginza graphic gallery

This gallery runs design exhibitions of creative works by individual artists and groups from Japan and overseas, along the themes of graphic design and printing. It also presents artist lectures and talk shows. In 1996, the 10th year of the gallery's operations, its decade of activity

was honored with the "Mainichi Design Awards Special Prize" . The gallery's special 10th anniversary project, "Japanese Graphic Design Currents", was very highly praised, and received the "Mecenat Awards for Outstanding Popularization of the Arts". The gallery had held 218 design exhibitions by July 2004, and had hosted 651,294 visitors, 12 exhibitions were held in 2003, with 40,801 visitors.

Location: DNP Ginza Building 1st floor 7-2, Ginza 7-chome, Chuo-ku

Tokyo 104-0061 TFI · 03-3571-5206

11:00 - 19:00 (Saturdays until 18:00) on Sundays and holidays

Established in 1991

The ddd Gallery is graphic design gallery in Kansai that conducts design exhibitions and lectures. The gallery's exhibitions focus mainly on introducing up-and-coming artists from overseas. The gallery had held 131 exhibitions by September 2004, and has hosted 182,730

visitors. 11 exhibitions were held in 2003, with 17.659 visitors.

Dojima AXIS Bldg. 1F, 2-2-28 Dojimahama, Kita-ku Location:

Osaka 530-8208

10:00 - 18:00 Cinsed: on Saturdays, Sundays and holidays

Admission: Free



#### **Center for Contemporary Graphic Art**

The CCGA stores the Tyler Graphics Archive Collection of Tyler Graphics of the USA, which is wellknown as modern graphic arts center. In addition to regular exhibitions



of the works it holds in storage, the Center also holds exhibitions of a wide range of modern art. The gallery had held 32 exhibitions by September 2004, and has hosted 48,201 visitors. In 2003, 4 exhibitions were held, with 4,002 visitors.

Location: Miyata 1, Shiota, Sukagawa-shi, Fukushima, 962-0711

0248-79-4811

10:00 - 17:00 (Admission until 16:45)

Closed: on Mondays and days following holidays (not including consecutive

holidays): New Year's

Admission: ¥300 for adults; ¥200 for students (elementary school children, seniors over 65, and the handicapped are admitted free of charge.)

#### Ginza School Opened 1995

This is an open event held 4 - 5 times annually with the theme, "Having a good time thinking about communications." We consider the fun and the difficulties of communications along with the guests. These events have been held 42 times, with about 70 par-



ticipants each time, for a total of 3.012 participants.



The Mainichi Publishing Culture Prize was established in

1947 by the Mainichi Shinbun, and is awarded each year for superiority in literary publishing. DNP maintains deep ties with the publishing world through our printing, and since 1997 we have been awarding



the Kitajima Prize, with a diploma of merit and commemorative gift, in our capacity as a special cooperating company. We presented five works with awards on the 57th occasion of the prize, among them Saburo Kawamoto's Fumiko Hayashi's Showa and Takeshi Yoro's Wall of Stupidity.

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#### **Environmental communication**

#### **Publication of the Environmental Report**

We issued our first "Eco Report" in 1998. We have since, from 2000 through 2004, issued five consecutive annual "Environmental Reports (with the 2004 edition entitled "Sustainability Report"). The 2003 edition received the Superiority Award at the "7th Environmental Reporting Awards" sponsored by Toyo Keizai Publishing's Green Reporting Forum. In granting the award, the Forum praised the report for "providing a clear explanation of environmental conservation goals and results, and making strong efforts to maintain data reliability." We continue to provide these features. The next challenge we face is bolstering the environmental information posted on our homepage (Web).

#### Nikkei Shinbun's 7th "Environmental Management Ranking"

DNP's Environmental Management Ranking in the manufacturing industry category fell from 22nd to 34th (announced in the December 11, 2003 Nikkei Shinbun; DNP had been ranked 15th in 2001, and 22nd in 2002). We intend to make improvements in the quality of our environmental management system, i.e., the "Eco Report System".

