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SITA Isle of Man Annual Public Report 2005-6

SITA ISLE OF MAN ANNUAL PUBLIC REPORT 2005-6

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Welcome to SITA Isle of Man's second annual public report

Last year we set out the basis on which we would report our performance to you, our stakeholders.

The island's Energy-from-Waste (EfW) plant, which is one of the most advanced in the British Isles, is designed to operate to the highest environmental standards.

We declared our commitment to maximise for our community the benefits of this asset – which is the cornerstone of the Manx waste management strategy – while minimising its negative environmental impacts. It is satisfying to be able to report that we have lived up to that commitment in the first full year of operations.

Towards the end of 2005 we gained certification to international standards for environmental and quality management. We are on course to do the same under the EU's rigorous Eco-Management and Audit Scheme (EMAS) in 2006, reinforcing our drive for continuous improvement.

Last year we set ourselves a target to reduce, by 10 per cent, the number of occasions air emissions exceed the parameters set in our waste management licence. We managed to halve the number of incidents in 2005, despite problems with non-conforming waste and high sulphur levels in the waste stream, due to the waste amnesty during commissioning.

In all we received approximately 55,000 tonnes of general waste, more than double the total for the eight months covered in our first report. We also commissioned the second incineration line, for animal and clinical wastes.

For every tonne of waste destroyed, we exported 0.48MWh of electricity, avoiding the burning of fossil fuels by recovering energy from this partially renewable resource.

The early benefits of an initiative to drive efficiency and effectiveness are already showing through. This ranges from how we receive waste to power management, and includes the health and safety of our people and their career development.

SITA Isle of Man is striving to promote sustainability in its widest sense – economic and social, as well as environmental. We have taken on the role of sorting and storing waste paper for recycling in UK paper mills. We aim to play our part in the formulation of the island's long-term strategy for waste and resource management. And we are expanding our visitors and education programme to increase awareness and understanding of the environmental challenges facing us all.

We hope this report provides an informative and interesting overview of SITA Isle of Man's operations and performance, and our objectives for the coming year and longer term.

Jeffrey Robinson
General Manager
SITA Isle of Man

Per-Ander Hjort
Chief Executive Officer
SITA UK

section one
Introduction

Key points

- SITA's commitment to openness
- The EfW plant is a strategic asset
- The challenge posed by rising waste levels
- Planning effective collection and recycling

This is SITA Isle of Man's second annual report, covering the operating period from 1 April 2005 to 31 March 2006, and including our performance data for the 2005 calendar year.

Last year's inaugural publication set out our commitment to keep the Manx community informed about the operations and performance of the island's Energy-from Waste plant (EfW).

We reported on all the key impacts and outputs of the Richmond Hill facility in that initial operating period, raised some of the major environmental issues facing the island, and outlined objectives for SITA Isle of Man for the coming year.

This year's report follows the same format. In addition, having set benchmarks for our performance last year, we can compare this year's results and assess our progress, while also committing the company to new and more challenging objectives for 2006 and beyond.

The SITA Isle of Man annual public report also meets the Environmental Statement disclosure requirements of EMAS – the European Union standard for environmental management, to which we hope to gain registration during 2006.

SITA Isle of Man already provides access to daily emissions data on the company website (www.sita.co.im). We see the report as an important supplement to that, bringing together the year's data in a clear and accessible form for the widest possible readership.

Both approaches reflect our commitment to openness and honesty in all dealings with the Manx Government, the public, our customers and other stakeholders. This desire for transparency reflects, in turn, the corporate philosophy and governance of SITA UK and SUEZ, our ultimate parent.

About SITA Isle of Man and SITA

SITA Isle of Man is a wholly owned subsidiary of SITA UK, which in turn is the UK subsidiary of SITA.

SITA has over a centurys experience of waste management and is, today, Europes largest provider of waste management services.

Part of global services group SUEZ, the company delivers integrated solutions – through recycling, composting, energy recovery, and other innovative technologies – for municipalities, industry and commerce.

SITA has operated in the UK since 1988, and is now its leading provider of recycling and waste services, including refuse collection and street cleansing.

More significantly, SITA UK is pioneering a resource management approach to waste, with the aim of maximising the value that can be recovered from waste resources.

All branches of the company are fully committed to materials recovery and recycling along with energy recovery, composting, and the development of innovative technologies. Drawing on this expertise and experience, SITA devises the most cost-effective and environmentally friendly solutions for its customers.

SITA UK Statistics

Employees	**5,000**	Transfer stations	**45**
Turnover	**£480 million**	Composting sites	**12**
Industrial and commercial customers	**35,000**	Materials recycling facilities	**10**
Local authority contracts	**70**	Civic amenity sites	**97**
Residents served	**12 million**	Energy-from-waste plants	**3**
Landfill sites	**101** **(36 operating, 65 closed)**	Trucks	**1,493**

The SUEZ Group

As part of the SUEZ Group, SITA Isle of Man shares in the resources and know-how of a global enterprise.

SUEZ employs approximately 157,500 people worldwide and has earned a reputation for responsible and successful operations in energy, water, waste and communications.

The activities of the environment division, which includes SITA's waste management operations, involve collection and treatment of wastewater, and the production and supply of drinking water. More than seven million people receive their daily water supplies from facilities built by SUEZ.

The SUEZ energy division develops solutions that support sustainable development in the electricity and gas sectors. Renewable sources, such as wind power, are providing a growing share of the energy generated.

Waste management on the island

The British Isles is grappling with rising levels of waste and the challenge of finding environmentally sustainable and economically viable ways of dealing with it.

Landfill, though traditionally cheap, is not sustainable as suitable land becomes increasingly scarce and – more importantly – due to its environmental impacts. Chief among them, the methane gas released as biodegradable material breaks down is a major 'greenhouse gas' driving climate change.

The European Union's landfill directive is phasing out landfill for most wastes, and policymakers in the UK and Ireland are promoting the alternatives. Our Government adopted a new strategy in 2000. The Waste Plan, approved by Tynwald, echoes the successful approach of many continental European states by pursuing a combination of waste-to-energy, recycling and waste reduction.

Designed to satisfy the latest EU emission standards, our EfW plant is equipped to process all the island's 'base' output of 60,000 tonnes a year of municipal and commercial waste, while also disposing safely of animal and clinical waste. This capacity guarantees the island's self-sufficiency in the medium term, with the added benefit of exploiting a renewable energy resource. The plant acts as a power station, generating up to 10 per cent of the Isle of Man's electricity needs.

Future strategy

Our successful economy is giving rise to more and more waste, with levels growing by around 2 per cent a year. New solutions will need to be found in the years to come as the island's arisings exceed the plant's capacity. Our Government's foresight has afforded us the opportunity to plan and provide for that day.

During 2005 the Department of Local Government and the Environment launched a review of its waste strategy for the island. Along with other stakeholders and interested parties, SITA Isle of Man was invited to contribute. In our submission we urged the Government to take full advantage of this window of opportunity to devise a long-term waste reduction and recycling strategy.

The EfW plant is a core asset, which should be exploited to its full capacity as the island builds up a robust and cost-effective collection and recycling infrastructure. The economics of recycling are more finely balanced for an island state, where volumes may not justify capital investment in new facilities and comparatively high shipping and re-handling costs must be taken into account in cost-benefit calculations.

Raising awareness about waste is essential to successful waste reduction and recycling programmes. Again, the Isle of Man's current capacity affords time to educate the public, and business community, and ensure 'buy-in' to its emerging waste strategy.

For our part, we will continue to promote public understanding of waste and environmental issues through our visitors programme (see Section Four). We are committed to supporting recycling initiatives where practicable, as shown by our role in the sorting and storage of paper for export to UK reprocessors (see Section Two).

