



Feature Column

Chang Appointed as EPA Administrator

Former EPA Administrator Hau Lung-bin has resigned due to controversy surrounding the Pinglin Referendum. Soon thereafter on October 22, Executive Yuan Premier Yu Shyi-kun met with former EPA acting Administrator Chang Juu-en, whereupon Chang's succession to the position of EPA Administrator was made official. Administrator Chang will head the command of this team of experts and continue to carry out environmental protection policies already in progress as well as contribute all efforts toward the sustainable development of Taiwan's environment.



Newly appointed EPA Administrator, Chang Juu-en

Former EPA Administrator Hau Lung-bin (郝龍斌) resigned from office in early October due to a disagreement surrounding a

referendum on whether to open a freeway exit in Pinglin. After Executive Yuan Premier Yu Shyi-kun gave consent to Hau's resignation, a handing-over ceremony was held on October 6 and EPA Deputy Administrator Chang Juu-en (張祖恩) temporarily served as acting administrator. On October 22, Premier Yu met with Chang Juu-en at which time he announced Chang's official succession to the office of the EPA Administrator.

environmental engineering NCKU again, this time as the department head as well as associate dean of the NCKU College of Engineering. Chang was also appointed as executive secretary of the Ministry of Education's Environmental Protection Working Group.

Chang Juu-en returned to government affairs in April of 2001 when former EPA Administrator Hau Lung-bin invited him to serve as deputy administrator and assist in promoting key national environmental policies and administrative work. During Chang's over two years at this post, he assisted Hau Lung-bin in handling difficulties that arose with the Amorgos oil spill, removing illegal smelting operations on the Erren River, as well as implementing environmental policy restrictions on the use of plastic shopping bags and disposable tableware. Chang's expertise and capabilities have received wide affirmation from colleagues in the EPA as well as from the public.

During an interview with the media, Administrator Chang addressed questions regarding the proposal to hold a referendum on the construction of Taiwan's fourth nuclear power plant (NPP-4) and whether

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Wide Support for Chang as EPA Administrator

Newly appointed EPA Administrator Chang Juu-en is a native of Jhanghua County, aged 52, and has a rich academic background including a master's degree in construction from National Cheng Kung University (NCKU) and a doctorate degree in construction from Tohoku University, Japan. After returning from his studies in Japan, Chang taught as professor in the department of environmental engineering at NCKU, after which he served as deputy director of the EPA Department of Planning for one year. Chang returned to the department of envi-

additional EIAs would be carried out on NPP-4 and the Pinglin interchange on the Taipei-Ilan freeway. Other sensitive issues brought up by the media included whether the restricted use policy on plastic bags and tableware would be revised. Chang expressed that he had no preconceived stance toward these issues. As for the NPP-4 controversy, Chang stated that this issue goes beyond merely the EPA's concerns, involving the fields of energy production and nuclear safety. Therefore, before any referendum takes place, the government should determine the scope of relationship between those who would gain or benefit from the referendum.

Chang Juu-en pointed out that if a referendum is held on the NPP-4 issue, the government should make sure that the public first understands and compares the pros and cons regarding all facets including future energy resources, nuclear safety and environmental protection. Moreover, the government should first clearly delineate which parties have the right to vote in a referendum, and whether this issue is only limited to the local residents where the NPP-4 will be built in Gongliao Township, or whether more consideration should be given to the energy policy and the interests of the entire citizenry. Clear-cut explanations should be given regarding such questions of definition.

As to whether another EIA should be carried out for the NPP-4 construction project, while Administrator Chang did not provide a definite answer, he indicated that it is the EPA's responsibility to continue to oversee the methods of operation of the NPP-4 in the future. Chang said that the Executive Yuan's 14 experts and scholars on the Nuclear Free Homeland Working Group have recently begun to discuss the is-

sue anew and want to divide the work up among the Ministry of Economic Affairs, the Atomic Energy Council and the EPA. The EPA's responsibility is to monitor onsite environmental changes such as the lay of the land during the construction period.

Environmental Protection Policy Still Moving Forward with Focus on ESTPs

As for the issue that triggered the resignation of former EPA Administrator Hau Lung-bin, that is, the referendum among local Pinglin Township residents which resulted in favor of opening up the interchange at the Pinglin traffic control exit on the Taipei-Ilan freeway, Administrator Chang asserted that if the Ministry of Transportation and Communications' Highway Construction Bureau decided to reapply with the EPA for another EIA review, he would respect the EIA committee's decision.

ensure that referendum results genuinely take both public opinion and expert advise into consideration.

Chang stated that the EIA should provide an expert analysis and make sure citizens understand that if public opinion is allowed to overrule expert advise, then the outcome will not be of a professional nature. However, the main problem is that there are insufficient channels for public input within the current EIA system. Addressing this shortcoming, the EPA is already preparing a related investigation and hopes that in the future it can devise a system that employs both the referendum and professionalism. The EPA will submit a research report to this effect before the yearend.

Regarding the environmental policies enacted under the former administrator, Administrator Chang expressed that the EPA will continue to place checks on wastewater standards and will not alter the fundamental direction of the re-

Administrator Chang indicated that it is the EPA's responsibility to continue to oversee the methods of operation of the NPP-4 and monitor onsite environmental changes such as the lay of the land during the construction period.

