

# Environmental Management

# Environmental Management

To realize our intentions to contribute to a sustainable society, we have an "Environmental Charter." Furthermore, we are promoting environmental management activities to fulfill our 2010 Environmental Vision—What Kawasaki Should Be in the Year 2010.

## Environmental Charter

### Environmental Philosophy

As a company in key industries related to land, sea and air, Kawasaki is deploying its business activities globally in pursuit of reducing environmental impact and creating a sustainable society. This makes us to commit ourselves to contribute to the sustainable development of society through our environmentally conscious business activities, technologies and products that preserve the global environment.

### Conduct Guidelines

1. Recognizing that global environmental protection is a common and serious issue for humankind, Kawasaki will positively volunteer to engage itself in harmonizing with the environment globally. We shall regard this as one of the most important strategies when we deploy our business activities.
2. During its production stages, Kawasaki will endeavor to conserve resources, to save energy, to recycle resources and to reduce industrial waste and will promote the reduction of environmental impacts.
3. In the new product planning (i.e. research and development) and designing stages, Kawasaki will render careful attention throughout the procurement, production, distribution, utilization and material disposal stages in order to minimize the environmental impacts.
4. In seeking solutions to global environmental issues, Kawasaki will do its best to develop and provide new technologies and new products that contribute to environmental protection, energy saving and resource conservation.
5. Notwithstanding its compliance with environmentally related institutional laws, regulations and agreements and voluntary action plans of each industry concerned, Kawasaki will voluntarily institute its own environmental control standards as an appropriate and necessary action in order to strive to improve environmental control levels.
6. Through environmental training and public awareness activities, Kawasaki will strive to enlighten all its employees on global environmental issues and will support individual views, lifestyles and will encourage their participation in the social activities and services.
7. Kawasaki will implement an environmental management system to promote environmental preservation and conservation, and hold regular conferences to review management systems and maintain continual improvement.

## Action Plan for our 2010 Environmental Vision

In 2003, we established "What Kawasaki Should Be in the Year 2010" as the 2010 Environmental Vision of the Kawasaki Group. This vision defines how we should be in the year 2010, and consists of five aspects — environmental philosophy, environmental management, environmentally conscious products, environmentally conscious production, and

environmental communication.

In practice, we have been working to realize this vision through a series of three-year Environmental Management Activities Plans, the first of which began in FY1994.