Also, SITA Isle of Man is working up proposals for an integrated refuse collection service that could generate major savings over the present arrangements (see Section Two). These savings for the taxpayer could be reinvested in recycling or other environmental initiatives.

section two
Waste management

Key points

- Successful commissioning of secondary incinerator
- Waste throughput increases
- Essential repairs completed or in hand
- The need for a duty of care
- Making greater use of waste oils
- Licensed to sort paper for recycling
- Work to recycle bottom ash ongoing

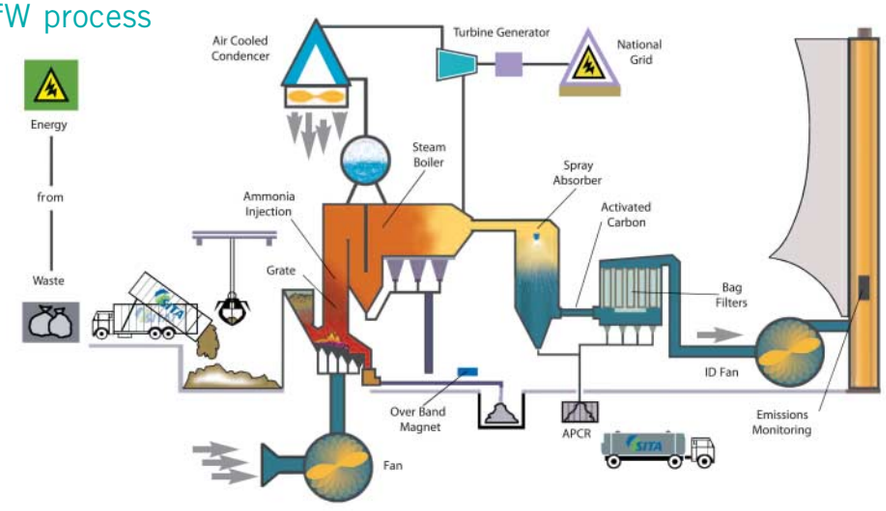
The EfW process

Our facility comprises two incineration lines. The primary line can burn up to 60,000 tonnes per annum of municipal and commercial waste. Our second line, designed for animal and clinical waste, and waste oils, has an annual capacity of 5,000 tonnes.

The plant and the entire treatment process (illustrated on opposite page) are designed for maximum efficiency and safety.

On arrival, waste vehicles use an automatic weighbridge set back from the site entrance to avoid queuing on the public highway. Waste type, amount, and customer details are securely recorded and the driver is directed to the appropriate despatch bay.

The EfW process



The plant and the entire treatment process are designed for maximum efficiency and safety.

Reception hall – A large reception hall allows refuse collection trucks to manoeuvre and tip safely. Air needed for combustion is drawn into the furnace from here so that odour and dust do not escape from the building.

Bunker – Waste vehicles reverse to a wheel stop and tip their loads into a large concrete bunker. This is big enough to hold 16 days' waste so that tipping can continue when the plant is shut down for maintenance. A shredder, for bulky items such as mattresses, also discharges directly into the bunker.

Control room – The plant's control room centralises the operation of all equipment, including the grab crane used to mix and load waste into the hopper that feeds the furnace. All on-site functions are monitored automatically and manually. Its systems verify in real time that equipment is functioning properly, continuously monitor the combustion gas, and maximise the efficiency of the entire EfW process.

Grate and boiler – Combustion air is blown up into the bottom of the water-cooled grate through five computer-controlled zones. The thermal energy released from the burning is used to convert water to super-heated steam. At high pressure, this steam drives a turbine-alternator.

Electricity generation – Electricity is generated at 11kv. Up to 1.5MWh is used to power the plant, leaving around 4MWh for export to the Manx Electricity Authority, which distributes it around the island. The plant's switchgear is designed to protect the island's supplies from interruption.

Bottom ash – Ash left on the grate after incineration is carried by conveyor, after quenching, to a storage bunker. A magnet above the conveyor extracts ferrous material for recycling. The remaining bottom ash is trucked off-site for disposal or recycling.

Air-cooled condensers – After exiting the turbine, the air stream is cooled and condensed back into water through air condensers. This recovered water is treated and reused in the boilers to produce more steam.

Emission control – The gases from the furnace are subject to a rigorous cleaning process involving selective non-catalytic reduction (SNCR), spray absorbers, and active carbon injection. This removes oxides of nitrogen, acidic gases, dioxins, and heavy metals from the gas stream.

Air pollution control residue (APCR) – The cleaned gas is passed through fine-fabric bag filters to remove solid particles before it is emitted through the stack. The resultant APCR residue, or fly-ash, contains particles from the incineration process, lime used in the spray absorbers, salts and carbon dust. It is stored in a sealed silo until tankered away for treatment and disposal.

Emissions monitoring – As it passes through the stack, the residual flue gases from the process – water vapour and oxygen – are continuously monitored before release. This data is relayed automatically to the control room and to a secure recorder.

Operations

The plant turned in a creditable performance in 2005/06. Over the year, the primary incinerator processed approximately 55,000 tonnes of waste, while the secondary line safely disposed of nearly 2,500 tonnes of animal, clinical and oil wastes. The plant operates 24 hours a day, seven days a week with two planned shutdowns per year for routine maintenance.

Essential repairs are scheduled for the May 2006 shutdown to remedy over-heating of the primary incinerator's furnace grate. This problem was traced to a design flaw in the cooling system's water hoses and errors in their fitting during construction. Both issues will be resolved and a new system installed under warranty by Aker Kvaerner, the turnkey contractor for the plant. Our engineering team will institute new procedures for dealing with future leaks that should obviate the need for shutting down the furnace outside planned maintenance slots.

Repairs will also be made to the tiled refractory wall, which protects the boiler and pipe work from the intense heat of the furnace and attack by chlorides in the flue gas. The refractory will be replaced, using a superior design of silicon carbide tile, during the scheduled May 2006 shutdown, again under Kvaerner's warranty.

Each shutdown imposes several penalties. Virgin oil must be burned to ensure that the correct temperature is maintained for incineration of the last load – and the first after start-up. More frequent cooling and re-heating increases the need for repairs and maintenance of plant and equipment.

Environmental impacts arise from the diversion of combustible waste away from the EfW, as mentioned in last year's report. In our view waste is still being buried and burned on open fires on the island, posing risks ranging from groundwater pollution to airborne dioxins. In the absence of a duty of care on waste carriers (see opposite), any attempts by regulators to clamp down on this abuse will be hampered.

Duty of care

SITA Isle of Man's operating licence specifies the types of waste we can accept for processing in the plant's two incinerators. Before registration, all waste producers and carriers are required to supply full particulars of the materials they provide for disposal. Our customers are under a contractual obligation to declare any waste items that may be in breach of guidelines.

We provide training for drivers to help them identify non-conforming wastes. Spot checks on loads, in which all waste is deposited on the floor of the receiving hall for inspection, are made at random to confirm that our procedures are being observed.

As operator of the EfW plant, the company has no control over the movement, and disposal, of wastes beyond the Richmond Hill gate. The imposition of a duty of care on waste carriers is one of the essential measures to combat fly tipping. The duty ensures a paper trail for wastes as they pass from the producer via licensed carriers to the point of disposal or treatment.

This is an important element of best practice in waste control, and similar duty of care regulations should, we believe, be introduced in the Isle of Man.

Secondary incinerator

Last year's report explained how the final takeover of the secondary incinerator for animal, clinical and oil wastes was delayed until the end of July 2005.

The remaining process control difficulties are largely attributable to variations in the characteristics of the waste stream from what was envisaged at the design stage. For example, incoming animal waste is wetter due to changes in the process at the abattoir. As a result it has a lower calorific value and more oil must be burned to sustain the required high temperatures.

