

# Environmental Policy Monthly



Volume IV, Issue 3 (Published Monthly)

March 2001

Environmental Protection Administration

GPN: 2008600068

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## **Preliminary Soil Pollution Fund Management Framework Set**

The EPA's *Draft Organizational Regulations of the Soil and Groundwater Pollution Remediation Fund Management Committee* calls for the future establishment of a committee composed largely of specialists and academics to bear responsibility for management and review tasks in connection with the *Soil Pollution Fund*. The committee will be chaired by the EPA administrator, under whom will be four technology working groups in charge of various types of remediation work.

Putting soil and groundwater pollution remediation on a sound fiscal footing, the *Soil and Groundwater Pollution Remediation Act* (土壤及地下水污染整治法) stipulates that the EPA may assess soil and groundwater pollution remediation fees for the importation and manufacturing of specified chemical substances, and shall establish a soil and groundwater pollution remediation fund. To insure that this fund is used effectively, the *Soil and Groundwater Pollution Remediation Act* also calls for the establishment of a fund management committee as the fund's management entity.

Based on the EPA's *Draft Regulations Governing Collection of Soil and Groundwater Pollution Remediation Fees* (土壤及地下水污染整治費收費辦法), the *Soil and Groundwater Pollution Remediation Fund* (土壤及地下水污染整治基金) is expected to eventually reach a total size of NT\$ 30 billion. In light of the fund's extremely great size, the fund management committee will bear heavy responsibility and play a major role.

In accordance with the above regulations of the *Soil and Groundwater Pollution Remediation Act*, the EPA announced the *Draft Organizational Regulations of the Soil And Groundwater Pollution Remediation Fund Management Committee* (土壤及地下水污染整治基金管理委員會組織規程草案) on February 8. These regulations lay out the following tasks for the committee:

1. review of the fund's balance of payments, safe-keeping and use
2. review of the fund's annual budgets and final accounting
3. oversight of the state of fund implementation

Organizationally, the EPA administrator and deputy administrator will take the chairperson and deputy chairperson seats on the committee. The committee will consist of 15~21 members, of which at least two-thirds will be specialists and academics. The committee shall have one executive secretary to bear responsibility for committee affairs.

The draft regulations also call for the future establishment of four technology working groups in addition to the committee's regular members. These working groups will bear responsibility for four tasks: overall planning, reviews of income and expenditures, technology reviews, and legal actions. Each working group shall have a chief and working personnel.

Because soil and groundwater pollution remediation involves an extremely broad range of considerations, the draft regulations strive to avoid conflict of interest by reiterating the stipulations of the *Soil and Groundwater Pollution Remediation Act*. Specifically, committee members are prohibited from performing any soil or groundwater pollution remediation-related work during their period of service or for three years thereafter, and their spouses, direct ancestors and descendants, and other close relatives are prohibited from performing soil and groundwater pollution remediation work at any sites under their review during their period of service.

The EPA says that the draft regulations have already been submitted to the Executive Yuan for approval and will be implemented in the near future.



## **EPA Announces Executive Personnel Changes**

EPA Administrator Edgar Lin recently announced the largest adjustment among EPA bureau and office directors since the founding of the EPA. It is hoped that these personnel reassignments will allow the EPA to make a fresh start and at the same time promote coordination and communication between each EPA department.

EPA Administrator Edgar Lin (林俊義) issued a personnel order in early February dictating the reassignment of the first-level executives of most departments within the EPA. These personnel reassignments, the most extensive since the estab-

lishment of the EPA, are aimed at promoting coordination and communications between each EPA department.

Under this personnel order, former Director General of the Air Quality Protective Planning Bureau Hsiung-Wen Chen (陳雄文) is now the new Director General of the National Institute of Environmental Analysis. Former Director General of the National Institute of Environmental Analysis Huang Wan-chu (黃萬居) has been reassigned as both Director General of the Performance Evaluation and

Dispute Settlement Bureau and as Director General of the Chief Inspection Team. Former Director General of the Performance Evaluation and Dispute Settlement Bureau Te-po Tung (董德波) has been reassigned as Director General of the Environmental Sanitation and Toxic Chemicals Control Bureau and as EPA liaison to the Legislative Yuan. Former Director General of the Environmental Sanitation and Toxic Chemicals Control Bureau Hong Cheng-chung (洪正中) has taken over as Director General of the Air Quality Protective Planning Bureau.

In addition to these reassignments, former Director General of the Solid Waste Control Bureau Cheng Shean-rong (鄭顯榮) has taken over as the new Director General of the Water Quality Protection Bureau, while former Director General of the Water Quality Protection Bureau Gwo-dong Roam (阮國棟) has become Director General of the Office of Science and Technology Advisors. Former Director General of the Office of Science and Technology Advisors Yang Chih-yuan (楊之遠) has been reassigned as Director General of the Environmental Monitoring and Data Processing Bureau. Former Director General of the Environmental Monitoring and Data Processing Bureau Chen Shis-how (陳熙灝) has become an EPA counselor. Former Director General of the Secretary's Office Chen Lian-ping (陳聯平) is now Director General of the Bureau of Incinerator Engineering. Former Director General of the Bureau of Incinerator Engineering Chang-Shya Yueh (樂昌洽) has become an EPA senior technical

supervisor. Former Deputy Director of the Solid Waste Control Bureau Leu Horng-guang (呂鴻光) has been promoted to Director General of the Solid Waste Control Bureau and senior specialist at the Air Quality Protective Planning Bureau Ching-Shi Yang (楊慶熙) has been promoted to Deputy Director of the Solid Waste Control Bureau.