Item	2010 Environmental Vision (What Kawasaki Should Be in the Year 2010)	4th Environmental Management Activities Plan (FY2003-FY2005)
Environmental Philosophy	<ul style="list-style-type: none"> <li>• Actions by all employees are taken with concern for the environment, not only at work, but also in their local communities and homes, in accord with our Environmental Philosophy, which declares our commitments to the realization of a sustainable society.</li> </ul>	<p>Provision of comprehensive education and training programs for promoting environmental consciousness</p> <ul style="list-style-type: none"> <li>• Publication of the Environmental Handbook in FY2004</li> <li>• Use of IT to promote the environmental consciousness of all employees</li> <li>• Continued education activities about environmental issues for employees</li> </ul>
Environmental Management	<ul style="list-style-type: none"> <li>• Implementation of an Environmental Management System (EMS) and actions are taken based on this EMS by all employees.</li> <li>• Incorporation of environmental considerations into the business management of each internal company enhances their environmental management levels.</li> <li>• An environmental management information system is created.</li> </ul>	<p>Environmental management to increase social trust</p> <ul style="list-style-type: none"> <li>• Support for promotion and creation of EMS for affiliates</li> <li>• Establishment of techniques for analyzing environmental management activities</li> <li>• Provision of management-related environmental information to management</li> <li>• Utilization of Information Technology for acquiring and managing environmental data</li> </ul>
Environmentally Conscious Products	<ul style="list-style-type: none"> <li>• Design for Environment (DfE) is used for all products to enhance their environmental efficiency.</li> <li>• Products are offered that help protect the environment, thus contributing to the environment, society and businesses.</li> </ul>	<p>Contribution to the sustainable development of society through technologies and products that help protect the environment</p> <ul style="list-style-type: none"> <li>• Application of DfE (product assessment, LCA, etc.) for major products</li> <li>• Promotion of green procurement systems in order to expand the use of green goods</li> <li>• Enhancement of supply of products that promote environmental protection and reduce environmental impact</li> </ul>
Environmentally Conscious Production	<ul style="list-style-type: none"> <li>• Administrative penalties and administrative provisions are avoided, and voluntary control standards based on the needs of society are established to improve environmental control levels.</li> <li>• Every production activity is free of irrationality and waste to enhance the efficient utilization of resources and energies.</li> <li>• Total greenhouse gas emissions in FY2010 is reduced by 6% relative to the FY1990 level.</li> <li>• Total waste production in FY2010 is reduced by 10% relative to the FY2000 level.</li> <li>• Maintenance of zero emissions (recycling rate 100%) is realized in all works.</li> <li>• The use of hazardous chemical substances is reduced.</li> </ul>	<p>Compliance with environmental laws, regulations and agreements</p> <ul style="list-style-type: none"> <li>• No administrative penalty, administrative provision, resident complaint, etc.</li> <li>• Setup of voluntary control standards that addresses social needs</li> </ul> <p>Promotion of environmental impact alleviation in production activities</p> <ul style="list-style-type: none"> <li>• Examination of programs for measuring and reducing the amounts of resources and energy input in production processes</li> <li>• Reduction in total emissions of greenhouse gases to the FY1990 level</li> <li>• Reduction in total waste emissions by 5% relative to the FY2000 level</li> <li>• Realization of zero emissions in all works by the end of FY2004</li> <li>• Implementation of hazardous chemical substances reduction program</li> </ul>
Environmental Communication	<ul style="list-style-type: none"> <li>• Kawasaki Environmental Reports that comply with the needs of society are published.</li> <li>• Communication with stakeholders is promoted.</li> <li>• The entire corporation and all employees are committed to environmental improvement in local communities.</li> </ul>	<p>Improvement of social trust in Kawasaki for sustainable development</p> <ul style="list-style-type: none"> <li>• Information disclosure of environmental data</li> <li>• Promotion of communications with stakeholders</li> <li>• Positive cooperation in environmental activities of national and local governments</li> </ul>

Development into 3-year Environmental Management Activities Plan

## Message from the Chief Environmental Officer



**Masatoshi Terasaki**

Senior Executive Vice President

### Dedicated to Earning the Trust of Society

Five years into the 21st century, it has become common knowledge that commitment to the environment is the key to enabling sustainable growth for future generations.

As a member of society, this is truly one of the most important challenges for Kawasaki.

Considering this, the following efforts are fundamental for a company such as Kawasaki, whose business deals with products and technologies.

- **Contributing to the environment through products and technologies**  
At Kawasaki, we supply transportation equipment and social infrastructure that contribute to the progress of human society. We help solve environmental issues in the following ways.
  - Developing and offering environmentally conscious products and technologies that reflect consideration of potential environmental impacts, including total energy costs, over their entire lifecycles
  - Developing and offering products and technologies that help protect the environment
- **Ensuring energy and resource conservation in production activities**  
We are improving production efficiency and minimizing global environmental impacts in order to be environmentally friendly.

In 2003, we released our 2010 Environmental Vision—What Kawasaki Should Be in the Year 2010—and launched our 4th

three-year Environmental Management Activities Plan to achieve this vision. FY2004 marked the second year of the plan, and our accomplishments included the following.

- Published Kawasaki Environmental Handbook to promote employee environmental consciousness
- Drafted an EMS development plan for affiliates
- Achieved zero emissions (no landfill waste disposal) in two divisions bringing the total to 10 out of 12 divisions
- Developed voluntary reduction targets for chemical substances in each division, and based on them established key targets for the entire company

FY2005 is the final year of our 4th Environmental Management Activities Plan, and the preparation year for our 5th, which will start in FY2006. We will focus on the following efforts in FY2005.

- Enlarge and improve EMS development in Japanese affiliates and establish action policies for overseas affiliates to raise the level of environmental management throughout the Kawasaki Group
- Plan to review our environmental risks to ensure comprehensive environmental protection
- Promote reduction of hazardous chemical substances
- Introduce and implement an environmental data management system that will help management grasp environmental impacts

A company is a group of individuals and everything it does is based on their acts.