Administrator Chang said while the EIA was being carried out on the Pinglin interchange issue, the EIA committee decided against the project due to overuse of the land and non-point source pollution which is reasoned will pollute the water source of four million residents in the Greater Taipei Area. If a referendum is held on this issue, and if there are similar instances in the future in which a past issue is brought up again for another EIA, developers will have to provide more detailed and more transparent information in order to

restricted use policy on plastic bags. However, the policy will be under constant review. Chang explained that while the restricted use policy on plastic bags is underway, if inspection work is sustained, any slackening in the policy's implementation will not have been due to former administrator Hau's leave of office. No changes will be made to fundamental aspects of the policy. However, special attention will be placed on the biggest controversy of the policy regarding storefront restaurants so that the restricted use policy is

implemented in the most practical way possible.

As for other environmental policies currently underway, Administrator Chang said that he himself has already set his focus on the Environmental Science and Technology Parks (ESTP). Chang said that international trends in environmental protection place a significant emphasis on sustainable develop-

ment and pollution prevention. Therefore, regulations and city planning can be drafted in advance to prevent environmental facilities from becoming objectionable public facilities that create more pollution problems than they solve. For instance, regulations can be drawn up to ensure that areas with environmental protection facilities are provided with subsidies or environmental beautification projects.

clearance vehicles that carry infectious industrial waste, hazardous sludge, hazardous dust and ash, incinerator fly ash and incinerator bottom residue.

The EPA pointed out several special items regarding the specifications of the clearance vehicle tracking system for this second group of vehicles. To begin with, transmission of positioning data will be handled by advanced and mature GPRS wireless online communications technology. This will enable instantaneous transmission of data on each clearance vehicle's moving trajectory via Internet, unique in that it can maintain the connection at all times. Moreover, these improved communications systems provide excellent quality and their cost has gone down significantly. Communications fees in the past have been as high as NT\$10,000 per installation per month. The new technology only entails an average cost of NT\$300~600. This not only results in largely reduced cost for industries but also increases the effectiveness of controls over waste flow.

Furthermore, this data system transmits information to the EPA every thirty seconds, enabling the EPA to check the moving position of GPS equipped vehicles via computer. The EPA thus has immediate command over waste

Waste Management

2,000 Waste Clearance Vehicles to Install GPS Next Year

Since 2002, the EPA began introducing GPS equipment to aid in the tracking and control of industrial waste flow. The obligation to install GPS equipment has received widespread cooperation among industries, and implementation results have been quite good so far. In addition to recently listing the second group of industries required to install GPS equipment, including waste clearance vehicles, the EPA will successively announce the third, fourth and fifth industry groups from the middle to the end of next year. By the end of next year, 2,000 waste clearance vehicles will be outfitted with GPS equipment.

Since last year, the EPA began introducing GPS equipment to reinforce the tracking and control of industrial waste flow. The EPA regularly tracks 260 waste clearance vehicles and has achieved an installation rate of 100%. Due to the intimidating nature of real-time tracking, no violations have been recorded to date. In light of such ideal implementation results, the EPA is now pushing to complete installation of GPS equipment on the second group of waste clearance vehicles before the end of February 2004. This measure will result in a total of 1,000 waste clearance vehicles under monitoring.

The EPA indicated that its real-time tracking system employs the global positioning system (GPS), which is capable of recording moving vehicles and reporting the data and has already been extensively used for dispatching vehicles, preventing theft, tracking, and for ve-

hicle navigation systems. The EPA began introducing applications of GPS technology since December 2002. As results have been considerably good, the scope of control has now been broadened with the announcement of the second group of vehicles required to install GPS equipment. This will extend strengthened controls over approximately 700 waste



This light and handy GPS equipment for vehicles costs around NT\$25,000

flow at all times and when vehicles enter sensitive areas such as water sources, the computer will promptly emit a warning signal so that control personnel can track subsequent movements. In addition, as part of its service to the waste clearance industry and vehicle manufacturers, the EPA has set up a special web page on the EPA's control center's website which provides various relevant information. Vehicles applying to enter this control system are required to undergo an examination in advance; the examination results are then posted in this special web page for industries to refer to when making their selection.

The EPA has already established a system that requires industries to

fill out waste clearance report forms in advance to describe the waste flow, and requires that delivery forms remain with the vehicle at all times. In addition, the EPA announced in 2002 that the first group of hazardous waste liquid clearance vehicles should install GPS equipment that complies with EPA standards. Moreover, those vehicles must first pass an examination before they can begin clearance operations. In the future, those industries that do not comply with regulations in installing real-time tracking systems will be subject to fines ranging from NT\$60,000 to NT\$300,000.

For more information, please call 02-2311-7722 ext. 2980.

away from 1988 to 2002 in the Taiwan area show that a peak volume of 8,880,800 tons was reached in the year 1997 (from July 1996 to June 1997). This equates to 1.143 kg of waste per person per day.

