



SINCE 1990

# NEWSLETTER

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July 1998

**THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS**

## Greeting from JSWME's New President



The Japan Society of Waste Management Experts, organized in 1990, will reach its 10th anniversary 2 years later. I was elected its president this May. One of my major tasks during my term of office as the president will be to plan out and implement various 10th anniversary events. A special committee in charge of those events has already been formed.

An important mission of our society is to promote studies of technology and measures for waste recycling and its proper disposal and thereby make further contributions to the human society. To meet the need of the society, JSWME already has various activities including the support to research of its members, auspicing meetings, the provision of opportunities for research results presentation and promotion of international information exchange.

In addition, JSWME is expected to play a more active role in the investigation into current waste management problems and the study and selection of appropriate measures for disposal and recycling.

By the way, "Not so Rich as You Think" authored by G.R. Stewart is one of my favorite books. Its original edition was published about 30 years ago. Even at that time, the author was concerned about possible problems caused by wastes. In the book, the author makes an impressive remark on the origin of man's habit of "discard useless things". "The ape men, while they were living on the trees, became uninterested about waste management because they had only to throw away useless things to the ground." A major task of the Japan Society of Waste Management Experts is to try to change this firm habit which the mankind maintained for thousands of years. I eagerly look forward to the cooperation of the society members and all those concerned.

(by Katsumi Yorimoto)

## Dear Waste Management Experts

As the top news of this issue introduces, Professor Katsumi Yorimoto, Dean, Office of Political Science and Economics, Waseda University, was elected as JSWME's new president to succeed Prof. Kenji Fujita. His term is 1998/99 - 99/2000. He is the first president of non-engineering background as an authority of local autonomy and urban policy. At the same time, Prof. Hidetoshi Kitawaki, Faculty of Regional Development Studies, Toyo University was appointed as the Chairman of the International Relations Committee, succeeding Dr. M. Tanaka. Under the new leadership, the NEWSLETTER will further strive to be an information crossroads for Waste Management Experts in and out of Japan.

The waste specially dealt in this issue is construction sludge, which is one of the headaches when construction works are underway. The amended Waste Management Law, outlined in our issue No.22, shows a way to solve the issue through recycling.

Another very important current recycling topic is the new enactment of the Law for the Recycling of Electric Home Appliances, promulgated on June 5, '98. Its feature will be outlined in the next issue.

(by Hiroki Hashizume and Hisayuki Futami)

## Japan's Role in Solid Waste Management Improvement in Developing Nations

The Government of Japan places importance in extending assistance for global environmental improvement. In recent years, it has been extending technical (development studies) and financial assistance (grant aid/loan) to many developing nations for solid waste management (SWM) improvement. Of these recipient nations, the focus here will be the Lao People's Democratic Republic.

As of 1992, Lao PDR has a total population of 4.4 million and Vientiane City, the national capital, covers an area of 3,920km<sup>2</sup> and a population of 425 thousand (1991 estimate). The development study was implemented in 1992 in the urban area of the city of Vientiane (30km<sup>2</sup>) considered to be seriously suffering from waste related

problems. At that time, the collection rate in the area was only 9.9% of the generation rate, as most wastes were either buried or burned in backyards, or illegally dumped in drains, roads and vacant lots. Such disposal methods have corrupted the urban landscape and caused physical damage e.g. flooding due to clogged drains, air pollution due to smoke of wastes burnt in the open among others. The study, therefore, aimed to increase the service population from 5% in 1991 to 50% in 1995, and to convert the open dumpsite to a sanitary landfill site. To realize these objectives, the establishment of an Urban Service Department (USD) to reinforce municipal cleansing services and the improvement of the fee collection efficiency to secure a stable financial source for the cleansing services were proposed. Pilot projects e.g. collection experiment (including refuse collection fees (RCF) collection and management), sanitary landfilling experiment, resident educational programs, were also conducted to determine the municipality's capabilities.

Upon the completion of the study in August 1992, the Government of Lao PDR privatized a part of its SWM services to improve waste collection rate. Unfortunately, only a 6.5% increase was attained (from 9.9% in 1992 to 16.4% in 1995). This then led to a request for grant aid to the Government of Japan to implement the "Project for Improvement of SWM System in Vientiane Urban Area". With grant aid for equipment procurement and facility construction, the project commenced in 1996. It entailed USD reinforcement (construction of main office and procurement of equipment and materials), collection & haulage system reinforcement (procurement of collection vehicles, containers, motorcycles for RCF collection and mowers), final disposal site improvement (site rehabilitation, construction of sanitary landfill without liners and administration building, installation of water pipelines for the nearby community, procurement of sanitary landfill equipment), and operation & maintenance system reinforcement (construction of maintenance shop, procurement of equipment for repair).



