Select Committee on the Kooragang Island Orica Chemical Leak

Kooragang Island Orica chemical leak

Ordered to be printed 23 February 2012.

New South Wales Parliamentary Library cataloguing-in-publication data:

New South Wales. Parliament. Legislative Council. Select Committee on the Kooragang Island Orica Chemical Leak

Kooragang Island Orica chemical leak / Select Committee on the Kooragang Island Orica Chemical Leak. [Sydney, NSW]: The Committee, 2012. – vi, 188p. ; 30 cm (Report ; no. 1)

Chair: Hon Robert Brown MLC
"February 2012".

ISBN: 9781921286810

1. Orica Mining Services Kooragang Site, Australia, 2011—Accidents.
2. Orica Mining Services Kooragang Site, Australia, 2011—Environmental aspects.
3. Chemical industry—New South Wales—Kooragang Island—Accidents.
4. Hazardous substances—New South Wales—Kooragang Island—Accidents.

I Title.

II. Brown, Robert.

II Series: New South Wales. Parliament. Legislative Council. Select Committee on the Kooragang Island Orica Chemical Leak. Report ; no. 1

363.3497 (DDC22)

How to contact the Committee

Members of the Select Committee on the Kooragang Island Orica Chemical Leak can be contacted through the Committee Secretariat. Written correspondence and enquiries should be directed to:

The Director
Select Committee on the Kooragang Island Orica Chemical Leak
Legislative Council
Parliament House, Macquarie Street
Sydney New South Wales 2000
Internet www.parliament.nsw.gov.au/oricainquiry
Email oricainquiry@parliament.nsw.gov.au
Telephone (02) 9230 3509
Facsimile (02) 9230 2981

Terms of reference

That the Committee inquire into and report on the Kooragang Island Orica chemical leak, in particular:

(a) the response of Orica following the incident, including:
  (i) how the Chromium VI was released and how Orica became aware it had been released,
  (ii) Orica's understanding of the geographic extent and environmental impact of the leak,
  (iii) whether the potential health and other impacts of the leak on Orica workers and on the community around the company's plant were adequately addressed,
  (iv) the actions and timing of Orica in reporting the leak and addressing its immediate impacts,
  (v) the adequacy of Orica's emergency response plans and safety plans with respect to chemical discharge or explosion prior to the incident,
  (vi) compliance by Orica with licensing or regulatory obligations arising from the incident,
  (vii) whether other toxic chemicals stored or produced on the Orica Kooragang site have potential to affect the community and environment,
  (viii) Orica's response plan to the incident,

(b) the New South Wales Government's response following the incident, including:
  (i) the timelines and reporting to the Office of Environment and Heritage within the Department of Premier and Cabinet, the Office of the Minister for Environment and Heritage, the Office of the Premier, the Department of Health, the Office of the Minister for Health, New South Wales Fire Brigades, the Office of the Minister for Police and Emergency Services and the Minister for the Hunter,
  (ii) the actions of government departments and agencies once notified,
  (iii) the actions of government ministers and ministerial staff once notified,

(c) the final report of the inquiry into the chemical leak at the Orica site being conducted by Brendan O'Reilly, and

(d) any other related matters arising from these terms of reference.

These terms of reference were referred to the Committee by the Legislative Council on 25 August 2011.[1]

[1] LC Minutes (25/8/2011) 35, p 374-376.

Committee membership

Hon Robert Brown MLC[2]	**Shooters and Fishers Party**	*(Chair)*
Hon Cate Faehrmann MLC	**The Greens**	*(Deputy Chair)*
Hon Luke Foley MLC	**Australian Labor Party**	
Hon Trevor Khan MLC	**Liberal Party**	
Hon Matthew Mason-Cox MLC	**Liberal Party**	
Hon Melinda Pavey MLC	**The Nationals**	
Hon Adam Searle MLC	**Australian Labor Party**	

Secretariat

Ms Rachel Callinan, Director

Ms Velia Mignacca, Principal Council Officer

Ms Kate Mihaljek, Senior Council Officer

Ms Christine Nguyen, Council Officer Assistant

[2] The Hon Robert Borsak MLC, Shooters and Fishers Party, who was elected Chair at the Committee's first meeting, resigned on 18 November causing a vacancy in membership and the position of Chair. Mr Brown was nominated to fill the Cross Bench vacancy that same day and, at a meeting of the Committee on 21 November 2011, was elected Chair.

Table of contents

Figures

Tables

Chair's foreword

This inquiry was initiated in response to the emission of chromium VI from Orica Kooragang Island on 8 August 2011. The leak caused a great deal of public concern particularly for residents in the nearby suburb of Stockton and led the NSW Government to re-evaluate its response to pollution incidents.

I joined the Committee and was elected Chair on 21 November 2011 following the resignation of my colleague the Hon Robert Borsak MLC. Mr Borsak tendered his resignation after becoming aware of a potential conflict of pecuniary interest. Once alerted to the situation Mr Borsak sought advice of the Clerk of the Legislative Council and on the basis of the advice received Mr Borsak tendered his resignation from the Committee on 18 November 2011.

The Committee acknowledges the work of Mr Brendan O'Reilly who was appointed to conduct an independent review into the serious pollution incident at the Orica Australia Pty Ltd Ammonium Nitrate Plant at Walsh Point, Kooragang Island. This inquiry began while Mr O'Reilly was conducting his review, the final report proved to be very useful to the Committee as it thoroughly examined the NSW Government and Orica's response to the leak.

The Committee thanks all of the Inquiry participants whose evidence about the incident has ensured this report thoroughly addresses the terms of reference. The Committee received 27 submissions and heard from 33 witnesses. The Committee also conducted a site visit to Orica Kooragang Island, toured Stockton and held a public forum with local residents. Many hours were spent by the Committee questioning Orica representatives about the incident. I am also grateful for the cooperation of the Premier in making available, himself, the Minister for the Environment, the Minister for Health and the Minister responsible for WorkCover, to appear before the Committee.

Finally, I wish to extend my appreciation to the Committee secretariat for their assistance and would also like to thank each of the Committee members for their constructive and thorough approach to the Inquiry.

Hon Robert Brown MLC
Committee Chair

Summary of recommendations

Chapter 1 Introduction

This chapter provides background to the Inquiry, an overview of the Select Committee's terms of reference and a description of the Inquiry process. It also provides an overview of the review conducted by Mr Brendan O'Reilly into the Orica incident by way of further background information.

Background to the Inquiry

1.1 At approximately 6.00 pm on 8 August 2011 a leak of chromium VI occurred from the ammonia plant at Orica Kooragang Island. Most of the chemical that was released fell on-site, however, some travelled off-site falling over a portion of nearby Stockton. The causes and circumstances surrounding the leak are examined in Chapter 3.

1.2 While Orica and various government agencies responded to the leak in the following days, concern and confusion grew within the nearby Stockton community about the health impacts of the leak. The impact of the leak on the community is examined in Chapter 4.

1.3 In the following weeks this concern escalated to the wider community, the media and the Parliament, with both Orica and the Government, particularly the Office of Environment and Heritage and the Minister for the Environment, coming under criticism for the way that the leak was handled. Orica's response to the leak is examined in Chapter 5 and the Government's response to the leak is examined in Chapters 6-9.

1.4 On 17 August 2011 the Premier announced an independent review of the incident, to be conducted by Mr Brendan O'Reilly, former Director General of the Department of Premier and Cabinet. Mr O'Reilly completed his review and provided his report to the Government on 30 September 2011. The O'Reilly report is discussed later in this chapter.

1.5 In both the Upper and Lower House in the sitting weeks following the incident a number of questions about the leak were asked of Ministers in Question Time. On 25 August 2011, the Legislative Council established this Committee to examine the response of both Orica and the Government to the leak. On the same day the Legislative Council, on a motion by Ms Cate Faehrmann, made an order for papers under standing order 52 regarding the response by government agencies to the leak.

1.6 On 11 October 2011 the Hon Robyn Parker MP, Minister for the Environment and Heritage introduced into the Legislative Assembly the Protection of the Environment Legislation Amendment Bill 2011, stating that the Bill was a response to issues arising from the Orica incident and other recent incidents involving major hazards facilities. The Bill passed both Houses and was assented to on 16 November 2011. The reforms implemented by the Amendment Act are examined in Chapter 6.

Terms of reference

1.7 On the 25 August 2011 the Legislative Council appointed a select committee to inquire into the Kooragang Island Orica chemical leak. The Inquiry's terms of reference are set out on page iv.

1.8 The terms of reference require the Committee to examine the release of chromium VI, a hazardous material, from the Orica ammonium nitrate plant at Kooragang Island, near Stockton, on 8 August 2011.

1.9 Pursuant to the terms of reference the Committee is required to examine two main issues. First, the response of Orica to the incident, including a number of specific issues such as what caused the leak, the potential health and environmental impacts of the leak and Orica's compliance with regulatory obligations. Second, the New South Wales Government's response to the incident, including the timeliness of various agencies and Ministers being notified of the incident and their actions once notified.

1.10 During the Inquiry the Committee received a number of submissions that raised concerns about the impact of Orica's site at Botany in Sydney. The Botany site falls outside the Committee's terms of reference, which concern the incident on 8 August 2011 at the ammonia plant at Orica Kooragang Island. However, the Committee has published all the submissions it received during the Inquiry including those which referred to other sites.

Conduct of the Inquiry

1.11 The Select Committee was established by the Legislative Council on 25 August 2011. The terms of reference for the Inquiry specifically stated that 'apart from its first meeting the committee is not to hold any further meetings until the first sitting week following the publication of the final report of the inquiry into the chemical leak at the Orica site being conducted by Brendan O'Reilly. '[3] Mr O'Reilly's report was published on 5 October 2011 and the Committee held a meeting to determine its inquiry schedule on 10 October 2011.

1.12 As detailed below, the Committee's inquiry process included a submission phase, a two day visit to the Stockton area to conduct a tour of the Orica site, a public forum and a public hearing. Three further hearings were held at Parliament House in Sydney.

1.13 The Committee would like to thank all the individuals and organisations who made submissions to the Inquiry and those who appeared before the Committee as a witness or forum participant.

1.14 The Committee particularly thanks those members of the Stockton community who shared their personal stories at the public forum. The Committee would also like to thank the staff of Orica Kooragang Island who provided the Committee with the site inspection briefing and tour and those who appeared at the Committee's public hearings.

Submissions

1.15 The Committee advertised a call for submissions in the *Newcastle Herald, The Post* and *The Newcastle Star* in October 2011. The Committee also wrote to key stakeholders inviting them to make a submission to the Inquiry. The closing date for submissions was Friday 4 November 2011.

[3] LC Minutes (25/8/2011) Item 35, 374-376.

1.16 The Committee received a total of 27 submissions from Orica, government departments, non-government organisations and individuals, as well as a number of supplementary submissions.

1.17 A list of submissions is contained in **Appendix 1**. The submissions are available on the Committee's website: www.parliament.nsw.gov.au/oricainquiry.

Visit of inspection - Orica Kooragang Island

1.18 On Monday 14 November 2011 the Committee undertook a site visit of Orica Kooragang Island. The Committee was provided with a briefing from Orica staff and toured the ammonia plant where the leak occurred. The visit greatly assisted the Committee's understanding of the causes and events surrounding the leak.

Public forum

1.19 The Committee held a public forum at the Stockton RSL in the evening of Monday 14 November 2011 at which a number of residents spoke about the incident and the impact it, and the way in which it was responded to by Orica and the Government, has had on themselves, their families and their community.

Public hearings

1.20 The Committee held four public hearings during the Inquiry. Three of these hearings were held at Parliament House on 17 November, 21 November and 7 December 2011. The Committee also held one hearing in Stockton on 15 November 2011.

1.21 The Committee heard evidence from four NSW Government Ministers, including the Premier, who were accompanied by senior departmental officers. The Committee also heard from community groups.

1.22 The Committee also took evidence from Mr Graeme Liebelt, Managing Director and Chief Executive Officer of Orica Limited, as well the head of the Crisis Management Team established to manage the incident and also three employees of the Kooragang Island Orica plant: the Site Manager; the Ammonia Plant Night Shift Supervisor; and the Sustainability Manager. When appearing before the Committee these Orica representatives and staff were accompanied by a legal advisor.

1.23 A list of witnesses who appeared at the hearings is reproduced at **Appendix 2**. The transcripts of the hearing are available on the Committee's website.

Inquiry witnesses

1.24 A number of the witnesses who gave evidence in this inquiry have moved on from the positions they held at the time of the incident. For the purposes of this report the Committee has referred to these witnesses using the titles they held at the time of the incident.

The O'Reilly Report

1.25 On 17 August 2011 the Premier announced the initiation of an independent review of the incident at Kooragang Island of 8 August 2011, to be conducted by Mr Brendan O'Reilly, former Director General of the Department of Premier and Cabinet.[4]

1.26 Mr O'Reilly was asked to consider the response to the incident and to identify improvements to ensure effective processes for responding to serious pollution incidents and for communicating accurate and up-to-date information to affected communities.[5]

1.27 Mr O'Reilly reported in relation to the review on 30 September 2011. The report included findings about the actions of Orica and government agencies, including the Office of Environment and Heritage, the NSW Health and WorkCover, in responding to the incident of 8 August 2011.

1.28 A central finding of the report was that Orica failed to notify any regulatory authority of the leak until approximately 16½ hours after the incident had occurred, and initially advised it believed the incident was contained on site.[6] The report further found that this delay in notification by Orica had a direct impact on whether the incident was treated as an emergency, which in turn influenced communication arrangements between response agencies and public communication arrangements.[7]

1.29 A further finding of the report was that, although the incident involved the leak of a hazardous material[8] it was not treated as an emergency under state emergency management requirements, as the leak had ceased by the time government agencies were notified.[9] Nevertheless, despite there being no formal activation of emergency procedures, key agencies had followed agreed emergency roles and responsibilities as detailed in the HAZMAT/CBR Sub Plan.[10]

1.30 While endorsing aspects of Government responses to the incident, the report also identified areas where response times and public communication had been less than the community is entitled to expect. For example, the report noted that although the leak was ultimately found to be one that did not pose a health risk to residents living near the chemical plant, a lack of communication, by Orica and the Government, in the days following the incident had represented a period of uncertainty for residents, which had led to expressions of anger and frustration.[11]

---

4 Hon Barry O'Farrell MP, Premier of NSW, 'Premier announces independent inquiry into Orica incident', *Media Release*, 17 August 2011.

5 Hon Barry O'Farrell MP, Premier of NSW, 'Premier announces independent inquiry into Orica incident', Media Release, 17 August 2011. ('Review into serious pollution incidents; Terms of Reference').

6 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8 2011*, 30 September 2011, p 3.

7 O'Reilly B, 2011, p 3.

8 O'Reilly B, 2011, p 8.

9 O'Reilly B, 2011, pp 10-11.

10 O'Reilly B, 2011, pp 3 and 23.

11 O'Reilly B, 2011, p 3.

1.31 The report also observed that, if the same reporting and response time-lines had been followed and the leak had been found to be one which did pose a health risk to residents, a very different outcome could have been the subject of review.[12]

1.32 Having examined responses to the incident, the report made nine recommendations for reform with the aim of ensuring that future incidents are handled in a more timely and appropriate manner. These recommendations concerned:

- Industry obligations with respect to pollution incidents
- Inter- and intra-agency communications
- Community notification and engagement
- Reform of the Environmental Protection Authority (EPA)
- The Kooragang Island industrial precinct.

1.33 The recommendations are set out in full in the O'Reilly report.[13] The main features of the recommendations are summarised in Table 1 below:

Table 1 Summary of recommendations in O'Reilly report

Subject	Recommended action
Industry obligations with respect to pollution incidents	Amend the current duty in the *Protection of the Environment Operations Act 1997* to notify pollution incidents so that incidents must be notified immediately or within one hour rather than 'as soon as practicable'. Make corresponding amendments to associated company plans (*Rec. 1*).
	Empower the Chief Health Officer to direct a company responsible for a hazardous incident to fund an independent analysis of the associated health risks (*Rec. 5*).
Inter- and intra-agency communications	Amend the MOU between Fire Brigades NSW and the Office of Environment and Heritage to make it mandatory for one party to notify the other party of a hazardous material spill immediately or within one hour of becoming aware of the spill (*Rec. 3).*
	Review the processes and time frame for submission of information under the government agency 'Early Alert' procedure *(Rec. 4).*
	Review Workcover's notification system and the content of training provided to staff of Workcover's Strategic Assessment Centre (*Rec. 6).*
Community notification and engagement	Activate the community engagement system (PIFAC) immediately a hazardous material spill becomes known irrespective of whether the spill is determined to be an 'emergency' or an 'incident' (*Rec. 2).*
	Conduct periodic emergency response exercises to test the clarity, timeliness and appropriateness of information provided to the public (*Rec. 9*).
Reform of EPA	Create an independent Environmental Regulatory Authority headed by a Chief Environmental Regulator with appropriate qualifications and experience; establish an independent board drawn from persons with regulatory expertise

12 O'Reilly B, 2011, pp 3-4.

13 O'Reilly B, 2011, pp 5-6.

Subject	Recommended action
	and representatives from community interests; consider establishing community reference groups to assist the Authority in its deliberations *(Rec. 7)*.
Kooragang Island precinct	Develop a precinct plan for Kooragang Island and surrounding areas similar to the Botany Bay Precinct Emergency Sub Plan as determined by the State Emergency Control Committee *(Rec. 8)*.

1.34 The Premier informed the Committee that the Government had accepted, and is implementing the recommendations of the O'Reilly Report.[14] Various recommendations of the O'Reilly report are examined in later chapters of this report.

[14] Hon Barry Farrell MP, Premier of NSW, Evidence, 21 November 2011, p 30.

Chapter 2 The regulatory context

The terms of reference for this inquiry concern the responses of Orica and the Government to an incident involving a chemical leak from Orica Kooragang Island on 8 August 2011. An assessment of those responses requires an understanding of the regulatory framework for the reporting and management of pollution incidents. This chapter therefore provides an overview of relevant aspects of the regulatory framework.

Pollution regulation

2.1 The framework governing the reporting and management of pollution incidents in NSW draws on elements of various regulatory regimes. These include planning and development, environmental protection, work health and safety, and emergency management. Key aspects of these regimes are summarised below.

Planning and development

2.2 Planning and development in NSW are carried out under the *Environmental Planning and Assessment Act 1979* and the Environmental Planning and Assessment Regulation 2000, in accordance with environmental planning instruments such as State environmental planning policies and local environmental plans.

2.3 Within this regulatory regime, there are various systems for the assessment of development proposals according to the size, nature and complexity of different project types.[15]

2.4 Large scale industry projects over certain production and/or investment thresholds are assessed by the NSW Government.[16] The assessment process includes the identification of relevant environmental assessment requirements, public consultation, and the preparation of a report on the proposal by the Director-General of the Department of Planning and Infrastructure.[17] Following assessment, the project is either approved with conditions, or disapproved.[18] Between 2005 and October 2011, proposals for major projects were determined by the Minister under Part 3A of the Act.[19]

2.5 The assessment process includes measures to evaluate and address potential hazards and risks. A systematic approach to the assessment of development proposals for potentially hazardous

15 Department of Planning of Infrastructure, 'Development Assessment Systems', http://www.planning.nsw.gov.au/Development/DevelopmentAssessmentSystems/tabid/72/language/en-US/Default.aspx, accessed 5/12/2011.

16 Submission 24, Department of Planning and Infrastructure, Appendix A, 'Framework for the Assessment of Major Hazard Facilities', p 5.

17 Submission 24, Appendix A, p 5.

18 Submission 24, Appendix A, p 5.

19 Following the commencement of the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* on 1 October 2011 and the consequent repeal of Part 3A, proposals for State significant developments will in general be determined by a delegate of the Minister: Department of Planning and Infrastructure, *State significant assessment system: an overview*, Fact Sheet, September 2011, p 4.

industries is set out in State Environmental Planning Policy (SEPP) No 33: *Hazardous and Offensive Development*.[20] The Department of Planning and Infrastructure has also developed an integrated assessment process for potentially hazardous development proposals.[21]

2.6 Hazards-related conditions of approval are often imposed on potentially hazardous developments proposals.[22] These conditions may include requirements concerning the conduct of periodic hazard audits,[23] the development of emergency plans,[24] and the notification of pollution incidents.[25]

2.7 The Department of Planning and Infrastructure has a role in ensuring that developments under ministerial approval or consent are carried out in compliance with the conditions of approval or consent,[26] and has a range of enforcement options available to it.[27]

2.8 Information concerning the planning approvals and associated conditions applying to Orica Kooragang Island is provided in Chapters 5 and 9.

Environmental protection

2.9 The *Protection of the Environment Operations Act 1997* includes measures to limit and regulate the incidence of pollution in NSW. These measures include requirements for the licensing of activities that have a potential environmental impact, the imposition of a statutory duty to notify pollution incidents, and the creation of a number of pollution-related offences.

2.10 Activities listed in schedule 1 to the Act ('scheduled activities') may only be carried out if authorised by an environment protection licence issued by Environment Protection Authority (EPA).[28]

2.11 Scheduled activities involving assessable pollutants attract an additional fee calculated on the loads of pollutants the activity releases (the 'load-based licencing fee').[29]

2.12 The conditions imposed by an environment protection licence may include requirements not to exceed the load limits on which the load-based licensing fee is based, effectively capping the

20 Submission 24, Appendix A, p 3.

21 Submission 24, Appendix A, p 3.

22 Submission 24, Appendix A, p 4.

23 Department of Planning, Hazardous Industry Planning Advisor Paper No 12, *Hazards-related conditions of consent*, January 2011, p 13.

24 Department of Planning, Hazardous Industry Planning Advisor Paper No 12, *Hazards-related conditions of consent*, January 2011, p 12.

25 Conditions requiring the notification of pollution incidents appear to be standard in project approvals for potentially hazardous developments and a condition to this effect forms part of the most recent project approval applying to Orica's Kooragang Island site (08_0129) as discussed in chapter 9 of this report.

26 Department of Planning, *Compliance and Enforcement*; *Compliance policy*, September 2010, p iii.

27 Department of Planning, *Compliance and Enforcement*; *Compliance policy*, September 2010, p iii.

28 *Protection of the Environment Operations Act 1997*, sections 6, 43, and 47-49.

29 Department of Environment, Climate Change and Water, *Guide to licensing under the Protection of the Environment Operations Act 1997, Part A*, October 2009, pp 2 and 10.

amount of assessable pollutants the activity may release.[30] Other licence conditions may include requirements concerning monitoring of the licensed activity including discharges,[31] mandatory environmental audits,[32] pollution studies,[33] pollution reduction programs,[34] emergency response plans, and the notification of pollution incidents.[35]

2.13 License-holders are required to submit annual returns disclosing information concerning compliance with license conditions and pollutant loads.[36] Annual returns are included in a public register maintained by the EPA or other relevant regulatory authority (see below). The EPA scrutinises annual returns and pollution load calculations under its compliance audit program.[37] In addition, mandatory audits may be required as a condition of a license if the EPA reasonably suspects the licensee has contravened the Act, regulations or license conditions and the contravention has caused or is likely to cause harm to the environment.[38]

2.14 There is a duty under the Act to notify pollution incidents where material harm to the environment is caused or threatened (section 148). Until recent amendments came into effect on 6 February 2012, incidents —were required to be notified 'as soon as practicable' to the 'appropriate regulatory authority'. Failure to comply is an offence. The penalties for the offence before the amendments were $1,000,000 and $120,000 for each day the offence continued, in the case of a corporation, and $250,000 and $60,000 for each day the offence continued, in the case of an individual.

2.15 The EPA has a role in enforcing compliance with the Act, regulations and licence conditions. This includes the right to issue penalty notices (clean-up notices, prevention notices and prohibition notices), institute civil proceedings, or bring prosecutions in the more serious cases.

2.16 The EPA is required to maintain a public register containing specified information on licences, license reviews, prosecutions, notices and mandatory audit reports.[39] The register also includes information from licensees' annual returns.[40] The register is published on the website of the Office of Environment and Heritage (OEH).

---

30 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8 2011*, 30 September 2011, p 12.

31 *Protection of the Environment Operations Act 1997*, s 66(1).

32 *Protection of the Environment Operations Act 1997*, s 67.

33 *Protection of the Environment Operations Act 1997*, s 68.

34 *Protection of the Environment Operations Act 1997*, s 68.

35 Conditions concerning emergency response plans and the notification of pollution incidents appear to be standard in many environment protection licenses and are included in the license applying to Orica's Kooragang Island site as discussed in chapter 6.

36 Office of Environment and Heritage, 'Annual returns', accessed 5 November 2011, <http://www.environment.nsw.gov.au/licensing/lbl/annualreturn.htm>.

37 Office of Environment and Heritage, 'Annual returns', accessed 5 November 2011, <http://www.environment.nsw.gov.au/licensing/lbl/annualreturn.htm>.

38 *Protection of the Environment Operations Act 1997*, s 175.

39 *Protection of the Environment Operations Act 1997*, s 308.

40 See, for example, non-compliance details disclosed in Orica's 2010 Annual Return published in the Register at:

2.17 Reforms to the statutory duty to notify pollution incidents are discussed later in this chapter. The duty to notify the incident of 8 August 2011 under the *Protection of the Environment Operations Act 1997* and relevant licence is considered in chapters 5 and 6.

Work health and safety

2.18 The *Occupational Health and Safety Act 2000* governs work health and safety in New South Wales. While the Act does not expressly apply to pollution incidents, a pollution incident may also be governed by the Act where it concerns or creates risks for work health and safety.[41]

2.19 Major obligations imposed by the Act include ensuring the health, safety and welfare at work of employees (section 8), ensuring that premises are safe and without risks to health (section 10), and notifying WorkCover of serious incidents in the workplace or other incidents prescribed by the regulations (sections 86-87).

2.20 The Occupational Health and Safety Regulation 2001 imposes additional obligations on workplaces that handle or store hazardous substances (chapter 6 of the Regulation) and dangerous goods (chapter 6A of the Regulation). Even higher standards apply to facilities that handle the largest quantities of hazardous substances, dangerous goods or explosives which are known as 'major hazard facilities' (chapter 6B of the Regulation).[42]

2.21 Workcover has a role in verifying industry compliance with the *Occupational Health and Safety Act 2000* and Occupational Health and Safety Regulation 2001 and in taking enforcement action.[43]

2.22 National work health and safety model legislation commenced on 1 January 2012.[44] National model regulations are being finalized to support the new legislation.[45]

2.23 The work health and safety requirements which apply in relation to the incident of 8 August 2011 are discussed in chapters 5 and 8.

Emergency management

2.24 The *State Emergency and Rescue Management Act 1989* sets out the broad framework for the management of State emergencies and rescues. The Act includes provision for the establishment of emergency management committees at state, district and local levels. It also provides for the preparation of disaster plans to ensure a coordinated response to emergencies.[46]

<www.environment.nsw.gov.au/prpoeoapp/Detail.aspx?id=828&periodid=33988&option=noncompliance&range=POEO licence>.

41 Submission 11, WorkCover NSW, p 2.

42 Submission 11, pp 6-12.

43 Submission 11, p 13.

44 Submission 11, p 11.

45 Submission 11, p 11.

46 O'Reilly B, 2011, Annexure 2, pp 6-7.

2.25 The State Disaster Plan established under the *State Emergency and Rescue Management Act 1989* details emergency prevention, preparedness, response and recovery arrangements for New South Wales.[47] It includes provisions identifying the combat agency primarily responsible for each particular form of emergency and specifies measures to ensure that the activities of supporting agencies are effectively coordinated.[48]

2.26 The State Disaster Plan has a series of 'sub plans' that address specific hazards, and 'supporting plans' that outline arrangements for supporting agencies in relation to particular functional areas.[49]

2.27 Emergencies involving hazardous chemicals are addressed in the Hazardous Chemicals/Chemical, Biological, Radiological (HAZMAT/CBR) Sub Plan. This sub plan includes obligations concerning the notification of emergencies and communication with the public. These obligations include a requirement that in the event of a hazardous chemicals emergency, communication and public information services are to be provided by the Public Information Services Functional Area Coordinator (PIFAC) in accordance with the Public Information Services Functional Area (PISFAC) Supporting Plan.[50]

2.28 The HAZMAT/CBR Sub Plan is supported by a Memorandum of Understanding (MOU) between the designated combat agency for land based hazardous chemical emergencies, Fire and Rescue NSW, and OEH, which includes a protocol for the notification of hazards incidents.[51]

2.29 Aspects of the emergency management regime are discussed in later chapters when considering the findings of the O'Reilly review. The roles of particular response and support agencies in relation to the incident of 8 August 2011 and subsequent regulatory reforms are examined in chapters 6-9.

47 Submission 3, Ministry for Police and Emergency Services, NSW Police Force and Fire and Rescue NSW, p 2.

48 O'Reilly B, 2011, Annexure 2, p 7.

49 Submission 3, p 2.

50 O'Reilly B, 2011, pp 8-9. The PISFAC Supporting Plan details the arrangements for the coordination of the collection, collation and dissemination of public information in an emergency. This includes the coordinated release of public safety/warning messages and public information, public education and interaction between all media agencies during the phase of emergency operations. O'Reilly, 2011, pp 13-14.

51 O'Reilly B, 2011, p 27.

Chapter 3 The chemical leak of 8 August 2011

This chapter gives a brief overview of Orica Kooragang Island and the leak of chromium VI from the site on 8 August 2011. It also includes a summary of the 'immediate cause' of the leak, and various contributory factors, identified by independent engineering experts following the incident.

Orica Kooragang Island

Orica Limited

3.1 Orica Limited is an Australian-owned, publicly listed company with operations in around 50 countries. It is ranked among the top 40 companies on the Australian Stock Exchange.[52]

3.2 Orica comprises three business units: Orica Mining Services, Orica Chemicals and Minova.[53] Orica Mining Services is the world's largest supplier of commercial explosives, blasting systems and blast-based services to the mining, quarrying and infrastructure sectors.[54]

Location of the site

3.3 Orica Mining Services operates an industrial chemical manufacturing site[55] on Kooragang Island in the Hunter River north of Newcastle. The site forms part of the Kooragang Island industrial precinct. Adjacent to the site on three sides are other industrial sites including Incitec Pivot, Newcastle Ports Corporation and Laing O'Rourke.[56]

3.4 Approximately 500 metres to the east of the site is the suburb of Stockton[57] located on the Stockton Peninsula. A number of other residential areas are located within a 4 kilometre radius of the site.[58] The location of Kooragang Island in the Newcastle region is shown in Figure 1:

52 Orica Limited, 'Company profile', accessed 7 February 2012, <www.orica.com.au/business/cor/orica/COR00254.nsf/HeadingPagesDisplay/About+OricaCompany+Profile?OpenDocument>; also see Orica Limited, 'History' accessed, 7 February 2012, <www.orica.com.au/BUSINESS/COR/orica/COR00254.nsf/Page/About_OricaHistory>.

53 Orica Limited, Presentation, 14 November 2011, p 2.

54 Orica Limited, *2011 Annual Report*, p 1.

55 Submission 16, Orica Limited, p 2.

56 Submission 16, p 2.

57 Submission 24, Department of Planning and Infrastructure, p 5. In its submission Orica stated that residential populations on the Stockton peninsula are approximately *800* metres from the site: Submission 16, p 2.

58 Councillor Michael Osborne, Evidence, 14 November 2011, p 3.

Figure 1 Location of Kooragang Island

Source: Map of Kooragang Island, whereis.com search

3.5 The position of the Orica site on Kooragang Island is shown in Figure 2:

Figure 2 Location of Orica site on Kooragand Island

Source: Submission 24, Department of Planning and Infrastructure, Appendix A – Location and site plans

Operations at the site

3.6 The site includes an ammonia plant, three nitric acid plants, two ammonium nitrate plants, a liquefied gas bottling plant and three storage and loading sites.[59] The site produces ammonia, nitric acid and ammonium nitrate.[60]

3.7 Orica's website states that ammonia is used in the production of ammonium nitrate and is also sold for use as an agricultural fertiliser or refrigerant. Nitric acid is used in the production of ammonium nitrate and is also sold for use in other industrial applications. Ammonium nitrate is used in the manufacture of explosives for the mining and quarry industries.[61]

3.8 The site is an important part of Orica Mining Services' operations in Australia. Orica has advised that the site:

- supplies 80% of the Hunter Valley resources operations with commercial explosives, initiating systems and blast-based systems
- at current capacity, meets 60% of New South Wales demand and 25% of national demand
- [is the] only manufacturer of ammonium nitrate in New South Wales - 90% of the ammonium nitrate manufactured on-site (430, 000 tonnes a year) [being] sold locally.[62]

3.9 The site operates 24 hours a day, 365 days a year. During normal operations there are 170 permanent staff and about 150 contractors. During site maintenance overhauls, the on-site population can rise to over 700 people during the day and around 70 staff after hours.[63]

History of the site

3.10 The site commenced operation in 1969 under the control of Eastern Nitrogen. In 1988 Eastern Nitrogen merged with Greenleaf Fertiliser and came under the control of ICI Australia, and later Incitec. Orica became the owner of the site in mid 2000s.[64]

---

59 Submission 16, p 2.

60 Submission 16, p 2.

61 Orica Limited, 'Our operations', accessed 8 December 2011, <www.oricaki.com.au/index.asp?page=55>. The ammonia plant also supplies carbon dioxide, which is produced during the manufacture of ammonia, to the agriculture, water supply, food (including soft drinks), dairy and medical sectors: Orica, 'Orica commences ammonia plant restart', accessed 7 February 2012, <http://oricaki.com.au/files/Orica%20Media%20Release%202%20January%202012.pdf>; Orica Mining Services, Kooragang Island, 'The plant and process', Ammonia Manufacturing, accessed 7 February 2012, <www.oricaki.com.au/files/pdf/71340%20Orica%206ppA4_Fact.pdf>.

62 Orica Limited, Presentation, 14 November 2011, p 2.

63 Orica Limited, Presentation, 14 November 2011 p 9.

64 Submission 24, Department of Planning and Infrastructure, p 5. The Managing Director and Chief Executive Officer of Orica Limited, Mr Graeme Liebelt, provided the Committee with the following further information concerning the history of the site: 'There have been some ownership changes with the plant over the years. Orica as Orica took over in 2003. Prior to that for a period of time it was a subsidiary of Orica's which is Incitec, which was then a subsidiary. It is now no

3.11 Various planning approvals for the site have been granted since 1987. The most recent approval, issued in 2009, authorised an expansion of the site to allow for an increase in ammonium nitrate production from 500,000 tonnes to 750,000 tonnes a year.[65] The expansion includes an upgrade of the existing ammonia plant, a new nitric acid plant, a new ammonium nitrate plant, and an upgrade and reorganization of storage capacity.[66] To date, only the upgrade of the ammonia plant has been finalized.[67]

The ammonia plant

3.12 The ammonia plant uses natural gas, steam and air to produce ammonia.[68] The process relies on a number of catalysts to promote the required chemical reactions.[69] The main steps in the process are shown in the diagram in Appendix 5.

Five-yearly maintenance overhauls

3.13 The ammonia plant undergoes a major maintenance overhaul or 'turnaround' every five years.[70] During maintenance overhauls the plant is 'shut down' or 'brought off line'.

3.14 Each five-yearly maintenance overhaul includes the replacement of a particular component, the High Temperature Shift catalyst, which is used in the conversion of carbon monoxide to carbon dioxide.[71] This catalyst needs to be replaced as its efficiency decreases over time.[72]

3.15 The High Temperature Shift catalyst includes iron, copper, and chromium.[73] When the catalyst is supplied by the manufacturer the chromium is in the form of chromium III (4.8 per cent) and chromium VI (0.5 per cent).[74]

Five-yearly 'start ups'

3.16 Following a 'shut down' for a five-yearly maintenance overhaul the ammonia plant undergoes a 'start up' procedure before resuming its normal operations.

3.17 As part of the 'start up' procedure the High Temperature Shift catalyst undergoes a process called 'reduction', which converts the catalyst from its manufactured form to its catalytically

longer a subsidiary that operated that plant.': Mr Graham Liebelt, Managing Director and Chief Executive Officer, Orica Limited, Evidence, 17 November 2011, p 23

65 Department of Planning, Project Approval (Minister for Planning), 08_0129, 1 December 2009, p 1, 'Definitions': 'Project'.

66 Submission 24, p 5.

67 Submission 24, p 5.

68 Submission 16, p 2

69 Orica Limited, Presentation, 14 November 2011, p 13.

70 Orica Limited, Presentation, 14 November 2011, p 14.

71 Submission 16, p 3.

72 Submission 16, p 3.

73 Orica Limited, Presentation, 14 November 2011, p 15.

74 Orica Limited, Presentation, 14 November 2011, p 15.

active form.[75] During 'reduction', copper oxide is converted to copper, haematite is converted to magnetite, and chromium VI is converted to chromium III.[76]

3.18 The process of 'reduction' begins by increasing the temperature in the catalyst by passing steam through the catalyst bed and discharging the steam to the vent system of the 'SP8' vent stack of the plant.[77] The next step is the introduction of natural gas,[78] which converts chromium VI to chromium III.[79]

3.19 The only time chromium VI is present in the plant is during the 'start up' of the plant following a five-yearly maintenance overhaul in which the High Temperature Shift catalyst has been replaced before the introduction of natural gas.[80]

3.20 During 'start ups' of the plant it is possible for steam to condense if temperatures in the plant become lower than the dew point of steam. The condensation of steam results in the presence of fluid (condensate) in the plant.

3.21 During the last 'start up' of the plant following a five-yearly maintenance overhaul, which occurred in 2006, fluid produced by condensation became contaminated with chromium VI before the High Temperature Shift catalyst had been 'reduced'. Some of the contaminated fluid was discharged into the Hunter River resulting in a breach of Orica's environment protection license. Following the incident the containment system of the plant was expanded with the aim of preventing similar discharges to the Hunter River in future.[81]

Chromium VI

3.22 Chromium VI is an 'oxidation state' of the element chromium.[82] Other oxidation states include chromium 0 (the metallic element chromium) and chromium III (the state in which chromium is found in nature).[83]

3.23 Small amounts of chromium III are essential for human health and well being. However, exposure to chromium VI can have adverse effects on human health and the environment.[84]

---

75 Submission 16, Appendix A, Johnson Matthey Catalysts, *Investigation into release of Chromium VI at Orica's Kooragang Island Ammonia Plant on 8th August 2011*, 1 September 2011, p 21.

76 Submission 16, Appendix A, p 21.

77 Submission 16, p 4.

78 Submission 16, p 4.

79 Submission 16, p 4; Orica Limited, Presentation, 14 November 2011, p 15.

80 Submission 16, p 4.

81 Mr Stuart Newman, Site Manager, Orica, Kooragang Island site, Evidence, 15 November 2011 pp 6, 13, 31.

82 National Pollutant Inventory, Factsheet, 'Chromium (VI) compounds: Overview', accessed 9 December 2011, <www.npi.gov.au/substances/chromium-vi/index.html>.

