

VICTORIA

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Auditor-General  
of Victoria

**SPECIAL REPORT No. 33**

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**HANDLE WITH CARE**  
**Dangerous Goods Management**

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*Ordered by the Legislative Assembly to be printed*

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MELBOURNE  
L.V. NORTH, GOVERNMENT PRINTER

ISSN 0818 5565  
ISBN 0 7306 7456 8

May 1995

The President  
The Speaker  
Parliament House  
Melbourne Vic. 3002

Sir

In accordance with section 16 of the *Audit Act 1994*, I transmit the Auditor-General's Special Report No. 33, "*Handle with Care: Dangerous Goods Management*".

Yours faithfully

C.A. BARAGWANATH  
*Auditor-General*

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# Foreword

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Dangerous goods and the consumer items produced from them have become part of the daily lives of most Victorians. However, it is not until incidents such as the major fire at Coode Island in 1991 or the petrol tanker accident close to the Melbourne Central Business District earlier this year that the associated issues of community safety and protection of the environment become a focus of public attention. At such times, questions of responsibility and accountability are frequently raised.

While the current Victorian legislation covering the use of dangerous goods clearly places responsibility for safety on individual operators, it also assigns inspection and enforcement powers to a number of government agencies. It is important that these agencies utilise resources provided to them effectively and in a manner which best protects the interests of the public.

The dangerous goods legislation forms part of a cumbersome regulatory framework covering chemical-related matters. The framework comprises around 60 State Acts with supporting regulations in addition to over 40 pieces of legislation at a Commonwealth level.

Two government reviews in recent years have recommended the development of one piece of Victorian legislation covering chemical-related matters to be administered by one agency. However, due partly to opposition from the agencies involved, this recommendation has lapsed. Audit considers there is merit in the proposal to rationalise legislation and it deserves further consideration. In this regard, the Treasurer, in his May 1995 *Autumn Economic Statement*, indicated that regulations which are overly complex and cumbersome add unnecessarily to the costs of doing business.

C.A. BARAGWANATH  
*Auditor-General*

# **Part 1**

# **Executive summary**

# Part 1.1

## Overall audit conclusion

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**1.1.1** The activities associated with dangerous goods within Victoria present potential risks to the safety of the community, employees, private property, public infrastructure and the environment if they are not successfully managed and controlled. In this regard, a legislative framework has been established which comprises the *Dangerous Goods Act 1985*, its supporting regulations and regulations covering dangerous goods in port areas. The framework assigns prime responsibility for safety to individual dangerous goods operators and prescribes the minimum safety requirements those operators must meet.

**1.1.2** As administrators of the legislation, the Occupational Health and Safety Authority and the Port of Melbourne Authority play key regulatory roles involving licensing certain premises and vehicles, inspection activities, investigation of incidents and prosecution. Audit found that neither of the regulatory agencies had undertaken a comprehensive assessment of the risks involved in dangerous goods operations within their areas of jurisdiction. Audit is strongly of the view that until effective risk assessments are undertaken, neither agency will be in a position to substantiate whether the focus and level of its activities are appropriate to reduce risks to an acceptable level or whether available resources are used in the most effective manner. These factors, together with deficiencies in management information systems, the absence of clear objectives in some areas and a lack of performance measures, unfortunately prevented conclusive audit assessments of the performance of the agencies. However, the examinations did raise a number of questions regarding whether the current legislative framework and activities of regulatory agencies have been effective in minimising the risks associated with dangerous goods.

**1.1.3** Given that the specific requirements established in dangerous goods regulations represent minimum safety standards, audit considers that the level of industry compliance with these standards could provide a basic measure of performance. Audit analysis of the limited compliance data available as a result of Occupational Health and Safety Authority inspections in recent years suggests that the high levels of non-compliance raised in 1992 by the Hazardous Chemicals Secretariat as a serious concern have, to some extent, been reduced. Nevertheless, non-compliance levels in some other areas continue to be unacceptably high.



**1.1.4** It is of particular concern that a large proportion of dangerous goods operators have not met requirements to obtain fire protection reports from the relevant fire authority, develop emergency plans or maintain manifests detailing the type and quantity of dangerous goods held on their premises. This situation raises doubts regarding the State's preparedness to effectively contain dangerous goods incidents.

**1.1.5** The legislation makes provision for certain vehicles carrying dangerous goods and premises storing or handling dangerous goods assessed as a high risk to be licensed by the Occupational Health and Safety Authority. Where an existing storage and handling operator does not meet all the necessary regulatory requirements, at the time a licence application is made, the Authority adopts the practice of either issuing a conditional licence or allowing the operator to continue operating while the matters requiring attention are addressed. These practices bring into question the purpose of a licensing system which enables dangerous goods operators to continue business with the Authority's knowledge, often for considerable periods of time, even though the operators are in breach of regulations.

**1.1.6** Inspections are primarily focused on those operators advising the regulatory agencies of their dangerous goods activities. This results in the illogical situation where operators who meet these basic requirements are far more likely to be the subject of routine scrutiny than those failing to meet their legislative obligation. Where non-compliance with specific regulatory requirements is detected during inspections, action taken by the Occupational Health and Safety Authority generally comprises provision of verbal advice or issue of written directions. The Authority has indicated a reluctance to revoke a licence or to force a business to cease operations even in cases of repeated non-compliance. Audit considers that this factor, coupled with the current absence of an infringement notice system, have reduced the effectiveness of the Authority's enforcement strategies as a preventative mechanism.

**1.1.7** Different approaches to enforcement have been adopted by the 2 key regulatory agencies. Prosecutions have been initiated by the Port of Melbourne Authority in many cases where non-compliance has been detected during routine inspections. On the other hand, the Occupational Health and Safety Authority has generally only prosecuted operators where an incident has resulted in a fatality, serious injury or major property damage. The difference in approaches has contributed to a situation where almost as many prosecutions have been initiated for offences within the Port of Melbourne as in the remainder of the State.

**1.1.8** Although audit evaluated performance under the existing legislative framework, the findings suggest that there is not only a need to address the various matters raised in this Report but also to consider the broader issues, in the context of risk-management principles, of whether:

- there is a need to rationalise the legislative framework and administrative arrangements concerning chemical-related matters which comprise around 60 separate pieces of State legislation and involve numerous government agencies;
- the current prescriptive style of legislation is the most effective means of achieving sound management practices; and
- the approach of the Occupational Health and Safety Authority of managing many aspects of dangerous goods regulation under the umbrella of its occupational health and safety responsibilities is appropriate to cover all public risk issues.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*In this Report, audit has not made clear the benchmarks against which the effectiveness of various activities have been assessed and on which qualitative comments have been based. The Report would have been very much more useful to management if that had been the case.*

*It would appear that the basic benchmark is an implied view that required levels of safety can only be really achieved by a cycle of direct government inspections of each and every site in the State with actual or potential involvement with dangerous goods. If such is the case, then this runs counter to both the intent of current legislation, current trends and the ineffectiveness and impracticality of such an approach.*

*The Authority, while pursuing an active and integrated program of inspection and audit of dangerous goods and occupational health and safety, undertakes a broad range of program activities. These are all directed at convincing and advising those in control of hazards of the safety requirements and ways of achieving those outcomes.*

*The legislation, programs and activities currently adopted are in accord with interstate and international practice and are all based on an underlying assessment of risks.*

*The use of statutory powers of discretion in the application of various advisory and enforcement processes is inherent in these approaches and is applied to provide both the agency and industry with the capacity to achieve the necessary results through appropriate actions.*

*At the same time, active steps are being taken, through reorganising administration and review of legislation, to achieve improvements and broaden the external infrastructure which can complement and support the core activities of the Authority. These actions are in accord with current national efforts to improve consistency and performance in this field.*

# Part 1.2

## Summary of major audit findings

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### REGULATORY FRAMEWORK

Page 31

- In 1992, the Hazardous Chemicals Secretariat identified over 60 Victorian Acts and 60 sets of regulations impacting on the management of chemical-related activities.  
*Paras 4.4 to 4.6*
- A draft paper prepared by the Secretariat indicated that chemical industry participants operate within a legislative framework which is not conducive to efficient operations. This framework may cause participants to incur increased costs which, in turn, may act as a disincentive to expanded business activity.  
*Paras 4.17 to 4.18*
- Poor communication and co-ordination of activities currently exists between various agencies with dangerous goods responsibilities.  
*Paras 4.13 to 4.15*
- In recent years, the Port of Melbourne Authority has moved to a more commercial approach to its operations. In assigning responsibilities for the regulation of dangerous goods within port areas, consideration needs to be given to eliminating any potential conflicts of interest which may arise from the change in focus.  
*Paras 4.23 to 4.25*
- A 1986 agreement between the Occupational Health and Safety Authority and the Environment Protection Authority aimed at eliminating overlap and duplication in dangerous goods responsibilities has not been updated to reflect changed circumstances. Some aspects of the agreement have not been satisfactorily implemented.  
*Paras 4.13 to 4.16*

**RISK MANAGEMENT****Page 39**

- A comprehensive assessment of the risks associated with dangerous goods activities within the State has not been undertaken. In the absence of such an assessment, there is no assurance that the current level of inspection and enforcement activity, and the allocation of available resources to regulatory functions, are commensurate with associated risks.

*Paras 5.8 to 5.19*

- Information systems need to be substantially improved to provide the data necessary for risk assessment purposes.

*Paras 5.25 to 5.26***LICENSING****Page 47**

- Routine inspections are not in place to identify dangerous goods operators who have not obtained the necessary licence, or to verify that the data provided by operators seeking a licence is accurate.

*Paras 6.28 to 6.38*

- Delays in processing licence applications by the Occupational Health and Safety Authority have been reduced significantly in the last 2 years.

*Paras 6.43 to 6.49*

- Some of the practices adopted by the Occupational Health and Safety Authority in relation to the issue of licences constitute tacit approval of unlicensed operators or of practices which are in breach of regulatory requirements.

*Paras 6.18 to 6.27*

- Applicants for dangerous goods vehicle licences are not required to provide any certification that the vehicle has been adequately maintained and is roadworthy.

*Paras 6.37 to 6.38*

- Although the Public Transport Corporation forwarded licence applications for its major city terminals to the Occupational Health and Safety Authority in 1990, licences were not issued. Substantial quantities of dangerous goods have been handled at the unlicensed terminals for a number of years.

*Paras 6.30 to 6.31*

- Since 1992, liquefied petroleum gas (LPG) storage and handling sites have been substantially excluded from government regulation. Although an unofficial agreement is in place between the Occupational Health and Safety Authority and the LPG industry that relevant Australian Standards will be adopted, these arrangements may place limitations on the prosecution of operators.

*Paras 6.39 to 6.42*

**INSPECTIONS****Page 61**

- The proportion of inspection resources directed to some areas such as dangerous goods transport and LPG installations has reduced significantly in recent years. In addition, the large number of relatively small sites throughout the State involved in dangerous goods activity have been subject to no inspection coverage or only limited coverage.

*Paras 7.27 to 7.42*
- While it continues its practice of not opening containers for inspection, the Port of Melbourne Authority will not be in a position to detect undeclared dangerous goods or the storage of incompatible types of dangerous goods in close proximity to each other.

*Paras 7.23 to 7.26*
- Consideration needs to be given to opportunities to achieve greater inspection coverage through increased delegation of inspection powers.

*Paras 7.43 to 7.47*
- Inspections are primarily directed at organisations recorded by the Occupational Health and Safety Authority rather than to detecting organisations failing to meet requirements to obtain a licence or provide information to the Authority.

*Paras 7.28 to 7.30*
- The approach of the Occupational Health and Safety Authority of allocating inspectors to all areas of the State does not necessarily result in the distribution of available resources to areas of greatest need.

*Paras 7.17 to 7.20*
- Benchmarks, such as acceptable levels of industry compliance, have not been established by the Occupational Health and Safety Authority. However, available evidence indicates that high levels of non-compliance exist in some areas of dangerous goods operations.

*Paras 7.50 to 7.59*
- The Public Transport Corporation had not established an internal framework for regularly monitoring compliance with regulatory provisions.

*Paras 7.63 to 7.65*

**INVESTIGATIONS AND PROSECUTIONS****Page 81**

- The enforcement mechanisms currently available to the Occupational Health and Safety Authority, in cases where non-compliance is detected, are written directions and prosecution. Audit considers that the effectiveness of the enforcement strategy could be improved if the mechanisms were expanded to include an infringement notice system, as provided for in the dangerous goods legislation.

*Paras 8.19 to 8.22*
- Legal action is generally only initiated by the Occupational Health and Safety Authority as a result of a fatality, serious accident or incident, rather than as a part of a preventative strategy. In comparison, the Port of Melbourne Authority has initiated prosecutions in many cases where non-compliance has been detected during routine inspections.

*Paras 8.30 to 8.43*

**INVESTIGATIONS AND PROSECUTIONS - *continued*****Page 81**

- The average time taken between a dangerous goods incident and the hearing of associated prosecutions initiated by the Occupational Health and Safety Authority is around 17 months. Strategies need to be developed to ensure investigations are completed and prosecutions initiated as close as possible to the time of an incident with a view to optimising the deterrent or educative impact of any publicity arising from the prosecution.

*Paras 8.8 to 8.13*

- In several cases, explanations were not available to support decisions made by the Port of Melbourne Authority to only issue a warning or to not take any further action when an initial recommendation had been made to prosecute an offender.

*Paras 8.14 to 8.16***EMERGENCY RESPONSE****Page 93**

- In 1993-94, the Occupational Health and Safety Authority was advised of over 200 dangerous goods incidents within the State.

*Paras 9.26 to 9.28*

- Fire authorities indicated to audit that they were generally satisfied with the technical support provided by the Occupational Health and Safety Authority and the Environment Protection Authority during dangerous goods incidents.

*Paras 9.26 to 9.29*

- A large proportion of organisations handling dangerous goods have not met regulatory requirements aimed at the efficient handling of an emergency incident.

*Paras 9.10 to 9.25*

- Incident data maintained by agencies is not used by the Occupational Health and Safety Authority as a source of input to the decision-making process.

*Paras 9.33 to 9.37*

- The Port of Melbourne Authority operated without a comprehensive emergency response plan for the Port of Melbourne for a number of years. A plan was endorsed in September 1994.

*Paras 9.14 to 9.18*

- Responses provided to audit by a number of employees of the Public Transport Corporation likely to come in contact with dangerous goods indicated that most had some understanding of safety procedures to be followed in an emergency situation. However, the responses did not reflect a good working knowledge of the emergency procedures set out in the Corporation's procedure manuals.

*Paras 9.14 to 9.18*

**COLLECTION OF UNWANTED CHEMICALS****Page 105**

- Between 1987 and 1992, the Melbourne Water Corporation and the Environment Protection Authority operated programs for the collection of unwanted chemicals from metropolitan and rural areas.

*Paras 10.5 to 10.7*

- Appropriate records of the volume and nature of chemical collection and disposal under the programs were not in place during most of the collection period. The lack of accountability is considered to be particularly unsatisfactory given the hazardous nature of the materials involved.

*Paras 10.13 to 10.17*

- Estimates prepared subsequent to collections suggest that around 560 000 kilograms of material were collected, including a range of items which were toxic or flammable. Around 111 000 kilograms of chemicals collected remain in storage facilities in Melbourne and Brisbane due to the absence of appropriate technology within Australia for their safe disposal.

*Paras 10.13 to 10.17*

- It was not until September 1994 that the preparation of manifests commenced for the chemicals still held in Melbourne storage facilities. This process involves testing the collected chemicals to identify their chemical properties, separating materials according to their nature and required method of disposal, and re-drumming the contents of collected containers. Until that time, some items remained in their original packaging which showed signs of deterioration.

*Paras 10.13 to 10.19*

- Estimates of expenditure to date and Melbourne Water Corporation projections of future costs indicate that the eventual costs associated with the collections conducted between 1987 and 1992 may amount to almost \$9 million.

*Paras 10.27 to 10.28*

- Although it has been estimated that less than 3 per cent of unwanted chemicals have been collected in the Melbourne metropolitan community alone, there is currently no program in place for the safe collection and disposal of remaining items.

*Paras 10.32 to 10.33*

- As many of the issues associated with unwanted chemical collections have implications for the wider community, continued action is needed between industry and government to establish an appropriate management framework and funding arrangements for such collections.

*Paras 10.34 to 10.36*

**COODE ISLAND**

**Page 115**

- In April 1994, the Government announced that the preferred site for development of a new port and chemical storage facility was Point Lillias. The target date for commencement of construction at the site is 1 July 1996 and the Government anticipates that the site will be operational in mid-1998.

*Paras 11.17 to 11.21*

- At November 1994, the Occupational Health and Safety Authority reported that 53 of the 72 recommendations contained in reports issued by the Coode Island Review Panel had either been fully implemented, alternative measures adopted or a decision made not to proceed with part of the recommendations. Action on a further 11 recommendations was in progress and the other 8 had been set aside for future attention pending further progress on the Point Lillias development.

*Paras 11.22 to 11.31*

- Accountability for the follow-up of recommendations made by the Coode Island Review Panel needs to be strengthened.

*Paras 11.32 to 11.34*



# **Part 2**

# **Background**

## DANGEROUS GOODS ACTIVITY

**2.1** Dangerous goods, broadly defined, are substances having toxic, explosive, corrosive or flammable properties. They include refined oil and gas products, fertilisers, pesticides, explosives, fireworks and a range of chemicals used in the production of plastic, rubber, paint, detergent and paper.

**2.2** Although accurate data on the volume of dangerous goods used within the State is not available, the Department of Business and Employment has estimated that around 50 per cent of the Australian chemical industry is located in Victoria. In addition to directly employing around 40 000 people, the industry impacts on many other manufacturing industries and on the daily lives of Victorians through providing input to the production of consumer goods such as building materials, motor vehicles, furnishings and pharmaceuticals.

**2.3** Due to the properties of dangerous goods, they can pose risks to workers, the general community, public and private property and the environment if they are not properly managed during their production, storage, use and disposal. A summary of the key activities within the State involving dangerous goods follows.

### Transport

**2.4** Chemicals and chemical products are either produced within the State or enter the State through port facilities or road and rail networks. The majority of bulk liquid chemicals entering the State by sea, pass through the Port of Melbourne while crude oil from the Bass Strait fields and refined petroleum products are handled at the Ports of Melbourne, Portland, Geelong and Hastings. A range of packaged chemicals and explosives also arrive or leave the Port of Melbourne as containerised cargo.

**2.5** The largest proportion of dangerous goods movement within the State between storage facilities, manufacturing sites and retail outlets is by road. Responsibility for road transport, in the main, rests with private organisations such as petroleum and chemical companies or specialist transport firms. To a lesser extent, dangerous goods, primarily in the form of petroleum products or liquid chemicals, are transported on the State's rail network.

### Manufacture

**2.6** The State's manufacturing processes which involve dangerous goods as input and/or output fall into the following broad categories:

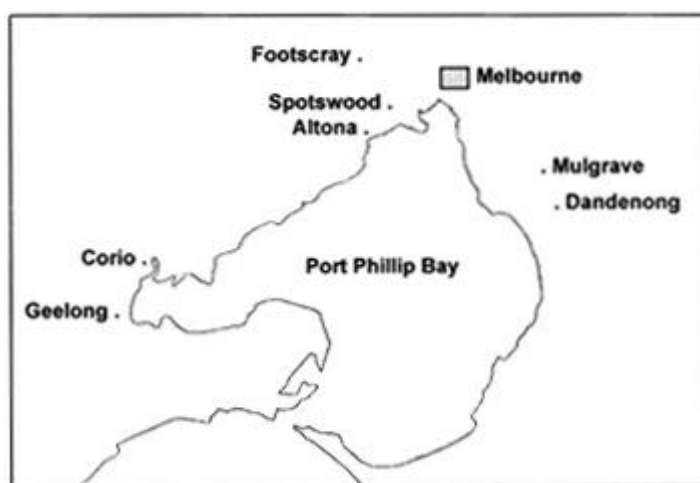
- the manufacture of chemicals from raw materials such as the production of various petrochemicals from oil and gas;
- the use of chemicals as input to the production of a wide range of products not necessarily classified as dangerous goods, e.g. the use of titanium oxide in the production of plastic products; and
- the upgrade of chemicals to provide end use products classified as dangerous goods, e.g. fertilisers, paints and pesticides.

**2.7** A substantial portion of the chemical manufacturing industry is located in the western suburbs of Melbourne, including a large petrochemical complex in Altona. The major concentrations of producers utilising chemicals in the production process are located in Altona and Footscray to the west of Melbourne and Mulgrave and Dandenong to the south-east.

## Transfer

**2.8** Transfer operations involve filling, discharging, pumping or pouring dangerous goods to or from containers such as shipping tankers, bulk storage tanks or road and rail vehicles.

**2.9** In the case of port operations, loading or unloading occurs at any one of a number of berthing facilities owned by government agencies and, in some cases, leased to private operators. Petroleum products transported by rail, are loaded and unloaded at sidings owned by petroleum companies located at Spotswood, Altona and Corio, and in some cases bulk liquids are transferred between ports and other locations by pipelines.



*Metropolitan Melbourne and surrounding areas*

## Sale at wholesale and retail outlets

**2.10** Dangerous goods such as petrol and liquefied petroleum gas (LPG), explosives, fireworks and other packaged chemical products are often sold through wholesale or retail outlets, including service stations and hardware stores, located throughout metropolitan and rural areas. The end users of these products include miners, farmers, tradesmen and individual households.

## Storage

**2.11** Dangerous goods can be stored on a short or long-term basis during various stages of production, sale and use. For example, large quantities of chemicals used in manufacturing can be held in bulk storage tanks at manufacturing sites or at specialist storage facilities such as those located at Coode Island in Footscray. The following types of items are also held in storage:

- containerised or packaged goods held adjacent to port facilities or at railway terminals prior to transport;
- LPG stored at service stations;
- packaged chemicals stored at retail outlets prior to sale; and
- unused or partly used packages stored on farms or in houses.

**2.12** By way of illustration, Chart 2A sets out the various activities which can be associated with the production and use of chemical products such as pesticides.

## REGULATORY FRAMEWORK

### State legislation

**2.13** Dangerous goods are currently controlled at a State level with each State and Territory establishing its own legislative framework. In Victoria, the *Dangerous Goods Act 1985* is aimed at promoting the safety of persons and property in all areas of dangerous goods activity with the exception of those involving radioactive and infectious substances, loading and unloading into or from any ship, transport by aircraft, conveyance through pipelines and supply by reticulation of gas. These activities are regulated either at a Commonwealth level or by means of separate Victorian legislation.

