



NEWSLETTER

No.45

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July 2003

THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS

Dear Waste Management Experts

Plum-fruit rainy season, Bai-u, has set in through the Japanese Islands excluding Okinawa and Hokkaido. It is a rather dismal period for city dwellers but indispensable for rice planting.

JSWME has set up a Strategic Conference recently to consider SWM problems toward Recycle-oriented society and raise questions. Enhancing international activities is one of the tasks.

This Newsletter reports a recent discussion to verify and stimulate Japanese ODA in the SWM field by a committee in OECC, a non-governmental body for promoting international environmental cooperation. Inside Japan the Waste Management and Public Cleansing Law has a regal frame to achieve appropriate disposal. In this issue we would introduce a qualified engineer system for a start. Public sector involvement in industrial waste disposal is also a hot concern to achieve appropriate disposal. The Kanagawa Clean Center is such a noteworthy plant constructed in the city of Kawasaki. The international session was held during KSWME annual conference last May at Sewon, Korea. A participant reviews it. JSWME's annual conference is going to be held in coming October 22-24 at Tsukuba, Ibaragi. We are preparing an international symposium on EPR. We also now call for papers in English for the poster session.

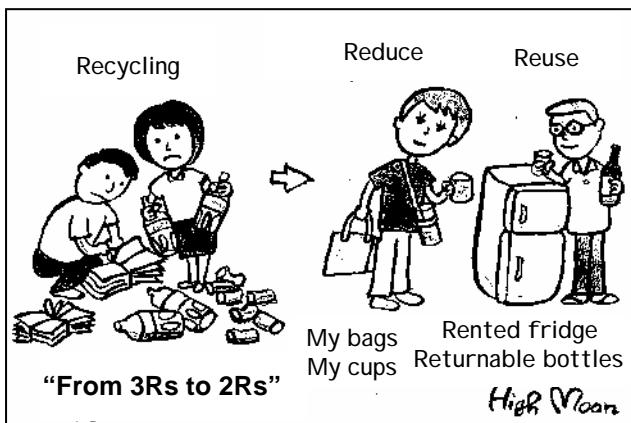
(Hideo Azuma)

**Japan's ODA on Solid Waste Management
- Technical Committee Set Up by OECC
for ODA on SWM -**

Overseas Environmental Cooperation Center, Japan (OECC) was established in 1990 supported by Ministry of the Environment (then Environment Agency) for the promotion of international environmental cooperation in a non-governmental position. The objective of OECC is to contribute to the global conservation of the environment through international environmental cooperation, studies, research and information activities in the era of international interdependence. Many activities of OECC are funded by the Japanese Government agencies such as Ministry of the Environment, Japan International Cooperation Agency (JICA), Japan Bank for International Cooperation (JBIC), etc. OECC's reports are thus utilized by such agencies in formulating policies and planning of ODA (overseas development assistance) in the field of the environment.

In 2002, OECC set up a technical committee of international cooperation on solid waste management (SWM) field. The first meeting was held on April 19. OECC came to take charge of this field after Ministry of the Environment has become the competent authority of SWM. The objectives of the committee are, 1) to examine the scheme of Japan's ODA of SWM, and 2) to prepare a report useful for the project implementation. The committee is constituted by five academic experts, three practitioners, Ministry of the Environment as the planning and cooperative body, and three organizations (OECC, Japan Environmental Sanitation Center, and Japan Waste Research Foundation) as secretariats. The observer status is also granted to other OECC member companies. Hereunder the outcomes of the first fiscal year are presented.

In the first meeting, various knowledge and references were introduced by the practitioners, and several aspects on SWM were discussed. The history of Japan's ODA in SWM field was reviewed and it was agreed that the committee should offer a possible scheme to Ministry of Foreign Affairs and JICA from the non-governmental standpoints. It also considered that basic points of concern for technical assistance for SWM should be documented for further discussion in future. The draft of the report was prepared by the practitioners and submitted to the second meeting held on December 10, 2002. Very active discussion was exchanged not limited



Comments by High Moon: "It seems to come under review of a rental system of home electronic appliances."

Illustrated by Prof. Hiroshi Takatsuki (Taka-tsuki literally means "High Moon".) Taken from the Monthly "the Waste", June 2003 and translated by JSWME.

to the evaluation of the draft paper but extended to the objectives of Japan's ODA in general. Some criticisms were also expressed, but they were not mere accusation. They extracted some weak points and improvement needs for Japan's ODA from the viewpoints as the experts who had taken charge of SWM projects. The problems disclosed during the discussion must be inevitably considered whenever overseas SWM projects are initiated.