Administrator Lin also ordered executive reassignments within the Chief Inspection Team. Former chief of this team's Southern Division Hsie Jen-hsiung (謝貞雄) has been reassigned as Executive Secretary of Recycling Fund Management Committee. Former Northern Division chief Tian-Chi Wu (吳天基) is now chief of the Southern Division. Senior specialist at the Air Quality Protective Planning Bureau Sheng-Jong Wu (吳盛忠) has become chief of the Northern Division. Hoei-Yuan Hwang (黃輝原), formerly a senior specialist at the EPA's Central Taiwan Division, has taken over the leadership of the team's Central Division.

The EPA states that, while the scale of this personnel reassignment program is quite extensive, the primary reason for its implementation is simply that most of these bureau and office directors had been at their previous positions for 6 years or more. The EPA expects that, in addition to provoking a reevaluation of the various programs within each department and fostering fresh attitudes towards work, this reassignment program will also promote greater coordination and communication between each EPA department. These reassignments will surely prove to be of great help in the promotion of EPA work in the future.

## ***Creating an e-Government: 12 Environmental Applications Processed On Line***

**The EPA will begin processing applications over the Internet for 12 activities and programs under the authority of the EPA, including the transportation of toxic chemical substances, in the near future. This initiative is aimed at simplifying administrative procedures for the public and at promoting the use of the Internet within the government. Interested parties can visit the EPA website in order to obtain more information on these Internet applications services.**

The EPA is preparing to process applications over the Internet for 12 activities and programs under the authority of the EPA, including the transportation of toxic chemical substances and the import and export of hazardous industrial waste. The EPA looks forward to saving the public's precious time by providing this service. The EPA began accepting applications over the Internet for 6 activities and programs under the authority of the EPA in 1999

and is now expanding this program to include a total of 12 activities and programs. Interested individuals and enterprises may visit the EPA website at <http://www.epa.gov.tw> in order to obtain details on these application procedures. Also, in January, as part of its preparation for this project, the EPA conducted Internet training seminars for the personnel of county and city environmental protection agencies in order to improve their Internet skills so they can take advantage of the opportunities brought by Internet era.

The EPA points out that the rapid development of information technology and the spread of the Internet have made it possible to use electronic signatures for processing Internet applications. It says that this not only merges well with the trend towards developing an e-government, but also provides more convenience and choices for applicants. The activi-

ties and programs for which the EPA will accept on-line applications, such as the transportation of toxic chemical substances, are those for which the applicant is simply required to make a report to the EPA in order to receive approval. Applicants will be able to determine immediately whether their applications have been processed and approved simply by going on line. This will prove to be a major convenience compared to the current method of processing applications through the mail. However, so as to avoid leaving applicants that still do not possess Internet capabilities on the other side of the information gap, the EPA notes that this Internet application program is not compulsory and that it will continue to process traditional paper applications.

Parties wishing to process applications over the Internet must first visit the application website in order to apply for an electronic signature and obtain application forms for this program. These application forms must be filled out, stamped with a chop and mailed to the EPA. Applicants may begin submitting applications over the Internet once they are formally presented with their electronic signatures. The public may obtain details on Internet applica-

tion procedures at the EPA website <http://www.epa.gov.tw>.

The 12 types of applications the EPA will process over the Internet include those for:

1. documents for the transportation of toxic chemical substances
2. permits to import and/or export hazardous industrial waste
3. documents proving a chemical is not a regulated toxic substance
4. documents proving a chemical is not a regulated environmental agent
5. proof of usage for the importation of environmental agent raw materials
6. approval for the importation of petroleum coke
7. documents for the import of diesel-powered electric generators
8. tax deductions on investments by waste clearing and disposal enterprises
9. permits for waste disposal
10. permits for waste clearing
11. the reuse of general industrial waste
12. the reuse of hazardous industrial waste



## **Motor Vehicle Recycling Growing**

**The EPA's motor vehicle recycling program continues to meet with growing success. Under this program, 97,635 motor vehicles were removed from Taiwan's streets in 2000. Also, the cumulative number of subsidies granted for upgrading to a new motorbike from an old one reached 125,917 by the end of 2000. The EPA has even set up a special telephone number, 0800-085717, in order to provide the public with information about reporting and recycling abandoned vehicles.**

There are over 16 million motorbikes and automobiles in Taiwan, and this number continues to increase. Every year approximately 370,000 automobiles and 940,000 motorbikes turn to waste. Not only does this massive number of waste vehicles cause such problems as the blockage of roads, the abandonment and inappropriate dismantling of vehicles also results in environmental pollution and makes a mess of the environment we inhabit. Addressing this issue is a major pillar of environmental protection work.