Since July, the monthly throughput of waste has increased, despite some ongoing problems, including tallow leaks. The government invested in additional bins and a lorry to move them, allowing waste to be processed in larger batches to sustain continuous 24-hour operation for up to eight days at a time. Longer running of the facility helps reduce the relatively high oil consumption. By substituting more waste oils for virgin fuel we can also achieve a net benefit for the environment.

Making greater use of waste oils

Our secondary incinerator is designed to dispose safely of waste oils as well as animal and clinical wastes. Virgin oil is used in the start-up phase and waste oils can be introduced when the furnace reaches the required 1,000 degC temperature. The operating licence specified oils from motor engines and hydraulic systems, and we are providing a cost-effective disposal route for all the available sources of such oil on the island.

Waste oils from the manufacturing sector form a second category of waste oil, not covered by our original licence. Such oils, used for example by specialised equipment in the cutting of high-precision parts for the aerospace industry, are just as suitable for disposal by incineration as used motor oils.

At the moment, these oils must be stored for extended periods, as the volumes may not justify the costs of shipment to the UK for disposal. Dealing with them in the EfW plant removes the risks of spillage or fire, while also reducing the use of virgin fuels in the plant.

The case for utilising them in this way has been accepted by the regulators, following an application to the Department of Local Government and the Environment for the necessary licence amendment during the year.

Recycling

Our facility is now licensed to sort paper for recycling on behalf of the Department of Local Government and the Environment. The material, which is collected at the kerbside and from local recycling points, is sorted, and stored at the plant before shipment to paper mills in the UK. Plastics and card are separated for disposal in the plant. The proceeds from selling the paper goes to the Government.

The delivery of collected paper for sorting was initiated in October 2005, and 312 tonnes of paper were shipped to the UK for recycling in 2005.

As mentioned in Section One, SITA Isle of Man is researching the potential for an integrated waste collection and recycling service for the island.

Currently, each of the 24 local authorities makes its own arrangements for the collection of domestic refuse and deliveries to Richmond Hill. We believe that a island-wide partnership approach would generate significant financial savings and result in a more cost-effective service. This could see the introduction of a kerbside collection service for other recyclables, in addition to paper, and the development of a materials recycling facility (MRF) on the island.

Preliminary calculations suggest that the fleet of collection vehicles required would be a third of the present number, with associated savings in mileage and emissions as well as operating costs. Drivers and other staff could be redeployed to handle other aspects of the service. We intend to present a detailed proposal to the authorities in due course. This initiative is in keeping with the SITA philosophy of devising integrated waste management solutions for our customers based on the best combination of techniques and technologies available.

Waste and outputs

Throughput in 2005

Last year, which was the first full year of operation, saw the destruction of approximately. 55,000 tonnes of waste in the primary incinerator. The secondary incinerator had processed approximately 2,400 tonnes of waste.

Municipal waste accounted for 97 per cent of the primary line's throughput. Waste from the construction industry remains the next–largest stream, though at just over 1,050 tonnes, this stream grew by 14 per cent last year.

Our facility is equipped to recover energy from tyres as well as most general household and commercial waste, including plastics. Old tyres, often illegally dumped or burnt, have become a major problem in the UK and other countries with the phasing out of landfill disposal. With no re-treading capacity and few other beneficial uses, the island's waste tyres must be shipped to the mainland.

Our primary incinerator's high-performance moving grate is equipped with water-cooling that enables it to burn tyres safely with municipal waste. Following successful trials, the plant's shredder has been modified to handle tyres. The shredded material is mixed with other wastes before burning. During the year 29 tonnes of tyres were incinerated and this volume is likely to increase in 2006.

Energy

The island's EfW facility is also its second power station, producing electricity by using household and other wastes as a renewable resource instead of fossil fuels. We have the capacity to generate 6.8MW per hour – exporting enough to power about 6,500 homes, or over 10 per cent of the island's electricity needs (assuming an average household uses 4.2 MWh per annum).

This not only reduces the Isle of Man's dependence on imported fuels, but also our community's contribution to global warming.

In 2005 the plant produced approximately 35,000 MWh of electricity. A small proportion of this was used in running the plant and offices, and we also consumed approximately 1,110 MWh of imported electricity during shutdowns, both planned and non-planned. The electricity exported for use by the island was approximately 27,500 MWh for 2005.

Our output reduced by 11 per cent, but reflected a full year's operation. In 2006 improvements in the plant's efficiency, and implementing energy-saving measures following a power management review, should see an increase in electricity production.

Bottom ash

The EfW process reduces the volume of waste by 90 per cent, leaving a residue to be dealt with. In terms of weight, for every 100 tonnes of waste incinerated, about 25 tonnes of bottom ash and 4 tonnes of air pollution control residues (or fly-ash) are produced. Other by-products include ferrous materials, which are recycled.

Bottom ash is sampled for contaminants, and typically, 96 per cent is comprised of harmless compounds such as silica, essentially sandy soil. Compounds such as arsenic, chromium and other naturally occurring elements make up the rest. Their concentrations in bottom ash are well below the thresholds considered to pose a risk to public health or ecology.

Following the complete closure of Wright's Pit East, the ash is transported to the Turkeylands disposal site for inert wastes at Ballasalla.

We are investigating the feasibility of recycling bottom ash instead. The equivalent ash produced by SITA UK's EfW plants in Britain is recycled as an aggregate replacement and used in applications such as road building and footways.

As a first step, we will commission independent tests by an UKAS-accredited laboratory to confirm that bottom ash from Richmond Hill can be safely recycled. As exporting the material to the UK is not economically viable, we will then seek partners to invest in the plant, machinery and land required to process the ash, most likely for use as an additive in asphalt or concrete.

Key points

- Environmental and quality management systems certified
- Audit confirms plant's compliance with licence
- On course for EMAS environmental registration
- Big boost in energy output and efficiency
- Environmental incidents reduced by 50 per cent
- New targets set for 2006

Fly-ash

The air pollution control residue (APCR), is a by-product of the gas-cleaning process. It contains particles left after incineration, lime from the spray absorbers, salts and carbon dust.

Just like the bottom ash, this is routinely sampled and analysed for contaminates, but it remains hazardous mainly due to the amount of lime remaining in the APCR after the gases are cleaned. Compounds such as lead, chromium, arsenic, are found in the APCR as activated carbon is also injected into the flue gas stream to encapsulate these compounds as part of the cleaning process.

The levels of these compounds can vary due to the disposal of batteries in the municipal waste stream, and are significantly higher than those found in the bottom ash. The island's government has introduced an island-wide recycling initiative for batteries, and this should reduce these compounds in both our APCR and bottom ash.

This residue is transported in sealed containers to the UK for disposal. Mixed with waste chemicals from industry, APCR is neutralised so it can be safely disposed of, along with other non-hazardous waste, in a normal landfill.

Ferrous material

The ferrous material automatically recovered from the bottom ash is dispatched to steel mills in the UK for recycling.

Water

Our plant, unlike many EfW facilities, does not discharge process water to watercourses.

Water is used to cool the grate of the furnace, for the production of super-heated steam to drive the turbine, and for general cleaning and other, non-industrial purposes.

Rainfall on the Richmond Hill site is stored and re-used, and the plant has also been designed to recycle water within the EfW process. This reduces our consumption of towns' water by up to 40 per cent.

The water discharged from a storm outfall and our on-site sewage treatment plant is continuously monitored for pH and conductivity.

Environmental policy

As a part of SITA UK (and SUEZ) we strive to achieve the highest standards of operational efficiency and environmental performance.

Our SITA Isle of Man environmental policy commits us to full compliance and, where we can, to exceeding the standards set down in legislation and regulations.