**Completed KM18 Disposal Site**

In 16 January 1998, the constructed facilities and procured equipment were handed over to the Government of Lao PDR, who simultaneously assigned 171 of its employees to the USD. It also allocated 250 million kips (US\$113.6 thousand) for SWM services operation. A month and a half after the hand-over the collection rate

sharply increased to 38% – from 27 tons/day in 1995 to 68 tons/day – 4% under the 1998 target collection rate of 42%. The number of service recipients also significantly increased. In January and February 1998, 667 and 417 new households, respectively, became recipients. By the end of February 1998, the monthly RCF collection totaled 10 million kips (US\$4,500) as opposed to the 1991 monthly collection of US\$1,320. As in the pilot project, waste collection revenues are separately audited from other municipal revenues and deposited in a bank on a weekly basis.

At present, the city of Vientiane continues to benefit from the project. One project impact worth taking notice is the inspiring change in the life of Mr. Bua, a waste picker, who was inadvertently given the opportunity to participate in the weeklong pilot project training program for heavy machinery operation. He made good use of the skills he acquired through the program and was hired by HAZAMA, the company in charge of disposal site construction works, as the operator of one of its machinery. Now, Mr. Bua no longer scavenges but works for Vientiane Municipality as chief operator of the KM-18 disposal site.

(by Susumu Shimura)

#### 1998 Pacific Basin Conference on Hazardous Waste

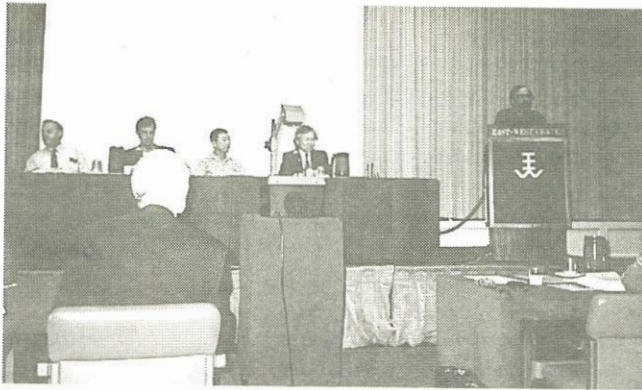
The 1998 Pacific Basin Conference on Hazardous Waste was held at the East-West Center in Honolulu, Hawaii, U.S.A. on April 22 to April 24, 1998, to discuss the "Risk-Based Approach to Sustainability in Hazardous Waste Management".

The conference got under way with an opening ceremony and a keynote address. The plenary session was held in the morning on the first day, in which Dr. Masaru Tanaka, Vice-President, JSWME gave a lecture entitled "A Concept and Indicators for Evaluations of Solid Waste Management Projects in Developing Countries".

The technical session was held in the afternoon on the first day. A total of 54 researchers from various countries made presentations in the morning on the second day and in the morning on the third day. Three researchers from Japan gave presentations among them.

The participants in this conference broke into two groups (Group A and Group B), and went on a technical site tour in the afternoon on the second day. Group A visited the Defense Reutilization and Marketing Office and the Defense Reutilization and Marketing Office Hawaii Conforming Storage Facility. At the Marketing Office, waste discharged from military facilities is sorted, and items fit for reuse are retained and sold to the public twice a month. Such items include electric appliances, furniture,

personal computers, and even trucks. Thirty-four percent of these items are sold, and the sales amounts to 2 million dollars annually.



**Opening Ceremony**

Hazardous waste from military facilities is brought to the Conforming Storage Facility for storage. This facility complies with the Hazardous Waste Storage Standard of EPA of the U.S.A. It is one of the most up-to-date facilities equipped with means for protection from various hazard. The hazardous waste is shipped later to the U.S. mainland for treatment.

Group B visited the BHP Hawaii Petroleum Refinery and visited a facility for the disposal of the waste liquid from the refinery. The primary and secondary oil recovery, air floatation, air stripping, thermal oxidization, biological treatment and sludge treatment are carried out there to recover 97% of the oil content of the waste liquid.

After the end of the technical session, the closing plenary session was held during the lunch hour to close the three-day conference. During this session, Dr. David Moy (TechSearch, Australia) commented on and summed up each session of the conference, praising presenters for their fine research achievements and highly evaluated enthusiastic questions and answers.

The Pacific Basin Conference on Hazardous Waste is held at an interval of a year and a half. The 8th conference covered here was attended by 82 representatives from 12 countries. Seven members including Dr. Tanaka and 4 others of the society participated in the conference as the representatives of Japan.

Originally, 104 individuals from 17 countries were expected to attend this conference, but the actual number was 82, which seemed to reflect the recent economic condition in Asian countries.

Hazardous waste problems are becoming more serious and urgent in the world. Many of the presentations at this conference concern to mitigation and restoration of environmental pollution. The information exchange and technical cooperation were recognized to be a crucial matter.

(by Masayoshi Nakanishi)

### Amendment of Waste Management and Public Cleansing Law Opened a Way to Promotion of Construction Sludge Recycling

The Waste Management and Public Cleansing Law was amended in June 1997. Before the amendment, construction sludge was considered to be waste regardless of the treatment before disposal. However, the amendment enabled the recycling of the sludge on condition that the Minister of Health and Welfare approves. The limitations to the reuse were announced as below in December 1997.