**2.14** The Act provides a broad framework for licensing, inspection and reporting of activities and incidents involving dangerous goods and defines penalties for offences against the Act. The following regulations under the Act prescribe minimum safety standards which operators must adopt:

- Dangerous Goods (Transport) Regulations 1987;
- Dangerous Goods (Liquefied Gases Transfer) Regulations 1987;
- Dangerous Goods (Explosives) Regulations 1988; and
- Dangerous Goods (Storage and Handling) Regulations 1989.

**2.15** Transporters of dangerous goods in Victoria must also observe the provisions of the *Australian Code for the Transport of Dangerous Goods by Road and Rail* which has the endorsement of the Australian Transport Advisory Council.

**2.16** The Port of Melbourne Authority (Transport, Handling and Storage of Dangerous Substances and Oils) Regulations 1993 govern dangerous substances and oils within port areas. These Regulations, which apply within the Ports of Melbourne and Hastings, outline specific requirements to be met by port users and define inspection and prosecution rights of the Authority. The Regulations are broadly in line with *Dangerous Substances Guidelines* issued by the Association of Australian Port and Marine Authorities which in turn were based on recommended international standards.

**2.17** Any environmental impacts of dangerous goods activity within the State come within the ambit of the *Environment Protection Act 1970*.

### National uniformity

**2.18** In November 1991, a meeting of the Council of Australian Governments comprising Premiers and Chief Ministers of the States and Territories agreed to the development of uniform standards for dangerous goods. This process is currently overseen by the Ministers of Labour Advisory Committee with responsibility for development of the standards assigned to the National Occupational Health and Safety Commission.

**2.19** Although progress has been made towards development, or revision, of uniform standards relating to transport, storage and handling of dangerous goods and major hazardous facilities, the standards have not been finalised. In the meantime, the Department of Business and Employment has determined that there will be no changes to existing State legislation where national legislation is proposed or underway.

## ASSIGNMENT OF RESPONSIBILITIES

**2.20** The *Dangerous Goods Act 1985* assigns prime responsibility for ensuring the safety of workers, the general public and property to individual occupiers or owners of premises where dangerous goods are manufactured, stored or sold and to owners or persons in charge of a vehicle or boat used to transport dangerous goods.

**2.21** The Department of Business and Employment, through the Occupational Health and Safety Authority, is responsible for the administration of the Act and its supporting regulations. The Authority plays a key role in licensing premises, vehicles and drivers, conducting inspections, investigating incidents involving dangerous goods and initiating prosecutions or other enforcement action.

**2.22** Responsibility for compliance with the regulations applying in ports in most cases rests with the masters of vessels, the owners of cargo or the operators of berthing facilities. However, in its role as a regulatory agency, the Port of Melbourne Authority has responsibility for monitoring compliance with the provisions of the Regulations.

**2.23** The Environment Protection Authority has responsibility for developing and implementing statutory policies and regulations together with administrative systems aimed at ensuring the maintenance and, if necessary, the restoration of the environment. As part of this role, the Authority is responsible for ensuring pollution resulting from the discharge of wastes from manufacturing does not occur and that any environmentally harmful effects arising from an accident involving dangerous goods are minimised.

**2.24** In the event of incidents involving dangerous goods, the Victoria Police, Metropolitan Fire Brigades Board and Country Fire Authority play a primary role in the provision of emergency response. A number of other agencies including the Occupational Health and Safety Authority, the Environment Protection Authority and the Department of Health and Community Services also provide technical support in such situations.

# **Part 3**

## **Conduct of the audit**

## AUDIT OBJECTIVES

**3.1** The overall objective of the audit was to evaluate whether the existing legislative framework and the activities of key government agencies are conducive to minimising risks arising from dangerous goods activity within the State.

**3.2** In particular, the audit was aimed at evaluating whether:

- appropriate procedures were in place within agencies and at a Statewide level to identify, assess and manage the risks associated with dangerous goods;
- agencies responsible for administration of key legislation had efficiently and effectively carried out their regulatory roles;
- the practices of individual agencies were in accord with the requirements of dangerous goods legislation;
- arrangements were in place to promptly respond to and contain incidents involving dangerous goods;
- effective communication was in place between all agencies with dangerous goods responsibilities and any potential overlap or duplication in responsibilities was effectively managed; and
- strategies and procedures were in place for the collection and safe disposal of unwanted chemicals.

## SCOPE OF THE AUDIT

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**3.3** The focus of the audit was on the management of substances defined as dangerous goods within State legislation including the *Dangerous Goods Act 1985* and the Port of Melbourne Authority (Transport, Handling and Storage of Dangerous Substances and Oils) Regulations 1993.

**3.4** The management of radioactive and infectious substances and conveyancing of dangerous goods through pipelines, supply by reticulation of gas and transport by aircraft were outside the scope of the audit. The management of waste produced during manufacturing processes involving dangerous goods was also excluded from audit examinations.

### Agencies subject to audit

**3.5** The audit concentrated on the key agencies with regulatory responsibilities, namely:

- Occupational Health and Safety Authority; and
- Port of Melbourne Authority.

**3.6** The following agencies were also selected for detailed examinations due to their role in managing programs or activities involving dangerous goods:

- Environment Protection Authority;
- Public Transport Corporation; and
- Melbourne Water Corporation.

**3.7** Input, in the form of a response to an audit questionnaire addressing a number of specific issues, was also received during the course of the audit from the following agencies:

- Metropolitan Fire Brigades Board;
- Country Fire Authority; and
- Roads Corporation.

**3.8** The matters addressed within the Occupational Health and Safety Authority were directed towards dangerous goods activities and did not include the Authority's responsibilities in relation to the administration of the *Occupational Health and Safety Act 1985*. Comments arising from an audit review of that area are contained in Part 3.3 of the *Auditor-General's Report on Ministerial Portfolios*, May 1994.

**3.9** In the case of the Port of Melbourne Authority, the audit essentially concentrated on evaluating the Authority's effectiveness as a regulatory body within the Ports of Melbourne and Hastings.

**3.10** Audit emphasis within the Public Transport Corporation was on assessing overall systems in place for the management of dangerous goods and on practices adopted within the 2 central terminals handling intrastate freight. Interstate freight is managed by the National Rail Corporation under contract arrangements which provide for that Corporation to utilise railway tracks and freight terminals owned by the Public Transport Corporation. Examinations in this area were limited to assessing the adequacy of dangerous goods provisions within the contract arrangements.

### Areas of examination

**3.11** The following specific areas were examined during the audit process:

- the dangerous goods legislative framework;
- risk management practices adopted by agencies;
- licensing of premises, vehicles and drivers;
- inspection activities;
- the investigation of incidents;
- enforcement activities including prosecutions initiated by the regulatory agencies;
- emergency response procedures;
- management information systems;
- communication procedures within and between agencies;
- the disposal of unwanted chemicals; and
- the implementation status of recommendations made as a result of various reviews undertaken subsequent to a major chemical fire at Coode Island in 1991.

**3.12** The audit generally covered the 2 year period to 30 June 1994 and developments since that date.

### Specialist assistance

**3.13** Technical advice, mainly in the area of risk management, was provided under contract to the audit team by Professor Jean Cross of the Department of Safety Science within the University of New South Wales. In certain other areas examined, Dr Chris Winder of that Department also provided advice to the audit team.



# **Part 4**

# **Regulatory framework**

## OVERVIEW

**4.1** A Ministerial Taskforce established in 1990 found that the legislative framework relating to hazardous chemicals, which incorporates dangerous goods, included 60 Victorian and 44 Commonwealth Acts. The framework was seen by the Taskforce to contain certain contradictions, duplications and multiple standards which, if not appropriately managed, could result in increased costs and possible disincentives to business.

**4.2** Although change to the current legislation is considered as the best option, scope still exists within the current framework to address a number of potential problems through improved communication between relevant agencies and greater co-ordination of their activities. Improvements in the mechanisms for disseminating information on legislative requirements could also enhance the relationship between government agencies and existing or potential industry participants.

**4.3** Consideration also needs to be given to addressing any potential conflict which currently exists between the dangerous goods regulatory roles of key agencies and their roles in other areas.

## LEGISLATIVE FRAMEWORK

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### Complexity of legislation

**4.4** Dangerous goods are part of a larger group of chemicals referred to as "hazardous chemicals" which have the potential to harm humans, animals, plants or the environment. This broader category includes a number of substances which are not covered by dangerous goods legislation such as hospital waste and radioactive materials.

**4.5** In July 1990, the Ministerial Taskforce on the Management of Hazardous Chemicals was set up by the Government in response to a growing number of incidents involving chemicals. The Hazardous Chemicals Secretariat was subsequently established to manage various working parties set up by the Taskforce and to provide administrative and research support. The role of the Secretariat included reviewing the legislation, administrative arrangements and government policies relating to the management of hazardous chemicals with a view to eliminating any overlaps, inconsistencies and duplications.

**4.6** Based on 18 months of research, a draft paper was prepared by the Secretariat in May 1992 which identified around 60 Victorian Acts and 60 sets of Victorian regulations relating to chemicals and chemical-related matters including the dangerous goods legislation. In addition, 44 Commonwealth Acts impacting on the area were identified.

**4.7 The Secretariat reported that the legislative framework had developed in an ad hoc manner with little regard for consistency.** It was seen as resulting in:

- Contradictory provisions between legislation in cases where more than one Act regulates a chemical or chemical-related activity. For example, although the *Dangerous Goods Act* 1985 prohibits the sale or supply of ammunition and most explosives to people under the age of 18, the *Firearms Act* 1958 permits supply to holders of junior shooters permits;
- Duplications where 2 or more Acts and agencies regulate the same chemical or chemical-related activity. For example, the Environment Protection Authority and the various water authorities all deal with the discharge of chemicals into waterways;
- Multiple requirements as a result of 2 or more Acts regulating the same chemical or chemical-related activity differently, depending on its use, application or location. For example, 17 Acts were in place in relation to pesticides with separate legislation regulating their use in various areas such as pest control, agriculture, aerial spraying, mining and alpine resorts; and
- Interdependence between the legislation and its administration resulting in the involvement of a number of government agencies in aspects of the management of a chemical. This was seen to be particularly evident in the licensing requirements. For example, the Occupational Health and Safety Authority may require an operator to make changes before a licence is issued. This may necessitate the Authority consulting with the Environment Protection Authority and fire authorities on whether the changes impact on the particular requirements of those authorities.

**4.8** At the time the draft paper was prepared, **26 agencies were involved in administering the State legislation** including those with responsibilities in the areas of occupational health and safety, health, agriculture, planning, conservation, industry development, transport, water and police.

### Secretariat recommendations

**4.9** The Secretariat proposed the development of one piece of legislation to replace the existing framework and the administration of the legislation by one agency. In this regard, the draft paper submitted for Cabinet consideration in May 1992 reiterated a number of recommendations made in the Coode Island Review Panel's Final Report of March 1992 (further comment on the Review Panel is included in Part 11 of this Report). However, **due to major opposition to the proposed changes from most of the key agencies involved with the regulation of chemicals**, it was recommended that a reference group be established, comprising representatives from a range of relevant agencies, to review the draft paper. Audit was advised that such a review was not undertaken and no further action has been taken to address the issues discussed in the draft paper.

**4.10** Since 1992, major restructuring of government departments and agencies has resulted in the transfer of administrative responsibility for much of the hazardous chemical legislation to new or restructured agencies. However, the form and complexity of the legislative framework has remained largely unchanged.

**4.11** **The plethora of legislation in the hazardous chemical area highlights a need for the Government to consider simplifying the regulatory framework.** The matters raised in the draft paper also suggest that there is a need to establish clear lines of responsibility within the existing structure and to develop sound communication processes between the relevant agencies and with industry participants.

**4.12** The current audit examinations concentrated specifically on the administration of dangerous goods legislation and did not examine the operations of all agencies responsible for administering legislation relating to hazardous chemicals. Nevertheless, **it was apparent during the audit that there is scope for improved administrative arrangements within the existing framework.**

□ **RESPONSE** provided by Chairman, Environment Protection Authority

*The complex nature of chemicals in modern society makes it unlikely that any single piece of legislation can effectively encompass all aspects of production, management, use and disposal which society may wish to regulate. There is, however, considerable potential to use administrative approaches to implement existing statutory controls in a better co-ordinated and more cost-effective manner so that industry and other clients of government are not inconvenienced or disadvantaged. Administrative procedures should be clear, consistent and should minimise overlap (especially in requirements to provide information to Government). The Victorian Government has initiated a trial, based upon the Altona Chemical Complex, to explore a range of options for improving and facilitating interaction between Government agencies and the major industrial clients. This exercise has already demonstrated a variety of opportunities for better co-ordination between agencies and for simplified administrative procedures.*

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority agrees that legislative arrangements are complex and that a whole of government approach to achieving a measure of simplification is a desirable objective.*

*Actions are being taken, within the national uniformity framework, to simplify that legislation for which the Authority has responsibility. The Dangerous Goods Act and associated regulations are being reviewed to achieve a more performance-oriented approach.*

*More generally, administrative actions are taken through the Department of Business and Employment to establish co-ordinating groups between business and government to eliminate duplication in dealing with the range of legislation. An active program of review and simplification of business-related legislation is also undertaken by the Department.*

*However, it must be recognised that hazardous materials and dangerous goods, as broadly defined, pervade many areas of activity and that specific legislation is necessary to cover the particular applications.*

## ADMINISTRATIVE ARRANGEMENTS

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### Communication between agencies

**4.13** The various agencies examined by audit with dangerous goods responsibilities were found to have adopted separate functions and, at times, different approaches to administering legislation, particularly in areas such as inspection, prosecution and data gathering. There was also limited sharing of available data between agencies. Where communication did occur, it was generally found to be limited to informal meetings or verbal contact at an operational level.

**4.14** A formal agreement had been established between the Occupational Health and Safety Authority and the Environment Protection Authority. The agreement recognised that most premises licensed by the Environment Protection Authority for the storage, reprocessing, treatment or disposal of industrial wastes would also be subject to licensing under the dangerous goods legislation. Both agencies acknowledged that this situation presented a potential overlap and duplication of their respective roles.

**4.15** The agreement was a positive approach designed to clarify responsibilities and eliminate duplications. Although informal communication had occurred between the agencies on an ongoing basis, the agreement had not been updated since it was developed in 1986 and as a result did not reflect changed circumstances. In addition, some aspects of the agreement had not been effectively implemented. For example, joint inspections by the 2 agencies proposed in the agreement had not been regularly conducted.

**4.16** In the case of the Occupational Health and Safety Authority, instances of poor communication and co-ordination of activities within the Authority were also identified largely resulting from the structure in place at the time of the audit. In particular, areas of the Authority responsible for inspection, prosecution and licensing were not accountable to, or did not have a reporting relationship with, the area within the Authority responsible for policy development or for monitoring the technical aspects of the dangerous goods legislation. Weaknesses in the current structure were also identified in a 1994 consultancy report commissioned by the Minister for Industry Services. Audit was advised that these matters are to be addressed in a proposed revised Authority structure.

□ **RESPONSE** provided by Chairman, Environment Protection Authority

*The Authority acknowledges the need for formal review of the agreement and has initiated processes to achieve this. Joint inspections have been undertaken but it is acknowledged that this practice has not been routinely maintained nor is it appropriate in all cases. The Authority is reviewing this issue with the Occupational Health and Safety Authority.*

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority agrees with the recommendation that clear communication arrangements with industry and the community, and between agencies is required. As advised to audit by all agencies, the Authority regularly liaises with the Environment Protection Authority and the Metropolitan Fire Brigades Board. In addition, the Authority has provided appropriately trained Metropolitan Fire Brigades' officers with limited inspectorial powers under the Dangerous Goods Act. The Authority is, as part of the current re-organisation, examining the appropriateness of further delegation of inspectorial powers to other agencies to broaden the overall capacity for compliance activity. The Authority will continue to facilitate effective communication links and information sharing between appropriate agencies. When circumstances require, the Authority will also ensure appropriate minutes are kept.*

*The Authority agrees that the September 1986 Ministerial Agreement is in need of review. Discussions between the Authority and the Environment Protection Authority have taken place and the review has commenced.*

## Communication with industry participants

**4.17** Because of the complexities in the legislative framework, **industry participants were seen by the Hazardous Chemicals Secretariat to operate within a framework not conducive to efficient operations and which resulted in increased costs to business and possible disincentives to undertake activities involving hazardous chemicals.** A lack of effective communication between agencies and inconsistency in the approach adopted by agencies can increase these difficulties.

**4.18** A suggestion was made by the Minister for Labour in 1992 that some of the difficulties for industry could be addressed through the establishment of a Chemicals Information Centre to provide industry and the community with information about chemicals and legislative requirements. It was suggested that such a Centre would be particularly useful where an individual or company wished to establish or modify an existing chemical business and faced the daunting task of identifying the applicable legislation to be followed and requirements to be met. Such a Centre has not yet been established.

## Potential conflict in responsibilities

**4.19** Audit found that the **current administrative arrangements have the potential to create a conflict between the regulatory roles of the key agencies responsible for administration of dangerous goods legislation and the other activities of those agencies.**

### *Occupational Health and Safety Authority*

**4.20** The Occupational Health and Safety Authority is for administrative purposes situated within the Industry Services portfolio of the Department of Business and Employment. The Department's mission is "*...to contribute to the Victorian Government's objective to make Victoria a better place in which to live, work and do business*", and seeks to achieve this by encouraging the growth of business activity and employment in the State. The goals of the Department support the Government's policy of facilitating private sector growth which has the stated major policy targets of reducing input costs to business through reducing the size and costs of government, reforming the regulatory environment and streamlining planning and approval processes.

**4.21** Audit considers that the current administrative arrangements could create situations where a conflict of interest arises for the Authority in meeting its primary regulatory role and achieving the major goal of the Department of encouraging business growth. For example, during the course of the examinations, audit was advised that the Authority seeks to reduce any financial impact of its operations on business. As a result, it is reluctant to suspend operations or delay licensing of existing dangerous goods operators even where the operators fail to comply with certain legislative requirements.

**4.22** While the need to encourage business activity and provide incentives for business investment are not disputed, audit considers that the prime focus of the Authority in the administration of the dangerous goods and occupational health and safety legislation should be on providing a framework which promotes the safety of persons and property.

- **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Department's key objectives include explicit recognition of the health and safety environment in Victorian workplaces and public risk associated with dangerous goods and equipment. Health and safety issues are located with the Occupational Health and Safety Authority and are functionally and operationally separate from the parts of the Department directly concerned with encouraging business development and investment.*

### **Port of Melbourne Authority**

**4.23** Since 1989, the Australian and State Governments have embarked on a program of economic reform at the waterfront to improve Australia's international competitiveness. With support from the State Government, the Port of Melbourne Authority has actively pursued a number of reform initiatives to improve efficiency, including a program for downsizing the organisation while pursuing a new strategic direction as a trade facilitator and landlord.

**4.24** The changing emphasis in the management of the Authority has the potential to create situations where a conflict may arise between the objectives of achieving commercial targets and those of regulating operations in a manner which protects the interest of the wider community and the environment. This situation needs to be taken into account in any revised arrangements and a suitable framework should be established which clearly assigns responsibilities associated with the development, administration and enforcement of regulations for the control of dangerous goods in the port areas in a manner which avoids or minimises any potential conflict.

**4.25** In this regard, it was announced in January 1995 that 2 new statutory authorities are to be established replacing the Port of Melbourne Authority. One authority will be responsible for land and berths within the boundary of the Port of Melbourne, while the other authority will be responsible for all channels in the ports of Melbourne and Geelong and Port Phillip Bay. Audit was advised that as part of the change, the regulatory functions relating to dangerous goods in port areas will be transferred to other appropriate government agencies.

- **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*Under the restructuring plans for the Victorian ports it is expected that the legislative responsibility for the movement of dangerous goods in the port areas will be separated, with responsibility for movements of dangerous goods in the land area being transferred to the Occupational Health and Safety Authority and responsibilities for shipboard and product transfer operations to other government agencies yet to be determined. Implementation of these legislative changes would resolve any potential conflict between the objectives of achieving commercial targets with those of regulating operations in a manner which protects the interests of the wider community and environment.*

# **Part 5**

# **Risk management**



## OVERVIEW

**5.1** The State's key dangerous goods regulatory agencies, namely the Occupational Health and Safety Authority and the Port of Melbourne Authority, have not undertaken comprehensive assessments of the risks associated with dangerous goods. Similarly, an assessment of the risks involved in the transport of dangerous goods through the State's rail network has not been undertaken by the Public Transport Corporation.

**5.2** Consequently, some uncertainty currently exists as to whether the regulatory framework, enforcement focus, and the allocation and level of resources available to these agencies are appropriate to ensure potential risks associated with dangerous goods activities have been reduced to an acceptable level.

**5.3** In addressing risks on a Statewide basis, the Occupational Health and Safety Authority needs to adopt a separate focus for dangerous goods activities rather than its current approach of primarily addressing such activities within the framework of its occupational health and safety responsibilities.

**5.4** To aid in assessing risks, significant deficiencies which currently exist in the nature, completeness, and accuracy of information available to the agencies examined will need to be addressed. In addition, opportunities for sharing available data between agencies should be explored.

## INTRODUCTION

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**5.5** **The responsibility for ensuring that appropriate safety standards are adopted rests with individual operators.** Nevertheless, regulatory agencies and other agencies with significant involvement in dangerous goods activities, have allocated substantial resources to the role of promoting the safety of people and property, and ensuring that adequate precautions are taken to minimise or guard against dangerous goods incidents.

**5.6** Expert advice engaged by audit indicated that risk management methodologies are ideal mechanisms for such agencies to use in regulating and controlling dangerous goods activities.

**5.7** A risk-based management framework should:

- **Take a structured, logical and formalised approach** to identifying, analysing, prioritising and reducing risks;
- **Aid decision-making** in areas such as planning, developing or revising the regulatory framework, establishing emergency procedures, inspecting for non-compliance and applying sanctions where non-compliance is detected. Such decisions should be based on facts and past data rather than on assumptions; and
- **Provide a suite of tools** which can be used, where appropriate, for detailed analysis of risks in particular areas.