#### **Results of 2003 Edition Questionnaires**

The results of the questionnaires returned are as follows (rating out of a maximum of 5 points):

Sufficient detail in content	4.8 points
Easy to view and read	3.9 points
Easy to understand	3.9 points
Cover design	4.3 points
Overall score	4.2 points

Note: Overall score was rated 4.3 in 2001, 4.1 in 2002

#### Support for the creation of environmental communication tools

From 2000 to the present we have been involved in the planning and creation of environmental reports, sustainability reports and environmental websites for various businesses. Our Group companies conduct specialized content consulting, with DNP Media Create Co., Ltd. handling printed media and DNP Digitalcom Co., Ltd. handling websites.





Nippon Steel Corporation

#### **Relations with Local Communities**

The DNP Group production facilities, which are located throughout Japan, are engaged in regional environmental conservation efforts, including beautification of the areas around plants and disaster drills. They also actively participate in and co-sponsor local festivals and other events. The DNP Group's production facilities also run on-site study programs and give

site tours. In addition, they work at maintaining good communications with local communities by making gyms and pools open to the public, offering conference rooms, meeting halls, training facilities, and recreational facilities, and by holding concerts and other events.

#### Communications with local communities

The DNP Group is a good corporate citizen in local communities.

Hokkaido Coca-Cola Bottling Co., Ltd.	Support for the local Yosakoi Soran dance team (May).
Ushikyu Plant, DNP Data Techno Co., Ltd.	Hosting of plant tour for local high school students (May).
Warabi Plant, Business Forms Operations	Received the Letter of Thanks from the Health, Labor and Welfare Ministry for blood drive activities (July).     In-house fire crew received the Excellent Firefighting Team Award from the Saitama Firefighters Association (March).
Kami Fukuoka Plant, Dai Nippon Printing Fine Electronics Co., Ltd.	Received the Letter of Thanks from the Health, Labor and Welfare Ministry for blood drive activities (July).
Tokai Dai Nippon Printing Co., Ltd.	Co-sponsor of Nagoya City Moriyama-ku "Genki Matsuri" (October).
Kyoto Plant, Dai Nippon Printing Fine Electronics Co., Ltd.	Received the Letter of Thanks from the Health, Labor and Welfare Ministry for blood drive activities (November).
Nara Plant, DNP Data Techno Kansai Co., Ltd.	Received the National Hazardous Materials Safety Association Director's Commendation from the All Japan Hazardous Materials Safety Association for excellence in hazmat control (June).
Shikoku Dai Nippon Printing Co., Ltd.	Hosted a book manufacturing process plant tour for parents and children as summer vacation on-site study program (July).
Kyushu Dai Nippon Printing Co., Ltd.	Cooperation in social studies classes for local elementary school children (June).     Received the letter of thanks for cooperation in Children's 110 home (March).
Headquarters Education & Traning Depertment	Hosted training for Tokyo school personnel (August).

#### **Targets for 2004 Activities**

The Air Pollution Control Law will be revised in May 2005, with text added concerning regulation of atmospheric emissions of VOCs from fixed sources. The DNP Group is involved in businesses that emit large quantities of VOCs, so we elected to take the initiative and deal with this issue prior to the revision of the law. The DNP Group Environmental Committee convened in March 2004 took action to beginning making efforts to reduce VOCs from 2004 onward by adding "Reduction of air emissions of VOC" to the list of DNP Group environmental targets.

#### **DNP Group Environmental Targets**

#### Development and sale of environmentally conscious products

• To improve year-on-year sales of environmentally conscious products by 10%

- . To improve the year-on-year purchasing ratio of products deemed to be green according to company standards by 2.5%
- To improve the year-on-year purchasing ratio of general products (office supplies & fixtures) bearing environmental labels such as the Eco-Mark by 3.0%

#### Reduction of industrial waste

To achieve the following targets by FY 2005

- · Reduce waste emissions per unit of production (Waste emissions/production) by 40% from the FY 2000
- Reduce the amount of unused materials generated by 25% from the FY 2000 level
- Achieve zero emissions at 20 sites
- . Improve the reduce ratio (Unused product generation amount / total material inputs) by 20% from the FY
- Achieve a recycling ratio (Recycle amount/unused product generation amount) of 80%