Owing to the great efforts exerted by both government and citizens to launch environmental policies, including resource recycling and waste reduction, the volume of waste cleared away finally showed negative growth in 1998. Waste volume has seen an annual drop of over 7% over the past three years. The daily per capita generation of waste has also been on the decline since 1998, dropping from 1.135 kg to the 2002 level of 0.829 kg. This has already fallen far below the 1988 level of 0.86 kg/person, marking a 14-year record low.

The EPA pointed out that the volume of waste cleared away in the Taiwan area began increasing since 1988, reaching a peak in 1998 at close to nine million tons. Following the initiation of resource recycling and waste reduction policies, garbage volumes have gradually gone down and the volume of waste cleared away last year was equivalent to that of 1990.

As for waste disposal, disposal methods now include recycling, incineration, landfilling, composting, and sorting into piles for possible future reuse or recycling. In 2002,

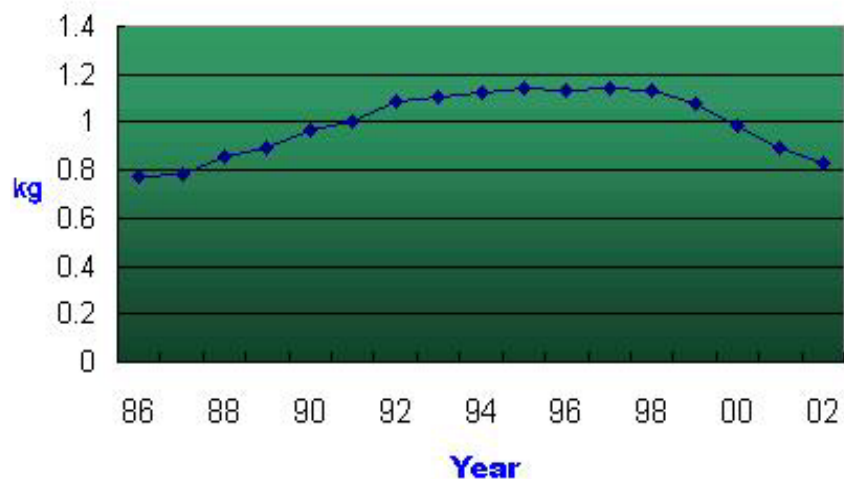
Waste Management

Daily Per Capita Waste Generation Hits 14-Year Low

The EPA's latest statistics show that last year over 6.72 million tons of garbage was cleared away in the Taiwan area. This marks a reduction of 0.53 million tons compared to last year and shows that the daily per capita volume of garbage picked up by clearance vehicles is just 0.829 kg. This is the lowest volume of waste posted since 1988 and can be attributed to the advancement of resource recycling and waste reduction policies.

In recent years, domestic commercial activities have flourished in Taiwan and the society has become largely affluent. Such trends have resulted in the generation of a vast amount of waste as well as complex problems in dealing with this scale of waste on such a small island. Working to prevent further harm to the environment and human health, the government began focusing special effort on the construction and management of sanitary landfills and incinerators designed for the appropriate disposal of various waste materials. An equally important measure to reduce garbage amounts was the advancement of resource recycling policies.

As for the nationwide volume of waste that undergoes clearance and disposal, EPA statistics on the annual volume of garbage cleared



Daily per capita waste clearance volumes over the years

a total of 64.19% of waste was incinerated, 34.81% was buried in landfills, while 11.55% was recycled. Observation of data recorded over the years shows that landfilling has been the primary method of disposal in the past. However, with the successive completion of large-scale incineration plants starting in 1993, the ratio of waste disposed of by incineration has steadily risen, taking the lead in 2001. In just one year, this percentage increased 12.68%, and incineration accounted for 64.19% of waste disposed of in 2002. In contrast, the volume of waste buried in landfills has gone down

and now takes second place with 34.81% in 2002, 12.47% less than the previous year.

According to the Garbage Disposal Plan (垃圾處理方案), incineration has been designated as the primary method of waste disposal for the nation's general waste in order to tie in with the development of urban areas. It is expected that 70% of the nation's garbage will be disposed of through incineration by 2005. The EPA stated that such an achievement is the result of many years of considerable input of manpower and material resources by the government.

promotion is in the area of composting or producing dry feed and expanding other methods of reusing food waste. For example, Taichung City has established an organic feed factory and five counties and cities, including Taichung County, have set up organic composting facilities.

Formosa Plastics Environmental Technology Company (台朔環保科技) is now planning to establish eight food waste treatment plants island-wide, drawing on its experience in food waste recycling at its Liuqing plant in Mailiao (麥寮) and its enterprise operation concepts. These eight plants will assist counties and cities in recycling their food waste. Taipei City, Jilong City (基隆市), Jiayi City (嘉義市), and Yunlin County (雲林市) will enter formal agreements with this company, entrusting their services in handling food waste recycling.

As for related ordinances, the EPA has already announced the *Guidelines for Promoting Private Sector Participation in Recycling General Household Food Waste* (促進民間機構參與一般廢棄物廚餘資源回收要點). These guidelines encourage private companies interested in participating in food waste recycling and explain the relevant documents that companies must prepare when applying to the appropriate level of government.