In February 2003, the draft of technical document was revised and prepared as a preliminary report on general consideration of Japan's ODA in SWM field. The report examines the particularity on SWM in developing countries. It points out population pressure, financial constraints and other characteristics often found in these countries. Analyzing the present status on SWM, the report identified problems and obstacles of proper management. It also develops several prototypes of possible schemes for the countries at various stage of development. Finally, the report presents some proposals toward the effective implementation of Japanese assistances.

This report was submitted to JICA and Ministry of Foreign Affairs so that the outcome can be reflected to national policy. The committee also expects that the report becomes useful guidelines for OECC member companies who are planned to get involved in SWM field. The committee still owes the responsibilities to fulfill the information backbone to Japan's ODA framework and to OECC member companies for effective development assistance in SWM.

Based upon the achievement of the activities so far, OECC makes further efforts for studies of environment overseas, human resource development for environmental cooperation, training of human resource in developing countries, research, development and transfer of environmental technologies, and collection and dissemination of environmental information.

Finally, followings are the points of further activities needed for the committee, which will be still enormous. The report gives only basic information and general considerations on SWM. It should be more comprehensive and much more detailed for particular stage of a project at particular region. In general, development survey is performed at the initial stage in every possible project site. The preparation of a concise and practical "survey manual" will be recommended in order to maximize the efficiency of the survey and to minimize the possible misconception. Next, information database on SWM field of countries in consideration as well as Japan should be prepared. Thanks to the era of global networking, inquiry to certain source becomes much easier even in less developed regions. The establishment of information system on this field will be anticipated. Also, ODA strategies for SWM should be prepared. The strategy should reflect the social, cultural,

climatic and historical circumstances in each country. Different from other environmental development assistances, the extent of social and cultural aspects is much greater, and they affect the overall strategy of SWM. Therefore, a deliberate and detailed strategy in each country (or even in each district if the disparity is large between districts in a country) should be established.

(Mick Saito)

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| <p>Technical Managers for Waste Treatment and Disposal Facilities in Japan</p> <p>- Framework of Waste Management Law in Japan -</p> |
|--|

Total waste generation in Japan in fiscal year 2000 is 45.8 million tons. 76% of this is treated by such intermediate treatment measures as incineration, dewatering, neutralization, crushing and compression. Some 12% of the total generation goes to final disposal sites including the residue of these processes and waste that do not undergo any treatment.

When the size and capacity of the waste treatment and disposal facilities including intermediate treatment plants and final disposal sites exceed a certain level, their constructors are required to place technical managers by the waste management and public cleansing law.

The law stipulates that the roles of the technical managers are twofold: to execute technical work for the upkeep and management of the facilities; and to supervise the other personnel engaged in so as to ensure the conformance of the facilities with the technical standards set by the law. Their roles are specifically shown in Table 1.

The technical managers need to have sufficient knowledge and expertise on laws, treatment technologies, facility structure, maintenance skills, safety control, and any other matters related to the upkeep and management of the facility, if they are to satisfactorily execute their task, appropriately operate the facility, comply with the standards and to prevent accidents.

Table 1: The Roles of Technical Managers of Waste Treatment and Disposal Facilities

| |
|--|
| <p>A. Technical work for the upkeep and management of the facilities</p> <ol style="list-style-type: none"> 1. Understanding of and compliance with relevant laws 2. Development of technical standards for the upkeep and management of the facilities 3. Development of the facility operation and control system |
| <p>B. Supervision of the other personnel</p> <ol style="list-style-type: none"> 1. Development of the supervision system 2. Capacity development of the other personnel 3. Execution of safety education and prevention of occupational accidents |

In recent years, the amendment of the laws and the

establishment of new laws proceed and the regulations and standards concerning the upkeep and management of the facilities are being strengthened aiming at the realization of recycling-based societies and the promotion of appropriate waste treatment. In response to such policy changes, new technologies have been developed, the facilities have become sophisticated, and equipment structure has been complicated. The technical managers should gain new knowledge and technique so as to play highly technical and responsible roles.



Participants Attending the Training Course of JESC

The constructor of the facility appoints the technical manager, who should meet qualifications required by a law. The technical manager should have official certifications such as a professional engineer, or should have practical experience of certain years depending on his/her final education (see Table 2). In case where these requirement can not be met, he/she must be approved to possesses comparable knowledge and skill.