## CURRENT APPROACH TO RISK MANAGEMENT

### Occupational Health and Safety Authority

**5.8** The Occupational Health and Safety Authority is responsible for the administration of legislation in both the dangerous goods and occupational health and safety areas. The *Occupational Health and Safety Act* 1985 is a performance-based statute providing broad standards and general duties of care in the workplace. The Act has provision for formulation and approval of **codes of practice** to provide practical guidance for safety in the workplace. The codes are not mandatory and employers and employees may choose to implement other arrangements, more appropriate to their workplace, which provide equivalent levels of safety. The emphasis of such legislation is on ensuring management and employees of organisations demonstrate responsibility for safety through a knowledge and control of workplace risks.

**5.9** The *Dangerous Goods Act* 1985, on the other hand, provides a broad framework for the regulation of dangerous goods supported by a range of regulations defining **prescriptive requirements** for operators, transporters and users. The prescriptive framework involves operators knowing a set of rules to be followed and an enforcement function which monitors compliance with those rules.

**5.10** While there are arguments for and against a move towards performance-based legislation in regulating dangerous goods, any change to the current prescriptive framework would be dependent on legislative amendment by the Parliament. Irrespective of the style of legislation in place, **it is important that a risk-based approach is adopted in developing a suitable framework and in targeting resources allocated to the regulatory function.**

### *Use of assessment factors*

**5.11** Although a Statewide assessment of the risks associated with dangerous goods activities has not been undertaken by the Authority, certain of its activities have been focused on the basis of assessment factors which operators storing and handling dangerous goods are required, under regulations, to calculate. For example, a larger proportion of inspection resources has been targeted at premises with high assessment factors.

**5.12** The assessment factor provides a simple basis for broad classification of risks by applying a formula which takes into account the types and classes of dangerous goods and the activities undertaken at a premises. (Details of the method of determining an assessment factor are set out in Schedule 2 to the Dangerous Goods (Storage and Handling) Regulations 1989.) However, audit considers that the calculation is not detailed enough to aid decision-making or to guide the allocation of resources. It does not take into account all factors impacting on risk such as past incidents and accidents, maintenance records of operators, locality of premises and their proximity to sensitive community facilities such as schools, the existence of workplace safety systems and quality of training provided to employees. In addition, the assessment factor does not apply to the transport of dangerous goods or activities involving explosives.

### *Need for a separate dangerous goods focus*

**5.13** Although the styles of legislation administered by the Authority differ, a common approach has been adopted in many areas of its activities. Examinations of policies, strategies, structure, field activities, information systems and reporting mechanisms all revealed that activities are largely focused on occupational health and safety with sound dangerous goods management viewed by the Authority as a part of achieving health and safety in the workplace.

**5.14** Concentration on achieving a safe workplace may make provision for safe practices in relation to dangerous goods used or stored in that workplace. Nevertheless, **there are a number of aspects of dangerous goods management which audit considers necessitate a separate focus resulting from the need to address the safety of the community in addition to workplace safety.**

**5.15** This broader focus necessitates a separate risk assessment for dangerous goods. In such an assessment, consideration needs to be given to the fact that the financial impact of increased WorkCover levies arising from a poor safety record provides some motivation to ensure safety in the workplace. However, the costs incurred in protecting the wider community from the risks associated with dangerous goods may not result in such a financial benefit to individual operators. There can also be areas of dangerous goods activity, such as transport, which do not represent a high risk from a workplace viewpoint but may be a significant risk from a public safety perspective.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority acknowledges that dangerous goods pose specific risks which are best handled through a legislative framework which is distinct from general OHS legislation. It is also important to recognise, however, that there a number of basic similarities in the dangerous goods and OHS legislative frameworks. Both pieces of legislation deal with risks to health and safety; virtually all significant dangerous goods risks occur at workplaces; and both place obligations on industry to minimise risks associated with their operations. While audit is correct to note that current dangerous goods legislation is more prescriptive than OHS legislation, it is also worth noting that a general consensus has emerged among most relevant agencies, at both the Commonwealth and State level, that dangerous goods legislation needs to take on a more outcome-oriented and preventative focus.*

*The trend therefore, both nationally and at the State level, in both OHS and dangerous goods is becoming increasingly similar. While the Authority accepts the need for further improvement in the administration of dangerous goods legislation, it also believes that the establishment of a separate focus for dangerous goods legislation, as suggested by audit, would not be appropriate. It will, however, continue to ensure that specific resources, programs and activities are developed and applied to dangerous goods. These arrangements will be maintained and improved in the impending reorganisation of the Authority.*

## Port of Melbourne Authority

**5.16** The Ports of Melbourne and Hastings form a hub in the transport chain with vessels transporting dangerous goods, operated by different shipping companies, originating in various interstate or overseas locations and carrying loads of differing nature and size. Any risks associated with these activities need to be assessed and managed particularly given the proximity of the Port of Melbourne to the Melbourne Central Business District and surrounding built-up areas.

**5.17** The 1993 Victorian Ports Land Use Plan Strategy, a joint initiative of the port authorities to establish a framework for developing the ports over the next 20 years, recognised that the risk level connected with dangerous goods is a key criterion in evaluating liquid bulk options. However, the Strategy was not based on an assessment of all risks associated with dangerous goods activity within the ports. For example, risks associated with handling, storage and transport of containers were not considered and some risk assessments of individual areas accessed in the preparation of the Plan, such as a quantitative risk assessment on Coode Island prepared in 1985, were out of date.

□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*The Authority acknowledges the contribution that formal risk assessment processes can make to the evaluation of risks associated with the movement of dangerous goods and that such an assessment has not been undertaken for the Port as a whole.*

*The Authority could progress this recommendation, however, given the proposed changed responsibility arrangements, in particular the timeframe for the formation of the 2 new authorities replacing the Port of Melbourne Authority, it would be more appropriate if it be considered jointly by the new authorities.*

## Public Transport Corporation

**5.18** The transport of dangerous goods by rail involves processes ranging from the loading and unloading of cargo, the storage of goods at freight terminals and the transport of goods throughout the rail network. An assessment of the associated risks had not been undertaken by the Public Transport Corporation.

**5.19** In addition, the calculation of risk factors by the Corporation to meet legislative requirements was found to require significant improvement. Specifically, a historical record of the movement of dangerous goods at each freight terminal was not maintained within the Corporation's management information systems and as a result the past assessment factor calculation for each location was based on estimates. Although the nature and volume of freight had changed over time, the assessment factors had not been recalculated since 1990.

□ **RESPONSE** provided by Chief Executive, Public Transport Corporation

*I will be proposing to my Managing Directors that the Corporation needs to consider further formal risk approaches to safety in this area and that this be considered in conjunction with their safety management plans. As part of this exercise the Corporation will consider the use of an external agency. The Corporation has a significant range of risk assessment systems already in place which minimise risks associated with all rail operations of which dangerous goods are a small component.*

## FEATURES AND BENEFITS OF A RISK-BASED APPROACH

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**5.20** A risk approach requires consideration of the factors that affect risk, including any specific community concerns, identification of data sources for those factors and definition of unacceptable risk levels. Broad qualitative classifications of risk in terms of likelihood and possible consequences, such as a fatality or event that requires evacuation of the public from their homes, also need to be defined.

**5.21** In analysing risks, consideration should be given to any known future developments in dangerous goods practices. For example, the trend towards *just-in-time* production, which involves manufacturers holding only sufficient stores to meet short-term needs, may reduce the quantity of dangerous goods stored in particular areas and may increase the frequency of import and unloading activities. The management framework should enable a rapid response to these and other emerging issues.

**5.22** A comprehensive risk assessment by the State's key regulatory body, namely the Occupational Health and Safety Authority, should consider all risks from dangerous goods activities across the State including port areas, transport systems, storage facilities, manufacturing plants and sales outlets. Based on this assessment, appropriate risk reduction strategies should be developed. As a risk reduction regime can involve considerable costs, **it is important that available resources are targeted in a manner which reduces risks to an acceptable level in the most cost-effective and practicable way.**

**5.23** The current regulatory framework involves a range of risk reduction approaches including planning, approval and licensing requirements, inspection activities, provision of advice, investigation of incidents and prosecution for non-compliance with legislative provisions. The outcome of a risk assessment process could identify a need for change in any one of these areas, e.g. it could result in recommendations to:

- Change the existing legislation framework such as specific standards contained in regulations or codes of practice;
- Change existing administrative arrangements and priorities;
- Change planning requirements;
- Implement education programs in particular areas where poor safety records are evident;
- Place restrictions on road transport in areas where risks are high such as in built-up or environmentally sensitive areas;
- Re-allocate inspection resources to areas identified as high risk due to poor safety records;
- Improve emergency systems;
- Change the enforcement focus; or
- Do nothing. In this case the process may merely provide assurance that the current approach is appropriate.

**5.24** A risk-based approach should also be adopted by other government agencies handling dangerous goods. For example, a risk assessment within the port areas may lead to a change in the current practice of the Port of Melbourne Authority of inspecting all bulk tankers entering the ports while undertaking limited coverage of containerised transport.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority already uses a risk-based approach for a number of purposes. The Authority acknowledges that improvements can be made to the targeting of its field operations by the development of a more rigorous risk-based targeting model. Work is currently underway to improve the model.*

## INFORMATION REQUIREMENTS

**5.25** As risk assessment is a process which attempts to ensure that decisions concerning policy and resources are based on facts rather than on perceptions, reliable data is essential, including past data in cases where statistically meaningful data exists on a State, national or international level. Audit found that **there were significant deficiencies in the nature, completeness and accuracy of data currently available for management purposes**. In particular:

- accurate data on the number of dangerous goods operators within the State or the volumes of dangerous goods involved in various activities were not available;
- consolidated information was not available regarding the number and nature of incidents within Australia and overseas involving particular types of dangerous goods or particular processes;
- comprehensive data on the levels of compliance with regulatory requirements was not available; and
- where information systems were maintained by the agencies examined, in some cases the data was incomplete or inaccurate.

**5.26** A range of agencies maintaining data relevant to dangerous goods activities useful to aid in a Statewide assessment of risks do not exchange information. In addition to the agencies included in the audit, such agencies include the Roads Corporation, the Victoria Police, local councils, the Department of Health and Community Services, individual hospitals and Commonwealth Government agencies. Data maintained by these agencies would include:

- detailed accident or incident records;
- records of premises or sites storing or handling dangerous goods which are unknown to the Occupational Health and Safety Authority;
- hospital records showing the possible effects of exposure to dangerous goods on workers or the public;
- disposal activities including sites licensed to treat or dispose of waste;
- any known instances of the dumping of dangerous goods; and
- police records relating to investigations such as details of the investigation of illegally manufactured explosive devices.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*Audit's views on identification of information sources and research are noted and, as part of revised targeting approaches all potential information sources are being considered.*

# **Part 6**

# **Licensing**

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## OVERVIEW

**6.1** Under the State's dangerous goods legislation, licences are required for storage and handling sites, vehicles used to transport dangerous goods in bulk, drivers of these vehicles and certain explosive-related activities.

**6.2** Audit considers that in administering such a system, it is important to ensure that only operators, drivers and vehicles meeting defined safety requirements are licensed and that there is a reasonable expectation that people operating without the required licence will be detected and sanctions initiated. The prompt issue of licences in cases where safety requirements are met is also important to the efficient operation of the chemical industry.

**6.3** However, audit found that under current arrangements it is possible for storage and handling operators to continue operating for considerable periods without a licence or without meeting all regulatory requirements, in some cases with the knowledge of the Occupational Health and Safety Authority. In addition, routine inspections are not undertaken to detect unlicensed operators or to ensure that operators issued with a conditional licence have subsequently met licence conditions. While significant delays in the processing of licences have been reduced in the past 2 years, audit found that delays in some individual cases are still unacceptable.

**6.4** The audit findings question the effectiveness of the current licensing system. They also suggest that there is a need for the Authority to clearly define the objectives of the system and determine whether its current practices are the most appropriate means of achieving those aims.

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## LEGISLATIVE REQUIREMENTS

**6.5** The Occupational Health and Safety Authority is responsible for ensuring that licence applications properly address the requirements under the regulations and for collecting fees payable for most licences. While revenue raised through dangerous goods licensing amounted to \$445 500 in 1993-94, information regarding the annual costs associated with managing the licensing system is not readily available within the Authority.

**6.6** Table 6A, prepared on the basis of information provided by the Authority, provides details of current licences recorded at the end of August 1994.



**TABLE 6A  
DANGEROUS GOODS LICENCES,  
AUGUST 1994**

<i>Type of licence</i>	<i>Number of licences</i>
<b>Storage and handling</b>	520
<b>Transport -</b>	
Driver registration	6 260
Vehicle	3 120
<b>Explosives - licence to:</b>	
Use blasting explosives	1 600
Keep for sale and to sell	820
Make an explosive mixture	500
Other (a)	240
<b>Total</b>	<b>13 060</b>

(a) In some cases, these licences were issued for short periods of time and would no longer be valid.

### Storage and handling sites

**6.7** All organisations storing and handling dangerous goods, with a limited number of exceptions, are required to comply with the minimum safety standards established in the Dangerous Goods (Storage and Handling) Regulations 1989. The occupier of each premises is required to calculate an *assessment factor* based on the quantity and nature of dangerous goods stored at the premises. Operators of sites with assessment factors in excess of 100 are to obtain a licence which is valid for up to 5 years.

**6.8** Licence applicants are required to provide the following information to the Authority:

- the name of the occupier and address of the premises;
- a plan of the premises showing key information about the site;
- information on the dangerous goods kept or intended to be kept at the site;
- details of manufacturing areas and processes undertaken at the site;
- the maximum number of people likely to be on the site during its operation;
- information on the potential hazards and steps to prevent emergency incidents together with staff training, inspection and maintenance arrangements; and
- a written emergency management plan detailing steps to be taken and responsibilities of personnel during an emergency.

### Bulk transport vehicle

**6.9** The owner of any road vehicle involved in the transport of dangerous goods in bulk must hold an individual licence or fleet licence for the vehicle, valid for 2 years. A licence is only valid for the vehicle and particular dangerous goods specified in the licence and only for the person to whom it is issued. Other vehicles carrying smaller quantities of dangerous goods are not required to be licensed specifically for dangerous goods transportation.

**6.10** An applicant for a licence is required to provide details of the vehicle including registration number, type of vehicle, fuel type, class of goods to be carried and the address of the premises where the vehicle is normally based. Routes to which licensed vehicles carrying liquefied gases, including LPG, are restricted and details of these restrictions are included on the licence. In the case of vehicles carrying other types of dangerous goods, there are no such restrictions included in the licence conditions.

### Drivers of bulk transport vehicles

**6.11** A driver involved in the transport of dangerous goods in bulk is required to be registered, for a period of 3 years, under the Dangerous Goods (Transport) Regulations 1987 and may only transport goods of the class specified in the registration. In order to become registered, the driver must:

- meet age and experience requirements;
- meet an approved standard for medical and physical fitness; and
- demonstrate adequate knowledge of:
  - the Regulations;
  - the Transport Code relating to the transport of bulk dangerous goods;
  - the nature and hazardous properties of dangerous goods of the class or type specified in the application;
  - precautions for the prevention of accidents;
  - action to be taken in emergencies; and
  - the operation of all relevant equipment.

**6.12** A person satisfies the requirements to demonstrate adequate knowledge by passing an approved course of training.

### Explosives

**6.13** The Dangerous Goods (Explosives) Regulations 1988 provide for licensing of the import, manufacture, use, storage, sale, and transport of explosives and use of fireworks.

**6.14** Information provided by applicants varies for each type of licence and, depending on the type, may include evidence of training and experience, police checks and plans of buildings or storage areas.

## PURPOSE OF LICENCES

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**6.15** The dangerous goods legislative framework was designed to promote the safety of Victorians through minimising the probability of accidents and mitigating the impact should they occur. In this regard, the licensing system can aid in ensuring that only operators meeting safety requirements are able to handle, store, transport or manufacture dangerous goods above certain quantities and/or of certain types.

**6.16** For the system to operate effectively, it is essential that:

- licences are issued only to organisations or individuals complying with legislative requirements;
- organisations or individuals operating without meeting the necessary requirements are identified; and
- licences are processed promptly with a view to minimising any disruption within the industry.

**6.17** Audit findings in regard to these criteria are set out in the following paragraphs.

## ISSUE OF LICENCES

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### Approval procedures

**6.18** Audit found that during the period when applications relating to existing sites are processed or while any non-compliance issues are resolved between the operator and the Occupational Health and Safety Authority, it is usual for operations to continue. Discussions with staff of the Authority revealed that this situation is accepted because of a desire to minimise any inconvenience that would result if an operator was required to shutdown or be subject to rigorous enforcement procedures.

**6.19** Similarly, it was found that the Authority had, since late 1992, adopted a policy of issuing conditional licences in some instances where delays in processing occurred, subject to the operator first meeting certain criteria. A conditional licence requires the operator to take action to address certain specified safety conditions, generally within a defined period. However, there was little evidence of follow-up by the Authority to ensure the conditions had subsequently been met.

**6.20** In audit opinion, such **practices constitute tacit approval by the Authority of the operation of unlicensed sites and the continuation of operations which are technically in breach of minimum safety requirements defined in the dangerous goods legislation.** The practices could lead to prosecution and enforcement difficulties should an incident arise at a site issued with a conditional licence or operating without a licence with the knowledge of the Authority.

**6.21** Audit was advised by the Authority that operators of **new sites** are not issued with a dangerous goods licence unless they **meet all regulatory requirements.** However, the Authority was unable to provide a documented licensing policy to support this advice.

**6.22** **The following cases, based on an examination of a random sample of files relating to storage and handling licences, illustrate some of the practices accepted by the Authority.**

#### Case 1

**6.23** In February 1990, correspondence from the Occupational Health and Safety Authority to an operator located at Coode Island advised that a licence under the dangerous goods legislation was to be issued for certain storage facilities. The licence was to be subject to compliance with a number of conditions *within a reasonable time* and a timetable for completion of those matters was to be forwarded to the Authority at the operator's *earliest convenience*. These conditions included a requirement that a tank containing phenol be separately banded from a number of other tanks containing flammable liquids or that the phenol be removed and stored elsewhere, as approved. The correspondence indicated that *"Although phenol is a combustible liquid, its storage with flammable liquids is not recommended and is not in accord with the Dangerous Goods (Storage and Handling) Regulations"*.

**6.24** A subsequent request was made by the operator in February 1991 for the condition relating to the separate bunding of tanks to be reconsidered. However, correspondence between the Authority and the operator between April 1990 and February 1991 indicated that the matter had not been resolved to the satisfaction of the Authority.

**6.25** **Audit was surprised to find that** a Coode Island Review Panel Information Paper issued in October 1991 disclosed that **the tank specified in the proposed condition continued to be bunded with other tanks containing flammable liquids and contained 133 000 litres of phenol at the time of a major fire at the site.** This situation indicates that arrangements at the site had not been altered some 18 months after the issue was initially raised with the operator. The Information Paper indicated that the tank and those in close proximity were totally destroyed during the fire.

### Case 2

**6.26** Although a site storing and handling dangerous goods had been previously inspected by the Occupational Health and Safety Authority on several occasions since May 1988, it was not until May 1993 that an inspector concluded that the site should be licensed. The organisation applied for the licence in December 1993 and a conditional licence was issued in January 1994 detailing areas to be addressed in the first quarter of that year. There was no record of an any subsequent inspection of the site.

### Case 3

**6.27** An investigation was conducted by the Occupational Health and Safety Authority subsequent to an incident involving a major fire in late 1991 at a chemical storage and packaging plant in a northern suburb. **The internal prosecution report prepared in this case indicated that the organisation was not licensed to store dangerous goods at the time of the incident.** The report indicated that *"The history of this issue shows much to-ing and fro-ing between the Authority and the company regarding this matter. It appears that the approach of the Authority is not one of strictly enforcing licensing requirements but rather to allow much time to pass and repeated requests to occur without any threat of legal action. This is incongruous with the Ministerial Guidelines for Prosecution which specify failure to be licensed as a category for prosecution. In this case, such a prosecution was not brought because of the history of dealing about licensing between the Chemicals Management Branch and the company."*

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*Audit raises concerns about the issue of conditional licences and suggests that the Authority does not undertake an assessment of the risks associated with non-compliance.*

*The Authority assesses the information and documentation supplied with all applications before licences are issued.*

*The Authority is not aware of any case where an operator has been allowed to operate and an immediate risk to people or property has not been addressed.*

*In instances where non-compliance is detected, the officer makes an assessment about the nature of the risk. If the non-compliance is serious, steps are taken quickly to have the risk eliminated or reduced to an acceptable level. If the non-compliance does not constitute a significant risk, the applicant is required to develop plans to deal with non-compliance and these plans are incorporated in the conditions of the licence.*

*As the Authority has reduced significantly the time taken to process licences and exemptions, it is not likely that there will be many licences with conditions issued in the future. However, circumstances will arise where their issue is necessary. The Authority's practice has been (and will continue to be) to properly assess risks arising from non-compliance issues when applications are reviewed.*

*The Authority notes the observations of audit in respect of the 3 specific cases and makes the following comments:*

- *the operator in Case 3 was prosecuted, convicted and fined \$10 000 plus costs; and*
- *the operator in Case 1 appealed the requirement to segregate as it was entitled to do. The requirement was reviewed and the Authority found no compelling reason of chemical compatibility which would warrant the imposition of that requirement. It is no longer required at any site where phenol is stored.*

## Identification of unlicensed operators

**6.28** The Occupational Health and Safety Authority's inspection activity is primarily directed at operators recorded within its information systems rather than at identifying operators not holding the required licences. Further comment on this matter is included in Part 7 of this Report.

**6.29** While recognising that the dangerous goods legislation places the onus for regulatory compliance on individual operators, audit considers that for the licensing system to be successful, the Authority should take routine action to identify unlicensed operators and initiate enforcement action where necessary.

**6.30** In the case of the Public Transport Corporation, although licence applications were sent to the Authority in 1990, together with the respective fees, licences were not issued. Audit was advised that informal discussions were held between the Corporation and the Authority on these licence applications. However, at the time of completing the audit the licences had not been issued.

**6.31** Audit found that **substantial quantities of dangerous goods had been handled at the Corporation's major city freight terminals, namely Melbourne and Dynon, for at least 4 years without the required licences.**

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority's field staff routinely and regularly undertake activity that enables detection of non-compliance with licensing requirements.*

□ **RESPONSE** provided by the Chief Executive, Public Transport Corporation

*Applications for licences to handle dangerous goods at the Corporation's then 3 major Melbourne terminals were in fact submitted in 1990. The Occupational Health and Safety Authority did not act upon the applications, despite verbal requests.*

*However, considerable progress was made in 1994 toward re-submission of applications. New applications have been submitted.*

## VERIFICATION OF DATA SUBMITTED

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### Storage and handling

**6.32** The storage and handling licence approval process generally involves an examination by Occupational Health and Safety Authority of documentation submitted by applicants. The documentation supporting submissions is often prepared by consultants.