Taiwan's motor vehicle recycling work began in January 1995 when the government began accepting reports of waste vehicles from the public. From March 1st of the same year when the government began allowing vehicle owners to report their vehicles for recycling, the program has continued to

meet with success. With each element of society cooperating with and providing their input for the vehicle recycling system, the number of recycled vehicles is rising steadily.

The EPA established the Recycling Fund Management Committee in July 1998. In the years that have followed, the EPA has gradually established procedures for the examination and authentication of waste vehicles by continuously studying every aspect for the planning and promotion of every type of recycling. Also in July 1998, the EPA instituted a system for the compulsory removal of abandoned vehicles within 48 hours of being reported. This system permits the public, police and personnel for environmental protection agencies to report abandoned vehicles. This system operates under a 3-step process: first, abandoned vehicles are reported, second, suspected abandoned vehicles are labeled with a sticker stating that the vehicle will be towed away and, finally, the abandoned vehicles are hauled to storage lots if they are not claimed by their owners. The system succeeded in removing 78,115 abandoned vehicles in its first year, achieving a 48-hour removal rate of 76%.

Removal rates have increased each year since the program began. The 48-hour removal rate for vehicles suspected of being abandoned reached 85% in 1999; a growth of 9% compared to the previous year. A total of 100,477 vehicles were towed away that year. The performance of the program continued to grow in 2000, with 97,635 waste vehicles being removed from the streets that year.

In addition, from December 1, 1998 to the end of December 2000, the government has granted 125,917 subsidies for upgrading from an old motorbike to a new one. Such policies as increasing awards for reporting abandoned vehicles have led to the removal and recycling of a total of 503,702 motor vehicles as of the end of 2000. These figures demonstrate the marked success of this program.

The EPA has set up a special telephone number, 0800-085717 (the Chinese pronunciation

of the last 6 numbers sounds like the phrase "you help me clean things up"), in order to provide the public with information on reporting and recycling waste vehicles. This telephone service provides the names and telephone numbers of motor vehicle recycling enterprises and the addresses of recycling lots. Vehicle owners can use this number in order to inquire about prices and recycling at each recycling enterprise. After completing the recycling transaction with the recycler, the owner can present the recycling receipt and other relevant documents to the EPA in order to apply for a vehicle recycling award. The EPA provides an NT\$ 3,000 award for automobiles and an NT\$ 1,000 awards for motorbikes. Give your vehicle an appropriate final resting place, clear up space for the public to use, clean up our environment.



## ***Simplifying Procedures for Altering EIS/EIA Reports***

**Responding to the conclusions of the National Economic Development Conference, the EPA has submitted the Revised Draft Environmental Impact Assessment Act Enforcement Rules, which simplifies procedures for changing environmental impact statements or environmental impact assessment reports. These new rules will require that public hearings be held in the communities in which the development is planned.**

In accordance with the requirements of the *Environmental Impact Assessment Act* (環境影響評估法), the originally submitted content of approved environmental impact statements (EIS) or environmental impact assessment (EIA) reports may not be altered without the prior consent of the responsible authorities. However, in reality many changes to development plans actually lessen their environmental impact. Because dealing with this kind of situation under ordinary change procedures has led to over-regulation, last year's National Economic Development Conference decided to simplify EIA change procedures in such cases.

Issued on February 27 in compliance with the above conclusion, the EPA's *Revised Draft Environmental Impact Assessment Act Enforcement Rules* (環境影響評估法施行細則修正草案). Besides revising or deleting certain articles to bring them in line with the *Administrative Procedures Act* (行政程序法), the revised enforcement rules also explicitly provide that, when it is wished to revise an EIS or EIA report in any of the following ways:

1. reducing the capacity or scale of the development plan;
2. changing the location of some on-site installations;

3. raising the processing grade or efficiency of environmental protection installations.
4. or changing the content in way so as to improve the maintenance of environmental quality.

The developer may make the change(s) after sending an application with attached reason for the change(s) and a comparative table of the content of the change(s) to the competent authorities and receiving approval. Unlike in the case of ordinary changes, there is no need to perform an environmental variance analysis in these situations.

Aiming to allow the citizens' comments to be reflected in EIAs, the EIA Act requires that the developing unit must hold public hearings during the EIA process. In order to prevent developing units from holding invalid hearings during the drafting process, the revised enforcement rules require that future hearings be held at appropriate locations near where the development will actually occur.

As for EIA review deadlines, the enforcement rules stipulate the number of days the developing unit may have to make corrections and additions, the number of deductible days not the fault of the developing unit and the number of days needed to clarify questions concerning relevant laws and discuss other related issues are not included in the review period.

Because these new enforcement rules represent only a partial revision and there are no disagreements concerning the revised content, the EPA expects the Executive Yuan to approve the revisions soon.



## Feature Article

### **Sustainable Development of Green Silicon Island Main Theme of Premier Chang's Administrative Report**

Executive Yuan Premier Chang Chun-hsiung's administrative report of June 20 contained the heading "Taiwan's Transformational Direction-a Green Silicon Island." Chang emphasized that "green" implies that sustainable development and environmental protection must take precedence, while "silicon" highlights the need for entrepreneurial spirit, especially the quality of "innovation". The blueprint for a Green Silicon Island calls for harmonious, coordinated progress in economic development, social development, and ecological development.