Table 2: Qualifications required for the technical managers of waste treatment and disposal facilities

| Official certificates, final education, etc. | Period of practical experience required |
|--|---|
| 1. With official certificates (professional engineer, environmental sanitation supervisor) | 0 – 2 years |
| 2. University education in science and engineering | 2 – 3 years |
| 3. Junior college education in science and engineering | 4 – 5 years |
| 4. Senior high school education in engineering | > 6 years |
| 5. University education in humanities, senior high school education | > 7 years |
| 6. No higher education | > 10 years |
| 7. With knowledge and skills comparable to above. | - |

Japan Environmental Sanitation Center (JESC), established with an approval of Ministry of the Environment, provides a training program for whoever wants to be a technical manager. One who attained

certain kinds of training courses in the program and passed examinations is certified to have knowledge and skill required for the technical managers. This program gives criteria to judge the capability of candidates in the case of item 7 in Table 2 and widens the opportunity to become the technical managers. It is also utilized by the technical managers who want to learn advanced knowledge and technologies and to develop themselves.

(Ryosuke Muraoka)

**Japanese Municipalities on the Move (15)
-Industrial Waste Treatment with Public Initiative
in Kanagawa Prefecture-**

Due to the social requirement for the promotion of appropriate management of industrial waste, public involvement is considered as important policy in the treatment and disposal of industrial waste not totally relying on the private sector. This article introduces a foundation established by the collaboration of the public and private sectors in Kanagawa prefecture and its waste treatment facility, Kanagawa clean center.

1. Objectives of the foundation

The foundation was established by the investment of Kanagawa prefecture, Yokohama city and Kawasaki city and the donation of business groups. It has two objectives. Firstly it is to promote the appropriate management of industrial waste by constructing a treatment and recycling facility that receives industrial waste from a wide area. The second objective is to contribute to the sound development of business activities and the improvement of the living environment of the citizens in the prefecture by carrying out studies for the promotion of the construction of waste treatment facilities by the private sector and diffusing the result of the studies. The foundation constructed its facility and is operating it.

2. Outline of the activities

a. Treatment of industrial waste

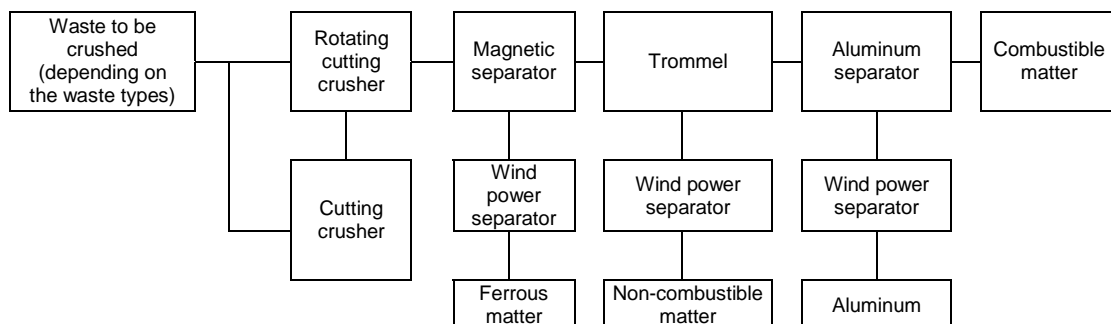
The foundation treats industrial waste as follows.

- incineration of organic sludge and combustible waste such as waste plastics
- crushing of bulky waste
- pre-treatment such as the separation of metals, removal of earth and sand and dewatering
- incineration of infectious waste

b. Research on technologies to treat industrial waste

The foundation carries out experimental studies on incineration of mixed industrial waste by operating its incinerator.

Fig. 1 Pretreatment Process



3. Kanagawa Clean Center

Kanagawa clean center was constructed rebuilding the incineration plant of municipal waste owned by Kawasaki city. It was designated as a “Waste Treatment Center” in 2000, which is defined by the waste management and public cleansing law as a waste treatment facility that receives industrial wastes from the



Kanagawa Clean Center

prefectural district. Construction started in April 1999 and finished in May 2001.

a. Outline of the center

Pretreatment, crushing and waste separation facility

Fig.1 shows the pretreatment process of the center.

| | |
|---------------------------------------|---------------------------------------|
| Rotating cutter/crusher/separator | 85 t/5 hours |
| Dewatering machine for organic sludge | 15 t/5 hours |
| Waste oil receiving facility | 20 m ³ |
| Infectious waste receiving facility | 80 packages x 12 hours = 960 packages |

Incinerators

| | |
|--------------------------------------|-----------------|
| Rotary kiln with stoker-type furnace | 70 tons/day x 2 |
| Fluidized bed-type incinerator | 70 tons/day x 1 |

Power generation facility

| | |
|---------------|----------|
| Steam turbine | 4,800 kW |
|---------------|----------|

b. Emission standards applied

| | |
|--------------------|------------------------------|
| Dust | < 0.023 g/m ³ N |
| SOx | < 30 ppm |
| NOx | < 46 ppm |
| HCl | < 50 ppm |
| Dioxins | < 0.1ng-TEQ/m ³ N |
| Dioxins in fly ash | < 0.1ng-TEQ/g |

c. Types of industrial waste received

Plastics, wood, paper, organic sludge, oil, animal refuse, textile, infectious waste from hospitals

Location: 6-1, Chidori-cho, Kawasaki-ku, Kawasaki City
(Motoaki Saito)

Report of the 2003 Spring Conference of the Korea Society of Waste Management (KSWM)

Spring conference of the Korea Society of Waste Management (KSWM) was held on May 15 and 16, 2003, at Suwon city, 30 minute far from Seoul by the limited train.