**6.33** Audit found that officers of the Authority do not routinely visit sites of applicants to verify the accuracy of the submitted data. To some extent, the Authority depends on the information lodged by consultants engaged by the applicant where it is considered that the consultant has a record of providing accurate details. Although audit was advised that reliance is also placed on inspections conducted by the Authority after the licence has been issued, in a number of the cases examined by audit there was no record of such inspection activity.

**6.34** Audit concluded that **under current arrangements, it is possible for dangerous goods operators to obtain a licence or approval from the Authority without necessarily meeting all the required safety standards established within legislation.** This situation is illustrated in the following cases.

#### Case 1

**6.35** In July 1993, a licence for a manufacturing organisation was renewed by the Occupational Health and Safety Authority. Although an inspection was not conducted at the time the licence was renewed, a subsequent inspection several months later disclosed numerous areas of non-compliance which were likely to be in existence at the time the licence was renewed. In total, 19 written directions were issued together with various timeframes to address the deficiencies. A subsequent dangerous goods inspection was not conducted.

#### Case 2

**6.36** A storage operator located at Coode Island was prosecuted by the Authority in 1991 under the dangerous goods and occupational health and safety legislation. The operator pleaded guilty to a number of charges relating to deficiencies in fire protection measures, storage of dangerous goods packages and absence of warning signs, and was fined a total of \$70 000. The report of the Authority's Legal Officer prepared subsequent to the case raised questions regarding:

- **The practice adopted by the Authority of back-dating the licence for administrative convenience;** and
- **The adequacy of procedures prior to the issue of a licence.** The Legal Officer expressed concern that a licence was issued to an organisation which seemed from court evidence to adopt a lax approach to maintenance.

❑ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority has procedures in place to verify the data provided by operators but notes audit's concerns and will review the co-ordination arrangements and implement changes where improvement is identified. Changes to the Authority's organisational structure currently being implemented are designed to better integrate proposal assessment activities and site inspection/verification. This aspect will be given special attention.*

## Transport vehicles

**6.37** Applications for dangerous goods vehicle licences, state that *"The owner is responsible for ensuring that the vehicle is designed, constructed, equipped and maintained in compliance with the Dangerous Goods Transport Regulations 1987"*. The Occupational Health and Safety Authority may require an applicant to submit drawings, specifications and particulars of the vehicle. However, there is no requirement for a vehicle inspection prior to issuing or renewing the licence.

**6.38** Audit considers that **procedures should be strengthened in this area to provide greater assurance in relation to the condition of the vehicle and its suitability for the transport of dangerous goods, prior to the issue or renewal of a licence**. Such a mechanism could involve the provision by applicants of a certification by authorised assessors that the vehicle has been adequately maintained and is roadworthy.

❑ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority notes that audit has not presented evidence to show that newly licensed vehicles are either unsafe or do not meet regulatory requirements. All such vehicles are required to comply with road traffic laws. The Authority will, however, examine the benefits of specifically and separately requiring authorised assessors to examine vehicles.*

## LICENSING OF LPG SITES

**6.39** On 30 June 1992, the Liquefied Gases (Transportation and Gas Transfer) Regulations 1980 were terminated under sunset provisions. From that time, the requirement for approval by the Occupational Health and Safety Authority of LPG self-serve sites ceased to exist.

**6.40** The existing regulations applying to the storage and handling of dangerous goods exempt LPG sites, apart from a number of very general requirements, including self-assessment and placarding. It was intended that the dangerous goods regulations would be amended to include all LPG installations within storage and handling requirements including licensing provisions. However, due to the move towards national uniformity, the Department of Business and Employment has decided not to amend the regulations as intended. As a result, **LPG installations remain largely exempt from licensing requirements and regulatory provisions apart from certain provisions which define requirements relating to filling and maintaining LPG containers.**

**6.41** In order to provide an alternative framework, an informal arrangement was developed between the Authority and the LPG industry in August 1992, to establish interim measures to be observed by operators including continuation of the relevant Australian Standard (AS 1596 *LP Gas - Storage and Handling*) as the principal vehicle for most operations, retention of separation distance requirements established in the sunsetted regulations, and lodgement of submissions for new sites and modifications of sites with the Authority. The industry, which operates under the Australian LPG Association, also subsequently agreed to deliver only to sites complying with AS 1596.

**6.42** It is of concern that:

- of the 9 key operators in the LPG industry in 1992, only 4 indicated their intention to abide by the arrangement (although more may have adopted the arrangement in practice);
- although the agreement provides for lodgement of submissions relating to new sites or the modification of existing sites, the Authority does not have a legislative role of approving the submissions;
- in the absence of any requirements to obtain licences or to advise the Authority of LPG operations, there is no indication of the number of sites within the State or whether the 1 500 self-serve sites recorded in 1992 have varied significantly since that date; and
- as the Authority has a reduced regulatory role in this area, there appears to be restrictions on its ability to carry out an enforcement role other than through prosecution for breaches of the general duty of care provisions of the dangerous goods and occupational health and safety legislation.



□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority, since 1992, has deliberately embarked on a course of action with the LPG industry to achieve acceptable levels of safety without the need for detailed regulation. This course of action was considered appropriate because the LPG industry comprises only 9 primary suppliers of LPG. These suppliers have given and displayed strong commitments to the safety of their own operations and have taken policy decisions to deny the supply of LPG to down stream suppliers and users who do not meet recognised safety standards.*

*The industry is still covered by all of the provisions of the Dangerous Goods Act. Inspectors are able to inspect installations and take enforcement action. Prosecutions can be undertaken for non-compliance with section 31 of the Act. A prosecution under this section of the Act has yielded the highest single penalty ever awarded (\$30 000) for non-compliance with Victoria's health and safety legislation, and consequently provides a considerable deterrence for offenders.*

*The action taken by the Authority is also consistent with the provisions of the Subordinate Legislation Act which requires other approaches to be investigated before decisions are taken to make regulations.*

*Audit's recommendations reflect a view that tight prescriptive regulations and approvals systems are the only means for achieving safety outcomes. There are other workable solutions that can achieve the objective of minimising the risk of accidents and ensuring adequate levels of safety for people and property.*

*The following information shows that the proportion of LPG incidents reported to the Authority has fallen over recent years with a very small increase in the 1994-95 year.*

*It should be noted that the approval requirement referred to by audit for self-service of LPG applied to automotive service stations only. The approval covered the suitability of dispensing equipment, customer-operated emergency shut-off facilities and supervision. All of these matters are routinely incorporated into automotive dispensing operations and the approval requirement became redundant. The following graph illustrates LPG incidents as a percentage of all dangerous goods incidents reported to the Authority for the period 1984 to 1994.*

IMAGE NOT AVAILABLE

*There is no objective evidence of the need for detailed regulation of LPG installations or of the need to introduce additional government approvals processes. The Authority will continue to monitor the operations of the LPG industry and take any action that may be necessary to ensure that safety is maintained.*

## TIMELINESS OF PROCESSING

### Processing period

**6.43** Detailed audit examination of documentation supporting a random sample of licences issued in the 2 years to 30 June 1994 indicated that significant delays had occurred between the receipt of applications by the Occupational Health and Safety Authority and the final processing of the application.

**6.44** In the case of storage and handling licences, audit found that in 12 of the 27 files examined, licences for existing sites had been issued over a year after the initial applications were received with periods ranging from 13 to 44 months. However, the delays had been reduced significantly in the case of applications received towards the end of the 2 year period and audit was advised that further reductions have occurred subsequent to the period audited.

**6.45** Based on an audit sample of vehicle licences issued over the same period, the average time taken to process the licence, was around 14 weeks. However, the processing time of those received towards the end of the period had been reduced to between one and 4 weeks. The time taken to process driver registrations was also found to have reduced from 16 days in 1992-93 to 7 days in 1993-94.

**6.46** Despite the overall improvement, audit considers that the time taken to process applications was still unacceptably long, particularly in the case of some existing storage and handling sites which, as previously mentioned, continue to operate during the processing period.

### Reasons for delays

**6.47** Audit was advised that in many cases processing delays were caused by applicants, or their consultants, submitting incomplete or inappropriate information, thus requiring follow-up action by the Authority. Other delays were attributed to the lengthy process of checking applications and obtaining clarification.

**6.48** It was apparent from some individual files examined, that the Authority's approach during this process was to advise rather than demand that applicants address non-compliance matters. This approach is considered by audit to have contributed to the lengthy processing timeframe and to operators continuing to operate without the required licence.

**6.49** In many other cases it was difficult to determine the cause of the delays experienced, due to a lack of file notes or documentation to explain significant periods of apparent inaction. The need for more comprehensive file notes was reinforced by comments arising from a March 1994 court case involving a dangerous goods prosecution initiated by the Authority. Internal documentation indicated that conflicting evidence was given during the case of the nature and content of conversations between the applicant and Authority staff.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*Audit has highlighted a number of problems including poor filing systems, lack of adequate information systems and excessive delays in processing of licences in the period up to 1993. A number of steps were taken in 1992 and 1993 including the establishment of the Major Hazards and Engineering Branch as a separate unit to specifically deal with licences and approvals.*

*The strategy has been successful. There is no backlog of applications and processing times are now within acceptable limits as illustrated by the following graphs. The first graph shows the average number of days to process licences, the second, the percentage of licences completed within 90 days.*

IMAGES NOT AVAILABLE

# **Part 7**

# **Inspections**

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## OVERVIEW

**7.1** Under powers provided in the dangerous goods legislative framework, the Occupational Health and Safety Authority and the Port of Melbourne Authority have established inspection functions aimed at encouraging and enforcing compliance with the minimum safety standards defined in regulations.

**7.2** With a view to ensuring that resources are used effectively, the regulatory agencies need to ensure inspections are targeted at areas of greatest risk and are at a level which enables adequate coverage in various areas of activity. Individual dangerous goods operators also need to establish internal inspections or audits to monitor compliance with regulatory requirements and internally developed safety procedures.

**7.3** Audit found that under current arrangements many areas of dangerous goods activity within the State do not receive inspection coverage or are subject to only limited coverage by regulatory agencies. The practice of the Occupational Health and Safety Authority of placing emphasis on large storage facilities and on inspecting those operators meeting their requirements to submit information to the Authority is not supported by a sound analysis of risks. Evidence also suggests that the current allocation of inspection resources within the State does not reflect the distribution of dangerous goods activities.

**7.4** Although the regulatory agencies have not established clear objectives to aid in assessing the outcome of inspections, audit considers that the level of industry compliance with legislative requirements provides some indication of achievements. In this regard, the limited data available on compliance levels in recent years, suggest that unacceptably high levels of non-compliance identified during joint agency inspections conducted between 1990 and 1992 still exist in some areas. Audit considers that this situation indicates a need to re-assess the current inspection practices in relation to coverage levels, targeting procedures, and the approach and nature of inspection activities.

## INTRODUCTION

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**7.5** The dangerous goods legislative framework defines specific requirements in areas such as the separation of incompatible substances, placarding of premises and vehicles, labelling of packages, development of emergency plans and preparation of manifests detailing the type and volume of dangerous goods likely to be held at a premises or on a transport vehicle. These requirements represent minimum safety standards to be adopted by operators. It also provides for the appointment of inspectors with the power to conduct any examinations and inquiries necessary to determine whether practices of individuals or organisations are in compliance with these provisions.

**7.6** Regulations administered by the Port of Melbourne Authority also contain general provisions which enable the Authority to carry out inspections including a requirement that Authority personnel be present during a process of checking compliance with specific provisions relating to tanker operations.

**7.7** At the time of the audit examinations, the Occupational Health and Safety Authority had 22 dangerous goods inspectors allocated to various regions throughout the State. Within the Port of Melbourne, 6 designated officers were appointed to carry out inspections. During their routine duties a number of Tanker Surveillance Officers engaged to perform a range of duties also observe for non-compliance with regulations and raise the alarm if they observe hazardous situations such as a chemical spill, fire or explosion. Within the Port of Hastings, 2 officers are available for inspectorial duties at any one time.

**7.8** To ensure that inspections achieve the maximum benefit in terms of encouraging and enforcing compliance, it is important that:

- clear objectives are established for the inspection functions;
- available resources are directed to areas of greatest risk;
- the level of inspection coverage in various areas is commensurate with the risks involved; and
- the outcome of inspection activities is regularly measured and evaluated.

## TARGETING OF RESOURCES

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### Occupational Health and Safety Authority

**7.9** The Authority's dangerous goods inspection activities fall into 2 broad categories, namely:

- Ad hoc inspections of individual sites and vehicles, initiated by regional inspectors; and
- Projects targeted at identified problem areas on a regional or Statewide basis. Such projects are approved centrally by the Authority's Occupational Health and Safety Steering Committee.

**7.10** According to Authority records, approximately 7 000 dangerous goods inspections, including project-based and ad hoc inspections, were conducted during 1993-94. Since 1991, the Authority has gradually increased the proportion of resources allocated to projects and in 1993-94, 70 per cent of inspection hours were allocated to this category of inspection.

### Prioritisation of inspections

**7.11** The Occupational Health and Safety Authority has established priorities for its dangerous goods inspections. Details of the priorities are set out in Table 7A.

**TABLE 7A  
DANGEROUS GOODS INSPECTION PRIORITIES**

Mandatory	Inspections requested by the Minister or Directors of the Occupational Health and Safety Authority, or resulting from the investigation of an accident or breach.
Discretionary	<p>Inspections of dangerous goods storage facilities in the following order of priority:</p> <ul style="list-style-type: none"> <li>- Warehouses with an assessment factor of 40 or more;</li> <li>- Transport centres with an assessment factor of 40 or more;</li> <li>- Manufacturing premises with an assessment factor of 40 or more;</li> <li>- Non-warehousing storage facilities with an assessment factor of 100 or more;</li> <li>- Storage facilities with an assessment factor between 40 and 100 and warehouses, transport centres and manufacturing premises with an assessment factor between 10 and 40; and</li> </ul> <p>Anything not specified above.</p> <p>Inspections of dangerous goods transport vehicles.</p> <p>Inspections associated with approving the licence of a premises.</p> <p>Inspections of premises where explosives are kept or used.</p> <p>Inspections of LPG installations.</p>

**7.12** These priorities, used within regions to allocate resources to inspections, were developed in 1991 and, although subject to annual review, have not changed since that time.

**7.13** **Audit has a number of reservations regarding the targeting of resources on the basis of these priorities, namely:**

- Details of the considerations taken into account in the development and annual review of the priorities were not available;
- The Authority has, to some extent, used assessment factors provided under the dangerous goods legislation as the basis of prioritising inspections in the storage and handling area. As indicated in Part 5 of this Report, the assessment factor is not considered by audit to be sufficiently detailed to be used as the primary basis of decision-making or for allocating resources to inspection activities;
- Discussions with regional inspectors revealed that they had limited input to the development of the priorities. Given that regional inspectors have significant knowledge of sites and premises in their areas and have knowledge of potential risks involved in dangerous goods, audit considers that they could provide useful input to the prioritisation process;
- Although the priorities were to be used in all regions, inspectors within some regions indicated to audit that the priorities did not reflect local circumstances; and
- The Authority has not defined the relative proportion of inspections to be allocated to each category or set lower limits to ensure that a minimum number of inspections are conducted in each area. In audit opinion, the absence of any inspection activity or minimal activity for even low priority categories may in time increase non-compliance levels and, as a consequence, associated risks.

**7.14** A review of a number of projects completed in recent years revealed that many had been undertaken as a result of matters identified during investigations of individual dangerous goods incidents. One such example included a Statewide project conducted between November 1992 and March 1993 involving the inspection of LPG facilities at 685 service stations. From the examination of documentation, audit concluded that the major factor contributing to the selection of the project was an accident at a service station where a person was seriously injured while filling an LPG-fuelled vehicle. Audit considers that given the high proportion of resources now allocated to project-based activities **it is important that the selection of such projects reflects the overall priorities developed to address risks, rather than a response to individual incidents or breaches.**

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority does not accept audit's assertion that its inspection activities are based on unsound priorities. Audit's criticism of management information systems and reporting against priorities ignores the evidence provided to audit that in broad terms priorities are met. In terms of inspectors' times and visits the highest risk categories receive the most attention. Authority inspectors have visited more than half of the licensed sites every year for the last 3 years ensuring that these sites are visited on average once every 2 years. The high risk categories receive more inspections per site because of the greater complexities while the lower risk sites have an appropriately lower inspection per site per ratio.*

*Actual inspection hours achieved*

**7.15** Inspection categories within the Authority's information systems do not correspond to the priorities set for dangerous goods inspections. Consequently, information is not available to management to monitor the actual allocation of resources against the established priorities. However, as indicated in the Table 7B which sets out the proportion of total inspection hours allocated to various areas during 1993-94, according to the categories which are available within information systems, the majority of dangerous inspections have been directed to storage and handling activities.

**TABLE 7B  
DISTRIBUTION OF INSPECTION HOURS, 1993-94**

<i>Inspection activity</i>	<i>per cent</i>
Dangerous Goods (Storage and Handling) Regulations, 1989	41.5
Other inspection activity	13.9
Follow-up notices	13.1
Dangerous Goods (Explosives) Regulations 1988	8.6
Dangerous Goods (Transport) Regulations 1987	8.5
Information	6.2
Accident investigation	5.0
Liquefied petroleum gas (LPG)	2.4
Ministerial directions	0.5
Project activity	0.3
<b>Total</b>	<b>100</b>

**7.16** While the above table indicates that allocations have been in accordance with the general outline of the established priorities, information regarding the specific allocation within the storage and handling area, such as warehouses or transport centres, is not available.



## Allocation of resources to regions

**7.17** A comparison of the number of inspectors allocated to each region at the time of audit examinations with the number of storage and handling sites in the region is set out in Table 7C.

**TABLE 7C  
REGIONAL ALLOCATION OF RESOURCES**

<i>Region</i>	<i>Number of inspectors allocated</i>	<i>Number of sites in the region</i>	<i>Average number of sites per inspector</i>
Mulgrave	4	1 335	344
Preston	2	467	233
Ballarat	1	214	214
Bendigo	2	413	206
Traralgon	2	404	202
Metro Central	1	153	153
Geelong/Warrnambool	3	405	135
Footscray	4	507	127
Wangaratta	3	352	117
<b>Total</b>	<b>22</b>	<b>4 250</b>	<b>Average 193</b>

**7.18** While not taking into account all factors impacting on the duties of inspectors in particular areas such as density of sites and travelling distances, audit considers that the above comparison provides some indication of relative workloads given that storage and handling is a major priority of the Authority.

**7.19** As indicated in the above table, the number of sites per inspector varies considerably between regions. Although 18 per cent of inspectors are allocated to the Mulgrave region, the number of sites per inspector is double that of most other regions as approximately 30 per cent of all the State's recorded dangerous goods sites are located in that region.

**7.20** Audit considers that the approach of the Authority of allocating inspectors to all areas of the State does not necessarily result in the distribution of available resources to areas of greatest need in terms of the number of sites, the nature of operations, the history of incidents and non-compliance and the sensitivity of surrounding areas.

**□ RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority has advised audit it has reviewed its allocation of resources as recently as 1994. The Authority believes a Statewide service based on a regional delivery system to be the most effective means of achieving its enforcement and advisory objectives. It should again be noted that most of the 133 occupational health and safety inspectors are also authorised under the Dangerous Goods Act and add significantly to the specialised group at all locations.*

## Port of Melbourne Authority

### *Tanker inspections*

**7.21** Audit was advised that inspection resources within the Port of Melbourne have primarily been targeted to the area of tanker operations. Responsibilities of inspectors include boarding all tankers following their arrival in the Port and in the company of a representative of the terminal operator and the master of the vessel, jointly completing a *Tanker Safety Checklist*. The checklist focuses on ensuring compliance with safety requirements set out in the Port of Melbourne Authority (Transport, Handling and Storage of Dangerous Substances and Oils) Regulations 1993. It is a requirement that this checklist be completed before the tanker is granted permission to commence loading or discharging operations. Authority staff also make a number of routine visits during these operations and are on 24 hour call if required. Ship-to-shore activities are also kept under constant observation.

**7.22** In relation to the Port of Hastings, each tanker entering the Port is inspected on arrival and departure, regardless of whether or not it is carrying cargo or is empty. A process of completing a *Tanker Safety Checklist* for each tanker is also followed at that Port.

### *Container inspections*

**7.23** The Regulations set out specific requirements relating to the storage and handling of containerised cargo such as requirements for the master of a vessel, owner of the cargo or berth operator to:

- declare dangerous goods;
- segregate goods on board the vessel and at berthing facilities in accordance with the requirements of the *International Maritime Dangerous Goods Code*;
- ensure cargo is properly labelled;
- supervise areas where dangerous goods are held; and
- inspect for leakage or damage to containers.

**7.24** In contrast to the thorough inspection activities relating to tanker operations, a program for routinely inspecting compliance with requirements covering containerised cargo is not in place within the Port of Melbourne. Audit was advised that it is only when Authority officers are undertaking ad hoc inspections of container vessels or security patrols of the port areas that containers may be inspected. For example, a record of a container marked as carrying dangerous goods could be taken at random and checked against information systems to ensure that relevant manifest details have been recorded. If the required information is not on record, further investigations are commenced. Audit was advised that the Authority does not arrange to open containers for inspection and is therefore reliant on an accurate declaration on manifests to enable the movement of dangerous goods within the Port to be monitored and safety measures to be developed.

**7.25** Under current arrangements, instances where the content of containers has been inaccurately declared or where incompatible types of dangerous goods have been stored in close proximity to each other would not be detected.

**7.26** Although it is recognised that the majority of dangerous goods, by volume, enters the Port of Melbourne in tankers, the number of vessels carrying containerised dangerous goods cargo is relatively high. Given this factor, **in addition to a significant number of incidents recorded by the Authority in recent years which have related to dangerous goods transported in containers, audit considers that the appropriateness of the current approach to inspections of containerised cargo should be re-assessed.**

□ *RESPONSE provided by Chief Executive, Port of Melbourne Authority*

*The Authority is of the view that its current procedures which place a greater emphasis on the movement of dangerous goods in bulk rather than on containerised dangerous goods is the most appropriate given the resources available.*

## INSPECTION COVERAGE

**7.27** Inspection coverage, representing the proportion of operators in various categories of dangerous goods activity subject to inspection, provides a useful indicator of the adequacy of inspection resources. Such a measurement is dependent, however, on accurate information on the number of dangerous goods operators within the State and the number of inspections completed in various categories. Details of inspection coverage achieved by the regulatory agencies follow.