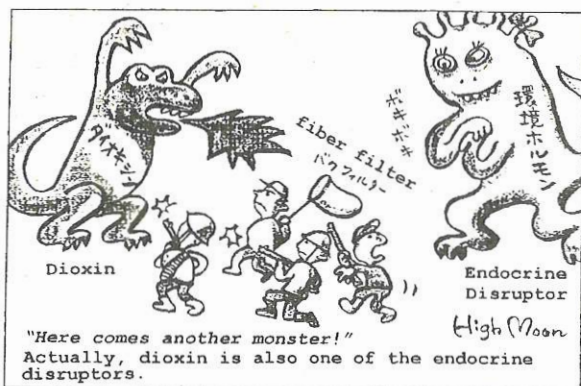
- (1) Sludge to be recycled shall be inorganic ones discharged from excavation works using shielded tunnelling method/open cut method, excavation works using pile foundation method/caisson foundation method or transportation underground wall method and construction works with soil improvement method (most of construction sludge falls in this category).
- (2) Leaching test of recycled sludge shall prove that hazardous material contents complies with environmental quality standard for soil pollution.
- (3) Recycled sludge shall be used as the structural material (filled at the depth of 1.5 m or more) in high standard embankment (so called "super embankment").
- (4) Heavy metal contents of recycled sludge, measured with "Examination Methods for Metals etc. in Industrial Wastes", shall comply with above standard. The recycled sludge shall have enough strength as indicated either by the cone index (4 kgf/cm<sup>2</sup> or more) or by the unconfined compression strength (1 kgf/cm<sup>2</sup> or more).



#### High Standard Embankment

With above mentioned approval system, the Ministry of Construction is planning to raise the recycling rate of construction sludge into 60% in the year 2000, whereas the rate is currently less than 10%.

(by Yasuji Ohkita)



by Courtesy of Prof. Hiroshi Takatsuki (translated by JSWME, taken from Monthly "The Waste", Nov. '97)

**Journal of the Japan Society of Waste Management Experts Vol.9 No.3 (March '98) & No.4 (May '98)**

The recent issues of journal of JSWME contain the following technical papers, written in Japanese with English abstract.

Vol.9 No. 3 (March '98)

Paper

*Removal of Cadmium from Waste of Scallop by Electrochemical Method*

by Youichi Sakuta, Keiichi Tomita, Motoomi Wakasugi, Takayuki Saito and Nobuhiro Nagano

*Development for Modelization and Simulation on Hauling Transportation System of Demolished Waste*

by Tohru Furuichi, Makoto Hasegawa, Shinobu Kan, Hiroki Hashizume, and Yasuhiko Kobayashi

*Biodegradation of Recalcitrant Organic Matters under Sulfate Reducing and Methanogenic Conditions in the Municipal Solid Waste Landfill: Continuous Experiments*

by Seog Ku Kim, Saburo Matsui, Sandeep Pareek and Yoshihisa Shimizu

*Production of Alkaline Lignin-degrading Enzymes by Aspergillus terreus Cultured in Alkaline Cooking of Manila Hemp*

by Nozomi Kanayama, Tohru Suzuki and Keiichi Kawai

*An Advanced Air-sorting Method to Separate Shredded Aluminum and Copper Waste*

by Takuya Yoshida, Yasuo Koseki, Chihiro Fukumoto and Tatsuya Koizumi

Note

*Characteristics of Continuous CO Analyzers in Municipal Waste Incinerators*

by Noboru Tanikawa and Kohei Urano

Vol.9 No. 4 (May '98)

Paper

*Genotoxicity Related to Nitroated Compounds in Incineration Ash*

by Yoshio Ono, Masato Yamada, Isao Somiya and Yoshimitsu Oda

*Material Flow Analysis of PCDDs DFs in a Municipal Solid Waste Incineration System*

by Shin-ich Sakai, Takahiro Ukai, Shin-ya Urano, Hiroshi Takatsuki, Kazuo Nakamura and Sayuri Kinoshita

*Study on Slag Quality of Furnace Conditions*

by Sadaharu Shirako, Teruaki Soyama, Masataka Hanashima and Masaru Tanaka

*The Behavior of Degradation and Characteristics of Produced Char in Agricultural PVC Films in Aqueous Solutions at Elevated Temperatures*

by Shun-Myung Shin, Toshiaki Yoshioka and Akitsugu Okuwaki

*Mutagenic Activities of Exhaust Gas from Municipal Solid Waste Incinerators in Starting and Stopping Terms*

by Hidekichi Yoshino and Kohei Urano

*Studies on Stabilization of The Solidified Coal Ash by Steam Treatment*

by Yasunori Shibata, Kazuo Ozasa, Kazuo Tsuzura and Hidetoshi Izumi

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