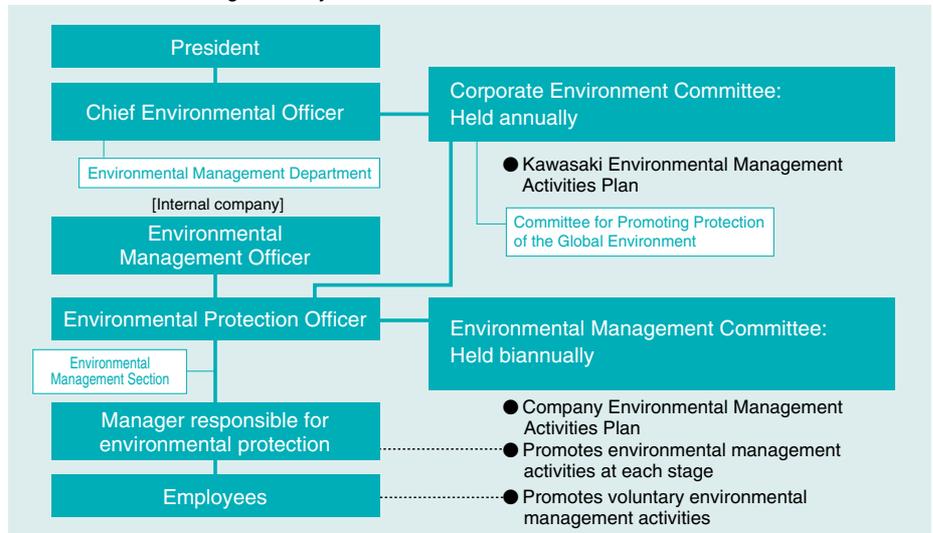
We must continue to ensure that each employee understands the importance of the global environment and feels a sense of duty to contribute to it through Kawasaki products and technologies in his or her work. Additionally, we must act so that every employee maintains an awareness of and makes a positive impact on the environment, not only at work but in the community and at home as well. When every employee has achieved this, I believe that we will have earned the trust of society as a company that contributes to the environment.

We, at Kawasaki, remain committed to achieving this goal.

## Organization for Environmental Management

The organizational structure for the environmental management of the entire Kawasaki Group is illustrated to the right. Internal company systems are applied to environmental management activities so that environmental protection programs suitable to the products manufactured by each internal company are promoted. An Environmental Management Officer, an Environmental Protection Officer and a manager responsible for environmental protection are assigned to every internal company, every affiliate and the Corporate Technology Division.

### Environmental Management System



## Key Measures and Evaluations for FY2004

### FY2004 Plans and Achievements and FY2005 Plans

FY2004 marked the second year of our 4th Environmental Management Activities Plan (FY2003–FY2005), which is a three-year basic plan. In this year, to fulfill our 2010 Environmental Vision—What Kawasaki Should Be in the Year 2010, measures were developed and executed along five themes. The achievements in this year are summarized below.

Items for which we failed to fully achieve our goals in FY2004, including complaints from residents and increases in waste emissions, are included in our FY2005 key measures. We will execute environmental management activities aimed at fulfilling our 2010 Environmental Vision.

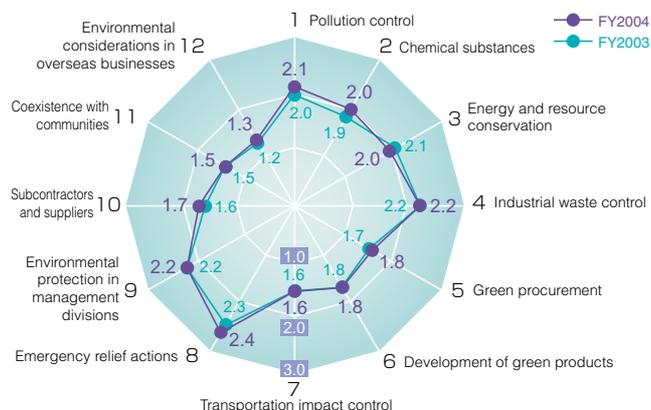
\*Evaluation criteria: ◎...Target was fully achieved. ○...Target was almost fully achieved. △...Target was not achieved.