### Occupational Health and Safety Authority

#### *Identification of dangerous goods operators*

**7.28** The dangerous goods legislation requires certain operators to be licensed or to provide a range of information to the Authority prior to undertaking activities involving dangerous goods. For example, where the site has an assessment factor of between 40 and 100, the occupier or owner of the premises is required to *notify* the Authority of certain details such as capacity of storage areas, a description of the dangerous goods to be stored or handled and emergency management plans. Where the assessment factor is between 10 and 40, the owner or occupier is required to *register* the premises with the Authority.

**7.29** Inspection resources are primarily targeted at those operators providing the required data. However, available evidence suggests that there is currently a high number of operators not complying with these requirements. While such operators may be identified, in isolated instances, during inspection activity, it was surprising to find that **the Authority does not routinely undertake projects to identify non-compliant operators.**

**7.30** Audit considers **it is unsatisfactory that the Authority with the key responsibility of regulating the management of dangerous goods and with a major organisational objective of reducing associated risks to the general public does not assume a role of ensuring operators involved with these substances comply with the basic requirements of the legislation. It is also considered illogical that organisations which comply with basic legislative requirements to provide information to the Authority are more likely to be inspected than organisations failing to meet these requirements.**

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority's field staff routinely and regularly undertake activity that enables detection of non-compliance with licensing requirements. They are also routinely provided with licence schedules for verification and follow-up activity. Audit's proposal for specific projects or campaigns on possible non-compliance within resource constraints is worthy of consideration.*

*Since the inception of the Dangerous Goods Act the Authority has undertaken a range of strategies aimed at assisting business and where required, ensuring business complies with the basic requirements of the dangerous goods legislation. In the period audited, this included over 7 000 inspections and the issuing of over 13 000 licences. The Authority therefore rejects totally the statement by audit that "the Authority does not assume a role of ensuring operators involved with these substances comply with the basic requirements of the legislation."*

### Actual coverage of recorded operators

**7.31** The Authority has not established targets or benchmarks for inspection coverage of various sizes or categories of operation such as storage and handling, transportation, LPG installations and explosives and has not regularly monitored inspection coverage achieved in various areas. Audit examinations disclosed a number of anomalies in relation to the actual coverage achieved for those operators recorded within the Authority's systems.

### Storage and handling

**7.32** Table 7D which is prepared on the basis of data provided by the Authority sets out details of coverage levels in each of the Authority's regions during 1993-94 for operators subject to storage and handling regulations. Information in the table is based on the proportion of sites recorded by the Authority which received at least one visit from a dangerous goods inspector during the period.

**TABLE 7D**  
**REGIONAL INSPECTION COVERAGE, 1993-94**  
(per cent)

Region	Proportion of sites visited		
	Licensed	Notified	Registered
Ballarat	33	9	7
Bendigo	28	6	7
Footscray	49	36	23
Geelong/Warrnambool	39	11	26
Metro Central	86	26	31
Mulgrave	66	25	12
Preston	56	16	14
Traralgon	44	19	10
Wangaratta	49	14	10

**7.33** Although the largest proportion of inspection resources in all regions was directed at licensed sites, the actual coverage achieved varied considerably between regions. For example, based on the proportion of sites visited in 1993-94, all licensed sites in the Metro Central region could be visited in a period of less than 14 months compared with the Bendigo region where it would take over 3.5 years to cover all licensed sites. At the 1993-94 coverage levels, it would take inspectors in many regions between 4 and 15 years to visit all recorded notified and registered sites.

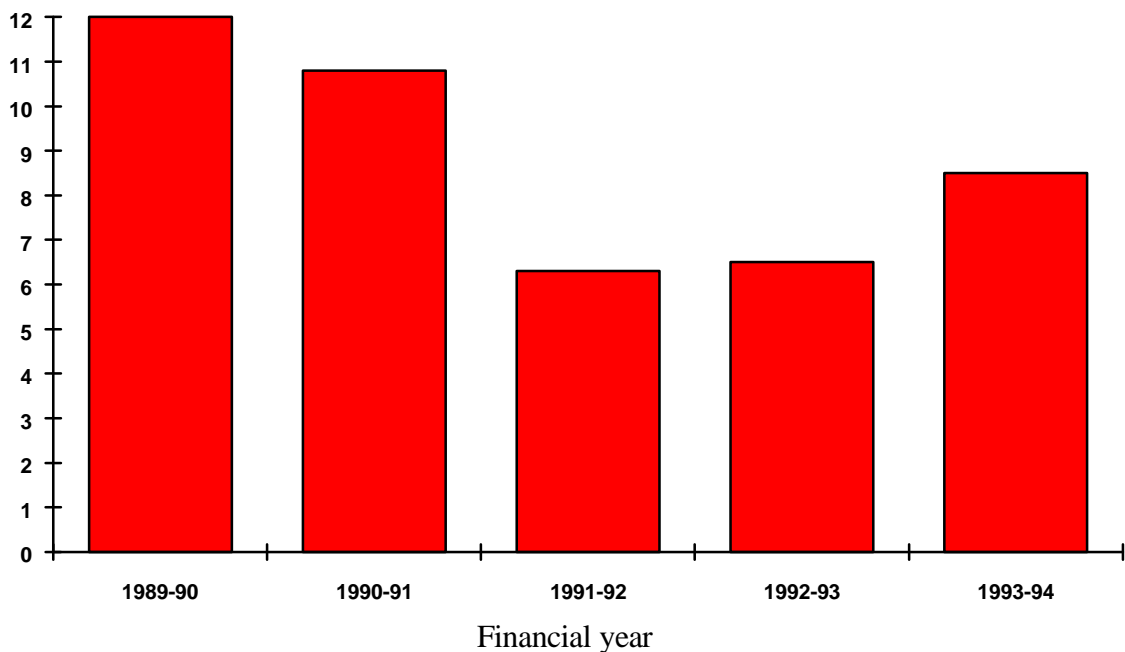
**7.34** While the Authority focuses its resources on recorded dangerous goods operators with assessment factors of 10 or more, there is a large number of other users of dangerous goods who are not required under legislation to submit information to the Authority. Such users range from households utilising or storing items such as paints or pesticides to workplaces where smaller quantities of dangerous goods are used or stored. Although these situations would generally be expected to represent less risk to the community, an assessment factor of less than 10 can still involve significant quantities of dangerous goods. For example, storage of 5 000 litres of petrol or 10 000 litres of hydrochloric acid would equate to an assessment factor of around 10. **These premises are generally not inspected by the Authority.**

### Transport inspections

**7.35** The Authority's inspection of road vehicles transporting dangerous goods involves periodic coverage on major Victorian roads including an annual blitz, often at points of entry to, and exit from, the State. Such inspections are co-ordinated by the Authority and undertaken with the participation of officers from the Roads Corporation and Victoria Police. Audit was advised by the Authority that ad hoc inspections of vehicles carrying dangerous goods are also conducted within regions and inspections at storage and handling sites in some cases include the examination of matters such as packaging and loading of vehicles at those sites. In the case of rail transport, the Authority recently conducted a compliance audit of the practices adopted by the Public Transport Corporation.

**7.36** Table 7E shows that the proportion of the Authority's dangerous goods inspection resources allocated to the transport area in the last 3 years was less than 10 per cent.

**TABLE 7E**  
**PROPORTION OF RESOURCES ALLOCATED TO TRANSPORT INSPECTIONS**  
(per cent)



**7.37** While records over the 5 year period revealed an increase in licensed vehicles and drivers, data is not available within the Authority on trends in the volume of dangerous goods transported by road or rail, or the frequency of transportation on particular routes. Consequently, **management is not in a position to measure the level or adequacy of coverage in this area.**

**7.38** Information provided from overseas organisations responsible for dangerous goods transport inspections indicated that to achieve a desired level of safety it is necessary to inspect consignments of dangerous goods at various stages in the transport cycle. In Canada, strategies have been developed to gain the greatest advantage for the expenditure of resources through directing transport inspections primarily at the point at which goods enter the transport chain, particularly port facilities, on the premise that if a consignment is correctly prepared and safely entered into the transportation system, the probability of it reaching its ultimate destination in a safe manner is very high.

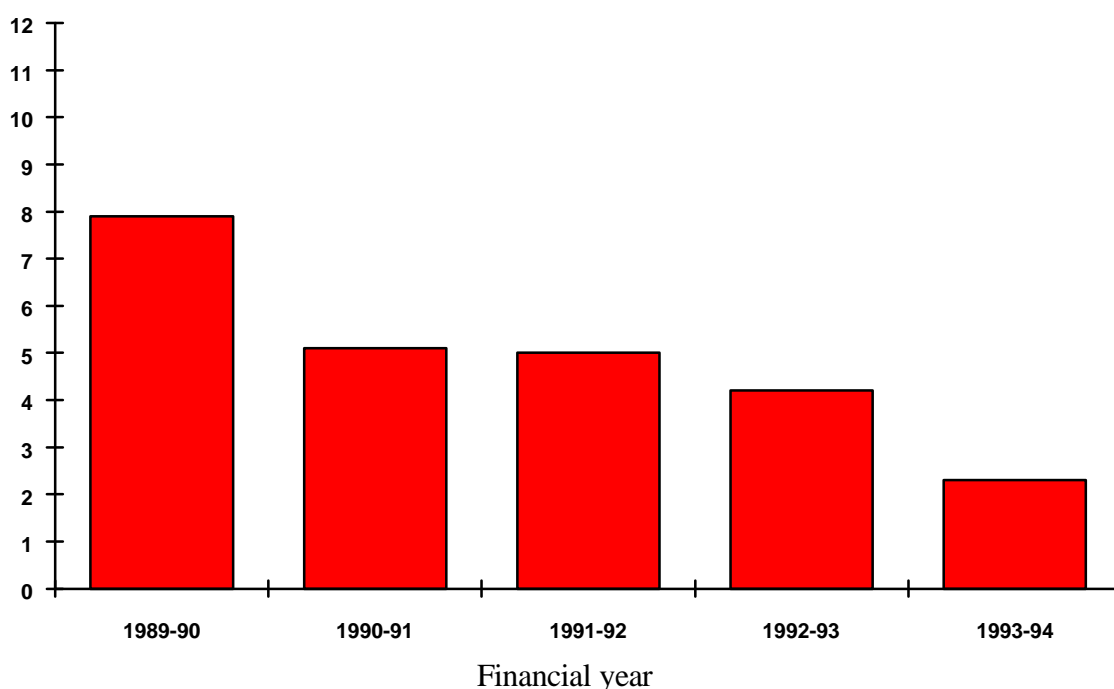
**7.39** In contrast, audit found that most of the transport inspections in Victoria are directed at road vehicles already in the transport chain. **Very little inspection activity is directed to the following origins of transport:**

- vehicles leaving the Port of Melbourne carrying containerised dangerous goods;
- vehicles leaving facilities adjacent to the Port of Hastings carrying LPG;
- facilities where containerised dangerous goods arriving at the Port of Melbourne are separated for transport by road and rail; and
- interstate freight managed by the National Rail Corporation.

#### *LPG installations*

**7.40** An examination of inspection data for the 5 years ended June 1994, indicated that a low priority has been assigned to the inspection of LPG installations by the Authority with a gradual decline in the proportion of inspection resources assigned to the area over the period. These trends are shown in Table 7F.

**TABLE 7F**  
**PROPORTION OF RESOURCES ALLOCATED TO LPG INSPECTIONS**  
(per cent)



**7.41** As disclosed in Part 6 of this Report, operators involved solely in LPG storage are not required to provide similar information to the Authority as operators storing or handling other types of dangerous goods. Consequently, **data on the number of LPG operators within the State is not available to the Authority**. In these circumstances, uncertainty exists regarding the level and adequacy of inspection coverage achieved in relation to LPG installations.

**7.42** However, verbal and written feedback provided to audit by a number of dangerous goods field inspectors indicated that the time spent is, in their view, no longer adequate to cover risks. For instance, the Mulgrave region has the highest level of LPG installations in the State, some of which have not been inspected since 1987.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority has established a set of priorities for dangerous goods field activity and monitoring of performance against these priorities is undertaken. The Authority is currently examining its priorities in these areas and this will address points made by audit.*



### Delegation of powers

**7.43** The *Dangerous Goods Act* 1985 provides for delegation of inspection powers to officers of the Roads Corporation, members of the police force, or officers of a fire authority or municipality. At the time of the audit, the Occupational Health and Safety Authority had delegated inspectorial powers to 11 officers of the Metropolitan Fire Brigades Board and the Country Fire Authority for the purpose of enforcing fire protection requirements. In 1991, the Authority also provided training on dangerous goods matters to 40 Port of Melbourne Authority staff to enhance enforcement of regulations in the port area. Although discussions at the time canvassed the possibility of providing staff of the Port of Melbourne Authority with delegated inspectorial powers, such delegations were not arranged.

**7.44** Nevertheless, a program was established by the Port of Melbourne Authority for regular inspections of trucks leaving the Port. Until September 1993, all exits from the Port, with the exception of certain leased areas, were manned by Authority personnel who inspected for correct placarding, load compatibility and the presence of correct safety equipment and emergency procedure guides. These inspections resulted in the detection of 70 breaches by 38 offenders over 9 months.

**7.45** A decision was subsequently made by the Port of Melbourne Authority to cease the routine inspection of trucks from September 1993 with a view to saving the associated annual costs estimated at \$1.4 million. Inspections are now limited to very occasional spot checks undertaken as part of regular surveillance activities.

**7.46** Audit considers that **there is a need to re-assess the cost-effectiveness of achieving increased inspection coverage through further delegation of powers** to agencies in a position to undertake enforcement activity, in addition to the Port of Melbourne Authority. For example, feedback to audit from management of the Metropolitan Fire Brigades Board indicated that it is seeking and would welcome increased dangerous goods delegations. The Board indicated that with over 45 strategically located fire stations, it would be able to tackle problems of non-compliance with the dangerous goods regulations.

**7.47** Audit was also advised by Roads Corporation that it carries out an average of 150 000 checks of trucks each year with the majority comprising routine mass checks at weighbridges located on major highways. With appropriate training, staff undertaking these checks could expand their examinations to include dangerous goods matters.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*As explained to audit, there is no provision in the Dangerous Goods Act to delegate inspectors' powers to employees of the Port of Melbourne Authority and there is no expectation that Port of Melbourne Authority staff should enforce the Dangerous Goods Act. The Authority is aware of the Government's Port Reform initiative and believes that delegations to Port of Melbourne Authority officers is not a realistic prospect even if it could be justified.*

*The Metropolitan Fire Brigades Board is keen to gain more delegations and the Authority will make the necessary arrangements when the Brigade is in a position to accept them and the Authority is able to provide the necessary training. VicRoads, as far as the Authority is aware, has no interest in having its staff carry out dangerous goods inspections and the Authority has no plans to pursue the matter.*

□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*The practice of inspecting containers of dangerous goods leaving the Port was discontinued in May 1993 as part of a much broader issue - the \$1.4 million cost of manning gatehouses to check cargo which had already been tallied out by the stevedore/terminal operator. In any event, these inspections were never more than a check to ensure that the container was placarded and paperwork was in order.*

## Public Transport Corporation

**7.48** The Public Transport Corporation has developed a comprehensive manual covering dangerous goods transport requirements and storage procedures which was updated in January 1994. The manual sets out emergency response procedures, responsibilities of customers and Corporation staff at various levels in addition to training requirements. Although audit found that the manual adequately reflects the principles of the dangerous goods legislation its effectiveness is compromised by the lack of staff awareness of the document in some cases, and the absence of regular monitoring of compliance with its provisions.

**7.49** Internal monitoring has been limited to a number of recent reviews focused on health and safety and to the examination of recorded incidents by the Corporation's dangerous goods officer, with a view to identifying any inherent problems or apparent procedural weaknesses. In 1995, the Corporation intends implementing regular dangerous goods audits of freight terminals and trains. These audits will form an essential component of the internal framework for ensuring compliance with regulatory requirements.

□ **RESPONSE** provided by Chief Executive, Public Transport Corporation

*The Corporation has already achieved Interim Accreditation to run a railway in Victoria, and is presently seeking Quality Management and Quality Assurance Standards. Part of all these requirements is documentation and audit of dangerous goods regulations, as well as comprehensive safety procedures.*

## LEVEL OF COMPLIANCE

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### Hazardous Chemicals Audit Team

**7.50** The Hazardous Chemicals Audit Team established in July 1990 comprised members of a range of Local Government and Victorian Government agencies involved in the regulation of hazardous chemicals. Over a period of around 2 years, the Team completed approximately 1 200 inspections and made 12 000 recommendations to various companies, mainly addressing non-compliance with dangerous goods regulations and local government building requirements.

**7.51** An analysis of 450 of the Team's inspection files by the Hazardous Chemicals Secretariat was undertaken to obtain a general indication of the degree of compliance within the industry at that time. The analysis disclosed high levels of non-compliance, particularly in the following areas:

- inadequate emergency access and egress (72 per cent);
- inadequate bunding, for spill control (64 per cent);
- unsafe chemical segregation (52 per cent);
- unlawful chemical discharge to the environment (50 per cent);
- inadequate signs (44 per cent);

- failure to provide protective equipment (39 per cent);
- failure to assess the chemical hazards at the premises (39 per cent);
- failure to obtain appropriate building permits from local government authorities (30 per cent); and
- unsuitable location of chemicals (28 per cent).

**7.52** The Secretariat concluded that the levels of non-compliance were unacceptable and should be of serious concern to government, the community and industry. Further comment on the findings of the Secretariat are provided in Part 4 of this Report.

### Occupational Health and Safety Authority

**7.53** The Occupational Health and Safety Authority has not developed specific objectives for dangerous goods inspections and the inspection function is undertaken under the general objectives of reducing work-related incidents and promoting the safety of persons and property. However, audit was advised that the Authority considers a significant component of its inspection role is in the area of encouraging or enforcing compliance. Consequently, trends in the level of compliance achieved in particular categories of dangerous goods activity or in particular industries provides a useful indicator of the effectiveness of inspections.

**7.54** As comprehensive data on the level of industry compliance is not regularly collected and analysed by the Authority, **it is not in a position to determine whether compliance levels have improved in recent years.** However, information collected through the use of checklists used on some specific projects has been maintained within the Authority's information systems. Summary results of compliance levels, using the checklist data from 3 separate areas of dangerous goods activity follow.

#### *Storage and handling*

**7.55** Analysis of 2 322 inspections of dangerous goods storage facilities over the period April 1991 to August 1994 are set out in Table 7G. Percentages shown relate to the number of establishments inspected which were required by legislation to comply with a particular issue.

**TABLE 7G  
COMPLIANCE LEVELS - STORAGE,  
APRIL 1991 TO AUGUST 1994**

<i>Compliance issue</i>	<i>Per cent</i>
Security acceptable	97
Maintenance plans acceptable	87
Packaging approved and labelled	87
Personal protective equipment/safety equipment acceptable	82
Housekeeping acceptable	82
Ventilation acceptable	78
Class segregation acceptable	75
Materials Safety Data Sheet/information acceptable	74
Spill control acceptable	68
Training plans/records available	67
Emergency plans/records available	58
Site plan acceptable	55
Manifest acceptable	51
Fire protection report available/applied for	51
Placarding/safety signs acceptable	50
Licence held	42
Establishment registered	34
Dangerous goods notified	22

### *LPG installations*

**7.56** Table 7H sets out results of a Statewide project conducted between November 1992 and March 1993 involving the inspection of LPG facilities at service stations. The data is compiled from 565 inspection results.

**TABLE 7H  
COMPLIANCE LEVELS - LPG,  
NOVEMBER 1992 TO MARCH 1993**

<i>Compliance issue</i>	<i>per cent</i>
Poor nozzle condition	14
Good nozzle condition	44
Good dispenser condition	45
Routine check procedures available	40
Emergency shutoff - operated monthly	74
Records available on maintenance	18
Fire Protection Report sought	53
Training satisfactory -	
Safe handling of gas	79
Correct filling procedures	89
Emergency procedures	81
Fire fighting procedures	74

## Transport

**7.57** Audit was advised that in a 1991 transport blitz, 88 per cent of trucks carrying dangerous goods on the Princes Highway near Little River were found to be in breach of the regulations. In comparison, similar projects detected breaches in 50 per cent of cases in 1993 and 49 per cent in 1994. The Authority advised that the nature of breaches had become less serious since truck blitzes were first implemented. Although a detailed report of a further blitz conducted by the Authority early in 1995 was not available at the time of completing this Report, a News Release issued by the Minister for Industry Services in February 1995 indicated that nearly 50 per cent of the 183 transporters of dangerous goods inspected during that blitz did not meet regulatory requirements.

**7.58** Audit found that while checklist data provides some indication of compliance levels in certain areas, it has limitations as a basis for determining overall compliance levels as:

- a checklist is not prepared in the case of all inspections and in some cases checklists are not consistently prepared;
- bias may exist as a result of targeting of projects in areas of suspected high non-compliance; and
- many of the projects are not repeated therefore trends in compliance levels are not available.

**7.59** Nevertheless, **given that the requirements established in regulations represent minimum safety standards, many of the compliance results disclosed in checklist data are unacceptable.**

□ *RESPONSE provided by Acting Secretary, Department of Business and Employment*

*In a self-assessment framework like that in occupational health and safety and dangerous goods, it is impossible to talk about absolute levels of compliance. It is not possible to identify at any one time absolute levels of compliance. The Authority, like other agencies, is able to get a snap shot of compliance but it is difficult to generalise in a self-assessment system. The Authority agrees with the need for more consistent use of checklists and development of new ones where appropriate to improve its capacity to generalise from specific projects.*

## Evaluation of projects

**7.60** According to the Authority's procedures, a project evaluation is to be completed for each project and results recorded in information systems within 3 months of project completion. Evaluations, together with recommendations, are to be submitted to the Authority's Occupational Health and Safety Steering Committee for review.