83 National Pollutant Inventory, Factsheet, 'Chromium (VI) compounds: Overview', accessed 9 December 2011, <www.npi.gov.au/substances/chromium-vi/index.html>.

84 National Pollutant Inventory, Factsheet, 'Chromium (VI) compounds: Health effects', accessed 7 February 2012, <www.npi.gov.au/substances/chromium-vi/health.html>; 'Environmental effects', accessed on 7 February 2012, <www.npi.gov.au/substances/chromium-vi/environmental.html>.

3.24 'Hexavalent chromium' appears to be a synonym for 'chromium VI'.[85] The word 'hexavalent' means 'having a valency of six'[86] and 'valency' refers to the capacity of atoms to unite or to combine.[87]

3.25 In this report the term 'chromium VI' has been used, rather than 'hexavalent chromium', except when quoting evidence which expressly refers to 'hexavalent chromium'.

The leak of 8 August 2011

How the leak occurred

3.26 In June 2011 the ammonia plant was 'brought offline' for approximately eight weeks to allow for completion of a five-yearly maintenance overhaul, costing $40 million, and a capacity upgrade worth over $100 million.[88] The maintenance overhaul included replacement of the High Temperature Shift catalyst previously described.

3.27 Following completion of the overhaul and upgrade, the plant entered the 'start up' phase in preparation for resuming its normal operations. On the third day of the start up, Monday 8 August 2011, the High Temperature Shift catalyst had begun the process of 'reduction'[89] which, as noted, involves passing steam though the catalyst bed and out the SP8 vent stack.

3.28 During the process of 'reduction', some of the steam in the plant condensed due to lower temperatures in certain parts of the plant and the resulting 'condensate' or liquid dissolved chromium VI present in the catalyst bed.[90] Some of the condensate containing chromium VI was captured in the drainage system of the plant. However, the volume of condensate produced was greater than predicted and overwhelmed the drainage arrangements with the result that some of the condensate was emitted from the SP8 vent stack.[91]

---

85 National Pollutant Inventory, Factsheet, Chromium (VI) compounds: Overview, accessed on 7 February 2012, <www.npi.gov.au/substances/chromium-vi/index.html>.

86 *Macquarie Dictionary online*, 'hexavalent', <www.macquariedictionary.com.au/202.146.8.4@929FFC63832881/-/p/thes/article_display.html?type=title&first=1&mid=2&last=2&current=1&result=1&DatabaseList=dictbigmac&query=hexavalent&searchType=findrank>

87 *Macquarie Dictionary online*, 'valency', <www.macquariedictionary.com.au/202.146.8.4@929FFC63832881/-/p/thes/article_display.html?type=title&first=1&mid=3&last=3&current=1&result=1&DatabaseList=dictbigmac&query=valency&searchType=findrank>

88 Submission 16, p 2.

89 Submission 16, pp 3-4.

90 Submission 21, NSW Ministry of Health, Appendix B, Dr Rodney Williams, Dr Bruce Niven, John Frangos, Garry Gately and Russell Higgins, *Release of chromium VI from the SP8 vent stack in the KI ammonia plant; response to Hunter New England Local Health District Request for Information 11/8/11*, pp 15-16; PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, 14 October 2011, p 3; Submission 16, Appendix A, p 34.

91 Submission 16, p 4.

3.29 The release of solution from the stack began at approximately 6.00 pm and continued for approximately 15 to 20 minutes.[92] The solution fell predominantly on the site downwind of the stack.[93] However, some of the solution drifted beyond the site in the form of airborne droplets.

How much chromium VI was released

3.30 Expert analysis of the solution emitted from the SP8 vent stack, commissioned by Orica, concluded that:

> The major species identified were sodium ion and chromium ion, consistent with the emitted species being sodium chromate. [94]

3.31 Approximately ten tonnes of this sodium chromate solution were produced as a result of the incident, of which probably over one tonne was captured in the containers of the plant.[95] Ten tonnes of sodium chromate solution contains about two per cent chromium VI.[96]

3.32 On 16 August 2011 the Department of Health released the results of chromium VI monitoring conducted by Office of Environment and Heritage (OEH) within Stockton between 9 and 12 August 2011. Chromium VI was found to be above the detection limit in 11 out of 71 samples taken from water, vegetation and surface swabs.[97] The locations where sampling took place and where chromium VI was detected are shown in Figure 3.

92 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011, p 7; Submission 16, pp 39-40.

93 Submission 21, Appendix B, p 14.

94 Submission 21, Appendix B, p 17.

95 Mr Newman, Evidence, 15 November 2011, p 20.

96 Mr Newman, Evidence, 15 November 2011, p 20.

97 PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, 14 October 2011, p 8.

Figure 3 Location of OEH chromium VI samples in Stockton

Source: Tabled document, Ms Kerry Chant, Ministry of Health, 21 November 2011

3.33 In its submission to this inquiry in November 2011, Orica estimated that approximately 45 kilograms of the chromium VI were captured using the plant's drain and storage systems, while approximately 21 kilograms of the chromium VI landed on the site.[98]

3.34 An air quality impact assessment by PAE Holmes on 14 October 2011 estimated that between 10 and 20 kilograms of chromium VI were released beyond the Orica site,[99] with a scenario closer to 20 kilograms being more likely.[100] These estimates relied on the OEH sample results referred to at paragraph 3.32 above.

3.35 The air quality impact assessment report by PAE Holmes in October 2011 also found that, of the 10 to 20 kilograms of chromium VI estimated to have left the Orica site, between 1.3 and 1.6 kilograms were deposited over Stockton:

98 Submission 16, p 5.

99 Toxikos, *Health risk assessment of hexavalent chromium release at Orica Kooragang Island*, 28 August 2011, p 8; PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, p 10.

100 PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, p 12.

> the model predicts a total of between 1.3 and 1.6 kg of Cr (VI) [chromium VI] having been deposited over Stockton under the 20 kg […] scenario. Under the 10kg release, this would be 50% of this value.[101]

3.36 Similarly, the final risk assessment report of the Department of Health in September 2011 stated that:

> It is estimated that at most 1.5 kg of chromium VI was deposited on the area of Stockton in which environmental sampling identified measurable amounts of chromium VI.[102]

3.37 In answers to questions taken on notice on 7 December 2011 Orica advised the Committee that it had discovered errors in the reporting of sampling results by the OEH which were used to calculate that approximately 10-20 kilograms of chromium VI were deposited over Stockton. Orica also advised that OEH had conceded that an error occurred in the reporting of the results, but that the extent of the error and its implications had not yet been resolved.[103]

3.38 Subsequently, on 15 February 2011, Orica provided a supplementary submission to the Committee which stated that OEH had sent Orica a table setting out the corrected OEH results of the sampling conducted in Stockton. The corrections to the original results showed that the highest swab concentration measured in Stockton was in the order of 25 times less than the results OEH had published in 2011.[104]

3.39 Orica also advised that PAE Holmes had prepared an addendum to its earlier air quality impact assessment to take account of the revised OEH results. The addendum to the air quality impact assessment included findings that revised air modelling based on the revised OEH data suggests:

- an emission scenario consistent with a 1 kilogram release of chromium VI, compared with 20 kilogram made with the original modeling and
- less than 60 grams of chromium VI predicted to have been deposited over Stockton, compared with between 1.3 and 1.6 kilograms within the original air assessment.[105]

3.40 The addendum to the PAE Holmes assessment also stated that the revised modelling further reduces the risk of any adverse health outcomes associated with the chromium VI release and further supports an earlier conclusion of negligible health impacts in Stockton due to the release.[106]

---

101 PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, p 15.

102 Submission 21, Appendix G, NSW Health, *Release of Chromium VI from the Orica chemical plant, Kooragang Island, Stockton, 8th August 2011, Final Health Risk Assessment Report Health*, 2 September 2011, p 37.

103 Answers to questions taken during evidence 7 December 2011, Orica Limited, Question 7, p 2, Annexures 2 and 3, and 'Additional comment and clarification', pp 4-5.

104 Supplementary Submission 16a, Orica Limited, p 1.

105 PAE Holmes, *Air Quality Impact Assessment – Addendum 3; Orica incident dispersion modeling*, 15 February 2012, p iv.

106 PAE Holmes, *Air Quality Impact Assessment – Addendum 3; Orica incident dispersion modeling*, 15 February 2012, p iv.

3.41 The reporting of the results of the OEH samples following the incident and the recent revisions to those results are further discussed in Chapters 6 and 7.

3.42 In its supplementary submission to this inquiry Orica also advised the Committee that, while the new information reveals that significantly less chromium VI was emitted into Stockton than originally estimated, it remains Orica's position that the discharge of any chromium VI on 8 August 2011 from the Kooragang Island site was 'highly regrettable and unacceptable'.[107]

Immediate cause of the incident and contributory factors

3.43 Following the release of chromium VI, Orica was directed by OEH to engage a qualified and experienced engineer to investigate the cause of the incident and make recommendations to ensure that a similar incident does not happen again.[108] Orica engaged the firm of Johnson Matthey Catalysts to conduct this review.

3.44 Johnson Matthey Catalysts reported in relation to the matter on 1 September 2011. The overall conclusion reached in that report was that the release of chromium VI was:

> caused by a combination of a modification to a flue gas heat recovery coil which was undertaken during the 2011 overhaul along with variability in the operational practices used to start the plant.[109]

3.45 In support of this overall conclusion, the report identified the 'immediate cause' of the incident and various 'contributory factors'.[110]

3.46 The 'immediate cause' included a series of interrelated factors which can be summarised as follows:

- The modification of a heat recovery coil during the overhaul of the plant in 2011 resulted in the temperature in part of the plant being lower during the 'start up' on 8 August 2011, which facilitated the formation of condensation.[111]
- The problem of condensation was exacerbated by the temperature of the 'deaerator' of the plant, which was lower than the equivalent temperature during start ups in February and May 2010.[112]
- The condensation problem was further exacerbated by deviations from operating procedures of the plant such as the timing of the 'vent valve' operations.

---

107 Supplementary Submission 16a, p 2.

108 Submission 16, p 3; Submission 17, Office of Environment and Heritage, p 7.

109 Submission 16, Appendix A, Johnson Matthey Catalysts, *Investigation into release of Chromium VI at Orica's Kooragang Island Ammonia Plant on 8th August 2011*, p 25.

110 Submission 16, Appendix A, pp 34-35.

111 This is a summary of information in Submission 16, Appendix A, p 34 and Submission 16, p 4.

112 The Committee understands that the 'starts ups' of the plant in February and May 2010 were not 'start ups' which followed major maintenance overhauls as such overhauls only occur every five years. Consequently, the High Temperature Shift catalyst was not in the process of being reduced and there was therefore no chromium VI present in the plant.

- The amount of condensate produced overwhelmed the drainage arrangements of the plant, and the SP8 vent stack was not designed to cope with the levels of condensate produced.
- While an increase in condensation had been anticipated due to modifications to the plant, the amount of condensation was not quantified and hence effective safeguards were not implemented.
- Temporary clamps fitted to the SP8 vent stack allowed condensate containing chromium VI to be emitted from the side as well as the top of the stack.

3.47 The key 'contributory factors' identified by Johnson Matthey Catalysts in summary were:

- The operating procedures of the plant were not prescriptive in defining the key criteria to be met at particular stages of the 'start up' such as the temperature at which the 'deaerator' should be set.
- The vent, vessel and pipework drainage arrangements of the plant do not appear to have been designed to accommodate condensate entering at the levels experienced.
- While Orica had expected increased levels of condensation, the magnitude and hence the consequence of that condensation do not appear to have been appreciated.
- Modifications to the plant during the 2011 overhaul appear to have been assessed as a collection of small projects rather than as part of a holistic review of the plant. For example, a 'heat and mass balance' conducted in 2008 does not appear to be reflected in the modifications installed in 2011.

3.48 The Committee understands that there was also a limited number of monitoring devices such that whilst the presence of condensate could be identified, the amount/quantity in the deaerator and SP8 vent stack could not be determined by the plant operators during the start-up phase.

3.49 The Committee received evidence from Orica representatives concerning many of the immediate causal and contributory factors which was consistent with the assessments reached in the independent experts' report. This evidence included testimony concerning modification of the heat recovery coil, plant procedures concerning the de-aerator temperature and 'vent valve' operations failure to quantify the amount of condensate expected to be produced during the 'start up' of the plant, and assessment of individual modifications to the plant as separate projects. However, with reference to one of the causal factors, pertaining to temporary clamps on the SP8 vent stack, Orica advised that the temporary repair was adequate to prevent any leaks at the time of the incident but that further corrosion holes in the stack have been discovered since the incident, which have now been repaired.[113]

3.50 To address the immediate causal and contributory factors, Johnson Matthey Catalysts also recommended changes to Orica's plant and its procedures. Orica has adopted the recommended changes as part of its response to the incident, as discussed in Chapter 5.

---

113 Answers to question on notice taken during evidence 15 November 2011, Orica Limited, Question 1, p 1; Answers to question on notice taken during evidence 17 November 2011, Orica Limited, Question 23, p 13.

Committee comment

3.51 The Committee notes that the release of chromium VI from Orica's ammonia plant resulted from a buildup of condensation which became contaminated with chromium VI that was present in one of the catalysts of the plant. A range of factors caused or contributed to the release including the design of recent modifications to the plant, variability in the operating procedures of the plant, and a failure to quantify the amount of condensation that was expected to be produced during the start up of the plant. These facts appear to be undisputed.

3.52 What is in dispute, however, is whether the response of both Orica and the NSW Government to the leak was appropriate and timely. As discussed in the next chapter, many residents of Stockton are dissatisfied and disappointed with the responses of both to the leak.

3.53 The concerns raised by residents and Orica's response to the incident are examined in Chapters 4 and 5, while the remaining chapters examine the response of government agencies.

Chapter 4 Impact on the community

This chapter examines the impact that the leak chromium VI from Orica's Kooragang Island site on 8 August 2011 had on the local Stockton community. The chapter explores the feelings of anxiety and concern among the community following the leak and how the lack of communication between Orica, various Government agencies and local residents helped escalate these fears. The chapter also discusses the lack of confidence the community now has in Orica and the NSW Government, as well as its concerns about the possibility of further incidents at the Kooragang Island facility. The chapter also examines suggestions made by community members about how serious incidents should be handled in the future.

Community concern

4.1 The Committee heard that Stockton residents and members of the wider community were distressed by the leak of chromium VI from Orica Kooragang Island on 8 August 2011 and Orica's response to the incident. People feared for their health and safety as well as that of their families and the environment. These concerns were exacerbated by the lack of information provided by Orica and the NSW Government in the days immediately following the incident.

4.2 Residents who participated in the Committee's Inquiry were overwhelmingly anxious that they, and their families, had potentially been exposed to chromium VI.[114] For example, Ms Jemma Sergent, Member of the Stockton Community Action Group, shared the fears she held for herself and her son since the leak:

> There is a real fear in the community and people are starting to think about should I be living here? And am I exposing my son? What happens in 30 years if he becomes ill and I knew there was something going on here and I did not move out of that situation? It is deeply disturbing to everyone. I do not think any of us have felt any security that anything is going to get any better from that site…[115]

4.3 Other community members, including Ms Vera Deacon, a resident of Stockton, expressed concern about the environmental impact of the leak.[116]

4.4 The lack of timely communication between Orica, the NSW Government and the community heightened anxiety for residents and was the focus of much ire during the Committee's public forum.[117] Inquiry participants expressed disappointment in the initial notification process, the

114 See for example: Ms Kate Johnson, Interim Chair, Stockton Community Action Group, Evidence, 15 November 2011, pp 53-54; Mr Keith Craig, Member, Stockton Community Action Group, Evidence, 14 November 2011, p 10; Mr James Giblin, Evidence, 14 November 2011, p 13; Mr Frank Rigby, Evidence, 15 November 2011, p 59; Ms Vicki Warwyck, Evidence, Evidence, 14 November 2011, p 4.

115 Ms Jemma Sergent, Member of the Stockton Community Action Group, Evidence, 15 November 2011, p 54.

116 Ms Vera Deacon, Evidence, 14 November 2011, p 15. Also see Submission 8, Name suppressed, p 3.

117 See for example: Submission 26, Clr Sharon Claydon, p 1; Submission 13, Stockton Community Action Group, p 5; Submission 5, Stockton Public School, pp 1-3.

dissemination of health-related information and how they were kept abreast of developments. For example, Mr Shane Gately, a resident of Stockton, told the Committee he was concerned for the health and safety of his young family during the time it took for residents to be informed of the incident:

> It was three days until we knew what had happened. The frustration and anxiety in that time I just cannot stress to you when you have a six month old son, what that is like. We had clothes on the line and we had our son playing in the background and we had no idea what was the right thing to do, what is the wrong thing to do. As a father you try to do the right thing by your family. There was no information available to make those decisions.[118]

4.5 Mr Brendan O'Reilly acknowledged residents' distress at the incident and communication breakdown in his report, stating:

> … to the residents of Stockton and neighbouring communities the lack of communication represented a period of six days of uncertainty. They have every right to express their anger, concern and frustration that at the end of the day, despite the legislation, the government and company plans, policies and procedures, they were let down.[119]

4.6 In response to the incident the Stockton community has taken a number of steps to allay its fears and express its dissatisfaction including holding public meetings, forming the Stockton Community Action Group and writing an open letter to Orica regarding access to information on the incident.[120]

4.7 Further consideration of how Orica, the Office of Environment and Heritage and Health responded to the chromium VI leak is discussed in Chapters 5, 6 and 7 respectively.

Community goodwill

4.8 A recurring theme in the evidence presented to the Inquiry was that Stockton residents had lost confidence in Orica and the NSW Government. The community was disappointed at how the company and the Government handled the incident and the strategies used to engage with residents.

4.9 A number of Inquiry participants were keen to impress upon the Committee that the community no longer had faith that Orica could operate its site safely.[121] In its submission the Stockton Community Action Group stressed that Orica's response to the recent fugitive emissions had caused local residents to no longer trust the company:

> … the Stockton community at large has lost confidence in Orica's ability to adequately respond and to adequately ensure the safety of the Stockton community in the event

118 Mr Shane Gately, Evidence, 14 November 2011, p 7.

119 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011, p 3.

120 Mr Ark Griffin, founder and editor, The Stockton Messenger, Evidence, 15 November 2011, p 66 and Submission 26, p 1.

121 See for example: Submission 26, p 4 and Mr Gately, Evidence, 14 November 2011, p 8.

of a chemical discharge or explosion because of their response to the incident on 8 August.[122]

4.10 Similarly, Mr Gately questioned how the community could trust Orica based on its environmental record and lack of effective communication with residents: '[h]ow could we as a community have faith that these people are doing the right thing by us? Their runs on the board aren't that good.'[123]

4.11 Various local residents expressed disappointment with the Government's response to the incident.[124] For example, Mr Ark Griffin, founder and editor of The Stockton Messenger, expressed the view that State agencies had not handled the incident well, and Ms Vicki Warwyck, a resident of Stockton, felt that the community had been badly let down by the current Administration.[125]

4.12 The Newcastle Greens expressed a similar opinion, stating that Stockton had been disappointed by successive NSW governments, which in its view had failed to provide adequate planning and regulatory regimes for hazardous industries.[126] The Newcastle Greens further suggested that the community's previous acceptance that government and industry controls effectively monitored major hazard facilities had been 'shattered.'[127]

4.13 Ms Warwyck and Mr Gately were also frustrated by the number of days it took NSW Health to conduct tests for chromium VI in the local area believing the lack of action caused additional unease in the community.[128]

Infrastructure and industrial concerns

4.14 Concerns were expressed by community members that Stockton lacked the necessary infrastructure, particularly adequate roads, to evacuate residents in the event of an emergency. Additionally, the Committee's attention was drawn to the possibility that the co-location of heavy industries on Kooragang Island, particularly those involving large-scale chemical production, could give rise to an incident that would cause irreparable damage to the local area.

4.15 Certain residents were concerned that future serious incidents at Kooragang Island could be exacerbated because there are inadequate local roads and the area cannot be evacuated quickly.[129] Mr Gately explained this stance: '[f]or the people here on Stockton peninsular there

122 Submission 13, p 5.

123 Mr Gately, Evidence, 14 November 2011, p 8.

124 See for example: Submission 13, p 8; Ms Vicki Warwyck, Evidence, 14 November 2011, pp 4-5.

125 Mr Griffin, Evidence, 15 November 2011, p 67 and Ms Warwyck, Evidence, 14 November 2011, pp 4-5.

126 Submission 9, Newcastle Greens, p 1.

127 Submission 9, p 1.

128 Ms Warwyck, Evidence, 14 November 2011, p 4 and Mr Gately, Evidence, 14 November 2011, p 7.

129 Ms Barbara Whitcher, Representative, Stockton Branch of the Australian Labor Party, Evidence, 14 November 2011, p 5.

is one road in and out … if there is a major incident we are isolated. There is nothing in place at this stage for us to know what to do if there is a major incident on that island.'[130]

4.16 A number of inquiry participants were concerned about the potential for a serious explosion to occur at various Kooragang Island sites, including Orica. Mr John Hayes, Convener of Correct Planning and Consultation for Mayfield Group, noted a large explosion at an ammonium nitrate facility in Toulouse France in 2001 and feared that due to the size of the Orica facilities and its proximity to a large residential population a similar explosion could occur that may cause more extensive damage.[131]

4.17 A similar concern was expressed by Ms Warwyck who suggested that Orica Kooragang Island was a potential terrorist target that could cause immeasurable damage to the surrounding area should it be attacked.[132]

Community proposals

4.18 Local residents suggested that Orica and the NSW Government should draw on the recent chromium VI leak to develop new policies and procedures for future incidents involving hazardous materials.

4.19 Inquiry participants forwarded a number of proposals they believed deserved the attention of Orica and the NSW Government, such as:

- Developing clear lines of communication between organisations, the government and local communities during critical incidents, including informing the community of which agency is in charge of emergency procedures.[133]
- Alerting the community to the use of chemicals in the area, particularly those that may be harmful to health and wellbeing.[134]
- Developing more stringent pollution monitoring in the area.[135]
- Conducting long term health studies of the local population.[136]
- Creating an Emergency Management Plan for Stockton, including emergency simulation exercises, evacuation procedures, audible alarm systems and electronic communication (text messaging etc).[137]

130 Mr Gately, Evidence, 14 November 2011, pp 7-8.

131 Mr John Hayes, Convener of Correct Planning and Consultation for Mayfield Group, Evidence, 14 November 2011, p 9. Also see Ms Whitcher, Evidence, 14 November 2011, p 5.

132 Ms Warwyck, Evidence, Evidence, 14 November 2011, p 4.

133 Submission 13, p 1. Also see Mr Rigby, Evidence, 15 November 2011, p 62.

134 Submission 2, Stockton Branch of the ALP, p 3.

135 Clr Sharon Claydon, Newcastle City Council, Evidence, 14 November 2011, p 7. Also see Mr Bill Todhunter, Evidence, 14 November 2011, p 13 and Submission 13, p 1.

136 Clr Claydon, Evidence, 14 November 2011, p 7. Also see Mr Griffin, Evidence, 15 November 2011, p 66.

137 Submission 13, p 1. Also see Clr Claydon, Evidence, 14 November 2011, p 7; Ms Johnson, Evidence, 14 November 2011, p 11.

- Carrying out a risk analysis of all industrial activities on Kooragang Island.[138]
- Introducing a Kooragang Island reference panel.[139]
- Establishing renewable industries in the area. [140]
- Strengthening the powers of the Environmental Protection Authority.[141]
- Requesting that Orica provide further explanation for its delay in reporting the Orica incident to the residents of Stockton.[142]
- Shutting down the Orica Kooragang Island site indefinitely.[143]

4.20 Many of these recommendations are discussed elsewhere in this report. Additionally, the NSW Government has addressed a number of residents' concerns as part of its response to the O'Reilly report and through the actions of individual agencies.

Committee comment

4.21 The Committee understands the anxiety faced by Stockton, and other Hunter, residents after the incident on 8 August 2011. It is clear that the fact that the community was not provided adequate information regarding the incident from Orica or the NSW Government in the days immediately following the leak had a significant and ongoing impact on those who live near the facility. It is regrettable that the community has lost confidence in local industry and the Government.

4.22 The Committee believes that both Orica and the NSW Government will need to work very hard to regain Stockton residents' trust. The next chapter outlines the response by Orica following the initial leak and its attempts to regain that trust.

138 Clr Claydon, Evidence, 14 November 2011, p 7. Also see Mr Giblin, Evidence, 14 November 2011, p 13 and Submission 13, p 1.

139 Clr Claydon, Evidence, 14 November 2011, p 7.

140 Mr Hayes, Evidence, 14 November 2011, p 9. Also see Mr Giblin, Evidence, Evidence, 14 November 2011, p 13.

141 Mr Rigby, Evidence, 15 November 2011, p 62.

142 Submission 13, p 1.

143 Ms Lesley Newling, Evidence, 14 November 2011, p 14. Also see Mr Craig, Evidence, 15 November 2011, p 45.

Chapter 5 Orica's response to the incident

This chapter examines Orica's response to the leak of chromium VI on 8 August 2011 including measures taken during the incident, immediately after the incident, and in the longer term. It includes consideration of Orica's actions to detect and control the leak, ascertain the off-site impact, report the leak to the authorities, notify the public, and modify the plant and its procedures.

Once the leak was detected the immediate response needed to be guided by the allocation of responsibilities in both the *KI Emergency Response Plan* and various notification procedures applying in the case of incidents. Key roles identified in these documents were allocated to the Site Manager and the Sustainability Manager, while the Night Shift Supervisor played a key role on the night of the leak. When the incident escalated the Crisis Management Plan for the site was activated and a crisis management team was established drawing upon Orica staff and external experts.

As was revealed in the evidence to the Inquiry, there were differences between the roles described in the documents, particularly the Emergency Response Plan, and those who undertook key tasks such as identifying the extent of the leak and notifying agencies. There were also gaps in procedures which contributed to the potential impact of the leak, once it occurred, being worse than it needed to be. This will be examined throughout the chapter.

In this Chapter the committee has made findings rather than recommendations in relation to Orica, as parliamentary committee cannot effectively make recommendations to a private company. However in subsequent chapters recommendations are made to Government agencies regarding improved regulation, monitoring and notification requirements in relation to the company.

The leak and attempts to control it

Detecting the leak

5.1 The circumstances of the leak are described in detail in Chapter 3.

5.2 Before the leak occurred, an alarm in the control room of the plant was activated signaling the presence of a high level of condensate at the bottom of the SP8 vent stack of the plant. This prompted operators to install a larger pump at the base of the SP8 vent stack. However, the relevant monitoring equipment of the plant was only able to detect the level the condensate had reached and could not detect factors such as the rate at which the condensate was flowing.[144]

5.3 The leak was detected approximately 25 minutes later when the Mr Warren Ashbourne, Night Shift Supervisor of Orica Kooragang Island, noticed yellow 'spots' that he believed to be 'chromium' on the helmet of a contractor who had entered the control room, and yellow 'droplets' on the window of the control room facing the SP8 vent stack.[145]

144 Submission 16, Orica Limited, p 39; Mr Warren Ashbourne, Night Shift Supervisor, Orica, Kooragang Island site, Evidence, 15 November 2011, p 12.

145 Submission 16, p 39; Mr Ashbourne, Evidence 15 November 2011, p 7.

5.4 The Night Shift Supervisor then saw a 'yellow vapour emitting approximately three meters vertically into the air' from the SP8 vent stack, falling around the base of the stack and falling onto the control room.[146] He described the substance falling from the stack as 'hitting the ground' and as a 'misty sort of rain falling down'.[147]

Attempting to control the leak

5.5 Various attempts were made to stop the leak of solution from the SP8 vent stack:

- The 'venting' arrangements of the plant were changed with the aim of capturing the solution in a larger container or 'knock out pot'.[148] This action was successful in stopping the solution being emitted from the top of the stack. However, the solution began overflowing the larger container to which it had been diverted and backing up to the SP8 vent stack.[149]
- It was then observed that some of the solution was being emitted from the side of the SP8 vent stack some five or six metres high, apparently from a previously-made temporary repair. It was also seen that the solution was pooling at the base of the stack.[150]
- The flow of solution finally stopped when the Night Shift Supervisor gave instructions for an emergency shutdown of the plant.[151]

Assessing the potential for off-site impact

5.6 Although the incident involved an airborne emission from a high level stack, Orica has submitted that until mid-morning of the following day when a report of possible fallout in Stockton was received, key personnel had believed that the impact of the incident was contained to the site. Orica has further submitted that this belief was based on evidence observed on the site itself.

5.7 The relevant on-site evidence from which key personnel concluded the emission had been contained to the site was as follows:

- Contaminated effluent resulting from the incident was successfully managed and contained, preventing any contaminated discharge to the Hunter River.
- Personnel at the site observed that the onsite fall-out did not extend as far as the site boundary.
- The Night Shift Supervisor observed chromium emission falling on the control room to the south east of the SP8 vent stack.

146 Submission 16, p 39.

147 Mr Ashbourne, Evidence 15 November 2011, p 7.

148 Mr Ashbourne, Evidence 15 November 2011, p 7.

149 Mr Ashbourne, Evidence 15 November 2011, p 10.

150 Mr Ashbourne, Evidence 15 November 2011, pp 8-9; Submission 16, p 40.

151 Submission 16, p 40.

- There were cool and dry weather conditions with a northwest and west-northwest light breeze and an average wind speed of 2.6 m/s between 6.00 pm to 6.20 pm.
- Site personnel on the night conducted an inspection of the site car park downwind of the SP8 vent stack which failed to detect any evidence of fallout on the cars.[152]

5.8 The view that personnel believed the emission had been contained to the site was supported by evidence received from individual Orica representatives.

5.9 For example, the Sustainability Manager who worked at the site between 10.45 pm on the night of the incident and early the following morning, described efforts to prevent contaminated discharge to the Hunter River and inspect the onsite fallout on the night.[153] She then maintained that when she went home from the site at 5.45 am on Tuesday 9 August 2011 'based on the observations [she] believed the air emission had been retained on site'.[154]

5.10 The Sustainability Manager also stated that prior to receiving the report of possible fallout in Stockton the following day, there had been no reason to believe the air emission had gone off-site.[155]

The inspection of the car park on the night of the incident

5.11 The Night Shift Supervisor told the Committee that approximately an hour after the incident he had asked personnel from the plant to put their cars and his car through the car wash at the site. When the personnel came back they told the Night Shift Supervisor there was no evidence of chromium on the cars. The inspection of the car park took place at approximately 7.30 pm. It was dark at the time, but the area was 'reasonably well lit'.[156]

5.12 The Night Shift Supervisor informed the Committee that he had assumed it would have been possible to see small yellow spots indicating the presence of chromium solution with the naked eye in those conditions. However, he conceded that he did not actually know whether it would have been possible to detect such evidence in those conditions or not.[157]

Adequacy of Orica staff training

5.13 The Committee sought to ascertain whether Orica staff receive any training in procedures which might assist them in detecting off-site impacts from airborne emissions.

152 Submission 16, pp 5-6.

153 Ms Sherree Woodroffe, Sustainability Manager, Orica Kooragang Island site, Evidence, 7 December 2011, p 5.

154 Ms Woodroffe, Evidence, 7 December 2011, p 13.

155 Ms Woodroffe, Evidence, 7 December 2011, pp 32-33.

156 Mr Ashbourne, Evidence 15 November 2011, p 9.

157 Mr Ashbourne, Evidence 15 November 2011, p 9.

5.14 Mr Liebelt advised that the Emergency Response Plan for the site includes a process called SIZEUP which includes a step that involves 'ascertaining the probability of anyone onsite or off-site potentially being impacted by the incident'.[158]

5.15 The Sustainability Manager advised that, as a result of requirements issued by WorkCover following the 8 August 2011 incident, the emergency plan for the site, in which staff are required to be trained, now also includes a scenario concerning 'the potential for discharges from high-level vent stacks of material to carry off-site'.[159]

Measures for detecting future off-site emissions

5.16 The Committee sought to ascertain what measures apart from improved staff training have been taken by Orica since the incident to ensure that any future off-site emissions of chromium VI are detected.

5.17 The Sustainability Manager advised that in future 'start ups' of the plant there will be measures in place to assess whether any solution containing chromium VI is being formed. She advised, however, that she is not aware of any monitoring equipment available that could detect off-site chromium VI emissions, and that emissions must be observed to be detected.[160]

Committee comment

5.18 During the incident personnel at the plant saw chromium solution being ejected three metres into the air from the top of a 54-metre high vent stack. The emission was in the nature of 'vapour', 'mist' or 'rain', substances known to be liable to movement with the wind. Stockton was known to be downwind of the emission only 800 metres away.

5.19 Despite these observable facts, until mid-morning on the following day Orica personnel believed the emission was unlikely to have travelled beyond the site. This conclusion was based on observations of the location of the onsite fallout, which included an inspection of the car park conducted by operators from the plant at night in the semi-darkness.

5.20 No attempt was made by Orica on the evening of 8 August 2011, by employees of Orica to inspect the area of Stockton immediately downwind of the site.

5.21 The Committee expresses its concern that Orica attempted the start up procedure with a temporary repair made to the stack.

5.22 It is not clear why Orica personnel decided to base their conclusions in relation to the potential for off-site impact on observations of the location of the onsite fallout rather than on the objective evidence of the height and manifest force of the emission itself. Whatever the reason, however, the Committee believes that the company's approach to this aspect of its response to the incident was grossly inadequate.

---

158 Answers to questions on notice taken during evidence 17 November 2011, Mr Graeme Liebelt, Managing Director and Chief Executive Officer, Question 20, p 12.

159 Ms Woodroffe, Evidence, 7 December 2011, p 21.

160 Ms Woodroffe, Evidence, 7 December 2011, p 28.

5.23 Faced with a significant airborne emission nearly 60 metres high it is disingenuous for Orica to have maintained that the 'evidence' suggested the emission had been confined to the site. Orica ought to have anticipated that communities in the path of the prevailing winds could potentially have been affected.

5.24 Since the incident there have been changes to Orica's procedures so that staff are now required to be trained in detecting off-site impacts from high level emissions. However, the Committee believes that further changes to Orica's procedures may be needed to ensure that the approach adopted by Orica in this case is not repeated in future. In Chapter 6 the Committee recommends action by the Office of Environment and Heritage (OEH) to ensure that in the event of any future airborne emissions from its plant Orica considers all the relevant factors when reaching assessments about the potential for off-site impact including the height and force of the emission as well as the location of any fallout on the site.

5.25 Given the Committee was informed there is no available equipment that can be installed to detect off-site emissions of chromium VI, the Committee believes it is particularly important that Orica's procedures includes measures that enable such emissions to be detected.

5.26 Whilst evidence was taken from Mr Graeme Liebelt, Managing Director and Chief Executive Officer of Orica Limited, he was unable to provide any detailed evidence relating to the incident or the actions taken by employees of the company following the incident on 8 August.

Finding 1

Orica ought to have anticipated that there was potential for the Stockton communities within the path of prevailing winds to be affected by an emission that was nearly 60 metres high. The approach by the company was grossly inadequate to address the potential impact of the leak.

Finding 2

While Orica has improved its procedures since the incident, the Office of Environment and Heritage will need to ensure that incident response procedures adequately provide for consideration of all relevant factors in a professional and expert manner when assessing the potential for off-site impact, including height and force of emissions as well as the location of any fallout on the site.

Responding to a report of possible fallout in Stockton

5.27 The belief held by site personnel that the emission had not travelled beyond the site reportedly changed after reports were received of possible fallout in Stockton during the morning after the incident.

Investigating the report

5.28 At approximately 9.45 am on Tuesday 9 August 2011, the Sustainability Manager received a telephone call from a resident of Stockton reporting that she had discovered yellow spots on her car. The Sustainability Manager found the resident's report 'conflicting' as the resident stated that the spots had been noticed after the car had been washed.[161] Similarly, Orica has submitted that the presence of chromium solution on the resident's car 'seemed implausible without further investigation' given that the car had been washed.[162]

5.29 At 10.00 am on 9 August 2011, the Sustainability Manager arranged for Orica personnel, the Compliance Manager and the Environmental Advisor at the site, to visit the resident's property to investigate the report.[163]

5.30 At 11.58 am the Orica personnel visited the home of the Stockton resident to investigate the report,[164] however, they did not take any samples to confirm the presence of chromium VI. The representatives also walked the streets of Stockton seeking evidence of chromium contamination as a result of which they ascertained that there appeared to be an area of around six blocks that had been affected.[165]

5.31 Mr James Bonner, General Manager of Orica Mining Services, Australia-Asia, advised that Orica did not have any clear reason for why it took the representatives nearly two hours to visit the resident's home. He acknowledged that this was a matter for concern, but noted that there were many matters to attend to in dealing with managing the crisis at the time.[166] Orica subsequently gave various reasons for the length of time taken to investigate, including:

- the Orica representatives had been required to attend a pre-scheduled meeting at the site in relation to the incident
- the Compliance Manager had been asked to report the incident to WorkCover and had needed to make several calls to get through
- the Environment Adviser had telephoned the resident to check on her address.[167]

Activation of the Crisis Management Plan

5.32 At approximately 10.30 am on Tuesday 9 August 2011 Mr Bonner, was notified by a manager at the Kooragang Island site that there had been an on-site emission at the plant the previous

161 Ms Woodroffe, Evidence, 7 December 2011, pp 19-20.

162 Submission 16, p 6.

163 Submission 16, p 41. The representatives were Peter Smith, KI Compliance Manager, has a safety, health and environment background and Richard Sheehan, KI Environmental Advisor: Ms Woodroffe, Evidence, 7 December 2011, pp 20-21, 27; Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 21, p 12.

164 Submission 16, p 42.

165 Mr James Bonner, Head, Crisis Management Team (8 August incident), Orica, Kooragang Island site, Evidence, 7 December 2011, p 10.