The management board of our parent company ensures that responsibility for environmental matters is clearly defined and understood throughout the company. Local managers and staff are required to carry out all activities in a manner designed to ensure compliance and protect the environment from the risk of pollution.

We are accountable to all our stakeholders – employees, the public, contractors, and customers, as well as shareholders. We communicate our environmental policy to stakeholders, engage with them to understand and inform their expectations, and report annually on the environmental performance of SITA Isle of Man.

We measure our environmental performance and monitor our progress against objectives and targets designed to spur continuous improvement.

Our environmental policy

We recognise that how we manage our customers' waste and our own, has an impact on the environment that we must strive to minimise.

Management responsibility
SITA UK and SITA Isle of Man management will ensure that responsibility for environmental issues is clearly defined and understood by all employees, and that all activities are conducted in a manner designed to protect the environment from the risk of pollution.

Environmental legislation
We will comply with, and wherever possible exceed, existing environmental and other pertinent legislative requirements at all stages of our business activities and operations.

Stakeholder relations
We recognise the importance of our relationships with stakeholders – employees, the public, contractors, customers and shareholders. We will communicate this policy to them, report annually on our environmental performance, and engage with stakeholders so that we can take account of their expectations in the way we manage our business.

Continuous improvement
We will measure and monitor progress by setting environmental objectives and targets to ensure continuous improvement in our environmental performance.

Through all aspects of our operations we will:

- Seek to reduce the amount of energy obtained through non-renewable resources, use energy efficiently and reduce greenhouse gas emissions.
- Seek to minimise the volume of waste generated and to maximise reuse, recycling and energy recovery from waste.
- Use suppliers or contractors that have environmental standards compatible with our own wherever possible.
- Implement ISO 14001 and other appropriate benchmarks for environmental management systems, such as EMAS.
- Continually reassess our policy and operations in the light of changing technology, legislation, the precautionary principle, business requirements and best environmental practice.

Environmental management

Environmental management systems (EMS) underpin our commitments to compliance and continuous improvement.

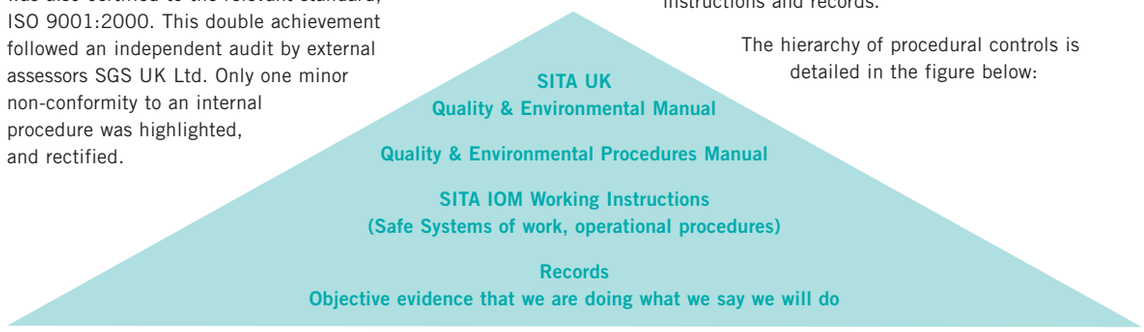
Certification of the SITA Isle of Man's EMS to international standards provides a valuable check on the company's performance and spurs continuous improvement. Achieving certification, and retaining it, involves extensive internal auditing and external verification.

We gained certification to ISO 14001:2004 – the international standard for EMS – in December 2005. At the same time, our quality management system was also certified to the relevant standard, ISO 9001:2000. This double achievement followed an independent audit by external assessors SGS UK Ltd. Only one minor non-conformity to an internal procedure was highlighted, and rectified.

Our EMS procedures govern every aspect of the plant's operations and influence how every level of the workforce operates – from the training given to drivers delivering waste, through the inspections made to identify non-conforming material, to how we report our activities to the regulator.

This system is monitored from the UK as part of the SITA UK, Quality and Environmental Management System (QEMS), as well as reviewed and audited locally. The QEMS is controlled and monitored by SITA UK to standardise the company's approach to environmental and quality management along with local implementation in the form of local work instructions and records.

The hierarchy of procedural controls is detailed in the figure below:



In November the Environmental Protection Unit of the Department of Local Government and the Environment conducted its own audit, using an independent team of consultants. The purpose was to establish that operations were being carried out in full compliance with the site's waste disposal licence. Our Continuous Emissions Monitoring System (CEMS) was also evaluated against the UK Environment Agency's Operator Monitoring Assessment (OMA) standard. No major non-conformities were identified.

Last year's report explained our objective of registering our management system to the Eco-Management and Audit Scheme (EMAS). This standard, backed by the European Union, sets rigorous requirements for continuous improvement, public reporting of performance, and annual external validation.

Following certification to ISO 14001 and publication of our environmental performance – included in this report as our Environmental Statement – we hope to obtain EMAS registration in summer 2006.

About EMAS

The Eco-management and Audit Scheme (EMAS) is a management tool for companies and other organisations to evaluate, report and improve their environmental performance.

To receive EMAS registration an organisation must:

1. **Conduct an environmental review** covering all environmental aspects of the organisation's activities, products and services; methods to assess these; the legal and regulatory framework; and existing environmental management practices and procedures.
2. In light of the results of the review, **establish an effective environmental management system** aimed at achieving the organisation's environmental policy as defined by top management. The management system needs to set responsibilities, objectives, means, operational procedures, training needs, monitoring and communication systems.
3. **Carry out an environmental audit**, assessing in particular the management system and conformity with the organisation's policy and programme as well as compliance with relevant environmental regulatory requirements.
4. **Publish a statement of its environmental performance** that lays down the results achieved against the environmental objectives and future steps to be taken to continuously improve the organisation's environmental performance.

EMAS registration is subject to an independent validation by external assessors. Audits are repeated each year to check that the requirements of EMAS continue to be met.

Environmental impacts

Every waste management activity has the potential to damage the environment and must be carefully controlled. Following the standard SITA UK procedure, all potentially significant environmental impacts from SITA IoM activities are assessed and reviewed annually. This process identifies whether each possible effect is under satisfactory control and whatimprovements are required. All the environmental impacts negative and positive, are placed on the Significant Environmental Aspects Register and through this process our environmental objectives and targets are established.

Aspect Number(s)	Aspect	Environmental Impact	Activities to control/reduce risk
WA1, L3, W3, W4	Waste control	**Negative Impact** Pollution of land, air and water arising from incorrect receipt, storage or disposal of waste. **Positive Impact** Paper sorting for recycling. Reduction in waste to landfill.	Procedures in place including education of delivery companies and drivers, with spot checks on waste loads. EMS requires investigation of incidents and monitoring of corrective action.
W1	Residue handling	**Negative Impact** Contamination of land, water, and air from bottom ash and APCR. **Positive Impact** Potential recycling of bottom ash resulting in a reduction of natural resource consumption and reduction of waste to landfill.	Procedures to minimise pollution risk during storage and handling. Bottom ash is assessed on-site to ensure suitability for disposal to landfill and results reported to the regulator. APCR disposal point also assessed and audited.
A13	Emissions to air	**Negative Impact** Air pollution from waste incineration.	Procedures and gas cleaning systems in place including continuous monitoring of combustion gases, and real-time feedback via the Control Room to optimise emissions control.
WA2, WA4	Surface water/ Effluent control	**Negative Impact** Pollution of aqueous environment. **Positive Impact** Recycled water and rainwater used on site to reduce the use of town's water by 40 per cent.	Process water is re-used within the EfW processes and not discharged into the river. Any discharge, including that from the on-site sewage treatment plant, is subject to monitoring and quality control.
WA6, WA7, L2	Delivery and storage of fuel and chemicals	**Negative Impact** Chemical release to land, water or air.	Procedures provide for safe handling and preventative maintenance. Spill kits available and employees trained in their use. Spillages are contained and not discharged to ground or river.
RC4, RC11	Consumption of chemicals, water, fuel and electricity	**Negative Impact** Contribution to climate change, resource depletion. **Good Impact** Recycling of water and use of rainwater. Production of electricity.	Procedures provide for monitoring and management of consumption.
N1	Noise	**Negative Impact** Nuisance detracting from local amenity.	Preventive maintenance plans identify potential problems. Routine external monitoring undertaken.
N6, N7, N8, N13	Litter, dust, odour and pests	**Negative Impact** Nuisance detracting from local amenity.	Procedures in place, for waste reception, and handling to minimise risk.