**7.61** Due to the absence of a complete set of minutes and associated papers for Steering Committee meetings, audit had difficulty in determining whether project evaluations had, in fact, been reviewed by the Committee. Minutes on record detailed a review of only one of the 8 projects selected for audit examination and in cases where an evaluation could not be provided, only 4 had project reports recorded on the Authority's database. None of the projects were reported within the 3 month target and where follow-up action had been recommended by the Committee, audit encountered difficulty in establishing whether such action had been taken.

**7.62** Given the large proportion of inspection resources allocated to project activity (70 per cent), it is important that project results are consolidated and promptly analysed with a view to assessing levels of compliance and determining the need for any future action.

## Public Transport Corporation

**7.63** Although the majority of internal reviews within the Public Transport Corporation had been directed at health and safety issues, they covered certain aspects of dangerous goods management. It was evident from the findings of these reviews that a number of non-compliance issues have existed in recent years.

**7.64** In July 1994, the Occupational Health and Safety Authority commenced an inspection project aimed at assessing compliance with dangerous goods legislation within the central freight terminals operated by the Corporation in addition to a number of other Corporation locations throughout the State. A summary of preliminary findings emanating from the inspections indicated that several written directions addressing non-compliance had been issued as a result of the inspections. The directions identified action required to address the following deficiencies at one or more of the Corporation's locations:

- fire protection reports had not been prepared for a number of locations with an assessment factor greater than 10;
- not all relevant safety signs were displayed at terminals;
- manifests were not available at freight terminals;
- emergency plans were required at the Melbourne Freight Terminal;
- site plans were required at the Dynon Freight Terminal;
- training information was not available at the Dynon Freight Terminal;
- explosives in the form of audible track warning signals and certain other dangerous goods were not appropriately stored at various terminals; and
- LPG cylinders were not protected adequately.

**7.65** Audit considers that the previously mentioned absence of a more systematic internal approach by the Corporation to regularly monitoring compliance and following-up areas of non-compliance has contributed to this situation. However, audit has been advised that substantial progress has been made in rectifying the matters raised.

□ **RESPONSE** provided by Chief Executive, Public Transport Corporation

*Internal systems have been introduced in conjunction with the accreditation system which covers the handling of dangerous goods as referred to at the end of paragraph 7.49 of this Report.*

# **Part 8**

# **Investigations and prosecutions**

## OVERVIEW

**8.1** Enforcement strategies can contribute in a number of ways to achieving sound dangerous goods practices through imposing sanctions on non-compliant operators, acting as a deterrent to other operators and contributing to the education process. With this in mind, regulatory agencies need to link their enforcement approach to the overall strategies developed to address areas of risk.

**8.2** Audit found that different approaches to enforcement had been adopted by the 2 key regulatory agencies. While prosecutions had been initiated by the Port of Melbourne Authority in many cases where non-compliance was detected during routine inspections, the Occupational Health and Safety Authority had generally only prosecuted operators where an incident had resulted in a fatality, serious injury or major property damage. The difference in approach contributed to a situation where almost as many prosecutions had been initiated for offences within the Port of Melbourne as in the remainder of the State.

**8.3** The action often taken by the Occupational Health and Safety Authority in cases where non-compliance is detected during inspections is to issue written directions to operators specifying the requirements to be met and a timeframe for achieving compliance. The high proportion of operators receiving several written directions in recent years suggests that the failure to take legal action where requirements are not met, together with the absence of an infringement notice system, have diminished the effectiveness of enforcement as a preventative measure.

**8.4** Audit concluded that a more strategic approach needs to be adopted by the Occupational Health and Safety Authority in relation to the enforcement of dangerous goods. In addition, the timeliness of investigations relating to dangerous goods incidents needs to be improved and, in the case of the Port of Melbourne Authority, accountability for investigations needs to be strengthened.

## INTRODUCTION

**8.5** The *Dangerous Goods Act 1985* specifies a number of actions which may be taken by the Occupational Health and Safety Authority to enforce legislative provisions, including:

- the issue of *written directions* detailing action which an inspector believes, on reasonable grounds, is necessary to ensure the safety of persons or property;
- provision for regulations to include the issue of *infringement notices* for an offence against the Act; and
- *prosecution* which may be brought by the Minister, an inspector or a member of the police force for an offence against the Act.

**8.6** The Act provides for maximum penalties to be imposed by the Courts ranging from \$10 000 to \$250 000 depending on whether the offence is a summary or indictable offence, is a first or subsequent offence and the defendant is a company or an individual.

**8.7** The failure of responsible parties to comply with the Regulations issued by the Port of Melbourne Authority also constitutes an offence. The maximum penalty which can be imposed by the Courts in these cases is \$50 000.



## INVESTIGATION OF INCIDENTS

### Occupational Health and Safety Authority

**8.8** Where an incident is reported to the emergency response service of the Occupational Health and Safety Authority, a regional inspector is generally required to attend with a view to providing technical advice. A comprehensive follow-up investigation is to be completed, under the guidance of the Authority's Central Investigations Unit where:

- a fatality or serious injury has occurred;
- the incident had the potential for serious consequences; or
- the operator did not hold the required licence.

**8.9** At the completion of the investigation, a detailed report recommending any prosecution and preventative measures is prepared and forwarded to the Central Investigations Unit of the Authority.

**8.10** The Authority has determined that investigation reports associated with fatalities or serious accidents are to be completed within 3 months of the commencement of the investigation. Other reports are to be completed within 6 months. The statute of limitations requires court proceedings relating to summary offences under dangerous goods legislation to be initiated within 12 months of the incident.

**8.11** Although 34 dangerous goods prosecutions had been initiated by the Authority since 1989, files relating to only 22 of these cases could be provided for audit examination. Audit analysis of these files indicated that an average of 17.5 months elapsed between the incidents relating to the prosecution and the time the cases reached the Courts. The length of time taken to finalise investigations and prosecutions resulted from a combination of:

- The time taken for the initial investigation of incidents, which on average was 5 months. In around 30 per cent of cases the time taken to complete investigation reports exceeded the target of 3 months;
- An average of a further 5 months before charges were laid. In many cases, these delays resulted from the need for further investigation of the matter subsequent to the finalisation of the report. Documentation within some files also indicated that there were periods of inaction during this period;
- Delays requested by the defendant; and
- Delays resulting from a backlog within the Courts.

**8.12** Audit was advised by Authority personnel that the statute of limitations in relation to summary offences prevented many additional cases from reaching prosecution, particularly in respect of charges laid under the Dangerous Goods (Transport) Regulations 1987.

**8.13** **Given that the impact of publicity of the prosecutions as a deterrent or for educative purposes is likely to be greater closer to the time of the incident, audit considers that efforts should be made to satisfactorily conclude investigations within the timeframe set by the Authority or earlier where possible.**

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*While the Authority is presently introducing measures to shorten the time frame for investigations and prosecutions, the Authority recognises that factors outside the control of the Authority may delay the prosecution being heard in court. Audit has indicated some of these possible delays, such as delays requested by the defendant and other delays resulting from a backlog within the courts. It is therefore important that audit recognises that OHSa can control prosecution processes only to the point where they are brought to court.*

### **Port of Melbourne Authority**

**8.14** A log is maintained of all incidents within the Port of Melbourne and, with the exception of minor cases, a formal report of the incident is prepared. Reports are also prepared in cases where Authority officers detect non-compliance during their regular inspection activities. In these circumstances, or where there is evidence that an incident resulted from negligence, a brief is prepared and an assessment made of whether further action should be initiated in the form of prosecution or a warning.

**8.15** Examinations of a sample of briefs disclosed several instances where explanations could not be provided by the Authority to justify the decision to issue a warning or to take no further action where an initial recommendation had been made to initiate prosecution.

**8.16** **Unless decisions are clearly documented and independently approved, the Authority could leave itself open to criticism of inconsistency or favouritism.**

## ENFORCEMENT APPROACH

### Occupational Health and Safety Authority

**8.17** The enforcement policy of the Occupational Health and Safety Authority indicates that the functions involving inspections, the provision of advice and training, the issue of written directions, investigation of incidents and the prosecution of offenders all form part of a comprehensive strategy aimed at promoting the health and safety of persons at work as well as those affected by workplace-related activities.

**8.18** The *Dangerous Goods Act* 1985 specifies that guidelines relating to the prosecution of offenders are to be issued by the Minister to inspectors and other persons delegated powers under the Act. The current guidelines, issued by the Minister for Labour in 1991, indicate that written directions and infringement notices are the primary instruments to be used to enhance the enforcement of the dangerous goods legislation. The overall objectives of the instruments are to provide an improved level of safety to workers and the community and to forewarn of possible prosecution.

### *Infringement notices*

**8.19** The *Dangerous Goods Act* 1985 indicates that as an alternative to prosecution for offences against the Act, regulations can provide for a person to be served with an infringement notice, specifying a fixed penalty.

**8.20** Approval to draft Dangerous Goods (Infringement Notice) Regulations was given by the Minister for Labour and in October 1990 the Premier approved a Certificate of Exemption from the Regulatory Impact Statement process. The submission prepared by the Authority when seeking the Exemption indicated that the introduction of the Regulations was essential to the implementation of the overall strategy for chemical safety. It also indicated that:

- High levels of non-compliance had been detected by the Authority including many contraventions of technical requirements which did not warrant prosecution;
- There was a need for a mechanism for minor matters, which could ultimately result in a major incident, to be dealt with expeditiously and to be subject to an immediate financial deterrent. Prosecution was recognised as a time-consuming and expensive process not warranted in lesser offences;
- The number of incidents involving dangerous goods was at an unacceptable level; and
- The introduction of infringement notices was consistent with enforcement of other legislation administered by the Environment Protection Authority, the Victoria Police, the Roads Corporation and local government agencies. Infringement notices in these areas had been designed to be an active deterrent to non-compliance.

**8.21** By August 1992, the Regulations were substantially completed. However, following the change of government 2 months later, Ministerial approval to continue the regulatory process was not sought and, at the time of completing the audit, no further action had been taken for the finalisation or adoption of the Regulations.

**8.22** In audit opinion, **the effectiveness of the Authority's enforcement strategy has been diminished by the absence of a mechanism such as the issue of infringement notices.** Under current arrangements, the only alternatives available in cases where continued breaches occur are the issue of written directions or the initiation of costly prosecutions.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority agrees with audit's recommendation regarding infringement notices. There is provision in the Act for the use of on-the-spot fines, and the Authority began development work on the implementation of a framework for the issuing of on-the-spot fines in January 1995. This framework is consistent with the recommendations of the draft Industry Commission report on work, health and safety.*

**Written directions**

**8.23** During dangerous goods inspections, officers of the Authority may provide verbal advice in relation to matters of non-compliance. In some cases, written directions are issued detailing the specific requirements an offender needs to address to comply with the dangerous goods regulations. They also specify a timeframe within which the requirements are to be addressed.

**8.24** Authority documentation indicates that written directions must be issued where an inspector believes, on reasonable grounds, that immediate action or cessation of activity involving dangerous goods is necessary to ensure the safety of persons or property. Documentation also indicates that where an employer in a workplace situation has a system in place for a planned approach to dangerous goods management and can effectively and promptly address the issue using existing arrangements, written directions need not be used.

**8.25** Data on the number of requirements addressed within the directions issued over the period July 1989 to June 1994, are set out in Table 8A.

**TABLE 8A  
REQUIREMENTS WITHIN  
DIRECTIONS ISSUED  
JULY 1989 TO JUNE 1994**

<i>Year</i>	<i>No. of specific requirements</i>
1989-90	52
1990-91	736
1991-92	3 027
1992-93	6 184
1993-94	4 829

**8.26** Audit analysis indicated that **approximately 64 per cent of all written directions during the period were issued to organisations which had previously received at least one direction. Due to the limitations of its information system, the Authority was unable to provide details on the number of those directions which were issued to the same organisation for the same or similar offences.** However, available data did indicate that:

- 853 organisations received between 2 and 4 written directions;
- 131 organisations received between 5 and 9 written directions; and
- 67 organisations received more than 10 written directions.

**8.27** **The high proportion of organisations receiving several written directions suggests that the mechanism is not currently taken seriously by many dangerous goods operators.** As previously indicated, the only options available to inspectors in such circumstances are the issue of further written directions or prosecution.

**8.28** The Authority has been reluctant to prosecute in cases where there has been a failure to comply with written directions due to the difficulty in substantiating that the safety of persons or property is at risk as a result of the non-compliance. Audit considers that prosecution difficulties may also arise where an inspector has previously limited enforcement to the provision of verbal advice or has adopted a lenient approach where the operator has been slow to address the matters addressed in written directions.

**8.29** Audit concluded that in the absence of a threat of legal action in cases where written directions have not been followed, **it is questionable whether the Authority's primary instrument for the enforcement of legislation can be totally effective in encouraging compliance or deterring operators from further breaches of regulatory requirements.** Audit's view is consistent with an April 1995 draft Industry Commission report on *Work, Health and Safety* which indicated that effective enforcement of the duty of care "requires the application of sanctions to all significant breaches as soon as possible following detection. In such instances, the use of persuasion is inappropriate as it detracts from the deterrence value of enforcement action on the behaviour of others".

❑ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*Audit's suggestion that the issue of multiple directions to an organisation is evidence that such directions are not taken seriously by operators is rejected. Written directions are issued on a range of matters over a period of time and cannot be construed as evidence of a continual failure to comply with matters serious enough to warrant prosecution.*

## PROSECUTIONS

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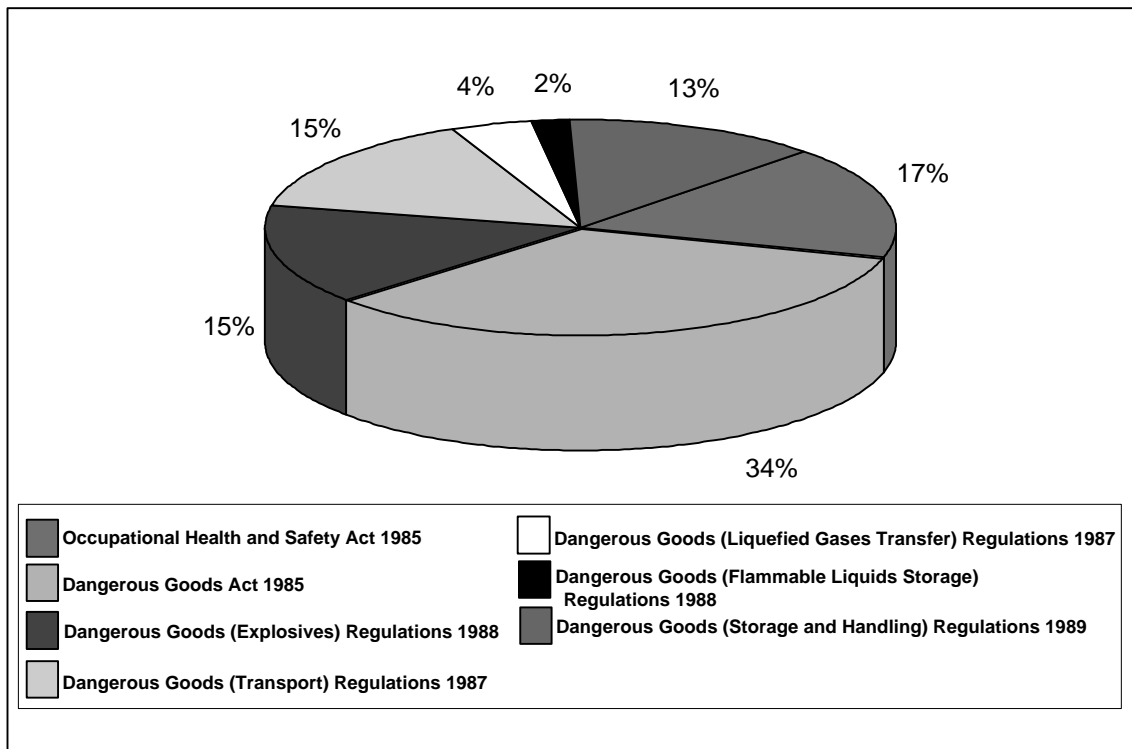
**8.30** The 1991 guidelines indicate that prosecutions will generally be instituted in the following circumstances:

- where offences are alleged in relation to obstruction, assault or intimidation of an inspector or delegate;
- where contravention of, or failure to comply with, any lawful direction, notice, demand or order of an inspector is alleged;
- where an alleged contravention of the Act has resulted in, or had the potential to result in, a fatality or serious injury to any person;
- where a contravention of the Act contributes to an incident involving dangerous goods which causes, or has the potential to cause, major damage to property;
- where any person who has been previously convicted of an offence against the Act is alleged to have again contravened the Act, either for the same or another offence;
- where a person who does not hold a licence or permit carries out any action for which a licence or permit is required by the Regulations; and
- where an accident resulting from an alleged contravention of conditions, limitations and restrictions prescribed by storage site approvals causes, or has the potential to cause fatality, serious injury to any person, or major damage to property.

**8.31** In the 5 years to June 1994, there have been 34 prosecutions involving 201 charges laid under the *Dangerous Goods Act 1985* and its supporting regulations. A further 43 charges associated with these prosecutions were laid under the *Occupational Health and Safety Act 1985*.

**8.32** As indicated in Chart 8B, around half of the charges related to alleged breaches of the general duty of care provisions of the *Occupational Health and Safety Act 1985* and the *Dangerous Goods Act 1985*. These provisions place the responsibility for safety in the workplace and in relation to dangerous goods activities on employers, occupiers or transporters. The remaining charges related to breaches of various specific regulatory provisions.

**CHART 8B  
CHARGES LAID UNDER DANGEROUS GOODS LEGISLATION, 1989 TO 1994**



**8.33** Of the 34 prosecutions involving dangerous goods, 27 resulted in a conviction in relation to at least one of the charges laid. Of the 201 charges laid under the dangerous goods legislation, 106 were withdrawn by the Authority. Audit was advised that in many cases this situation occurred when the defence was willing at the *mention hearing* to enter a plea of guilty to the remaining charges forming part of the prosecution thus saving the cost and inconvenience of a full, contested hearing at a later date.

**8.34** The average fines imposed by the Courts under the dangerous goods legislation, based on the files available for audit examination, were around \$1 000 per charge for individuals and \$8 100 for companies. The fines represented 10 per cent of the maximum penalty in the case of individuals and 20 per cent in the case of companies.

*Prosecution as a preventative mechanism*

**8.35** Prosecutions and the imposition of fines can contribute in a number of ways to achieving the Authority's enforcement objectives. For example, they can serve as punishments for unsafe practices, provide deterrents to further breaches by a particular operator, deter other operators from unsafe practices or contribute to the educative process through publicising issues raised during court proceedings.

**8.36** Audit found that although the Authority has clearly documented the procedures to be followed in relation to enforcement and prosecution, it has not formalised the specific aims of its prosecution activity. In addition, it has not defined target groups, such as those where high levels of non-compliance are evident.

**8.37** The 1991 guidelines indicated that prosecution could be used as a tool aimed at the prevention of a serious outcome. For example, they indicate that prosecution can be initiated where:

- an alleged contravention of the Act has resulted in, or had the potential to result in, a fatality or serious injury to any person; or
- a person operates without the required licence.

**8.38** In practice, the majority of prosecutions initiated by the Authority under the *Dangerous Goods Act 1985* have been associated with incidents resulting in a fatality, serious injury or major property damage. **There have been only 2 cases over the last 5 years where prosecutions have been initiated as a preventative mechanism or for repeated non-compliance.**

**8.39** It is recognised that prosecution resulting from serious incidents is necessary in some cases. However, for prosecutions to be used as a mechanism to encourage compliance or act as an effective deterrent to non-compliance, **it is important that available resources are also directed in a strategic manner to areas of high non-compliance or to areas of highest risk to community safety.**

**8.40** Under the Authority's current approach, the pattern and distribution of prosecutions is primarily dependent on the occurrence of incidents involving dangerous goods and the strength of evidence gathered to support the action. Internal documentation prepared in July 1994 indicated that a number of *low-priority* files were removed from the prosecution list and returned to the regions for inspection. This action, which was taken to bring the number of files pending prosecution back to a manageable workload, indicates that prosecution by the Authority is also dependent on the availability of resources to investigate and pursue cases.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority's prosecution strategy focuses on system of work breaches (under the general duty of care) as distinct from only focusing on technical breaches. It is worthwhile to note that the draft Industry Commission report on work, health and safety comments that the duty of care should be the focus of enforcement. In contrast to audit's recommendation, the draft Industry Commission report comments that when penalties are disproportionate to the offence, deterrence can be counter-productive and can be destructive to co-operation between the enforcement agency and the workplace. Balancing these views, the Authority will review its strategy and seek to identify technical breaches where prosecution activity is justified for preventative purposes.*

*Audit's assertion that only 2 cases have been initiated as a preventative mechanism by the Authority is rejected. All prosecution activity undertaken by the Authority is preventative. To reinforce this view, the Authority has established a quarterly information sheet titled Recent Prosecutions which advises the Authority's clients and staff of prosecution activity. The Authority also publishes its prosecution activity in its newsletter Workwords and is currently assessing ways to have prosecution results, including notices and written directions issued, detailed in the print media.*

**Port of Melbourne Authority**

**8.41** Information provided by the Port of Melbourne Authority on the actions taken as a result of detected non-compliance or incidents over the 5 years to June 1994 is presented in Table 8C.

**TABLE 8C  
ACTION TAKEN ON OFFENCES DETECTED, JULY 1988 TO JUNE 1994**

Year	Prosecutions	Warnings	No further action	Total
1989-90	3	6	3	12
1990-91	13	4	8	25
1991-92	8	-	-	8
1992-93	1	17	-	18
1993-94	3	2	-	5
<b>Total</b>	<b>28</b>	<b>29</b>	<b>11</b>	<b>68</b>

**8.42** Audit was advised that the maximum fine imposed by the Courts in the case of successful prosecutions was \$2 000 plus costs.

**8.43** The Port of Melbourne Authority has not established a formal enforcement policy document. However, audit found that in comparison to the approach adopted by the Occupational Health and Safety Authority of generally initiating prosecutions only as a result of an accident or incident, the Port of Melbourne Authority has prosecuted in many cases where non-compliance was detected during routine investigations. It is also interesting that **almost as many prosecutions have been initiated for non-compliance within the area administered by the Port of Melbourne Authority as have been initiated by the Occupational Health and Safety in the remainder of the State.**



□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*The Authority has commenced a review of its procedural guidelines in relation to the enforcement of prosecution provisions relating to dangerous goods based on the finding of the Report.*

*Given the changed responsibility arrangements proposed, it is appropriate that this matter also be considered by the Occupational Health and Safety Authority and the other agencies responsible for enforcement of prosecutions.*

# **Part 9**

# **Emergency response**

## OVERVIEW

**9.1** Although sound management procedures can reduce the risks associated with dangerous goods to an acceptable level, it is not possible to eliminate all incidents particularly where human factors are involved. In recent years, there have been a large number of dangerous goods incidents within the State with over 200 reported to the Occupational Health and Safety Authority in 1993-94 alone.