166 Mr Bonner, Evidence, 7 December 2011, p 20.

167 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 21, p 12.

evening and that evidence had emerged that 'the emission had possibly gone off-site', but that the precise impact was unclear.[168]

5.33 In response to this information, Mr Bonner directed that Orica's Crisis Management Plan be activated. The Committee was informed that the potential for external impact on the wider community was at least one of the reasons for the activation of the plan on 9 August 2011.[169]

5.34 Pursuant to the Crisis Management Plan a crisis management team was formed at 10.36 am.[170] The team comprised senior Orica officers with experience in various areas.[171.] The team was headed by Mr Bonner until 12 August 2011 when Mr Bonner relinquished the role to focus on issues relating to the media's coverage of the incident and another Orica manager, Mr Richard Hoggard, assumed leadership of the team.[172] The team first met at 2.00 pm and continued to hold meetings during the next one and a half weeks.[173]

5.35 Between 10.30 am and 2.00 pm Mr Bonner was informed that Orica had notified the appropriate regulatory authorities of the incident and that these authorities were WorkCover and OEH.[174] Mr Bonner informed the Committee that he also took various actions to advance the response to the crisis to assist those working on-site in ascertaining information about the incident. This included deploying a chemical expert[175] and an occupational hygienist, both of whom work at the site. Further, to help validate the assessments of the internal experts, the Team decided to engage 'external independent medical and toxicology experts': a physician specializing in occupational health and a specialist toxicologist. The Committee was advised by Orica that one of the external experts had worked for the company in the past and the other was an external consultant.[176]

5.36 Other actions taken by the Crisis Management Team following the incident included:

168 Mr Bonner, Evidence, 7 December 2011, p 2.

169 Mr Bonner, Evidence, 7 December 2011, pp 11, 12, 13. A similar view was expressed by the Managing Director of Orica Limited, Mr Liebelt, who advised that the appointment of a crisis management team following the incident 'would have been made when there was a reasonable expectation that the chromium material was off site': Mr Liebelt, Evidence, 17 November 2011, p 12.

170 Mr Bonner, Evidence, 7 December 2011, p 2; Submission 16, p 41; Answers to questions on notice taken during evidence 15 November 2011, Orica Limited, Question 6, p 2.

171 Mr Bonner, Evidence, 7 December 2011, p 2. The members of the Crisis Management Team are listed in Answers to questions on notice taken during evidence 15 November 2011, Orica Limited, Question 6, pp 2-3.

172 Mr Bonner, Evidence, 7 December 2011, p 8. Mr Hoggard is Orica's ammonium nitrates global manufacturing projects manager, but in previous roles had been Orica's global manufacturing manager and so had intimate knowledge of KI and its manufacturing processes: p 8

173 Mr Bonner, Evidence, 7 December 2011, pp 2 and 16.

174 Mr Bonner, Evidence, 7 December 2011, pp 2, 5-6. This information was provided to Mr Bonner by the Site Manager, Mr Stuart Newman: pp 5-6. Mr Bonner did not seek details about what the authorities had been told or inquire as to whether the Department of Health had been notified. He understood that it is the responsibility of the site emergency plans to notify the relevant government authorities: pp 6-7.

175 Mr Bonner, Evidence, 7 December 2011, pp 2, 14-15, 26; Answers to questions on notice taken during evidence 15 November, Orica Limited, Question 6, p 3.

176 Mr Bonner, Evidence, 7 December 2011, pp 10 and 26.

- Selecting a door-knocking process as the most effective form of communication with those who might be affected off-site in Stockton.
- Establishing a community hotline to answer any questions from residents.

5.37 These decisions are examined in later sections of this chapter.

Committee comment

5.38 While the Committee appreciates that there were many matters to attend to in dealing with the crisis at the site, the evidence presented to this Inquiry suggests that the deployment of resources to investigate the resident's report of possible off-site fallout in Stockton was not handled as effectively or as timely as it might have been.

5.39 The inability of any representative of Orica who gave evidence to the Inquiry to explain why it took nearly two hours to visit the resident's home is a matter of continuing concern to the Committee, particularly in view of the fact that Orica had carried out an internal investigation.

5.40 The potential for an external impact from the incident was one of the factors which led to the activation of the company's Crisis Management Plan. Had that potential been identified earlier, the Crisis Management Team may have been formed sooner, which in turn may have led to an earlier decision to involve the Department of Health or initiate earlier communication with the community. Such considerations reinforce the need for Orica to ensure that the potential for off-site impact is appropriately and expertly assessed early on in future responses to airborne emissions.

5.41 There appear to have been gaps in the practices followed during the crisis management phase of the response with respect to notifying the authorities. The head of the Crisis Management Team was told by the Site Manager that the authorities who needed to be notified had been notified. However, as later sections of this chapter show there were deficiencies in the nature and extent of those notifications. The need for clear accountabilities in relation to the reporting of incidents is discussed below.

Finding 3

The failure of Orica to inspect the area of Stockton, immediately downwind of the site, until approximately midday on 9 August 2011 was an inadequate response by the company to the incident.

Notifying Office of Environment and Heritage

5.42 One of the key issues that emerged during the inquiry was the timeliness with which Orica notified relevant Government agencies of the incident. This section focuses on Orica's actions in notifying OEH. It includes discussion of:

- the regulatory requirements for notifying OEH at the time of the incident
- the steps taken by Orica personnel to notify OEH of the incident
- Orica's procedures for notifying OEH at the time of the incident and the extent to which personnel were aware of those procedures
- changes to Orica's notification procedures since the incident.

5.43 Later sections of this chapter examine Orica's reporting of the incident to other regulatory authorities.

Regulatory requirements at the time of the incident

5.44 At the time of the incident section 148 of the *Protection of the Environment Operations Act 1997* provided that a pollution incident causing or threatening material harm to the environment must be notified to the appropriate regulatory authority 'as soon as practicable'.[177] The appropriate regulatory authority in Orica's case is the Environment Protection Authority (EPA). The powers of the EPA in regulatory matters are exercised by OEH and are discussed in Chapter 6.

5.45 Environment protection license holders such as Orica also have obligations to notify incidents under conditions of their license to provide written details of the notification to EPA within seven days,[178] and to disclose any incidents in annual reports.[179]

Notification of the incident

5.46 At 6.15 pm on the night of the incident the Night Shift Supervisor telephoned the Plant Manager to report the incident. At 8.20 pm the same night the Plant Manager telephoned the Site Manager to report the incident. Between 8.30 pm and 8.45 pm that night the Plant Manager telephoned the Sustainability Manager to advise there was chromium in effluent and coming out of the SP8 vent stack.[180]

---

177 Material harm to the environment includes 'actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial': section 147(1)(a)(i).

178 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011, p 12.

179 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, Evidence, 21 November 2011, p 66.

180 Submission 16, pp 39-40.

5.47 Staff worked through the night to address the onsite impact. At approximately 7.00 am the next day, the Site Manager arrived at the site.[181] The Site Manager informed the Committee that he was aware the emission was a reportable incident and that there was material harm to the environment. However, his focus during the morning was on the toxicological issues and understanding the safety implications.[182]

5.48 During the morning of Tuesday 9 August 2011, a conversation took place between the Site Manager and the Sustainability Manager in which it was realized that OEH had not been notified of the incident.[183]

5.49 A file note prepared by Hamish Rutherford of OEH records a telephone call received by him at approximately 10.30 am on 9 August 2011 of the incident.

5.50 The file note records the telephone conversation with Ms. Sherree Woodroffe as follows:

> Ms Woodroffe reported that around 6.30 pm yesterday evening they had an incident while trying to reduce a catalyst in the NH3 Plant leading to the emission of Hexavalent Chromium aerosol via a vent to atmosphere … I'm not yet clear on what went wrong in the process in this part of the plant. We will need to do our investigations. At this stage it was believed fallout was contained to the premises.[184]

5.51 The incident was therefore reported to OEH approximately 16 ½ hours after it occurred. The O'Reilly review found that the delay in notifying OEH had 'a direct impact on the time taken by a number of agencies in carrying out their duties.'[185]

5.52 There were discrepancies in the evidence received by the Committee as to what was said in the report to OEH at 10.28 am concerning the extent and nature of the emission. With respect to the *extent* of the emission, Orica has submitted that the Sustainability Manager reported to OEH that the extent was 'being investigated', and that contaminated 'effluent' had been 'contained on site':

> Orica informed OEH that there had been airborne discharge from SP8 vent stack which had coated surfaces in the plant on-site, the extent of which was being investigated. In addition, Orica advised OEH there had been a significant effort overnight to ensure that chromium containing solution in the effluent system was successfully contained on-site.'[186]

5.53 However, OEH has submitted that Orica indicated that 'the fallout was contained on the premises'.[187] The Sustainability Manager testified that she could not recall saying the fallout was contained to the premises.

---

181 Mr Stuart Newman, Site Manager, Orica, Kooragang Island site, Evidence, 15 November 2011, p 16.

182 Mr Newman, Evidence, 15 November 2011, pp 17, 22.

183 Ms Woodroffe, Evidence, 7 December 2011, p 16.

184 Tabled document, Hamish Rutherford, Department of Environment and Climate Change NSW, Hunter Region – File Note, 9 August 2011, 10.30 am.

185 O'Reilly B, 2011, p 40.

186 Submission 16, p 6.

187 Submission 17, Office of Environment and Heritage, p 5.

5.54 With respect to the *nature* of the emission, while Orica has submitted that OEH was advised of 'chromium containing solution',[188] OEH maintains that Orica reported a discharge of 'hexavalent chromium'.[189]

5.55 Pursuant to a standing order 52 motion, a contemporaneous note of Mr Hamish Rutherford reveals in part:

> 12.15 – Inspection with Peter Matthews (OEH). Briefing provided by Stuart Newman (Plant Manager Orica) – confirmed initial briefing earlier in day...extent of particulate fallout greater than first thought, with fallout on cars in car park and unconfirmed reports of fallout in Stockton. They are investigating. I advised that Orica should start thinking about its communication Strategy in Stockton, however, regardless, should notify the Department of Health's Public Health Unit re the incident.[190]

5.56 At approximately 12.30 pm on 9 August 2011, Orica personnel returned to the site having investigated the resident's report of possible fallout and having found evidence of possible contamination in Stockton. Orica then advised OEH officers who were present on the site of the presence of fallout off-site. In this notification to OEH, Orica specified the relevant substance was 'chromium VI':

> As soon Orica became aware of the spread of the chromium VI emission to Stockton, it immediately notified OEH officers who were on-site at the time.[191]

5.57 On 15 August 2011 Orica emailed OEH providing written notification of the incident.[192] Orica has expressed regret that the incident was not reported sooner to OEH.[193]

Orica's Emergency Response Plan and other procedures at the time of the incident

5.58 Section 3 of Orica's Emergency Response Plan for the site at the time of the incident, entitled 'Roles of external agencies and the community' acknowledged the involvement of various government authorities, including the predecessor to OEH, the former Department of Environment, Climate Change and Water (DECCW), in responding to incidents at the site.[194]

5.59 Section 11 of the Plan, entitled 'Reporting and investigations', included provisions indicating that:

---

188 Submission 16, p 6.

189 Submission 17, p 5, Answers to questions on notice taken during evidence 21 November 2011, Office of Environment and Heritage, Question 5.

190 Tabled document, Inspection report dated 9 August 2011 and Contemporaneous notebook by Hamish Rutherford, p 3.

191 Submission 16, p 6.

192 Submission 16, p 44.

193 Submission 16, p 6.

194 In response to a request by the Committee for a copy of the Emergency Response Plan at the time of the incident, Orica supplied the table of contents and 'sections relevant to notification of government authorities', but declined to provide the whole document, citing confidentiality concerns: Answers to questions on notice taken during Evidence 15 November 2011, Orica Limited, Question 12, p 5, Annexure D.

- there are requirements to report incidents to certain authorities such as DECCW
- the 'exact requirements shall be confirmed by the Site Manager' following an emergency
- the investigation and reporting of incidents must comply with certain specified model procedures of Orica.[195]

5.60 Orica's procedure for notifying OEH at the time of the incident was contained in a document entitled 'Environmental Incident Management', a copy of which Orica supplied to the Committee.[196] This procedure stated that the responsibility for notifying OEH lay with the 'Department Manager'. Paragraph 5.4 of the document provided as follows:

> Environmental incidents that have potential for off site effects must be reported to the EPA. This communication should be as soon as practicable after the event and is the responsibility of the Department Manager. Examples of events that require notification to the EPA are:
> - A justified community complaint
> - Any breach of a license condition
> - A significant loss of containment where offsite effects are likely
>
> With seven days of notification a written report must also be forwarded to the EPA. Written reports shall not be sent prior to the approval of the site manager.

5.61 Orica has advised the Committee that the 'Department Manager' referred to in this document is 'the manager of the plant relevant to the incident'. However, the practice at the site since 2004 has been for the Sustainability Manager or an Environmental Advisor to notify OEH.[197]

Awareness of the procedures

5.62 Evidence provided by key Orica personnel displayed differing understandings as to whose responsibility it was to notify OEH of incidents at the plant under Orica's procedures.

5.63 For example, Mr Stuart Newman, Site Manager of Orica Kooragang Island, gave the impression at one stage in his evidence that the responsibility to notify external authorities lies with a team to which the Site Manager belongs, rather than any particular individual:

> The Hon. Cate FAEHRMANN: … your requirements under WorkCover to notify WorkCover of an incident and the requirements under the POEO Act [*Protection of the Environment Act 1997*] is that contained in the emergency response plan, for example, for the shift supervisor at the time to have a look at that response plan and who they need to notify, is it written down somewhere?
>
> Mr NEWMAN: The way our response plan is that the plant commander and his team are charged with sort of the tactical response, so the containment isolation,

195 Orica, Pre-incident *KI Emergency Response Plan*, last revised 11 April 2011, Section 11, 'Reporting and Investigations', 11.1.

196 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11, Annexure A.

197 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11.

> search and rescue, that sort of thing. As a layer above them, it is the site incident command team, which is myself and the management team.[198]

5.64 In later evidence, however, the Site Manager suggested that the custom and practice of the site has been that specific individuals are responsible for notifying particular authorities, and that the Sustainability Manager has been responsible for notifying OEH:

> The way that we have operated that historically is anyone can do it, but by custom and practice the sustainability manager is our sort of lead contact with OEH and complies with (inaudible) our lead contact that WorkCover, so it has typically been that in the past but anyone can do it.[199]

5.65 Despite such evidence indicating that the Sustainability Manager may be responsible for notifying OEH, the Sustainability Manager herself seemed unclear as to whose responsibility it was to notify OEH:

> The Hon. TREVOR KHAN: Is it not the case that under the site Emergency Plan both you and he shared the obligation to notify OEH? Is that the case.
>
> Ms WOODROFFE: I do not believe that that is correct under the Emergency Response Plan.
>
> The Hon. TREVOR KHAN: Under whose responsibility under the Emergency Response Plan was it to notify OEH?
>
> Ms WOODROFFE: I am sorry, I do not recall that.[200]

Was the Emergency Response Plan Engaged?

5.66 There were also differing views as to whether the Emergency Response Plan for the site was engaged following the incident.

5.67 The Site Manager stated that the incident was classified under the Plan as a 'local emergency', that is, an emergency that can be managed without site-wide resources, rather than a 'site emergency', requiring site-wide resources, or an 'off-site emergency', having off-site implications. As a result, the parts of the Plan concerning a 'site emergency' and an 'off-site emergency' were not implemented.[201]

5.68 In contrast to this evidence, the Sustainability Manager initially stated that the Emergency Response Plan was not formally activated during the event, but that 'the principles' of the Plan were followed.[202]

---

198 Mr Newman, Evidence, 15 November 2011, pp 21-22.

199 Mr Newman, Evidence, 15 November 2011, p 24.

200 Ms Woodroffe, Evidence, 7 December 2011, p 37.

201 This is a summary of Mr Newman's explanation of the three types of emergencies. For further details of the classification of emergencies under the plan see Mr Newman, Evidence, 15 November 2011, p 21.

202 Ms Woodroffe, Evidence, 7 December 2011, p 12.

5.69 Subsequently, Orica sought to clarify the Sustainability Manager's evidence by advising that parts of the Emergency Response Plan relating to 'site' and 'external' emergencies were not activated, and that one of the reasons for this was the belief the incident had been contained to the site.[203]

Changes to Orica's Emergency Response Plan and other procedures since the incident

5.70 Since the incident Orica has adopted a new procedure for the reporting of incidents to the authorities including OEH. According to information supplied by Orica in answers to questions on notice to the Committee, the new procedure identifies specific personnel as being responsible for notifying the authorities with provision for alternative officers to act in the event a designated officer is unavailable:

> The new procedure requires notification of authorities including the OEH, NSW Ministry for Health and WorkCover. The new procedure identifies the Orica personnel responsible for notifying the authorities (depending on who is first available), in the order KI Sustainability Manager, Environmental Advisor, Compliance Manager, Plant Manager, or Site Manager. [204]

5.71 The Committee has not been provided with a copy of this new procedure and has not been informed about what it says concerning the time frames for notification.

5.72 The Emergency Response Plan for the site has been revised since the incident and now includes references to OEH rather than the DECCW.[205] Further, in the revised Plan, a reference to Orica's model procedures for investigating and notifying incidents has been replaced by a reference to a different model procedure.[206] The Committee has not been informed whether the different model procedure referred to in the revised Plan is the new notification procedure referred to in Orica's answers to questions on notice. In other respects, in so far as the Committee is able to judge from the extracts Orica has provided, the revised Emergency Response Plan appears to be substantially the same as the pre-incident version in relation to requirements concerning the notification of OEH.

5.73 Orica has advised that further changes to its procedures will be made when recent amendments to the notification requirements of the *Protection of the Environment Act Operations*

---

203 Answers to questions on notice taken during evidence 7 December 2011, Orica Limited, 'Clarification', p 5.

204 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, pp 11-12.

205 Orica Limited, *KI Emergency Response Plan*, revised 31 October 2011, pp 8 and p 41. In response to a request by the Committee for a copy of the revised Emergency Response Plan, Orica supplied the table of contents and 'updated sections relevant to notification of government authorities' but declined to provide the whole document, citing confidentiality concerns: Answers to questions on notice taken during evidence 7 December 2011, Question 4, pp 1-2, Annexure 1.

206 Orica Limited, *KI Emergency Response Plan*, revised 31 October 2011, p 41, Section 11.1. The model procedure referred to in the revised Emergency Response Plan is 'BG-06 Incident Management and Corrective Action'.

1997 come into effect.[207] These legislative changes include requirements for pollution incidents to be notified to OEH 'immediately', rather than 'as soon as practicable', and for any further information that becomes available about the incident following the initial notification to be reported immediately it becomes available. The legislative changes are further discussed in Chapter 6.

Committee comment

5.74 Orica failed to notify any regulatory authority of the incident until it contacted OEH at 10.28 am on the following day. This notification was approximately 16 ½ hours after the incident occurred. The impact on government agencies is examined in later chapters of this report.

5.75 The Committee concludes that the initial report by phone by the Sustainability Manager to OEH was to the effect that the fallout was contained on the premises.

5.76 The Committee accepts the evidence contained in the file note of Hamish Rutherford. The Committee notes that the failure to disclose off-site impact is compounded by the following factors:

- The height and force of the emissions, as well as the direction of the wind at the time, suggested the impact in Stockton.
- Prior to contacting OEH, Orica had received a report from a resident of Stockton of possible fallout at her property at 9.45am on 9 August 2011.
- The evidence contained in the contemporaneous note of Hamish Rutherford in the conversation with Stuart Newman indicated that there had been identified fallout on cars in the car park. This fallout could have only been present on cars that had been onsite on the evening of 8 August 2011.
- At approximately the same time as Orica contacted OEH, 10.30 am on 9 August 2011, Mr James Bonner, the General Manager of Orica Mining Services, was informed by an Orica manager that 'the emission had possibly gone off-site'.

5.77 Orica's procedures with respect to the external notification of incidents at the site were unclear at the time of the incident. The relevant written procedure referred to the 'Department Manager' as being responsible for notifying OEH, but 'Department Manager' does not appear to correspond to any fixed job within the company. Further, the implementation of the procedure appears to have relied on unwritten custom and practice. This lack of clarity appears to have been reflected in evidence given by key Orica personnel who appeared unable to give a straightforward answer to the question of who was responsible for notifying authorities such as OEH of incidents at the site. It appears that lack of clarity in the procedures contributed to Orica's delay in reporting the incident in this case.

5.78 Orica has advised that since the incident it has revised its notification procedures so that specified positions are responsible for notifying relevant authorities of incidents at the site. While this is an important and necessary step the Committee has not seen the full procedures so cannot conclude whether more stringent processes should be put in place. For example, the

[207] Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 12.

new procedures should include a clear accountability path to ensure that the notification requirements specified in the notification procedure are complied with, so that for example, the Site Manager is responsible for ensuring the Sustainability Manager or other designated available officer has fully discharged their obligations to notify OEH. Orica should also ensure that all relevant personnel are fully trained in the new procedures.

5.79 The evidence also suggested there was some confusion in the aftermath of the incident as to whether the Emergency Response Plan was being activated or merely its principles were being followed. While this may not have had any significant consequences in this case, for future emergency responses, Orica should ensure that key personnel are adequately trained in the company's emergency procedures so that they are able to identify the extent to which the Emergency Response Plan is being engaged when incidents occur.

5.80 The Committee notes that OEH has commenced legal proceedings in relation to Orica's actions in notifying regulatory authorities, as discussed in Chapter 6.

Finding 4

There was an unacceptable delay in Orica's reporting of the incident to the Office of Environment and Heritage on 9 August 2011.

Finding 5

Orica's Emergency Response Plan and other procedures were not sufficiently clear or comprehensive to enable staff to deal effectively with the situation which occurred on 8 August 2011.

It is unacceptable that Orica staff did not appear sufficiently aware of the requirements of the Plan, particularly with regard to notification procedures.

Orica needs to ensure that in future key personnel are adequately trained in the company's revised emergency response procedures so that they are able to identify the extent to which the Emergency Response Plan is being engaged and are all aware of their individual responsibilities under the plan.

Finding 6

In Orica's initial report of the incident to the Office of Environment and Heritage, there was a failure to disclose the prospect that the emissions had escaped off-site.

Notifying WorkCover and worker safety measures

5.81 This section addresses the issue of safety of Orica's workers, particularly notifying WorkCover of the incident. It includes discussion of:

- The regulatory requirements for notifying WorkCover at the time of the incident
- Orica's procedures for notifying WorkCover and the extent to which personnel were aware of those procedures
- Changes to Orica's notification procedures since the incident, and
- Actions by Orica to protect the safety of workers at the site when the leak occurred.

Regulatory requirements at the time of the incident

5.82 Section 86 of the *Occupational Health and Safety Act 2000* provides that the occupier of a workplace must notify WorkCover of any serious incident as defined by section 87 of the Act as well as any other incident declared to be notifiable under clause 341 or 344 of the Occupational Health and Safety Regulation 2001.

5.83 Notice of a *'serious incident'* must be given immediately the occupier becomes aware of the incident, by the quickest available means (section 86(3)). Notice of other incidents must be given as soon as practicable after the occupier becomes aware of the incident but not later than seven days (section 86(2)).

5.84 The Committee received evidence concerning Orica's obligations under these provisions including the issue of whether the 8 August 2011 incident was a *'serious incident'*. This evidence is explored in Chapter 8.

Notification of the incident

5.85 At approximately 11.10 am on 9 August 2011 Mr Peter Smith, Compliance Manager at Orica Kooragang Island, telephoned WorkCover to notify it of the incident.[208] The task of notifying WorkCover had been delegated to Mr Smith by the Site Manager.[209]

5.86 Mr Smith reported to WorkCover that there had been a release of chromium at the workplace and that the workplace was being cleaned-up. There was no report of injuries, no indication of off-site impact and no detail of the substance released or the seriousness of the leak.[210] This notification was approximately 17 hours after the initial leak.

---

208 Submission 16, p 42 (11.05 am); Hon Greg Pearce MLC, Minister for Finance and Services, Evidence, 21 November 2011, p 4 (11.15).

209 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11.

210 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4; Submission 11, Workcover NSW, p 1.

Orica's Emergency Response Plan and other procedures at the time of the incident

5.87 As noted earlier in this chapter, at the time of the incident the Emergency Response Plan for the site acknowledged that there are requirements to report incidents to various external agencies. These agencies included WorkCover.

5.88 Orica's procedure for notifying incidents to WorkCover was contained in a document entitled 'Injury Management'.[211] This document included a description of incidents that must be reported to WorkCover within seven days and a description of incidents that must be reported to WorkCover immediately by phone or fax. As to who was responsible for notifying WorkCover of incidents at the site, the document provided:

> Department Managers shall be responsible for determining which incidents need to be reported to WorkCover and in what time frame (immediately or seven days) the reporting occurs. They are also responsible for ensuring that the required reporting occurs. The Site Manager shall be informed of the incident in the same time frame as WorkCover notification.[212]

Changes to Orica's procedures since the incident

5.89 As noted earlier, a new procedure has been adopted since the incident specifying the particular officers who are responsible for notifying the relevant authorities rather than allocating that responsibility to the 'Department Manager'. Orica has advised the Committee that WorkCover is one of the relevant authorities that require notification under that procedure.[213] However Orica has not supplied the Committee with a copy of this procedure so the Committee cannot comment on whether the time frames for notifying WorkCover are appropriate, as discussed in Chapter 8.

5.90 Also as previously noted, the Emergency Response Plan for the site has been revised since the incident. Compared to the pre-incident Plan, the revised Plan includes reference to a different model procedure for the investigation and reporting of incidents. As discussed, the Committee has not been provided with a copy of that model procedure and is unable to confirm whether or not it is the same procedure concerning the notification of WorkCover as is referred to above. In other respects, the requirements of the revised Emergency Response Plan concerning the notification reporting to WorkCover appear to be unchanged.

5.91 Orica has advised the Committee that further changes to its notification procedures will be made to incorporate upcoming changes to notification requirements under amendments to occupational health and safety legislation.[214] The legislative changes include a requirement to notify all incidents at workplaces immediately to WorkCover, whether they are 'serious

---

211 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11.

212 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11, Annexure B, Orica Limited, 'Injury Management', p 3.

213 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 11.

214 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 19, p 12.

incidents' or not. The nature of the upcoming legislative changes is further discussed in Chapter 8.

Orica's actions to protect company workers exposed to the leak

5.92 Evidence was given to the Committee as to the actions taken by the company to care for workers. Through the night of 8 August 2011 personnel outside at the time of the emission were instructed to shower and change their clothes. Further, all personnel who assisted with the effluent management and clean up wore protective clothing.

5.93 The Orica submission notes that nine on-site personnel involved in the response to the incident reported minor skin or respiratory irritations.[215]

5.94 The Site Manager contacted the Corporate Occupational Hygienist for assistance in the immediate incident response. In the weeks following the incident Orica employees and contractors exposed to the chromium VI emission underwent health assessments and provided urine samples for testing, which did not show elevated levels of chromium or otherwise give any cause for concern. A small sample of four workers had blood and urine samples taken within 20 hours of the incident, and did not identify any adverse results.

5.95 An email between an officer at WorkCover and an officer at NSW Health which was attached to WorkCover's submission to this inquiry raised concerns about the urine testing of the Orica employees after the incident. The WorkCover officer stated that urine testing did not begin of Orica's employees until three days post exposure. For some workers, there was a delay of a week. Further, the officer writes that the half life of absorbed chromium is in the order of eight to 20 hours, and then three days the chromium levels in urine will be down one to five per cent of maximum levels and may represent zero to two to three per cent of the absorbed dose.

5.96 In the same emails, the WorkCover professional officer recommended that the workers be checked for chromium VI exposure by blood test.

5.97 However, this suggestion was not supported by the most senior health expert to give evidence to the inquiry, Dr Kerry Chant, Deputy Director General and Chief Health Officer, NSW Ministry of Health, who stated that a one off blood test is not a valid indicator of chromium VI exposure and that other measures are recommended to detect the presence of chromium VI. The evidence regarding this testing is considered in Chapter 7 in relation to residents of Stockton.

Committee comment

5.98 Orica notified WorkCover of the incident at approximately 11.10 am on the day after the incident, Tuesday 9 August 2011, approximately half an hour after it notified OEH, and approximately 17 hours after the leak occurred.

5.99 The Committee notes that in notifying WorkCover, Orica failed to disclose any potential impacts from the leak on workers or any off-site effects. Even after Orica had reported the

215 Submission 16, p 11.

presence of fallout in Stockton to OEH, at approximately 12.30 pm, Orica failed to disclose the extent of the fallout to WorkCover.

5.100 Orica also failed to disclose to WorkCover that the substance emitted in the incident was chromium VI, using the more general term 'chromium' instead. This was the case even though Orica had advised OEH that the substance was chromium VI at 10.30 am that day (according to OEH) or at 12.30 pm (according to Orica).

5.101 WorkCover has advised that it is investigating issues relating to Orica's compliance with regulatory requirements concerning notification of the incident. Further information concerning that issue is provided in Chapter 8.

5.102 The adequacy of Orica's notification to WorkCover was not raised as a concern among submissions, unlike the issue regarding OEH. However the Committee's findings in regard to the Emergency Response Plan and other procedures in relation to OEH is equally applicable to the WorkCover interaction.

5.103 The Committee has received evidence from Orica regarding actions taken to protect workers who were on the site at the time of the leak, but notes, in Chapter 8, that WorkCover is the appropriate body to investigate these matters in depth.

Finding 7

Orica failed to disclose to WorkCover potential impacts from the leak on workers or any off site effects in its initial notification to that agency, and failed to disclose the substance emitted was chromium VI.

Notifying the Department of Health

5.104 This section addresses the role of Orica in notifying NSW Health of the incident. It includes discussion of:

- The lack of regulatory requirements for notifying Health at the time of the incident
- The steps taken by Orica personnel to notify Health of the incident
- Changes to Orica's notification procedures since the incident.

Regulatory requirements at the time of the incident

5.105 The Committee understands that at the time of the incident there were no relevant provisions requiring the notification of pollution incidents to the Department of Health.

Notification of the incident

5.106 On 10 August 2011 at 11.30 am, Hunter New England Population Health received a telephone call from Orica reporting 'a release at their plant (likely chromium)'.[216] In that call Orica also advised that OEH had been notified of the incident.

5.107 At 2.25 pm the same day, Orica advised Hunter New England Population Health that 'hexavalent chromium solution' had been identified from a deposit on the site.[217] Orica also advised they were about to deploy teams to the Stockton area to inspect for deposition and directly contact residents 'in the potentially affected area' which they had determined based on wind direction at the time of the release. [218]

5.108 The circumstances in which Orica first came to notify Health at 11.30 am were the subject of conflicting evidence to the Committee. This evidence came from OEH on the one hand and Orica, on the other. There was also conflicting evidence from Orica itself.

5.109 According to OEH:

- At about midday on 9 August 2011, OEH 'verbally directed' Orica to contact Health and the potentially affected community in Stockton.[219] This direction was given during an inspection of the site by OEH officers after Orica had advised that there was evidence of fallout in Stockton.[220]
- At 11.00 am on 10 August 2011, OEH officers re-inspected the site and during the inspection learnt that Orica had not contacted Health or the community. An OEH officer then asked Orica to comply with the earlier direction and only then did Orica notify Health. [221]
- OEH received no satisfactory explanation as to why Orica did not follow the initial advice to contact Health. OEH understands that the request was simply overlooked.[222]
- At the time of the incident, OEH did not have the power to direct that an incident be notified to Health, in the sense that any such direction would have had no legal force. This situation has since been addressed by changes to relevant legislation which empower OEH to direct that incidents be notified to other authorities.[223]

5.110 Orica's submission to this inquiry acknowledged that on 9 August 2011 at approximately 12.30 pm OEH had advised Orica to contact Health. The entry for that particular period in the timeline contained in the submission states:

---

216 Submission 21, Ministry of Health, p 1. Orica places the time of the call at approximately 11.15 am: Submission 16, p 42 and Answers to questions taken on notice during evidence 17 November 2011, Question 14, p 10.

217 Submission 21, p 1.

218 Submission 21, p 1.

219 Submission 17, p 5.

220 Submission 17, p 5.

221 Submission 17, p 5.

222 Mr Sullivan, Evidence, 21 November 2011, p 67.

223 Mr Sullivan, Evidence, 21 November 2011, p 72.

> Orica employees return to site and report that fallout was visually evident off-site on residential properties in Stockton. **OEH advises Orica to contact NSW Health** and to prepare a communications strategy to advise members of the public of any risk [emphasis added].[224]

5.111 The assertion contained in Orica's submission that OEH had advised Orica to contact NSW Health is consistent with the contemporaneous diary entry, referred to at paragraph 5.55. However, later evidence provided by Orica during this inquiry gave a different version of events. According to this later evidence:

- While there were discussions with OEH officers at around 12.30 pm on 9 August 2011 in which OEH asked Orica staff whether Health had been notified, the question was not understood by the Orica staff member to be a direction to contact Health, and there was no follow-up or subsequent communication by OEH on the issue that day. In fact, Orica received no advice or direction from OEH on 9 August 2011 with respect to notifying Health.[225]
- The decision to notify Health was an independent decision of Orica's Crisis Management Team on the evening of 9 August 2011. This decision was taken as a consequence of an earlier decision of the Team to initiate a communications strategy involving the door knocking of selected homes in Stockton, which was expected to result in the dissemination of health-related information to the community.[226]
- Following the decision by the Crisis Management Team to notify Health, the task of contacting Health was assigned to the Sustainability Manager Australia-Asia, to be carried out 'prior to the commencement of the door knocking'.[227]
- On the morning of 10 August 2011, the Sustainability Manager, Australia-Asia, participated in a meeting with an officer of OEH who asked whether Orica had contacted Health. When the OEH officer was advised that this had not occurred he gave certain undertakings to provide contact details for Health but those undertakings were not followed through. The Sustainability Manager Australia-Asia, then found the contact details himself, and contacted Health.[228]
- If OEH had advised Orica to notify Health, Orica would have complied.[229]

Orica's Emergency Response Plan and other procedures at the time of the incident

5.112 Orica has advised that prior to the incident, the site 'did not have a specific procedure that dealt with notifying the NSW Ministry of Health'.[230] Similarly, the Site Manager testified that,

224 Submission 16, p 42.

225 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 14, p 10.

226 Mr Bonner, Evidence, 7 December 2011, p 3.

227 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 14, pp 10-11.

228 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 14, p 11.

229 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 14, p 11.

at the time of the incident, 'in terms of our on-site emergency response planning, [Orica] did not have a clear linkage with the Department of Health', and that for that reason the issue of notifying Health was taken over by the Crisis Management Team.[231]

Changes to Orica's procedures since the incident

5.113 Orica has advised that since the incident Orica has implemented:

> improvements to the KI site emergency response procedure to refer to the involvement and notification of NSW Health Environmental Health Unit if there are any potential toxic or carcinogenic impacts on the community.[232]

5.114 The revised Emergency Response Plan expressly states:

> The following authorities may require notification: (…)
>
> NSW Health Environmental Health Unit - for any workplace incident resulting in potential community exposure to toxic or carcinogenic substances.[233]

5.115 Orica has also adopted a new incident notification procedure which identifies the personnel responsible for notifying relevant authorities including the 'NSW Ministry for Health' of incidents at the site.[234] Orica has advised that further changes to its notification procedure will be made when recent amendments to the notification requirements of the *Protection of the Environment Operations Act 1997* come into effect.[235] These legislative changes include requirements to notify the Ministry of Health as well as the appropriate regulatory authority of pollution incidents (see Chapter 7).

Committee comment

5.116 On the basis of the existence of the contemporaneous diary entry by Hamish Rutherford and the contents of Orica's own submission, the Committee concludes that Orica was advised to contact the Department of Health on 9 August 2011.

5.117 The Committee concludes that it took approximately 23 hours for Orica to notify Health after being first advised to do so by OEH officer Hamish Rutherford.

5.118 Orica notified Health of the incident at approximately 11.30 am on Wednesday 10 August 2011, approximately 25 hours after first notifying OEH and approximately 41 ½ hours after the leak occurred.

---

230 Answers to questions taken on notice 7 December 2011, Orica Limited, Question 3, p 1.

231 Mr Newman, Evidence, 15 November 2011, p 24.

232 Answers to questions taken on notice 7 December 2011, Orica Limited, Question 3, p 1.

233 Orica Limited, *KI Emergency Response Plan*, revised 31 October 2011, p 41; Answers to questions taken on notice 7 December 2011, Orica Limited, Question 4, pp 1-2, Annexure 1.

234 Answers to questions taken on notice 7 December 2011, Orica Limited, Question 3, p 1.

235 Answers to questions taken on notice 7 December 2011, Orica Limited, Question 19, p 12.

5.119 While there appear to have been no legal requirements for Orica to notify Health, the need to inform health authorities of the fallout of what is believed to be a hazardous chemical in a suburban area would seem to be self-evident. The Committee concludes that there is no clear explanation as to why it took approximately 23 hours after first being advised to contact Health by OEH.

5.120 Orica seems to have been of the view that one of the main reasons for contacting Health was to check information Orica proposed to disseminate when door knocking residents in Stockton. Such a view is reflected in the fact that the timeframe for contacting Health was to be 'prior to the commencement of the door knocking'. It is disturbing that there appears to have been no sense of urgency about the need to notify health authorities in the sheer interests of public health, independently of confirming the door knocking script. The door knocking process undertaken by Orica personnel following the incident is examined later in this chapter when considering Orica's actions in notifying the public.

5.121 When Orica did eventually contact Health, it did not convey all relevant information, describing the emission as containing 'chromium' even though it had earlier advised OEH it was 'chromium VI'. It was not until three hours after the initial notification to Health (at approximately 11.30 am) that Orica informed Health the emission was believed to have involved chromium VI (at approximately 2.25 pm).

5.122 The Committee acknowledges there is some conflicting evidence as to what Orica said when, all of which supports the argument for the Government to enact a clear and legal obligation to notify Health, a recommendation considered in Chapter 7.

Finding 8

While Orica had no legal requirements to notify NSW Health, its failure to do so until 41 ½ hours after the incident demonstrated a lack of urgency in addressing the potential for public health risks to communities in Stockton.

The handling of the health aspects of the incident, including the gaps in Orica's original Emergency Response Plan and other procedures, demonstrates the need to impose a clear legal requirement to notify NSW Health within a short time frame of such incidents. This appears to have been addressed by the recent legislative changes.

Notifying other agencies

5.123 There are a number of other agencies which play a role in responding to an incident such as occurred on 8 August 2011. These agencies are discussed in detail in Chapter 9.

Department of Planning and Infrastructure

5.124 In its submission to this inquiry, the Department of Planning and Infrastructure stated that Orica has obligations under relevant planning approvals to notify the Department within specified time frames of incidents at the site:

> Condition 51 of the project approval (08_0129) requires Orica to notify the Department as soon as practicable following an incident, which has actual or potential significant off-site impact on people and the biophysical environment associated with the approved project. In addition, incidents are to be notified "within 24 hours" under the 1998 consent (DA2/98) which also applies to part of the site.[236]

5.125 With reference to the 8 August 2011 incident, the Department stated that:

- Orica left a message with the Department concerning the incident on 12 August 2011 at approximately 9.30 am.
- In response to that message the Department contacted the company requesting further information regarding the incident.
- On 15 August 2011, Orica submitted an 'Interim Incident Report' to the Department in response to the Department's request.
- The Department is giving consideration to Orica's 'late notification of the incident' in accordance with the Department's 'Breach Management Guidelines'.[237]

5.126 The Department of Premier & Cabinet, the NSW Police Force, Fire and Rescue NSW and the Department of Primary Industries were notified of the incident by other government agencies or by members of the public rather than Orica, as discussed in Chapter 9.