The guidelines state that developing organizations can take the initiative to request that local governments provide administrative assistance and resources if they encounter any difficulties in administrative work when applying to make changes to the land, applying for financial or tax benefits, carrying out EIA reviews, or obtaining a waste treatment permit.

Apart from providing assistance, each local government is required to handle supervisory management

Waste Management

Taiwan to Recycle 900 Tons/Day of Food Waste by End of 2004

Taipei City has taken the lead in food waste recycling through a cooperation program between the Taipei City Environmental Protection Bureau and Formosa Plastics Environmental Protection Technology Company. Local county and city governments throughout Taiwan are also successively launching their own food waste recycling initiatives. Through coordinated efforts by the central and local governments, the EPA estimates that by the end of 2004, the nation's counties and cities will reach a food waste recycling rate of 900 tons per day.

Food waste accounts for two-thirds of general household waste volume. Recycling and reusing this material via composting or as feed to pig farms attains two aims in a single move by not only decreasing the burden of waste disposal but also improving pH levels of agricultural soils and boosting land productivity. The EPA indicated that in order to actively promote food waste recycling on a larger regional scale, it has been focusing intense efforts on advocating township and city agencies to implement recycling work since 2002. So far, results have been considerably good, and up to the end of September 2003, already 160 townships and cities throughout Taiwan's 25 county and city

governments have implemented food waste recycling work. The recycling rate of food waste has skyrocketed from the 2001 level of 80 tons per day to 527 tons per day by the end of September 2003. It is estimated that this recycling rate is likely to reach 900 tons per day by the end of 2004.

Currently, each county and city government primarily uses high-temperature treatment methods such as composting or steaming food waste for pig feed. Concerned with disease prevention when using food waste to feed pigs, the EPA and the Council of Agriculture have already drawn up restrictive measures and this method of recycling is on the decline. The direction of future

responsibilities and the local government should watch over and check on each organization while they are in the process of implementing food waste recycling work. Moreover, they are also responsible for tracking the flow of products made from recycled resources so as to prevent the occurrence of secondary pollution. For more information, please call 04-2254-5872 or 02-2311-7722 ext. 2620.

Dispute Management

Online Complaint Filing System Offers Immediate Handling and Tracking

October 1, 2003, marked the launch of new and improved services available to the public when dialing up the national public nuisance complaint hotline. Meanwhile, the EPA has also launched a round-the-clock initiative, encouraging people to take full advantage of its new website feature which allows visitors to file environmental complaints at the click of the mouse. Those who file will be given a registration number, enabling them to track updates to their report at any time. This new service is more timely and efficient than filing over the phone.

Responding to the demands of the cyber-era, and aiming to improve the quality of service and provide multiple channels for people to file public nuisance complaints, the EPA has introduced *Work Improvement Measures for Public Nuisance Complaint Management* (公害陳情案件處理作業改進措施) and has amended the

following three work guidelines and standards: *Environmental Report Center Hotline Answering Service Standard Operational Procedures and Telephone Etiquette Requirements* (環保報案中心專線電話接聽標準作業程序及電話禮貌須知), *Work Guidelines for Public Nuisance Complaint Tracking and Double-checking* (公害陳情案件追蹤清查及管制複查作業要點), and *Guidelines for Reviewing the Achievements of Local Environmental Agencies' Management of Public Nuisance Complaints*, (地方環保機關處理民眾陳情案件成效評比要點).

The new guidelines require operators in the environmental report center to follow a set of procedures and phone etiquette while receiving call-ins. For instance, the operator should assign a registration reference number upon entering a case, inform callers of handling results and deadline, and arrange for an immediate inspection. Moreover, confidentiality of personal information is highly stressed.

According to the EPA, as much as 91% of complaints are made over the telephone, while only 2.7% are made through the Internet. For situations where serious harm is not an immediate likelihood, people are encouraged to use the Internet service. This service frees citizens from the hassle of busy telephone

lines, and open access is available at any time of the day. While providing a registration number on the spot, the system also passes the record to local offices for immediate action.

With the help of the Internet, the EPA can keep an eye on follow-ups, and the complaint filer is able to track the progress of the case and inspection results against her or his registration number. Statistics indicate that complaint filers receive a report or response of their cases from the EPA within an average of seven days time. For urgent cases, experts are sent to the reported site within three to four hours on average.

As for software, the EPA has strengthened the functions of case entry in its computer filing system and in September conducted two seminars on system operations for 70 case handlers from local environmental protection offices. Working to build the professional capacity of on-site inspectors, the EPA's training center is providing ten rounds of a training course for personnel in charge of public nuisance handling and inspection, from September this year until the end of December in northern, southern and central Taiwan.

The EPA emphasizes that anyone who spots any public nuisance is welcome to file a case on its official website by clicking "com-

Activity

Former Administrator Hau Bids Heartfelt Adieu

A farewell gathering was held for former EPA Administrator Hau Lungbin on October 6. On the eve of his departure, Hau was moved to tears while showing his appreciation to his colleagues at the EPA. He stated, "Our time together as fellow workers is one of my life's most wonderful memories." Hau expressed solid confirmation of the outstanding pro-

fessionalism of his colleagues at the EPA during his over two-year term as administrator. Hau said that the implementation results of policies carried out under the expert advise of his colleagues have already received a high level of public approval. Hau repeatedly extended his appreciation toward all the all-out support of his co-workers.

plaint filing” under “correspondence with the EPA” (English service not yet available). Citizens are encouraged to either directly

connect to ww3.epa.gov.tw, or simply dial the toll-free national public nuisance complaint hotline at 0800-066666.

