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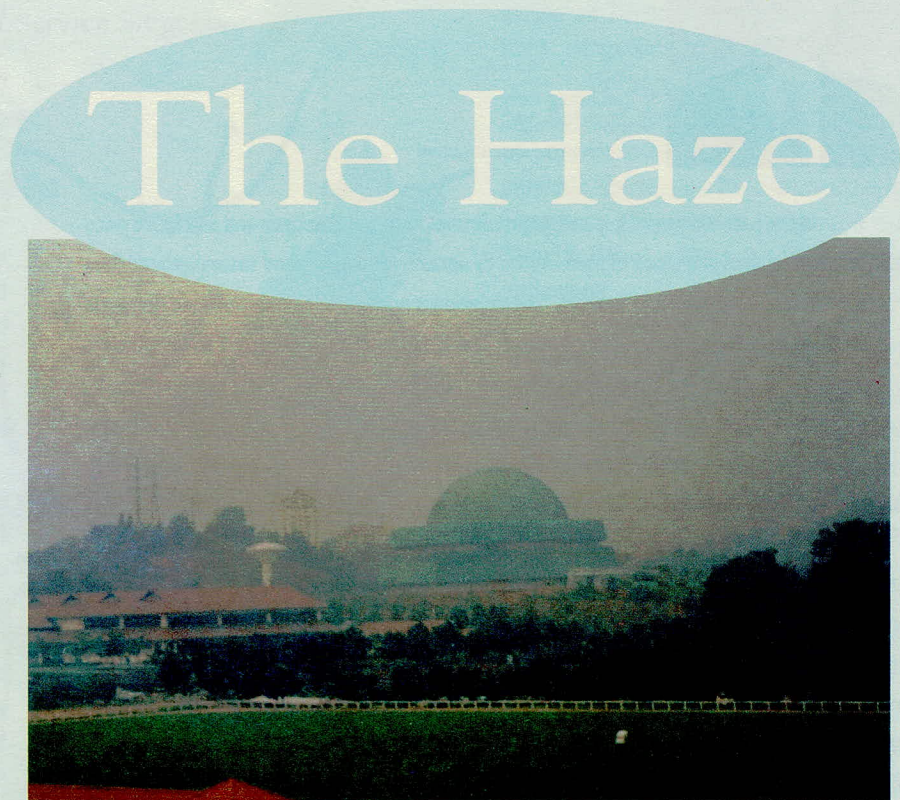
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COLLECTIVE EFFORT TO TACKLE TRANSBOUNDARY AIR POLLUTION

Air pollution knows no boundaries. When the Chernobyl nuclear disaster took place some years ago, places as far as Lapland were affected by the fallout - helped across the continent by the prevailing winds. In 1872 when Britain was undergoing the Industrial Revolution not only did it face heavy industrial emissions but 'exported' some of its air pollution across to Norway. The transboundary connection was only raised in the 60's, carefully examined in the 70's and in the 80's an agreement made for a 30 percent reduction of its sulphur emissions.

The interdependence of ecosystems and interconnection of the causes of environment was one of the guiding principles identified at the Rio Summit in 1992. "Achieving a common goal of protecting the environment meant a genuine partnership of shared responsibilities that transcends geographical boundaries," says the DOE Director General Ir Tan Meng Leng

For almost a decade now Malaysia has been experiencing a seasonal recurrence of smoky haze during the months of August, September and October - so bad in recent years it was declared a national disaster this year.

To control the haze situation, you have to go to the source to remove the problem," he explains. The current problem of the haze will persist unless the forest fires in Kalimantan and Borneo are put out, he says.

Forest fires are not new in Indonesia. Some of the fires occur naturally. The soft peaty nature of Kalimantan's soil triggers off spontaneous combustion of these coal areas. The peaty soil smoulders, emitting smoke into the atmosphere almost continuously throughout the year. "Sporadic rain during the year will keep it down a bit but not enough to extinguish it completely. When the dry months come the burning embers trigger off forest fires as such the country



Ir. Tan Meng Leng
Director-General
Department of Environment

In the past months of July and August, Brunei, Indonesia, Malaysia and Singapore once again were enveloped in a cloud of haze caused by uncontrolled forest and natural ground fires from peat soil in Kalimantan and Sumatra. The situation is not helped by unassimilated domestic pollutants trapped under the stagnant weather. The El Nino effect is expected to bring about drier air and unchecked fire would spread further.

In Malaysia, the months have seen rising pollutant index in heavily populated areas. Cities in the West Malaysia are experiencing unhealthy air quality level 20% of the time, while those in East Malaysia such as Kuching 40% of the time.

This yearly recurring haze is causing havoc to economic activities, schedules and routines: air flights have to be cancelled, much outdoor activities have to be curtailed. People have increasingly raised concerns on the effect on their health; entrepreneurs and industries on the threat to their production activities and continued growth, tours are being cancelled. The press, traditionally friendly to governments, is increasingly critical and query the government's lack of visible effort to abate the problem. It would only be a matter of time before the NGO's and some politicians jump on the band wagon to instigate the discontent further. Some foreign missions are also spreading words that air quality in the region is health-hazardous and this discourages in flow of investment. This impiety to nature has serious impacts on health, economies, ecology and politics; if not quickly addressed, it would harm the region in the long run.

The Malaysian Government is extremely worried about the situation. It has not spared any effort especially at regional level to seek long term solution to this health and ecological threat. The past negotiation and consultation at ASEAN level clearly indicate more need to be done in terms of policy and operational commitment especially in surveillance and enforcement to check clearing of vegetation and forest by burning. It is no secret that in some countries the jurisdiction on management of resources and the environment are fragmented and vested in many agencies which have totally opposing objectives e.g. sustainable environmental practises are perceived by some to be counter development. Coordination requires political will and commitment and at times some external push a through international obligations help the responsible agency under siege.

In this regard, the time definitely has come for ASEAN to consider the need for a regional agreement to make commitment that would obligate preventive action against environmental disaster. I do not see how countries, having subscribed to the Earth Summit Environmental Principles, would backtrack to seek exclusion. The regional agreement could build on ongoing work and draw experience from other regions, for example the agreement on Long Range Transboundary Air Pollution by the Nordic countries, and those of US/Canada/Mexico. In doing so the spirit of ASEAN cooperation would be further enhanced and specific progress could be charted. It is the way to go forward, otherwise the region would see its hard earned fruit of development being eroded by unsustainable environmental practises while the states idle by.

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has been experiencing," says the DG.

Then of course, man contributes further to the problem. Tribal people of Indonesia for years have been clearing the land annually using the slash and burn agriculture. Farmers and plantation owners, too, start fires to clear land needed to increase agriculture production acreage. So are lumber companies wanting to clear the already heavily logged forests. The fires go on even though the Indonesian government has banned the practice. Indonesia's Environment Minister Sarwono Kusumaamadja says at least 16,000ha have been blackened this year.

The ASEAN Haze Technical Committee contains Malaysian proposal for cost-sharing in fire-fighting and control, joint monitoring committees and joint study groups.

Indonesia has also pledged to take action against plantation clearing through open-burning and enforce stricter laws. Malaysia has offered financial support to put out the fires. Malaysia, along with Singapore, would also help to train Indonesian officials in environmental enforcement.

With positive response by the Indonesia government, a line of anti-haze actions are being activated in Malaysia. This includes creating awareness that everyone has to play a part in tackling the local air pollution.