Newcastle City Council

5.127 Newcastle City Council appears to have been first notified of the incident on Thursday 11 August 2011, by OEH.[238] Prior to that, Councillors received enquiries from Stockton residents regarding the matter and sought advice from Council officers but Council officers had no knowledge of the incident.[239]

5.128 The O'Reilly report found that Orica 'did not meet its obligations to notify Newcastle City Council in accordance with SEPP 33'.[240]

5.129 In any case it would have made sense for Orica on a number of levels to have notified the Council. This now appears to be a requirement under amendments to the *Protection of the Environment Operations Act 1997* which recently came into effect. Following the commencement of schedule 2[2] of the *Protection of the Environment Legislation Amendment Act 2011* on 6 February 2012, section 148 of the *Protection of the Environment Operations Act 1997* now requires that a pollution incident must be notified to 'each relevant authority', which includes '(c) if the EPA is the appropriate regulatory authority—the local authority for the area in which the pollution incident occurs' (section 148(8)).

---

236 Submission 24, Department of Planning and Infrastructure, p 1.

237 Submission 24, p 2.

238 In its submission to this inquiry, Newcastle City Council stated that the Council was first notified of the incident on 'Thursday *10* August' (page 1). However, 10 August was a Wednesday. In his review of the incident, Mr Brendan O'Reilly reported that the General Manager of Newcastle City Council had informed him that Council first heard of the incident on Thursday *11* August 2011: O'Reilly B, 2011, p 24.

239 Submission 18, Newcastle City Council, p 1.

240 O'Reilly B, 2011, p 40.

Committee comment

5.130 As with the three key agencies, Orica appears to have failed to adequately notify some other government departments, particularly the Department of Planning and Infrastructure, in sufficient time or detail for them to deal promptly with their responsibilities for the incident. The failure to notify Newcastle City Council may have now contributed to legislative change imposing a requirement on the company and other similar corporations.

Notifying the public

5.131 During the immediate response to the leak on 8 August 2011 Orica staff failed to identify the potential for the leak to impact on the wider community beyond the plant. When reports began to be received of fallout in the Stockton area the next morning investigations began but it was not until Wednesday 10 August 2011 that Orica began a process of informing residents.

5.132 Consideration of how to notify residents of Stockton began when the Crisis Management Team was established at 10:30 am on 9 August 2011. The head of the Crisis Management Team detailed in evidence the steps taken to notify the public:

> Another decision taken on Tuesday evening, as our understanding of the incident and its consequences developed, was that the most effective form of communication for those who might be affected off-site in Stockton was to be via a door-knocking process. We chose this course because it was a personalised and targeted approach to notifying the public and we thought would be the most effective way to proceed. We did not want to cause widespread or unnecessary public alarm. We were also keen to ensure the information shared was accurate and consistent.
>
> A further decision on the Tuesday evening was that as we were going to be sharing health information with members of the public in this way that we should proactively contact the Department of Health to inform them of this proposed course.[241]

5.133 The Crisis Management Team also set up a community hotline to answer any additional questions from residents. The hotline was manned by Orica personnel and an external medical expert to answer any health-related questions.

Door knocking

5.134 During the Inquiry three concerns have been raised regarding the door knocking process by Orica:

- The process began too long after the leak occurred
- Not all potentially affected residents were contacted, and
- The information contained in the door knocking script was not as accurate or as detailed as it needed to be, especially in regards to the presence of chromium VI and its associated health risks.[242]

---

241 Mr Bonner, Evidence, 7 December 2011, p 4.

242 For example, Mr Newman, Evidence, 15 November 2011 pp 43 - 44.

5.135 The reasons for the delay in contacting residents and the limited extent of the door knocking was put to the Mr Liebelt at the public hearing on 17 November, to which he responded that it was a decision made by the Crisis Management Team, not at a higher level.[243]

5.136 The advice from the head of that Team, Mr Bonner, was that later on Tuesday morning two Orica staff walked around the streets where the initial 9.45 am call had come, and identified the relevant blocks using wind data.[244] This investigation was used as the basis for the area chosen for door knocking.

5.137 It appears that 25 households were door knocked between 2.30 pm to 7 pm on Wednesday 10 August 2011 by Orica staff.[245] This did not include the Early Learning Centre, as is discussed in Chapter 7, and residents advised the committee that most local people first heard about the leak through the media.[246] The delay in commencing door knocking was attributed to the complexity of the overall crisis management measures being undertaken and the need to establish an accurate script.

5.138 The Sustainability Manager advised that the script to be used for the door knocking and for the community hotline was signed off by the Crisis Management Team.[247] It used information prepared by Orica occupational hygienist Mr Garry Gately, an independent medical expert Dr Bruce Niven and an external consultant Mr John Frangos. However it appears the script interpreted data obtained from these experts about the low concentrations of chromate potentially released to create a message that there was little or no risk to the public:

> The Hon. CATE FAEHRMANN: In your opening statement you said that Garry Gately was assisting the team to interpret the available material safety data sheet information and its implications. The material safety data sheet for hexavalent chromium does not say, as your door knocking script says, if you find evidence of—you said sodium chromate but hexavalent chromium, because that is what was released—please do not be too concerned. They have advised there is little to no risk from this substance. The material safety data sheet says that chromium VI is toxic if swallowed, inhaled or absorbed through the skin. It says it causes burns by all exposure routes. It says that it may cause allergic, respiratory and skin reaction, that it is harmful if swallowed, that it is toxic to aquatic organisms, that it is a cancer hazard and there is a possible risk of impaired fertility and it may cause heritable genetic damage. The residents of Stockton were informed that there was no risk from this substance, "however we would like to clean this up for you". What is your opinion about the differences there?
>
> Mr BONNER: I might add that I am not a chemist so I am not a specialist in this area, but as it was explained to me sodium chromate was the compound that was released. Hexavalent chromium was the chromium element of the sodium chromate. That was from the samples that were taken on the site. . …

243 Mr Liebelt, Evidence, 17 November 2011, p 6.

244 Mr Bonner, Evidence, 7 December 2011, p 11.

245 Submission 16, p 42.

246 Ms Kate Johnson, Interim Chairperson, Stockton Community Action Group, Evidence, 15 November 2011 p 43.

247 Ms Woodroffe, Evidence, 7 December 2011, p 15.

> …One of the key tasks of both Garry Gately and Dr Niven was to interpret the material safety data sheet. With most material safety data sheets context is required in relation to interpreting them, as I understand it. Therefore, guys like Garry Gately and Dr Niven were asked, given the concentrations that we thought were involved here, based on the visual effects, and also given the fact there had been no acute symptoms with any of the operators that had been exposed to this release on the site on the evening of the incident—we had the visual views from the Stockton area—their task was to interpret that in the context of the material safety data sheet. That is what they do and that is where the conclusion came to the fact that it was a very low likelihood that there were any acute health issues associated with this.
>
> In addition to that, any longer term health impacts were really consequent, as I understand it, from material safety data sheet long-term constant exposure to high levels of chromium VI could have some quite serious health effects, and none of those conditions were part of their view of this situation. That was the flavour of the information and the expertise that, I guess, was interpreting that information that I took on board as the leader of the crisis management team to give us the comfort that that Q&A had the appropriate information in it, and proved to be correct, given subsequent testing and further sampling. We did not have the luxury of that much information so we had to make best of what we had and that did prove to be an accurate assessment as further testing was done by New South Wales Health and further external views on this.[248]

5.139 Other witnesses to the Inquiry were critical of the approach taken by Orica to minimise warnings about potential risk so as to not create unnecessary alarm. Mr Pepe Clarke, Chief Executive Officer of the Nature Conservation Council, called the approach 'false information' and 'a damage control approach'.[249]

5.140 Overnight on Tuesday and into Wednesday morning the Crisis Management Team and external experts continued working on information gathering for the door knocking exercise. This resulted in the form of a question and answer document which was to be used by the Orica personnel involved in the door knocking. This Q&A script did disclose that the emissions contained chromium VI. NSW Health was consulted on Wednesday morning, although the exact nature of this consultation is disputed and is discussed in more detail in Chapter 7.

5.141 The door knocking commenced in the early afternoon on Wednesday and was led by Orica's most senior safety, health and environment officer in Australia, Mr Sean Winstone, and utilised members of his team. Mr Winstone gave a progress report by telephone to the Crisis Management Team during its 3.00 pm meeting, advising that the door knocking was going well but there were some residences where nobody was home. Orica door knocking teams committed to following up the following day to try to reach all of the houses targeted.[250]

248 Mr Bonner, Evidence, 7 December 2011, p 15-16.

249 Mr Liebelt, Evidence, 17 November 2011, pp 42-43.

250 Mr Bonner, Evidence, 7 December 2011, p 3.

Follow up engagement with the community

5.142 Following the initial door knocking Orica continued to maintain a community information hotline and to work with agencies such as Health, OEH and WorkCover. It also sent representatives to attend public meetings organised by Stockton residents on Saturday 15 August 2011 and then held its own information sessions. The company also replaced the sand pit and paid for the clean up at the Early Learning Centre. Despite these efforts, the way in which the original notification was handled by the company has influenced community perceptions of this engagement process:

> I think the community appreciates that Orica has come and spoken to them a number of times, but it does not take away the feeling that people had, particularly during that week and with the subsequent leaks, the arsenic leak into the river that happened afterwards…. Since then the ammonium leak as well, so people are quite unbelieving about what happened.[251]

5.143 As the Committee has not seen the full revised version of Orica's Emergency Response Plan it is not able to judge whether this contains specific guidance to staff in contacting a broader section of the community than the area considered potentially to be affected.

Committee comment

5.144 Once the Crisis Management Team was established Orica did make efforts to notify sections of the Stockton community as to the leak which had occurred. However as with other aspects of Orica's handling of the leak these efforts suffered from lack of timeliness and an overly narrow view of potential impact. Too few people were included in the initial door knocking – it should have been obvious to Orica that the wider communities of Stockton would have an interest in being informed, even if the Crisis Management Team correctly prioritised those in the immediate wind path. The information provided, while clear in language, played down the potential risks involved.

5.145 The Committee believes accuracy of the information should be given greater emphasis over the need not to alarm residents. It is accepted the information is being put out before results are confirmed and based on a preliminary assessment, but the approach taken has failed to gain the trust of many Stockton residents, who instead have required fuller disclosure and transparency in what is told to their community.

[251] Ms Johnson, Evidence, 15 November 2011, p 46.

Finding 9

The process by which Orica notified some households in the Stockton area was inadequate, because of the original failure to anticipate the potential impact of the leak beyond the site.

Orica's failure to advise Health in a timely manner, and to fully apprise the Department of all the information available to it relating to the emission, did not assist a coordinated approach between Government departments.

While Orica understandably prioritised the households in the immediate wind path of the emission in its door knocking, it failed to anticipate that the surrounding areas should also be informed as soon as possible about the incident which had occurred.

The information presented by Orica in its initial door knocking script downplayed the potential health risks, when more accurate information about potential health risks was more appropriate.

Because Orica's initial attempts to notify the public were too late, too limited in scope and provided incomplete information, subsequent attempts to engage the Stockton community have suffered from the lack of trust of residents.

Orica's response to the immediate cause of the leak

Recommendations by Johnson Matthey Catalysts

5.146 As well as changing procedures and the Emergency Response Plan, Orica has taken steps to address the contributing factors within the plant equipment which lead to the leak.

5.147 As noted in Chapter 3, a review of the incident by Johnson Matthey Catalysts completed in September 2011 identified the 'immediate cause' of the incident and various contributory factors. Most of the causal and contributory factors concerned the creation of condensation during the start up of the plant and a failure of the drainage and containment systems of the plant to adequately deal with that condensation. The individual causal and contributory factors are outlined in paragraphs 3.43 to 3.50 of Chapter 3.

5.148 Johnson Matthey Catalysts also recommended changes to the ammonia plant and its procedures to address the causal and contributory factors. Most of these changes were concerned with minimising the possibility of condensation being formed during start ups of the plant and ensuring that any condensation that may be produced is effectively contained. These included recommendations that Orica:

- Use nitrogen, rather than steam, to heat the High Temperature Shift catalyst to above the dew point.
- Return the relevant flue gas coils in the plant to their original configuration as they were prior to the 2011 upgrade of the plant.
- Install drainage arrangements to accommodate worst case condensation levels.
- Provide alarms to indicate the presence of abnormally high levels of condensation.

- Rewrite the operating procedures of the plant to reflect best practice for starting up the plant.[252]

5.149 Other recommendations in the review were that Orica:

- Prepare a detailed study (a 'heat and mass balance') of each significant stage of the start up, shut down and normal operation of the plant.
- Subject the proposed modifications (that is, the modifications to the plant proposed in the Johnson Matthey Catalysts review) to certain technical studies including a process of risk review and adjust the proposed modifications in accordance with any relevant findings.[253]

Actions taken by Orica

5.150 In its submission dated 4 November 2011 Orica advised that it was working through a program with regulators to ensure that an event such as the 8 August 2011 incident does not occur again. This program included implementing measures to comply with recommendations made by Johnson Matthey Catalysts in their review. Orica also advised that it had completed a hazard study of the relevant parts of the plant.[254]

5.151 On 14 December 2011 OEH announced that the interagency Start Up Committee established to oversee the recommissioning of the ammonia plant had concluded that Orica had satisfactorily implemented the operational and procedural recommendations outlined in the independent engineer's report as well as other actions identified by the Start Up Committee.

5.152 OEH also announced that the Start Up Committee's own independent expert had confirmed the operational and technical requirements that needed to be undertaken had been completed.[255]

Committee comment

5.153 Changes to the ammonia plant since the incident appear to have addressed the immediate cause of the emission and the contributory factors identified by independent experts, although the Committee cannot claim to be able to make a definitive finding on an issue which requires technical verification. If the actions taken have been successful there is little likelihood that sufficient condensation could be generated during a start up of the plant that would overwhelm the drainage systems and result in an off-site emission, as the plant currently stands.

5.154 Further, if Orica's procedures are reviewed to include measures for detecting off-site emissions, as suggested earlier in this chapter, the impact of any future emissions from the plant should be much less extensive.

---

252 Submission 16, Appendix A, Johnson Matthey Catalysts, *Investigation into release of chromium VI at Orica's Kooragang Island Ammonia Plant on 8th August 2011*, 1 September 2011, pp 36-37.

253 Submission 16, Appendix A, p 37.

254 Submission 16, p 9.

255 OEH, 'Orica Ammonia Plant ready to re-open', *Media Release*, 14 December 2011.

5.155 While Orica has taken steps to address the immediate cause, however, evidence in this inquiry raised certain broader issues which are yet to be responded.

Orica's response to risk assessment and other contributory factors to the leak

5.156 Two of the causal and contributory factors identified by Johnson Matthey Catalysts were:

- a failure to quantify the amount of condensation that was expected to be produced during the start up of the plant
- a failure to assess previous modifications to the plant in the context of the plant as a whole.

5.157 In response to these factors Johnson Matthey Catalysts made recommendations to minimize the risk of condensation occurring during start ups of the plant and to ensure that the modifications proposed in the review would be assessed in the context of the wider plant. However, the Johnson Matthey Catalysts review was not concerned with the possible longer term ramifications of such factors for future modifications to the plant.

5.158 In this inquiry the Committee sought to explore the implications raised by Orica's failure to adequately anticipate the risk of condensation prior to the incident and its approach to the design of modifications to the plant. The evidence received by the Committee in relation to these matters is examined below.

Failure to quantify the likely condensation

5.159 The Johnson Matthey Catalysts review found that despite a historic problem with condensation at the plant, Orica had failed to quantify or appreciate the magnitude of the condensation expected to be generated in August 2011 and therefore failed to implement adequate safeguards:

> Although anticipating an increase in condensation due to plant modifications (…), the amount of condensation was not quantified and hence effective safeguards were not implemented.[256] (…)
>
> There appears to have been an ongoing problem with condensation on the plant. Records shown by KI indicate that whilst increased levels of condensation were expected, the magnitude and hence the consequence does not appear to have been appreciated.[257]

5.160 In evidence to the Committee the Site Manager indicated that:

- At the time of the start up on 8 August 2011 personnel at the site had been expecting condensation to be produced
- The amount of condensation was expected to be within the containment capacities of the plant in place at the time

256 Submission 16, Appendix A, p 34, para 7.9.

257 Submission 16, Appendix A, p 35, para 8.5.

- The containment capacities of the plant at the time reflected the level of condensation generated during the start up of the plant in 2006 when effluent contaminated with chromium VI was discharged into the Hunter River.[258]

5.161 A similar view was expressed by the Night Shift Supervisor who told the Committee that: 'We were under the understanding that there were going to be very similar amounts [of condensation] to 2006'.[259] Despite this evidence, however, in a later answer to a question without notice, Orica informed the Committee that it was not known how much condensate had been generated during the incident in 2006.[260]

5.162 A further aspect of this issue explored during the inquiry concerned the impact of modifications to the plant during the overhaul or upgrade in 2011 which included the modification of the heat recovery coil that according to Johnson Matthey Catalysts precipitated the 8 August 2011 incident at the plant. In relation to those modifications, the Site Manager stated that '[t]here is a range of hazard studies and design reviews and so on where they recognize the creation of condensate' but that he was not aware of any quantification of that condensate.[261]

5.163 Following this evidence, the Committee sought to establish who in Orica was responsible for the apparent limitations in the upgrade project in 2011 which failed to identify the amount of the condensate likely to be produced. In response, the Site Manager stated:

> The organisation has a well-defined hazard study and risk management processes, but ultimately those processes are as good as the ability of the team of people who are doing those risk assessments to identify and quantify the hazards that they were doing.[262]

Design of modifications to the plant

5.164 The Johnson Matthey Catalysts review found that modifications made to the plant during the overhaul in 2011 had been assessed in isolation from other aspects of the plant and in some cases had not reflected the results of studies conducted in the planning stages:

> **Design Process**
>
> The plant was subjected to a wide variety of modifications during the 2011 overhaul. An impression has been gained that they were assessed as a collection of small projects rather than as part of a holistic review of the ammonia plant. The heat and mass balance that was made available and dated 20.03.2008 does not appear to reflect the final package of modifications that was installed in 2011, and in any case, does not

258 Mr Newman, Evidence, 15 November 2011, p 6; Answers to questions on notice taken during evidence 15 November 2011, Question 11, p 5.

259 Mr Ashbourne, Evidence 15 November 2011, p 15.

260 Answers to questions taken on notice during evidence 15 November 2011, Orica Limited, Question 5, p 2.

261 Mr Newman, Evidence, 15 November 2011, p 5.

262 Mr Newman, Evidence, 15 November 2011, p 32.

> appear to cover utility streams, and specifically the BFW streams that were modified.[263]

5.165 When asked to respond to this assessment of Orica's approach to the design of modifications to its plant, Mr Liebelt advised that the reason modifications had been managed in that way was that there had been many modifications to make:

> I can confirm it is the nature of this project that the up-rate - I should say the expansion of capacity was achieved by way of a large number of modifications and that is the point being made in relation to this point. I think there were some hundreds of modifications that were made on the plant in order to achieve the up-rate capacity. That is the reason for it being managed like that.[264]

5.166 Further, when asked why modifications made in the 2011 overhaul could not have been dealt with as a single project, Mr Liebelt replied that individual modifications have to be dealt with as such:

> I think that the individual modifications have to be dealt with as individual modifications and that as a consequence, managing it in that way is appropriate. As to the comments on the overview of the totality of that, I would be happy to take that on notice. I do not have more information.[265]

5.167 In a subsequent answer to a question on notice, Mr Liebelt provided details about various stages of the 'uprate' and maintenance 'turnaround' of the plant in 2011 including that:

- the uprate and turnaround projects had been 'dealt with as a single project' in the latter stages to ensure their timely completion
- the turnaround Project Leader had overall responsibility for carrying out the remaining uprate work, and
- the uprate Project Leader reported to the turnaround Project Leader.[266]

Risk assessment processes

5.168 At various stages in his evidence Mr Liebelt was asked to comment on the adequacy of the risk management processes followed by Orica at its ammonia plant. The responses provided by Mr Liebelt indicated that he believed those processes are in order.

5.169 For example, at one point in his evidence Mr Liebelt stated that:

> We have strong risk management processes in place and so whilst again I have to say that we have had incidents and we find those unacceptable and in response to incidents we certainly do the investigations and look for whatever improvements we can put in place, I think that that total process of risk management and improvement up to stride is good practice.[267]

263 Submission 16, Appendix A, p 35, paragraph 8.6.

264 Mr Liebelt, Evidence, 17 November 2011, p 8.

265 Mr Liebelt, Evidence, 17 November 2011, p 8.

266 Answers to questions on notice taken during evidence 17 November 2011, Question 12, p 10.

267 Mr Liebelt, Evidence, 17 November 2011, p 29.

5.170 Further, in response to a suggestion that Orica's risk management approach is one of reacting to issues as they occur, Mr Liebelt replied:

> I do not believe that our risk management processes are at all as you describe them, in a sense waiting for a mistake and then fixing it. I think our own risk management process is very much to identify the risks that might occur in relation to a project or in relation to other parts of our business and then put in place necessary mitigation plans.[268]

5.171 In its submission to this inquiry Orica advised that, since the incident, Orica has completed a hazard study of the relevant parts of the plant under different operating modes to ensure that safety, health or environmental risks had been identified and appropriate controls have been implemented if required.[269]

5.172 In response to requests from the Committee, Orica supplied:

- Hazard Studies conducted prior to the incident, including a 'job safety and environmental risk analysis ('JSERA') with respect to various aspects of the start up and turnaround of the plant.[270]
- Hazard Studies undertaken as part of the work to restart the ammonia plant.[271]
- Orica's Project Process as used on the Ammonia Plant Expansion Project.[272]

Safeguards for future modifications to the plant

5.173 In view of the conclusions and recommendations by Johnson Matthey Catalysts, which revealed that flaws in the design of the 2011 upgrade to the plant caused or contributed to the 8 August 2011 incident, Mr Liebelt was asked whether OEH should have a role in assessing the design of future upgrades. Mr Liebelt replied that, while OEH had a strong role in terms of the response to the incident, OEH would not normally have a role in terms of the design of a particular project, but that he would give further consideration to whether OEH should have such a role.[273]

5.174 Subsequently, in answers to questions on notice, Mr Liebelt expressed reservations about the feasibility of OEH becoming involved in the design of projects at the plant:

> There are several authorities presently involved in the assessment and approval of major projects. The KI expansion project has been considered by the Department of Planning, Environment Protection Authority, Newcastle City Council, NSW Ministry

268 Mr Liebelt, Evidence, 17 November 2011, p 31.

269 Submission 16, p 9.

270 Answers to questions on notice taken during evidence 15 November 2011, Orica Limited, Question 3, p 1; Answers to questions on notice taken during evidence 7 December 2011, Orica Limited, Question 5, p 2.

271 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 16, p 11.

272 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 25, p 1.

273 Mr Liebelt, Evidence, 17 November 2011, p 33.

> of Health, Fire and Rescue NSW, Roads &Traffic Authority, NSW Police and the Department of Water and Energy. I think it would be difficult for OEH to develop the kind of expertise and the resources required to get into a high level of detail at the design stage of a project.[274]

Committee comment

5.175 The Committee notes that Mr Liebelt gave evidence before the Committee and was asked an extensive range of questions regarding his knowledge of the incident and the actions taken by the company subsequent to the incident. The Committee notes that Mr Liebelt did not display an extensive knowledge of the events, or of his own company's local practices or procedures.

5.176 It is noted that Mr Liebelt repeatedly refused to answer questions, after taking advice from the company's lawyer

5.177 While Orica conducted hazard studies and risk assessments in relation to start ups of the plant and the modifications to be made in the upgrade in 2011, these studies clearly failed to successfully identify and address the risks which led to the leak in this case. The assessments failed to address the potential volume of the condensate produced and the potential for impact beyond the site, among other shortcomings. It is clear that the flawed risk assessment undertaken by Orica contributed to the seriousness of the leak.

5.178 There is a need for ongoing monitoring of future changes to the plant whether in five-yearly maintenance overhauls or one off upgrades. Since OEH approved Orica to go ahead having been satisfied Orica had addressed all the technical matters the company has announced two further delays, and it appears understandably to be taking a very cautious approach at present.

5.179 To ensure that future modifications to the plant are properly assessed Chapter 6 contains a recommendation requiring OEH to ensure that Orica engage and pay for independent experts to oversee any modifications to the plant in the next major overhaul in 2016 and in any other upgrade projects prior to that date. In November 2011 it was reported that the EPA had announced that when the Orica plant re-opens, there will be ongoing scrutiny of the operation for at least another year. A special inter-agency committee will now be formed to oversee the Orica site in the longer term to ensure improvements continue.[275]

5.180 In ensuring the future safety of the workers at the plant and the communities of Stockton the Office of Environment and Heritage has a crucial role. The next chapter examines the way in which OEH undertook that role in the immediate aftermath of the chemical leak of 8 August 2011, and the ongoing role for the agency.

---

274 Answers to questions on notice taken during evidence 17 November 2011, Mr Liebelt, Question 27, p 14.

275 ABC News, 'EPA plans long-term monitoring at Orica site', accessed on 7 February 2012, <www.abc.net.au/news/2011-11-25/epa-plans-long-term-monitoring-at-orica-site/3693860>

Finding 10

Orica's inadequate risk assessment and hazard studies prior to the incident contributed to the seriousness of the leak and the failure to contain the leak on site.

Chapter 6 Government response - Environmental

This chapter provides an analysis of the response by the Government to the 8 August incident at Orica Kooragang Island from an environmental perspective. It canvasses the response of the Office of Environment and Heritage (OEH) as well as the response of the Hon Robyn Parker MP, Minister for the Environment. The OEH is now located within the Department of Premier and Cabinet, so this chapter also considers the notification made to the Premier's Office. The Chapter also examines OEH's ongoing actions in relation to the leak and concludes by reviewing the changes made to the State's environmental regulatory regime since the incident.

OEH provided a submission to the Inquiry and three of its officers, including Ms Lisa Corbyn, Chief Executive of the Office of Environment and Heritage, appeared with the Minister for the Environment at the Committee's public hearing on 21 November 2011.

Role of OEH in pollution incidents

6.1 OEH is the lead environmental regulator in NSW. It is responsible for regulating activities that are required to hold an environment protection licence under the *Protection of the Environment Operations Act 1997* and activities operated by public authorities.[276]

6.2 OEH uses a mix of tools to achieve environmental outcomes, including education, economic mechanisms and a compliance and enforcement program.[277]

6.3 In regulatory matters for environment protection, OEH staff act under the statutory powers of the Environment Protection Authority (EPA) and its Board.[278]

6.4 The EPA has power to investigate possible contraventions of the *Protection of the Environment Operations Act 1997*, regulations or any environment protection licence.[279] It also has a role in enforcing compliance with the Act and licence conditions. This includes the power to issue clean-up notices, prevention notices and prohibition notices, institute civil proceedings, or bring prosecutions in the more serious cases.

Ministerial responsibilities

6.5 Under the administration order for the Act and the Regulation, as well as other associated regulations, the Minister for the Environment, the Hon Robyn Parker MP, is responsible for OEH.[280]

276 Submission 17, Office of Environment and Heritage, p 4.

277 Submission 17, p 4.

278 Office of the Environment and Heritage, 'Who we are', accessed 7 February 2012, <www.environment.nsw.gov.au/whoweare/>.

279 See *Protection of the Environment Operations Act 1997, Chapter 7*.

280 The Allocation of the Administration of Acts [2011-338] (current for 11 January 2012) lists the *Protection of the Environment Operations Act 1997* under the responsibility of the Minister for the Environment but doesn't refer to the Regulations or to OEH specifically.

Notification of the 8 August 2011 leak

DATE	TIME	ACTION
8 Aug 2011	6.00 pm	Fugitive emission of chromium VI from the SP8 stack at Orica Kooragang Island.
	6.15 pm	Orica Night Shift Supervisor notified Orica Plant Manager of the incident.
	8.20 pm	Orica Plant Manager notified Orica Site Manager of the incident.
	8.30 pm - 8.45 pm	Orica Plant Manager notified Orica Sustainability Manager of the incident.
9 Aug 2011	10.28 am	Orica Sustainability Manager notified OEH of the incident.
	11.10 am	Orica Compliance Manager notified WorkCover of the incident.
	1.00 pm	Hazmat team of the Newcastle Fire Station received an anonymous phone call regarding the incident.
10 Aug 2011	9.25 am	Fire and Rescue NSW contacted OEH about the incident.
	11.30 am	Orica notified Hunter New England Population Health of the incident.
	2.15 pm	OEH notified the NSW Police Force of the incident.
	4.23 pm	OEH notified the Minister for the Environment and the OEH Chief Executive Officer of the incident.
	Approx. 5.40 pm	OEH Chief Executive Officer notified Chief Health Officer of the incident.
	5.50 pm	Minister for Health notified of the incident by her staff.
	7.00 pm	Premier's press staff alerted to possible media story about the incident by the office of the Minister for the Environment.
11 Aug 2011		OEH notified Newcastle City Council of the incident.
		Minister of the Environment's office notified the Premier's Chief of Staff about the incident.
	Approx. 1.00 pm – 2.00 pm	The Premier is notified of the incident.
	2.10 pm	HNEPH notified NSW Food Authority of the incident.
		NSW Food Authority notified the Department of Primary Industries – Fisheries about the incident.
	3.30 pm	Minister for the Environment issues a Ministerial Statement during Question Time in Parliament about the incident.
12 Aug 2011	9.25 am	Finance Minister notified of the incident by his staff.
	9.30 am	Orica notified the Department of Planning and Infrastructure about the incident.
15 Aug 2011		Orica email OEH providing written notification of the incident.

Key

COLOUR	AGENCY
	Environment
	WorkCover
	Fire and Rescue NSW
	Health
	NSW Police Force
	Premier
	Newcastle City Council
	NSW Food Authority and Department of Primary Industries – Fisheries
	Department of Planning and Infrastructure

6.6 Notification of the incident by Orica to OEH was examined in Chapter 5. In this section OEH's actions to notify the Minister and appropriate agencies of the incident and, in turn, the Minister's actions to notify the public are examined.

Notifications by OEH

6.7 After the incident concerns were raised about the length of time it took OEH, as the lead agency responsible for pollution matters, to notify NSW Health, the Minister for the Environment, the Stockton community and others.

6.8 OEH advised the Minister for the Environment of the incident 46½ hours after the incident occurred.[281] This was approximately 30 hours after OEH itself was informed.[282] OEH used its 'Early Alert' email system to provide initial notification to its Chief Executive and Minister's office.[283]

6.9 OEH contacted the Ministry for Health about the incident at some time after 11.00 am on 10 August 2011, once OEH officers had been informed that Orica had not complied with an earlier direction to Orica on 9 August 2011 to notify Health.[284] The O'Reilly Report found that OEH should have taken the initiative to notify Health when first understanding the emission had not been contained, at approximately 2.00 pm on 9 August 2011.[285] Since the incident Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, has issued a directive to staff requiring that if in future circumstances arise where staff need to advise a licensee to contact another agency such as Health the staff should also make contact with that other agency themselves.[286]

281 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, September 2011, p 13.

282 Hon Robyn Parker MP, Minister for the Environment, Evidence, 21 November 2011, p 46.

283 Submission 17, p 11.

284 Submission 17, p 6. Health's submission refers to a conversation between Health and OEH at 1 pm on 11 August. The submission states: 'Consulted OEH to determine their actions and assessment. Visual inspection by OEH staff identified deposition in Stockton area of yet to be identified material. Not aware of any reported ill health'. (Submission 21, Appendix A, p 7.)

285 O'Reilly B, 2011, p 34.

286 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, Evidence, 21 November 2011, p 58.

6.10 Newcastle City Council informed the Committee that it was only notified by OEH on Thursday 11 August 2011, noting that when calls from members of the community were received the previous day Council had no knowledge of the incident. The Council noted that the delay in being notified meant that it was not able to perform its role properly including in communicating to the public:

> In incidents such as this, Council can have a role to play as a significant land owner in the affected area, as a support agency to the lead combat agencies and functional areas, and as a conduit for communication and engagement with the broader community. Council also has local emergency management role to plat when emergencies are declared. Councils' capacity to perform in these roles was hampered in this instance by delayed notifications, not from Orica to the lead agencies, and from those agencies to Council.[287]

6.11 When questioned about whether Orica's 16 hour delay in notifying OEH of the incident and the Government's 54 hour delay in notifying the public, the Premier responded:

> I made clear no bones about this, I have said this on radio time and time again, that the delay in notifying the Minister, the delay in notifying the Premier, who was the head of Government, was completely and utterly unacceptable…[288]

6.12 Ms Lisa Corbyn, Chief Executive of the Office of Environment and Heritage, acknowledged that OEH should have provided information to the Minister sooner that it did.[289] The need for improvement in the timeliness of its communication about the incident was also acknowledged by OEH in its submission:

> In reviewing all aspects of the incident response, the area identified and acknowledged for improvement by OEH is in the timeliness of communication, both with the community about the incident and across Government, including in providing information to the Minister for the Environment.[290]

Notifications by the Minister

6.13 The Premier informed the Committee that his press staff were first alerted to a possible media story about the chemical leak by the office of the Minister for the Environment at approximately 7.00 pm on 10 August 2011.[291] The Premier's Chief of Staff was then notified of the incident by Minister Parker's office on 11 August 2011 and it was not until lunch time on the same day that the Premier was advised of the leak.[292]

6.14 Minister Parker informed the people of NSW of the Orica incident through a Ministerial Statement made in Parliament at approximately 3.30 pm on Thursday 11 August 2011.[293] It

287 Submission 18, Newcastle City Council, p 1.

288 Hon Barry Farrell MP, Premier of NSW, Evidence, 21 November 2011, p 32.

289 Ms Lisa Corbyn Chief Executive, Office of Environment and Heritage, Evidence, 21 November 2011, p 83.

290 Submission 17, p 1.

291 Hon Barry Farrell MP, Evidence, 21 November 2011, p 31.

292 Hon Barry Farrell MP, Evidence, 21 November 2011, p 31 and p 37.

293 *LA Debates* (11/8/11) 4295.

was through this communication that information about the leak was finally disseminated to the community at large.

6.15 As noted in the O'Reilly report: 'The first that the general public got to hear about it was the nightly news on 11 August 2011, approximately 72 hours after the incident occurred.'[294] This was confirmed by the representatives of the Stockton Community Action group who appeared before the Committee at its public hearing in Stockton on 15 November 2011.[295]

6.16 A number of inquiry participants expressed concern about the length of time it took for the Government, and the Minister for the Environment in particular, to inform the general public about the incident.[296] For example, the Stockton Community Action Group stated:

> The Stockton Community Action Group is extremely disappointed and alarmed about the delayed response from the NSW Government following the incident on Monday 8th August 2011. Once Orica informed Government bodies, there was a very long lead-time before residents were notified. The fact that most residents found out about the incident on the nightly news service on Thursday night 11 August or on the morning news on Friday 12 August is also of major concern. … There was no apparent reason for this delay apart from lack of appropriate systems and communication. An alternative explanation would be that there may have been reluctance on the part of Government Agencies and the Environment Minister to go public based on political considerations.[297]

6.17 Similarly, the National Toxics Network, a 'community-based network of experts working on a wide range of toxic chemical pollution issues' stated:

> While Orica's lack of notification of its neighbours was simply unacceptable and demonstrates a reckless attitude to public safety and environmental health, the NSW Government's lack of notification for a further extensive time period was also unforgivable. It has placed at risk public confidence in NSW pollution laws and managements, and may have resulted in long-term adverse impacts to people's health and the environment.[298]

6.18 It is clear that the failure to notify the public sooner lead to many in the Stockton and surrounding communities living with a great deal of uncertainty and fear for longer than was necessary. Stockton Public School stated in its submission:

> We believe the government did not take responsibility for the people of Stockton, because they did not inform the community for 54 hours. This in our opinion is negligent and we believe the ministers concerned did not take responsibility for their own portfolios. The leak was unreported to us by the EPA, the government or Orica and this gave us little opportunity to implement a safe response for attending students at our school in or out of the zone in the follows days after the leak.[299]

294 O'Reilly B, 2011, p 13.

295 Ms Kate Johnson, Interim Chairperson, Stockton Community Action Group, Evidence, 15 November 2011, p 42.

296 See for example: Submission 2, Stockton Branch of the NSW ALP, p 2; Submission 26, Councillor Sharon Claydon, Newcastle City Council, pp 2-3; Mr James Giblin, Stockton resident, p 13.

297 Submission 13, Stockton Community Action Group, p 8.

298 Submission 1, National Toxics Network, p 6.

299 Submission 5, Stockton Public School, p 4

6.19 Issues were also raised in relation to the ministerial statement concerning the incident made by the Minister for the Environment in Parliament on 11 August 2011.

6.20 The Committee was advised by the Premier that after being notified of the incident he directed Minister Parker to make a ministerial statement about the leak after Question Time on 11 August 2011.[300] When queried about why his senior staff advised the Minister not to make the statement until after Question Time, the Premier told the Committee that it was common practice for ministers to make public statements at this time.[301]

6.21 Committee members also questioned the Premier about whether it was appropriate to use a ministerial statement as opposed to a press conference to alert the public to the leak.[302] The issue had been raised in the O'Reilly Report. The report stated that while it is the Minister's prerogative to make ministerial statements in this instance Minister Parker's actions led to a great deal of political debate ultimately increasing public concern and confusion about the leak.[303]

Committee comment

6.22 The Committee shares the concern of many inquiry participants that the Government did not inform the public of the incident sooner.

6.23 The Committee notes that OEH has accepted the need for improvements in the timeliness of its communications regarding pollution incidents. As noted later in this chapter, OEH has advised the Committee that it is reviewing its Early Alert procedure, as recommended in the O'Reilly report.

6.24 The Committee concludes that the Minister gave no explanation as to why she took 23 hours after being advised of the incident to take any steps to inform the public.

6.25 The Committee is of the view that, as the Minister responsible for the environment and the key regulatory body in relation to pollution, Minister Parker should have informed the public earlier. The Committee notes the comments of Mr Brendan O'Reilly in his report that:

> Coordinated, accurate and timely information to the public is important particularly during the operational recovery phase...
>
> Government agencies handle numerous incidents, many of which require a single agency response, and do not require the deployment of additional resources other than that which are readily available. When an incident is on a larger scale, a different and more coordinated interagency response is required.[304]

6.26 The Committee's view is that the notification of the public required a coordinated response between the OEH, Department of Health and Fire and Emergency Services

300 Hon Barry Farrell MP, Evidence, 21 November 2011, p 37.

301 Hon Barry Farrell MP, Evidence, 21 November 2011, p 33 and p 37.

302 Hon Barry Farrell MP, Evidence, 21 November 2011, p 35.

303 O'Reilly B, 2011, pp 35-36.

304 O'Reilly B, 2011, p 36.

6.27 A number of Stockton residents and others such as the Stockton Public School, shared their experiences with the Committee during this inquiry and it is clear that their concerns could have been alleviated earlier had the public been properly notified.