Executive Yuan Premier Chang Chun-hsiung's February 20 administrative report to the Legislative Yuan contained the heading "Taiwan's Transformational Direction - a Green Silicon Island." Chang emphasized that as the country enters the age of the knowledge economy, increased effort will be made to realize the specific objectives of financial reform, sustainable development, full-scale environmental protection, a fair and just society, and the improvement of all human rights.

With regard to realizing sustainable development and environmental protection, Premier Chang noted that while Taiwan has long enjoyed international praise for its "economic miracle," it has also long suffered the after-effects of its neglect of environmental protection. For instance, the threat of devastating mudslides has become a recurring nightmare that accompanies every typhoon or torrential rain. Nearly half of Taiwan's rivers and streams are polluted to some degree, and 2-3 million residents of Kaohsiung still lack access to clean drinking water! There is also a glaring lack of comprehensive urban development and land use planning.

Worsening environment quality has become a major factor eroding the quality of life in Taiwan. There is a widespread feeling among the public that although the material standard of living is good, the quality of life is poor! This is why Premier Chang declared that the beautiful island of Formosa permits us no further delay. A responsible government must strive to create a safe, friendly, public-oriented living environment for its people. To enable citizens to truly enjoy the fruits of economic development, it is necessary to realize sustainable development and environmental protection, build public confidence in environmental protection, and insure the sustainable utilization of natural resources.

The inappropriate use of mountain and coastal areas in the past threatened the existence of many

living organisms and severely harmed water and soil conservation. In the future the government will establish a "Green Corridor" -an ecological protection axis along the Central Mountains-strengthen ecological protection along rivers and the seashore, and bolster its implementation of national land planning, allowing Taiwan to keep pace with more advanced nations in the area of natural conservation.

As for the conservation of water resources, the Executive Yuan has completed the drafting of the *National Industrial Waste Management and Disposal Plan* (全國事業廢棄物管制清理方案), which is intended to end the pollution of Taiwan's rivers and streams, and achieve the goal of sustainable management of water resources. This plan will strengthen the policy, management, and implementation foundation of the industrial waste management system.

In addition, the Executive Yuan has made the improvement of the Kaohsiung area's water supply an important administrative objective, and will spend NT\$3 billion this year alleviating water shortages and improving water quality in the Kaohsiung area. The government has also made the remediation of the Kaoping River a major priority. Its goals are to effect a sweeping improvement in water quality, the volume of water utilization, embankment safety, and environmental protection throughout the upper, middle, and lower sections of the Kaoping River.

Premier Chang feels that our beautiful natural environment is both a heritage we hold in trust for our forefathers and is a priceless asset to be passed on to our descendents. Last month's oil spill from the Greek freighter MV Amorgos severely affected the marine ecology in the vicinity of Kenting. Feeling very pained by this incident, Chang requested the EPA and other responsible authorities to use all means at their disposal to control the spread of pollution. Hoping to shorten the cleanup period and fulfill the government's responsibility to its citizenry, Chang also instructed the Ministry of National Defense to lend its full assistance to cleanup efforts.

Concluding his report, Premier Chang stressed that there is only one Earth, and there is also only one Taiwan! This is the reason that the government has recently expressed extremely great concern for the issues of sustainable development and environmental protection. Although natural disasters are unavoidable, it is up to us to take effective

steps at the earliest possible time whenever an emergency occurs. Apart from striving to prevent harm from natural disasters, all central and local government agencies must establish practical emergency

warning and response mechanisms. It is hoped that we can learn from past mistakes and prevent harm to our environment.



## **98.4% of Drinking Water Samples Tested in 2000 Meet Standards**

The EPA has recently released the results of drinking water quality inspections for 2000. In these inspections, 98.4% of tap water samples met standards. For the counties and cities with over 1% of samples not meeting standards, which include Kinmen County, Penghu County, Kaohsiung City and Hsinchu City, the presence of odor, phenols, chloride and ammonia nitrogen were the primary reasons for samples not making the grade. Also, 44.68% of non-tap water samples drawn in 2000 did not meet standards. The categories for which these non-tap water samples did not meet standards were principally those for coliform group bacteria and total bacterial count.

The EPA announced the results of its drinking water sample inspections for 2000 on February 20. Of the 16,008 samples tested, 255 samples, or 1.59%, did not meet drinking water standards. Those areas with over 1% of their samples not meeting standards include, in descending order, Kinmen County, Penghu County, Kaohsiung City and Hsinchu City. The presence of odor, phenols, chloride and ammonia nitrogen were the main reasons water samples in these areas did not make the grade.

The Water Quality Protection Bureau notes that the Kaoping River incident, in which illegal waste handlers dumped organic solvents in one of the Kaohsiung area's primary waterways on July 14, 2000, is the main reason the percentage of samples that failed to meet standards reached over 1% higher than in recent years. This incident caused the percentage of tap water samples that fell below standards to rise in July and August of 2000. Around 20% of tap water samples in Kaohsiung City and Kaohsiung County failed to meet standards in July. However, by August the failure rates in these two areas declined to 5.88% and 1.54% respectively. The main categories in which these samples did not meet standards were those for odor and phenols.