Air Quality

Legal Backing for Nonscheduled Roadside Motorcycle Inspections

Aiming to increase the efficiency of motorcycle exhaust inspections, apart from establishing stationary inspection stations and holding routine inspections, the EPA has formulated the Guidelines for Conducting Nonscheduled Emissions Inspections on In-Use Motorcycles (draft). These guidelines will help environmental protection agencies implement nonscheduled roadside inspections in a more systematic way to increase efficiency and create the least level of disturbance to citizens, also making sure to protect the rights of those under inspection.

Currently, roadside motorcycle inspection work is administered by the local environmental protection bureaus (EPB) of each county and city government. However, due to a lack of inspection personnel, the greater part of inspection work has been entrusted to the private sector, with hopes of increasing inspection rates. One problem with this, however, is that citizens are suspicious of private companies that are not authorized to enforce the law. In the past, some companies have intentionally carried out inspections during rush hours in order to increase the number of cases for which they can apply to EPBs for reimbursement. Such instances have led to citizen complaints and conflicts have broken out with disgruntled motorcyclists in a hurry to get to and from work.

To prevent such circumstances and give environmental protection agencies legal backing to carry out enforced roadside motorcycle inspections, on October 31, 2003, the EPA made a preliminary announcement of the draft *Guidelines for Conducting Nonscheduled Inspections on In-Use Motorcycle Emissions* (使用中機車排放空氣汙染物不定期檢驗辦法) based on Article 41

Paragraph 2 of the *Air Pollution Control Act* (空氣污染法). This provides roadside inspection agencies that have been carrying out such work for years with a more detailed description of their duties, and impels them to carefully consider traffic conditions and safety concerns as well as requires inspectors to carry identification papers at all times and wear a vest and shoulder patch.

These draft guidelines stipulate that all environmental protection agencies that carry out nonscheduled motorcycle emission inspections in parking lots, transportation stations, on roadways, harbors or other suitable locations, must first consider traffic conditions and place signs in a conspicuous spot on the roadside. They must also pay due attention to the safety of all vehicles on the roadway while carrying out inspections.

Furthermore, when stopping motorcycles on the roadway, the agency must use clear body language to indicate that vehicles should pull over and proceed to a designated waiting area. Those who are to undergo inspection should be given clear explanation about the purpose of the inspection and if necessary should be asked

to present related documents.

To forestall citizen complaints of inspection agencies obstructing traffic or causing delays in getting to work, the EPA explains that motorcycle inspections will not be enforced during rush hours. To gain the people's confidence, environmental protection agencies' inspection personnel are required to carry inspection papers at all times and wear a vest and shoulder patch. Upon completing an inspection, the agency should give the inspection results to the vehicle owner. Those unwilling to accept inspection results can file an appeal according to litigation procedures.

As for related penalties, owners of motorcycles that fail to undergo annual inspections will be subject to fines ranging from NT\$1,500 to \$15,000 according to Article 67 Paragraph 1 of the

News Brief

Hau Lung-bin Receives Medal of Merit

On October 29, Premier Yu conferred a medal of merit to former Administrator Hau to commend Hau Lung-bin for his efforts since stepping into office on March 2001. Upon joining governmental forces, Hau bravely accepted the challenge to enact environmental policies with immeasurable resolution. Premier Yu especially praised Hau's efforts to implement the removal of illegal smelting operations on the Erren River (二仁溪) and actively promote the restricted use policy on plastic bags, which changed public consumer habits and concepts, and fostered an advanced level of environmental consciousness in people's everyday lives. By holding fast to environmental protection principles, Hau effectively upgraded national environmental quality, which is indeed a great merit to be extolled.

Air Pollution Control Act. Owners of vehicles pulled over for inspection and found to exceed air pollution emission standards will be fined from NT\$1,500 to \$60,000 according to Article 63 of the Act, and will furthermore be given a notice to improve their vehicle

within a limited timeline. If improvements have not been made within the deadline, the owner will be additionally charged for each failed inspection henceforth.

For more information, please call 02-2311-7722 ext. 2780.

records, business records must also be compiled into written reports and sent to the MOEA before the end of every January, April, July and October. A copy of this report must also be sent to the local environmental protection bureau.

Waste Management

Regulations Revised for Industrial Waste Clearance and Disposal Cooperatives

Just days ago, the EPA and the Ministry of Economic Affairs promulgated revisions to the *Regulations Governing Industrial Waste Clearance and Disposal Cooperative Organizations*. The new regulations call for more judicious management of cooperative organizations that handle clearance or disposal of industrial waste to ensure that they adhere to the true meaning of "clearance and disposal." The regulations also give authoritative organizations a stronger command over the flow of industrial waste.