#### Global warming prevention

To achieve the following targets by FY 2010

- To maintain total energy consumption at the FY 2000 level
- . To maintain greenhouse gas emissions a the FY 2000 level
- To reduce energy consumed per unit of production (Crude-oil converted energy consumption amount / production) by 15% from the level in FY 1990
- To reduce CO<sub>2</sub> emissions per unit of production (CO<sub>2</sub> / production) by 20% from the level in FY 1990

#### PRTR (Pollutant Release and Transfer Register)

- To reduce air emissions of toluene for the entire DNP group to less than 500 tons / year by FY 2004
- To reduce emissions and transfers of items designated as Class I Chemical Substances (except toluene) under the PRTR law to 50% of the FY 2000 level by FY 2004
- . Reduction by 2005 of air emissions of VOCs (with the exception of methane) by the DNP Group by 50% in comparison with 2002

#### **Environmental conservation**

To achieve the following targets by FY 2005

- To keep maximum densities of gas emissions subject to emissions regulations at 70% of the required
- . To keep maximum densities of wastewater discharges subject to wastewater regulations at 70% of the required standard or less
- To keep the maximum density of odors at site perimeters at 70% of the required standard or less
- To keep the maximum level of noise and vibration at our site perimeters at 95% of the required standard

#### Prevention of soil or underground water contamination

To execute the measures prescribed in the DNP group Guideline for Measures against Ground Contamination

To improve the used paper recovery ratio by 65% in comparison to the rate for municipal waste

#### Reduction of environmental impact incurred during transport

#### To achieve the following targets by FY 2010

- . To reduce CO2 emissions per unit of transport (CO2 emissions / transported weight / distance traveled) by
- 5% from the level in FY 2000 • To reduce fuel consumption per unit of sales (Fuel consumed / sales) by 20% from the amount in FY 2000
- To achieve ISO 14001 certification at 30 sites by FY 2005
- · To perform Eco-Audits at all sites