Environmental Performance

Emissions

Waste incineration is among the most tightly regulated industrial processes in the western world. Last year the controls in the European Union were tightened further. Under its Waste Incineration Directive, which in 2000 had significantly lowered the limits on allowable emissions, new limits and reporting standards came into force at the end of 2005.

Our EfW plant was designed to satisfy these more exacting standards, which are enshrined in the Waste Disposal Licence issued by the Department of Local Government and Environment. Therefore, there have been no changes in the air emission limits for the plant.

The licence sets average daily and half-hourly emission limits for six parameters. Cleaned flue gases are monitored by the plant's Continuous Emissions Monitoring System (CEMS) for:

- Particles
- Carbon monoxide
- Sulphur dioxide
- Hydrogen chloride
- Oxides of nitrogen
- Volatile organic compounds

The SITA Isle of Man facility also has continuous sampling for dioxins and furans. We also regularly monitor flue gases for a range of other compounds – such as cadmium and mercury – that cannot be continuously measured, but are subject to emission limits.

The results of all monitoring – including discharges to water, bottom ash and other solid residues – are reported to the Department of Local Government and Environment.

The facility can operate in full compliance with its licence conditions when an air emission goes over the half-hourly limit. Under these circumstances, however, the operator must take steps to bring the emission back under control within certain time limits or shut the plant down.

Every exceedance is reported to the department's Environmental Protection Unit (EPU) within 24 hours under a three-stage procedure. Our compliance staff investigate the reasons for the exceedance and, where appropriate, implement corrective action. The outcome of these investigations must be reported to the EPU before the event is closed.

We also post daily emissions data for the continuously monitored parameters on the SITA Isle of Man website. Visitors can view the emissions profile for the previous 90 days for both the primary and secondary incinerators. A graph shows the daily readings for the chosen parameter and the emissions limit. Details of exceedances are also listed along with the outcome or status of the resultant investigation.

Emissions Limits

Emissions to air	Half hour average	Daily average	Other limit
Particulate matter (as Total Organic Carbon)	30 mg/m³	10 mg/m³	
VOCs	20 mg/m³	10 mg/m³	
Hydrogen chloride	60 mg/m³	10 mg/m³	
Carbon monoxide	100 mg/m³	50 mg/m³	
Sulphur dioxide	200 mg/m³	50 mg/m³	
Oxides of nitrogen	400 mg/m³	200 mg/m³	
Hydrogen fluoride			2 mg/m³
Cadmium & Thallium (& their compounds)			0.05 mg/m³
Mercury (& its compounds)			0.05 mg/m³
Sb, As, Cr, Co, Cu, Pb, Mn, Ni, & V (& their compounds)			0.5 mg/m³
Dioxins & furans			0.1 ng/m³
Ammonia			*
Polyaromatic hydrocarbon (PAH)			*
Dioxin like PCBs			*

Emissions to Water Surface water	Limit
pH minimum	6
pH maximum	9
Visible oil	Nil
Conductivity	*
Suspended solids	*
Chemical Oxygen Demand	*
Sulphides	*
Sb, As, Cd, Cr, Co, Cu, Pb, Mn, Hg, Ni, Tl, & V	*

Emissions to Water Sewage Treatment Plant	Limit
pH minimum	6
pH maximum	10
Visible oil	Nil
Suspended solids	60 mg/l
Biochemical Oxygen Demand	40 mg/l

* Parameter does not have a limit stated in the Waste Disposal Licence, but is required to be measured and reported to the EPU.

Waste Licence Amendments

The Department of Local Government and the Environment granted SITA Isle of Man a waste disposal licence on 14 November 2003. The licence authorises the sorting, storage, processing and incineration of waste. It also defines operating conditions and sets the emission limits, which are in line with the Waste Incineration Directive 2000/76/EC.

There have been three amendments to the waste disposal licence in the operating period:

- 19 September 2005: The licence was amended to include the sorting, storage and processing of waste paper on site, prior to recycling.
- 4 November 2005: The timescale set out in the Improvement Programme Condition 9.1.1 was changed. The dates have been forwarded due to the delays to the takeover of the primary and secondary incinerators.
- 23 March 2006: The limits for biochemical oxygen demand (BOD) and suspended solids from emission point W1 at the sewage treatment were increased due to the low and irregular flow rate.

Benchmarking performance

In line with our commitment to openness and transparency, all the key environmental data for the year 2005 are summarised in the table on page 23. Where appropriate, data is expressed per tonne of waste incinerated to allow comparison with 2004.

Among the year's most notable changes was the decrease in power generation. We also managed to reduce the number of emission limit exceedances significantly, surpassing our target for the year.

Our performance against the targets published in last year's report is described, along with new goals for the coming year.

Our achievements in 2005 were made despite ongoing technical challenges, including higher than expected sulphur levels in the waste stream and the maintenance demands described elsewhere. Operational issues of this type are to be expected in the early years of a plant of this complexity as systems bed down and procedures are fine-tuned. This gives us the confidence to believe that we can continue to meet our targets and operate at even higher levels of efficiency and environmental performance in 2006 and beyond.

Energy output

For every tonne of waste processed during 2005, the EfW plant exported 0.48Wh of power. This is a decrease of 11 per cent over the previous year's energy rate. Changes to the design and installation of the vacuum pump serving the turbine and air-cooled condensers should boost the system's efficiency considerably this year. Some operational procedures were also modified.

Our electricity consumption per tonne of waste has increased due to a rise in the amount of time the secondary incinerator was in operation during shutdowns of the primary line. This smaller incinerator increases the facility's output by up to 0.5MWh of power but only when then the primary unit is also operating.

Further improvements in the overall energy efficiency of the plant are anticipated following the completion of the power management projects undertaken in 2005 and reported in last year's publication. A new team has been set up to implement the other recommendations from this review.

Bottom ash

The rise from 275 Kg/t of waste incinerated to 252 Kg/t is a significant decrease that resulted from preventing process water collecting in the bottom ash pit.

Ferrous materials

During the year, for every tonne of waste processed, more than 9 kilograms of ferrous material was recycled. Over 500 tonnes of ferrous material were shipped to the UK in 2005 for recycling.

Environmental incidents

Our site's waste licence has set performance parameters that, if reached, trigger certain operational conditions, which may include shutting the plant down. All environmental incidents over the year have been documented and reviewed and we have taken all practicable actions to avoid their recurrence.

The Department of Local Government and the Environment was notified of all deviations above the licence limits, and the remedial action taken. When such an event occurs all details of the incident are recorded, and a 'Part A' notice is submitted to the regulator outlining the measurement results and any immediate measures taken to reduce the environmental impact.

A detailed investigation follows, and then a 'Part B' report is submitted to the regulator, outlining the findings and any actions taken to prevent a recurrence of the incident.

In 2004 29 incidents were reported to the Department of Local Government and the Environment in the period from takeover in August to the end of 2004. In 2005, a total of 35 incidents were reported for the full 12-month period. This represents a reduction (pro rata) in environmental incidents of 50 per cent. These incidents, their causes and the steps taken are summarised below.