The implementation of the more stringent second stage of the *Drinking Water Quality Standards* (飲用水水質標準) on December 1, 2000 is another reason for the increase in the percentage of samples that failed to meet standards. With these higher standards, ammonia nitrogen exceeded acceptable levels in some areas and the levels of chloride and the volume of total dissolved solids (TDS) exceeded acceptable levels on offshore islands. The percentage of samples not meeting stan-

dards in December reached 4.26% due to these new standards. Also, the EPA began including samples from Kinmen County and Lianchiang County, the homes of two offshore island archipelagoes, in water quality testing statistics in 2000. In Kinmen County, it is possible that pH levels and free effect residual chloride levels exceed acceptable levels due to the poor quality of water sources and inadequate treatment. The EPA concluded that the primary reason for this poor water quality is most probably that some water supply pipes are exposed to pollution and water treatment processes are flawed. Environmental protection agencies have meted out punishment in accordance with the law for those areas that do not supply drinking water that meets standards. These agencies have also notified water suppliers in these areas that they must complete the improvement of drinking water quality within a limited period of time. These measures are aimed at pushing water suppliers to improve water quality monitoring and upgrade water treatment technology.

Inspectors collected 573 samples from non-tap water sources that are used for drinking water. Of these samples, 256, or 44.68%, did not meet standards. These samples primarily failed to meet standards in the categories of coliform group bacteria and total bacterial count. The EPA says that the main reason many of these non-tap water sources of drinking water, which include small water treatment facilities, drinking water wells and mountain spring water, do not meet standards is because they do not undergo sufficient treatment or sterilization. It says that, as the same water quality standards that are applied to tap water are also applied to non-tap water, it is natural that the failure rates for non-tap water sources will tend to be higher. In addition to efforts by local environmental protection agencies to improve water quality inspection work and expand public education programs, the EPA has also called on county and city governments and the Ministry of Economic Affairs to step up their work on improving the quality of drinking water from non-tap water sources.

The EPA emphasizes that 98.4% of tap water samples met drinking water standards in 2000. This high figure was achieved despite the illegal dumping of organic solvent waste in the Kaoping

River which significantly lowered water quality in the Kaohsiung area and caused fear among the public in July and August. With only 55.3% of non-tap water samples meeting EPA standards, it is clear that tap water is the safest form of drinking water in

Taiwan. For further information on the EPA's drinking water quality testing, please visit the EPA website at <http://www.epa.gov.tw/j/drinkwater/dkstat/index.htm>.



## Recommended Reference Levels for Non-Ionizing Radiation Announced

The wireless communications industry has developed rapidly. While there is currently no research proving that electromagnetic radiation poses a health threat to humans, the public still harbors a fear of this form of radiation. With the goal of quelling public disputes and alleviating this fear, the EPA, based on the standards of the International Commission on Non-Ionizing Radiation Protection, has announced its *Recommended Reference Levels for Non-Ionizing Radiation in the Environment*.

Along with the rapid growth of the wireless communications industry, the public's suspicions about the safety of non-ionizing radiation (NIR) have also continued to deepen. There are frequently public protests surrounding the installation of wireless communications base stations and other telecommunications equipment. Not only has this created an exaggerated level of fear, it has also hin-

*Recommended Reference Levels for Non-Ionizing Radiation in the Environment*

Frequency Range	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Magnetic Flux Density (uT)	Power Density Seq (W/m <sup>2</sup> )
<1Hz	-	3.2*10 <sup>4</sup>	4*10 <sup>4</sup>	-
1-8Hz	10,000	3.2*10 <sup>4</sup> /f <sup>2</sup>	4*10 <sup>4</sup> /f <sup>2</sup>	-
8-25Hz	10,000	4,000/f	5,000/f	-
0.025-0.8KHz	250/f	4/f	5/f	-
0.8-3KHz	250/f	5	6.25	-
3-150KHz	87	5	6.25	-
0.15-1MHz	87	0.73/f	0.92/f	-
1-10MHz	87/f <sup>0.5</sup>	0.73/f	0.92/f	-
10-400MHz	28	0.073	0.092	2
400-2000MHz	1.375f <sup>0.5</sup>	0.0037f <sup>0.5</sup>	0.0046f <sup>0.5</sup>	f/200
2-300GHZ	61	0.16	0.20	10

dered the development of telecommunications technology. In order to address this situation, the EPA announced its *Recommended Reference Levels for Non-Ionizing Radiation in the Environment* (非游離輻射環境建議值) on January 12 of this year. These levels are provided as preliminary authoritative reference levels for controlling NIR in Taiwan. They are also intended to be referred to by relevant organizations in drawing up related regulatory standards.


The EPA began collecting international information related to NIR beginning in 1995. It reached the preliminary conclusion that the vast majority of international research over the last 10 to 20 years does not provide any significant evidence indicating any direct relationship between long-term or short-term exposure to electromagnetic fields and certain biological effects, such as the presence of tumors. In 1996, the World Health Organization and over 20 nations began conducting a 5-year research program called the International Electromagnetic Field

(EMF) Project. It is hoped that after this project is completed the effects of each type of EMF on human health can be conclusively reported and that further discussion of safe exposure ranges for NIR will be pursued in order to protect human health.