#### **Results of Environmental Efforts**

1972	Establishes the Environmental Department within the head office to promote pollution prevention measures and communication with local residents	2003	Environmental Report Division receives "6 <sup>th</sup> Environmental Report Grand Prize" for superior reporting
1990	Makes new efforts to deal with global environmental issues		Establishment of "DNP Eco Label", a Type-II environmental label
4000	by establishing the Eco-Plan Promotion Office within the Environmental Department		DNP Media Create Kansai Co., Ltd. Ono Plant acquires ISO 14001 certification
1992	Establishes the DNP Group Codes of Conduct and the DNP Group Employee Codes  Establishes the Eco-Plan Promotion Targets, the		Information Media Supplies Operations receives JIA-type environmental Eco Label registration for two types of ink ribbon for dye sublimation card printers: ID-3BP (250
	fundamental voluntary plan based on the Environmental Declaration of the Codes of Conduct, and starts activities by 4 subcommittees		screen/PS core) and ID-3BP (250 screen/ABS core).  Convening of the DNP Environmental Committee (Report
1993	Starts the Eco-Report System, which is part of the DNP	Anr 2003	on 2002 activities, revision of 2003 guidelines)  Training of new regularly hired employees
	Group environmental management system	-	Issuance of Eco Report No. 20
1994	Remodels and expands the Environmental Department into the Environment & Product Liability Department to strengthen our efforts towards environmental issues,	May 2000	Holding of Eco Report explanatory meetings at sites participating in the Eco Report System
	including taking responsibility for the disposal of products we produce	Jun. 2003	Training of employees hired on a non-regular basis
1995	DNP wins the International Trade and Industry Minister'	Aug. 2003	Eco-audits conducted at three sites
	s Prize in the "Fourth Global Environmental Awards", which commend companies and groups that contribute to conservation of the global environment. (The Awards was		Commercial Printing Operations acquires FSC-CoC certification
	established in 1991 by the Japan Industrial Journal and the Fuji Sankei Group, with special support by WWF Japan and sponsorship by the Ministry of the Environment, the Ministry of the Economy, Trade and Industry, and the Japan		Convening of the DNP Environmental Committee (Report on activities in the first half of 2003)
		Sep. 2003	Eco-audits conducted at 15 sites
1996	Federation of Economic Organizations.)  Begins performing the Eco-Audit, the internal		DNP Media Create Kansai Co., Ltd. acquires FSC-CoC certification
	environmental audit performed by the Eco-Plan Promotion Office to upgrade the Eco-Report System	Oct. 2003	Eco-audits conducted at three sites
1997	Okayama Plant, the Information Media Supplies Operations becomes the first in the printing industry to acquire ISO 14001 certification		Training of employees hired on a non-regular basis
		Nov. 2003	Issuance of Eco Report No. 21
1998	Mihara Plant, the Display Components Operations acquires ISO 14001 certification		Holding of Eco Report explanatory meetings at sites participating in the Eco Report System
	Publish the DNP Group Environmental Activity Report	Dec. 2003	Eco-audits conducted at three sites
2000	The Eco-Plan Promotion Office is dismantled and replaced with the DNP Group Environmental Committee	Jan. 2004	Advanced Colortech Co., Ltd. and Decorative Materials Operations Tokyo Plant acquire ISO 14001 certification
	to strengthen the system for promoting environmental activities  The affiliate DNP Facility Service Co., Ltd. becomes the first in the world to be certified as a comprehensive system with quality, environment, office safety and HACCP*1		Packaging Operations acquires PEFC-CoC certification
			Eco-audits conducted at four sites
			Technical Seminar "A" is held
		Feb. 2004	Technical Seminar "A" is held
	Okayama Plant, the Decorative Materials Operations acquires ISO 14001 certification		Eco-audits conducted at 18 sites
2001	Tokai Dai Nippon Printing Co., Ltd., and Sayama Plant, Dai Nippon Printing Technopack Co., Ltd. acquires ISO 14001	Mar. 2004	Electronic Components Operations Kami Fukuoka Plant acquires ISO 14001 certification
	certification		Eco-audits conducted at nine sites
2002	Tokai Dai Nippon Printing Co., Ltd. acquires FSC-CoC certification		Convening of the DNP Environmental Committee (Report on 2003 activities, revision of 2004 guidelines, decision t reduce air emissions of VOCs and make additional efforts
	Acquisition of ISO 14001 certification by: Decorative Materials Operations Kobe Plant, The Inctec Inc. (Tokyo, Kansai, and Utsunomiya Plants), Business Forms Operations Ushikyu Plant, DNP Technopack Co, Ltd. Tokai, Ten Wa Press (Private) Limited, Kyushu Dai Nippon Printing Co., Ltd. Chikugo Plant, Electronic Components Operations Kyoto Plant, Information Media Supplies Operations Sayama Plant.		to manage hazardous substances)

## **Comparison with the 2003 Guidelines**

The "DNP Group Sustainability Report 2004" has been composed based upon the Ministry of the Environment's "Environmental Report Guidelines, 2003 Edition". The pages containing the 5 areas and 25 categories deemed by the Guidelines to be important for inclusion in an environmental report are noted below.

#### Comparison with Environmental Reporting Guidelines by the Ministry of the Environment

	Area	Content	Page
1)	•	(1) CEO's statement	1, 6
		(2) Foundation of reporting (Reporting organisation, time period, fields)	Second cover, 4, 5, 70, back cover
		(3) Summary of the nature of the business	2, 3, 4, 5, 18-30, 67, 68, 72
2)	Policies, Targets, Achievements in Environmental Conservation	(4) Business policies regarding environmental conservation	8
		(5) Summary of plans, targets, and achievements in environmental conservation	32, 33
		(6) Material Balance	16, 17
		(7) Summary of environmental accouting information	50, 51
3)	Management .	(8) State of environmental management system	9-14, 44-47, 55
		(9) State of supply-chain management for environmental conservation	24-27, 43, 47
		(10) State of reserch and development of technologies for environmental conservation and environment-conscious products/services	20, 24, 26, 30
		(11) State of the disclosure of environmental information and environmental communication	55, 70
		(12) State of compliance with environmental regulations	44-47
		(13) State of social contrigution related to environment	50, 70, 72
4)	for Reduction of Environmental Burden	(14) State of total energy input, and mitigation measures	41, 42
		(15) State of amount of material input, and mitigation measures	16, 38, 39
		(16) State of volume of water resource input, and mitigation measures	40
		(17) State of GHG emission, and mitigation measures	41, 42
		(18) State of emmisions and removal of chemical substaces, and mitigation measures	36, 37, 52-54
		(19) Production volume or sales volume	67, 68
		(20) Total amount of waste, amount finally diposed of waste and mitigation measures	38, 39
		(21) Total amount of waste water, and mitigation measures	40
		(22) State of environmental burdens from transportation, and mitigation measures	43
		(23) State of green purchase, and promotion measures	47
		(24) State of environmental impacts on whole life cycle of products and servises	48
5)	State of social activities	(25) State of social activities	58-70