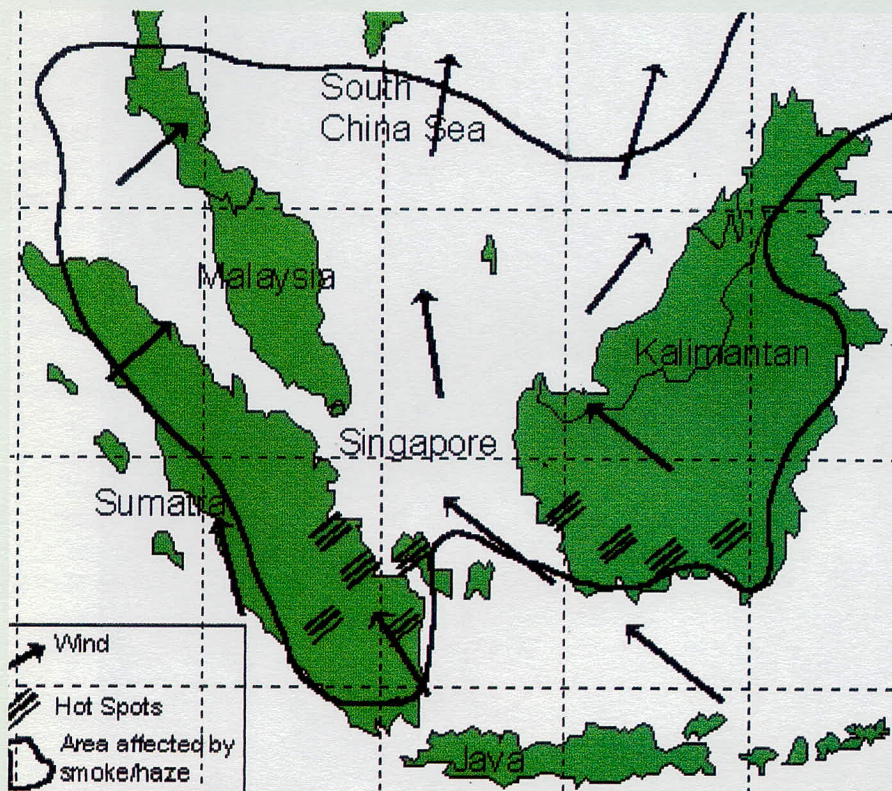
It has been recognised that local air pollution becomes worse when a country changes rapidly from an agrarian culture to an industrial society. "Air pollution is the consequence of heavy industrialization and urbanization we experience in the last twenty years," points out Ir Tan. "Air pollution is caused mainly by motor vehicles, power generation of solid wastes, industrial activities, open air burning and land clearing for replanting purposes. We only show concern when pollution becomes visible like what we are experiencing now. We should be aware that local pollutant loads are building up and unless early remedial action is taken, haze will become a permanent feature," he added.



cont'd from page 2

Regional Haze Monitoring

Date : 26 Sept 1997 Time Issued : 09:30 am
Meteorological Service Singapore



This year the haze hung heavily since mid-July in most parts of the country as a result of ground and forest fire in Indonesia attenuated by the drought. Among the worst hit area is Kuching whose Air Pollutant Index hovered for days at a hazardous level more than 500. Kuala Lumpur, Gombak, Petaling Jaya and Malacca are other badly affected places. The haze, besides causing health problems, gives rise to low visibility which can threaten the safety of air, sea and road traffic.

Normally through the external sources, much of the hydro carbons and carbon monoxide in the air from the local sources is attributed to motor vehicles. They contribute about 67 per cent of the nitrogen oxides in the atmosphere. Vehicles, especially buses and lorries, belch black fumes far exceeding the level allowed under the Environmental Quality Regulations (Diesel Engine Emission Control) 1996.

Over the years joint enforcement exercise by DOE and several agencies are being conducted on vehicles. Vehicles found emitting excessive smoke would be compounded and its owners not allowed to drive them until they comply with the smoke emission standard. Between August 11 and 27, the DOE conducted 13 operations against smoky vehicles in Selangor, where 406 commercial vehicles were issued summonses and 390 were taken off the road.

An increase in car parking charges or restricting vehicles entering the city are also imminent if the API reaches

the danger mark of 300. Seremban, for example introduced the Sydney Co-ordinated Traffic System (Scat) to ease traffic congestion.

Motorcycles contribute to 50 per cent of the air pollution, mostly hydrocarbons and carbon monoxide and catalytic converters for 2-stroke bikes have been suggested to help wipe out 'Devil's Brew' - the term for exhaust emissions.

Industrial activities are responsible for 86 per cent of the oxides of sulphur in the atmosphere and contribute 70 per cent of the suspended particulate emissions. Penang, for example, has told industries to minimise wastes and deploy cleaner production processes.

Local open burning is another factor adding to the current haze situation. Enforcement has been stepped up in many states. In Selangor, two cases of open burning in Sabak Bernam and Port Klang have been investigated and brought to court for prosecution. One of the area affected was secondary jungle and open burning spread to a 40ha of peat soil which went out of control until fire services department managed to bring it under control.

Where weather permits, helicopters are used to investigate hot spots which were detected in satellite images and keeps lookout for new sightings of forest fires in the state.

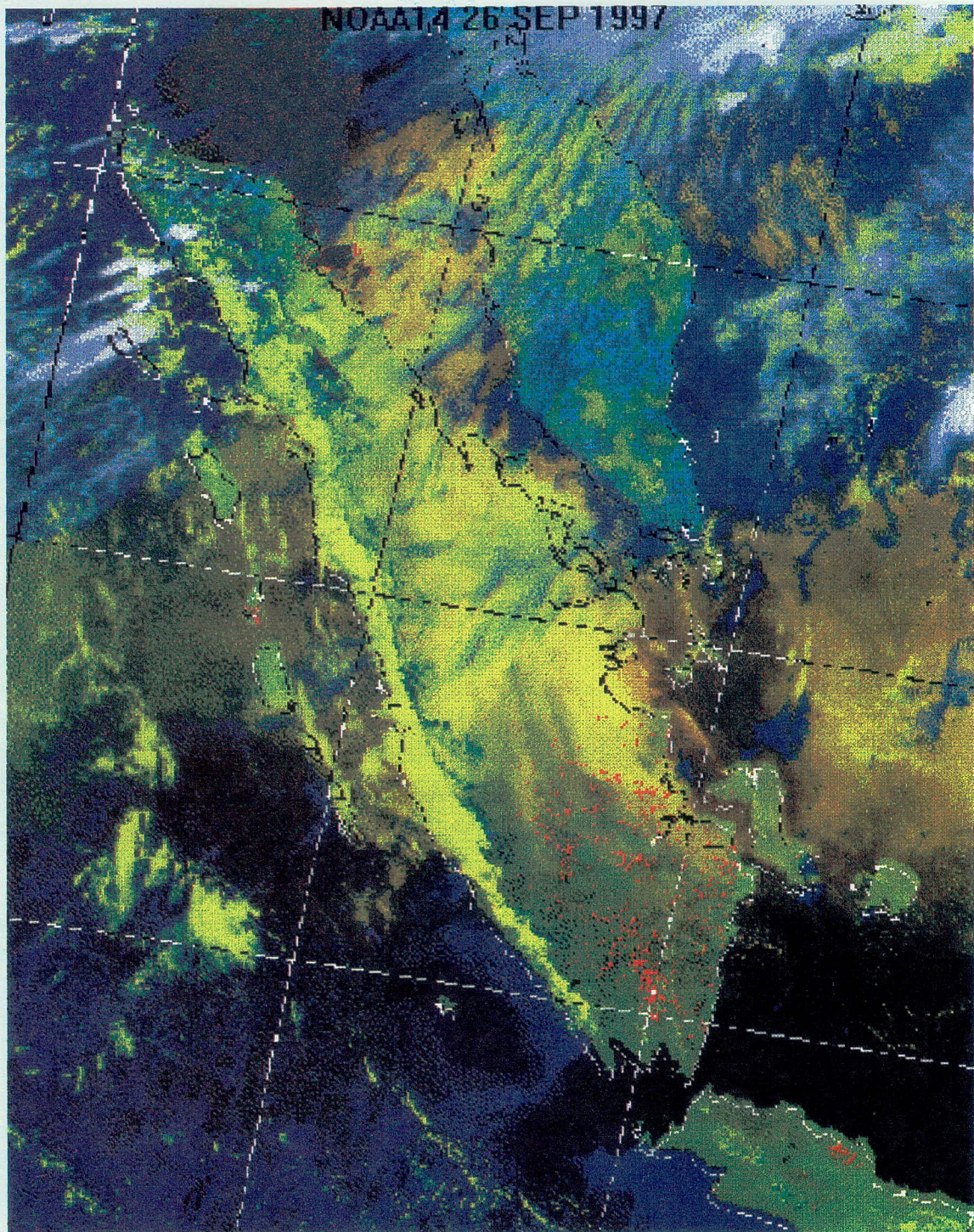
One of the immediate anti-haze actions is inducing rain by conducting cloud-seeding. Costing about RM50,000, it involves a Skyvan or a rocket-launcher to inject water into cumulus clouds which will then form bigger droplets and fall as rain.