Item	FY2004 Plan	Evaluation Result	FY2004 Achievements	FY2005 Plan
Environmental Philosophy	① Publication of the Environmental Handbook for the environmental consciousness of all employees	◎	① Distributed the Environmental Handbook to all employees in March 2005	• Review and examine the contents of the Environmental Handbook
	② Consideration of environmental education utilizing Information Technology	○	② Provided expenses for FY2005 environmental e-learning courses	• Implement environmental education system through e-learning
	③ Education for all Kawasaki employees about environmental issues	○	③ Environmental News, in-house magazine, "Kawasaki" (see page 12)	• Continue publication of environment-related articles
Environmental Management	① Support of EMS at affiliates	○	① Established EMS achievement plan for domestic affiliates	• Develop action guidelines for EMS at overseas affiliates
	② Establish methods for analyzing environmental management activities	○	② Introduced a method for evaluating greenhouse gas emissions reduction activities	• Begin reappraisal of environmental risks for our 5th Environmental Management Activities Plan
	③ Disseminate environmental information associated with business management	△	③ Introduction after investigating VOC emission control information	• Continue publications related to environmental management
	④ Consider online environmental data collection	◎	④ Investigated data input and output forms at each site in preparation of system introduction	• Develop structure for practical utilization of environmental data management system
Environmentally Conscious Products	① Apply Design for Environment (DfE) to major products	○	① Product assessment and LCA (see page 13)	• Continue and expand application of DfE
	② Formulate green procurement rules for subcontractors	○	② Developed procurement rules by each division (aircraft, construction machinery, etc.)	• Develop green procurement rules by each division and expand the scope of green materials procured
	③ Expand scope of environmental protection products	○	③ Examples of products (see pages 13 through 20)	• Continue supply of products that decrease environmental impacts
Environmentally Conscious Production	① No administrative penalty/provision, resident complaint, etc.	△	① Received three resident complaints (see page 12)	• No administrative penalty/provision, resident complaint, etc.
	② Establish voluntary control standards that meet social needs	○	② Established atmosphere-related voluntary control standards	• Establish voluntary control standards that meet social needs
	③ Implement trial of energy flow control method for major processes	○	③ Initiated energy flow control (machinery division, construction machinery division)	• Continue activities for appropriate use of resources and energies
	④ Decrease greenhouse gas emissions by 1.9% (265,800 t-CO <sub>2</sub> ) or more relative to the FY2003 level	△	④ Increased emissions by 5.1% (285,000 t-CO <sub>2</sub> ) relative to the FY2003 level	• Decrease greenhouse gas emissions to the FY1990 level (258,700 t-CO <sub>2</sub> )
	⑤ Decrease waste emissions by 3.5% (66,300 tons) or more relative to the FY2000 level	△	⑤ Decreased waste emissions by 2.6% (66,900 tons) relative to the FY2000 level	• Decrease waste emissions by 5% or more relative to the FY2000 level
	⑥ Achieve zero emissions at all Kawasaki works	◎	⑥ Achieved by Gifu Works and Yachiyo Works in March 2005, completing achievement of zero emissions by all KHI and KPM works	• Establish zero emission maintenance system
	⑦ Develop hazardous chemical substance reduction plan	○	⑦ Developed reduction plan for VOC, hazardous heavy metals and dichloromethane	• Reduce hazardous chemical substances in accordance with both corporate-wide targets and voluntary targets of individual divisions
	⑧ Promote program to achieve total elimination of PCB-containing equipment use	○	⑧ Developed replacement program for PCB-containing equipment	• Develop disposal program for stored PCBs and promote replacement of PCB-containing equipment
Environmental Communication	① Include data by site and affiliates in the Environmental Report for social trust	○	① Environmental data information (see pages 27 through 30) Status of chemical substance control (see page 22)	• Continue providing information for social trust
	② Establishment of system for risk communication with stakeholders	○	② Risk communication system (see page 11)	• Establish risk communication system
	③ Promotion of environmental volunteer activities in local communities	○	③ Actual activities (see pages 23 through 24)	• Continued activities for contribution to communities

## Evaluation of Kawasaki's Environmental Level

In order to evaluate our FY2004 environmental protection activities, we used the results of self-evaluations prepared by all divisions to calculate corporate-wide averages. As summarized in the results shown to the right, there are 12 indexes stipulated by our Environmental Activities Evaluation Guide that was created in FY2002. These indexes are subcategorized into 37 items.