#### **Independent Review Report**

#### **Comments by independent institution**

The following are the comments made by the independent institution (Shin Nihon Environment and Quality Management Research Institute) regarding the assertions made by DNP.

#### **Reduction of Environmental Impact of Chemicals**

(Assertions made by DNP on page 36)

We recognize that the DNP Group implements voluntary management of chemicals that are not specified in the PRTR, and that they are making efforts to reduce emissions. The DNP Group is also making steady progress in its efforts to reduce emissions and transport amounts of VOCs that it cannot, at the present time, avoid using as raw and subsidiary materials, given the particular features of its business. The company is achieving success in its measures for toluene, which include recycling and elimination, and this shows up in the performance figures.

Henceforth we can hope to see research and development into products and production processes that lead to even further reductions in VOC use and emissions

#### **Efforts in Resource Recycling: Waste Reduction**

(Assertions made by DNP on page 38)

The DNP Group targets focus on reducing the amounts and generation rates for waste. These are the appropriate efforts and targets for attempts to contribute to the building of a recycling society. Moreover, as noted in the report, the company's performance in this area continues to be in an upward trend. We hope to see the results of these efforts shown even more clearly in the future, with the effectiveness and the efficiency of these efforts using economic benefits. and environmental costs- economic benefits ratios, etc.

#### Efforts in Resource Recycling: Recycling of Used Office Paper (Assertions made by DNP on page 40)

While it is easy to measure in general used office paper collection, given the difficult of accurately measuring the weight of waste, it is difficult to measure the collection rate. The DNP Group deserves special mention for achieving accurate measurement of collection rates at half of the sites in the Group.

We hope to see the results of efforts in other office-related areas shown quantitatively in the future, in the same way as those for collection of used office paper.

#### **Measures against Global Warming**

(Assertions made by DNP on page 41)

The DNP Group maintained its targets of 2000 levels or lower for energy consumption and greenhouse gas emissions despite an increase in its lines of business, and has very ambitious 2010 per unit targets of 15% and 20% reductions in comparison with 1990 for both of the above categories, respectively.

In terms of the actual efforts underway, the utility-related measures covered by the assertions are nearly complete, and we believe that in the future more strategic efforts will be necessary. While we do see the effects of the "Production 21" efforts, we hope to see emissions credit know-how, developed through participation in test programs conducted by the Ministry of Economy, Trade and Industry and the Ministry for the Environment, put to use in the future.

#### Prevention of pollution

(Assertions made by DNP on page 45)

The DNP Group has established voluntary standards that exceed the regulations contained in the laws and ordinances, and these standards are complied with and form the basis of improvement measures at each business site. The checking performed by the Environmental Safety Department is strict, and sites at which the voluntary standards are not being met are required to identify the problems and implement appropriate measures.

#### Efforts made in the business area upstream Green Purchasing (Assertions made by DNP on page 47)

The DNP Group disseminates information about green products in-house, and creates incentives for the purchasing of green products, including both raw materials for products and general supplies. We confirmed that, in the area of general supplies, the reason for the decrease in the green purchasing rate for 2003 was that the increase in the overall purchasing amount was great and countered the increase in the amount of green purchasing. In the future we hope to see more comprehensive efforts toward an even greater increase in the green purchasing rate, such as the controls on the purchasing of non-green materials and an increase in the resource recycling of general supplies.