To ensure that existing regulations fit in with actual circumstances and industries' needs, the EPA and the Ministry of Economic Affairs (MOEA) jointly revised and announced the 25-article *Regulations Governing Industrial Waste Clearance and Disposal Cooperative Organizations* (工業廢棄物共同清除處理機構管理辦法) on May 5, 2002. Further revisions were made again on October 22, 2003, leaving the regulations with 24 articles.

First responding to the MOEA's requirement to retain jurisdiction over industry, the revised regulations expand the definition of industrial waste to include waste generated by all businesses involved with manufactured products, such as the storage industry, wholesale companies, or businesses that provide manufacturers with expertise including design or research and development services. Industrial waste from these operations can now be handled by clearance and disposal cooperatives.

Procedures have remained the same as regards the test run reports that industries must prepare when applying with the MOEA for cooperative disposal permits. For example, businesses must wait until their waste disposal facilities are completely established before they can present the report of their plans to the MOEA for approval. However, the new revisions stipulate that test run report content should also include appropriate documents such as Waste Disposal Facilities, Equipment and Procedure Design Plans to make it easier for the MOEA to verify the feasibility of the proposed disposal technology.

New stipulations have been added to this regulation to strengthen the management of industrial waste clearance and disposal cooperatives as well as increase their cooperation with the EPA's online report system. For example, in addition to following the EPA's announcement requiring companies to email their business

Measures have been included to prevent industries from installing larger capacity disposal facilities, operating under a "cooperative disposal permit" for one year, and then applying for a "surplus disposal capacity permit" as a way of handling industrial waste from non-shareholders in amounts that far exceed those of shareholders. To forestall industries from attempting this loophole, which goes against the meaning of "clearance and disposal" implied in this regulation, the current revision expressly adds the condition that: "The MOEA shall abrogate the disposal permits of companies whose surplus disposal capacity exceeds the permitted waste volume by 50%."

For more information, please call 02-2311-7722 ext. 2641.

International Scholar Affirms Taiwan's Achievements in Hazardous Waste Management

In response to developments in the international arena regarding the Basil Convention, the EPA held a symposium on "The Basil Convention and Waste Management" on October 9 at the Chinese Cultural University's international conference hall. A primary aim of this symposium was to raise Taiwan's capabilities in waste management. Former Secretariat of the Basil Convention Legal Working Group, Dr. Suian, remarked that upon making a first hand visit to Taiwan, he felt that Taiwan has made excellent progress with respect to waste management. Dr. Suian advised Taiwan to take the initiative to participate more actively in international conferences in the future and share Taiwan's experience and expertise in this area.

Air Quality

Remote Sensing Improves Efficiency for "Squid Car" Inspections

Days ago, the EPA announced the results of last year's remote sensing inspections for vehicle emissions, revealing that over 10,000 vehicles out of the 190,000 vehicles inspected did not conform with inspection standards. Eager cooperation by car owners to undergo reexamination helped to decrease the rate of substandard inspection results by a large margin. Models posting the highest remote sensing pollution scores (locally known as "squid cars" for their sooty exhaust) will be prioritized for mandatory in-use vehicle recalls, requiring manufacturers to rectify any problems.

On October 21 this year (2003) the EPA announced the results of the 2002 remote sensing for automobile emissions. Of the 190,000 vehicles tested, 13,493 showed high pollution. After the car owners were informed that their cars had been tested by remote sensing, as much as 89% of the owners showed up for reexamination. Only 517 of those cars reexamined were found to actually have substandard emissions. The EPA ranked car models according to the pollution levels detected by remote sensing inspections. Models on the top of the list with the highest levels of pollution will be prioritized as targets for mandatory recalls of cars currently in use, requiring manufacturers to rectify any problems. Among the top candidates for

mandatory recalls are Ford Lio Ho Motor Telstar, Kuozui Motors KFIWMD and YULON Sentra.

Remote sensing is quite unlike roadside emissions testing, which requires enormous manpower, is limited to the traffic flow on a given road, and yields economically inefficient inspection rates. Automobile emissions remote sensing technology has been under development in the U.S. for several years and produces good results. The EPA has already introduced this technology and plans to broaden the scope of its applications to include vehicle emission testing as it causes less inconvenience to motorists and is more efficient than setting up roadside inspection stations. According to the U.S. EPA's experience, the top 10% of the most polluting cars generate 50% of all air pollution from cars tested. Therefore, in order to effectively reduce air pollution, the older and more severely polluting model cars are being screened and drivers are encouraged to replace them with newer models.

Drawing on Article 42 of the *Air Pollution Control Act* (空氣污染法) which provides the legal basis for implementing remote sensing inspections, the EPA announced the *Screening Criteria for Remote Sensing of Air Pollution from Au-*

tomobile Exhaust (汽車排放空氣污染物遙測篩選標準) this January (2003). This document sets screening criteria for remote sensing examinations, targeting cars over five years from the issuance of their first license plates, and ranked in order according to the year of manufacture. This measure will help the EPA ensure that cars tally with the annually decreasing air pollution total quantity control levels and upcoming stricter emissions regulations, by setting different remote sensing standards for newer car models.