Regarding the current state of domestic NIR regulations, the National Bureau of Standards (currently called the Bureau of Standards, Metrology and Inspection) set recommended safety levels (CNS6141) for the effects of EMF on human health on August 13, 1980. These recommended levels only apply to frequencies ranging from 10MHz to 100GHz (this frequency band includes ionizing radiation (IR) and NIR frequencies) and apply to such facilities as radio stations, wireless communications, television broadcast signals and mobile phone base stations. Average radiation standards (recommended safety levels) are set at 10 mW/cm<sup>2</sup>. The government has yet to specifically establish regulatory limits for equipment that produces NIR.



Aiming to control NIR pollution and protect the environment, the EPA has announced its *Recommended Reference Levels for Non-Ionizing Radiation in the Environment*. The EPA's levels are based on standards announced by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 1998. These are the latest international standards for the prevention of NIR. They are based on scientifically recognized data and are intended to prevent short-term harm to humans.

Following discussions with relevant professionals, scholars and enterprises, all sides have agreed to adopt the standards set in the EPA's *Recommended Reference Levels for Non-Ionizing Radiation in the Environment*. As international research continues on this subject, Taiwan will make timely revisions to its recommended levels and measurement standards in order to coordinate with international standards. 

## **Boosting QA/QC: Regulations for Environmental Analysis Industry to be Revised**

The EPA's planned revision of the *Regulations Governing Management of Environmental Inspection and Testing Organizations* will focus on the qualifications and number of analysis personnel, and on organizational changes at analysis organizations, etc. Furthermore, in conformity to international laboratory certification criteria, the revision will change requirements concerning laboratory management handbooks.

Environmental analysis is an important environmental management tool. Analyzing data is a key means with which to control and investigate air, water, noise, drinking water, waste, toxic chemicals, environmental chemical agents, and environmental organisms, etc. It is also the foundation on which to draft environmental strategies, and these strategies can be implemented in the form of management plans and measures.

The accuracy of data analysis is closely linked to factors that may include testing technology, personnel, instruments, and experience etc., and a small mistake from any cause may lead to a large error. The environmental analysis work performed in Taiwan by government, industry, and schools is increasing every year. Examples include surveys and assessments of unidentified waste disposal sites, drinking water safety investigations, and environmental impact assessment monitoring. This trend highlights the need to put environmental analysis data under tighter management, utilize it in an integrated manner and institute consistent quality standards for analyzing data.

Environmental analysis in Taiwan is currently governed by regulations contained in the *Drinking Water Management Statutes*, *Air Pollution Control Act*, and the *Water Pollution Control Act*, as well as the EPA's *Regulations Governing Management of Environmental Inspection and Testing Organizations* (環境檢驗測定機構管理辦法). As the government strives to make its administrative policies increasingly fair and open, continuing to allow environmental analysis work to be conducted under the existing system which lacks

unified regulations will make it nearly impossible to improve data quality in a time of growing demand for more and better analysis. Since there are no unified disciplinary standards or guidelines for the environmental analysis industry, improving administrative efficiency would be difficult.

If the public cannot be led to hold a high degree of confidence in the data generated by environmental analysis organizations, not only will the government have difficulty providing a solid foundation for the implementation of its policies, but the credibility of the analysis these organizations conduct on behalf of industry will also be jeopardized. Therefore, in order to raise the standards of domestic environmental analysis laboratories and better integrate the government's administrative manpower, a draft revision of the *Regulations Governing Management of Environmental Inspection and Testing Organizations* has been made. This revision takes into consideration overseas regulations, such as ISO 17025 and ISO 58 certification requirements, and domestic regulations, such as the *Drinking Water Management Statutes*.

The revised draft regulations will include the following features:

1. The chief goal of legislation is to integrate the analysis-related regulations of environmental protection laws.
2. It will lay out a procedural basis for the announcement of standard environmental analysis methods.
3. It will specify how environmental analysis laboratory personnel are to be trained and licensed.
4. It will specify the scope, analytical technology, and quality control of regulated laboratories.
5. It will spell out disciplinary measures to be taken when violations of these regulations occur, and thereby maintain the quality of analysis data and safeguarding the rights of contract analysis organizations.

The revised draft regulations consist of six chapters, which will contain the following key points. The first chapter-General Principles-explains the regulations' primary goals, defines terminology, and lays out the regulations' scope, commissioned items, and competent authorities. The second chapter-Environmental Analysis Methods-specifies procedures for the formulation of standard environmental analysis methods. The third chapter-Environmental Analysis Laboratory Management-concerns the classification, grading, licensing, and license revocation of environmental analysis laboratories, declares that certification should be performed in accordance with international standards, discusses the licensing system and training regulations for analysis personnel and defines the duties of executives and standards for analysis reports, analysis records, report

issuance, and dispute resolution. The fourth chapter-Environmental Analysis Technology-specifies quality assurance and quality control systems, sample inspection, sampling equipment and guidelines, quality documents, performance evaluation, and systems evaluation regulations. The fifth chapter-Penalties-specifies that written warnings, suspension of operations, and revocation of license shall serve as the disciplinary measures for environmental analysis organizations, while fines, penalties, imprisonment, and compulsory community service shall serve as disciplinary measures for executives and analysis personnel. The sixth chapter is entitled Supplementary Rules.