6.28 The Committee supports the Premier's statement that Orica's 16 hour delay in notifying the appropriate authorities of the leak was unacceptable. The Committee also notes the unequivocal statement made by the Premier when he appeared before the Committee during the Inquiry that the delay in OEH notifying the Minister was 'unacceptable', as discussed further in Chapter 9.

Finding 11

The delay in the Office of Environment and Heritage contacting the Minister for the Environment regarding the leak was unacceptable, and the Committee supports the recommendations of the O'Reilly Report for review of its Early Alert procedure.

Finding 12

The delay by the Minister for the Environment in informing the public regarding the leak, whether by press statement, ministerial statement or other means, was unacceptable.

Finding 13

The public should have been informed by a coordinated response between the Office of Environment and Heritage, Health, and Fire and Emergency Services.

Recommendation 1

That the Premier issue clear and unambiguous guidelines to all Government Ministers specifying the timing of notifications to the public of any matters that may affect public health or safety.

OEH actions taken once notified

6.29 In this section the Committee examines the actions that OEH took once it was notified of the incident including its initial investigations and subsequent regulatory actions.

Initial response

Inspections and sample testing

6.30 OEH officers arrived at the Kooragang Island site at 12.15pm on 9 August 2011 and inspected the site.

6.31 As soon as the officers had completed their inspection of the site they travelled to Stockton and undertook an inspection and took samples.[305]

6.32 The samples were transported to OEH's laboratory at Lidcombe the following day 'for urgent analysis'. OEH acknowledged that 'in hindsight it would have been better to arrange for the samples to be transported to Lidcombe that evening and have the laboratory staff commence work overnight.'[306] OEH officers re-inspected the site at 11.00 am on 10 August 2011.

6.33 Issues relating to the reporting of the results of the samples taken by OEH are addressed at paragraphs 6.65 – 6.72 below.

Working with NSW Health

6.34 OEH officers contacted the Ministry of Health and worked with health officers to identify and confirm possible health impacts so that appropriate information could be communicated to the community.

Regulatory action

6.35 After being notified of the incident and conducting its initial investigations OEH commenced a number of formal regulatory actions against Orica, including issuing a Clean Up Notice, two Prevention Notices and the commencement of prosecution in the NSW Land and Environment Court. The OEH's powers in this regard are described in Chapter 2.

Prevention Notices

6.36 The EPA issued a Prevention Notice on 11 August 2011 preventing Orica from using its ammonia storage tanks at its Kooragang Island site until the EPA is satisfied that Orica can operate the tanks in a safe and environmentally satisfactory manner.[307]

6.37 A second Prevention Notice was issued on 12 August 2011 directing Orica to engage an independent expert to undertake a thorough analysis to determine the cause of the incident

305 This information is derived from Submission 17, pp 5-7

306 Submission 17, pp 5-6.

307 Office of Environment and Heritage, 'EPA issues Prevention Notice to Orica', *Media Release*, 10 November 2011.

and make recommendations for improvements in operational systems to prevent a reoccurrence at the plant.[308]

6.38 On 14 December 2011 OEH announced that following a recommendation by the interagency Start up Committee established to oversee the recommissioning the ammonia plant, OEH had revoked the prevention notice applying to the plant.[309] Since then, however, Orica has announced further delays to the opening of the plant.[310]

Clean Up Notice

6.39 OEH issued a Clean Up Notice on 12 August 2011 which required Orica to take the necessary action to clean the area affected by the incident where it many have been contaminated; both the Orica site and the surrounding areas including residential properties in Stockton.[311]

Other Notices

6.40 OEH has also issued various other notices to Orica in relation to the incident including Notices to Provide Information and/or Records and Notices to Provide Reasonable Assistance.[312]

Prosecution in the NSW Land and Environment Court

6.41 On 9 November 2011 the EPA commenced prosecution of Orica for the 8 August 2011 incident in the NSW Land and Environment Court for breaches of sections 148 and 64 of the Act.[313] In relation to the prosecution the EPA stated that:

> The EPA alleges that Orica breached its Environment Protection Licence in that it failed to operate its ammonia plant in a proper and efficient manner. Orica's actions resulted in hexavalent chromium escaping to the atmosphere.
>
> The EPA also alleges that Orica failed to notify the EPA as soon as practicable after becoming aware of the incident and to provide all relevant information to the EPA about the incident.[314]

---

308 Hon Robyn Parker MP, Minister for the Environment, 'Clean Up Notice issued to Orica today, *Media Release*, 12 August 2011 p 2.

309 Office of Environment and Heritage, 'Orica Ammonia Plant ready to re-open', *Media Release*, 14 December 2011.

310 Office of Environment and Heritage, 'Orica postpones start up of ammonia plant', *Media release*, 16 December 2011; *Orica, Update on Orica's Kooragang Island Ammonia Plant restart*, 24 January 2012, accessed 7 February 2012, <http://www.oricaki.com.au/files/Orica%20Media%20Release%2024%20January%202012.pdf>

311 Hon Robyn Parker MP, Minister for the Environment, 'Clean Up Notice issued to Orica today, *Media Release*, 12 August 2011, p 1.

312 Submission 16, Orica Limited, p 7.

313 Office of Environment and Heritage, 'EPA prosecutes Orica for Stockton incident', *Media Release*, 9 November 2011.

314 Office of Environment and Heritage, 'EPA prosecutes Orica for Stockton incident', *Media Release*, 9 November 2011.

6.42 Orica has been ordered to appear before the NSW Land and Environment Court on 3 February 2012.[315]

Start Up committee

6.43 Following the incident OEH established an interagency committee to oversee and review the recommissioning of the Orica ammonia plant at Kooragang Island.[316] The Committee includes representatives from OEH, NSW Health, Fire and Rescue NSW, NSW Police, WorkCover, Newcastle City Council, Port Stephens Council and the NSW Department of Planning and Infrastructure. The Committee met for the first time on Wednesday 7 September 2011.

6.44 The Start Up Committee is assisted by an independent engineer. The Start Up Committee required Orica to engage an independent auditor to audit the clean up process following the incident.[317]

6.45 As previously noted, on 14 December 2011 OEH announced that the Start Up Committee had recommended the start up of the ammonia plant as it was satisfied that Orica had implemented the operational and procedural recommendations outlined in the independent engineers report and other actions identified by the Start Up Committee.

6.46 As discussed in Chapter 5, it has been reported that EPA has announced that when the Orica plant re-opens there will be ongoing scrutiny of the operation of the plant for at least another year with a special inter-agency committee to oversee the Orica site.

Audit of 42 major hazard facilities

6.47 On 12 September 2011 the Minister for the Environment announced that the OEH will conduct an audit of 42 major hazard facilities in NSW. Minister Parker advised that audits would '… focus on the facilities management of potential risks to human health and the environment and the adequacy of emergency response procedures for managing major environmental incidents.'[318]

6.48 Orica Kooragang Island is currently the subject of a mandatory environmental audit. The audit involves a team of auditors that will assess 'every single process that is involved in the operation of the plant'. The first component of the audit will focus on the ammonia plant at the site and will be completed by 1 March 2012. Following this the audit will move on to the nitric acid plants and then the ammonium nitrate plant at the site. A final report with

315 Office of Environment and Heritage, 'EPA prosecutes Orica for Stockton incident', *Media Release*, 9 November 2011.

316 Office of Environment and Heritage, 'Committee formed to oversee recommissioning of Orica's ammonia plant', *Media Release*, 9 September 2011.

317 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, Evidence, 21 November 2011, p 69.

318 Hon Robyn Parker MP, Minister for the Environment, 'Industries that pose a high risk of environmental harm targeted', *Media Release*, 12 September 2011, p 1.

recommendations will be issued by 1 May 2013. The cost of the audit will be met entirely by Orica.[319]

Reviews of procedures since the leak

6.49 As noted in Chapter 2, the O'Reilly report recommended that OEH and the Minister for the Environment review the processes and timeframes for the submission of information under the 'Early Alert' procedure. In response to that recommendation, OEH has instituted a review with a new communication protocol to be put in place to ensure that senior management and Minister Parker are notified of any serious pollution incidents as a matter of priority.[320]

Minister's response to contact by Mr Liebelt

6.50 One issue raised during the appearance of Managing Director and Chief Executive Officer of Orica Limited, Mr Graeme Liebelt, was the contact between the CEO and Minister Parker. He stated:

> I called the chief of staff on I think 15, 16 and 17 August. I called the chief of staff because I was at that time seeking to speak to the minister. I had intended to say essentially three things to the minister. One is to express my regret for the incident. The second is to say that we were doing everything possible to respond to the incident in a responsible way and to put these matters right, to cooperate with the authorities in terms of that response. Then thirdly to reinforce with the minister that we as a company take these matters very seriously and we believe we have good standards in this area. So I was seeking to make those three points.
>
> I would have made those three points, without recalling the absolute detail of each of those discussions; I would have made those three points to her chief of staff.
>
> The Hon. Luke FOLEY: But you did not succeed in getting put through to the minister, is that right?
>
> Mr LIEBELT: That's correct.[321]

6.51 In response Minister Parker argued that such direct contact between her and the CEO was inappropriate given the legal proceedings which were to follow:

> I talked and indeed I continue to talk with Orica all of the time, but I do so through the correct channels, through the Office of Environment and Heritage, the EPA and my ministerial office and through them with other authorities when the need arises.
>
> As Minister overseeing a regulator that prosecutes environmental offenders in carrying out my responsibilities, the advice given to me by the Office of Environment and Heritage was that it is essential to remain at arm's length from potential defendants in order to avoid any perception that prosecutions are or can be influenced by political considerations, avoid being accused of discriminating in favour of or against particular

319 Mr Sullivan, Evidence, 21 November 2011, p 68.

320 Submission 17, p 11.

321 Mr Liebelt, Evidence, 17 November 2011, p 3.

> persons, and avoid becoming involved in a attempts a potential defendants may make to avoid being prosecuted.
>
> From my point of view a phone call with Orica's CEO Mr Graeme Liebelt after the spill was not worth the risk of compromising a prosecution. Mr Liebelt said he wanted to assure me of the company's good standards. There is nothing Mr Liebelt could have said at that time which would convince me the company had good standards.
>
> The EPA has recently commenced prosecution actions against Orica at Kooragang Island for the August 8th incident. These are in addition to three other criminal prosecutions and investigations which were already underway. These are not trivial failures, they are serious breaches by Orica of their operating licence and they are serious breaches of the trust to the community.
>
> They are serious breaches with serious criminal consequences, the type of consequences that I was not prepared to put at risk by taking a phone call from the Orica CEO, a belated phone call at that which was made over a week after the incident.[322]

6.52 Some confusion was created by comments made by Minister Parker that she was in touch with Orica 'all the time', which she clarified in her evidence:

> The Hon. Luke FOLEY: Minister, why did you say last Thursday week, "I am in touch with Orica all of the time"?
>
> MINISTER: I think I mentioned that in my opening statement. The way in which with a Minister should be in touch with an organisation that is under investigation is through the correct channels, through the environmental regulator, through the EPA, through the Office of Environment and Heritage and through my ministry.[323]

Committee comment

6.53 The Committee understands that Minister Parker acted appropriately by not communicating directly with Orica when legal proceedings were in the process of being initiated by her Department against the company.

6.54 Nevertheless, the Committee considers that, in the immediate aftermath of the incident, before the legal proceedings had commenced, it would have been appropriate for Minister Parker to have made contact with the chief executive of Orica.

Stakeholder concerns about OEH's actions

6.55 Concerns were raised during the Inquiry about a number of aspects of the Government's environmental response to the incident on 8 August 2011, including the delay in the Minister informing the public of the incident and the way in which the OEH responded to calls made to its Environment Line.

---

322 Hon Robyn Parker MP, Evidence, 21 November 2011, pp 44-45.

323 Hon Robyn Parker MP, Evidence 21 November 2011, pp 44-45.

Response to calls made to Environment Line

6.56 OEH operates an Environment Line through which any person may report any of the types of pollution for which OEH has responsibility.[324] The Committee learnt that a number of calls were made to the Line by Stockton residents, some of whom reported negative health effects. The Committee learnt that OEH's handling of this information was unsatisfactory.

6.57 Ms Linda Roy, Manager of the OEH Information Centre, advised the Committee that 26 calls were made to the Environment Line in relation to the Orica incident between 9 and 26 August 2011. Of those 26 one was from an Orica employee, three were from anonymous but suspected Orica employees and 18 were from Stockton residents. Ms Roy confirmed that in their calls eight of the Stockton residents had reported negative health effects including rashes and respiratory problems.[325]

6.58 OEH advised the Committee that people who reported health issues were advised to contact their GP or health authorities:

> … members of the public who reported health issues to the Environment Line were advised to contact their GP and/or to contact the Health call line, established by the Hunter New England Public Health Unit.[326]

6.59 The Committee was also informed of the fact that eight Stockton residents had called the Environment Line reporting negative health impacts but this had not been directly passed on to NSW Health by the Environment Line.[327]

6.60 OEH did clarify that these reports were sent to the OEH Hunter Regional Office and that regional staff provided information about the reports' to Hunter New England Health, however, no further information, such as the timing of this information being passed on, was provided.[328]

Committee comment

6.61 The Committee notes that officers of the Environment Line responded appropriately by advising callers who called reporting negative health effects to seek medical information from their GP or health authorities.

6.62 The Committee is concerned that OEH did not immediately inform NSW Health that a number of residents had reported negative health impacts through its hotline. While the Committee understands that OEH is responsible for environmental issues rather than health

---

324 Office of Environment and Heritage, 'Reporting pollution', accessed 7 February 2012, <www.environment.nsw.gov.au/pollution>.

325 Ms Linda Roy, Manager (Information Centre), Office of Environment and Heritage, Evidence, 21 November 2011, p 56.

326 Answers to questions on notice taken during evidence, 21 November 2011, Office of Environment and Heritage, Question 1, p 1. See also Evidence, 21 November 2011, pp 56-60.

327 Ms Roy, Evidence, 21 November 2011 and Ms Corbyn, Evidence, 21 November 2011, pp 56-60.

328 Answers to questions taken on notice 21 November 2011, Office of Environment and Heritage, Question 1, p 1.

issues, information provided to it that indicated that there may have been negative health effects from a serious pollution incident should have been passed on to health authorities immediately. This information would have been particularly useful for NSW Health at a time when it was in the throes of determining whether there were any negative health impacts from the leak, and what information should be provided to the public.

6.63 From the information provided to the Committee during the Inquiry it appears that the panel of experts tasked by NSW Health to determine the risk to the public of the leak of chromium VI was not provided with these reports.[329] It also appears that the information was not provided to the Minister for the Environment or the Minister for Health at a time when they too were assessing the public risk.

6.64 The Committee recommends that a process of appropriate information sharing should be formalised to ensure that this lack of critical information sharing does not happen again. The Committee therefore recommends that OEH review its procedures in relation to the Environment Line to ensure that where information relevant to other agencies is reported that appropriate steps are followed to inform those agencies.

Finding 14

The Office of Environment and Heritage was in error in not directly and immediately informing NSW Health of the reports of negative health impacts received through its Environment hotline.

Finding 15

The Office of Environment and Heritage should have passed on to Minister Parker's office that calls had come through to the Environment Line reporting potential negative health impacts as a result of the incident.

Recommendation 2

That the Office of Environment and Heritage amend its operating procedures for the Environment Line to ensure that there are clear obligations to pass on information relevant to other agencies, to those agencies in a timely manner.

329 Mr Sullivan, Evidence, 21 November 2011, p 60.

The reporting of sampling results

6.65 As discussed in Chapter 3, on 16 August 2011 the Department of Health released the results of chromium VI monitoring conducted by Office of Environment and Heritage within Stockton between 9 and 12 August 2011. Chromium VI was found to be above the detection limit in 11 out of 71 samples taken from water, vegetation and surface swabs.[330]

6.66 The results of the testing conducted by OEH were subsequently used in various technical studies and reports to assess the environmental and health impacts of the incident. These included an air quality impact assessment by PAE Holmes in October 2011 and a health risk assessment of the incident by Toxikos in August 2011.

6.67 On 15 February 2011 Orica provided a supplementary submission to this inquiry which advised that, in response to communications from Orica pointing out apparent errors in the reported results, OEH had revised the results of the sampling it had conducted in Stockton. The corrections to the original results showed that the highest swab concentration measured in Stockton was in the order of 25 times less than the results OEH had published in 2011.[331]

6.68 In response to this new information, PAE Holmes prepared an addendum to its air quality impact assessment regarding the incident. The addendum included revised assessments of the amount of chromium VI released beyond the site as a result of the incident and revised assessments of the amount of chromium VI deposited in Stockton.

6.69 In its addendum PAE Holmes expressed the view that the revised air modelling should be used to inform an amendment to the health risk assessment that was conducted following the incident. It also noted that the revised modelling supports the conclusion previously reached of negligible health impacts in Stockton due to the incident.

Committee comment

6.70 The Committee notes that the results of chromium VI sampling conducted by OEH following the incident contained significant errors. This meant that erroneous information was used by independent experts and Government authorities when responding to the incident.

6.71 Fortunately, the errors were in the nature of an overstatement of the amount of chromium VI in Stockton, rather than an understatement of that amount. Had the errors been in the opposite direction, there could have been serious consequences for the health of Stockton residents.

6.72 The errors in the results reported by OEH indicate a need for more stringent procedures in relation to the procedures for reporting the results of testing following pollution incidents.

330 PAE Holmes, *Air quality impact assessment; Orica incident dispersion modeling*, 14 October 2011, p 8.

331 Supplementary Submission 16a, Orica Limited, p 1.

Recommendation 3

That OEH's testing procedures for determining the impact of pollution incidents incorporate additional requirements for the checking and verification of results before those results are released.

Legislative reforms

6.73 On 11 October 2011 the Minister for the Environment and Heritage introduced into the Legislative Assembly the Protection of the Environment Legislation Amendment Bill. The Minister indicated that the Bill was a response to issues arising from recent incidents at the Orica industrial complex at Kooragang Island and other recent incidents involving major hazards facilities.[332] Minister Parker also stated that the Bill formed part of a comprehensive response from the Government to recommendations made by Mr Brendan O'Reilly in his review of the Kooragang Island incident.[333]

6.74 On 9 November 2011 the Bill was agreed to by the Legislative Council, with certain amendments[334] to which the Assembly later agreed.[335] The resulting Act was assented to on 16 November 2011. The Act is to commence on a day or days to be appointed by proclamation.[336] Certain provisions of the Act commenced on 6 February 2012 while other provisions are to commence on 29 February 2012 or 31 March 2012 or are yet to be proclaimed.[337]

6.75 The *Protection of the Environment Legislation Amendment Act 2011* makes amendments to the *Protection of the Environment Operations Act 1997,* the *Protection of the Environment Administration Act 1991*, and certain other Acts. The main amendments concern:

- Industry notification of pollution incidents.
- A new duty on industry to develop pollution incident management response plans.

332 *LA Debates* (11/10/11) 5960.

333 *LA Debates* (11/10/11) 5960.

334 *LC Minutes of Proceedings* (9/11/2011) 565-566.

335 *LA Votes and Proceedings*, (11/11/2011) 460.

336 Commencement Proclamation under the *Protection of the Environment Legislation Amendment Act 2011*, January 2012, p 1.

337 For example, provisions relating to the notification of pollution incidents and reform of the Environment Protection Authority commenced on 6 February 2012; provisions relating to the publication of monitoring results by environment protection licensees will commence on 31 March 2012: 'http://www.environment.nsw.gov.au/legislation/poelegisamend2011.htm, accessed 25/1/2012; Commencement Proclamation, 2010 (13) 20.2.2012 . Provisions relating to a duty to prepare and implement pollution incident response management plans have not been proclaimed: Commencement Proclamation, 2010 (13) 20.2.2012. However, according to the OEH website: 'The requirement to prepare and implement plans is proposed to commence on 29 February 2012 with all necessary plans in place within 6 months, that is, by 1 September 2012: 'http://www.environment.nsw.gov.au/legislation/poelegisamend2011.htm, accessed 25/1/2012.

- Expanding the circumstances in which mandatory environmental audits may be undertaken.
- Expanding the reporting of pollution-related data ('community right to know').
- A new requirement for polluters to fund risk-assessment studies following suspected pollution incidents.
- Reform of the Environmental Protection Authority (EPA).

6.76 The key reforms introduced by the Act in relation to each of these issues are summarised below.

Table 2 Summary of reforms introduced by the *Protection of the Environment Legislation Amendment Act 2011*

Subject	Main effect of reform
Industry notification of pollution incidents	Pollution incidents must be notified 'immediately' rather than 'as soon as practicable' as is currently the case.
	Pollution incidents must be notified to a range of agencies in addition to the appropriate regulatory authority: the EPA (if the EPA is not the appropriate regulatory authority); the local authority; the Ministry of Health; WorkCover; and Fire and Rescue NSW.
	The EPA may direct the occupier of premises in which a pollution incident has occurred to notify such other persons as the EPA requires.
	If further information becomes known after an incident has been notified that further information must be notified immediately.
	The maximum penalty for offences concerning notification of pollution incidents is to double from $1,000,000 (for a corporation) and $250,000 (for an individual) to $2,000,000 and $500,000 respectively.
Pollution incident management response plans	Holders of environmental protection licenses must prepare, test and implement pollution incident response management plans which must include community notification and communication protocols.
Mandatory environmental audits	The circumstances in which conditions may be imposed on an environmental protection license requiring the undertaking of a mandatory environmental audit will be expanded to include where the EPA (or other appropriate regulatory authority) reasonably suspects that an activity has been or is being carried out in an environmentally unsatisfactory manner.
Publication of pollution data ('community right to know')	The results of monitoring undertaken in accordance with a condition of an environmental protection license must be published on the licensee's website or supplied in hard copy to any person on demand.
	The information disclosed in the public register maintained by the EPA or other appropriate regulatory authority must include details of each mandatory environmental audit, pollution study and pollution reduction program required by a license issued by that authority.
Risk analysis of pollution incidents	Polluters can be required to pay the reasonable costs of an independent health risk analysis or environmental risk analysis if the EPA reasonably suspects a pollution incident has occurred or is occurring.

Subject	Main effect of reform
Reform of EPA	The EPA will include: * A new chairperson who is to be accountable for the performance of the Authority in its environmental protection role and will be required to listen and respond to community views and ensure that local government has a voice.[338] * A Chief Environmental Regulator who will be responsible for the day-to-day running of the EPA and its activities.[339] * A new Board which will oversee the effective, efficient and economical management of the Authority. The Board will comprise five members who must include persons with expertise in environmental science; environmental law; corporate, financial and risk planning and management; and business.
	The Board will be required to provide an annual regulatory assurance statement to the Minister for tabling in Parliament. The statement must include information on: * the success of the EPA in reducing risks to human health and material harm to the environment, including comparisons with other Australian jurisdictions and * the performance of industries regulated by EPA in reducing health risks and environmental harm.

Non-legislative reforms

6.77 Non-legislative measures announced by the Government in response to the recommendations of the O'Reilly report include:

- improving notification and cooperation between the Environment Protection Authority and Fire and Rescue NSW through changes to the existing memorandum of understanding between the two agencies;
- developing a precinct plan for Kooragang Island and appropriate surrounding areas, which will be led by the State Emergency Management Committee with assistance from relevant government agencies;
- expanding the role of the community engagement system through the public information functional services area for hazardous materials incidents, including considering practical issues to ensure that the system can be implemented effectively and that the community's concerns about timeliness of information and its content are addressed; and
- involving the public and the media in all future emergency response exercises, and specifically in testing public communication protocols and mechanisms.[340]

338 *LA Debates* (13/10/11) 6209.

339 *LA Debates* (13/10/11) 6209.

340 *LA Debates* (13/10/11) 6211.

6.78 The Government has also introduced the measures summarised below.

Lower Hunter environmental monitoring network

6.79 The EPA has been directed to commence work to establish an industry-funded environmental monitoring network in the lower Hunter to provide information on the potential cumulative impacts of industry.[341]

Newcastle Community Consultative Committee

6.80 A Newcastle Community Consultative Committee has been appointed to improve communication between government, industry and the community and to provide advice on measures to monitor, mitigate and reduce the environmental impacts of industries in the Newcastle Local Government Area. The Committee's brief includes advising on the establishment of an environmental monitoring network for Newcastle. The Committee includes community representatives, an environmental representative, industry representatives and a representative from Newcastle City Council.[342]

Industry and community roundtable

6.81 The Minister for the Environment convened a round table discussion in Mayfield, near Newcastle, on 21 October 2011 to inform industry and the community about the reforms the Government is implementing and about what is expected and required of industry.[343]

Audit of high-risk facilities

6.82 As mentioned above, OEH has commenced a program of audits targeting industries that pose a high risk of environmental harm. Initial audits are being conducted at 42 high-risk facilities across the State that store toxic, hazardous or dangerous substances in large quantities or volumes. These include oil refineries, chemical processing plants, large chemical and gas storage depots and large chemical warehouses.

6.83 The audits are focusing on making sure that industry manages potential risk to people and the environment, and that adequate emergency response procedures are in place should an incident occur. Any deficiencies found will be systematically addressed.[344]

Other measures

6.84 Other measures being undertaken by particular agencies in response to the incident of 8 August 2011 are noted in Chapters 7-9.

---

341 *LA Debates* (13/10/11) 5964.

342 Hon Robyn Parker MP, Minister for the Environment, 'Newcastle Community Consultative Committee announced', *Media Release*, 4 November 2011.

343 *LC Debates* (8/11/2011) 7004.

344 *LA Debates* (13/10/11) 5964.

Committee comment

6.85 The NSW Government took a number of actions in response to the incident on 8 August 2011 including the establishment of the O'Reilly Report. The Committee recognises that the NSW Government has substantively accepted the recommendations in the O'Reilly Report and is in the process of implementing them.

6.86 The Parliament also passed the Protection of the Environment Legislation Amendment Bill 2011 which was introduced by the Government. The Committee notes that the legislation contains useful reforms to the way in which pollution incidents are managed in NSW.

Future environmental monitoring of the Kooragang Island plant

6.87 While useful reforms have been introduced following the 8 August 2011 incident to ensure that future pollution incidents are responded to more effectively by industry and government, there are further issues which require ongoing action in relation to Orica's ammonia plant. These issues concern:

- the need for safeguards with respect to modifications to the plant that may be made in future overhauls or upgrades of the plant
- the need to ensure that the potential for offsite impact is adequately addressed in Orica's incident-response procedures
- the need for monitoring stations to ensure early warnings of any future pollution events.

6.88 There is also a need for guidance for industry generally in implementing the new legislative provisions concerning the notification of pollution incidents and in particular the interpretation of the requirement to notify 'immediately'.

Safeguards for future modifications of Orica's ammonia plant

6.89 In Chapter 5 the Committee found that Orica's inadequate risk assessment and hazard studies prior to the incident had contributed to the seriousness of the leak and the failure to contain the leak to the site.

6.90 The Committee noted that while Orica had conducted hazard studies and assessments of the risks of various aspects of the plant, those assessments had failed to identify the issues which ultimately led to the incident, namely, the volume of the condensate produced during the start up of the plant and the inability of the drainage and containment systems of the plant to handle that volume.

6.91 Since the incident Orica has implemented wide-ranging changes to the plant and its procedures to address the immediate cause of the incident and the contributory factors, in accordance with recommendations of independent experts and the requirements of OEH. However, the Committee is concerned that the risk management processes of the company may fail again in the future if modifications are made to the plant in maintenance overhauls or capacity upgrades.

6.92 As part of its response to the incident to date OEH has required Orica to fund an independent engineer to identify the cause of the incident and recommend changes to the plant. OEH has also required Orica to fund a mandatory environmental audit of its Kooragang Island site including the ammonia plant which is due to report by May 2013. The Committee believes that a continuation of this approach would enable OEH to ensure that any risks associated with the design of future modifications to the plant are identified and addressed before those modifications are made.

6.93 As discussed in Chapter 3 the maintenance cycle of the plant involves a major maintenance overhaul every five years. The most recent five-yearly overhaul was that which led to the incident on 8 August 2011. The Committee understands that the next major maintenance overhaul of the plant is due in 2016, being five years after 2011.

Recommendation 4

That the Office of Environment and Heritage require Orica to engage and fund appropriate independent experts to oversee any modifications to the plant in the next major maintenance overhaul of the plant in 2016 and in any upgrades to the plant prior to that date.

Ensuring that Orica's incident response procedures address potential impacts

6.94 In Chapter 5 the Committee noted that, until midmorning on the day after the incident when a report of possible fallout in Stockton was received, Orica staff had believed that the emission was unlikely to have travelled beyond the site. This belief is said to have been based on observations of the location of the onsite fallout and efforts to prevent discharge to the Hunter River.

6.95 While noting these efforts, however, the Committee found that Orica staff ought to have anticipated that there was potential for Stockton communities within the path of prevailing winds to be affected by an airborne emission nearly 60 metres high. The Committee also found that Orica's approach to the assessment of the potential extent of leak was inadequate

6.96 In view of these concerns the Committee concluded that OEH should ensure that Orica's response procedures clearly address the need to consider all relevant factors when assessing potential impacts from airborne emissions including the height and force of emissions as well as the location of any onsite fallout.

6.97 The Emergency Response Plan for Orica Kooragang Island has been substantially rewritten since the incident in consultation with WorkCover. During this inquiry the Committee was informed that the revised Emergency Response Plan has reached the appropriate standard.[345]

6.98 However, recent legislative amendments discussed earlier in this chapter include new requirements for industry to develop more expansive procedures in relation to pollution incident response. Under those amendments, activities licensed under the *Protection of the Environment Operations Act 1997* will be required to prepare, implement and test pollution

345 Mr Sullivan, Evidence, 21 November 2011, p 70.

incident response management plans. A pollution incident management response plan must be in the form prescribed by the regulations and must include certain matters specified in the Act. These matters include the procedures to be followed by the license-holder or the occupier of premises in notifying a pollution incident to:

> (i) the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and
>
> (ii) the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and
>
> (iii) any persons or authorities required to be notified by Part 5.7 [of the *Protection the Environment Operations Act 1997*].[346]

6.99 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, informed the Committee that:

> The content of those pollution incident management response plans is yet to be finalised but it will be finalised via regulation and in fact there are project teams in place now to negotiate and to consult with both industry and communities about what the content of those plans should be.
>
> Now the plans are intended to be customised and site specific so that it is not a one size fits all arrangement. Each individual licensee is expected to have a plan, they must have a plan but that plan needs to be tailored to their own circumstances. So you need to take into account the particular community and the needs of that community that are around their site.[347]

6.100 Given the importance of ensuring there is no repetition of the 8 August 2011 incident, the Committee believes that Orica incident response procedures need to be monitored by OEH to ensure the pollution incident management response plan is adequate and specific to the problems of the site.

Recommendation 5

That, as part of the Pollution Incident Management Response Plan to be developed for Orica's Kooragang Island site, or by another appropriate mechanism, the Office of Environment and Heritage ensure that Orica's incident-response procedures address the need to consider all relevant factors when assessing potential impacts, including the height and force of emissions as well as the location of any onsite fallout and whether there are off-site impacts following all serious incidents.

346 *Protection of the Environment Operation Act 1997* s 157C.

347 Mr Sullivan, Evidence, 21 November 2011, p 66.

Air monitoring stations in Stockton

6.101 A number of submissions to the Inquiry called for additional air monitoring in Stockton. Orica informed the Committee that it has agreed to consider funding additional of air monitoring in Stockton provided it is scientifically valid and useful in monitoring the possible emissions from the Kooragang Island plant.[348] Orica also advised the Committee that a factor in Orica's decision as to what additional air monitoring should be installed in Stockton will be the extent of the air monitoring to be decided on by the Newcastle Community Consultative Committee.[349]

6.102 The Committee understands that the Newcastle Community Consultative Committee has already been a forum for discussion of issues concerning the nature and timing of additional air monitoring that may be provided by Orica in Stockton, including the issue of permanent and temporary air monitoring stations.[350] The Committee supports the continued use of the Newcastle Community Consultative Committee to advance negotiations between Orica, residents and the EPA in relation to the issue.

Guidance for industry in complying with new legislative notification requirements

6.103 One of the recent legislative amendments discussed earlier in this chapter concerns the timeframe within which pollution incidents must be notified to EPA and other government authorities.

6.104 Under the previous regime, section 148 of the *Protection of the Environment Operations Act 1997* provided that a pollution incident causing or threatening material harm to the environment had to be notified to the relevant regulatory authority 'as soon practicable'. Following the recent amendments, however, pollution incidents must now be notified 'immediately' to the authorities.

6.105 In its submission to this inquiry the Environmental Defenders' Office (EDO) noted that the amendment to the notification requirement in section 148 of the Act did not reflect the O'Reilly Report's recommendation that incidents notified 'immediately or within one hour'. EDO also submitted that without further guidance as to what constitutes 'immediately' the term could be interpreted in a number of ways:

> The EDO supports the alteration to the 'as soon as practicable' time limit for notification of a 'pollution incident', currently set out in s 148(2) of the POEO Act. We note that Recommendation 1 of the O'Reilly Review proposed an amendment that would require notification 'immediately or within one hour of the incident

348 Answers to questions on notice taken during evidence, 17 November 2011, Mr Liebelt, Question 1, p 1.

349 Answers to questions on notice taken during evidence, 17 November 2011, Mr Liebelt, Question 1, p 1.

350 See, for example, Mr Keith Craig, Member, Stockton Community Action Group, *Stockton environmental monitoring Information*, presentation to the Newcastle Community Consultative Committee, accessed 10 February 2012, <www.environment.nsw.gov.au/resources/about/Keith%20Craig%20SCAG%20Stockton%20Environmental%20Monitoring.pdf>

> occurring', but that the Bill, in Sch 2[2], omits 'within one hour'. The reasoning behind this omission is unclear.
>
> In the absence of a specified time period, the EDO submits that further guidance should be given on the meaning of the term 'immediate' in this circumstance. We note that the Courts have interpreted requirements of 'immediate notice' and similar phrases, depending on the circumstances in question, as requiring notice 'at the first reasonable opportunity';4 or 'with all reasonable speed considering the circumstances of the case'.5 Without further guidance on what constitutes 'immediately' in the circumstances of pollution incidents under the POEO Act, the term could be interpreted in a number of ways, ranging from being no more stringent than the 'as soon as practicable' standard; or, alternatively, applying comparatively harshly, especially in light of the increases in penalties proposed in the Bill.6 We note that we otherwise support the increase in penalties.
>
> The EDO would support further guidance in the form of setting out specific classes of pollution or environmental harm that have degrees of urgency attached to them. This information could also be used to inform the requirements of the proposed pollution incident response management plans to be prepared by holders of environment protection licences, and others engaged in industry.7.[351]

6.106 The OEH website currently contains the following explanation of 'immediately' in relation to the notification of pollution incidents:

> As 'immediate' is not defined in the legislation, it has its ordinary meaning, that is, licensees need to report pollution incidents promptly and without delay to ensure that the appropriate agencies have the information they need to respond within an appropriate time.[352]

6.107 However, references to 'promptly' and 'without delay' may not be sufficiently precise to ensure that the need for urgency in reporting pollution incidents is clearly understood by industry.

6.108 The submission from EDO also identified a need for guidance to assist industry in understanding when 'material harm to the environment is caused or threatened' within the meaning of the Act to facilitate compliance with the notification requirements:

> We also note that at present, the POEO Act provides that pollution incidents must be notified when "material harm to the environment is caused or threatened". The EDO would support the provision of further guidance regarding this threshold. Such guidance might also be incorporated in pollution incident response management plans, noted at 1.1 above.[353]

6.109 The Committee agrees that with the introduction of a shorter timeframe for the reporting of incidents it is now even more critical than before that industry is able to clearly identify when pollution incidents cause or threaten material harm within the meaning of the Act.

---

351 Environmental Defenders Office, Submission, p 2.

352 Office of Environment and Heritage, 'Protection of the Environment Legislation Amendment Act 2012,' accessed 7 February 2012, <www.environment.nsw.gov.au/legislation/poelegisamend2011.htm>.

353 Submission No. 12, Environmental Defenders Office, p 2.

6.110 The Committee notes that EPA is currently preparing a regulation and associated guidance concerning matters that need to be addressed by licensees in their pollution incident management response plans.[354] The Committee believes that the issues raised by EDO could usefully be addressed in that process:

Recommendation 6

That, when developing requirements concerning pollution incident response management plans pursuant to the recent legislative amendments, the Office of Environment and Hertiage include appropriate definitions as to the meaning of 'immediately', and when 'material harm to the environment is caused or threatened'.

354 Office of Environment and Heritage, 'Pollution incident response management plans: Proposed amendments under the POEO (General) Regulation 2009', accessed 7 February 2012, <www.environment.nsw.gov.au/resources/licensing/20120030pirmpamends.pdf>.

Chapter 7 The Government's response – Health

This chapter provides an analysis of Health's response to the chromium VI leak from Orica Kooragang Island on 8 August 2011. The chapter first discusses Health's role in responding to pollution incidents. It then considers how and when Health was notified of the fugitive chromium VI emissions and the agency's immediate actions following notification. The chapter also examines Health's other actions in response to the leak including its health risk assessment of the situation and the provision of public health advice to Stockton residents. The chapter concludes with a discussion of Health's procedural reviews since the leak.

For the purposes of this chapter Health refers to NSW Health including Hunter New England Population Health (HNEPH), the NSW Ministry of Health and Dr Kerry Chant, Deputy Director General, Population Health and Chief Health Officer, NSW Ministry of Health.

Role in pollution incidents

7.1 The regulatory framework governing the reporting and management of pollution incidents in NSW is described in Chapter 2. This section provides an overview Health's role in responding to pollution incidents.

Response to pollution incidents

7.2 The NSW State Emergency Disaster Plan (Displan) sets out that Health is the combat agency for all health emergencies within NSW. The agency is responsible for coordinating the response to incidents that pose a risk to public health including the provision of relevant communication services.[355] NSW HEALTHPLAN and the Hazardous Chemicals/Chemical, Biological, Radiological Emergency Sub Plan (HAZMAT/CBR Sub Plan) also set out the agency's responsibilities during such incidents.[356]

7.3 The Hon Jillian Skinner MP, Minister for Health, advised the Committee that when responding to health emergencies it is Health's role: '… to assess the risk [posed by the incident], identify strategies to mitigate or control the risks and work with partner agencies, the community and industry to ensure this happens.'[357]

7.4 Health emergencies may result from environmental incidents. Minister Skinner explained that Health had on occasion responded to such events:

> Regrettably, incidents occur which have the potential to pose a risk to public health. These range from water quality incidents resulting from flooding events, through to chemical emissions from factories such as the 2007 incident involving the release of carcinogenic ethylene oxide from a factory situated in Sydney's northern beaches.[358]

355 State Emergency Management Committee, *NSW State Disaster Plan*, 2010, p 27.

356 NSW Health, *NSW HEALTHPLAN*, 2009 and State Emergency Management Committee *Hazardous Chemicals/Chemical, Biological, Radiological Emergency Sub Plan*, 2005, pp 12-13.