According to statistics derived from last year's automobile remote sensing data, the average concentrations of CO and HC emissions were recorded at 0.49% and 91ppm, respectively. Of the 13,493 cars whose owners were informed of having substandard emissions, average CO and HC concentrations were 2.9% and 416 ppm, around five times greater than the overall average. Ranking in order of highest to lowest concentration among those cars that underwent remote sensing, the top three car models with the highest CO concentrations were Ford Sierra GHIA4D, Honda Accord AMC, and Saab 9000CD16 4DA, all posting CO levels over 12.8%. Those car

Ranking	Brand	Model	Units tested	Percentage of total units (13,493) found with substandard emissions
1	Ford Lio Ho Motor	Telstar-3E	704	5.22%
2	Kuozui Motors	KFIWMD	456	3.38%
3	YULON Motor	YLN331SD	370	2.74%
4	Ford Lio Ho Motor	Festiva-3V	369	2.73%
5	Kuozui Motors	AT1EMN	339	2.51%
6	Ford Lio Ho Motor	Festiva-4U	246	1.82%
7	Ford Lio Ho Motor	Laser-5A	231	1.71%
8	Ford Lio Ho Motor	Telstar-5E	226	1.67%
9	China Motor	CM2512C	199	1.47%
10	YULON Motor	YLN321STD	189	1.40%

2002 automobile exhaust remote sensing screening results, showing high polluting car models and number of units with substandard test results

models with the highest average HC concentrations were Volvo S80T6 Turbo, Ford Modeo GLX 5D and Subaru 4WD GT, with HC levels over 8,000 ppm. It should be mentioned however, that these values were taken from the top four cars tested and high pollution levels could be due to individual car owners' varying car maintenance habits or damaged exhaust control systems. Therefore the abovementioned emission values are not representative of the general status of emissions from all cars belonging to these models.

The EPA indicated that it will continue to carry out car emissions remote sensing measures in the future according to the *Air Pollution Control Act*. Owners of high-polluting cars that were screened

out were notified to report to a designated location for further inspection. Car owners were obligated to report for testing and if they failed to show up or if testing produced substandard results, they were fined a penalty between NT\$1,500 and \$60,000 as stipulated in Article 68 of the *Air Pollution Control Act*. The EPA put a priority on recalling cars that showed exceptionally high remote sensing scores, requiring manufacturers to recall cars already in use and rectify the problem or clarify the reason why their cars showed such high pollution on remote sensing scores. If the error was on the part of the car designer or manufacturer, then the car manufacturer will be given a deadline in which to recall the cars back to

amend the problem, as stipulated in Article 37 of the *Air Pollution Control Act*.

EIA

EPA to Install Environmental Supervisory Committee for NPP-4

At a time when opinions are still widely divided among the public regarding the issue of whether or not to build a fourth nuclear power plant, the EPA has announced working guidelines on the establishment of a supervisory committee for the fourth nuclear power plant (NPP-4). The committee will play an impartial role in monitoring the environment in the interests of the public, checking to ensure that regulations are followed throughout the construction and operation of NPP-4.

To reinforce implementation of environmental protection supervisory work for the fourth nuclear power plant, the EPA announced the *Guidelines for Installing and Operating the Environmental Protection Supervisory Committee for the Fourth Nuclear Power Plant* (核能四廠環境保護監督委員會設置及作業要點) on October 9. In the future, an NPP-4 Environmental Protection Supervisory Committee will be established to bear the responsibility of keeping tabs on the environment within and near the power plant.

The guidelines stipulate the two main duties of this committee as, 1) overseeing the implementation status of EIA documents and EIA review conclusions related to NPP-4 plans, and 2) other environ-

News Briefs

Cement Industry Air Pollution Emissions Standards Revised

Current restrictions on cement companies' rotary kiln production requirements and control technology still permit large variances in nitrogen oxide (NOx) concentrations. Furthermore, the average 24-hour concentration of NOx emissions has yet to drop below 350 ppm. Therefore, due to practical considerations for the cement industry, the EPA has announced a revision to Article 5 of the *Cement Industry Emissions Standards* (水泥業空氣污染物排放標準) on October 29. The revised standards differentiate between those rotary kiln facilities established before and after January 24, 1996, setting two different NOx emission standards of 450ppm and 350ppm for these two groups respectively. These new standards will become

effective as of January 1, 2005.

Second Group of Stationary required to report emissions.

As directed by Article 21 Paragraph 1 of the *Air Pollution Control Act* (空氣污染防治法), on October 29, the EPA announced the second group of stationary pollution sources required to report emissions. Stationary pollution sources that carry operating permits with annual permissible emission volumes as indicated on the following chart, are required to register online. Starting from April 2004, these facilities must report the previous quarter's air pollution emission volumes for the entire facility online before the end of each April, July and October. Every year, they must also submit a report on the previous year's emission volumes for the entire facility before the end of January.

Second Group of Stationary Pollution Sources Required to Report Emissions	Report deadlines
NO _x between 5 and 40 metric tons	From April 2004, industries must report the previous quarter's air pollution emission volumes online before the end of each April, July and October, and the previous year's emission volumes before the end of January.
SO ₂ between 10 and 60 metric tons	
VOCs between 5 and 30 metric tons	
PM ₁₀ between 10 and 15 metric tons	

mental protection supervisory and coordination work for plans related to NPP-4.