#### Efforts made in the business area downstream

Sales of environmentally-conscious products

(Assertions made by DNP on page 48) While there were fluctuations in the sales of individual envi-

ronmentally conscious products, there has been a steady increase in sales in comparison with the previous year. Some of the Divisions are applying a high degree of technical expertise to meeting the green purchasing needs of customers. In the future we hope to see concentrated efforts put into suggestion selling of environmentally conscious products to customers.

#### The reliability of the results of efforts has been increased through adoption of the "Kensyou-Meidai Method".

The DNP Group's "Eco Report System", as described on page 9, is the company's own environmental management system. It provides the basis for determining the various environmental standards, guidelines and efforts toward attaining the environmental targets. Through this system, the details of environmental efforts and their results for each site within the Group are published semiannually in the form of a white paper report.

The DNP Group has employed the services of Shin Nihon Environment and Quality Management Research Institute as independent verifier for environmental reports since issuing their 2000 edition. In the early stage of services, verification had been conducted on whether the contents of "DNP Group Eco Report" is collected, compiled, and disclosed appropriately in accordance with the policy determined by the company.

It was later suggested at the editorial policy meeting in the spring of 2002 that a novel approach differing from other independent verification might be taken. Rather than merely following along with the policy determined by the company, it might be better to attempt to get a general evaluation of the reliability of the information in the environmental report.

In response to this, the Institute proposed that the verification methodology named"Kensyou-Meidai Method". This method is characterized by that verifier develop "Proposition (kensyou meidai)" for the "Assertions", the main messages that the company wants to appeal to reader. The reasonable evidence that is provided in support of these assertions is then examined during the verification. The proposition requires the extended degree of the evidence to be verified, and in some cases causes the assertions themselves to be changed.

The adoption of the Kensyou-Meidai Method has doubled the work necessary to preparing for the verification. Nevertheless, it not only has improved the accuracy of the contents of the report, but also has improved the accuracy of the reported results of the environmental efforts, thereby enhancing the reliability of the environmental report itself. It also makes clear what kind of environmental efforts can be evaluated by an independent body, and therefore has benefit on improvements to the management

#### **Independent Review Report**

#### TRANSLATION

#### Independent Review Report on mental Annual Report for the year ended March 31, 2004 the DNP Group Environ

Angust 27 2002

Mr. Yoshitoshi Kitaiima

Chairman of the Board, President and Chief Executive Officer Dai Nippon Printing Co., Ltd.

1. Purpose and Scope of Our Review

1. Purpose and Scope of Our Review
We have performed certain procedures as described below to the DNP Group Environmental Annual Report for the year ended March 31, 2004 (The "Report") of Dai Nippon Printing Co., Ltd. and its principal subsidiaries ("Company"). The scope of the procedures are limited to, "Whether the main message that the Company wants to communicate with stakeholders through the Report (the "Assertion") agrees with the main point of the Report", and "Whether the main point of the Report agree with the Actual Condition of the Company". It is understood that this report is solely for reporting our findings based on procedures developed by us for this purpose with the Kensyou-Meidal Method, and we do not express audit opinion on any of the items in the Report because our procedures do not constitute an audit conducted in accordance with generally accepted auditing standards.

#### 2. Procedure Performed

The procedure of Kensyou-Meidai Method requires the evaluation of the two clauses, "Whether the Assertion are procedule or reciprost-related sections required the configuration of the Report agree with the Actual Condition of the Company" by setting propositions. The fact that all the propositions are proved based on reasonable evidence is equal to the fact that the two clauses are proved based on the reasonable evidence. For this

- We understand the Assertions prepared by the Company. The propositions vary according to the existence of a hierarchical structure in the Assertions.
   We set the propositions that are based the two clauses.
   We apply procedures for each proposition and ask the Company for submission of reasonable evidence in

- support of each proposition.