Meanwhile pamphlets and flyers on ways to combat the haze are being distributed to the people. People are reminded not to carry out open burning as it can aggravate the haze problem.

The Health Ministry has given some guidelines for the people, particularly those at risk like the elderly, children and those with respiratory problems, to cope with the haze. This includes reducing outdoor physical activities, washing hands and faces regularly and drinking plenty of water. They are also advised to take a move out of the Klang Valley if the haze reaches an unhealthy level (over 101). Kuching and Kuala Lumpur have already been put on early alert stage two.



Satellite Image Showing Hot Spots Indicating Open Air Burning Areas



The air quality is regularly monitored. Early alerts will be given when the air quality reaches an unhealthy level for more than 24 hours. The alerts are divided into five stages:

- early alert when the air quality is unhealthy for more than 24 hours (100 to 150 on the Air Pollutant Index) in the first stage
- similar alerts will be given when the air quality is unhealthy for more than 72 hours (between 151 and 200) and

- more than 48 hours (200 to 300)
- more than 24 hours (300 to 400) and
- when the index is above 400.

“We are doing the best we can,” stresses the DG, “to address the current haze problem which we first recognised way back in the 60’s. Our solution includes long term measures as well as short term goals to make the environment cleaner. But a clean environment requires shared responsibility of everyone. Only then can we fight the pollution that overwhelms us,” concluded Ir Tan.



A training course on Hazardous Wastes Incinerators was conducted on August 4 - 8, 1997 by experts from the United States Environmental Protection Agency (US-EPA), with the assistance and financial support from the United States-Asia Environmental Partnership (US-AEP). This course was a continuation and part of US-EPA Action Team's program, formed in June 1996, to assist the Department of Environment (DOE) in evaluating the implementation of the Bukit Nanas Integrated Scheduled Wastes Treatment and Disposal Facility.

The objectives of the training course were:-

- i) To expose participants to the basic applied engineering design concepts of hazardous wastes incinerator and momentous aspects of hazardous wastes incinerators;
- ii) To acquire and exchange ideas and views on the enforcement experiences and regulatory aspects;
- iii) To develop checklists for DOE's inspection officers when conducting enforcement visit to incineration facility; and
- iv) To expose the participants on the actual operation of hazardous wastes incinerator by including a visit to medical wastes incineration facility (stepped hearth type)

PARTICIPANTS

40 officials from the DOE's headquarters, DOE's state offices and also private sectors participated in the training course.

TRAINING COURSE

The training course consisted of lectures, video presentations, team exercises and discussions and a field trip to an incineration facility. The main subjects covered during the one week training course were:-

- i) Basic Incinerator Design Aspects
- ii) Scheduled Wastes Incinerator, Boiler & Industrial Furnace Requirements
- iii) Environmental Management Systems for Hazardous Wastes Facility
- iv) U.S.EPA's New Hazardous Wastes Incinerator, MACT Standards, Implications & Impacts
- v) Minimizing the Generation of Medical

Hazardous Wastes Incinerator Training Course Air Keroh, Melaka

By : Norhayati Mohd Yusof

Wastes & Hazardous Wastes

- vi) Stack Testing
- vii) Trial Burns & Performance Testing
- viii) License (Permit) Condition & Compliance Monitoring & Oversight

Most of the lectures and video presentations was on the basic incinerator knowledge. Experts from the U.S.EPA also provided the participants with useful guidance documents that were developed by their agency over the last twelve years. These guidance documents were indeed very beneficial for permit/license writers and the regulated industries, for the standardization of the hazardous wastes incinerator permitting/licensing process. These documents included:-

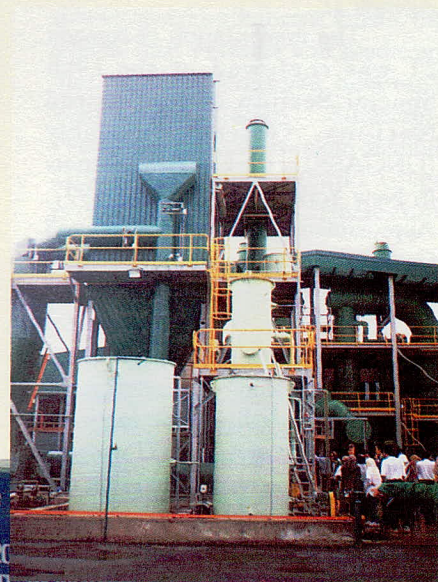
- i) Guidance Manual of Hazardous Wastes Incinerator Permits;
- ii) Guidance on Setting Permit Conditions and Reporting Trial Burn Results;
- iii) Hazardous Wastes Incinerator Measurement Guidance Manual; and
- iv) U.S. Code of Federal Regulations, proposed Federal Regulations for the Control of Hazardous Wastes Incinerators, Boilers and Industrial Furnaces.

The documents contain valuable technical discussion regarding the operation, maintenance and testing of hazardous wastes incinerators which will be helpful in assisting the DOE to address the complexity of the first

major off-site hazardous wastes incinerator facility in Malaysia. In addition, guidance on setting permit conditions with some examples of permits was also provided to give the DOE a better understanding of the technical permit requirements. This information would assist DOE to select and develop our own licensing standards as well as specify requirements for the licensing application from Kualiti Alam and other similar facilities.

Besides lectures and videos, participants were divided into groups for team exercises to ensure that every participants understood the subjects discussed. This has enabled participants from the regulatory side (DOE) to communicate with other agencies and to get to know the expectations and requirements from both parties.

A visit to the medical wastes incineration facility in Bukit Rambai, Melaka was also arranged for the course. Participants were required to develop checklists for the inspection of the facility, which comprised of the operational aspects, reports, record keeping, emergency response plans, equipment and training. As a result of this exercise, some good suggestions and also improvements were forwarded to the facility.





AGENDA 21 Reviewed at UNGASS

UNGASS Takes a Fresh Look at Agenda 21



In 1992 at the Earth Summit in Rio de Janeiro, Brazil, world leaders looked towards Agenda 21 to provide the basic framework on development that was socially, economically and environmentally sustainable.

With its specific range of activities to promote economic growth, minimise negative environmental impacts and reduce inefficient consumption patterns, Agenda 21 appeared to be a model plan of action for developing countries in making their transition to sustainable development.

However, five years later, after assessing the status of the global environment, the United Nations General Assembly acknowledged the unsatisfactory progress in the implementation of Agenda 21.

The implementation of Agenda 21 was reviewed at the 19th Special Session of the United Nations General Assembly (UNGASS) at the UN Headquarters in New York on 23 -27 June 1997. Approximately 60 Head of States and Government addressed the Assembly during the week-long session.

Malaysia, which contributed significantly at the Earth Summit, was again very vocal in being heard at the session. It underlined the fact that overall progress of Agenda 21 was well below Rio expectations and that the main reason for this was due to the unfulfilled commitments by the developed countries.

The Malaysian delegation was led by the Minister of Science, Technology and Environment, YB Datuk Law Heing Ding who spoke on 26 June 1997, the fourth day of the session. He pointed out that the main obstacles to the achievement of the goals was due to the inadequate



means of implementation; unsustainable patterns of consumption and production; and above all the lack of genuine partnership between developed and developing countries.

Datuk Law Heing Ding said that like other developing countries, Malaysia met its international commitments largely through its own efforts. He stressed that this has not been easy for Malaysia as development is a priority for developing countries.

Meeting international commitments with limited domestic resources, puts additional stress on the country's development priorities.

He explained that Malaysia's efforts to protect the environment predates the Rio Summit. Malaysia has clear policies and programmes to deal with environmental matters at the national, regional and global levels.

Datuk Law pointed out that forests in Malaysia cover more than 50% of the country and if agricultural plantations, forests and trees were taken into account the green cover would be well over 70%.

He emphasised that Malaysia is regarded as one of the few mega diversity countries in the world which

pays particular attention to the management of its biodiversity resources.

Malaysia, he added, is also one of the leading countries in the world in implementing rapid reduction of ozone depleting substances. Though a rapidly developing country, Malaysia is fortunate that it is not ODA's (Overseas Development Assistance) dependant. It had even implemented a modest technical cooperation program which renders training and assistance in environmental management to developing countries, especially countries in Asia and Africa, explained Datuk Law.