As a result of self-evaluation for FY2004, there were improvements in some items, including green procurement (5) and environmental considerations in overseas businesses (12) over the FY2003 level. However, the marks are still low and additional efforts are needed to make further improvements.



## Environmental Accounting

In accordance with the "Environmental Accounting Guidebook" issued by the Japanese Ministry of the Environment, we have attempted to provide an easy-to-understand presentation of our environmental accounting calculations for FY2004, focusing on the formulation of indexes for use by internal management. Based on the calculation results, we evaluated the environmental investments and costs for maintaining environment-related

equipment, economic effects, and the amounts of substances decreased. We analyzed and assessed the contributions of various investments and costs to actual decreases in substance amounts in order to develop more cost-efficient and effective environmental protection measures.

○Coverage: Domestic works and offices of Kawasaki Heavy Industries, Ltd., Kawasaki Shipbuilding Corporation and Kawasaki Precision Machinery Ltd. (KPM) ○Period: April 1, 2004 to March 31, 2005

### Calculation Results for FY2004 Environmental Accounting

Unit: million yen

Category	Item	Details	Environmental investments	Environmental costs	Economic effect	Amount of decrease relative to the previous fiscal year
Category	Sub-category	Details				★Indicates increase
Business area cost	Global warming prevention (energy conservation, decrease in greenhouse gas emissions, ozone layer protection, etc.)		927.2	691.1	Reduction of energy costs by saving 539.7	Total energy consumption 6,060 TJ Reduction in energy consumption ★91 TJ
	Efficient use of resources (raw materials, water, etc.)		17.8	156.4	Reduction of materials costs by resource conservation 161.9	Total greenhouse gas emissions 284,842 t-CO <sub>2</sub> Targeted emissions reduction 5,200 t-CO <sub>2</sub> Actual emissions reduction ★13,865 t-CO <sub>2</sub>
	Resource recycling activities	●Resource recycling activities	32.2	721.1	Income from recycling 820.2	Total material input 493,696 t Reduction in material input ★27,261 t
		●Waste disposal cost	16.3	522.7	Reduction of waste disposal costs 70.6	Total water consumption 7,616,000 m <sup>3</sup> Reduction in water consumption ★460,000 m <sup>3</sup>
	Risk control (pollution control, compliance management)		654.0	756.4	—	Total waste emissions 66,929 t Targeted emissions reduction 100 t Reduction in emissions ★534 t
	Subtotal			1,647.4	2,847.7	1,592.5
Comparison with previous FY			337%	84%	87%	Total SOx emissions 13.6 t Reduction in emissions 4.6 t
Upstream/downstream costs	Assessment, improvement for eco-products and green procurement		250.2	3,192.0	0.0	Total NOx emissions 136.2 t Reduction in emissions ★37.9 t
	Recovery, recycling, reuse and adequate disposal of products		0.0	0.1	0.0	Total COD emissions 16.3 t Reduction in emissions 0.2 t
	Reduction of environmental impacts from containers and packing materials		0.0	0.0	0.0	
	Subtotal			250.2	3,192.0	0.0
Management activity cost	Management activities	●Environmental education	0.0	86.0	—	
		●Environmental Management Systems	0.0	315.4	—	
		●Environmental impact monitoring	9.0	45.2	—	
	Subtotal			9.0	446.6	—
R&D activity cost	Research & development		12.7	2,739.7*1	—	
Social activity cost	Social activities	●Improvement of environment, contribution to communities	3.7	171.0	—	
		●Information disclosure	0.0	20.7	—	
Subtotal			3.7	191.7	—	
Environmental damage cost	Countermeasures against pollution, etc.		187.2	26.2	—	
Total			2,110.1*2	9,443.9	1,592.5	
Comparison with previous FY			267%	98%	85%	

Item	Sum
Total investments in the applicable period*3	22,127.3
Total R&D costs in the applicable period*4	12,267.8

Item	Proportion
Percentage of environmental investment (Sum of environmental investments*2 / Total investments*3)	10%
Percentage of R&D costs (Total environmental R&D costs*1 / Total R&D costs*4)	22%