357 Hon Jillian Skinner MP, Minister for Health, Evidence, 21 November 2011, p 16.

358 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 16.

7.5 However, at the time of the 8 August 2011 emissions Health did not have a legislative role in responding to pollution incidents.

7.6 Following the leak at Orica the Parliament of NSW passed the Protection of the Environment Legislation Amendment Bill. The bill received assent on 22 November 2011, and the *Protection of the Environment Legislation Amendment Act 2011* ('the Act') began taking effect from 6 February 2012.

7.7 The Act alters Health's involvement in pollution incidents. For example Section 148 (8)(d) now requires that the Ministry of Health be notified of pollution incidents causing or threatening to cause material harm.[359] The Act also sets out that Health can recover costs from the occupier of a premises or any person it reasonably suspects of causing a pollution incident if an analysis of the human health and environmental risks arising from the incident is undertaken.[360]

Non-activation of Displan, NSW HEALTHPLAN or the HAZMAT/CBR Sub Plan

7.8 Health did not activate the Displan, NSW HEALTHPLAN or the HAZMAT/CBR Sub Plan in response to the Orica incident. The O'Reilly Report[361] explained this was because the leak did not result in any casualties requiring treatment:

> "With respect to the role of NSW Health in activating the plan, the HAZMAT/CBR sub plan states – this plan is to be activated when the hazardous materials/ CBR emergency involves or has the potential to involve the activation of HEALTHPLAN to manage casualties."
>
> There were no casualties requiring treatment, hence HEALTHPLAN was not activated. When NSW Health was notified of the incident on 10 August 2011, the required health response was a public health response that did not require activation of HEALTHPLAN.[362]

Committee comment

7.9 The Committee notes that at the time of the leak Health did not have a legislative role in responding to pollution incidents. However the agency plays a significant role in the response to incidents that pose a risk to public health. The Committee welcomes the *Protection of the Environment Legislation Amendment Act 2011,* which should ensure that Health has a more direct role in responding to pollution incidents in the future.

7.10 The Committee recognises that the Displan, NSW HEALTHPLAN and the HAZMAT/CBR Sub Plan were not activated in response to the chromium VI leak as there were no casualties requiring treatment.

---

359 *Amendment of Protection of the Environment Operations Act 1997* No 156, s 148 (8), Schedule 2.

360 *Amendment of Protection of the Environment Operations Act 1997* No 156, Part 9.3D, Schedule 2.

361 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011.

362 O'Reilly B, 2011, p 11 quoting NSW Health Folder 1 Tab 1, p 7.

Notification of the leak and immediate actions

7.11 This section briefly discusses the legislative requirements for Orica to notify Health of the leak, as well as Orica's own notification procedures for contacting Health. It then examines when Health was notified of the incident and the immediate actions taken by HNEPH, Dr Kerry Chant, Deputy Director-General Population Health and Chief Health Officer of the NSW Ministry of Health, and Minister Skinner. The section concludes with the debate that arose during the Inquiry about the notification process.

Legislative requirements

7.12 As discussed, at the time of the incident there was no legislative requirement for Health to be notified of pollution incidents. The O'Reilly Report supports this sentiment stating: '[t]he Health Department has no legislative responsibility to ensure any obligations of companies involved in the use of hazardous material in relation to notification to authorities are met.'[363] The *Protection of the Environment Legislation Amendment Act 2011* now sets out that the Ministry of Health be notified of pollution incidents.[364]

Orica's internal procedures

7.13 At the time of the incident Orica did not have any specific internal procedures requiring that Health be notified of pollution incidents. Mr Stuart Newman, Site Manager of Orica Kooragang Island, explained that on 8 August 2011 Orica's onsite emergency planning including the *KI Emergency Response Plan* did not have any clear linkages to Health because the company's notification procedures centered on WorkCover and/or OEH.[365]

7.14 As discussed in Chapter 5, since the incident Orica has updated its emergency response procedures. The new procedures require that the Hunter New England Area Environmental Health Unit be notified of events that have potential toxic or carcinogenic impacts on the community, and/or where an incident involves potential for significant off-site impacts on people.[366]

Hunter New England Population Health

7.15 Hunter New England Population Health (HNEPH) is the unit of Hunter New England Local Health District responsible for delivering population health services to the Hunter and New England regions.[367] HNEPH staff provided support to Health's response to the incident at Orica.

---

363 O'Reilly B*,* 2011, p 29.

364 *Amendment of Protection of the Environment Operations Act 1997* No 156, s 148 (8), Schedule 2.

365 Mr Stuart Newman, Site Manager, Orica Kooragang Island, Evidence, 15 November 2011, p 24.

366 Answers to questions taken on notice during evidence 7 December 2011, Orica Limited, Question 3, p 1.

367 Hunter New England Local Health District, 'About HNE Population Health', accessed 8 February 2011, <www.hnehealth.nsw.gov.au/hneph/about_hunter_new_england_population_health>.

7.16 As discussed in Chapter 5, a crisis management team formed by Orica on Tuesday 9 August 2011 began the process of notification of agencies and Stockton residents. Orica notified HNEPH of the incident at 11.30 am on 10 August 2011.[368] The notification included the following information:

- Chromium had likely been released from Orica Kooragang Island.
- OEH had been notified of the incident.
- Workers had not reported any illnesses.
- Occupational health consultants had been consulted for advice on the assessment and care of workers.[369]

7.17 The notification did not mention that Orica had verified that chromium VI deposits had been located in Stockton on the morning of 9 August 2011.[370]

7.18 After being notified of the incident HNEPH followed protocol and contacted Hunter New England Health Services Functional Area Controller and HAZMAT to determine whether either entity had received notification, or started an investigation of the incident.[371]

7.19 HNEPH also monitored regional hospital for any presentations related to the incident. There were no presentations recorded.[372]

7.20 Further information about the incident was obtained during a telephone conversation between HNEPH and Orica at 2.25 pm the same day, including:

- Confirmation that 'hexavalent chromium solution' had been identified from a deposit on the Orica Kooragang Island site.
- The potentially affected area of Stockton had been determined based on the wind direction at the time of the release.
- Orica was ready to deploy teams into the potentially affected area of Stockton to inspect for deposition and directly contact residents.[373]

7.21 There was debate during the Inquiry as to whether Orica was instructed by the Office of Environment and Heritage (OEH) to notify Health of the incident. For further discussion of this issue see Chapter 5.

7.22 For further discussion of HNEPH actions following the leak see 7.41 to 7.149.

368 Submission 21, NSW Ministry of Health, p 1.

369 Submission 21, p 1.

370 Submission 16, Orica Limited, p 6.

371 Submission 21, p 1.

372 O'Reilly B, 2011, p 16.

373 Submission 21, p 1.

Chief Health Officer

7.23 Dr Kerry Chant, Deputy Director General Population Health and the Chief Health Officer, NSW Ministry of Health was responsible for notifying the community of the public health response to the incident.[374] Dr Chant appeared before the Select Committee on Kooragang Island Chemical Leak on 21 November 2011.

7.24 Dr Chant advised the Committee that Ms Lisa Corbyn, Chief Executive of the Office of Environment and Heritage, notified her of the incident at approximately 5.40 pm on 10 August 2011.[375] Ms Corbyn provided the Chief Health Officer with a brief description of the leak and the results of the preliminary deposition samples taken from the Stockton area.[376]

7.25 At this time Dr Chant assumed control of the public health response to the incident and Health adopted the role of lead responding agency.[377]

7.26 Immediately following her conversation with Ms Corbyn, Dr Chant contacted the Director of Health Protection to receive a brief précis of the incident and then phoned the Director of the Environmental Health Branch.[378]

7.27 In its submission to the Inquiry Health noted that Dr Chant also retrieved a message on her telephone from Minister Skinner's office at approximately 5.54 pm the same day alerting her to the incident.[379]

7.28 For further analysis of Dr Chant's actions in response to the incident see 7.41 to 7.149.

Minister Jillian Skinner MP

7.29 The Hon Jillian Skinner MP is the current NSW Minister for Health. Minister Skinner attended the Inquiry into the Kooragang Island Orica chemical leak hearing on 21 November 2011.

7.30 Minister Skinner advised the Committee that she was notified of the chromium VI leak by her staff at 5.50 pm on 10 August 2011.[380] After being informed of the incident Minister Skinner immediately confirmed that Dr Chant would lead Health's response to the leak:

> When I was advised about this incident by my staff, who had been in contact with the Office of Environmental Health, I was told that the - the first question I asked was is Dr Kerry Chant involved and the answer was yes, because there was a potential public health risk, she was going to be responsible then for doing the testing and determining

374 Pellegrini E, NSW 'Chief Health officer Dr Kerry Chant not told of Orica spill for 48 hours', *The Sunday Telegraph*, 28 August 2011.

375 Dr Kerry Chant, Deputy Director General Population Health and Chief Health Officer, NSW Ministry of Health, Evidence, 21 November 2011, p 17.

376 Submission 21, p 2.

377 O'Reilly B, 2011, p 16 and p 34.

378 Dr Chant, Evidence, 21 November 2011, p 17.

379 Submission 21, p 2.

380 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 17.

> the communication strategy to alert the public. I was totally confident that that is how it should be and that is in fact how it turned out.[381]

7.31 Minister Skinner also received briefings about the incident and was in regular contact with Dr Chant following the leak.[382]

Concerns about the notification process

7.32 Inquiry stakeholders including the Stockton Branch of the Australian Labor Party were concerned that Orica did not notify Health of the incident until over 40 hours after the leak occurred.[383]

7.33 The Chief Health Officer recognised there had been issues with the timeliness of the notification process. An article in *The Sunday Telegraph* reported Dr Chant saying she would have preferred to have been notified of the incident immediately:

> I would have loved to have heard about the incident when it was happening. That would have been the best opportunity to get messages out at that time of the plume - as the incident was happening. That was the time when gas (was) being emitted off-site from Orica.[384]

7.34 Dr Chant expressed a similar view to the Committee noting that she could have coordinated a more effective response to the leak had she been aware of it sooner:

> … it would have been most appropriate for all agencies to be aware about this incident on the Monday. That would have positioned us most appropriately to have a co-ordinated response, to get answers to questions and get precautionary measures out. I think no one disputes that fact, that the Monday was the best time for Orica to notify and that would have set in train an emergency response that would have been in the community.[385]

7.35 Minister Skinner and Dr Chant also noted that the Government had accepted the O'Reilly Report's recommendations concerning notification procedures.[386] For further discussion of the O'Reilly Report see 7.153 to 7.161.

Committee comment

7.36 The Committee notes that at the time of the incident there were no legislative requirements for Orica to notify Health of the fugitive chromium VI emissions nor did the company have any internal procedures about such matters.

---

381 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 17.

382 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 16.

383 Submission 2, Stockton Branch of the Australian Labor Party, p 2.

384 Pellegrini E, NSW 'Chief Health officer Dr Kerry Chant not told of Orica spill for 48 hours', *The Sunday Telegraph*, 28 August 2011.

385 Dr Chant, Evidence, 21 November 2011, p 22.

386 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 17 and Dr Chant, Evidence 21 November 2011, p 22.

7.37 The Committee acknowledges that Orica notified HNEPH of the incident at 11.30 am on 10 August 2011, over 40 hours after the leak occurred. Despite not being bound to contact Health of pollution incidents the company's actions are unacceptable. Orica's initial notification failed to mention that chromium VI had been detected in Stockton thus HNEPH was not provided with a full and accurate account of the incident. The Committee notes that HNEPH correctly followed procedure and contacted the Hunter New England Health Services Functional Area Controller and HAZMAT after receiving notification of the incident.

7.38 The Committee notes that the telephone conversation between Orica and HNEPH at 2.25 pm on 10 August 2011 provided more detailed information about the incident, particularly the identification of chromium VI and acknowledgement that Stockton residents may have been impacted by the leak.

7.39 The Committee notes that Dr Chant received notification of the incident from Ms Corbyn at approximately 5.40 pm on 10 August 2011, over 46 hours after the incident occurred. Once notified of the incident Dr Chant immediately assumed responsibility for coordinating the public health response to the leak. The Committee supports Dr Chant's view that had Orica notified Health of the incident in a timelier manner a more effective response to the leak could have been coordinated. The Committee also notes that this criticism can equally be directed to OEH.

7.40 The Committee understands that Minister Skinner was notified of the fugitive emissions by her staff at 5.50 pm on 10 August 2011, and that she received regular updates about the situation.

Finding 16

While Orica had no legislative requirement to notify Health regarding the chemical leak, had Orica or indeed the Office of Environment and Heritage, done so earlier the public health response to the incident could have been much more timely and more effectively coordinated.

Health actions in response to the leak

7.41 This section examines Health's response to the 8 August 2011 incident including:

- The health risk assessment undertaken to determine whether Stockton residents were at risk of exposure to chromium VI.
- The provision of Health advice to Stockton residents.
- Health's involvement in Orica's door knocking script.
- Health's use of information obtained from the OEH Environment Line.
- The provision of incident action plans to the Emergency Operations Controller.

7.42 It should be noted that since the leak Health has also been involved in activities to ensure the safe resumption of operations at Orica. For example, Health is a member of the Orica Start Up Committee and has conducted pre-recommencement desktop exercises.[387]

Health risk assessment

7.43 Following notification of the incident Health instigated a health risk assessment of Stockton residents to determine whether they were at risk of exposure to chromium VI. The health risk assessment had three distinct but sometimes overlapping stages:

- hazard identification
- acute risk assessment
- final risk assessment.

Hazard identification

7.44 Initially Health worked to determine what specific threat chromium VI exposure posed to the Stockton community. This section discusses Health's progress through the hazard identification phase, particularly its work with Orica and OEH. It also considers the agency's own investigations into the possible contamination of the Stockton water supply and local foodstuff.

Consultation with Orica

7.45 Health made numerous enquiries to Orica to assist its understanding of the potential hazard posed by the leak. As previously discussed, in the afternoon of 10 August 2011 Health had a telephone conversation with Orica to ascertain further details about the emission, as well as information about how the company was handling the situation including its planned precautionary health messages.[388] In its submission Health also detailed a conversation it held with Orica later that evening to discuss the company's preliminary investigation results:

> Over 25 properties inspected by Orica. Deposition identified on 2 cars and several letter boxes. No calls to their information telephone line. Orica advised that their toxicology consultants considered the risk to human health in Stockton to be very low.[389]

7.46 In the following days Health and Orica also had discussions to:

- Establish the size of the emission and potentially affected area of Stockton.
- Determine whether adjacent industries had been informed of the incident.
- Examine Orica's environmental testing results.

387 Submission 21, p 6.

388 Submission 21, p 1.

389 Submission 21, Appendix A, 'NSW Health Orica chromium incident draft timeline, August 2011', p 8.

- Request Orica to urgently provide its air quality monitoring data and health risk assessment documents.[390]

7.47 Orica provided Health with the PAE Holmes air modelling data of the incident and draft Toxikos risk assessment on 20 August 2011 and 21 August 2011 respectively.[391] Orica and Health also corresponded on 22-23 August 2011 about the unit risk values to be used in the assessment of cancer risk.[392]

7.48 For further discussion on Orica's response to the chromium VI leak see Chapter 5.

Collaboration with the Office of Environment and Heritage

7.49 Health worked collaboratively with OEH to gather evidence about the incident. For example, on the morning of 10 August 2011 Health and OEH began an investigation into whether any workers or residents had been impacted by the leak.[393]

7.50 Overall, OEH collected 71 environmental samples from around Stockton on 9-12 August 2011 including samples from the Early Learning Centre.[394] All of the OEH samples were analysed by Health's expert panel, independent expert clinical toxicologist Professor Alison Jones and independent cancer epidemiologist Professor Bruce Armstrong.

7.51 As discussed in Chapter 5, OEH has recently revised its analysis of the environmental samples taken from Stockton following the chromium VI emission. The revised results indicate that approximately 1 kg of chromium VI was emitted over Stockton.[395]

7.52 OEH also provided Health with reports received by operators of its Environment Line following the incident. There was debate during the Inquiry about the content of these reports and their inclusion in Health's final health risk assessment of the situation. For more detailed discussion about this debate see 7.132 to 7.142.

7.53 OEH representatives also participated on Health's expert panel. In its submission OEH noted that the agencies had worked well together in response to the leak.[396] For further discussion on how OEH responded to the incident see Chapter 6.

Health investigations

7.54 Health took steps to determine whether Stockton's water supplies and foodstuff may have been contaminated by the chromium VI emissions. For example, on 11-12 August 2011 Health identified and tested two potentially contaminated water sources in the affected six block area of Stockton.[397] Neither water source was found to be contaminated.[398]

390 Submission 21, Appendix A, pp 8-12.

391 Submission 21, Appendix A, p 12.

392 Submission 21, Appendix A, pp 12-13.

393 Dr Chant, Evidence, 21 November 2011, p 18.

394 Submission 21, Appendix A, pp 9-10.

395 Supplementary Submission 16a, Orica Limited, p 1.

396 Submission 17, Office of Environment and Heritage, p 10.

397 Submission 21, Appendix A, p 11.

7.55 The O'Reilly Report noted that Stockton's main water supply was not at risk of contamination: 'Stockton has a reticulated potable water supply provided by Hunter Water Corporation and there was no risk of this becoming contaminated.'[399]

7.56 On 11 August 2011 Health contacted the NSW Food Authority about the leak. Health had been concerned about the Hunter River's oyster harvest however the agency was informed that there were no active oyster licences in the area.[400] For further discussion about the NSW Food Authority's response to the incident see Chapter 9.

7.57 Health issued health advice urging Stockton residents to take precautions against the possible contamination of water and foodstuff.[401] For further information about this advice see 7.89 to 7.118.

Committee comment

7.58 The Committee acknowledges Health's extensive efforts to determine the potential hazards caused by the fugitive chromium VI emissions. Health worked diligently to collect and collate a vast amount of evidence about the leak from Orica, OEH and its own investigations. This information proved to be significant during the next phases of the health risk assessment.

7.59 The Committee notes that following notification of the incident Health was in regular contact with Orica. The information gathered during this phase ensured Health had an understanding of the nature of the chemical leak and Orica's response to the incident, including its precautionary health messages, public information campaign and toxicological results. Orica also facilitated Health's access to the toxicological experts being used by the company. The Committee appreciates that Orica provided Health with the PAE Holmes air modeling data and draft Toxikos risk assessment.

7.60 The Committee recognises the collaborative efforts of Health and OEH during the hazard identification phase. OEH and Health worked to identify potential deposition locations and to collect environmental samples in the wake of the chromium VI emission. The 71 samples collected by OEH provided critical evidence for the initial acute risk assessment and final health risk assessment.

7.61 The Committee notes that Health initiated its own investigations into the possible contamination of water supplies and foodstuff in Stockton. Health identified and tested two potentially tainted water sources neither of which proved to be contaminated. Health also notified the NSW Food Authority of the leak due to concerns about the oyster harvest in the Hunter River and issued public health advice encouraging the community to take precautions against the possible contamination of water supplies and foodstuff. For further discussion about Health's public health advice see 7.89 to 7.118.

398 Submission 21, Appendix A, p 13.

399 O'Reilly B, 2011, p 17.

400 O'Reilly B, 2011, p 17.

401 Submission 21, Appendix K, NSW Health, 'Orica identifies chemical release in the Hunter', *Media Release*, 11 August 2011, p 53.

Initial acute risk assessment

7.62 The initial acute risk assessment phase saw the establishment of the Chief Health Officer's expert panel and the release of *A Rapid Risk Assessment Following the Release of Chromium VI from the Orica Chemical Plant, Kooragang Island, 8th August 2011* by Professor Jones on 13 August 2011.

Expert panel

7.63 The expert panel met regularly during 11-15 August 2011 and included the Chief Health Officer, Professor Jones, Professor Armstrong, and representatives from OEH and Health.[402] The expert panel collated evidence about the incident and assessed whether the leak posed any health risks to the Stockton community.

7.64 During its initial meeting at 9.30 am on 11 August 2011, the expert panel formally requested that Orica provide responses to a set of 14 questions about the leak by 2.30 pm that afternoon, including:

> 1. What was the exact chemical composition of the emissions from Orica (Cr VI – how much, what other chemicals and how much)?
>
> …
>
> 6. Geographic representation of the samples taken – what was sampled, where, and the levels were detected at what locations both on and offsite?
>
> 7. Air dispersion modeling – how was this done, and did it take into account precipitation and other factors apart from wind direction?
>
> 8. What is the community area identified as being potentially exposed? What assumptions were used in this calculation?
>
> …
>
> 14. What advice is Orica giving or has Orica given to the community generally or to specific members of the community about action they should or should not take in relation to visible or assumed contamination of their property by material from the release?[403]

7.65 In response to the request Orica provided Health with the *Release of Chromium from the SP8 Stack in the KI Ammonia Plant.*[404] The expert panel reconvened at 3.50 pm on 11 August 2011 to review the new evidence and determined that the public health risk continued to be low. During the meeting the panel also approved the content of the first factsheet providing public health advice to the local community, and the specific precautionary advice to the Early Learning Centre.[405]

---

402 Submission 21, Appendix A, pp 8-11.

403 Submission 21, NSW Ministry of Health, Appendix B, Dr Rodney Williams, Dr Bruce Niven, John Frangos, Garry Gately and Russell Higgins, *Release of chromium VI from the SP8 vent stack in the KI ammonia plant; response to Hunter New England Local Health District Request for Information 11/8/11*, p 21.

404 Submission 21, p 2.

405 Submission 21, Appendix A, p 9.

7.66 The expert panel later reconvened four times, twice on 12 August 2011 and then once each on 13 and 15 August 2011. During these meetings it continued to review collated evidence about the leak and concluded that the risk to public health remained low.[406]

Rapid health risk assessment

7.67 Professor Jones prepared *A Rapid Risk Assessment Following the Release of Chromium VI from the Orica Chemical Plant, Kooragang Island, 8th August 2011* which provided a preliminary analysis of the likely risk of Stockton residents ingesting chromium VI. The report's findings were based on the OEH test results Health received at 11.26 pm on 12 August 2011.[407]

7.68 The report used worst case scenario modelling to conclude that it was implausible for a child or adult to suffer adverse effects from the chromium VI leak on 8 August 2011:

> In making a risk assessment a very worst case scenario risk assessment for ingestion as a route of exposure has been worked through and indicate that for a child to get adverse effects is very unlikely and would require an implausible chain of events – and for an adult it is also implausible.[408]

7.69 Health uploaded the rapid health risk assessment on to its website to ensure the public could access the information.[409]

7.70 As previously mentioned, OEH's recently revised analysis of its Stockton environmental results has impacted on the potential adverse health risk associated with the emission. In its supplementary submission Orica noted that:

> the revised modelling based on the new OEH data suggests the theoretical risk of any adverse health outcomes associated with the Chromium VI release is further reduced and this provides further support for the previous conclusion of negligible health impacts in Stockton as a result of the 8 august incident.[410]

Committee comment

7.71 The Committee acknowledges the efforts of the Chief Health Officer's expert panel in analysing the collated evidence concerning the 8 August 2011 incident. The expert panel met a total of six times during which time its members were able to assess the available evidence and conclude that the public health risk posed by the chromium VI emission remained low. Additionally, Dr Chant's ability to convene the expert panel, which included two independent experts, within 24 hours of receiving notification of the leak, indicates that Health is adequately prepared to respond to such incidents.

7.72 The Committee recognises the work of independent expert toxicologist Professor Alison Jones in preparing *A Rapid Risk Assessment Following the Release of Chromium VI from the Orica*

406 Submission 21, Appendix A, pp 10-11.

407 Submission 21, Appendix F, Professor Jones A, *A Rapid Risk Assessment Following the Release of Chromium VI from the Orica Chemical Plant, Kooragang Island, 8th August 2011*, 13 August 2011, p 34.

408 Submission 21, Appendix F, p 35.

409 Submission 21, p 5.

410 Supplementary Submission 16a, p 1.

Chemical Plant, Kooragang Island, 8th August 2011. The report clearly set out that, even when using worst case scenario modelling, it was implausible for Stockton residents to have ingested chromium VI following the fugitive emissions. It should be noted that the report was based on OEH test results provided to Health at 11.26 pm on 11 August 2011, underscoring the importance of the collaboration between the agencies.

7.73 The Committee notes that OEH's revised findings support the rapid risk assessment's conclusion that the emission posed a negligible adverse health risk to Stockton residents.

7.74 The Committee notes that the acute risk assessment report was released on 13 August 2011, five days after the incident, however it would have been disingenuous for Health to provide a definitive evaluation of the possible health risks posed by the leak before Professor Jones was able to undertake an accurate analysis of the evidence.

Final risk assessment

7.75 The final risk assessment of the situation was provided in Professor Armstrong's *Release of Chromium VI from the Orica chemical plant, Kooragang Island, Stockton 8th August 2011 Final Health Risk Assessment Report* on 2 September 2011. The report examined the cancer risk posed by the chromium VI emission.

7.76 The final risk assessment presented two scenarios that estimated the health risks posed to Stockton residents by the leak. The scenarios primarily considered the PAE Holmes' air modelling data, OEH's environmental samples and standard exposure factors.[411] The first scenario measured the worst case estimate of risk and the second scenario used the maximum reasonable calculation of exposure.[412] Professor Armstrong explained the factors the scenarios took into account:

> [e]ach scenario makes assumptions about human factors (such as the location of a person at the time of the release and the quantity of home grown vegetables that person eats) and environmental factors (such as the levels of chromium in the air and the amounts that might have been on surfaces or soil in the area of Stockton directly downwind of the Orica plant at the time of the incident).[413]

7.77 The report confirmed Professor Jones' conclusion that there were no expected immediate health effects from the incident and concluded: '[w]e would not expect to see a single extra case of cancer in the population of Stockton as a result of chromium VI exposure.'[414]

7.78 Again, OEH's revised data supports the findings of the final risk assessment.[415]

7.79 Health also uploaded the final health risk assessment on to its website.[416]

411 Submission 21, Appendix G, Professor Armstrong B, *Release of Chromium VI from the Orica chemical plant, Kooragang Island, Stockton 8th August 2011 Final Health Risk Assessment Report*, 2 September 2011, p 39.

412 Submission 21, p 36.

413 Submission 21, Appendix G, p 38.

414 Submission 21, Appendix G, p 36.

415 Supplementary Submission 16a, p 1.

416 Submission 21, NSW p 5.

Committee comment

7.80 The Committee acknowledges the work of independent cancer epidemiologist Professor Bruce Armstrong in preparing *Release of Chromium VI from the Orica chemical plant, Kooragang Island, Stockton 8th August 2011 Final Health Risk Assessment Report*. The final health risk assessment used PAE Holmes' air modelling data, OEH's environmental samples and standard exposure factors to produce two scenarios, a worst case estimate of risk and a maximum reasonable calculation of exposure, to estimate the health risks posed to Stockton residents by the leak. The Committee notes that report found that there were no expected health effects from the incident thus supporting the findings of the initial acute risk assessment. This conclusion is further supported by the recent analysis of OEH's revised data.

Finding 17

No evidence has been found by Health of any expected adverse health impacts on Stockton residents either in the immediate or longer term. However negative health impacts reported to the Environment Line from Stockton residents were not made public despite a strong public interest to do so.

Health responded in a timely fashion, and has discharged its responsibilities thoroughly in regard to hazard identification, acute risk assessment and final risk assessment following notification of the chemical leak.

Health risk assessment v. urine and blood testing

7.81 During the Inquiry there was a suggestion that individuals who were potentially exposed to the chromium VI should have been subjected to urine and blood testing.[417] Dr Chant advised the Committee that the expert panel had examined the issue and determined that a health risk assessment was a more suitable option for measuring exposure:

> … in this context, the expert advice available to us is the urine testing or serum test for red blood cell for chromium testing was not useful, was not valid, and the best way of testing exposure was the health risk assessment process, and that is by which we use the environmental contamination levels of contaminants where we look at what concentration of hexavalent chromium was in the air and then we model assumptions, including controls for things like children. We add sensitivity factors. We basically do what we call worst scenario but also best justified case scenario, which look at what people could be potentially exposed to, and that that could provide a more robust and worst case scenario for maximum exposure for population protocols, including adjustment to vulnerable groups.[418]

7.82 The Committee asked Dr Chant to elucidate on why one-off tests such as urine and blood sampling were not as useful as a health risk assessment in measuring the long-term health impacts of exposure to chromium VI:

417 Hon Jeremy Buckingham MLC, Evidence, 21 November 2011, pp 24-25.

418 Dr Chant, Evidence, 21 November 2011, p 26.

> In relation to … hexavalent chromium, the one-off measures would not be useful because you get variety in the population in terms of baseline measures so in terms of being a much more conservative and valid approach, as I said, the advice was modelling people's exposure through a variety of standard assumptions about how much people breathe, how much soil a one-year-old consumes, and how much green-leaf vegetables people consume. That will give a very conservative estimate of what your exposure is and that is what we are interested in in terms of being able to provide advice to the community about whether there are any acute health effects or any long-term health effects.[419]

7.83 Dr Chant further clarified that one-off testing had limited relevance because a number of variables affect the impact chromium VI may have on individuals, including:

- tobacco smoking and exposure to cigarettes
- genetics
- previous exposure to the chemical.[420]

7.84 The Committee also expressed concern about the use of urine tests as part of the health surveillance conducted on Orica employees after the incident. For further discussion about the health surveillance conducted on Orica staff see Chapter 8.

Public information concerning urine and blood testing

7.85 An inquiry participant suggested that the community had not been appropriately informed about blood testing for chromium VI exposure. Ms Vicki Warwyck, a resident of Stockton, claimed that Health had deliberately withheld information about the availability of chromium red cell blood tests.[421]

7.86 Health did however provide GP Alert with information concerning urine and blood testing for exposure to chromium VI via email on 15 August 2011:

> Given the measured levels of environmental release from the Orica plant on Kooragang Island and the very low levels of hexavalent chromium measured in the environmental samples in Stockton, there is no indication for testing residents in the area. Human blood or urine testing for hexavalent chromium does not provide a prediction of human health impacts.[422]

Committee comment

7.87 The Committee accepts Dr Chant's advice that the health risk assessment approach was the most appropriate method of measuring exposure to chromium VI. The approach allowed for the analysis of evidence such as the OEH environmental samples and PAE Holmes air modeling data, and added certain control variables and sensitivity factors to produce both a worst case scenario and a best justified case scenario of the public health risk of exposure to

419 Dr Chant, Evidence, 21 November 2011, p 27.

420 Dr Chant, Evidence, 21 November 2011, p 27.

421 Submission 22, Ms Vicki Warwryk, p 1.

422 Submission 21, Appendix D, 'Email from HNEPH Director to GP Alert', p 31.

chromium VI. One-off measures such as urine and blood tests would not have been as useful because of variations in the population's baseline measures, such as exposure to tobacco smoke and previous exposure to chromium VI.

7.88 The Committee notes that the information regarding the unsuitability of blood and urine tests for measuring exposure to chromium VI was conveyed to GP Access on 15 August 2011. Ms Warwyck's concern that she was not appropriately informed about the availability of chromium red blood cell tests raises an issue about the provision of public health advice following the leak. The Committee considers Ms Warwyck's experience to be an example of the problems an individual may encounter if they are not provided with accurate advice in a timely manner.

Health advice to Stockton residents

7.89 From 11 August 2011 Health was in regular direct contact with the Stockton community about the chromium VI emissions. This section examines the provision of public health advice about the leak and provides an analysis of the debate surrounding its timely dissemination.

Factsheets

7.90 Late in the afternoon of 10 August 2011 Dr Chant determined that it would be appropriate to provide written public health advice about the chromium VI emission to the affected Stockton residents. In its submission, Health explained the advice would be based on expert input and separate from Orica's precautionary health messages.[423] The advice included a set of three factsheets concerning the chromium VI emissions that were distributed via letterbox drop in the affected area, at local Stockton businesses, emailed to certain government and private sector employees and posted on the relevant Health websites.[424]

7.91 The first factsheet *Chromium VI release from Orica at Kooragang Island* was initially distributed from 7.10 pm – 9.15 pm on 11 August 2011 and noted:

- There had been no health affects resulting from the incident.
- The incident posed a low health risk to the community.
- The NSW Government was working towards verifying any potential health risks.
- Ways to reduce exposure in the interim.
- Chromium VI degrades into a safer form within 10 days on contact with soil.[425]

7.92 Factsheet two *Stockton chromium results confirm no health risk to residents* was released on 14 August 2011. The factsheet declared that the emissions posed no health risks to residents:

423 Submission 21, p 2.

424 Submission 21, pp 4-5.

425 Submission 21, Appendix H, NSW Health, Factsheet, 'Chromium (VI) release from Orica at Kooragang Island', 11 August 2011, p 48.

> … the levels of hexavalent chromium found in Stockton are very low and that the results [of OEH's 71 environmental samples] now confirm that there is no health risk to the residents of Stockton from the release of hexavalent chromium last Monday [8 August 2011].[426]

7.93 The second factsheet also listed precautions Stockton residents should take concerning rainwater tanks and foodstuff:

- Wash any yellowish brown droplets on cars, outdoor objects or surfaces with tap water.
- These should be washed on the lawn or near the drain.
- Don't drink water from rain water tanks. These tanks should be emptied onto the lawn or down the drain.
- Don't eat home grown leafy vegetables or fruits.
- Wash all home grown root vegetables (this is a good lifetime habit).
- Wash hands before eating or smoking after being outside (this is also a good lifetime habit).
- Ensure outdoor playing areas at home have been washed down by strong rain or tap water.[427]

7.94 The factsheet continued: '[e]ven though the sample results reveal no threat to health, we recommend residents continue to take these simple steps to protect children by minimising exposure to any dust that may contain chromium.'[428]

7.95 The final factsheet also entitled *Stockton chromium results confirm no health risk to residents* was released on 16 August 2011. The factsheet included seven key messages about the incident:

> 1. Chromium VI was not detectable in the *vast* majority of samples. No chromium was detected in the 5 samples from the child care centre in Barrie Crescent.
>
> 2. When detected, chromium VI was at low levels that do not represent a risk to the health of Stockton residents.
>
> 3. Chromium VI was only detected in the area identified as most likely to be exposed when the initial risk to residents was assessed considering the prevailing wind.
>
> 4. The concentrations of chromium VI detected are consistent with expectations based on the amount of chromium VI estimated to have been released outside the plant.
>
> 5. Chromium VI converts to a much safer, naturally occurring form of chromium (III) within 10 days of contact with the environment.
>
> 6. Residents of Stockton within the area bounded by Fullerton Street, Griffith Avenue, Barrie Crescent and Flint Street (six block area) should follow the simple precautionary measures previously advised until Friday 19 August. No precautionary measures are required after this date.

426 Submission 21, Appendix I, NSW Health, Factsheet, 'Stockton chromium results confirm no health risk to residents', 14 August 2011, p 50.

427 Submission 21, Appendix I, p 50.

428 Submission 21, Appendix I, p 50.

> 7. The Office of Environment and Heritage has defined an outer area larger than the confirmed affected area in the Clean Up Notice issued to Orica. This is a precautionary approach to not limit Orica's area of responsibility in relation to any cleanup activities that may be required.[429]

7.96 The final factsheet also included further details about the OEH test results and a map of the affected area.[430]

Other public health advice

7.97 Health also provided advice to the affected community on the following occasions:

- 11 August 2011 – specific precautionary advice to the Early Learning Centre in Stockton.
- 11-18 August 2011 – Health staff wearing high visibility tabards deployed into Stockton to answer questions from concerned residents.
- 11-23 August 2011 – Health established a 24 hour information line to answer queries about the leak. The information line received 89 calls.
- 11-13 August 2011 and 2 September 2011 – Dr Chant represented Health at media conferences.
- 13 August 2011 - *A Rapid Risk Assessment Following the Release of Chromium VI from the Orica Chemical Plant, Kooragang Island, 8th August 2011* released.
- 15 August and 2 September 2011 – Health contacted GP Access to provide updated information about the incident.
- 23 August 2011 – Health representatives attended a community meeting at Stockton RSL.
- 2 September 2011 - *Release of Chromium VI from the Orica chemical plant, Kooragang Island, Stockton 8th August 2011 Final Health Risk Assessment Report* released.[431]

Committee comment

7.98 The Committee notes that Health created and distributed three factsheets concerning the possible health risk posed by the 8 August 2011 incident. The factsheets provided pertinent information concerning the potential health risk posed by the leak and encouraged Stockton residents to take certain precautions when using tank water or in the preparation of certain foodstuffs. Health ensured the factsheets were distributed around Stockton and made them available online.

7.99 The Committee acknowledges that Health also provided advice to affected residents on a number of other occasions, most notably the provision of specific precautionary advice to the

429 Submission 21, Appendix J, NSW Health, Factsheet, 'Stockton chromium results confirm no health risk to residents', 16 August 2011, p 51.

430 Submission 21, Appendix J, pp 51-52.

431 Submission 21, pp 4-5 and Submission 21, Appendix A, pp 9-13.

Early Learning Centre in Stockton and the release of the initial health risk assessment and final health risk assessment.

Concerns about the provision of public health advice

7.100 Inquiry participants expressed a great deal of frustration at the delay in the provision of public health advice, particularly as some Stockton residents had suffered adverse health effects following the leak. The Committee's attention was also drawn to the fact that the first factsheet was not distributed until the evening of 11 August 2011, over 24 hours after the Chief Health Officer had decided to provide public health advice and more than 50 hours after the incident occurred. Health argued a precautionary approach to information dissemination was taken to ensure the community received an accurate analysis of the potential health risk posed by the chromium VI emissions.

7.101 For discussion on the O'Reilly Report's evaluation of the provision of public health advice in this Chapter see 7.153 to 7.161.