Datuk Law highlighted a number of key sectoral and cross sectoral issues, namely:

- *The need for genuine international cooperation and assistance to support efforts of developing countries towards sustainable development;*
- *The reversal of the decline in ODA to developing countries and the provision of new and additional financial resources;*
- *A more effective transfer of environmentally friendly technologies; and*



KURSUS EIA UNTUK PEGAWAI-PEGAWAI BAHAGIAN PENILAIAN

oleh Tuan Haji Abu Hassan Md. Isa

Kursus yang pertama kali diadakan khusus untuk melatih pegawai-pegawai EIA dalam menilai Laporan EIA dengan sistematik dan seragam, telah diadakan dengan jayanya pada 3-5 Julai 1997 di Port Dickson. Kursus tersebut juga bertujuan untuk mendedahkan kepada peserta mengenai kaedah mengkaji skop kajian dengan lebih berhati-hati agar isu-isu yang dibentangkan dalam laporan EIA adalah merupakan isu-

isu yang benar-benar signifikan yang mana akan ditangani dengan kaedah-kaedah kawalan yang berkesan. Di samping itu peserta juga dilatih menggunakan senarai semak bagi menilai laporan EIA diperingkat awal untuk memastikan keperluan-keperluan asas yang penting bagi membantu membuat keputusan dibentangkan dengan jelas dalam laporan EIA. Seramai 33 orang pegawai mengikuti kursus tersebut merangkumi pegawai baru dan berpengalaman yang bertujuan

mengujudkan satu interaksi antara mereka. Gabungan ini didapati berkesan kerana dengan adanya interaksi antara mereka, pengalaman dapat dikongsi bersama memandangkan proses penilaian EIA memerlukan "value judgement" yang hanya diperolehi oleh pegawai-pegawai yang berpengalaman dalam menilai laporan EIA.

Berdasarkan maklumbalas yang diterima dari peserta kursus sejumlah besar dari mereka menyuarakan bahawa objektif kursus telah pun tercapai dengan memuaskan dan berjaya meningkatkan pengetahuan mereka dalam menilai laporan EIA. Sebahagian besar juga berpendapat bahawa modul kursus sesuai dengan tahap pengetahuan yang ada di kalangan pegawai. Pencapaian ini amat membanggakan memandangkan bahawa kursus ini adalah buat pertama kali diadakan dan memang dijangka beberapa kekurangan akan dihadapi. Pandangan para peserta akan diambil kira bagi memperbaiki lagi pengendalian kursus ini di masa akan datang.



cont'd from page 6

- The need for a comprehensive convention covering all types of forests

He said while mobilising national efforts and promoting awareness were necessary for sustainable development, this was not adequate to deal with the challenges which are global in nature. The past five years have proved that international assistance and cooperation are vital in achieving the goals of Agenda 21.

Malaysia, he added, suggests breaking away from the North-South divide, which had stalled so many

important issues. Future cooperation must be based on a genuine partnership of shared values and common destiny.

It was thus important for UNGASS to issue a strong political statement reaffirming commitments, especially to the full implementation of Agenda 21, stated Datuk Law.

He further added that Malaysia is in support of a comprehensive convention covering all types of forests, and that a legal framework is needed as voluntary compliance of forest management principles had not prevented degradation and loss of forests.

In concluding his address, Datuk Law said he hoped that the UNGASS will provide the political push to take the decisions required for moving the Rio process forward.

UNGASS ended with participants reaffirming their commitment to accelerate the implementation of Agenda 21. They also adopted the multi-year programme of work of the Commission of Sustainable Development for the period 1998-2002 covering sectoral (fresh water, oceans, land resources, energy and atmosphere) and cross-sectoral issues.



PENERIMAAN PAKAI “INTERNATIONAL CONVENTION ON OIL POLLUTION PREPAREDNESS, RESPONSE AND CO-OPERATION, 1990 (OPRC)” OLEH NEGARA MALAYSIA

Oleh : Hasbullah Bin Zakaria

Dalam persidangan “International Maritime Organisation” (IMO) di London pada 19 - 30 November 1990, semua negara anggota termasuklah negara Malaysia telah bersetuju supaya “International Convention On Oil Pollution Preparedness, Response and Co-operation” (OPRC) ditubuhkan.

Tujuan konvensyen ini dibentuk dan tanggungjawabnya adalah untuk mengujudkan satu rangka kerjasama antarabangsa bagi menangani kejadian tumpahan minyak yang besar iaitu:

- (i) untuk bertindakbalas kepada kejadian tumpahan minyak yang besar; dan
- (ii) memberi perhatian kepada persediaan dan tindakbalas bersama terhadap isu-isu berkaitan dengan tumpahan minyak daripada petroleum dalam sebarang bentuk seperti minyak mentah, minyak engin, enapcemar, sisa-sisa minyak dan produk lain.

RANCANGAN KONTIGENSI KEBANGSAAN

Untuk menerimapakai OPRC, setiap negara ahli adalah dimestikan supaya mempunyai sistem tindakbalas diperingkat kebangsaan. Malaysia telahpun mempunyai sistem ini sejak dari tahun 1976 lagi apabila kerajaan meluluskan Rancangan Kontigensi Kebangsaan Kawalan Tumpahan Minyak. Rancangan tersebut telah menetapkan agensi-agensi yang bertanggungjawab mengawal tumpahan minyak, termasuklah cara bertindakbalas, komunikasi, pelaporan, pembersihan dan maklumat stokpil peralatan

melawan tumpahan minyak di Malaysia. Ini adalah selaras dengan peruntukan pada ‘Article 6’ konvensyen OPRC.

ASEAN - OIL SPILL RESPONSE ACTION PLAN (OSRAP)

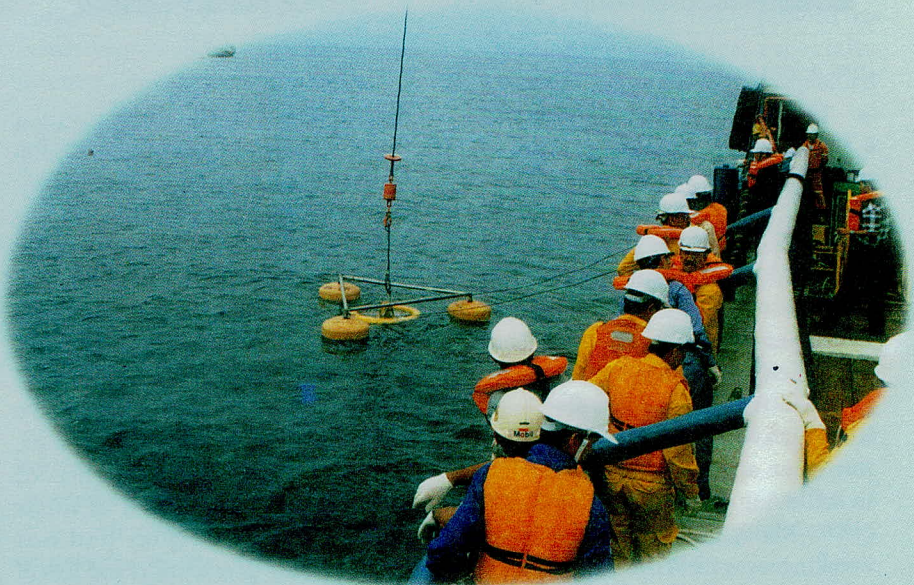
Di peringkat serantau pula, telah wujud satu pelan kerjasama bertindak bersepadu bagi negara-negara anggota ASEAN (ASEAN - OSRAP) dalam menangani kejadian tumpahan minyak. Ini adalah selaras dengan peruntukan pada ‘Article 10’ konvensyen OPRC.

ASEAN - OSRAP juga menawarkan skim mobilisasi antarabangsa yang juga boleh dimanfaatkan oleh industri petroleum di rantau ini di bawah “ASEAN Council Petroleum (ASCOPE)” serta unit tindakbalas kerajaan di peringkat antarabangsa. Ianya juga turut melibatkan pengwujudan pusat kawalan

tumpahan minyak serantau dan pusat-pusat kecil kawalan, peningkatan peralatan melawan tumpahan minyak dan latihan-latihan yang berkaitan.