  (4) We review the evidence, and search for any negative evidence for each proposi
- (5) We consider every proposition and report the findings to the preparer of the Report

The Assertions are not in a hierarchical structure in this case. They are set in each chanter of the Report and are disclosed on page 74 of the Report. We have developed the Propositions on all the topics and the Report regardless of whether it has an assertion or not. The propositions on each Assertion are disclosed on the

4. Results of the Procedures Performed

As a result of the procedures performed, no matters came to our attention that caused us to believe that the As a result of the procedures periorimen, nor intentic scane to our attention that classed us to believe that the widence is neither negative nor is against the proposition. Thus, we conclude that the Assertions agree with the main point of the Report and the main point of the Report agree with the Actual Condition of the Company.

Representative Director Shin Nihon Environment and Quality Management

Research Institute

#### The Kensyou-Meidai Method

We describe the company's Environmental report and Sustainability report ("the Report) as a hierarchical structure of "Assertion-Description of the Report-Actual Condition of company" shown in fig.1 in the independent review with the Kensyou-Meidai Method. Here. we simply refer the main message that the company wants to communicate with stakeholders through the media as "Assertion"

A desirable Report is one where Assertions are appropriately described and Description of the Report is based on the Actual Conditions of the Company.

The scope of our independent review with the Kensvou-Meidai Method is to perform certain procedures and report the findings on "Whether the Assertion agrees with the Description of the Report" and on "Whether the Description of the Report agrees with the Actual Condition of the Company", from an independent position.

A=>R means the Assertion (A) agrees with the Description of the Report (B) and B=>C means the Description of the Report (B) agrees with the Actual Condition of the Company (C). Also, the Assertion should agree with the Actual Condition of the Company when the Company makes the Assertion (We describe as A=>C).

The following three clauses are the basic clauses under this method.

- 1. Basic clause (1): The Assertion agrees with the Actual Condition of the Company (A=>C)
- The Assertion agrees with the Description of the Report (A=>B)
- 3. Basic clause (3): The Description of the Report agrees with the Actual Condition of the Company (B=>C)
- In the next step, we set the propositions derived from the basic clauses of (1), (2) and (3), 1-1. Generally multiple, practical propositions derived from 1. The Assertion agrees with
- the Actual Condition of the Company. 2-1. Practical propositions derived from 2. The Assertion agrees with the Description of
- the Report. 3-1. Practical propositions derived from 3. The Description of the Report agrees with the Actual Condition of the Company.



Fig. 1 Hierarchical Structure of the Report

Thus, we have the following 6 types of propositions under the Kensyou-Meidai Method with the derived propositions added to the basic propositions

- The Assertion agrees with the Actual Condition of the Company (A=>C)
- The Assertion agrees with the Description of the Report (A=>B)
- The Description of the Report agrees with the Actual Condition of the Company (B=>C)

- Practical propositions are derived from "The Assertion agrees with the Actual Condition Practical propositions are derived from "The Assertion agrees with the Description of
- Practical propositions are derived from "The Description of the Report agrees with the

The Assertions should be as concrete as possible when performing the procedures, and are the following:

- I. Understanding of the Assertions
- II. Setting the Propositions
- III. Performing procedures to consider whether proposition 4, 5 and 6 are proved or not.
- IV. Performing additional procedures to consider whether basic propositions 1, 2 and 3 are

\*The procedures involve the process of asking the company for submission of reasonable evidences in support of each proposition, evaluating the relevance of submitted evidence, and searching for any negative evidence.

The conclusion on whether each proposition is proved would be reported as the result of the procedures performed. If we obtained reasonable evidence in support of all the propositions and did not find any negative evidences on each proposition, it means, "the Assertion agrees with the Description of the Report, and the Description of the Report agrees with the Actual Condition of the Company".

In addition, the Kensyou-Meidai Method performed included only "The Assertion agrees with the Description of the Report (A=>B)" and "The Description of the Report agrees with the Actual Condition of the Company (B=>C)" as an attestation, although it included "The Assertion agrees with the Actual Condition of the Company (A=>C)" as a procedure.

\*Supplementary explanation: The description of the report shown in Fig.1 may indicate the whole report, or part of the report such as each chapter and each page. In addition, the Assertion of the whole report is above the Assertion of part of the report in the hierarchical structure.

On the other hand, it is useful in practice to prepare Assertion on each page as needed without considering such complex structure. However, propositions are always set for each page in which no Assertion is set.