

SembCorp Industries is committed to responsibly serving our community and safeguarding the environment. We aim to ensure that the health and safety of our customers, employees, the communities in which we operate, as well as the environment are protected through tight certification, regulations, and more importantly, a culture throughout the organisation that recognises the importance of health, safety and environment (HSE) at every level.

During the year, we won 23 safety awards at the Annual Safety Performance Award 2002 organised by the Singapore Ministry of Manpower. Our Engineering & Construction unit received 16 awards comprising 12 Silvers and four Certificates of Merit while our Marine Engineering unit clinched awards for all six projects it submitted, out of which four were selected for Silver Awards and two for Merit Awards. Utilities' SMOE also received the Silver Award for good safety performance from the Ministry of Manpower.

Utilities and Logistics, as well as Marine Engineering (Jurong Shipyard and Sembawang Shipyard) were also each awarded the Singapore H.E.A.L.T.H (Helping Employees Achieve Life-Time Health) Award

respectively. Jurong Shipyard received the Silver Award while each of the others received a Bronze Award. Organised by Singapore's Ministry of Health, the Singapore H.E.A.L.T.H Awards are designed to give national recognition to workplaces with commendable workplace health programmes.

Individual units also continued to achieve accreditations of internationally recognised HSE standards such as ISO 14001 and OHSAS 18001.

Throughout 2002, many initiatives were undertaken to further improve on our HSE efforts.

UTILITIES

Integrated Utilities

In 2002, we implemented several measures to make our treatment of wastewater at our multi-utility facilities more eco-friendly. We reduced potable water usage in one of SUT Sakra's wastewater treatment plants by using wastewater for dilution purposes. By diverting existing wastewater flows to the facility, we have cut our usage of potable water for this facility by 89 per cent. We also introduced granular sludge-based



anaerobic technology to reduce sludge production at another wastewater treatment facility and expect a 75 per cent drop in sludge production in 2003 as a result of this initiative.

In the year, we treated some 841,000 cubic metres of wastewater at our wastewater treatment facilities, incinerated 8,200 tonnes of waste at our hazardous waste incineration facility, and recycled some 11,893,000 cubic metres of water. We not only recycle sewage effluent into high grade industrial water (which is then used as process water for our customers on Jurong Island), but also collect condensate return to be utilised in our demineralised water facility.

Energy

Our 815-megawatt combined cycle generation plant, SembCorp Cogen is designed and built according to Singapore's Green Charter and World Bank emissions standards. A natural gas-fired plant, it has substantially lower emissions of greenhouse gases than conventional plants, and emits a negligible amount of sulphur dioxide, particulate matter, and less carbon dioxide than plants powered by fuel oil.

Health, Safety and Environment

In cogenerating steam, SembCorp Cogen utilises waste heat from its power generating gas turbines to produce steam. This steam then powers a steam turbine to generate more power. The steam is also used by industrial customers for their process heating requirements. Cogeneration helps to bring fuel utilisation up to the region of 70 to 75 per cent efficiency levels thereby making more efficient use of our energy resources.

In June, SembCorp Gas achieved OHSAS 18001 accreditation, and since January 2000, a zero accident rate has been achieved at Singapore's first commercial gas receiving facility.

Offshore Engineering

In December, SMOE crossed the 16 million manhours mark for work without lost time injury. This safety record is amongst the very best in an industry that demands very high standards, as our clients are international oil and gas companies which demand extremely high safety requirements from its contractors.

ENVIRONMENTAL ENGINEERING

This year, Singapore was brought nearer to closing the recycling loop with the opening of our automated materials recycling facility to sort collected recyclables. Asia's first, the facility automatically sorts and recovers

paper, plastics, glass and metals and presently recovers some 25 tonnes of recyclables a shift, with capacity expected to increase to 100 tonnes per shift by end-2003. Integral to our service to society as an environmental engineering company is the key role we play in public education as we continue to share our 3Rs philosophy "Reduce, Reuse and Recycle" with the young and the public at large. To this end, we not only encourage our industrial and commercial clients to recycle with a rewards-cum-loyalty programme, but are also involved in a wide range of initiatives to encourage greater community participation in recycling and environmental awareness.