Kedudukan Malaysia yang di kelilingi laut sebagai laluan perkapalan dan kawasan eksplorasi sumber petroleum menyebabkan ianya sentiasa terdedah kepada risiko berlakunya pencemaran laut. Perairan Selat Melaka dan Laut China Selatan adalah merupakan kawasan perairan yang sensitif dan mempunyai kepentingan besar kepada Malaysia dari segi aspek ekonomi, sosial dan alam sekitar. Oleh itu, perairan tersebut perlulah di lindungi dari ancaman pencemaran.

Bencana dari insiden yang melibatkan kapal tangki seperti Torrey Canyon 1969, Amoco Cadiz 1978, Exxon Valdez 1989, Braer 1993 dan Sea Empress 1996 telah mengakibatkan tumpahan minyak yang serius di lautan. Di Malaysia,





tragedi Showa Maru 1975, Diego Silang 1976, M.V. Fortune 1979, Century Dawn 1988 dan Nagasaki Spirit 1992 telah menyebabkan banyak kemusnahan kepada sumber-sumber persisiran pantai dan juga lautan. Oleh kerana lebih dari 80% bencana maritim adalah akibat dari aktiviti manusia, maka risiko dan ancaman tumpahan minyak mestilah ditangani oleh kerajaan dengan melihat kepada keupayaan negara melawan tumpahan minyak yang serius ini. Adalah tidak mustahil bencana seperti Amoco Cardiz berlaku di Malaysia. Oleh itu pelan tindakbalas mestilah tersedia untuk membolehkan Malaysia mendapatkan sumber-sumber untuk melawan tumpahan minyak dari dalam negara dan juga pertubuhan-pertubuhan antarabangsa.

OPRC, 1990 bertujuan membantu kerajaan mendapatkan kerjasama sepenuhnya untuk melawan tumpahan minyak yang serius. Ianya menjadi undang-undang antarabangsa dan telah dikuatkuasakan di peringkat antarabangsa sejak 13 Mei 1995 selepas dianggotai oleh 15 negara. Sehingga 31 Julai 1995 sebanyak 21 buah negara telahpun menerima pakai konvensyen ini.

Melalui penyertaan konvensyen ini, Malaysia akan mendapat faedah-faedah antara lainnya :

- (i) Mendapat kerjasama daripada pemilik dan operator kapal, Plan Kecemasan Pencemaran Minyak (Article 3). Konvensyen ini memerlukan semua kapal-kapal yang mengibarkan bendera masing-masing menyediakan 'Shipboard Oil Pollution Emergency Plan' (SOPEP). Keperluan ini juga meliputi 'off-shore unit', pihak berkuasa dan operator yang terlibat dengan pengendalian minyak serta menyelaraskan sistem tersebut dengan sistem kebangsaan. Kapal-kapal yang tidak mematuhi kehendak konvensyen ini boleh diambil

tindakan penguatkuasaan oleh negara ini.

- (ii) Perkongsian dan penyiaran maklumat yang lebih cekap dan berkesan, (Article 4& 5) Konvensyen ini juga menghendaki 'shipmaster', pegawai-pegawai pemerintah mana-mana kapal, juruterbang serta pegawai-pegawai yang bertanggungjawab ke atas 'off-shore unit' untuk melaporkan sebarang kejadian yang melibatkan tumpahan minyak. Laporan-laporan ini perlu dikemukakan kepada 'nearest coastal states' bagi kapal-kapal dan kepada 'coastal state' untuk 'off-shore states unit'.

Di peringkat negara, laporan perlu dibuat kepada negara jiran jika ditahap berisiko dan kepada Pertubuhan Maritim Antarabangsa IMO (melalui organisasi wilayah) bila diperlukan.

- (iii) Kerjasama Antarabangsa Dan Bantuan Bersama (Article 7) Dalam Konvensyen ini setiap ahli perlu bersedia untuk membantu antara satu sama lain mengikut tahap kemampuan/keupayaan masing-masing dalam mengawal tumpahan minyak. Walau bagaimanapun ini adalah tertakluk kepada bayaran balik oleh ahli yang meminta seperti mengujudkan peraturan-peraturan khas apabila pampasan terhadap dan pertimbangan yang harus diberikan kepada keperluan negara-negara sedang membangun.
- (iv) Memperluaskan program penyelidikan dan pembangunan (Article 8) Melalui IMO, semua negara-negara ahli kepada konvensyen ini, boleh menyalurkan kerjasama dibidang teknikal seperti bantuan latihan, peralatan dan kakitangan dan penyelidikan dan pembangunan berhubung peningkatan

keupayaan penyediaan dan tindakbalas melawan tumpahan minyak. Penyelidikan dan Pembangunan adalah melibatkan perkara-perkara seperti berikut :-

- (a) teknik pengawasan udara;
 - (b) pengepungan dan pengumpulan minyak;
 - (c) penggunaan 'dispersant';
 - (d) pembersihan pantai; dan
 - (e) pembaikpulihan eko-sistem kelautan.
- (v) Meningkatkan kerjasama teknikal dan pemindahan teknologi (Article 9) Semua negara anggota boleh secara terus atau melalui pertubuhan antarabangsa yang berkaitan pencemaran minyak, menyediakan sokongan kepada negara lain yang meminta bantuan terutama dari segi :
 - (a) latihan kakitangan;
 - (b) memastikan kejudahan teknologi berkaitan peralatan dan kemudahan;
 - (c) kaedah-kaedah atau persediaan untuk melawan tumpahan minyak; dan
 - (d) menjalankan program penyelidikan dan pembangunan secara bersama.
 - (vi) Memperolehi Penasihat dari IMO (Article 12) Negara-negara anggota boleh memperoleh nasihat daripada IMO dalam perkara-perkara berhubung pengurusan pencemaran minyak.

Dengan menjadi parti kepada konvensyen ini, Malaysia dapat memantapkan lagi usaha-usaha kerajaan menguatkuasakan undang-undang kawalan pencemaran laut khususnya Akta Kualiti Alam Sekeliling, 1974, Ordinan Perkapalan Saudagar, 1952 dan Akta Zon Ekonomi Eksklusif, 1984, di mana peruntukan-peruntukan di bawah akta tersebut melarang sesiapa saja melepaskan minyak ke dalam perairan Malaysia.



Environmental Protection Management

The German Experience by Ms Muhibbah Selamat



in managing its treatment of waste with stringent environmental laws to control pollution. The laws control Waste, Air, Wastewater and Soil Pollution.

In Waste Management, the reduce, reuse and recycle techniques which emphasis on waste reduction are practised by both the public and private sector. Green Dot programme was introduced on packaging material for recycling purposes. Through a popular recycling system known as Dual System German, waste is segregated into glass, aluminium cans, papers, plastics and other waste. This system which was introduced in 1992 has increased the recycling rate in Germany from 20% in 1992 to 80% in 1996.

The cost for the disposal of solid waste is paid for by the industry and the public instead of the government. The disposal of toxic industrial waste, however, is undertaken by the federal and state government.

In the region of North Rhine Westphalia (NRW), Germany, where the course was conducted, the North Rhine Westphalia State Environment Agency assumes the responsibility in handling air pollution. The air quality data which was updated every 30 minutes, was made available to the public.

Since 1964, there has been a reduction of air pollution in the NRW which was attributed to the substitution of environment friendly fuels, decrease of traffic-derived pollutants, and a reduction in industrial capacity



The Wastewater Management in Germany follows a highly efficient and effective process. A private company, called LINEG, handles waste water treatment from the towns on the left of lower Rhine. The LINEG plant treats wastewater through semi-biological process before discharging the water back to the river.

Once a contaminated river used by millions of people, the Rhine today is a cleaner river and has become one of the major tourist attractions in Germany.

Eighteen participants from selected Asian countries attended a three-week course on Environmental Protection Management in Rhede, in the region of North Rhine Westphalia, Germany.

Ms Muhibbah Selamat from the Department of Environment was one of the participants who felt Asian countries could take a leaf out of Germany's environmental management and avoid the mistakes Germany made in its early years.

Briefly, she said, the course which was held from 2 - 28 June 1997, delved into the causes of pollution, identify appropriate solutions and how to put them into implementation effectively. It also outlined techniques in counteracting opposition groups when planning and executing projects.

In Germany, environmental policy was determined by the Federal Government through the Ministry of Environment, Nature Conservation and Nuclear Safety.