Carbon monoxide & volatile organic compounds emissions: 17 incidents

Emissions of carbon monoxide and volatile organic compounds (VOCs) rise when there is incomplete combustion. The losses of combustion control were associated with failures of equipment and non-conforming waste.

All equipment failures were investigated, malfunctioning plant was repaired, and the combustion control system has been improved. The stack burners of the plant's plume suppression system were also found to have been incorrectly commissioned. This is currently being corrected by Aker Kvaerner, the company contracted to build the plant.

The non-conforming waste, such as tree trunks and large metal objects, blocked the chute where the bottom ash leaves the furnace. This prevents the furnace from achieving negative pressure, and allows non-controlled combustion air to enter the furnace. This can also cause a manual shutdown. This waste was traced to skip companies, who have been notified of the problems and the need to cut up large objects or separate them for shredding.

Sulphur dioxide & hydrogen chloride emissions: 14 incidents

High sulphur dioxide (SO_2) levels were detected on several occasions in the raw gas prior to the abatement process. Despite high usage of lime in the spray absorbers, the limits for SO_2 and for hydrogen chloride (HCl) were exceeded.

The lime milk system, the atomiser of the spray absorber and the 'buffer' layer on the bag filters have all been investigated with the assistance of a specialist consultant. Blockages in the lime delivery system and overheating in the atomisers of the spray absorbers were found to be contributing to the excessive levels of both gases.

Modifications to the lime milk supply tubes are scheduled for the next maintenance shutdown. Larger-diameter pipes will be installed in the atomisers' water-cooling system. The make-up of the plant's waste stream will also be investigated further in 2006, as lime usage remains higher than expected, even for conforming waste.

Oxides of nitrogen emissions: 2 incidents

Several minor exceedances in the level of oxides of nitrogen were traced to a loss of ammonia in the emission control system. The level indicator of the ammonia tank gave false readings, concealing low levels. This has been remedied by re-calibrating the indicator.

Biochemical oxygen demand (BOD) emissions: 2 incidents

The waste licence limits were originally established for the operation of a large sewer works. The low and inconsistent flow from the plant's sewage plant occasionally gave rise to higher BOD levels. An environmental assessment of the impact on the local river of an increase in the BOD limits showed this would have a negligible impact. This was reviewed by the Department of Local Government and the Environment, and the revised waste licence limits were approved.

Environmental Data

The environmental data is reported in relation to the annual waste incinerated to allow a year-on-year comparison. The data has been obtained from CEMS daily average emissions readings and annual mass calculations, which have been approved, by the Department of Local Government and the Environment, and plant operating system such as weighbridge data and electricity production.

Wastes incinerated in the primary incinerator

	2005
Wood	1.7 tonnes
Packaging	292 tonnes
Construction waste	1057 tonnes
Waste screenings	62.5 tonnes
Municipal waste	53541 tonnes
Tyres	29.1 tonnes

Wastes incinerated in the secondary incinerator

	2005
Animal waste	1975 tonnes
Waste oil*	270 tonnes
Clinical waste	183 tonnes

**estimated*

Consumption of raw materials

	2004		2005	
	Kg per tonne of waste	Total tonnage	Kg per tonne of waste	Total tonnage
Gas oil	44.5	833.4	27.4	1575.5
Water			327	18789

Energy consumption & energy production

	2004		2005	
	MWh per tonne of waste	Total MWh	MWh per tonne of waste	Total MWh
Electricity consumption	0.014	267.4	0.02	1137.1
Electricity production	0.54	17110	0.48	34476

Waste disposal and recovery

	2004		2005	
	Kg per tonne of waste	Total tonnage	Kg per tonne of waste	Total tonnage
Bottom Ash (landfill)	275.5	5158	252	14479.9
APCR (landfill)	69.6	1303	40	2290.7
Ferrous metal (recycled)	12.5	233.5	9.8	562.7

Water emissions

	2004		2005	
	Kg per tonne of waste	Total tonnage	Kg per tonne of waste	Total tonnage
Suspended solids*	0.019	0.35	0.008	0.48
Biochemical Oxygen Demand*	0.0018	0.033	0.0006	0.035
Chemical Oxygen Demand*	0.026	0.49	0.006	0.35

**calculated from estimated flow rate*

Air Emissions[1]

	2004		2005		
	Kg/ Tonne of Waste	Total Tonnage	Kg/ Tonne of Waste	Total Tonnage	Tonnes allowed under Waste Licence*
Particulate matter	0.0059	0.11	0.00094	0.054	5.3
VOCs	0.0014	0.027	0.0056	0.32	5.3
Hydrogen chloride	0.02	0.38	0.047	2.71	6.0
Hydrogen fluoride	0.00012	0.0022	0.00063	0.036	0.71
Carbon monoxide	0.04	0.76	0.075	4.31	19.8
Sulphur dioxide	0.11	1.98	0.21	11.95	22.3
Oxides of nitrogen	0.5	9.45	1.08	61.81	88.3
Ammonia	0.0075	0.14	0.025	1.43	–
Cadmium & Thallium	0.000036	0.00068	0.0001	0.0056	0.018
Mercury	8.7×10^{-7}	1.63×10^{-5}	0.0001	0.006	0.018
Sb, As, Cr, Co, Cu, Pb, Mn, Ni, & V	0.00043	0.0081	0.00059	0.034	0.18
PAH	–	–	–	1.5×10^{-3}	–
Dioxins & furans	1.44×10^{-10}	2.7×10^{-9}	8.7×10^{-11}	5.0×10^{-9}	–
Dioxin like PCBs	2.46×10^{-9}	4.6×10^{-8}	2.2×10^{-9}	1.3×10^{-9}	–

**Tonnages allowed under licence conditions calculated using the Waste Disposal Licence Limit, average flow rate and hours the plant has operated in 2005*

Environmental data for 2004 relates to part year from August – December.

[1]Note: In 2004 the annual mass release calculation for trace metals was based on one periodic analysis. In 2005, three results were available, allowing a more accurate calculation of emission values. However, the size of the latest data set and the magnitude of the data mean that a detailed comparison of the results for 2005 with those for part of the previous year is impracticable.

Environmental Objectives & Targets

SITA Isle of Man is committed to improving its environmental performance year on year. This drive for continuous improvement is a requirement of EMAS and our environmental policy. To spur and focus our efforts, we set objectives and targets and report on our progress in achieving them.

Our objectives and targets are set after the annual review of the Significant Environmental Aspects Register. A target has not been set for each environmental impact listed in the register, but all are closely monitored to ensure compliance with legal requirements and the company's policies and procedures.

Last year's objectives Targets set for end of 2005	Achieved ?	How we did	Target – by the end of 2006
Ensure continuous improvement in our environmental performance. Attain cerification to ISO 14001.	✔	Continuous improvement is part of EMS, ISO14001 and SITA policy. Cerification obtained in December 2005.	Attain registration to EMAS.
Ensure all activities are undertaken in a compliant manner. Reduce emission limit exceedances by 10 per cent.	✔	Audit by the EPU confirmed compliance with waste licence requirements. Emission limit exceedances reduced by 50 per cent (pro rata).	Further reduce emission exceedances by 10 per cent.
Minimise the negative impact and use of land by our activities. Reduce the quantity of waste to local landfill by investigating the suitability of bottom ash for recycling as an aggregate.	✖	This effort is ongoing. The introduction of the Hazardous Waste Regulations in the UK and the switch to a new landfill site on the island for disposal of bottom ash delayed the investigation as more tests were required to ensure that bottom ash was non-hazardous. This has now been proven and the target re-scheduled for 2006.	Investigate suitability and viable options to recycle bottom ash.
Minimise the use of natural resources by reducing the consumption of chemicals, fuel, water and electricity by 10 per cent.	✔	Water consumption reduced by 50 per cent.	
	✔	Fuel consumption/tonne of waste reduced by 10 per cent.	Reduce fuel consumption by 10 per cent.
	✖	Electricity consumption increased by 50 per cent due to the increased operations of the secondary incinerator.	Reduce electricity consumption by 10 per cent.
	✖	Reduction in chemical consumption.	Implement chemical management plan.
	✔	Introduced an energy management plan, and formed an energy management committee.	