In 2002, we introduced crates for the collection of recyclables in landed housing estates and worked with key retailers in a "Go Green" initiative organised by the National Environment Agency to provide recycling and refuse bins in strategic places. We launched a Waste Wise Programme that reached out to 30,000 children in 14 schools throughout Singapore and also organised various environmental awareness programmes in local communities such as Hong Kah North, ZhengHua and Woodlands.

We continued to support the adoption of three endangered tree frog species at the

Singapore Zoological Gardens, and throughout the year, continued to hold various public talks and roadshows in schools and community centres. We partnered the private sector in launching their own in-house recycling programmes and sponsored a wide range of events. We helped students of the Singapore Management University secure a place in the Guinness World of Records by contributing some 16,000 used cans for building the world's longest aluminum can chain. By using aluminum cans, the organisers hoped to promote environmental awareness in the campus while raising funds for future community service projects at the same time.

ENGINEERING & CONSTRUCTION

Apart from the 16 awards clinched at the Annual Safety Performance Award 2002, SembCorp Engineers and Constructors also took a gold in the Safety Innovation Teams Convention 2002.

For 2002, our Accident Frequency Rate was down to 1.5 against the industry average of 2.8, and our Accident Severity Rate was 34 against the industry average of 553. We aim to reduce these numbers even further in 2003.

We also seek to minimise environmental

impact in our operations. Apart from communicating our environmental policy to our employees, partners and clients, we also believe in the importance of integrating environmental management into our day-to-day business management processes. For example, protecting the environment is one of the key considerations in our design, development and construction. A total environmental quality score is established to monitor the environmental design effectiveness of our designs. During the construction process in our projects, systems and procedures are established to minimise pollution and material wastage.

LOGISTICS

2002 saw the start-up of operations at Jurong Logistics Terminal, our new chemicals solutions centre built with joint venture partner Katoen Natie on Jurong Island. This terminal serves the logistics needs of the chemical and petrochemical industries with a revolutionary bulk supply chain system, particularly known in the industry for its contribution to a greener environment. The bulk supply chain system pioneered successfully by Katoen Natie in Europe has now been introduced to Singapore by Katoen Natie SembCorp. It eliminates the step where materials need to be handled in packed form for transportation between production

facility and processing plant. Instead, products are stored in silos and can be transferred by specialised bulk trailers to their eventual destinations. We have 40 such silos in the Jurong Logistics Terminal. Not only is this system more efficient, it also eliminates the vast volume of packaging materials previously needed.

Other measures to minimise environmental impact are also undertaken at the terminal. These include the segregation of the drainage systems within the terminal from public drains in order to prevent chemical products flowing into them. All waste produced at the terminal is also categorised into recyclables and non-recyclables, and information and trends are monitored so that waste production can be reduced.

MARINE ENGINEERING

During 2002, Behavioural-Based Safety (BBS) was implemented at both Jurong Shipyard and Sembawang Shipyard. The purpose of BBS is to move away from an independent safety culture that depends on enforced, self-regulatory systems and towards an interdependent one which relies on more effective and permanent behavioural and cultural changes to inculcate the value of individual responsibility in ensuring the safety of oneself and those around.

In addition, Jurong Shipyard also inaugurated the SmartSAFE system that pioneers the use of Palm-based Personal Digital Assistants to update electronic records of safety inspections. Apart from BBS, SmartSAFE also incorporates the yard's Safety Management System and a cross-referencing module on legislative safety requirements.

Copper slag is the single largest source of shipyard waste. JPL Industries, set up to collect and recycle used copper slag, continues to operate successfully, recycling copper slag waste to usable slag or concrete products.