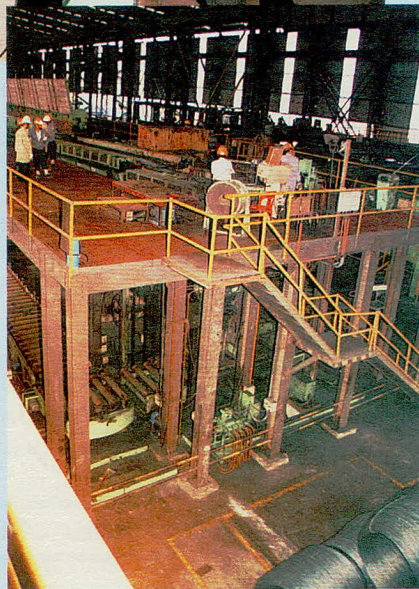
As a highly industrialised country with high solid waste, Germany has, however, been effective





Lawatan Ke Kilang Amsteel Mills Sdn Bhd

oleh Badlishah bin Ahmad



Satu lawatan sambil belajar ke kilang besi Amsteel Mills Sdn Bhd yang terletak di Lot 1, Jalan Waja, Bukit Raja Industrial Estate telah dilakukan oleh pegawai-pegawai dari Bahagian Penilaian, pada 8 Julai 1997. Tujuan lawatan ini diadakan ialah untuk mendedahkan pegawai-pegawai Alam Sekitar di Bahagian Penilaian, terutama kepada pegawai-pegawai baru mengenai proses-proses yang terlibat dalam pemprosesan besi, serta langkah kawalan yang diambil untuk menjaga kualiti alam sekitar.

PROSES DAN PRODUK

Kilang ini menghasilkan bar dan wayar rod dengan kapasiti pengeluaran sebanyak 890,000 MT setahun. Besi diproses dari 'scrap metal' dan Hot Briquette Iron (HBI) untuk menghasilkan billet dan kemudiannya diproses menjadi bar dan wayar rod. Bar yang dihasilkan terbahagi kepada dua bentuk iaitu 'round bar' dan 'deformed bar'. Secara amnya terdapat tiga loji

pengeluaran iaitu Steel Meltshop, Rolling Mill No. 1 dan Rolling Mill No. 2. Loji Steel Meltshop ialah untuk memproses 'scrap metal' dan HBI untuk menghasilkan billet.

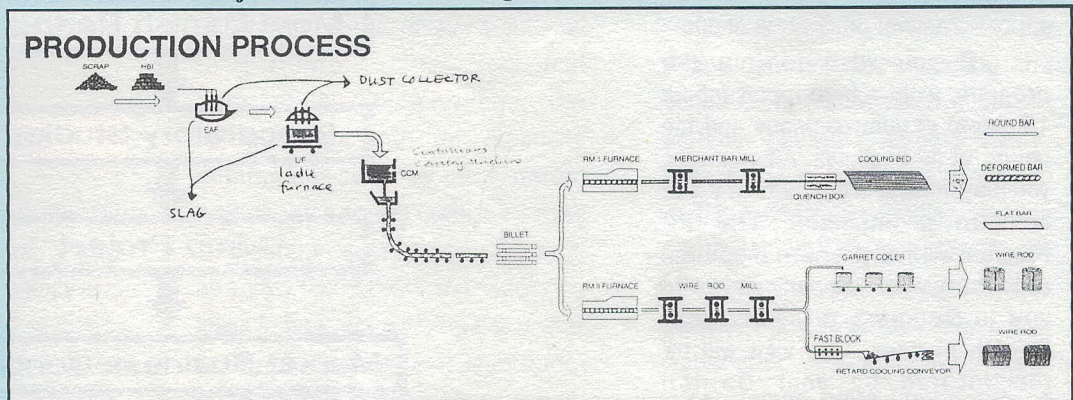
Manakala dua loji seterusnya adalah merupakan 'rolling mill' yang menghasilkan 'steel bar' dan 'wire rod'.

Carta aliran bagi proses bar dan wayar rod adalah seperti yang ditunjukkan di Rajah 1. 'Scrap metal' dan HBI dileburkan di dalam Electric Arc Furnace (EAF) pada suhu 1650°C. Peleburan kali kedua dibuat di dalam LF (Ladle Furnace) bagi mengurangkan 'impurities' di dalam besi yang terhasil. Proses peleburan di dalam EAF dan LF menghasilkan habuk dan slag yang mencemarkan alam sekitar. Habuk ini disalurkan ke sistem perangkap habuk setelah melalui 'Ducting Channel' yang dilingkari oleh air penyejuk bertujuan menurunkan suhu dari 1650°C ke 90°C. Habuk yang terkumpul seterusnya dilupuskan di tapak pelupusan yang dibenarkan, manakala slag pula disimpan kerana tertakluk di bawah buangan sisa terjadual.

ISU ALAM SEKITAR DAN LANGKAH KAWALAN

Punca pencemaran utama dari kilang seumpama ini ialah pencemaran habuk dari EAF dan LF. Langkah kawalan habuk yang diambil di kilang ini ialah melalui penggunaan sistem perangkap habuk, yang terdiri dari beg penapis. Bagi

Rajah 1: Carta Aliran Bagi Proses Pengeluaran Bar dan Wayar Rod



cont'd on page 14

Promotion of Advanced Environmental Technologies

To help Malaysian companies to cope with environmental technologies the Danish Government has come up with a unique program called DANCED Partnership Facility (PF program for short).

The PF program is a trade facility rather than aid. It helps to facilitate the transfer of Danish environmental technology to Malaysian companies that are engaged in environmental protection such as:

- Waste Water Treatment;
- Water Supply;
- Solid Waste Treatment and Disposal;
- Hazardous Waste Handling;
- Air Pollution Control;
- Energy Supply;
- Cleaner Technology and
- Soil Pollution Control

Three criteria has to be met if a company wishes to join the PF program:

1. The company must present a business idea that is commercially viable by incorporating the advanced technology.
2. The concept must have a positive effect on the environment. The effect shall be 'downstream', i.e. the effect shall not only benefit the partner enterprise but also other companies or end users of a product.
3. The two partners for cooperation should have an ability and interest in a long term cooperation.

If you wish to join the program, write a brief report (about 1/2 page) of your company and the nature of its business. Alternatively, you may enclose a brochure of your company's business. The PF Program will then prepare a special report on your company and invite you to Denmark to select your Danish partner. This visit will be reciprocated by your Danish partner. After a series of



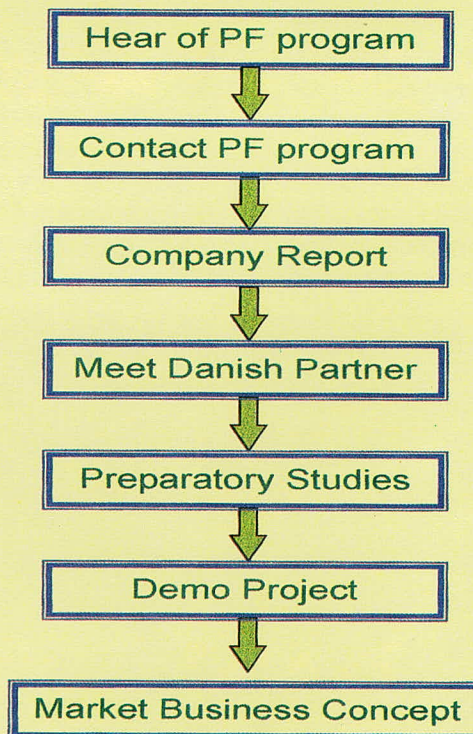
preparatory studies and a demo project the two partners confirm their cooperation through a market business concept. If at any stage the Malaysian company wants to opt out of the program it may stop the process.

Companies wishing to know more about this program may contact:

DANCED

*Royal Danish Embassy, Wisma Denmark
86, Jalan Ampang, 22nd Floor, 50450 Kuala Lumpur
Tel: 03-2022002 Fax: 03-2022012*

Normal Procedure





Satellite Tracking and Monitoring System for Hazardous Material & Wastes

- The Argos System

by Norhayati Mohd. Yusof

In the midst of “Cyber-technology fever” in our country, it is the perfect time to think of an advanced high-technology system of tracking and monitoring system of hazardous materials and waste to be implemented. This advanced high-technology system would therefore:-

- i) formulate an accurate data base of waste generation and treatment practices;
- ii) cease the practice of unauthorised dumping of hazardous wastes;
- iii) establish an electronic signature between waste generators, transporter and facility operators, which is enforceable by law in cases of fines and prosecutions; and
- iv) form the basis of legislated electronic system from waste management that benefits both the waste industry and competent authority.