7.102 Clr Sharon Claydon, Councillor of Newcastle City Council, described how Stockton residents potentially placed themselves and their families at risk of exposure to chromium VI because they had not received advice about incident:

> It was the three long days for Stockton residents before they received the health notification which was of particular concern. So we have parents in Stockton unknowingly sending their kids to preschool in the heart of the so-called fallout zone. We had children playing at home and at school in the outdoors and on play equipment that had been fully exposed to the fallout of hexavalent chromium. We had residents drinking water from their tanks, eating vegies from their garden, students from the neighbouring school in Mayfield sending hundreds of kids over here for their annual run and walk around the Stockton peninsular the morning after the hexavalent leak. People delaying reporting their symptoms to their GPs and workers on neighbouring sites of Kooragang Island not knowing to undergo their own medical checks.
>
> All of that because, yes, Orica took 16 hours to notify the relevant authority, but it took another 54 hours for the Government to notify this community. Three really long days of people in very anxious situations and had the data back from public health been more dire than it was then those three days would have been invaluable - could have been proven to be invaluable for Stockton residents.[432]

7.103 Forum participants including Mr Shane Gately and Mr James Giblin, residents of Stockton, expressed similar concerns.[433] For further discussion about the community's response to the incident see Chapter 4.

7.104 Mr Ark Griffin, owner and editor of the Stockton Messenger, described the ill-health he experienced after walking around Stockton on the evening of 8 August 2011:

---

432 Clr Sharon Claydon, Councillor, Newcastle City Council, Evidence, 14 November 2011, p 6.

433 See for example Mr Shane Gately, Stockton resident, Evidence, 14 November 2011, p 7 and Mr James Giblin, Stockton resident, Evidence, 14 November 2011, p 13.

> On the night of 8 August I was returning on foot from the ferry to my then home… [in] Stockton.
>
> The next morning .... [m]y eyes were watery and my nose was runny … that night … [m]y eyes were continually watering. I had to constantly dab at them with a tissue and my nose was running continuously. My throat was dry and sore in an unusual way.
>
> … on Wednesday, 10 August … there were flecks of blood in my snot suggesting multiple lesions. The dryness in my throat continued and seemed worse. I walk a lot. I knew that I did not have a respiratory tract infection because my fitness was not affected. Apart from my symptoms, I felt well. On Saturday, 13 August the symptoms started to subside. This was gradual and they took a month to completely subside.
>
> On Monday, 15 August multiple small shallow lesions had broken on my shins, they quickly formed crusts and scabs and healed and disappeared by Friday, 19 August. I did not see a doctor.[434]

7.105 The Committee also heard that eight callers to the OEH Environment Line claiming to be Stockton residents reported a range of ill-health effects from the leak.[435] For further discussion about this matter see 7.132 to 7.146.

7.106 Additionally, Orica's submission to the Inquiry stated that nine on-site personnel involved in the response to the incident reported minor skin or respiratory irritations.[436]

Reasons for the precautionary approach to the provision of public health advice

7.107 Health presented three primary arguments for its decision to take a precautionary approach to the provision of public health advice on the evening of 10 August 2011 and the morning of 11 August 2011:

- The agency was still in the process of analysing the available evidence and understood that the leak posed a low risk to public health.
- Orica was conducting its own public information campaign.
- The agency did not want to send inconsistent messages to Stockton residents.

7.108 In its submission to the Inquiry, Health explained that public health advice was not provided to Stockton residents prior to the evening on 11 August 2011 because the agency was still in the hazard identification and initial acute risk assessment phases, and additionally it considered the emissions to have posed a a low risk to public health:

> On the night of 10 August, the response remained in the hazard identification and initial acute risk assessment phases; this continued based on the decision of the expert panel on Thursday morning (11 August) that additional information was required to properly assess the potential hazard.

---

434 Mr Ark Griffin, Founder and Editor, The Stockton Messenger, Evidence, 15 November 2011, p 65.

435 Ms Linda Roy, Manager (Information Centre) Office of Environment and Heritage, Evidence, 21 November 2011, p 56.

436 Submission 16, p11.

> The environmental scan, including laboratory test results, conducted by OEH showed very low levels of chromium VI concentration (eg sparse and patchy potential contamination).
>
> Given the above and:
> - that the most likely route of any possible ongoing exposure was through ingestion following hand to mouth contact with contaminated surfaces and soil ingestion whilst outdoors (and it was thought that only very young children would be likely to engage in this behaviour and given that it was a cold winter night they were unlikely to be playing outside even in the early morning)
> - that based on current advice the risk of adverse health outcomes in those residing near the plant was very low,
>
> it was not considered appropriate to issue precautionary warnings on the night of 10 August but to assess the situation in light of all the evidence the next morning and then communicate the recommendations.[437]

7.109 Health also relied on Orica to disseminate advice via door knocking and letterbox drops in the affected area. Orica started door knocking homes in the affected six block area of Stockton at 2.30 pm on 10 August 2011.[438] The Chief Health Officer explained that Health provided preliminary comments on Orica's door knocking script and had been updated on the progress of the company's information campaign:

> By 7 pm on the Wednesday night, 25 households had been door knocked by Orica and in addition little cards had been left in the letterboxes of a number of others.
>
> Orica had advised the public health unit that their survey had identified some scant deposits. The level of chromium detected in the samples was quite low and they had initiated letterbox dropping at the most affected.[439]

7.110 For further discussion of Health's involvement in Orica's door knocking script see 7.119 to 7.131.

7.111 Dr Chant further justified the decision to take a precautionary approach to information dissemination by saying it was inappropriate to provide the community with inconsistent advice:

> There was a real concern out in the community about mixed messages; so on that assessment, we had taken a precautionary approach, messages had gone out to the most affected households, in terms of ongoing exposure pathways, I think that we had until morning to get the best advice as possible so we could go out and initiate that.[440]

437 Submission 21, p 3.

438 Submission 16, p 42.

439 Dr Chant, Evidence, 21 November 2011, p 18.

440 Dr Chant, Evidence, 21 November 2011, p 19.

Minister Skinner's response to criticism

7.112 The Committee asked Minister Skinner to respond to criticism about the timeliness of the public health advice to Stockton residents. Minister Skinner confirmed her confidence in Dr Chant and supported her decision to take a precautionary approach to information dissemination:

> I absolutely support Dr Chant's explanation that it was important to get the message right, to undertake the further testing before putting the messages out and in fact that is what happened.
>
> You have also got to remember, as Dr Chant has said, the precautionary measure was not only to those most immediately affected but because this incident happened on the Monday, there was a lesser degree of potential impact by the time we are talking.
>
> So that was important therefore in getting the further testing and the independent toxicologist report before the message was put out and that is in fact what happened.[441]

Provision of advice to the Early Learning Centre

7.113 There was a suggestion during the Inquiry that the Early Learning Centre in Stockton should have received its specific precautionary advice sooner than 11 August 2011.[442] Dr Chant was questioned about this issue during her evidence and explained it was highly unlikely that the Early Learning Centre had been affected by the leak because the plume did not cross over the facility however the centre was closed as a precautionary measure:

> There was no indication of - visual inspection of the premises indicated no evidence contamination; and in addition to that, testing on the childcare centre did not find any samples in sand pits and swabs of slippery dips and various other sites and also I can show you the map, and it clearly shows that the plume direction would have been south of the childcare centre, so on all of those bases, I am very confident that the childcare centre was not impacted and we have communicated extensively with the childcare centre.
>
> … it is precautionary in these circumstances for the childcare centre [to close] for reassurance to change the sand in the sand pit and to clean the facility. The childcare centre was in no way responsible for this, Orica was. It was important that the families had confidence in relation to the childcare centre for safety, and I understand Orica covered the cost of changing the sand and cleaning up in the childcare centre.[443]

Committee comment

7.114 The Committee appreciates the frustration Stockton residents felt following the chromium VI leak on 8 August 2011. It is particularly understandable in light of the evidence received by the Committee concerning the adverse health effects certain individuals reported following the leak. It would have been deeply distressing to have to wait until the evening of 11 August

441 Hon Jillian Skinner MP, Evidence, 21 November 2011, p 23.

442 Hon Luke Foley MLC, Evidence, 21 November 2011, pp 21-22.

443 Dr Chant, Evidence, 21 November 2011, p 22.

2011, over 50 hours after the leak occurred, to receive precautionary health advice from the Government. At the same time, the Committee recognises that Health was working to ensure that the community received the most accurate advice possible and was operating under the assumption that the leak posed a low risk to public health.

7.115 The Committee notes that during the evening of 10 August 2011 and morning of 11 August 2011 Health was working to properly assess the potential hazard caused by the leak. Health had received preliminary test results from OEH which showed that low levels of chromium VI had been detected in Stockton, and considered the risk to exposure through ingestion to be unlikely. The expert panel then had to convene on 11 August 2011 to analyse the available evidence and approve the content of the first factsheet. The factsheet was distributed from 7.10 pm – 9.15 pm. The Committee understands it is unlikely that this process could have been expedited as it required careful analysis and attention to detail. It can be reasonably assumed that Health could have provided public health advice sooner had Orica or OEH notified the agency on 8 August 2011 instead of on 10 August 2011.

7.116 The Committee notes that Health had liaised with Orica about the content of its door knocking script during the evening of 10 August 2011. Health was also advised that 25 households had been door knocked and a number of other homeowners had received information cards about the incident in their letterboxes. It is however difficult to understand why Health would rely on Orica to distribute accurate information to affected residents if the agency was itself still in the process of analysing the available data. For further discussion about Health's involvement in Orica's door knocking script see 7.119 to 7.131.

7.117 The Committee accepts Health's argument that distributing 'mixed messages' about the impact of the incident would have been detrimental to the wellbeing of the affected community. It served the best interests of Stockton residents to provide clear, consistent, well-researched advice. The Committee notes that Minister Skinner expressed a similar view during her evidence.

7.118 The Committee understands that the Early Learning Centre in Stockton received specific precautionary health advice on the afternoon of 11 August 2011. Again, it would have been upsetting for parents to be uncertain of the potential health risks their children faced if they attended the centre following the leak. However, it could be suggested that had Health been notified of the incident in a timelier manner, representatives may have visited the Early Learning Centre sooner. The Committee accepts Dr Chant's evidence that the direction of the chromium VI plume and the location of the centre meant that it was highly unlikely the facility had been affected by the leak. Additionally, environmental samples taken from the centre confirmed that there were no signs of contamination.

Finding 18

Health acted appropriately in waiting until initial hazard assessments and environmental testing was further advanced before providing public health messages, given the indications that there was a low risk to residents. However the late notification to Health meant the initial public health advice received by some residents came from Orica.

Orica's door knocking script

7.119 This section discusses the concerns raised during the Inquiry about Health's involvement in Orica's door knocking script that was used as part of the company's information campaign on 10 August 2011. As previously mentioned, Health liaised with Orica at 2.25 pm about its precautionary health messages and the company commenced its door knocking campaign at 2.30 pm the same day.[444] The Committee raised issues about the suitability of door knocking as a means of information dissemination, the appropriateness of Health relying on Orica to distribute accurate information and the content of the script.

7.120 The Chief Health Officer advised the Committee that door knocking is an appropriate means of disseminating advice because it allowed for clean-up and mediation, as well as providing Orica with an opportunity to inform the community about the nature of the emissions.[445]

7.121 Dr Chant also explained that Health often worked with other parties to provide precautionary information to communities:

> In terms of the advice to the community, as I said, the initial precautionary advice was given out. In some circumstances we liaise, for instance, in water quality incidents with local council. Local council might actually give out the water notice but we are often involved in that in terms of a local council; like with asbestos, we may craft the message and or be notified and check off if the message is correct, but it may be through another party that gives that.
>
> At that point, given the Public Health Unit had been working with Orica all afternoon, that direct face to face door knocking had occurred; that was considered the appropriate action…[446]

7.122 As to the content of the door knocking script, Dr Chant noted that during the afternoon of 10 August 2011 Health provided comment on the messages it expected Orica to convey to residents:

> … the Public Health Unit was working with Orica on the messaging. That was the engagement of the Public Health Unit using Orica. Orica was saying we are door knocking. The Public Health Unit was saying these are the message you need to convey in the door knocking. The Public Health Unit also wanted the written form and had been emailing Orica in regard to that.[447]

7.123 At 7.30 pm that evening the Dr Chant received a copy of the script and the materials data sheet from the Director General of the Office of Environment and Heritage which prompted her to seek further information about Orica's independent toxicological advice.[448] Dr Chant however denied that Health had approved the script and said she was unaware that the document sent by Ms Corbyn was the final script used by Orica. [449]

444 Submission 21, p 1 and Submission 16, p 42.

445 Dr Chant, Evidence, 21 November 2011, p 21.

446 Dr Chant, Evidence, 21 November 2011, p 20.

447 Dr Chant, Evidence, 21 November 2011, p 20.

448 Submission 21, Appendix C, 'Copy of email from Ms Lisa Corbyn forwarded to NSW Health CHO and Minister's office 10 August 2011', pp 22-31 and Dr Chant, Evidence, 21 November 2011, p 23.

449 Dr Chant, Evidence, 21 November 2011, p 23.

7.124 When asked by the Committee whether she took issue with Orica's use of 'sodium chromate' rather than 'chromium VI' in the script, Dr Chant responded that she was disappointed with the terms used and that Health always referred to the emission as chromium VI in its publications:

> We would not be happy with this information. We had already made the decision that we needed written communication with the facts to the community and in every fact sheet that Health wrote, we certainly did describe it as hexavalent chromium. We were very, very clear in relation to the health risks associated with hexavalent chromium.[450]

7.125 Later in her evidence the Chief Health Officer noted there was a possibility that the script had been constructed prior to confirmation that chromium VI had been released.[451]

7.126 Health also responded to the Committee's enquiry about whether it told Orica to use the term 'hexavalent chromium' in the door knocking script in its answers to questions on notice, stating:

> By that time, NSW Health had decided to communicate directly with the community about the deposition of hexavalent chromium. Because of this, NSW Health had no further contact with Orica regarding the content of the script.[452]

Committee comment

7.127 The Committee notes that door knocking was an appropriate method of information dissemination as it allowed Orica to directly contact residents and offered an opportunity to identify potential chromium VI deposits. It also accepts that Health often works with other parties to provide precautionary health advice to residents. However, the Committee finds it challenging that Health relied on Orica to deliver accurate advice about the incident to the Stockton community on 10 August 2011.

7.128 The Committee notes that Health provided preliminary comments on Orica's precautionary health messages at 2.25 pm on 10 August 2011 and that Orica began door knocking at 2.30 pm the same day. It is difficult to understand how within a five minute period Health could have given detailed consideration to the script and had its messages incorporated before Orica deployed staff to start door knocking.

7.129 The Committee understands that Dr Chant did not receive a copy of the script and the materials data sheet until 7.30 pm that evening, five hours after the door campaign had started. It is therefore clear that Dr Chant, the person charged with the responsibility of informing the public about the potential health risks associated with the incident, was not able to give any kind of approval to the script. While Dr Chant did not have an opportunity to correct the use of the term 'sodium chromate' instead of 'hexavalent chromium' in the script it is unclear whether other Health staff challenged its inclusion. While the inclusion of 'sodium chromate' is technically accurate, by the time door knocking had started Orica was aware that chromium

450 Dr Chant, Evidence, 21 November 2011, p 23.

451 Dr Chant, Evidence, 21 November 2011, p 28.

452 Answers to questions taken on notice during evidence 21 November 2011, Dr Kerry Chant, Chief Health Officer, New South Wales Ministry of Health, Question 1, p 1.

VI had been released during the leak. Health should have ensured that this oversight did not occur.

7.130 The Committee notes that upon reading the script Dr Chant was prompted to seek further information about Orica's toxicological advice on the leak. From the evidence received during the Inquiry it is not clear what specific problems the Chief Health Officer had with the script, however it does raise further issues about its content.

7.131 The Committee considers that in this instance Health should have been more diligent about the content of Orica's door knocking script, particularly as for many of the contacted residents it may have been the first time they had heard about incident. It may also have been appropriate for Health to insist that Orica begin its public information campaign after Dr Chant was able to approve the script.

Finding 19

Health should have been more diligent in their consultations about the content of Orica's door knocking script, particularly as for many of the contacted residents it may have been the first time they had heard about incident.

Recommendation 7

That, if necessary, regulation be amended to require Health to approve any script used by any party concerned, for door knocking or other information dissemination, if Health is not the first source of information to affected residents.

OEH Environment Line

7.132 OEH operates an Environment Line that the public can contact if they have concerns about conservation and environmental issues such as air quality and hazardous materials.[453] This section discusses the debate that arose during the Inquiry about whether information received by the Environment Line was effectively incorporated into Health's final assessment of the health impacts of the leak.

7.133 Ms Linda Roy, Manager (Information Centre) Office of Environment and Heritage, advised the Committee that 26 callers contacted the Environment Line about the incident at Orica from 9-26 August 2011.[454] Ms Roy said that approximately eight of these callers claimed to be Stockton residents who described a range of health impacts including rashes and respiratory problems.[455]

453 Office of Environment and Heritage, 'OEH Information Centre (Sydney CBD), accessed 9 February 2012, <www.environment.nsw.gov.au/contact/InformationCentreSydneyCBD.htm>.

454 Ms Roy, Evidence, 21 November 2011, p 56.

455 Ms Roy, Evidence, 21 November 2011, p 56.

7.134 Ms Roy explained to the Committee that Environment Line operators told individuals who had health complaints to visit their GP as it was not the operator's role to provide health advice:

> We abide by the role of the EPA which is that we do not provide any comment on health issues but we do advise people who report health issues to see their GP. In some of the cases of those residents they had already seen their GP. Where they had not we advised that they should and by the time we actually received those calls we did actually have the first release or information on the Ministry of Health website which we used as a way to provide advice for them on how to proceed.[456]

7.135 Later in her evidence Ms Roy added that the Environment Line also referred individuals to the Hunter New England Public Health Unit.[457] Ms Lisa Corbyn, Chief Executive of the Office of Environment and Heritage, commented that OEH had liaised closely with Health to ensure callers to the Environment Line received appropriate information.[458]

7.136 OEH advised the Committee that the eight callers' complaints had previously been provided to the Legislative Council under an order for the production of documents made under standing order 52 on 25 August 2011.[459]

Use of caller information

7.137 During the Inquiry the Committee raised concerns about how the information concerning the eight callers who reported adverse health effects was used. OEH was extensively questioned about whether the evidence was passed on to Health and if it was included in Health's final assessment of the health risks posed by the chromium VI emission.

7.138 Ms Corbyn was initially unable to provide a direct response as to whether the eight callers' complaints were passed on to Health and instead explained the standard procedures for reporting similar matters:

> I can't answer for each individual case but the standard procedure is that we provide the information to the regional officers who are actually on site and then we actually ask the people to make sure they contact their GPs and it is health that actually is having the discussions with the GPs. So they may present for different reasons and the GP can provide the better advice to the Ministry for Health at a regional level.
>
> So we do try to actually make the connections between the information that we get, get it to the regional level through our people, but also so the individual community members can actually get accurate information from their GPs and then we do try to reconnect with health.[460]

456 Ms Roy, Evidence, 21 November 2011, p 56.

457 Ms Roy, Evidence, 21 November 2011, p 58.

458 Ms Lisa Corbyn, Chief Executive, Office of Environment and Heritage, Evidence, 21 November 2011, pp 56-57.

459 Ms Roy, Evidence, 21 November 2011, p 57; Ms Corbyn, Evidence, 21 November 2011, p 57; and *LC Minutes* (25/8/2011) 370.

460 Ms Corbyn, Evidence, 21 November 2011, p 58.

7.139 OEH provided a more definitive response in its answers to questions on notice:

> As advised during the hearing, members of the public who reported health issues to the Environment Line were advised to contact their GP and/or to contact the Health call line, established by the Hunter New England Public Health Unit.
>
> … these reports were also sent to the OEH Hunter Regional Office, and regional staff provided information about the reports to Hunter New England Health.[461]

7.140 During his evidence to the Committee Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, maintained that OEH had properly discharged its responsibilities to inform Health of the complaints:

> Our task was to provide sampling results and information to the expert health panel who considered all of that information. They were also aware of the information coming in via their public health units so they were aware they there were complaints and they were aware that people were expressing concerns about various types of ailments.
>
> But having considered all of the evidence and all the toxicology evidence, they concluded there was no health impact. So the EPA did discharge its responsibility in terms of referring both people ringing up to the appropriate health authorities, as well as making information known to health authorities as we could.[462]

7.141 Mr Sullivan also took issue with the Committee's suggestion that Health's assertion that the chromium VI emission did not cause adverse health impacts was undermined by the evidence presented by the eight complaints made to the Environment Line. Mr Sullivan said such a proposition was incorrect because there was no established link between the complaints and the incident.[463] Mr Sullivan continued on to explain that Health's expert panel would have considered all of the available evidence before drawing its conclusions:

> Just for the record, the decision in terms of the conclusion regarding health effect was reached by an expert panel which consisted of independent experts, world renown experts, who assessed all of the data available.
>
> …
>
> It assessed all the toxicology data available, the survey data available, and concluded that there were no health impaction.[464]

7.142 The Hon Robyn Parker MP, Minister for the Environment, concurred with Mr Sullivan, stating that OEH had followed proper reporting procedures and that it was the responsibility of health experts to assess the available information and manage the public health response:

---

461 Answers to questions on notice during evidence 21 November 2011, Office of Environment and Heritage, Question 1, p 1.

462 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, Evidence, 21 November 2011, p 59.

463 Mr Sullivan, Evidence, 21 November 2011, p 59.

464 Mr Sullivan, Evidence, 21 November 2011, p 60.

> Clearly the department was following the processes and procedures that were in place at the time. The processes and procedures that are in place in terms of passing information on.
>
> It is up to the health experts, the public health experts to determine that. Now those people called the environment line with information, that information was passed on, the experts assessed what happened. It is up to the public health officer to take all of that information and to manage the public health response.[465]

Committee comment

7.143 The Committee notes that the OEH Environment Line received approximately eight telephone calls from Stockton residents reporting a range of health issues over 9-26 August 2011. Environment Line operators were not able to provide the callers with health advice however they did direct callers to contact their GP and/or the Hunter New England Public Health Unit.

7.144 The Committee expresses its concern that despite the community asking whether there were any potential health impacts as a result of the leak, the calls to the Environment Line were only made public well after the event and only as a result of a Call for Papers and questioning during the Inquiry.

7.145 The Committee notes that the OEH answers to questions on notice clearly state the callers' reports were provided to the OEH Regional Office who then passed them on to HNEPH. OEH therefore discharged its responsibilities to inform Health of the complaints. It is reasonable to assume that Health's expert panel had an opportunity to evaluate the callers' complaints and consider the reports before drawing any conclusions about the public health risk posed by the chromium VI emission.

7.146 The Committee was not able to pursue this issue with Dr Chant or Health.

Incident action plans

7.147 Despite the fact that the HAZMAT/CBR Sub Plan was not activated in response to the incident Health still followed its procedures and provided the Emergency Operations Controller with five incident action plans concerning the leak over 12-15 August 2011.[466] The incident action plans ensured the Emergency Operations Controller was kept abreast of information about the fugitive emissions, including:

- The current status of the hazard/response.
- The objectives of the response.
- The strategies being used to achieve the objectives.
- The provision of public information and public health services.

---

465 Hon Robyn Parker, Minister for the Environment, Evidence, 21 November 2011, p 59.

466 Submission 21, Appendix L 'Public Health Incident Action Plan', pp 60-78.

- The administration and logistics associated with the response, including personnel and equipment.
- The control, coordination and communication between relevant agencies.

7.148 After 15 August 2011 OEH assumed responsibility for the submission of incident action plans to the Emergency Operations Controller.[467]

Committee comment

7.149 The Committee recognises that Health effectively followed the procedures outlined the procedures of the HAZMAT/CBR Sub Plan and provided the Emergency Operations Controller with five incident action plans concerning the leak over 12-15 August 2011. After 15 August 2011 OEH assumed this responsibility.

Procedural reviews since the leak

7.150 This section discusses the recommendations Health identified during its internal procedural review following the leak, as well as the relevant recommendations presented in the O'Reilly Report.

Health procedural debrief

7.151 Health conducted a formal debrief of its response to the chromium VI emissions on 9 September 2011. From the meeting Health identified nine areas of improvement:

- Sampling protocols following acute industrial pollution events.
- Establishing the social/psychological/historical and community context early.
- Rapid quantitative health risk assessments to guide public health action.
- Early field reconnaissance.
- Community risk communication and risk mitigation.
- Community risk communications.
- Explore greater involvement of community 'expertise'.
- Interagency/emergency notification.
- Optimal document control.[468]

7.152 In its submission Health noted that it was working with OEH and other agencies to implement the required changes.

---

467 Submission 21, p 6.

468 Submission 21, Appendix M, NSW Health, 'NSW Health debrief of Orica chromium incident 9 September 2011,' pp 79-82.

O'Reilly Report

7.153 The O'Reilly Report assessed the NSW Government and Orica's response to the chromium VI emission. The report evaluated Health's actions against the HAZMAT/CBR Plan and concluded that the agency responded appropriately to the incident.[469]

7.154 The Report considered the timeliness of the public health advice provided to Stockton residents. It acknowledged community concerns about the issue however concluded that the agency had appropriately adopted a precautionary approach to the provision of information:

> NSW Health, although recognising that the risk to the community was likely to be low delayed external communications whilst they obtained further information as to risk levels and advice from the 'expert panel'. In my opinion this cautious approach is appropriate because the release of early information that may have to be corrected later can cause a loss of confidence by the public.[470]

7.155 The Report also noted that Health and OEH had worked effecting to collect, analyse and distribute information to the affected community:

> Once Health was notified of the incident (1130 hours on the 10 August 2011) Health adopted the role of lead agency. OEH worked well with Health in organising additional sampling; reviewing Toxikos' risk assessment as to methods and assumptions; participating in teleconferences with Health; assisting in letter box drops; preparing media releases and attending the community meeting at Stockton RSL.[471]

7.156 The NSW Government fully endorsed the recommendations presented in the O'Reilly Report. Recommendations 5 and 7 of the report require specific actions from Health. Recommendation 5 stated that companies responsible for hazardous incidents should provide funds for Health to procure independent analysis of the health risks posed by the event.[472] Recommendation 7 proposed the establishment of an independent Environmental Regulatory Authority whose members would include individuals with regulatory expertise, as well as community representatives.[473] These recommendations have been incorporated into the *Protection of the Environment Legislation Amendment Act 2011*.

7.157 Dr Chant advised the Committee that since the release of the report government agencies had communicated more effectively with local communities:

> All I can is in terms of future incidents that have happened… for instance, the mercury issue in Botany, the ammonia leak in Kooragang Island from the Orica plant and in all of those cases the information was provided to the community quite rapidly.
>
> It still does take a few hours for us to get the facts collected, but those communities were notified in those events and interestingly, the ammonia leak, the fire brigade issued a press release but concurrently the Office of Environment and our own

469 O'Reilly B, 2011, pp 15-20 and p 3.

470 O'Reilly B, 2011, p 3 and p 37.

471 O'Reilly B, 2011, p 34.

472 O'Reilly B, 2011, p 5.

473 O'Reilly B, 2011, p 6.

> offices were involved in cross checking the information from the fire brigade and we ourselves were comfortable.[474]

7.158 For further discussion about the O'Reilly Report see Chapter 1.

Committee comment

7.159 The Committee notes that Health conducted an internal procedural review of its response to chromium VI emission. The review identified nine areas of improvements, including communication strategies with local communities and other agencies. The Committee expects that Health will implement the necessary changes to ensure improvements to its response capabilities are made.

7.160 The Committee concurs with Mr O'Reilly that Health's precautionary approach to information dissemination was appropriate in these circumstances. While Stockton residents were understandably distressed at having to wait until 11 August 2011 to receive the public health advice, it was preferable that Health ensured accurate information was being disseminated. The Committee has also previously noted the collaboration efforts of Health and OEH.

7.161 The Committee notes that the NSW Government has accepted the O'Reilly Report's recommendations. The recent amendments to the *Protection of the Environment Legislation Amendment Act 2011* incorporate the recommendations concerning Health.

[474] Dr Chant, Evidence, Evidence, 21 November 2011, p 22.

Chapter 8 Government response – WorkCover

This chapter examines the response of the WorkCover Authority of NSW ('WorkCover' or 'the Authority') to the chromium VI leak from Orica Kooragang Island on 8 August 2011. The chapter describes WorkCover's role in responding to pollution incidents and discusses how and when the Authority was notified of the fugitive emissions, as well as the actions it took once aware of the incident. The chapter also examines WorkCover's ongoing actions in relation to the leak and concludes by reviewing the changes made to the Authority's procedures since the incident.

WorkCover provided a detailed submission to the Inquiry and the Minister responsible for WorkCover, the Hon Greg Pearce MLC, gave evidence to the Committee on 21 November 2011.

Role in pollution incidents

8.1 WorkCover administers occupational health and safety (OH&S) and workers compensation legislation in NSW. In relation to pollution incidents WorkCover may play a support role in response to the incident depending on the circumstances. This section briefly outlines the role of the Authority and the principal legislation governing OH&S across the State.

Functions of the WorkCover Authority of NSW

8.2 WorkCover is primarily responsible for ensuring workplaces comply with OH&S legislation.[475] It also provides workplaces with assistance on day-to-day operational matters and, along with co-regulators such as the Office of Environment and Heritage (OEH), monitors the storage and management of chemicals at workplaces.[476]

8.3 WorkCover is not a combat agency. This means that the Authority is not involved in the emergency response phase of an incident such as occurred on 8 August 2011, however it does have a supporting role under various sub-plans of the NSW State Disaster Plan.[477]

Occupational Health and Safety Act 2000 and the Occupational Health and Safety Regulation 2001

8.4 The *Occupational Health and Safety Act 2000* ('the Act') and the Occupational Health and Safety Regulation 2001 ('the Regulation') are the primary instruments governing OH&S in NSW workplaces. These documents seek to secure and promote the health, safety and welfare of people at work through minimising the risk of injury and illness. The Act and the Regulation also encourage consultation between employers and employees to achieve safe work practices, and regulate certain types of dangerous goods in places of work.[478]

475 *Workplace Injury Management and Workers Compensation Act 1988*, s 22.

476 Submission 11, Workcover NSW, p 1.

477 Submission 11, p 1 and Hon Greg Pearce MLC, Minister for Finance and Services, Evidence, 21 November 2011, p 4.

478 *Occupational Health and Safety Act 2000*.

8.5 As the Authority explained in its submission, the Act applies to all workplaces but not expressly to pollution incidents:

> Section 5 of the OHS Act makes it clear that the Act applies to workplaces. The OHS Act does not expressly apply to pollution incidents. The OHS Act is the legal framework governing work health and safety. However, a pollution incident may also be governed by the OHS Act where it concerns or creates risks for work health and safety.[479]

8.6 Throughout this chapter there is discussion on how selected sections of the Act and the Regulation relate to WorkCover's response to the fugitive emission from Orica Kooragang Island on 8 August 2011.

Ministerial responsibilities

8.7 Under the administration order for the Act and the Regulation, as well as other associated regulations, the Hon Greg Pearce MLC, Minister for Finance and Services is responsible for WorkCover.[480]

8.8 Minister Pearce advised that while WorkCover is not required to inform him of workplace incidents, he is usually informed of a *serious incident* such as a fatality.[481]

Notification of the 8 August leak

8.9 The chromium VI leak from Orica Kooragang Island occurred at approximately 6.30 pm on 8 August 2011. Orica personnel notified WorkCover of the incident at 11.10 am on 9 August 2011.

Requirements under the Act and Regulation

8.10 The Act sets out the obligations of occupiers of a place of work to notify WorkCover of particular incidents. Section 86 of the Act requires an occupier to notify WorkCover of any *serious incident* as defined by section 87 of the Act, as well as any other incident as declared to be notifiable by clause 341 or 344 of the Regulation.[482]

8.11 Section 87 of the Act defines a *serious incident* at a place of work as 'an incident that has resulted in a person being killed, or any other incident prescribed by the regulations for the purposes of this definition.'[483] The Regulation relevantly states that a *major accident* at a major hazard facility is a *serious incident* and defines such an event as:

> … an incident (including an emission, loss of containment, fire, explosion or release of energy or projectiles, but not including the long term, low volume release of any

479 Submission 11, p 2.

480 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 2.

481 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 2.

482 *Occupational Health and Safety Act 2000,* s 86.

483 *Occupational Health and Safety Act 2000,* s 87.

> material) involving a Schedule 8 material occurring in the course of the operation, commissioning, shutdown or maintenance of a major hazard facility that poses a risk of serious danger or harm (whether immediate or delayed) to any person (including members of the public).[484]

8.12 At the time of the incident the Act stipulated that after becoming aware of a *serious incident* an occupier must immediately notify WorkCover of the matter by the quickest possible means.

8.13 Since the National Work, Health and Safety legislation was brought into effect in January 2012 occupiers are now required to immediately notify the Authority of any incidents such as fatalities, serious injuries and illnesses, and dangerous incidents that occur in places of work.[485]

Requirements under the *KI Emergency Response Plan*

8.14 The *KI Emergency Response Plan* is the emergency response plan for Orica Kooragang Island. All major hazard facilities are required to have an emergency response plan that deals with incidents that may result from the storage and handling of dangerous goods.[486]

8.15 The Committee was advised that the Emergency Response Plan was significantly redrafted in 2009 though it does not provide specific reporting procedures for notifying WorkCover of an incident. Rather the document sets out the general stages for reporting an incident to government authorities and states that the exact notification requirements will be confirmed by the site manager immediately following the incident.[487] It also notes that WorkCover may be notified of incidents resulting in serious bodily harm or judged to be a 'dangerous occurrence.'[488]

8.16 As noted in Chapter 5, Orica personnel did not activate the Emergency Response Plan after the incident on 8 August 2011, instead choosing to rely only on its principles to guide their decisions.[489] Orica declined to provide the Committee with a full copy of the *KI Emergency Response Plan* citing confidentiality concerns.[490] It did, however, provide the contents pages and the section concerning the notification of government authorities.

---

484 Occupational Health and Safety Regulation 2001, cl 341 and Occupational Health and Safety Regulation 2001, cl 175A.

485 *Occupational Health and Safety Act 2000,* s 86 *and* O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011, p 28.

486 O'Reilly B, 2011, p 32.

487 Mr Stuart Newman, Site Manager, Orica Kooragang Island, Evidence, 15 November 2011, p 39 and Answers to questions taken on notice, 15 November 2011, Orica Limited, Question 12, Appendix D, p 9.

488 Answers to questions taken on notice during evidence 15 November, Orica Limited, Question 12, Appendix D, p 9.

489 Mr Newman, Evidence, 15 November 2011, p 39 and Ms Sherree Woodroffe, Sustainability Manager, Orica Kooragang Island, Evidence, 7 December 2011, p 12.

490 Answers to questions taken on notice, 15 November 2011, Orica Limited, p 5.

Notification to WorkCover and Minister Pearce

8.17 As discussed in Chapter 5, Orica notified WorkCover of the leak at approximately 11.10 am on 9 August 2011, approximately 17 hours after the incident.[491]

8.18 The initial Workplace Services Management System (WSMS) Incident Notification Report lodged by Mr Peter Smith, Compliance Manager of Orica Kooragang Island, noted that:

- chromium had been released into the workplace,
- no injuries had occurred,
- the workplace was being cleaned-up.[492]

8.19 WorkCover also received a WSMS Incident Notification Report from an anonymous person who said there had been a spill of chromium VI at Orica and that workers had been sent home.[493]

8.20 Based on the information provided in the WSMS Incident Notification Reports the leak was not identified as a *serious incident* and WorkCover did not commence an investigation of the emission until 11 August 2011.[494]

8.21 Minister Pearce was not informed of the leak until 9.25 am on 12 August 2011, when the matter had significantly escalated.[495]

8.22 The O'Reilly Report sets out the time between when the incident occurred and when Orica notified the authorities of the leak:

- 16 ½ hours after the incident, Orica notified the OEH Hunter Regional Office
- 17 hours after the incident, Orica notified WorkCover…
- 42 hours after the incident, Orica advised Health…[496]

8.23 Orica therefore notified WorkCover of the incident 30 minutes after the OEH Hunter Regional Office and 25 hours before NSW Health.

Concerns about the notification process

8.24 While some submission authors raised general concerns about the health of Orica personnel, overall inquiry participants did not raise specific criticisms about when Orica notified WorkCover of the leak.[497]

491 Submission 16, Orica Limited, p 6 and Mr James Bonner, General Manager of Orica Mining Services, Australia-Asia, Evidence, 7 December 2011, pp 12-13.

492 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4.

493 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4.

494 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 2.

495 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 2.

496 O'Reilly B, 2011, pp 12-13.

497 See for example Submission 8, Name suppressed, p 1 and Submission 13, Stockton Community Action Group, p 4.

8.25 Committee members did however discuss the notification process with certain Orica personnel who appeared as witnesses during the Inquiry, particularly whether the correct employee made the notification. For example, when questioned about why the Compliance Manager contacted the Authority instead of the Sustainability Manager, Mr Stuart Newman, Site Manager of Orica Kooragang Island responded: '[t]he practice has been just the experience of those individuals on the site and who they have dealt with in terms of the government agencies, the compliance manager has tended to be the one who has dealt with WorkCover.'[498]

Debate about whether the leak was a *serious incident*

8.26 There was contention during the Inquiry as to whether the leak on 8 August 2011 constituted a *serious incident* requiring immediate notification to WorkCover. Orica representatives said their legal advice suggested that the incident did not meet the definition of a *serious incident* as set out in clause 344 of the Regulation.[499] The issue is now subject to an investigation by the Authority.

8.27 The issue was first brought to the Committee's attention via correspondence contained in Orica's submission from Mr Graeme Liebelt, Managing Director and Chief Executive Officer of Orica Limited, to Mr Chris Eccles, Director General of the Department of Premier and Cabinet, which stated:

> In Orica's view, the circumstances of the incident which occurred on 8 August 2011, did not meet the criteria set out in clause 344 of the OHS Regulation. Accordingly, the incident which occurred on 8 August 2011 is not, In Orica's view, a 'serious incident' within the meaning of clause 344 of the OHS Regulation.[500]

8.28 Mr Liebelt reiterated this sentiment during his evidence to the Committee, saying that while the company considers the incident on 8 August to be 'serious' it does not meet the technical or legal definition of the term:

> Let me say that we regard this as a very serious incident in the ordinary interpretation of the words serious incident…
>
> Our point in that letter regarding clause 344 is to do with the technical and legal definition of serious incident as defined in the OH&S Act and it is our legal advice that this incident does not meet that definition.[501]

8.29 Orica declined to provide the Committee with a copy of its legal advice citing professional privilege.[502]

---

498 Mr Newman, Evidence, 15 November 2011, p 24.

499 Mr Graeme Liebelt, Chief Executive Officer and Managing Director, Orica Limited, Evidence 17 November 2011, p 16.

500 Submission 16, Appendix C, p 72.

501 Mr Liebelt, Evidence 17 November 2011, p 16.

502 Answers to questions taken on notice, 17 November 2011, Mr Graeme Liebelt, Chief Executive Officer and Managing Director, Orica Limited, p 11.