**9.2** With the aim of promptly and effectively containing the impact of incidents, sound emergency procedures need to be established by individual operators and by the government agencies responsible for providing emergency response services. In this regard, a Statewide plan has been developed which sets out procedures to be followed and defines the roles of various agencies during major emergencies. Audit found that the plan could be strengthened through enhanced communication between relevant agencies.

**9.3** The dangerous goods regulations also define a number of requirements, to be met by individual operators, which are aimed at enabling incidents to be dealt with effectively. Requirements include the establishment of emergency plans and fire protection measures, display of appropriate signs and preparation of manifests indicating the nature and volume of dangerous goods likely to be at a premises or on a transport vehicle.

**9.4** However, the high levels of non-compliance with these requirements disclosed during Occupational Health and Safety Authority inspections raise doubts regarding the preparedness of some operators to deal with emergencies. It also indicates that key information necessary to aid emergency agencies in promptly identifying the nature and quantity of substances involved in an incident is not always available.

## INTRODUCTION

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**9.5** Dangerous goods incidents may include fire, explosion, spillage, leakage or escape of hazardous substances. They can also result in damage to property or the environment and injury or death to individuals in the workplace or the wider community.

**9.6** Prompt identification of substances involved in such incidents and their effective containment can be aided by compliance with certain regulatory requirements. In the case of premises where the assessment factor is calculated at 10 or more, operators are required to:

- **Obtain fire protection reports from fire authorities.** Action to address any recommendations made in a report is to be taken before dangerous goods are brought onto the premises or in the case of existing premises, within 12 months;
- **Develop emergency plans,** in a form acceptable to the fire authorities, detailing procedures to be adopted in an emergency. The *Australian Code for the Transport of Dangerous Goods by Road and Rail* also requires procedural guides for an emergency involving road and rail transport of dangerous goods; and
- **Prepare and maintain manifests.** All dangerous goods cargo entering a port, either by tanker or in a container or transported by road and rail, must also be accompanied by a manifest prepared by the consignor of the goods.

**9.7** Outer warning signs are to be displayed where certain quantities of dangerous goods are stored and likewise vehicles transporting dangerous goods by road or rail are to be appropriately marked in accordance with provisions of the Transport Code.

**9.8** While some incidents involving dangerous goods are relatively minor and able to be contained by the operator without outside assistance, others are of such magnitude or nature that involvement of the fire authorities and other government agencies is required. These latter incidents may come within the ambit of the *Emergency Management Act 1986* which deals with emergencies endangering the safety or health of any person or damage to property. The Victorian State Disaster Response Plan (DISPLAN) established under the Act provides for a co-ordinated response to emergencies and identifies the roles and responsibilities of various agencies.

**9.9** To enable incidents involving dangerous goods to be effectively contained, it is essential that a high level of compliance with the safety standards defined in regulations is achieved. In addition, it is essential that the response to any incident by government agencies is timely, appropriate to the particular incident and properly co-ordinated.

## COMPLIANCE WITH LEGISLATIVE REQUIREMENTS

**9.10** Based on the limited consolidated inspection results available within the Occupational Health and Safety Authority, as discussed in Part 7 of this Report, low levels of compliance with regulatory requirements specifically aimed at dealing with dangerous goods incidents have been identified.

### Fire protection reports

**9.11** Data provided to audit by the 2 fire authorities indicated that a total of only 2 400 fire protection reports had been issued in comparison with around 4 300 storage and handling premises recorded by the Occupational Health and Safety Authority at August 1994. The Metropolitan Fire Brigades Board advised that of 1 220 operators it provided with reports, only 17 per cent had complied with the recommendations. The fire authorities also expressed concern that a large number of premises subject to the dangerous goods legislation were not recorded by the Authority and would not have applied for fire protection reports.

**9.12** This low level of compliance is also evident in the results of inspections of 2 322 storage sites undertaken by the Authority between April 1991 and August 1994. Fire protection reports were available or had been applied for in only 51 per cent of sites examined. Similarly, of the 565 records relating to LPG facilities at service stations examined by the Authority between November 1992 and March 1993, **only 53 per cent had sought fire protection reports.**

**9.13** It was particularly disappointing that the Public Transport Corporation had not obtained fire protection reports for a number of its sites where dangerous goods were used or stored. Although the Corporation subsequently applied for fire protection reports for its major city freight terminals, information provided by the Metropolitan Fire Brigades Board indicated that such reports had not been requested for other Corporation terminals or workshops with assessment factors between 10 and 100.

❑ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority recognises problems in the achievement of compliance with the fire protection requirement of the Dangerous Goods (Storage and Handling) Regulations.*

*Action was taken in 1993 on the issue when officers of the Metropolitan Fire Brigades Board and Country Fire Authority were trained and issued with delegations of inspector's powers specifically to carry out compliance activity on fire protection measures. Currently there are 18 fire authority officers with delegations.*

*Further compliance action will take place in 1995 involving the fire authorities and Authority personnel.*

❑ **RESPONSE** provided by Chief Executive, Public Transport Corporation

*Applications for fire protection reports at the Corporation's 3 major Melbourne freight terminals were submitted in 1990. The Metropolitan Fire Brigades Board did not act on the applications. Fire protection report inspections have now commenced.*

## Emergency plans

**9.14** As action taken at the time of, or immediately following an incident can affect the chances of minimising its impact, the development of emergency plans or procedure guides is of particular importance. In addition, staff within organisations utilising dangerous goods should be properly trained to aid in combating incidents and should participate in periodic exercises to test emergency preparedness.

**9.15** Inspection data from transport blitzes undertaken by the Authority in 1993 and 1994 revealed that 90 per cent of vehicles inspected carried acceptable emergency procedure guides. On the other hand, the results of the inspections of storage sites disclosed that emergency plans were available in only 58 per cent of cases.

**9.16** In the 2 year period to June 1994 there were almost 100 incidents recorded by the Port of Melbourne Authority, primarily related to spills or leakages of flammable or toxic substances. The Public Transport Corporation had also recorded in excess of 50 incidents since 1990 in which dangerous goods, or goods thought to be of a dangerous nature were involved. Given the potential impact of these incidents on the public and the environment, it is particularly important that adequate emergency plans are prepared by the agencies responsible for these areas.

**9.17** At the time of the audit, the Port of Melbourne Authority had been operating without an emergency response plan for the Port of Melbourne for a number of years. However, during the course of the audit, a plan was endorsed by the Authority's Planning Committee and an update of a 1986 Marine Emergency Management Plan developed for the Port of Hastings was in the process of finalisation.

**9.18** Although procedural documentation setting out the immediate precautions to be observed by staff in the event of emergencies had been developed by the Public Transport Corporation, the audit highlighted a lack of employee knowledge and confidence in applying the procedures. Exercises to trial procedures supported by formal assessments of responses to past emergency incidents would assist in addressing this situation.

□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*As indicated, a new emergency response plan for the Port of Melbourne was endorsed by the Planning Committee in September 1994. A full table top exercise of an incident at Coode Island was conducted in February 1995 and an ongoing program of training and further exercises is being implemented.*

*The Port of Hastings draft Marine Emergency Management Plan is currently under scrutiny by the emergency response agencies pending final approval and implementation. Exercises and training as outlined in the plan can be expected to take place during 1995.*

## Placards

### *Transport*

**9.19** A road or rail vehicle or container used for transporting dangerous goods must display a *Class Label* which denotes the class of the goods transported as well as a *Subsidiary Risk Label* identifying additional risks related to the consignment. Vehicles transporting dangerous goods in bulk are also required to display a panel which contains information on the vehicle's cargo for use in an emergency.

**9.20** Results of road transport inspections undertaken by the Occupational Health and Safety Authority in 1993 and 1994 indicated that **vehicle markings were unacceptable in approximately 14 per cent of vehicles inspected.**

### *Storage and handling*

**9.21** Premises in which dangerous goods are stored or handled are required to display outer warning signs including the *HAZCHEM* sign warning emergency personnel of the presence of dangerous goods. A *composite warning sign* identifying the type of dangerous goods stored is also to be displayed.

**9.22** Results of inspections undertaken by the Occupational Health and Safety Authority revealed that **safety signs and placarding was acceptable in only 50 per cent of sites inspected.**

### **Manifests**

**9.23** A manifest incorporating information such as a description of the class, subsidiary risk and quantity of goods carried must accompany dangerous goods in transit. A manifest is also to be maintained at a storage site in the form of an up-to-date list of all dangerous goods stored by a particular storage operator at a given time including quantities and their locations. The presence of an accurate manifest greatly assists those responding to an emergency in promptly identifying the nature of the substances involved.

**9.24** Results of transport inspections undertaken by the Occupational Health and Safety Authority in 1993 and 1994 indicated that **accurate documentation was carried by the majority of vehicles examined.** However, **manifests were found to be acceptable in only 51 per cent of storage sites inspected.**

**9.25** The ability of transporters to comply with manifest requirements is largely dependent on consignors providing accurate and complete descriptions of cargo to transport agents at the time of consignment. However, as dangerous goods transported by road or rail may be subject to surcharges to meet the added costs of managing them in a safe manner, there are economic incentives for consignors to incorrectly declare cargo. Despite this fact, the Public Transport Corporation does not routinely undertake inspections to identify undeclared dangerous goods cargo.



## STATEWIDE EMERGENCY RESPONSE

### Role of support agencies

**9.26** Under DISPLAN the Victoria Police, the Metropolitan Fire Brigades Board and the Country Fire Authority have direct responsibility for combating emergency situations.

**9.27** Due to the toxic, corrosive, explosive and flammable properties of dangerous goods, it is essential that combat agencies have access, at an early stage, to expert knowledge of any chemicals involved in emergency situations and on the most appropriate means of treatment or containment. As support agencies under DISPLAN, the Occupational Health and Safety Authority provides technical advice relating to dangerous goods and the Environment Protection Authority provides advice on the stabilisation and containment of the chemicals involved, in addition to suitable clean-up procedures.

**9.28** Each of these support agencies operates a 24 hour, 7 day a week emergency response service to provide advice either during attendance at the scene or by telephone. The Occupational Health and Safety Authority attended 188 dangerous goods incidents in 1992-93 and 213 in 1993-94. In comparison, the Environment Protection Authority attended 141 and 181 incidents in those years, respectively.

### Quality and timeliness

**9.29** Although the 2 support agencies had not established performance targets or measured the timeliness or quality of the emergency response provided, audit discussions with the fire authorities and feedback sought from them by the Environment Protection Authority revealed that there was general satisfaction with the service provided. They indicated, however, that the support service could be further improved through more timely response in rural areas and an increase in the knowledge and skills of some staff attending emergency incidents.

□ **RESPONSE** provided by Chairman, Environment Protection Authority

*Support services to emergency services personnel at incidents in more remote parts of the State generally rely upon rapid provision of advice by phone or radio contact. Such support is provided immediately following notification of the incident and enables an immediate, interactive assessment of the nature and severity of the incident as well as provision of advice on how to deal with environmental hazards. For most incidents at remote sites this is the only practicable means of providing rapid, effective support. Where the nature and severity of the incident warrants rapid attendance, support staff can access the Victoria Police airlift capacity. Where follow up attendance is required, but the need is not urgent, support service officers employ motor vehicles to attend.*

*The Authority recognises the need for ongoing training to maintain and enhance the level of skills of staff providing emergency response support. Its staff regularly attend training programs run in conjunction with emergency services.*

## Co-ordination

**9.30** In an emergency, it is important that all agencies involved are aware of their respective roles in order to eliminate confusion or duplication.

**9.31** Comments made to audit by the fire authorities indicated that in the past there have been situations where minor duplications and problems with delineation have occurred or where there has been conflict between advice provided by support agencies. These situations highlight the need to have in place clear assignment of responsibilities, documented procedures and effective communication processes supported by joint training exercises.

**9.32** Audit was advised that considerable work has been undertaken in recent times to improve communication between the Occupational Health and Safety Authority and the Environment Protection Authority through informal discussions. Audit considers that the communication process should be formalised through regular meetings to discuss common approaches to the provision of emergency response support services.

## Information systems

**9.33** Access to information during an emergency is essential to enable effective decision-making. As a result of the complexity of the framework under which dangerous goods are managed within the State, data for use during emergency situations such as details of the chemicals involved or activities undertaken at the premises may be maintained in separate agencies.

**9.34** A 1992 report commissioned by the former State Disasters Council, a body established under the *Emergency Management Act 1986* to provide advice in emergency situations, highlighted the need to establish an inter-agency information management system to ensure consistent gathering and dissemination of accurate data. Comments regarding the need to share information were also made in the Final Report of the Coode Island Review Panel. Nevertheless, links between computerised databases of agencies maintaining information useful for emergency response had not been established except in the case of manifest data maintained by the Port of Melbourne Authority. Such data is downloaded twice daily by the Metropolitan Fire Brigades Board, through its computer link with the Authority, for use in identifying the nature of any items originating at the Port which are involved in an emergency situation.

**9.35** Manifest data is required to be provided to the Port of Melbourne 48 hours prior to a ship's arrival. However, audit found that around 40 per cent of manifests relating to container cargo entering the Port were either incorrectly entered or not recorded on the system.

**9.36** In addition, significant delays were identified between the date the container cargo arrived in the Port and the date manifests were recorded on the system. **Only 53 per cent of manifest data was entered prior to, or on the day of the ship's arrival, with many not entered for over 10 days.** Given that, on average, container vessels do not stay in the Port longer than 3 days, the value of data recorded after the vessel's departure is questionable.

**9.37** The Authority advised that action has been taken since the completion of the audit to achieve more timely input of data. It is also developing strategies to follow overseas trends towards the electronic lodgement of manifests.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*At present, the Authority does not have a computer-based system for recording accidents and incidents involving dangerous goods. The ACCIDENT system is not suitable for recording this information. Production of a suitable system has been planned for 1995.*

*Linking of databases is not possible at this point in time. However, it is an objective which the Authority will continue to pursue. The Authority has advised the fire services previously that all incidents should be reported to the Authority. It will do so again.*

□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*Delays in recording of manifest data occasioned by organisation restructure were incurred during the period analysed in the Report. Additional resources have since been assigned to the relevant department and a significant improvement was achieved in the timeliness of information entered into the system.*

*It is anticipated that one of the 2 new agencies replacing the Authority will be given the responsibility for maintaining information on dangerous goods moving through the Port area. The information would also be available to other interested organisations, i.e. the Occupational Health and Safety Authority, the Metropolitan Fire Brigades Board. Based on international trends, it is expected that labour intensive manual entry of this information will eventually be replaced by electronic lodgement. This will improve both the accuracy and timeliness of the data.*

# **Part 10**

## **Collection of unwanted chemicals**

## OVERVIEW

**10.1** Positive action was taken by the Melbourne Water Corporation and the Environment Protection Authority to manage programs over several years for the collection of unwanted items such as paints, pesticides and other chemicals from metropolitan and rural areas. However, the programs ceased in 1992 and the only means of disposal currently available within the community is the engagement of commercial waste management organisations on a user-pays basis.

**10.2** A proportion of the estimated 560 000 kilograms collected under the various programs has been disposed of by contractors engaged by Melbourne Water Corporation. However, as a result of a 1992 ban on the export of hazardous wastes and the absence of a high temperature incinerator within Australia suitable for disposal of pesticides, some of the collected materials still remain in storage facilities in Melbourne and Brisbane. It is estimated by the Corporation that the total costs of the collection programs including storage and disposal of items still held will amount to \$9 million.

**10.3** Audit found that inadequate record keeping over much of the collection period has resulted in a lack of accountability over collections and disposals. The contractual arrangements with operators engaged by Melbourne Water Corporation to manage the collections, in addition to some aspects of storage conditions at the time of audit inspections, were also found to be poor.

**10.4** Action needs to be taken by government to resolve a number of key issues associated with the disposal of the significant quantities of unwanted chemicals which remain in the community. In particular, the risks inherent under the current arrangements need to be assessed. Also, suitable mechanisms should be established for assigning any future collection costs either to industry, users of the products or government agencies and solutions need to be found for the safe disposal of items still held in storage or collected in the future.

## INTRODUCTION

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**10.5** In response to restrictions imposed by the Australian Government on the use of certain pesticides such as DDT and dieldrin, and in recognition of the problems facing households in the safe disposal of chemicals, the Melbourne Water Corporation introduced the Metropolitan Chemical Collection Program which operated between 1987 and 1992. The Program was seen by the Corporation as providing direct benefits through preventing damage to sewerage infrastructure and sewage treatment plants which could result from household chemicals being dumped into the sewerage system. The Program was advertised widely as a free service through the distribution of pamphlets to every household in metropolitan Melbourne and advertisements in local newspapers and on radio.

**10.6** As part of its legislative role in relation to the protection of the environment, the Environment Protection Authority also saw a need to establish a similar program in rural Victoria for unwanted veterinary products and agricultural chemicals not suitable for disposal through traditional on-farm methods. Authority documents indicate that chemical residue problems can occur where such chemicals are disposed of inappropriately. The Rural Unwanted Chemical Collection Scheme was conducted in 1989, 1990 and 1992. According to the Environment Protection Authority, funds were not available for the Scheme in 1991.

**10.7** Based on advice from the Environment Protection Authority, contractors were engaged by the Melbourne Water Corporation to manage the collections in metropolitan areas and to manage rural collections on behalf of the Environment Protection Authority. The material collected was expected to be stored by the contractors at their facilities as an interim measure prior to safe disposal. It was envisaged that the material would be disposed of through several means including the neutralisation of acids and alkalis, extraction of chemical or mineral properties through precipitation or, in the case of pesticides, transportation to the United Kingdom for disposal in high temperature incinerators.

## **BASLE CONVENTION TREATY**

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**10.8** One of the most important steps taken in recent times in relation to the international regulation of hazardous waste has been a Treaty signed at the Convention on the Control of Transboundary Movements and Disposal of Hazardous Wastes held in Basle, Switzerland, in March 1989. Over 100 countries of the 116 attending the Convention supported the Treaty which was subsequently ratified by more than 20 signatories, including Australia, and came into force in March 1990.

**10.9** In line with the Treaty, the Australian Government introduced the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* which came into force in July 1990. The aim of the Act is to regulate the export and import of hazardous waste with a view to ensuring the public and the environment, both within and outside Australia, is protected. The Act made provision for the introduction of a permit system to control the export and import of hazardous wastes.

**10.10** In June 1992, the then Commonwealth Minister for the Environment decided that permits would not be granted for the export of certain hazardous materials including waste which may contain either inorganic or organic constituents such as organochlorin pesticides. The underlying reason for the decision was to encourage the development of appropriate technology in Australia for the safe disposal of such wastes.

**10.11** During revision of the Treaty in March 1994, Australia joined other countries in signing a ban on the export of all hazardous wastes from Organisation for Economic Co-operation and Development (OECD) countries to non-OECD countries. The ban aims to end the dumping of hazardous materials in countries with weak or non-existent environmental regulation.

**10.12** A proportion of the items collected under the Metropolitan Chemical Collection Program and the Rural Unwanted Chemical Collection Scheme were disposed of prior to 1992, including the transport of some pesticides overseas. However, the export ban and the continuing absence of suitable high temperature incinerators within Australia, has resulted in some items remaining in 3 storage facilities in suburban Melbourne. In addition, some pesticides in transit to the United Kingdom at the time of the ban are held in storage facilities in Brisbane. Corporation records indicate that the majority of material still in storage originated from rural collections and comprises arsenic (around 60 per cent) and pesticides (around 40 per cent).

## COLLECTION AND DISPOSAL RECORDS

**10.13** Audit found that **appropriate records of unwanted chemical collections and disposals were not maintained by the Melbourne Water Corporation during most of the collection period.** In particular, the nature and volume of all chemicals were not determined and recorded at the time of collection. Similarly, details of the volumes and methods of disposal advised by contractors were not verified.

**10.14** In late 1991, the Corporation conducted an internal review of its collection program which subsequently resulted in an improved system to record collections, disposal and storage activities including costs and contract administration.

**10.15** However, it was not until October 1993 that a manifest detailing the items held in Brisbane storage facilities was prepared and until September 1994 that preparation of manifests commenced for the chemicals held in Melbourne. The process of preparing manifests involves testing the materials to identify their chemical characteristics, separating the materials according to their nature and required method of storage or disposal, and re-drumming.

**10.16** Estimates prepared by the Environment Protection Authority subsequent to the collections indicate that 312 000 kilograms were collected from rural areas. A consultant engaged by the Melbourne Water Corporation estimated that 248 000 kilograms were collected from metropolitan Melbourne including a wide range of chemicals which were toxic, flammable, caustic, corrosive, highly reactive, explosive or radioactive. In comparison with the estimated total collections of 560 000 kilograms, the completed manifests record only 111 000 kilograms of material remaining in storage.

**10.17** In the absence of more accurate records of collections, consolidated disposal volumes and a reconciliation between these amounts, the Melbourne Water Corporation is not in a position to substantiate that all items collected were appropriately disposed. **The lack of accountability for the disposal of the materials is considered by audit to be particularly unsatisfactory given the hazardous nature of the materials involved.**

□ *RESPONSE provided by Chairman, Environment Protection Authority*

*Appropriate records of volumes and nature of items collected were recorded by the Authority during the collections. The Melbourne Water Corporation managed the contractual arrangements with companies and the Authority is not able to comment on the adequacy of storage records.*

## MANAGEMENT OF STORAGE

### Conditions of storage

**10.18** Audit visits to the 3 Melbourne storage facilities revealed the following deficiencies in the controls and management of material held on behalf of the Melbourne Water Corporation:

- In the case of one operator, an Environment Protection Authority licence condition that the material be stored in bunded areas was not adhered to. In addition, the site was unsupervised and did not have the relevant local government permit to store the chemicals;
- At another site, several Environment Protection Authority licence conditions were breached in relation to the identification of the source of the waste; and
- At 2 of the sites, chemical storage had exceeded the Environment Protection Authority licence conditions in relation to duration of storage.