The revised regulations (draft) will be completed with all due speed after they are discussed with specialists and scholars. ◉

## ***EPA Drafts a Control Strategy for Persistent Organic Pollutants***

The presence of persistent organic pollutants (POPs) in our environment has drawn the attention of the public. Apart from continuing to monitor international control regulations, the EPA, along with the Department of Health and the Council of Agriculture, has also established the *Taiwan Environmental Pollution and Biological Edibility Safety Assessment Committee* as a means of coordinating and integrating crisis response mechanisms and of providing the public with relevant safety information.

News such as possible dioxin emissions from incinerators, the possible contamination of deep sea fish by polychlorinated biphenyls (PCBs), and residual DDT pollution, as well as the recent controversy over heavy metals in oysters, have induced a general state of panic over persistent organic pollutants (POPs). Responding to these fears, the EPA invited specialists and scholars to participate in a conference on February 16 in order to discuss appropriate strategies for addressing the presence of POPs in our environment. The EPA then held the POPs Risk Management Seminar at the Chientan

Overseas Youth Activity Center on March 2 to explore management mechanisms for controlling POPs at their source.

So-called POPs are long-lasting organic pollutants that possess the ability to survive or accumulate in the environment or in living organisms over long periods of time, thereby causing environmental pollution and health hazards. POPs generally recognized by the international community include PCBs, DDT, dioxin and some organochlorine pesticides. Most of these are under EPA regulatory listing as toxic chemicals (see the table below), and their manufacture, import, sale, and use are prohibited.

Because PCBs in the environment are not readily decomposed by living organisms, and are potent toxins that can cause chronic health problems, the EPA declared them regulated toxic substances under the *Toxic Chemical Substances Control Act* (毒性化學物質管理法) as early as June 22, 1988, and has completely banned their use starting in 2001. The seven substances Dieldrin, DDT, Toxaphene,

### *POPs Already Under Regulation in Taiwan*

Chinese name	English name	Date regulated	Use
阿特靈	Aldrin	5/2/1989	Pesticide
可氯丹	Chlordane	6/24/1988	Pesticide
十氯丹	Chlordecone (Kepone)	Not regulated	Pesticide
滴滴涕	DDT	5/2/1989	Pesticide
地特靈	Dieldrin	5/2/1989	Pesticide
安特靈	Endrin	5/2/1989	Pesticide
飛佈達	Heptachlor	5/2/1989	Pesticide
六氯苯	Hexachlorobenzene	12/24/1993	Pesticide
滅蟻樂	Mirex	Not regulated	Pesticide
毒殺芬	Toxaphene	5/2/1989	Pesticide
靈丹	Lindane	5/2/1989	Pesticide
六溴聯苯	Hexabromobiphenyl (HBB)	Not regulated	Pesticide
多氯聯苯	Polychlorinated biphenyls (PCBs)	6/22/88	Insulating Oil
Others	Dioxin, furans, polycyclic aromatic hydrocarbons (PAHs)	Not regulated	

Endrin, Heptachlor, Aldrin, and Lindane were put under regulatory listing on May 2, 1989, and Hexachlorobenzene was regulated as a toxic substance and banned from use on December 24, 1993. These measures are aimed at preventing POPs from polluting the environment and endangering human health.

The EPA intends to establish the *Taiwan Environmental Pollution and Biological Edibility Safety Assessment Committee* (台灣地區環境污染與生物可食性安全評估委員會) as a

means of coordinating and integrating crisis response mechanisms. This committee will call an immediate inter-agency conference whenever an incident occurs, allowing a swift and effective response. In the future the EPA will actively broaden channels of communication, offer more specialized training and accumulate relevant resources and databases. It looks forward to the development of POPs research and strategies for dealing with POPs. These conventions and regulations will serve as a basis for the EPA's POPs risk management efforts. ♻️

## **An Account of the Handling of the MV Amorgos Incident**

**When the freighter MV Amorgos ran aground off of Hengchun on January 14, residual oil leaking from the vessel caused severe pollution of the nearby coast. Because of Taiwan's lack of marine pollution cleanup experience and equipment, as well as poor weather conditions, cleanup work did not proceed rapidly at first. But with help from relevant units and the Armed Forces, the first phase of oil removal work was finally completed on February 16. Subsequent cleanup work is now actively underway.**

On route from India to China's Jiangsu Province, the Greek freighter MV Amorgos ran aground in the waters off Oluanpi after losing power on the night of January 14. After receiving notification on the morning of the 15th, the EPA immediately contacted the Coast Guard Administration Headquarters to gain a better understanding of situation. The EPA then notified the Hualien Harbor Bureau to assist in cleanup work. The EPA also contacted the Pingtung County Bureau of Environmental Protection on the same day to request that it oversee the owner and ensure that the owner remove the remaining fuel oil as quickly as possible so as to prevent additional leakage.