Prior to the opening ceremony on the first day, the national anthem was played with everyone’s rise. The president of KSWES made an address, followed by the address by Prof. Takatsuki, the President of JSWME.

In the international session, 10 articles were presented by Japanese experts in total: four in the oral session and six in the poster session. Discussion in the oral session was so active to extend the time of the session.

Between the sessions, the president Dr. Takatsuki, the chairman of the international committee Dr. Yokota and other two members of JSWME had a meeting with the



Dr. Takatsuki addressing at the Opening Ceremony

vice president and the chairmen of the international committee and editorial committee of KSWES to discuss the plan of the international session of JSWME. We proposed a symposium that allows opinion exchanges between the two countries, and the proposal was agreed by the Korean side. The details of the symposium, such

as the themes and participants, are to be planned and cooperation will be officially requested to KSWES.

We were guided to a waste landfill near Inchon and a park close to the 2002 world cup stadium.

There was a signboard saying “from a landfill to a park of dream” on the landfill. The site is tidy and clean, and waste is hardly seen except in the surrounding of waste unloading trucks. Gas generated from waste is collected and used to generate power. Leachate is also collected and centrally treated.



Model of the World Cup Stadium and the Park

The park was a waste landfill in the past. It was a place in disrepute where were two piles of waste with a severe odor problem. The place was cleanly developed to be a golf course on one pile, and a park on the other where people can enjoy walking. There is a memorial hall near the park that shows a topographic model of the site and the history from the landfill to the park. Enthusiasm for improving the environment in Korea was impressive.

(Akio Suzuki)

**Journal of the Japan Society of
Waste Management Experts, Vol.14, No. 3
(May 2003)**

The latest issues of the Journal of JSWME contain the following articles. They are written in Japanese with the abstract in English.

Waste Management Research

Preface

Thinking of the Basic Law for Promoting of the Creation

Ryo Tatsukawa

Special Issues: Recycling System of Personal Computers in Japan

Recycling of Household Personal Computers in Japan

Katsuya Nagata and Keiichi Kawakami

Material Flow in PC Recycling

Toshinori Seki

Municipal Measures Against Voluntary Take-Back and Resource Reconversion Systems

Hajime Shoji

PC Manufacturer Policy: Take-Back and Recycling System for Used PCs

Takashi Unno

Report

Current Situation and Prospects for Urban Solid Waste in China

Wang Qunhui, Sun Xiaohong, Li Guojin and Hiroaki I. Ogawa

Journal of the Japan Society of Waste Management

Experts

Paper

Ionic Concentration of Leachate and Resistivity of Strata in Some Landfill Sites

Kazuo Kamura, Noboru Ebihara and Yu Hara

A Study on the Effective Management by the Quality Control Technique Concerning the PCB Detoxification Plant

Atsuo Watanabe, Atsushi Ohara, Naoki Tajima and Etsuo Aoki

Behavior of Chlorine, Sulfur and Metals in Solid Residue during Thermal Decomposition of Chlorinated Synthetic Rubber

Shoji Ozawa, Kenji Suyama, Yasumasa Yamazaki, Hitoki Matsuda, Toshikazu Kondo, Satoshi Ota and Katsumasa Takeuchi

Removal and Capture of Heavy Metal Ions in Polluted Water with Crystallized Molten Slag

Yukio Fujita, Takayuki Shimaoka and Seizou Kenmoku

A Study on the Seasonal Fluctuation Model for Municipal Solid Waste and its Irregular Component

Akira Koizumi and Yasuhiro Arai

Social Influence by Parents on Children's Waste Reduction Behavior

Kayo Yorifuji

Current Members of JSWME As of 30 June 2003
(Values in parenthesis are differences
from 28 February 2003)

| | |
|---------------------|-------------|
| Regular Members | 3,613 (-90) |
| Students | 284 (-38) |
| Non-Japanese Member | 77 (55) |
| Public Institutions | 114 (-2) |
| Supporting Members | 191 (-20) |
| Individuals of NPOs | 2 (2) |
| Total | 4,281 (-93) |

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