NISSAN

Zama Operations Center / Environmental Report 2004

Business Summary: Design and production of vehicle manufacturing equipment, vehicle-associated parts in line with engineering development, design, and production

Location: 2-10-1 Hironodai, Zama-shi, Kanagawa, Japan

Start of Operations: December 1964

Number of Employees: 1,345

ISO 14001 Certification: January 2000

Environmental Slogan: Continuing to Improve the Environment and to Protect our Precious Earth

General Manager
Zama Operation Center
Sadao Sekiyama

Zama Operations Center

Major Results in FY 2003

Zero Emissions

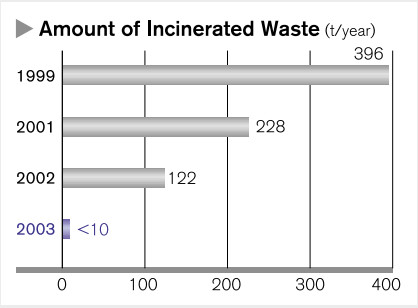
In fiscal year 2003, we again had zero waste to landfill. The amount of incinerated waste also was reduced to 99% in comparison with fiscal year 1999 levels, allowing us to attain our goal of zero emissions.

In fiscal year 2004, we are initiating activities to reduce the volume of waste generated and are making a shift toward taking preventive measures at the source.

Water-soluble cutting fluid used at the metal processing stage accounted for 55% of the plant's incinerated waste, and therefore posed a critical problem to get to zero emissions. Working in collaboration with the equipment manufacturer, we installed sewage-processing equipment and succeeded in processing 100% of the water-soluble cutting fluid at the plant.

Environmental Risk Reduction

As a preventive measure against environmental accidents, if by any chance the pH of effluent reaches an unacceptable level during normal operation of the water treatment equipment, the treatment will cease automatically, the emergency cutoff valve of the discharge tank will be activated, and measures will be taken to ensure that nothing flows out of the operational area. In fiscal year 2004 we will make further efforts to be aware of preventive measures against environmental accidents as we develop an effective water treatment system.



FY 2003 Objectives and Results

Objective	Target	Results	Comments
Environmental preventive measures	Zero complaints	+	Learning from complaints we have received in the past, we worked to make environmental improvements by performing measurements on vehicular noise emission, etc.
	Implementation of environmental patrols	+	Working for environmental improvements by conducting environmental patrols as a preventive measure against environmental accidents.
Energy conservation	Reduction in amount of heat 4,290 GJ/year	+	Centered around the energy conservation project, promoting improvements in energy efficiency through performing energy efficiency diagnosis. Reduced by 2% compared to last year, surpassing our target of 1.5%.
Zero emission of waste	Reduction in amount of incinerated waste	+	As a result of installing processing equipment for the water-soluble cutting fluid which accounts for 55% of the volume of incinerated material, we have gained a head start over the entire company on attaining zero incinerated waste material.
Promotion of environmentally friendly development and design	Reduction in weight of casting press	+	Continuously promoting the reduction in the number of processes through combining processes, etc.
	Reduction in material intensity of manufacturing equipment	+	Lightened the weight of the robot hand and have achieved a 40% reduction compared to the previous fiscal year.
	Reuse of unit equipment	+	Reusing the unit equipments for such things as the crank grinder.
	Reduction in environmental impact of electronic parts	+	An evaluation for the adoption of lead-free galvanizing of electrode was implemented and plans are being made for its adoption.
Cooperation and coexistence with local communities, local environmental protection	Cleanup activities around the Operation Center	+	Regularly occurring activity that is held four times a year.
	Zama Operations Center Open House	+	Invited employees and citizens of the local area and introduced our environmental efforts
	Communication activities with the community	+	Participated in the meeting of the Zama city board of education and proposed an excursion tour to our place of business to contribute to the education of elementary school students.

Communication with the Community

Volunteer Activities in the Local Community

As a local volunteer activity, we utilize our non-business days to conduct volunteer cleanup activities around the vicinity of the Operations Center in collaboration with companies in the surrounding area and the neighborhood community association. This year marks the third consecutive year since we began the activity in 2001 and has led to the curtailment of illegal dumping.

Event Date: June, September, November 2003; February 2004
Total Participants: 320

Zama Operations Center Open House

We invited local citizens to an open house to introduce our business activities, while also introducing automobile recycling, waste reduction activities, and our environmental efforts. In addition, we are contributing to the local community by hosting such events as meetings to exchange opinions regarding environmental issues with local companies and the local government.

Event Date: Friday, November 3, 2003
Number of Participants: 300

Environmental Data

Air Quality (Air Pollution Control Law and ordinances) Unit: NOx: ppm, Soot and dust: g/m³ N

Substance	Facilities	Legal Limits	Measured Value
NOx	Boilers	60	45
	Air heating furnace	150	58
	Heater	125	39
Soot and dust	Boilers	1	0.003
	Air heating furnace	0.3	0.026
	Heater	0.3	0.001

Measured values are the maximum measured values in FY 2003

Wastewater Quality (Waste Water Pollution Control Law and other ordinances) Unit: mg/L (except pH)

Item	Legal Limits	Measured Values		
		Maximum	Minimum	Average
pH	5.8~8.6	7.6	7.2	7.4
COD	60	11.6	3.5	6.1
BOD	60	10.5	1.1	2.7
SS	90	6	2.0	4.9
Oil	5	ND	ND	ND
Zinc	5	0.23	0.05	0.09
Fluoride	8	0.5	0.5	0.5
Soluble manganese	1	0.05	0.05	0.05
Total nitrogen	60	10.4	3.8	7.6
Total phosphorous	8	0.7	0.11	0.21

▪ Measurements of items other than those listed above were below minimum quantifiable limits
▪ ND indicated values lower than the minimum quantifiable limit

PRTR Substances

Unit: kg/year (Dioxins: ng-TEQ/year)

Substance number	Chemical substance	Amount handled	Air	Water	Waste	Landfilled by Nissan	Recycled	Chemically changed	Product
30	Bisphenol A mold epoxy resin	3	0	0	0	0	0	1	2
40	Ethyl benzene	67.5	67.5	0	0	0	0	0	0
63	Xylene	1,091	1,036	0	0	0	0	55	0
227	Toluene	2,547	994	0	0	0	0	1,553	0
230	Lead and its compounds	145	0	0	0	0	115	0	30
309	Poly (oxyethylene) nonyl phenyl ether	1	0	0	0	0	0	1	0
311	Manganese and its compounds	4	0	0	0	0	4	0	0
179	Dioxins	5,376	136,476	0	0	5,239	0	0	0
	Total	**3,858**	**2,097**	**0**	**0**	**0**	**119**	**1,610**	**32**

▪ PRTR : Pollution Release and Transfer Register. This system calculates the extent to which the production, use, and storage of chemical substances result in the release and transfer of those substances into the environment. The PRTR Law was originally enacted in July 1999 in Japan. ▪ According to PRTR law, raw materials that contain 0.1% or more of carcinogen (designated type 1 chemical substances) and those that contain 1% or more of other substances are measured. All are reported to the local government, but information on additional substances is included in this chart (all types of dioxin are stated). ▪ As the figures are rounded to the first place, the sum of air, water, waste, or buried by Nissan, recycled, chemically changed, and made into products may not necessarily be the same as the sum of the amount handled or total.

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