However, because oil continued to leak, the EPA both instructed the Pingtung County Bureau of Environmental Protection to require the owner to prevent additional spillage and clean up the spill, and also requested the Chinese Petroleum Corp. to assist in cleaning up the spill. On the 19th the EPA requested the Hualien Harbor Bureau to prevent the vessel's crew from leaving Taiwan in accordance with the *Marine Pollution Control Act* (海洋污染防治法). While this was occurring, the EPA also notified the Ministry of Transportation and Communications (MOTC) and Ministry of National Defense (MND) by letter to mobilize military manpower and equipment for the sake of the cleanup effort in accordance with the *Marine Emergency Rescue Organization Operating Regulations* (海難救護機構組織及作業辦法). After performing an inspection of the stranded vessel, the Chinese

Petroleum Corp. personnel concluded that since none of their company's boats could go alongside the MV Amorgos, and the stranded freighter lacked propulsion, cleanup and disposal work would be extremely difficult.

To stay abreast of ongoing developments, the EPA stationed personnel at Oluanpi on January 22. The Pingtung County Bureau of Environmental Protection then fined the vessel's owner NT\$300,000 for violating the *Marine Pollution Control Act* and again requested the owner to clean up the leaking oil. Visiting the scene on February 5, Director Gwo-dong Roam of the Bureau of Water Quality Protection established an emergency response team and an on-site command post at Kenting.


Executive Yuan Premier Chang Chun-hsiung expressed his concern about the MV Amorgos incident at a meeting of the Executive Yuan on February 7. Premier Chang indicated that relevant units lacked sufficient emergency response experience, and instructed the MND to make a full effort to complete the cleanup within one month's time. In addition, Chang also instructed the EPA, Ministry of the Interior, MND, MOTC, Coast Guard Administration, Council of Agriculture, and relevant county and city governments to establish a standing "marine pollution cleanup task force" chaired by the EPA administrator. This task force will bear responsibility for handling any similar incidents in the future.

Accompanying Premier Chang, EPA Administrator Edgar Lin visited the scene of the incident on February 10. Upon returning from this visit, Lin immediately held a meeting of all responsible EPA personnel and gave them instructions concerning subsequent response work. Hoping to increase efficiency and accelerate the pace of work, Lin returned to the scene on February 11 to assume personal command of oil cleanup operations. The Army sent 600 troops to Hengchun on the evening of the same day to assist with the cleanup. This mobilization of Armed Forces manpower sped up

the pace of oil collection work. The MND increased its manpower commitment to 1,500 soldiers on February 13, and continued the oil cleanup working two shifts per day. Apart from the removal of oil from the shore, the EPA also coordinated the deployment of an inshore oil containment boom by the Chinese Petroleum Corp. to prevent the oil from spreading.

After responsible units and the Armed Forces had committed their manpower more than 8,000 person-times to the cleanup operations, the first phase of cleanup work was finally completed on February 16. A total of 460 tons of oil had been removed, and inshore water in the area was much cleaner than before. EPA Administrator Edgar Lin marked the occasion by expressing his highest gratitude to the news media for their prodding, to the

representatives of relevant ministries, councils, and agencies, and to the soldiers of the Armed Forces for their efficiency and teamwork. Although he had originally estimated that the first phase of cleanup work would take from 14 to 30 days to complete, Lin remarked that the soldiers' amazing efficiency had enabled them to complete a "mission impossible" in only five and a half days.

Administrator Lin also stated that the EPA and the incident's emergency response team will continue to oversee the responsible agencies carrying out the second phase of oil cleanup work, which will include towing away the stranded vessel and seeking compensation from its owner. Finally, the EPA has recorded the experience gained from this incident in detail, and will refer to it when handling this type of work in the future. 

## News Briefs

### **A Shining New Refuse Incinerator Comes on Line**

Designed by world-renowned Taiwanese American architect I. M. Pei, the Hsinchu incinerator came on line on February 16. This incinerator, which features glass curtain walls, was built by the EPA and will be managed by the local city government. With a capacity of 900 tons of refuse per day, the incinerator will resolve Hsinchu's waste disposal problems and also generate 500,000 kwh of power daily, earning nearly NT\$300 million for the Hsinchu municipal treasury every year. In the future this publicly-owned incinerator will be put under the management of a private company.

### **Review of Eco-Products May be Outsourced**

To enlist the resources of the private sector in the effort to implement green procurement, the EPA and the Public Construction Commission publicly announced the revision of the *Regulations for the Priority Procurement of Eco-Products by Government Organizations* (機關優先採購環境保護產品辦法) on January 15. This revision allows the EPA to outsource the acceptance and review of Tier 2 and 3 Eco-Products to a private organization.

## Environmental Policy Monthly, Taiwan, R.O.C.

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### **Editorial and translation support provided by:**

Hui-kuo Consulting, Ltd., Productivity Asia, Ltd.

The EPM has been published monthly since July 1997. The current issue was published in July 2001. The EPM is available in electronic form free of charge on the EPA website ([www.epa.gov.tw](http://www.epa.gov.tw)). For inquiries or subscriptions to the printed version, please contact:

### **Environmental Policy Monthly**

### **Environmental Protection Administration**

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GPN: 2008600068

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中華郵政北台字第6128號執照登記為雜誌交寄