The EPA explained that "EIA documents" refers to environmental impact assessment reports, environmental variance analysis reports, comparison charts for modified content, environmental impact investigation reports and emergency response measures that pertain to the No.1 or No.2 To reactors at NPP-4 and have been approved by the Atomic Energy Council (Executive Yuan) or the EPA.

The director of the EPA Department of Planning will concurrently hold the post of the convener of the committee and will be responsible for handling administrative affairs. The committee will have a total of 15 members including the convener, and five members will comprise of representatives from the Atomic Energy Council (Executive Yuan), the Construction and Planning Agency (Ministry of Interior), the Tourism Bureau (Ministry of Transportation and

Communications), the Taipei County Environmental Protection Bureau, and the Taipei County Gongliu Township Hall (貢寮鄉公所). Another six to seven members will comprise of experts and academics, and two to three members will comprise of representatives from citizens' groups. The term of office for committee members is two years, after which members may be chosen to serve consecutive terms.

According to the guidelines, committee meetings require attendance of over half of the committee members and resolutions may be passed with approval from over half of the committee members in attendance. In the instance that there is a tie between those in favor and those in opposition of a resolution, the chairman shall make the final decision. The guidelines will be implemented after the Cabinet's Council for the Promotion of a Nuclear-Free Homeland (非核家園推動委員會) passes it during an NPP-4 Supervisory Task Force Committee meeting.

and sustainable development into practice. Founded on ecology and guided by safety, ecological engineering reduces the degree of damage inflicted on the natural environment. Generally speaking, ecological engineering adopts the following methods:

phytoremediation, including wetlands, chinampas, floating plants, grass ditches, grass belts, and vegetation filtration beds; or soil treatment methods, including irrigation treatment and ground filtration.

Ecological engineering has many advantages including raising the capacity to purify environmental pollution, upholding biological diversity, increasing economic efficiency, raising environmental aesthetics and creating waterway access areas, and promoting environmental education. One shortcoming of ecological engineering however is that it requires the use of a large area of land and is therefore not as practical for areas of high population density.

Carrying over from work begun last year, the EPA Department of Water Quality Protection will continue promoting ecological construction remediation work on six major river basins, including the Tanshui (淡水河), the Nankan (南崁溪), the Wu (烏溪), the Erren (二仁溪), the Jiangjun (將軍溪) and the Kaoping (高屏溪) rivers. By the end of the year, a total of 15 water quality purification construction projects will be completed, estimated to reduce the total biological oxygen demand (BOD) by 643 tons. This will significantly contribute to efforts to stall the deterioration of river water quality. The EPA began promoting ecological engineering applications in river pollution remediation in 2002, engaging in water quality purification construction, eco-parks, natural embankments and riverbank greening projects. Each measure

Water Quality

Ecological Engineering Proves Successful in River Remediation

Domestic river remediation has continually been a focal issue for EPA senior officials in the past. In river basins and tributary waterways where wastewater sewers are still not universal, the latest remediation method is to promote water quality purification systems based on ecological engineering. The EPA estimates that construction of 15 water quality purification projects will be completed by the end of this year (2003), which will help to effectively reduce BOD by 643 tons.

Working to continually advance river remediation efforts, the EPA has not only placed active controls on various pollution sources, but has also adopted a two-pronged approach addressing both symptoms and sources of pollution problems through on-site treatment. This is done through advancing wa-

ter quality purification systems that are based on ecological engineering so as to intercept the flow of domestic wastewater in river basins and tributary waterways where sewer systems are not yet widespread.

Ecological engineering works to put both biodiversity conservation

has already resulted in initial success. As far as pollution reduction, environmental education, rehabilitation of source water, and environmental activities

are concerned, the projects have already brought about many benefits. The EPA will continue to introduce ecological engineering projects in the future and engage

in river pollution remediation work so as to put principles and concepts of sustainable management for water environments into practice.

News Brief

President Chen: Ecological Engineering and River Remediation is a Part of Environmental Responsibility

While attending the Taiwan Ecotechnology Exhibition on Octo-

ber 25, President Chen Shui-bian remarked that disruption of Taiwan's natural ecology has led to soil conservation problems, which must be confronted at once. Hydraulic engineering projects intended to save

costs and ease construction procedures frequently result in serious ecological destruction. Conversely, ecological engineering can be adopted to achieve the objectives of reducing cement consumption and fostering sustainable urban development. President Chen highlighted the importance of promoting ecological engineering concepts so that we may bear our responsibility to the environment and to future generations.

The central resolution that came out of the 2002 UN Sustainable Development Summit underscored the need to recover biological diversity. Taiwan has been implementing river remediation projects that allow people to access waterways and make use of ecological engineering; such measures can help restore forested areas and river environments, as well as strike a balance between natural ecology and industrial development. Moreover, such projects have drawn attention in the international arena, attesting to Taiwan's efforts in global environmental conservation.



President Chen reads aloud the signed "Declaration on Ecological Engineering" (生態工法宣言), signifying the government's staunch determination to promote ecological engineering

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