Mapping the business

During the year we also completed a business mapping exercise, producing a series of documents setting out how the entire business is managed. The Management Process integrates all procedures – for quality and health and safety as well as environmental management – in a coherent framework. This plan has been prepared in line with the requirements of the relevant international standards (respectively, ISO 19001, OHSAS 18001, ISO 14001 and EMAS).

The exercise has already generated some benefits for the business – for example, from technical improvements in the weighbridge system (see box) – and we see The Management Process as a valuable tool for driving continuous improvement.

Weighing the benefits

The weighbridge system is an automated process that allows this operation to be unmanned. A review of the system in 2005, undertaken as part of the business mapping exercise, identified a range of modifications with potential for improving efficiency in the handling of waste deliveries and associated processes.

Technical enhancements were made to increase throughput speeds and reduce breakdowns. Drivers as well as SITA staff have commented favourably on the improved process times now being achieved.

Changes were also made allowing the weighbridge system to interface with our central management information system. Data on weighbridge deliveries, the incinerator lines, emissions and other aspects of the plant's operations can now be integrated in management reports, giving a more holistic view of the operation.

Process enhancements to the weighbridge operation as a whole, from vehicle arrival to the creation of invoices, have improved data accuracy and reliability, thus reducing invoicing queries and complaints. In turn this has helped streamline the 'month-end' accounting process, so that it can be accomplished by one person in a couple of hours rather than taking several people at least a day.

This increased reliability lends itself to better performance measurement. SITA Isle of Man has completed a separate project to define performance measures for other EfW plants.

These successes are motivating our personnel to seek similar improvements in other areas of our operations. For example, several projects are underway to enhance the systems and data at the secondary incinerator.

Key points

- Health and safety procedures appraised
- Intensive training and development ongoing
- All public complaints investigated and resolved
- Active social programme expands

Social responsibility

As a responsible company and employer, we owe a duty of care to our local community and our employees as well as to the environment. In this section of the report we outline how we are discharging these responsibilities to our employees, neighbours and other stakeholders.

Our employees

The size of our team has increased to 28, following the recruitment of a general assistant with responsibility for cleaning duties. There have also been a series of internal and external appointments to fill posts in both the maintenance and operations departments.

We have systems in place to provide for the ongoing training and development of the whole workforce and to manage their health and safety.

Reflecting our commitment to work towards best practice in the way we manage our people, we follow the European Foundation for Quality Management's model approach, 'Towards Culture Transformation'.

Health and safety

Our approach to managing health and safety is founded on standards set by our parent group SUEZ, which requires a safety action plan for every SITA company and site. This plan is part of a framework of risk assessment, training, incident reporting and investigation, and auditing.

A SITA UK team conducted an audit of the EfW facility towards the end of 2005, and reported a 94 per cent compliance level with SITA UK Health & Safety policy and procedures. Several minor non-conformities were identified and remedial action has been taken.

We continue to follow the site's Health and Safety Plan, which has been reviewed regularly and forms part of our Business Plan.

Our health and safety system requires that all incidents, including near misses, are recorded and reviewed.

Incidents in 2005

There was one incident reportable to the Health and Safety Inspectorate (under the RIDDOR regulations) during the year and eight other minor injuries.

- RIDDOR incident: An operative sustained a cut in his hand requiring stitches when the handle of a broom he was using to sweep up bottom ash splintered. Changes have been made to prevent the ash being dropped on the plant floor. A beam that was obstructing the mechanical grab handling the ash was repositioned away from the path of the grab.
- Two minor eye injuries: In one case an operative was not wearing eye protectors, while the second injury occurred as an employee was removing his dust-covered goggles. Holder stations for goggles and warning signs have been installed in areas where eye protection is required.
- Two minor arm burns: The first incident involved a water heater in the plant's kitchen. The unit was removed and the kitchen has been refurbished. Another operative suffered a burn to his arm while turning a valve in the turbine hall. Elbow-length protective gloves have been issued for this task, pending the re-positioning of the valves to make them more easily accessible.
- A minor knee injury: House keeping has been improved in the secondary incinerator area to prevent the floor from becoming slippery.
- Three minor finger injuries: These occurred during routine tasks and were attributable to human error rather than shortcomings in operating procedures, equipment or training.

Near misses in 2005

Research shows that the number of near misses in the workplace far outnumbers the total of injury incidents. Underlying all such events is unsafe behaviour, which should be the primary focus of efforts to protect the workforce and improve health and safety. By analysing these incidents, we can identify generic failings and rectify them so as to prevent future injuries.

We recorded and investigated seven near-miss events during the year.

- The secondary incinerator waste bins were left on the pavement and blocked the pedestrian route from the car park. Instructions were issued to all operatives to keep the pedestrian walkway clear at all times.
- When it was pointed out that the fire alarms were not being heard in all parts of the plant, we tested and reviewed the system. As a result, additional alarms have been installed.
- Following storm damage to the roof, debris fell into the car park. The area was coned off and temporary scaffolding erected to prevent further debris falling until repairs to the roof were carried out.
- Several items of portable equipment were found to be damaged, including electrical cables and ladders. All such equipment was inspected and repaired or replaced where necessary.
- A flood occurred in the fire pump house when a diesel generator defect set off the deluge system. Drainage has been added to the pump house and the diesel generator has been repaired.
- Waste was founded to be smouldering on the cables above the feed hopper to the primary incinerator. A fireboard has been erected to prevent the build-up of dust on the cables.
- Large amounts of smoke entered the building from the primary incinerator when the deslagger became empty of water. The building was evacuated and ventilated, and the local fire brigade was called out by passing drivers. The deslagger water top-up procedure has been modified to prevent a recurrence.

Training and development

SITA Isle of Man provides a comprehensive training and development programme for employees at all levels. We recognise that this is essential for a competent and well-motivated workforce, and for a safe and compliant working environment.

Many different courses were provided during the year, ranging from health and safety inductions and instruction in emergency procedures to safe manual lifting, environmental decision-making, and QEMS awareness.

Individual training records document progress and training needs and opportunities are reviewed regularly. On an annual basis, all employees meet with their line manager to discuss their personal development within the company, providing further opportunity to identify any training requirements and career opportunities.

It is company policy to encourage employees to develop their expertise and competency through on-the-job supervision, workshops and other forms of training. The success of this approach is reflected in the internal promotion of maintenance engineers to the operations team during the year.

We encourage our people to contribute to the management of the plant through safety meetings, consultation meetings, and daily morning meetings. Feedback on the issues raised is communicated via e-mail, and notice boards.

Shifting gear

Shift engineer Bob Jepson was promoted to the operations team in January 2006, almost exactly two years after joining the company as a maintenance engineer.

During his previous 16 years with the Royal Navy, Bob had gained a diploma in electrical and electronic engineering and vast experience maintaining systems on board frigates and destroyers.

These skills are eminently transferable to an energy-from-waste plant – “It’s like a big ship in some respects,” he says. “But the pieces of machinery and equipment are different, and the training required is necessarily of the practical, on-the-job variety.”

The shift work pattern of the operations team appealed and Bob had shown his capabilities on the maintenance side, so he was a strong candidate for the vacancy.

As part of the operations team running the plant, a shift engineer requires an understanding of all the processes, not least the mechanical systems of the boiler and steam plant.