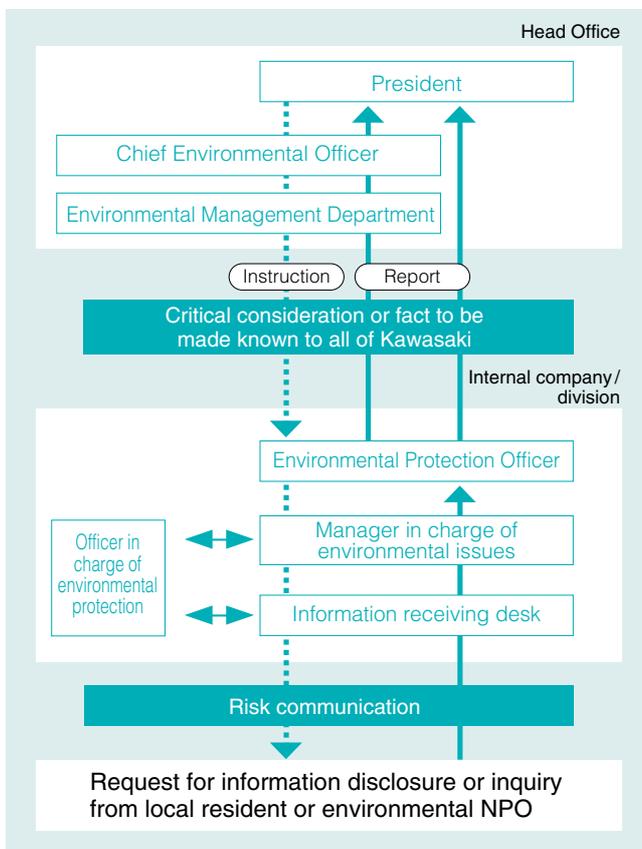
## Environmental Management System (EMS)

### Risk Management

While environment-related laws and regulations are being enhanced or newly enacted, each internal company is fully involved in risk management so that its established EMS functions satisfactorily and environment-related trouble is avoided.

The risk communication system for information disclosure is illustrated below. A request or inquiry from local residents or environmental NPOs is received by the environmental management section of each internal company or division involved, which then determines and provides an appropriate response. A critical consideration or fact that should be known by all of Kawasaki is reported to Head Office and at that time, instructions are sought as necessary.

#### □ Risk Communication System



### EMS in Offices and Affiliates

With the goal of establishing an environmental management system in the Kawasaki Group, we are promoting EMS at affiliates in Japan. We have set up three levels – acquisition of ISO 14001 certification, acquisition of certification for a simplified EMS, and EMS self-declaration. We are also setting policies for domestic affiliates to establish EMS with consideration of the natures of their businesses, including whether or not they have factories.

In FY2004, Kawajyu Shoji Co., Ltd. acquired ISO 14001 certification, the Kobe Head Office acquired Kobe Environmental Management System (KEMS) certification and Kawaju Techno Service Corp. (KTS) declared the

#### □ Kawasaki Environmental Auditing System



### ISO 14001 Certification

All our works in Japan have already acquired ISO 14001 certification, and established EMS.

The year and month of certification and the reviewing & registering organization for each internal company and affiliate are summarized below.

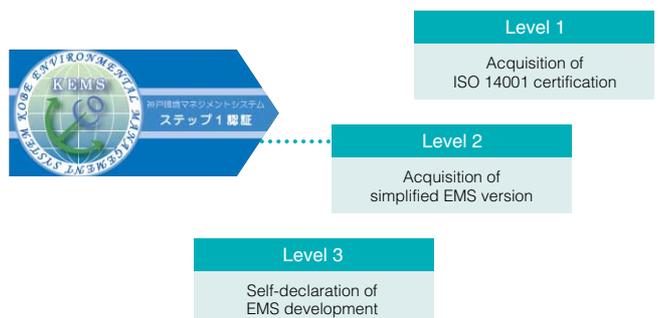
		Date acquired	Registration
Rolling Stock & Construction Machinery Company	Rolling Stock Division	2002.2	LRQA
	Construction Machinery Division	2000.5	JICQA
Aerospace Company	Aerospace Company	2002.2	BSK
Gas Turbines & Machinery Company	Gas Turbine Division	2000.3	LRQA
	Machinery Division	2000.12	NK
Consumer Products & Machinery Company	Consumer Products & Machinery Company	2000.2	DNV
(Under direct control of Head Office)			
	Environmental Control Plant Division	1999.3	NK
	Steel Structure & Industrial Equipment Division	1999.11	JICQA
Affiliates	Kawasaki Shipbuilding Corporation		
	Kobe Works	2002.8	NK
	Sakaide Works	2000.8	DNV
	Kawasaki Precision Machinery Ltd.	1998.2	DNV
	Kawasaki Plant Systems, Ltd.*	2001.2	NK

\* Former Power Plant & Industrial Plant Engineering Division became a separate company in April 2005.