THE ARGOS SYSTEM

The world's environmental scientists and planners need information, quickly, conveniently and reliably. This is what CLS (Collection, Location, Satellite) Provides. It all started with Service Argos satellite based location and data collection

system. It is dedicated to environmental observation and protection world wide and has been operating uninterrupted since 1978. Today Argos is operated by CLS in the United States.

Applications include tracking chemical tanks containers, reporting leaks, monitoring product temperatures: monitoring pipelines and gas well-heads for pressure; tracking reefer containers and transmitting the container's internal temperature, plus technical information concerning the refrigeration unit or security information such as door status; continuously tracking railcars carrying temperature-sensitive product such as anhydrous chloride and monitoring leaks in tankcars carrying hazardous material / waste. For traditional markets, the service offers fishing vessel tracking and catch reporting,



volcano monitoring, ocean buoy data collection and location services for scientific study, polar adventure and scientific exploration, animal tracking and sail boat race monitoring.

HOW THE DATA IS ROUTED?

Argos transmitter send signals that are received by two polars orbiting NOAA (the National Oceanic & Atmospheric Administration) . The satellite relay the signals to ground stations and will be forwarded to the Argos centres for processing and distributions. There are five ground stations located in Virginia U.S.A., France, Japan and Australia and two dual redundant processing centers in Landover and France. The Argos communication system (transmitter to satellite), global visibility, low power transmitter, transmitter pre-programmed, data inputs can be easily integrated, compact size and low



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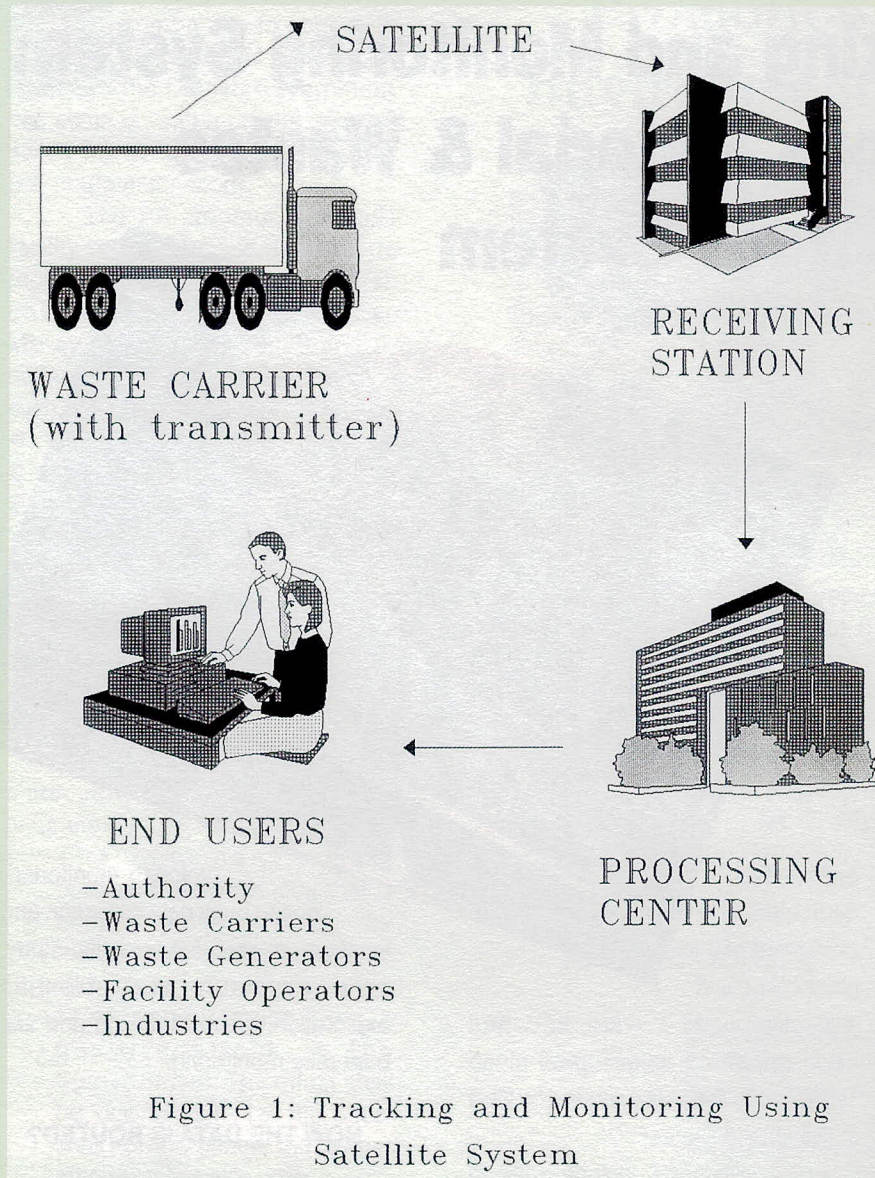


Figure 1: Tracking and Monitoring Using Satellite System

lightweight and compact (less than 1 kg, some as little as 25g). They are simple to operate and require low power (as low as 20 to 40 mW). Messages are sent automatically every 2-3 minutes, without satellite interrogation. Each transmitter is seen by the satellite six to twenty-eight times a day. Results are processed and available within twenty minutes to less than three hours. Figure 1 shows how the system works.

TRACKING AND MONITORING

Argos tracks chemical containers and other dangerous cargo. If a schedule is interrupted or a cargo lost, the operators know immediately and may act to reduce the risk of an environmental disaster. Tracking also helps to optimize logistic management.

The tracking of hazardous vehicles by using this high-technology system will allow a monitoring database to be formed. A database of this kind can be used by both the hazardous wastes generators and facility operators. This tracking system is also useful to ensure that hazardous wastes transported reaches the final destination safely. It can also detect the illegal dumping in case of hazardous wastes.

power consumption. The map info is based on Geographic Information System (GIS) package, which allows direct modem dial-into Argos

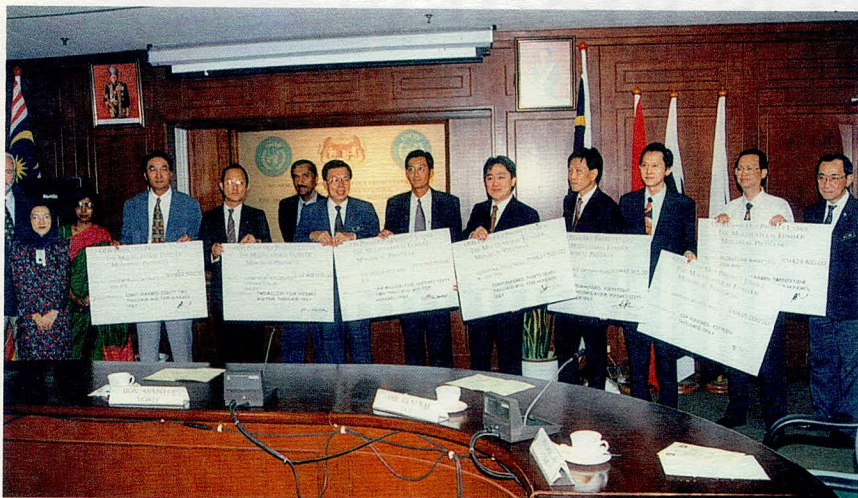
processing centres. The user will then translates ASCII text files from the Argos processing center to a dBase file for viewing. Transmitters used are

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memastikan sistem kawalan ini berfungsi dengan baik, beg penapis sering diganti. Selain dari itu, pihak kilang juga menggunakan vacuum untuk mengawal habuk di kawasan kerja. Pencemaran air tidak berlaku di kilang ini kerana air tidak digunakan dalam pemerosesan. Air hanya digunakan untuk sistem penyejukan (cooling sistem) bagi mengurangkan suhu billet yang terhasil. Air ini dikitar semula dan

tidak disalurkan keluar. Tahap bunyi bising di dalam kilang adalah diawasi dengan alat pengawasan bunyi bising untuk tempoh 24 jam. Data-data ini akan dikemukakan ke Jabatan Keselamatan dan Kesihatan Pekerjaan (JKKP) untuk ulasan. Pengurusan juga telah melantik jururunding untuk menjalankan kerja-kerja pengawasan (monitoring) kualiti udara dan bunyi bising di sekitar premis kilang.