“It’s been a steep learning curve, but I’ve had help and assistance from team members and line managers,” he says. The two experienced operators in his shift team have been at Richmond Hill since the start and Bob can also tap the knowledge of the other shift engineers.

The 45-year-old had already benefited from a three-day course on the plant’s computer control system, and further training on the emissions monitoring systems and power plant operations is in the pipeline.

The navy is renowned for the quality of its training, but Bob points out: “SITA is a big company. There is the support there, and a lot of training provided to build up the qualifications and abilities of the workforce.”

Our stakeholders

At SITA Isle of Man we take a wide view of our stakeholder responsibilities. These include maintaining a close liaison with community representatives, being as open as possible about our performance and plans, and pursuing an active social and education programme.

Liaison

SITA policy is to set up and maintain liaison arrangements between all major sites and their local communities.

In the Isle of Man, a statutory body created by Tynwald fulfils this purpose. The Richmond Hill Consultative Committee – whose brief is to guarantee openness and transparency in the regulation of the EfW plant – and meet quarterly during the operating year.

The committee works in partnership with the Department to ensure that the plant operates within the terms of its licence and planning consent. Members have access to all relevant information, may raise any issue of concern, and make recommendations to the Department.

There are five local government representatives – nominated by: Bradden Parish Commissioners (2), Douglas Corporation, Onchan District Commissioners, and the Isle of Man Municipal Association. The Department is represented by the chairman of its Environment, Safety and Health Division, who also chairs the committee. Environmental health and technical specialists from the Department also attend meetings as required.

The website

Our website remains popular, and the number of unique visitors to the site has continued to increase. During the year, monthly traffic peaked at over 13,700 visits in February 2006. Almost 8,000 of these were unique visitors.

Air emissions data for the secondary incinerator was added following its takeover in July 2005.

Last year's annual public report was made available as a download from the website, and we intend to widen the availability of this year's publication in the same way.

Our neighbours

On a small island everyone is our neighbour and owed a duty of care.

Our plant and its operating procedures have been carefully designed to have minimal impact on the environment and the local community.

We take complaints seriously and seek to maintain close liaison with local landowners, the general public, and our customers.

Last year's annual public report was distributed to every local authority, government office and library on the island.

Complaints

All complaints, whatever the source, are recorded and investigated. We report back to the complainant and take corrective action as soon as practicable.

In 2005 we received six complaints from members of the public and waste producers.

- April 2005: A waste producer raised a safety issue regarding manual handling of waste in the waste reception area. The procedure for waste delivery was reviewed and amended.
- April 2005: There was a delay in issuing a waste producer with a swipe card. All swipe cards are now issued during the safety induction training given to all waste producers.
- April 2005 & December 2005: Concerns arose regarding the non-receipt of weighbridge tickets. The weighbridge ticket system was reviewed and has been improved.
- May 2005: A low tonal noise from the secondary incinerator ID fan could be heard at a neighbour's house. This complaint is still under investigation, and a resolution is still ongoing with Aker Kvaerner.
- October 2005: A farmer raised concerns about discolouration of the river near the plant. An investigation of the continuous river discharge monitoring of pH and conductivity, and an inspection of the outflow pipe, showed that this complaint was unjustified. The Department of Local Government and the Environment was informed of our findings.

Social programme

We played host to around 850 visitors on scheduled tours of the plant during the year – an increase of about 70 per cent on the previous year. In addition, there were visits by HRH Prince Andrew, The Lord Chancellor of the UK and the island's MHKs.

It is SITA Isle of Man policy not only to explain the role and workings of our plant to as wide an audience as possible, but also to promote understanding of waste and environmental issues generally.

Our visitors in 2005 included school children, from both primary and secondary age groups. Our plans to cater for more such visits are progressing well. During the year we made use of an innovative education pack produced by SITA UK that presents issues around reducing, reusing and recycling waste to primary school children in a practical and fun way.

Conversion of part of the plant's reception area as an Education Centre is almost complete. Visual displays will promote The Waste Hierarchy – and the need to reduce, reuse and recycle waste – as well as explaining the EfW process. We also intend to facilitate project work by children.

"Further to consideration of the documentation, data and information resulting from the company's internal procedures examined during the verification process, it is evident that the environmental policy, program, management system, review (or audit procedure) and environmental statement meet the requirements of Regulation 761/01 (The EMAS Regulation)".

Signed:

Date: 22nd September 2006

SGS United Kingdom Ltd
Rossmore Business Park
Ellesmere Port
Cheshire
CH65 3EN

Verifier number UK - V – 0007

EMAS
Validated information
REG.NO. UK-000145

Glossary

APCR – Air Pollution Control Residue: particles from combustion gases, carbon dust, salts and lime used in the gas-cleaning process, also known as fly-ash.

Biodegradable – Capable of being decomposed by bacteria or other biological means.

Bottom ash – The residue left on the furnace grate when waste materials are incinerated.

Climate change – The process in which man-made gases are building up in the atmosphere, trapping the sun's heat, causing changes in weather patterns on a global scale.

Dioxins and furans – A large family of compounds, including some of high toxicity, that are byproducts of uncontrolled burning, incineration, and certain industrial processes, as well as volcanoes and forest fires.

EA – The Environment Agency: the UK's waste industry regulator. A non-departmental government public body, set up under the Environment Act 1995 to take an integrated approach to environmental protection and enhancement in England and Wales.

EfW – Energy from Waste: The incineration (burning) of waste at high temperatures to reduce its weight, volume and toxicity. The energy from the incineration process is converted into electricity.

EMAS – The Eco-Management and Audit Scheme: a EU-backed scheme designed to recognise and reward organisations that go beyond minimum legal compliance and continuously improve their environmental performance.

EPU – Environmental Protection Unit, the environmental regulator body of the Department of Local Government and the Environment.

EU Waste Incineration Directive – Reflects the ability of incineration plants to more cost-effectively achieve high standards of emission control in comparison to the 1980s. It covers virtually all waste incineration and co-incineration plants.

Fly-ash – See APCR.

Furans – See dioxins.

Greenhouse gas – Natural and man-made gases that contribute to the 'greenhouse effect' and climate change, including carbon dioxide, methane, ozone and chlorofluorocarbons (CFCs).

Hazardous waste – Defined by EU legislation as the most harmful wastes to people and the environment.

ISO 14001 – The international standard for Environmental Management Systems.

ISO 9001 – The international standard for Quality Management Systems.

Landfill Directive – The Landfill Directive (Council Directive 1999/31/EC), aims to prevent, or to reduce as far as possible, the negative environmental effects of land filling.

Landfill site – The deposit of waste into or onto land in such a way that pollution or harm to the environment is minimised or prevented and, through restoration, reclaims land, which may be used for another purpose.

Leachate – Water that has come into contact with waste within a landfill site.

Methane – An odourless gas and principal component of natural gas and landfill gas, produced as biodegradable waste breaks down. Over 20 times more potent as a greenhouse gas than carbon dioxide.

Municipal waste – Household waste, as well as other industrial and commercial waste similar in nature or composition, such as wastes collected by a waste collection authority or its agents (ie, wastes from municipal parks and gardens, beach cleansing, and fly-tipped materials).

MWh – Mega Watt hours, equivalent to 1 million Watt hours, and a unit of energy (1 Watt is equivalent to 1 Joule of energy per second).

Recycling –The direct re-introduction of a waste type into the production cycle from which it originates as a total or partial replacement for new material.

RIDDOR – The UK's Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995, which require the reporting of work-related accidents, diseases and dangerous occurrences.

VOCs – Volatile organic compounds: carbon-based compounds that easily evaporate into the atmosphere; commonly used in industry for de-greasing, thinning and dissolving; and found in paint, inks and adhesives.