Registering organization: LRQA: Lloyd's Register Quality Assurance  
 JICQA: JIC Quality Assurance  
 NK: Nippon Kaiji Kyokai (ClassNK)  
 BSK: Bouei Choutatsu Kiban Seibi Kyoukai (Defense Procurement Framework Establishment Association of Japan)  
 DNV: Det Norske Veritas

As of April 1, 2005

development of EMS. We have been steadily achieving EMS development at affiliates in Japan. We are also planning to examine EMS levels at major overseas affiliates.



## Compliance with Laws and Regulations

In FY2004, there were three resident complaints – an oily water leak at the Banshu Works due to a typhoon, and separate noise and odor complaints at the Akashi Works. We have already implemented measures to prevent recurrence of these problems.

No problems were subject to administrative warning or more serious government action.

## Environmental Education

In addition to an environmental education program at each internal company and division, Kawasaki holds corporate-wide internal environmental auditor training courses for ISO 14001 at regular intervals.

The internal environmental auditors trained and qualified in FY2004, including those at affiliates, amounted to 169 persons. The number of people legally qualified for environmental protection is summarized in the tables to the right.



## Environmental Month and Environmental Slogans

During Environmental Month held in June every year, we encourage employees to make individual proactive efforts that promote energy conservation and resource conservation in addition to usual environmental protection activities.

Employees submit slogans for Environmental Month and the number of submissions has steadily increased. In FY2004, 447 employees submitted 613 slogans. Most works, including the one that won the grand prize, "Create the environment that is friendly to people with gratitude expressed by every person" (Seiichi Fujii, Kawasaki Shipbuilding Corporation), show a desire to address environmental issues through our manufacturing work.

## Publication of the Kawasaki Environmental Handbook

The Kawasaki Environmental Handbook was issued to all group employees in March 2004. This handbook consists of four chapters titled after the syllables in the name Kawasaki. Chapter "Ka" covers topics about the present-day environment, chapter "Wa" is about the energy that we need and use, chapter "Sa" deals with participation in a sustainable society, and chapter "Ki" provides information about conservation of the earth.

The handbook is edited so readers can understand the current status of global environmental issues and become familiar with ways for individual employees to address environmental protection. It also includes articles about our global environmental efforts and achievements. We believe that this handbook will help every employee act with consciousness of the environment at all times in their work, homes and local communities.

## Promotion of Environmental Awareness

To promote the environmental awareness of our employees, we publish Environmental News four times a year. The quarterly in-house magazine "Kawasaki" also has an environmental column called Eco-mind.

## Violations, Accidents and Complaints in the Past 5 Years

FY	2000	2001	2002	2003	2004
Judicial or administrative penalty	0	0	0	0	0
Administrative provision	0	0	0	0	0
Administrative warning	1	1	3	0	0
Resident complaints	0	4	2	1	3

Judicial or administrative penalty: Punishment by judicial or administrative authorities  
 Administrative provision: Instructions imparted in writing (e.g. improvement order, etc.)  
 Administrative warning: Verbal warning

## Number of Qualified Pollution Control Managers

Air	81
Water	92
Noise	36
Vibration	23
Others (Dust, Senior Managers)	17
<b>Total</b>	<b>249</b>

## Number of Qualified Energy Managers

Heat	36
Electricity	22
<b>Total</b>	<b>58</b>

## FY2005 Environmental Month Slogan Prize Winners

### Grand Prize slogan

"Create the environment that is friendly to people with gratitude expressed by every person"

### Second place slogans

"A little energy conservation by every person creates great conservation"

"Manufacture products friendly to humankind and the earth through our efforts"

"Every Kawasaki employee's efforts help us save the green earth for future generations"

"Eco-life: affluence from another perspective"



Kawasaki Environmental Handbook



Environmental News



Eco-mind page in in-house magazine "Kawasaki"