Lawatan adalah sangat berfaedah terutama kepada pegawai-pegawai baru, dan mempelajari kaedah dan teknik dalam kerja pemrosesan besi. Selain dari itu kami juga dapat meninjau kesan pencemaran dari industri ini kepada alam sekitar dan mengenalpasti langkah-langkah kawalan yang boleh diambil.



Multilateral Fund for ODS Malaysia Leads the Way in Phasing Out ODS

A decade after the Montreal Protocol on Substances that Deplete the Ozone Layer was signed, Malaysia can take pride that it is leading the way in phasing out ODS from the country's industries.

Of the 51 countries, who through the Multilateral Fund of the Montreal Protocol, have completed a total of 254 investment projects, Malaysia topped the list with the largest number of completed projects - 20.

At a special Signing Ceremony and Cheque Presentation on 12 June 1997 at the DOE's Headquarters in Kuala Lumpur, jointly organised by the Department of Environment (DOE), the United Nations Development Programme (UNDP) and the United Nations Office for Project Services (UNOPS), the UNDP's Regional Representative, Ms Ameera Hag feels a sense of pride that consumption of ODS has been reduced more rapidly than required by the Montreal Protocol.

She singled out in particular Ir. Tan Meng Leng, Director-General of the Department of Environment whose personal commitment in phasing out

ODS made him the sole Asian recipient of the Global Ozone Award.

The DOE, which received the Ozone Stratospheric Award in 1996 from the US Environmental Protection Agency for being the leading country in ozone protection activities, was also commended. DOE was also the only environmental agency in the region which has been distinguished with the International Standards Organisation certificate of ISO 9002. The certificate recognises that DOE's licensing procedures conform to international standards.

In enabling the Programme Management Office in the DOE to continue with its activities of phasing out ODS, the UNDP has extended its support to the office for another two years (1997-1998) under Phase Two of the project.

This strengthens the capacity of the Programme Management Office in the DOE which, though short handed, has been very active in identifying projects and source of fund from Multilateral Fund - the fund which, through UNDP and UNOPS, apportions money and assistance to developing

countries in phasing out the use of CFC in industries.

In presenting the cheques to the beneficiary companies, YB Datuk Law Heing Ding, the Minister of Science, Technology and Environment reminded the industries that early reduction and phasing out of CFCs and halon was the only way to ensure their future competitiveness. The seven companies which had completed their projects received financial assistance from the Multilateral Fund amounting to USD 2.8 million.

He expressed disappointment with some industries which are still not cooperating with DOE. He said the government would not allow this to go unchecked. Stricter regulations on the use of refrigerants and halons are being drafted and would soon come in place.

Datuk Law urged industries especially the small and medium scale industries to come forward and avail themselves to the opportunity to seek financial assistance from the Multilateral Fund, saying that in future, funding may be difficult to obtain.

Datuk also acknowledged the Project Management Office which was instrumental in coordinating various activities under the Malaysia ODS phase. He said in 1989 Malaysia's ODS consumption was 0.20 kg per capita but this dropped to 0.14 kg per capita in 1996. By the year 2000 it hopes to reach zero CFCs.

Datuk Law recorded Malaysia's appreciation to UNDP, UNOPS, World Bank, UNEP and UNIDO for their support as agencies for the Multilateral Fund. He explained that out of USD 27.5 million approved by the Fund, USD 16.9 million went to 86 phase out activities and projects. These projects will phase out 5,444 metric tonnes of ODS by 1998. As of May 1997, 51 projects which phased out 3,100 metric tonnes of ODS were completed.

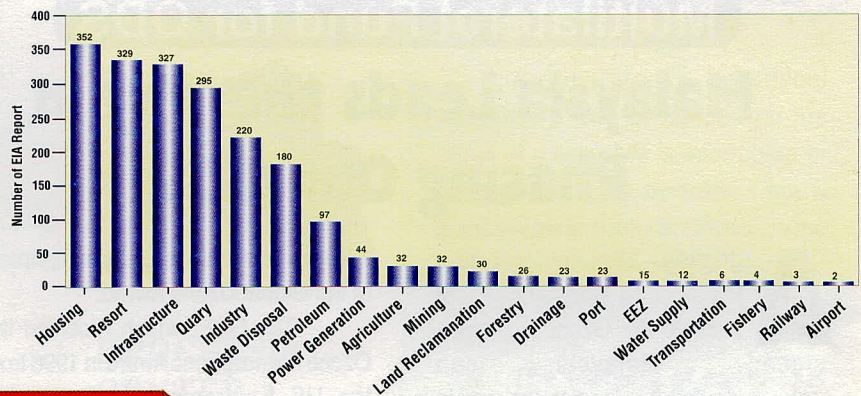
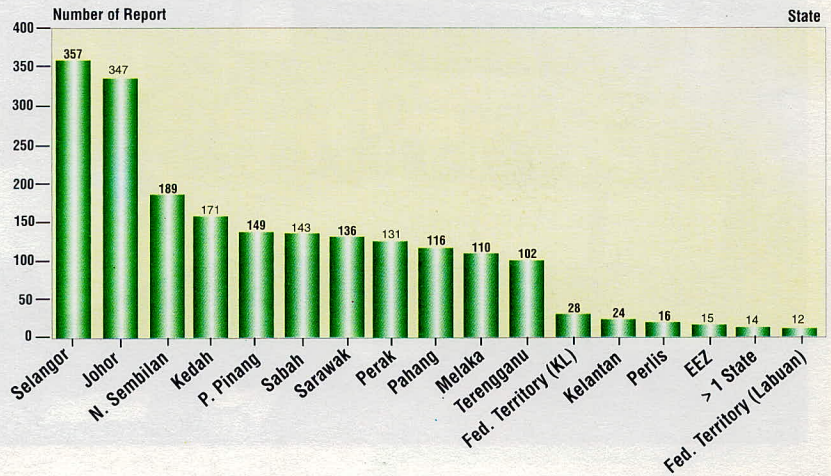
Datuk Law concluded his speech by thanking Ms Ameera Haq who will be leaving UNDP Kuala Lumpur for greener pastures.

EIA STATUS REVIEW by Norhayati Mohd. Idris

The number of EIA reports submitted to the Department of Environment for the current year up to the month of August, 1997 were 228. Of these, 121 were approved, 44

rejected and 16 withdrawn by respective project proponents. The remaining 47 reports are currently being reviewed and the 55 reports that were brought over from 1996 have been cleared.

The highest number of reports submitted since the enforcement of the EIA Order 1987, have been for housing activity (18 percent) followed by resorts and recreational development (16 per cent) and infrastructure (15 percent). Analysis of the distribution of EIA reports by state over the period of EIA implementation indicates a similar trend to the past period with Selangor and Johor far outnumbering the other states, accounting for 17 per cent and 16 per cent respectively of the total number of reports submitted. Perlis (16 reports) is the state with the least number of reports followed by Kelantan (24 reports) and Federal Territory (Kuala Lumpur & Labuan) (40 reports).



CALENDAR OF EVENTS OGOS/SEPT/OKT ' 97

Tarikh	Tempat	Perkara
OGOS		
04	Kuala Lumpur	National ODS Seminar
04-08	Melaka	USEPA Incinerator Training Course
10-16	Port Dickson	Kursus Penyiasatan dan Penguatkuasaan AKAS '74
18	Kuala Lumpur	Pelancaran ASEAN Youth Camp
19	Kuala Lumpur	Road Show on Refrigeration sector and Retraining on MAC recycling (II)
26	Sarawak	EQA Amendment Roadshow
27	Sabah	EQA Amendment Roadshow
SEPTEMBER		
10	Kuala Lumpur	Simposium 'River-Watch'
16	Kuala Lumpur	International Ozone Day Celebration
OKTOBER		
21-27	Pulau Pinang	Pelancaran Minggu Alam Sekitar Malaysia
31	Singapura	Mesyuarat MSJCE ke-12