**10.19** Under arrangements in place at the time of the audit visits, re-drumming of chemicals collected had commenced. However, many **chemicals had not been separated and were still stored together in their original packaging which showed signs of deterioration.**

**10.20** While recognising that the operators of the facilities have the responsibility to comply with licence conditions, audit considers that the Melbourne Water Corporation as the administrators of the arrangements with the operators also has a duty to ensure that the collected chemicals are safely stored.



□ *RESPONSE provided by Chairman, Environment Protection Authority*

*The poor storage practices referred to appear, in almost all cases, to be technical breaches rather than substantial breaches which would have caused any significant environmental hazard. The Authority is not aware of any poor storage practices employed by the Melbourne Water Corporation's contractors that would have posed a significant environmental hazard, but accepts that best practice was not observed by all companies involved.*

## Contractual arrangements

**10.21** In cases such as those relating to the storage of chemicals on behalf of the Melbourne Water Corporation, contractual arrangements can assist in ensuring the responsibilities and obligations of both parties are clearly defined, costs of storage are negotiated in advance at an agreed rate, appropriate controls are addressed through the inclusion of storage requirements and the Corporation is protected from liabilities in the case of damage.

**10.22** However, examination of the contractual arrangements between the Corporation and the 3 Melbourne-based operators disclosed that:

- a contract was never in place with one operator;
- the contracts with the other 2 operators did not define manifest requirements; and
- one contract was poor in terms of defining the liability of the operator in the event of any property damage.

**10.23** As contractual arrangements with Melbourne-based operators, where they existed, were terminated in October 1993 there are currently no contracts relating to the ongoing storage of remaining items.

**10.24** Audit inspections were not conducted of the Brisbane premises. However, an examination of the formal contract in place between the Corporation and the operator of the premises indicated that it provides clear division of responsibilities and obligations between the parties and sufficient protection to the Corporation in terms of placing liability on the operator in the case of any public or property damage.

□ *RESPONSE provided by Chairman, Environment Protection Authority*

*With hindsight the Authority should have more closely monitored contract management arrangements.*

## Disposal of remaining chemicals

**10.25** A draft 5 year Action Plan was prepared by the Melbourne Water Corporation in August 1994 for the disposal of chemicals still in storage. According to the Plan, the Corporation intends, in the short-term, consolidating the chemicals currently held at the 3 Melbourne sites at one location. Consolidation of the chemicals on one site under one contract will enable the risks to be concentrated and controlled in one location. It will also offer convenience of management, ease of inspection and will enable costs to be negotiated at a fixed rate in advance. The Corporation has made progress towards selecting appropriate premises for the relocation of the chemicals.

**10.26** It is the intention of the Corporation to identify safe disposal technology for the chemicals within 5 years and it is currently investigating a number of options for treating pesticides and for converting arsenic to a form that can be used in copper-chrome-arsenic wood preservation. In this regard, audit was advised that in 1992 the Corporation made a financial contribution of \$50 000 to a private firm for the development of a process for disposing of arsenic wastes. While the Corporation anticipates that by the end of the 5 year period safe disposal may be possible, achievement of the Plan will be dependent on the availability of appropriate treatment technology and funding.

## COST OF COLLECTIONS

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**10.27** As the Melbourne Water Corporation had not maintained consolidated records of the costs associated with rural and metropolitan unwanted chemical collections between 1987 and late 1991, some uncertainty exists regarding total costs. Nevertheless, **based on Corporation estimates, total costs are expected to amount to almost \$9 million, including costs of \$5.6 million to date and projected costs of at least \$3.3 million over the next 5 years for future storage, regular re-drumming and disposal.**

**10.28** As expert advice provided by the contractor engaged by audit indicated that it is doubtful whether technology will be available for the disposal of all types of pesticides within 5 years, the time span identified in the Corporation's draft Action Plan is considered over-optimistic and an accelerated effort will need to be put into research and development activities in this area. This factor may result in final costs in excess of those currently estimated by the Corporation.

□ *RESPONSE provided by Managing Director, Melbourne Water Corporation*

*The advice of the "expert" retained by your Office runs contrary to that of the waste disposal industry and a specific review of the 5 year Action Plan by an officer of the Department of Chemical Engineering at the University of Melbourne.*

## COLLECTION OF MARINE FLARES

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**10.29** The Occupational Health and Safety Authority is often advised by police or members of the public of marine flares which have been handed-in or dumped. The Authority has established a program for the collection of marine flares and, in some cases, other explosive items.

**10.30** Records maintained by the Authority indicate that there has been a significant increase in the number of explosive collections in recent years to a total of around 50 per year. The increase has primarily resulted from the introduction by the Government several years ago of a requirement that a 3 year *use-by date* be assigned to all marine flares.

**10.31** The Authority has indicated that the number of items to be collected and the resources required to arrange collections is likely to further increase in future given the significant number of boats registered within the State, and the requirements for each to carry flares which are to be replaced every 3 years. The Authority is considering introducing an amnesty to allow people to legally dispose of these and other unwanted explosives.

## FUTURE DIRECTIONS

### Chemicals still held in the community

**10.32** The consultant engaged by the Melbourne Water Corporation in 1993 to evaluate the Metropolitan Chemical Collection Program estimated that the service was utilised by less than 1 per cent of total Melbourne households and that **collections amounted to less than 3 per cent of unwanted chemicals held in metropolitan areas. Between 10 000 and 20 000 tonnes of unwanted chemicals were estimated to remain uncollected.**

**10.33** The consultant assessed the unwanted chemicals still in the community as a low or minor risk to the sewerage infrastructure and that the cost to the Corporation of collections would be prohibitive compared with the benefits to be gained. Accordingly, the Corporation was advised to discontinue unwanted chemical collections. Nevertheless, the consultant acknowledged that unwanted chemicals within the Melbourne metropolitan area do pose a risk to the community and that based on past collections the chemicals are likely to contain dangerous substances which could present a medium to high risk to public health and safety. Estimates have not been prepared by the Environment Protection Authority of the likely volumes or risks associated with unwanted chemicals remaining in all rural areas.

□ **RESPONSE** provided by the Chairman, Environment Protection Authority

*Estimates of the volume of materials held in rural areas where collections have not been carried out have been made. Estimates of material remaining in other areas would serve little purpose at this stage, but would be required before any new strategy was adopted.*

### Issues to be addressed

**10.34** In March 1994, an inter-agency Household Chemicals Working Group was established comprising representation from the Environment Protection Authority, Melbourne Water Corporation, Regional Refuse Disposal Groups, the Waste Management Council, the Australian Conservation Foundation and industry, represented by the Plastics and Chemicals Industries Association. The Working Group is examining appropriate strategies to deal with the issue of unwanted chemicals in the community, including the long-term approach of community education and strategies to minimise unwanted materials. A formalised approach to resolving the issues has not yet been developed.

**10.35** **Until such time as an agreed direction for future collections is devised, disposal of chemicals by householders is to be referred to commercial waste management organisations on a user-pays basis.**

**10.36** In resolving the issues associated with unwanted chemical collections from metropolitan household and rural areas, the following matters will need to be given consideration:

- The risks presented by the level of unwanted chemicals within the community and their inappropriate disposal;
- Assignment of responsibilities and accountabilities for collection and disposal. The success of collections will be dependent on an effective co-operative approach between government, the community and industry;
- The costs associated with the collections. Given the estimated total cost of collections to date, it is likely that the costs associated with collecting the large volumes remaining in the community could amount to millions of dollars. A costing system will need to be established which is conducive to promoting sound practices and at the same time encouraging disposal within the community. In this regard, consideration needs to be given to whether costs should be assigned to users of the service, to industry participants or to the Government as part of its community service obligations. In audit opinion, the current arrangement of assigning the total costs to users may only serve to discourage safe disposal; and
- The development of mechanisms for safe disposal of collections.

□ **RESPONSE** provided by Chairman, Environment Protection Authority

*The Authority agrees on the need for an effective strategy to deal with unwanted chemicals in the community. It does not accept that this necessarily involves a government operated collection scheme. Rather, the long-term answer is more likely to depend on a policy of product stewardship being adopted by industry.*

# **Part 11**

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# **Coode Island**

## OVERVIEW

**11.1** Following a major chemical fire at Coode Island in 1991, the Government established the Coode Island Review Panel to evaluate and make recommendations relating to the safety of chemical storage facilities located at the site.

**11.2** Action has subsequently been taken by a number of government agencies to address issues raised by the Panel and individual operators at the site have developed plans detailing the specific action required to improve the safety of existing storage facilities. The Occupational Health and Safety Authority has also undertaken numerous inspections at the site and in 1994 engaged consultants to assess risks associated with the facilities.

**11.3** While the findings of the consultancies are not yet available, recent reports prepared by the Occupational Health and Safety Authority indicate that action has been taken or is in progress to address most of the recommendations made by the Coode Island Review Panel. In a number of instances, Panel recommendations were exempted or have been deferred pending the proposed relocation of chemical storage and associated port facilities to a site at Point Lillias. The target set for commencing construction at the new site is 1 July 1996 and it is anticipated that the storage facilities will be operational in mid-1998.

**11.4** To ensure that all Panel recommendations are eventually addressed, procedures within the Occupational Health and Safety Authority for monitoring their implementation need to be strengthened.

## INTRODUCTION

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**11.5** The area of land located in Footscray known as Coode Island is vested in the Port of Melbourne Authority and leased to a number of bulk liquid chemical storage operators, warehouses and a transport depot. Bulk liquids are transported to the site through the Maribyrnong No. 1 berth, located at the junction of the Maribyrnong and Yarra Rivers, operated by the Port of Melbourne Authority.

**11.6** Since a major chemical fire at the site in August 1991, community and government interest in the area was heightened and there has been pressure to find a long-term solution to problems associated with storage of bulk liquid chemicals at Coode Island such as the site's close proximity to the Melbourne Central Business District and residential areas.

**11.7** The current audit did not look specifically at the adequacy of changes made to existing storage facilities to address recommendations emanating from various reviews completed since the fire. However, key post-fire activities initiated by the Government, in addition to arrangements for monitoring the status of the recommendations, were subject to examination.

## ACTION TAKEN SUBSEQUENT TO THE FIRE

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### Legal action

**11.8** The Occupational Health and Safety Authority took legal action following the fire to prosecute an operator of storage facilities at Coode Island for 17 offences under the dangerous goods and occupational health and safety legislation. The company was convicted on 6 charges in January 1994 and fined a total of \$82 000.

**11.9** A coronial inquiry subsequently found that the fire resulted from a combination of a natural phenomenon known as St Elmo's fire and a missing pressure plate on a chemical tank. The Coroner concluded that the operator of the tank contributed to the cause of the fire in that employees engaged by the operator were the only people with access to the tank to remove the pressure plate.

### Coode Island Review Panel

**11.10** In August 1991, the Coode Island Review Panel was appointed by the Government to recommend measures to improve safety at Coode Island to the maximum extent practicable, thereby minimising risks to workers, residents and the environment. The Panel was also to identify and evaluate possible new sites for bulk liquid chemical port and storage facilities.

**11.11** As part of the review process, the Panel appointed a firm of consultants to undertake safety audits which comprised analyses of systems and practices at the site. The audits resulted in 179 specific recommendations relating to the Maribyrnong No. 1 berth and storage facilities managed by 5 private operators. The Panel's Phase 1 Report issued in December 1991 included a range of recommendations to address short-term issues including a recommendation that each of the operators of chemical storage facilities at Coode Island prepare a Safety Plan detailing specific actions to be taken to address the matters raised in the safety audits.

**11.12** The Panel's Final Report presented to the Government on 31 March 1992 included a number of broader long-term issues which the Panel considered needed to be addressed by government agencies including a proposal that a new storage facility be established at West Point Wilson.

### Inspection activity

**11.13** Since 1991, the operations at Coode Island have been the subject of considerable inspection activity. Joint-agency inspections conducted by the Hazardous Chemicals Audit Team soon after the fire identified 400 matters requiring attention, including a number of issues raised by the Metropolitan Fire Brigades Board. A follow-up of those inspections by the Occupational Health and Safety Authority in February 1992 disclosed that the majority of issues had been addressed. Audit was advised that the Authority has since completed further inspections of the site and has provided a range of technical advice to site operators.

**11.14** During 1994, 2 consultancies were commissioned by the Authority to assess any remaining risks associated with the operation of the storage facilities and to provide an indication of the management standards of the facilities. At the time of preparation of this Report, the consultants' reports had not been finalised.

### SAFER CHEMICAL STORAGE TASKFORCE

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**11.15** Following the tabling of the Coode Island Review Panel's Final Report, the Safer Chemical Storage Taskforce was established to:

- monitor the implementation of Panel recommendations by various agencies;
- monitor the continuing operations at Coode Island;
- commence implementation of recommendations specifically related to the establishment of new storage facilities;
- draft legislation for the establishment of a new body with responsibility for implementing the Panel's recommendations; and
- build on the links that had been established during the review process between the Government, industry, unions and the community.

**11.16** The Taskforce reported periodically to the Government on the implementation of the recommendations. It also initiated the preparation of an Environment Effects Statement for the proposed West Point Wilson site. Following the abolition of the Taskforce in 1993, responsibility for monitoring implementation of the recommendations was allocated to the Industry Services portfolio of the Department of Business and Employment.

### RELOCATION OF CHEMICAL STORAGE

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**11.17** Although a body was not established under separate legislation to implement the Panel's recommendations, the West Point Wilson Project Unit was created in December 1993 within the Department of Business and Employment. The Unit's primary focus was to facilitate the movement of chemical storage from Coode Island at the earliest possible date.

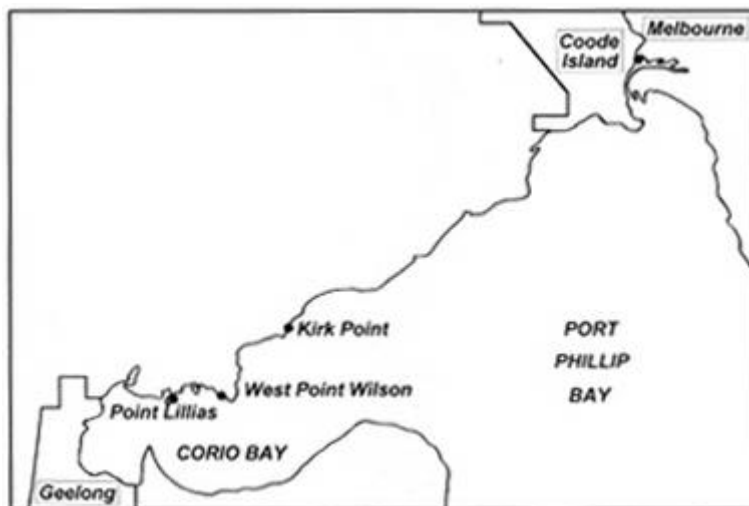
**11.18** During January 1994, the Government re-appraised alternative sites to West Point Wilson and in April 1994, concurrent with the Australian Government's announcement of the location of its new East Coast Armaments Complex at Point Wilson, it was announced that the preferred site for development of the new port and chemical storage facilities was Point Lillias.



**11.19** As a result of the change in location, the Unit was renamed the Point Lillias Project Unit and the scope of the West Point Wilson Environment Effects Statement was subsequently extended to include the Point Lillias site. The target date for completion of the Statement is 14 June 1995.

**11.20** In August 1994, a *Letter of Understanding* was developed between the Minister for Industry Services and the chemical industry, represented by the Plastics and Chemicals Industries Association Inc., setting out an agreement for the development of the new site. The agreement indicates that the Government will provide the marine, port, roads and services infrastructure for the project and that industry will lead the process of selecting a consortium to design, build, own and operate the new chemical storage facility.

**11.21** Audit was advised by the Unit that the selection process is well advanced with 5 consortia short-listed at the time of preparation of this Report. **A decision on the successful consortium is expected shortly and the target date for commencing construction is 1 July 1996. Construction is expected to take 2 years and the Unit anticipates the site will be operational in mid-1998.**



*Location of proposed port and chemical storage facilities*

## PANEL RECOMMENDATIONS RELATING TO EXISTING FACILITIES

### Status of recommendations

**11.22** The most recent status report collated by the Occupational Health and Safety Authority in November 1994 reveals that of the 72 recommendations contained in the Coode Island Review Panel's Reports, 53 had been either fully implemented, alternative measures taken or a decision made not to proceed with parts of the recommendation. Action on a further 11 was still in progress.

**11.23** The following 7 recommendations were reported as pending further progress on the development of the new storage facilities:

- review of boundaries and qualities of significant environments between Point Lillias and Kirk Point in order to clarify the boundaries and protect any areas of environmental value;
- development of a strategic land use plan as part of preparation of a planning scheme amendment for the new port facility;
- preparation of legislation on the final planning scheme amendment to guarantee the security of buffers for the proposed facility;
- development of a safety and environmental performance case for the proposed facility;
- conduct of annual audit and regular spot checks of compliance with safety and environmental requirements;
- operation and testing of terminal fire protection systems at the new site; and
- development of a computer-based chemicals manifest system linked with the Country Fire Authority in addition to a computer-based system to link chemicals manifests between fire authorities and all dangerous goods storage in Victoria.

**11.24** In relation to the remaining recommendation that tetra ethyl lead, petrol and diesel fuel be removed from Coode Island, the Government has decided that current leases will not be renewed with operators storing hazardous products on the site. It is planned that such items will not be stored at Coode Island once the proposed new facility at Point Lillias is completed.

**11.25** Other matters reported as in progress which had been assigned to the Occupational Health and Safety Authority for attention, together with a summary of action taken to November 1994, follow:

- Publication, for public comment, of draft risk criteria guidelines for land use planning with a view to incorporating the guidelines in the State section of planning schemes. In this regard, the Authority reported that progress on the development of a uniform approach to land use planning and integrated risk criteria is well advanced. Discussions on this matter have also taken place between the Authority and the Department of Planning and Development;
- Reporting to the public and specific interest groups on the progress towards the implementation of recommendations, assisting in the establishment of local area monitoring committees and acting as a catalyst to bring together interest groups to examine opportunities and resource implications for more systematic Government collection and dissemination of data on hazardous chemicals. The planned community liaison group had not been established; and
- Regular operation and testing of the fire protection system at the existing site. The Authority and the Metropolitan Fire Brigades Board were still consulting with the operators to determine an agreed regime of testing which meets the objectives of the recommendation.

## Safety plans

**11.26** A summary was provided to audit by the Occupational Health and Safety Authority of action taken to address the 179 recommendations made as a result of the safety audit commissioned by the Panel. The summary indicated that the majority of recommendations have been implemented. However, a number of matters relating to the Maribyrrnong No. 1 berth have, in audit opinion, not yet been fully addressed.

## Security arrangements

**11.27** The safety audit recommended that action be taken to *"Review security practices at the Maribyrrnong wharf and implement additional measures to better control access to the area"*.

**11.28** Action was subsequently taken by the Port of Melbourne Authority to improve a number of aspects of security including the installation of a 24 hour security gate and the introduction of regular security patrols of the area. In addition, the Authority engaged a consultant to review security arrangements at the Maribyrrnong No. 1 berth. The recommended option of the consultant, costed at \$1.5 million, included new fences and gates, gatehouse relocation, detection system, closed circuit television, lighting, training and signs.

**11.29** However, an internal assessment by the Port of Melbourne Authority of the commercial impact of the recommendation on its operations and on port users concluded that the associated costs would be excessive relative to the volume of hazardous cargo passing through the area. For this reason, it was recommended that a modified security system be implemented. However, **at the time of completing the audit, the Port of Melbourne Authority had not reached a decision regarding any further action to be taken to strengthen security.**

□ *RESPONSE provided by Chief Executive, Port of Melbourne Authority*

*The Authority and Terminals Pty Ltd are currently investigating the feasibility of utilising the resources of both organisations to provide an integrated security system to the appropriate standard.*

### Wharf structure

**11.30** The safety audit disclosed that *"The wharf is an aged wooden structure that is subject to fire risks from the operation and maintenance activities that take place at the facility. A below the deck foam application system should be considered for fighting fires that could occur on the water surface"*.

**11.31** A foam application system was subsequently installed as recommended. However, the wooden structure remains relatively unchanged. The Port of Melbourne Authority estimated in 1994 that the life of the berth is 6 years and will require regular maintenance over that time. Audit considers that **the adequacy of ongoing maintenance of the berth will need to be regularly monitored particularly in the event that any significant delays occur in the planned relocation of chemical storage to Point Lillias by 1998.**

□ **RESPONSE** provided by Chief Executive, Port of Melbourne Authority

*The Authority has its own internal system for monitoring the adequacy of maintenance at Maribyrnong No. 1 berth which is more than adequate in the short-term. This system will be reviewed in the event that any significant delays occur in the planned relocation of chemical storage to Pt Lillias by 1998.*

## Monitoring procedures

**11.32** Audit found that there have been a number of weaknesses in monitoring the implementation of the broad recommendations of the Coode Island Review Panel and the specific recommendations arising from the safety audit.

**11.33** Quarterly reports based on material provided by various agencies on the implementation of the Panel's recommendations have been prepared for the Deputy Secretary, Industry Services by the Occupational Health and Safety Authority. The reports detailed recommendations *in progress* or with *future action pending*. In cases where recommendations were finalised since a previous report, the actual action taken was not included in the report. While this is not a significant concern where implementation directly mirrors the recommended action, audit considers that full details should be provided where alternative action has been taken to enable the adequacy of such action to be independently assessed.

**11.34** The Authority was also required to report regularly to the Minister for Industry Services on the implementation of the safety plans developed for each site on Coode Island, until such time as they were fully implemented. Although some of the matters addressed in the plans are still outstanding, there have been no formal reports to the Minister since July 1993. The Authority considered its responsibility was to report on the plans only to the point when the implementation phase commenced. However, audit considers that reporting and monitoring needs to continue until the plans are fully implemented to ensure all matters identified in the safety audit have been adequately addressed.

□ **RESPONSE** provided by Acting Secretary, Department of Business and Employment

*The Authority believes audit has not understood the recommendation of the Panel. Operators were required to produce safety plans and implement the plans. Operators have duly done that and the recommendation has been implemented. The recommendation did not set in place an open ended reporting requirement on the detail of the safety plans. However, the plans do include the specific recommendations made by the Coode Island Review Panel which are reported regularly on a quarterly basis.*

*In addition, a complete audit of actions implemented was undertaken in late 1993.*

*An independent quantitative risk assessment and an operational safety audit of Coode Island have been undertaken during 1994 by internationally recognised companies. These audits have provided a basis for assessing both progress and effectiveness of actions taken.*