8.30 The Committee was also informed by the Minister that WorkCover did not consider the leak to be a *serious incident* after initially receiving notification of the fugitive emissions.[503] The Authority has since gathered further evidence about the leak and launched an investigation into whether it was in fact a *serious incident*, the terms of reference for which are below:

> Whether or not the particular emission was:
> - within the classification of 'dangerous goods' within the ADG Code (the Australian Code for the Transport of Dangerous Goods by Road and Rail) approved by the Ministerial Council for Road Transport and published by the Australian Government from time to time).
> - a 'major accident' or 'near miss'
> - an uncontrolled escape of gas or steam
> - one that posed an immediate threat to life.[504]

8.31 WorkCover advised the Committee that since the incident on 8 August 2011 WorkCover has changed its internal procedures to ensure that any major chemical incident at a major hazard facility is classified as a *serious incident*.[505]

Committee comment

8.32 The Committee notes that Orica did not notify WorkCover the incident until 11.10 am on 9 August 2011 approximately 17 hours after the leak occurred and that the company has expressed regret for both the leak and the delay. The Act and Regulation set out the notification procedures for workplace incidents however the information provided to Orica personnel in the Emergency Response Plan did not adequately reflect these reporting guidelines, as discussed in Chapter 5.

8.33 The Committee notes that WorkCover was notified of the incident 30 minutes after the OEH Hunter Office and 25 hours before NSW Health. These notification timelines appear inappropriate considering the potential fallout for the incident. For further information about when the OEH and NSW Health were notified of the incident see chapters 6 and 7 respectively.

8.34 The Committee will not comment on whether the leak on 8 August 2011 constituted a *serious incident* as defined under the Act and Regulation as WorkCover is still investigating the matter.

8.35 The Committee notes that in light of the incident on 8 August 2011 WorkCover has reviewed its internal procedures regarding chemical leaks at major hazard facilities and now requires any major chemical incident at a major hazard facility is classified as a *serious incident*.

---

503 Hon Greg Pearce MLC, Evidence, 21 November 2011, pp 3-5.

504 Submission 11, pp 5-6.

505 Submission 11, p 1.

Actions taken once notified

8.36 This section examines the actions taken by WorkCover after being notified of the incident. There was discussion during the Inquiry about the length of time between when the incident occurred and when WorkCover launched a formal investigation, as well as whether the proper notification procedures were followed by the Authority.

Requirements under the Act and Regulation

8.37 The Act and the Regulation specify the types of inspections WorkCover can conduct in places of work, as well as the notices it may issue.

8.38 According to Part 5 of the Act, specially appointed and trained WorkCover inspectors can conduct investigations of work premises under certain circumstances, such as investigating an accident or breaches of legislation. Inspectors also have the power to: dismantle, take and keep certain things from an inspection site; obtain information, documents and evidence about the potential breach; and to demand the name and address of a person suspected of committing an offence.[506]

8.39 An inspector may issue an investigation, improvement or prohibition notice to the occupier of a site if there has been an investigation of the workplace under Part 5 of the Act. Part 6 of the Act provides an explanation of the notices and outlines the actions that can be taken should a corporation or individual fail to comply with each notice.

Initial investigation

8.40 The Minister and the Authority offered a great deal of evidence about the initial WorkCover investigation into 8 August 2011 incident. During the ten days following the leak various sections of the Authority were notified of the incident and took measures to investigate what happened. Paragraphs 8.41 – 8.49 detail the initial investigation process and its outcomes.

8.41 As previously mentioned, Orica notified WorkCover of the fugitive emissions on 9 August 2011. The initial WSMS notifications were logged and passed onto the Authority's Strategic Assessment Centre where the leak was not classified as a *serious incident* under clause 344 of the Regulation. The notifications were then allocated to WorkCover's Regional North Team. At this time the Strategic Assessment Centre did not follow protocol and contact WorkCover's Major Hazard Facilities team about the leak.[507]

8.42 At approximately 3.20 pm on 10 August 2011 the incident was reviewed by WorkCover's Regional North Team which contacted the Major Hazard Facilities team. The Major Hazards Facilities team includes an officer from OEH, Fire and Rescue NSW, the NSW Police Force and the Department of Planning and Infrastructure.[508] Both teams then contacted Orica requesting further details about the incident.[509]

506 *Occupational Health and Safety Act 2000,* s 63.

507 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4.

508 Submission 11, p 16.

509 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 8.

8.43 An inspector was assigned to conduct the initial compliance investigation on 11 August 2011. The Minister described the investigation during Question Time on 9 September 2011:

> WorkCover's investigation of the Orica incident is focusing on the root causes leading to the loss of the required containment of a hazardous chemical; its impact on the safety and health of Orica's workers; the systems and procedures of work in place to ensure the safe handling of hazardous material; and the requirement of full disclosure to inform WorkCover of an incident under New South Wales work health and safety legislation. WorkCover is also assessing the corrective actions and system changes required before the plant recommences operations.[510]

8.44 The inspector visited the site at approximately 1.00 pm on the same day and later submitted an incident report to the WorkCover Chief Executive Officer. At approximately 5.12 pm the report was given to a liaison officer in Minister Pearce's office.[511]

8.45 Inspectors also visited the site on 12 August 2011. The WorkCover website explained the inspectors' on-site actions:

> WorkCover has taken four statements from persons who were on site at the time of the incident. WorkCover has issued notices to a further 32 people who were on site at the time. These notices under the *Occupational Health and Safety Act 2000* were to obtain statements in relation to what actions were taken by Orica and what occurred immediately after the pollution release. This would include information in relation to potential exposure, decontamination procedures, health surveillance and the handling of clothing. The notices have been framed broadly to obtain all relevant information in relation to the health and safety of workers.
>
> WorkCover is undertaking a full analysis of the statements and will determine the next phase of its investigation including further interviews, inspections and engagement of experts. WorkCover will consider issuing further notices as the investigation progresses.[512]

8.46 The Committee was advised that Minister Pearce and the WorkCover Chief Executive Officer first received notification of the incident at approximately 9.25 am on this day.[513]

8.47 On 13 August 2011 WorkCover liaised with Orica's Compliance Manager and the local OEH manager about the incident.[514]

8.48 WorkCover met with the OEH Newcastle office to discuss liaison and coordination on investigations and arrangements for the issuing of notices under the Act on 15 August 2011.[515] Minister Pearce noted that WorkCover had worked closely with a number of agencies during

---

510 *LC Debates (9/9/2011)* 5334.

511 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4.

512 Workcover Authority of NSW, 'Update on Orica Investigation', accessed 8 February 2012, <www.workcover.nsw.gov.au/aboutus/newsroom/Pages/oricakoorangangisland investigationsite.aspx>.

513 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4 and Answers to questions taken on notice, 21 November 2011, the Hon Greg Pearce, Minister for Finance and Services, p 1.

514 Submission 11, Appendix 20, p 218.

515 Submission 11, Appendix 23, p 234.

this period, particularly NSW Health and OEH, including the Environment Protection Authority.[516] The Authority also joined the start-up committee established by OEH to assist Orica in restarting the plant during this period.[517]

8.49 Following the initial investigation, on 18 August 2011 WorkCover issued Orica with two improvement notices relating to Emergency Management Procedures and Dangerous Goods Spill Containment and a notice pursuant to section 62 of the Act requiring the production of records about the plant's operating procedures and health surveillance records.[518] Minister Pearce informed the House that these notices had been complied with by 25 August 2011.[519]

Minister Pearce's view on WorkCover's actions

8.50 Minister Pearce advised the Committee that WorkCover understood the seriousness of the incident but its actions were hampered by the flow of information from Orica:

> WorkCover views the incident that occurred on 8 August very seriously and is taking all steps to ensure that the facility takes the appropriate corrective actions to ensure the safety of workers and others who may be affected by its operations.
>
> … if Orica had fully disclosed the nature of the incident, then WorkCover would have taken immediate action in response to the incident. Moreover, had WorkCover been fully informed at that point, they may also have advised my office.[520]

8.51 Minister Pearce also told the Committee that he considered the time it took between WorkCover receiving the initial notifications of the incident and the investigation being undertaken was unsatisfactory.[521]

Stakeholder concerns about WorkCover's actions

8.52 Inquiry participants did not have specific concerns about WorkCover's actions following its notification of the leak however committee members questioned Minister Pearce on the issue. For example, when asked about whether there was a delay in WorkCover's response to the incident Minister Pearce responded that the Authority had acted appropriately:

> … there was no delay, in the sense that WorkCover was given information. It went through and assessed that information in accordance with its protocols. It was given a second set of information, that was assessed and it went through the normal processes

516 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 4.

517 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, Evidence, 21 November 2011, p 69.

518 Workcover Authority of NSW, 'Update on Orica Investigation', accessed 8 February 2012, <www.workcover.nsw.gov.au/aboutus/newsroom/Pages/oricakoorangangisland investigationsite.aspx>.

519 *LC Debates (9/9/2011)* 5334.

520 Hon Greg Pearce MLC, Evidence, 21 November 2011, pp 3-4.

521 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 10.

> that WorkCover had in place to arrive at the further stage when they got to that stage.[522]

8.53 Members questioned Minister Pearce about the validity of the information provided by the anonymous phone caller who first notified the Authority that chromium VI, as opposed to chrome, had been leaked. Minister Pearce argued that WorkCover personnel had acted in line with procedure but agreed it was unsatisfactory that it took almost 28 ½ hours for the Authority to request that Orica provide further details on the incident.[523]

8.54 Minister Pearce was also asked to confirm that it took 50 hours between WorkCover receiving the initial notifications and its inspectors visiting Orica Kooragang Island, as well as when the Authority's Chief Executive Officer was advised of the incident.[524]

Committee comment

8.55 The Committee recognises that WorkCover's ability to conduct a full and proper investigation of the incident on 8 August 2011 was initially hampered by the information provided by Orica. However it appears that WorkCover itself also contributed to the lack of timeliness of the investigation. For example, the Strategic Assessment Centre's decision not to identify the fugitive emissions as a serious incident and subsequent failure to contact the Major Hazards Team as dictated by protocol contributed to delays.

8.56 The Committee is of the opinion that the information provided by the WSMS Incident Notification Reports should have triggered WorkCover to launch its investigation into the incident in a more timely manner. The release of chromium VI into a place of work, particularly a major hazard facility, should have encouraged WorkCover to respond swiftly. Had the leak been identified as a *serious incident* earlier WorkCover would have conducted its preliminary investigation and notified Minister Pearce sooner.

8.57 The Committee agrees with the view of Minister Pearce that it was unsatisfactory for WorkCover to request further information about the leak from Orica almost 28 ½ hours after being notified of the incident. It also unclear why WorkCover inspectors did not visit the site until almost 50 hours after the initial notifications were received. Despite these early issues the initial investigation appears to have been appropriately conducted.

8.58 The Committee notes that Orica has complied with the improvement notices issued by WorkCover and the notice requesting employee health surveillance results.

---

522 Hon Greg Pearce MLC, Evidence, 21 November 2011, pp 8-9.

523 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 10.

524 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 9.

Finding 20

Administrative decisions by WorkCover, as well as Orica's delays in notification, contributed to the delay in initiating a workplace investigation at the Kooragang Island site. The release of chromium VI into a place of work, particularly a major hazard facility, should have required WorkCover to visit the site much earlier than the 50 hours following the initial notification.

Other ongoing actions

8.59 This section examines WorkCover's other ongoing actions and investigations in relation to the chromium VI leak on 8 August 2011. The following issues were raised during the Inquiry:

- Orica Kooragang Island's status as a major hazard facility.
- The health surveillance conducted on Orica employees after the incident.
- Orica's obligations regarding consultation with employees
- Orica's duties as an employers
- Orica's duties as controllers of premises.

8.60 These investigations do not specific deadlines for completion.[525]

Orica Kooragang Island's status as a major hazard facility

8.61 Orica Kooragang Island is one on 42 major hazard facilities in NSW. WorkCover describes major hazard facilities as '… facilities such as oil refineries, chemical processing plants, large chemical and gas storage depots and large chemical warehouses that have dangerous goods in amounts that exceed specified threshold quantities.'[526] Provisions for the operation of major hazard facilities are set out in the Regulation.

Registration

8.62 Part 6B of the Regulation details the operational requirements for major hazard facilities and potential major hazard facilities. The Regulation is based on the National Standards for Control of Major Hazards.[527] Amongst other provisions, these sites must apply for provisional registration and move towards full registration over time. Minister Peace clarified how the progressive registration process operates for these sites:

525 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 7.

526 Workcover Authority of NSW, 'Major Hazard Facilities', accessed 8 February 2012, <www.workcover.nsw.gov.au/healthsafety/healthsafetytopics/Majorhazardfacilities/Pages/default.aspx>.

527 Workcover Authority of NSW, 'Update on Orica Investigation', accessed 8 February 2012, <www.workcover.nsw.gov.au/aboutus/newsroom/Pages/oricakoorangangisland investigationsite.aspx>.

> During this progressive registration process, occupiers of major hazard facilities have to develop safety management system requirements, emergency plans and safety reports, which are also known as safety cases.
>
> A safety case must provide assurance that the potential for a major incident has been systematically assessed and that effective and appropriate controls are in place.[528]

8.63 Minister Pearce advised that Orica Kooragang Island has preliminary registration and is in the process of applying for full registration. The company must submit its Safety Report and updated security and emergency arrangements to WorkCover by February 2012.[529] The WorkCover website detailed the information required in the Safety Report:

> A Safety Report must demonstrate that hazards and risks are fully understood, that the documented controls, systems and procedures and processes are fit for purpose and that the facility achieves a level of risk as low as reasonably practicable.[530]

8.64 On 11 November 2011 WorkCover wrote to Mr Liebelt requesting that he explain why the company's provisional registration should not be cancelled. While WorkCover expected a response to this request by 25 November 2011 the Committee has not received any further information on this matter.[531]

Emergency response plan

8.65 The Regulation sets out:

- that emergency response plans for major hazard facilities must be developed and updated regularly,
- that staff and persons in control of adjacent premises must be aware of the plan and how it relates to them, and,
- that the Commissioner of the New South Wales Fire Brigades be supplied with a draft of the plan.[532]

8.66 Evidence gathered during the Inquiry suggests that Orica's Emergency Response Plan had complied with these obligations.[533] However, as outlined in Chapter 5, there is conflicting evidence whether this Plan was activated by the incident, and whether staff were sufficiently aware of their responsibilities under the Plan.

8.67 Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage, informed that Committee that since the incident WorkCover has played a key role in approving and authorising Orica's updated emergency

528 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 3.

529 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 3.

530 Workcover Authority of NSW, 'Update on Orica Investigation', accessed 8 February 2012, <www.workcover.nsw.gov.au/aboutus/newsroom/Pages/oricakoorangangisland investigationsite.aspx>.

531 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 5.

532 Occupational Health and Safety Regulation 2001, c 174ZC.

533 See Mr Newman, Evidence, 15 November 2011, p 39; Answers to questions taken on notice, 15 November 2011, Orica Limited, Question 12, Appendix D, p 7; O'Reilly B, 2011, pp 12-13.

response plan which has included working through the document with the company and testing emergency procedures on two occasions.[534]

Committee comment

8.68 The Committee notes that Orica Kooragang Island is in the process of applying for full registration as a major hazard facility and expects WorkCover to conduct the necessary assessments of its application particularly in light of the 8 August 2011 incident.

8.69 The Committee understands that Orica had met its obligations as a major hazard facility and had an emergency response plan at the time of the incident, but that as discussed in Chapter 5 there were gaps in both the Plan and its implementation.

Health surveillance conducted on Orica employees

8.70 The Regulation requires that employers provide health surveillance to certain employees if they are exposed to hazardous substances. The Regulation defines health surveillance as '… the monitoring of persons to identify changes (if any) in their health due to exposure to a hazardous substance, and includes biological monitoring, but does not include the monitoring of atmospheric contaminants.'[535] Among other obligations, employers must ensure that authorised medical practitioners perform all health surveillance, cover expenses and maintain relevant employee records. Authorised medical practitioners are in turn obligated to inform WorkCover of any adverse health surveillance outcomes. The Regulation provides details on how to conduct health surveillance for inorganic chromium.[536]

8.71 The Committee was informed that Orica offered health assessments and urine tests for employees exposed to chromium VI during the leak however the testing did not start until 11 August 2011 and certain employees were not tested for up to one week later.[537] As mentioned, Orica complied with WorkCover's notice requesting the results of the employees' health surveillance.[538]

8.72 Orica reported that the tests did not show elevated levels of chromium or otherwise give cause for concern. It was however acknowledged that there were nine on-site personnel suffered minor skin or respiratory irritations.[539]

534 Mr Sullivan, Evidence, 21 November 2011, p 69.

535 Occupational Health and Safety Regulation, Pt 6b.

536 Occupational Health and Safety Regulation, cl 165.

537 Mr James Bonner, Head, Crisis Management Team (8 August incident), Orica, Kooragang Island Evidence, 7 December 2011, p 30.

538 Workcover Authority of NSW, 'Update on Orica Investigation', accessed 8 February 2012, <www.workcover.nsw.gov.au/aboutus/newsroom/Pages/oricakoorangangisland investigationsite.aspx>.

539 Submission 16, p 11.

Adequacy of the health surveillance

8.73 There was discussion during the Inquiry about whether Orica provided adequate health surveillance to its employees after the chromium VI emission. While urine tests were conducted comments made by Dr Max McEwan, a WorkCover toxicologist, explained that the delay in testing rendered the results almost useless:

> Even if the workers concerned inhaled 'significant' chromium for say 3-4 hours on August 8, the earliest urine collected was approximately 3 days post exposure – for some workers the delay was a week. The literature values for the half-life of chromium in the body vary with route of exposure. Level of uptake also varies with type of chromium (III or VI), particle size in the case of inhalation and solubility is also an important factor. But the half-life for absorbed chromium is in the order of 8-20 hours. So at 3 days the chromium levels in urine will be down to between 1-5% of maximum levels and may represent zero to 2-3% of the absorbed dose. In other words our best urinary samples are next to useless.[540]

8.74 Dr McEwan suggested that conducting blood tests was a more suitable tool for measuring exposure to chromium.[541] When questioned on the suitability of the tests Minister Pearce said he was unable to contribute to the discussion as it was outside his expertise.[542] However, as discussed in Chapter 5, the most senior medical expert to provide evidence to the Inquiry, Dr Kerry Chant, Deputy Director General Population Health and Chief Health Officer, NSW Ministry of Health, discounted the value of one-off blood tests as an accurate measure of exposure.

Committee comment

8.75 The Committee notes Dr McEwan's concern that the health surveillance conducted on Orica employees after the 8 August 2011 incident was not completed in optimal circumstances. The Committee is not in a position to decide whether urine testing or blood testing was the most appropriate tool for measuring exposure to chromium IV. It is the responsibility of WorkCover to investigate this subject further in consultation with NSW Health.

Orica's obligations regarding consultation with employees

8.76 The Act and Regulation set out provisions for consultation in places of work. Sections 13-19 of the Act, along with Chapter 3 of the Regulation, outline the obligations on employers to consult with employees about decisions affecting their health, safety and welfare in the workplace and the nature of consultation in the workplace.

8.77 In its submission WorkCover noted that Orica has established and consulted with an OH&S committee regarding the incident on 8 August 2011. Additionally, WorkCover has been in discussions with the chair of the committee about the incident.[543]

---

540 Submission 11, Appendix 32, p 1 [emphasis as per original].

541 Submission 11, Appendix 32, p 1.

542 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 14.

543 Submission 11, p 3.

8.78 The Act and Regulation only require consultation with the workforce and do not extend to the general public thus WorkCover does not have a role in providing information to communities, such as Stockton residents potentially affected by emissions.[544]

Orica's duties as employer

8.79 Section 8 of the Act outlines the duties of employers. The Act requires that 'an employer must, so far as is reasonably practicable, ensure the health, safety and welfare at work of all the employees of the employer.'[545] It is also expected that the health, safety and welfare of people in the workplace other than employees is protected.[546]

8.80 WorkCover is currently investing whether the chromium VI leak and the company's subsequent response breached section 8 of the Act.[547]

Orica's duties as controllers of premises

8.81 Section 10 of the Act describes the duties of controllers of premises. Under this section a controller of premises used by people as a workplace must, so far as reasonably practicable, ensure that the premises are safe and do not pose any health risks.[548] The section also makes reference to the use of substances at places of work, noting that 'a person who has control of any plant or substance used by people at work must, so far as reasonably practicable, ensure the plant or substance is safe and without risks to health when properly used.'[549]

8.82 In line with its role in monitoring the use of certain types of chemicals at workplaces, WorkCover is currently investigating whether the incident on 8 August 2011 breached section 10 of the Act.[550]

Committee comment

8.83 The Committee acknowledges that Orica has also followed the appropriate procedures relating to the establishment and consultation of an OH&S committee. It is hoped that the OH&S committee can learn from the incident and ensure steps are taken to prevent a similar occurrence during the next start-up.

8.84 The Committee recognises that WorkCover has operated in accordance with the Act by conducting investigations into whether Orica breached its duties as an employer and a controller of premises. The Committee looks forward to the outcomes of these investigations.

---

544 Submission 11, pp 3-4.

545 *Occupational Health and Safety Act 2000,* s 8.

546 *Occupational Health and Safety Act 2000,* s 8.

547 Submission 11, p 6.

548 *Occupational Health and Safety Act 2000*, s 10.

549 *Occupational Health and Safety Act 2000*, s 10.

550 Submission 11, p 6.

Changes to WorkCover procedures since the leak

8.85 WorkCover has implemented a number of procedural changes since the leak from Orica Kooragang Island on 8 August 2011. Some of these changes were recommended by the O'Reilly Report. Others were developed as part of the Authority's Chemical Incident Improvement Plan. In line with procedures as set out in Work Health & Safety Division's Business Plan 2011/12 and Corporate Plan the improvement plan provides an analysis of WorkCover's policies and practices in response to the chromium VI leak.[551]

8.86 The relevant recommendations of the O'Reilly Report discussed reviewing WorkCover's notification and assessment protocols and ensuring ongoing training for certain staff.[552] The recommendations, as well as other actions, were then incorporated into WorkCover's Chemical Incident Improvement Plan. The objective of the Plan is to '… address the lessons learned from the Orica incident and to review existing policies and practices to continuously improve arrangements for chemical incident prevention, preparedness and response.'[553]

8.87 During his evidence Minister Pearce highlighted some of the key deliverables outlined in the plan, including that:

- All chemical incidents at major hazard facilities will now automatically be classified as high risk incidents.
- There will be verification inspections at all major hazard facilities.
- WorkCover's emergency response policies and practices are to be reviewed.
- Protocols concerning the receipt and processing of notifiable incidents to the Strategic Assessment Centre are being updated.
- All emergency phone line staff will be highly trained.
- All after hours' serious incident notifications will be referred to a senior officer.
- The Strategic Assessment System will be reviewed.[554]

8.88 Additionally, WorkCover has contacted the State Emergency Management Committee and expressed an interest in having greater involvement in emergency preparedness activities.[555]

Committee comment

8.89 The Committee notes that WorkCover has accepted the O'Reilly Report's recommendations that relate to its functions and has conducted its own Chemical Incident Review Plan. The Committee recognises that WorkCover has taken a number of steps to rectify its procedural deficits.

551 Submission 11, Appendix 33, WorkCover Authority, 'Chemical Incident Improvement Plan', p 276.

552 O'Reilly B, 2011, p 38.

553 Submission 11, Appendix 33, p 3.

554 Hon Greg Pearce MLC, Evidence, 21 November 2011, p 6.

555 Submission 11, p 1.

8.90 The Committee notes that classifying all chemical incidents at major hazard facilities as high risk will encourage greater reporting and allow for WorkCover investigations to be conducted in a more prompt manner.

Finding 21

WorkCover has taken a number of steps to implement the O'Reilly Report recommendations and rectify procedural deficits identified by the incident. The Chemical Incident Review Plan of the agency is specifically a response to the lessons of the handling of the Kooragang Island chemical leak.

Chapter 9 Government response – other agencies

This chapter briefly examines how certain other NSW government agencies responded to the incident at Orica Kooragang Island on 8 August 2011. It looks at the response by the NSW Police Force, Fire and Rescue NSW, the Department of Planning and Infrastructure, and the Department of Primary Industries.

NSW Police Force

9.1 The NSW Police Force made a submission to the Inquiry jointly with the Ministry of Police and Emergency Services and Fire and Rescue NSW (FRNSW).

9.2 The NSW Police Force's responsibilities when responding to major pollution incidents are outlined in the *State Emergency and Rescue Management Act 1989* and the NSW State Disaster Plan (Displan).

9.3 The NSW Police Force played a relatively minor role in the Government's response to the incident at Orica on 8 August 2011. The NSW Police Force was not promptly notified of the incident however did respond and seek to offer assistance to other government agencies once informed of the leak.

Notification of the incident

9.4 Police were first notified of the fugitive emissions from Orica Kooragang Island by OEH at approximately 2.15 pm on 10 August 2011. During the initial notification and in a later phone call there was no request by OEH for on-site assistance from the NSW Police Force.[556]

Actions taken once notified

9.5 Once notified of the leak the NSW Police Force took steps to verify what had happened and to cooperate with other government agencies. On 11 August 2011 the Newcastle Local Area Command attended the Kooragang Island site and entered the incident on the COPS database. Assistant Commissioner Mark Murdoch also received a briefing note on the incident from FRNSW.[557]

9.6 From 11-16 August 2011 the NSW Police Force liaised with representatives from NSW Health, OEH, as well as the Hon Michael Gallacher, Minister for Police and Emergency Services, regarding the situation. Discussions covered a range of topics including health concerns, environmental risks and actions being taken by agencies.[558]

---

556 Submission 3, Ministry for Police and Emergency Services, NSW Police Force and Fire and Rescue NSW, p 4.

557 Submission 3, pp 8-9.

558 Submission 3, pp 9-10.

9.7 On 17, 18 and 23 August 2011 police provided situation reports to the local Stockton community about the incident.[559]

9.8 As with all government agencies, the NSW Police Force has accepted the recommendations of the O'Reilly Report and is working towards their implementation.[560] For example, police are assisting in the preparation of amended guidelines for security and emergency plans at major hazard facilities and are providing support for emergency management exercises.[561]

Committee comment

9.9 The Committee is of the view that the NSW Police Force responded appropriately and thoroughly to the incident at Orica based on the notification it received. The Committee did not receive any criticism of the response of the NSW Police Force to the incident.

Fire and Rescue NSW

9.10 As noted above, FRNSW contributed to the joint Ministry of Police and Emergency Services and NSW Police Force submission to the Inquiry.

9.11 FRNSW hazardous response responsibilities are outlined in the *State Emergency and Rescue Management Act 1989*, *Fire Brigades Act 1989* and Displan.

9.12 FRNSW did not play a major role in responding to the incident at Orica despite being the designated combat agency for the management of hazardous materials.[562] FRNSW was initially informed that the fugitive emissions were contained on-site and that its assistance was not required thus the Hazardous Materials/Chemical, Biological, Radiological Emergency Sub Plan was not activated.[563] After receiving further information about the incident FRNSW took steps to assist in minimising fallout from the incident.

Notification of the incident

9.13 At approximately 1.00 pm on 9 August 2011 the Hazmat team of the Newcastle Fire Station received an anonymous phone call regarding the leak. The team contacted Orica at 1.30 pm and spoke to Mr Stuart Newman, Site Manager of Orica Kooragang Island, who confirmed the incident.[564]

9.14 FRNSW has a Memorandum of Understanding (MOU) with the EPA that requires the OEH to notify the FRNSW of any hazardous materials incidents, however 22 hours lapsed before

559 Submission 3, p 10.
560 Submission 3, pp 5-6.
561 Submission 3, pp 5-6.
562 Submission 3, p 12.
563 Submission 3, p 4.
564 Submission 3, p 12.

OEH advised FRNSW of the chromium VI leak.[565] OEH failures in regard to notification are examined in Chapter 6.

Actions taken once notified

9.15 After receiving notification of the incident FRNSW gathered more information about the leak and offered assistance to other government agencies.[566]

9.16 On the morning of 10 August 2011 FRNSW contacted both Orica and OEH to check the progress of the response to the leak.[567]

9.17 At approximately 10.05 am on 11 August 2011 FRNSW was advised of the door knocking efforts taking place in Stockton. Five minutes later FRNSW was informed by OEH that low-level contamination had been detected in Stockton and that FRNSW resources would be activated as an operational contingency. FRNSW then escalated the matter to the Deputy Commissioner Emergency Management who directed that specialised resources be immediately mobilised as a precautionary measure, and consulted with relevant officials to activate the State Emergency Operations Centre.[568]

9.18 On 11-15 August 2011 FRNSW liaised and held briefings with the responding authorities and with the Deputy State Emergency Operations Controller.[569]

9.19 On 18 August 2011 OEH requested that FRNSW assist in the collection of samples from Orica Kooragang Island. The request was denied as Hazmat technicians are not properly trained to conduct such tests, and Occupational Health and Safety concerns were also cited. FRNSW did however offer Hazmat staff to provide safety support to the OEH staff that collected the samples.[570]

9.20 FRNSW informed the Committee that it has accepted the relevant recommendations in the O'Reilly Report and is working towards implementing them. For example, FRNSW is currently consulting with OEH to update the pertinent MOU and as a member of the State Emergency Management Committee has commenced examining whether an emergency plan for the Kooragang Island precinct is possible.[571]

9.21 In its submission FRNSW also noted that the *Protection of the Environment Legislation Amendment Act 2011* requires that FRNSW be immediately notified of all major pollution incidents.[572]

565 O'Reilly B, *A review into the response to the serious pollution incident at Orica Australia Pty. Ltd. ammonium nitrate plant at Walsh Point, Kooragang Island on August 8, 2011*, 30 September 2011, p 27.

566 Submission 3, pp 13-18.

567 Submission 3, p 13.

568 Submission 3, pp 13-14.

569 Submission 3, p 14.

570 Submission 3, p 15.

571 Submission 3, pp 17-18.

572 Submission 3, p 15.

Committee comment

9.22 The Committee notes that FRNSW responded appropriately based on the initial information it received about the chromium VI leak. FRNSW worked with other agencies and sought to offer assistance as appropriate. The Committee recognises that FRNSW is working towards implementing the relevant recommendations of the O'Reilly Report and that the *Protection of the Environment Legislation Amendment Act 2011* contains a requirement that FRNSW be immediately notified of all future major pollution incidents.

9.23 The Committee did not receive any criticism of the response of the FRNSW response to the 8 August 2011 leak.

Department of Planning and Infrastructure

9.24 The Department of Planning and Infrastructure does not have a role in responding to pollution incidents however it does have certain responsibilities in relation to major hazard facilities. Orica notified the Department of Planning and Infrastructure of the leak which has led to an investigation into whether the company has breached the conditions of its project approval.

Notification of the incident

9.25 Orica is required to notify the Department of Planning and Infrastructure of any incidents under its project approval. In its submission to the Inquiry the Department of Planning and Infrastructure outlined the reporting conditions as follows:

> Condition 51 of the project approval (08_0129) requires Orica to notify the Department as soon as practicable following an incident, which has actual or potential significant off-site impact on people and the biophysical environment associated with the approved project. In addition, incidents are to be notified "within 24 hours" under the 1998 consent (DA2/98) which also applies to part of the site.[573]

9.26 Orica notified the Department of Planning and Infrastructure of the incident at approximately 9.30 am on 12 August 2011. After receiving the notification the Department contacted the company requesting further information on the leak.[574]

Actions taken once notified

9.27 In accordance with usual procedures the Department of Planning and Infrastructure played no operational role in the response to the incident on 8 August 2011. The Department informed the Committee that it did however receive an Interim Incident Report from Orica on 15 August 2011 and is finalising its consideration as to whether the late notification by the company complied with its 'Breach Management Guidelines'.[575]

---

573 Submission 24, Department of Planning and Infrastructure, p 2.

574 Submission 24, p 1.

575 Submission 24, p 2

9.28 The Department of Planning and Infrastructure also advised that it had reviewed the O'Reilly Report and determined the recommendations did not require it to take any action.[576]

9.29 The Department of Planning and Infrastructure also advised that it has suspended the processing of Orica Kooragang Island's current modification application until the EPA lifts its 'shut down' notice.[577]

Committee comment

9.30 The Committee notes that the Department of Planning and Infrastructure has no operational response in relation to pollution incidents but is investigating whether Orica met its Breach Management Guidelines obligations as a major hazard facility. The Committee looks forward to the outcome of this investigation.

Department of Primary Industries

9.31 The NSW Food Authority and the Department of Primary Industries – Fisheries were notified about the incident by NSW Health due to concerns about the impact that chromium VI could have on the local recreational and commercial fishing industries. Once notified of the leak both organisations took steps to ensure the risk to public health was minimised.

Notification of the incident

9.32 The NSW Food Authority was notified of the incident by Hunter New England Population Health in the afternoon of 11 August 2011. Hunter New England Population Health had been concerned about the possible impact of the leak on the local oyster industry. On the same day the NSW Food Authority notified the Department of Primary Industries – Fisheries of the leak as commercial prawn trawling occurs in the region.[578]

Actions taken once notified

9.33 After being notified of the incident at Orica the NSW Food Authority and the Department of Primary Industries – Fisheries sought to ensure public health issues relevant to their portfolios were being addressed. On 12 August 2011 Hunter New England Population Health assured both organisations that there was a low level public health risk from the leak and that no additional restrictions on recreational or commercial fishing in the Hunter River were required.[579]

9.34 The Department of Primary Industries noted in its submission the importance of timely notification of pollution incidents to its agencies.[580]

576 Submission 24, p 2.

577 Submission 24, p 3.

578 Submission 20, Department of Primary Industries, pp 1-2.

579 Submission 20, pp 2-3.

580 Submission 20, p 3.

Committee comment

9.35 The Committee recognises the importance of notifying the NSW Food Authority and the Department of Primary Industries – Fisheries of pollution incidents to ensure the safety of recreational and commercial fishing stocks. The Committee notes that the correct notification procedures were followed in this instance and that both agencies acted appropriately.

Finding 22

The NSW Police Force responded appropriately and thoroughly to the incident at Orica based on the notification it received.

Fire and Rescue NSW, once belatedly advised of the leak by the Office of Environment and Heritage, worked with other agencies and assisted as appropriate. The Committee recognises that Fire and Rescue NSW is working towards implementing the relevant recommendations of the O'Reilly Report.

Finding 23

The Department of Planning and Infrastructure met its requirements once notified of the incident.

Finding 24

The NSW Food Authority and the Department of Primary Industries – Fisheries followed correct notification procedures and both agencies acted appropriately following notification of the leak.

Appendix 1 Submission list

No	Author
1	National Toxics Network Inc.
2	Stockton Branch of the ALP
3	Ministry for Police and Emergency Services, NSW Police Force and Fire and Rescue NSW
4	Mr Steve Haigh
4a	Mr Steve Haigh
4b	Mr Steve Haigh
4c	Mr Steve Haigh
5	Stockton Public School
6	Name suppressed
7	Air Liquide Australia Limited
8	Name suppressed
9	Newcastle Greens
10	Confidential
11	WorkCover NSW (partially confidential)
12	Environmental Defenders' Office Ltd
13	Stockton Community Action Group
14	Ms Melissa Rogers-Hyde
15	Ms Coleen Green
16	Orica Limited
16a	Orica Limited
16b	Orica Limited
17	Office of Environment and Heritage
18	Newcastle City Council
19	Ms Lynda Newnam
19a	Ms Lynda Newnam
20	Department of Primary Industries
21	Ministry of Health
22	Ms Vicki Warwyck

No	Author
23	Nature Conservation Council of NSW and Total Environment Centre
24	Department of Planning and Infrastructure
25	Confidential
26	Clr Sharon Claydon
27	Mrs Vera Deacon

Appendix 2 Witnesses at hearings and forums

Date	Name	Position and Organisation
Monday 14 November 2011	Clr Michael Osborne	Councillor, Newcastle City Council
Public Forum	Ms Vicki Warwyck	Resident
The Auditorium **Stockton RSL, Stockton**	Ms Barbara Whitcher	Secretary, Stockton Branch of the ALP
	Clr Sharon Claydon	Councillor, Newcastle City Council
	Mr Shane Gately	Resident
	Mr John Hayes	Convenor, Correct Planning and Consultation for Mayfield Group
	Ms Lyn Kilby	Representative, Great Lifestyle of Wickham
	Mr Keith Craig	Member, Stockton Community Action Group
	Mr Gavin Talbot	Resident and Stockton Parish Priest
	Mr Bill Todhunter	Resident
	Mr James Giblin	Resident
	Ms Lesley Newling	Resident
	Mr Alan McMaster	Resident
	Mrs Vera Deacon	Resident
Tuesday 15 November 2011 **Public Hearing**	Mr Stuart Newman	Site Manager, Orica, Kooragang Island
The Auditorium **Stockton RSL, Stockton**	Mr Warren Ashbourne	Night Shift Supervisor, Orica, Kooragang Island
	Ms Kate Johnson	Interim Chairperson, Stockton Community Action Group
	Mr Keith Craig	Member, Stockton Community Action Group
	Ms Jemma Sergent	Member, Stockton Community Action Group
	Mr Frank Rigby	Resident
	Mr Ark Griffin	Founder and Editor, Stockton Messenger.
Thursday 17 November 2011 **Public Hearing**	Mr Graeme Liebelt	Managing Director and Chief Executive Officer, Orica Limited
Jubilee Room **Parliament House, Sydney**	Mr Pepe Clarke	Chief Executive Officer, Nature Conservation Council
	Mr Jeff Angel	Executive Director, Total Environment Centre

Date	Name	Position and Organisation
Monday 21 November 2011	Hon Greg Pearce MLC	Minister for Finance and Services
Public Hearing	Hon Jillian Skinner MP	Minister for Health
Jubilee Room **Parliament House, Sydney**	Dr Kerry Chant	Deputy Director General, Population Health and Chief Health Officer, NSW Ministry of Health
	Hon Barry O'Farrell MP	Premier of New South Wales
	Hon Robyn Parker MP	Minister of the Environment
	Ms Lisa Corbyn	Chief Executive, Office of Environment and Heritage
	Mr Greg Sullivan	Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage
	Ms Linda Roy	Manager (Information Centre), Office of Environment and Heritage
Wednesday 7 December 2011 **Public Hearing** **Jubilee Room**	Mr James Bonner	Head, Crisis Management Team (8 August incident), Orica, Kooragang Island
Parliament House, Sydney	Ms Sherree Woodroffe	Sustainability Manager, Orica, Kooragang Island

Appendix 3 Tabled documents

1 Map of Stockton sampling site, Office of Environment and Heritage, tendered on 21 November 2011 by Dr Kerry Chant, Deputy Director General, Population Health and Chief Health Officer, NSW Ministry of Health.

2 Hunter Region file note, dated 9 August 2011, tendered on 17 February 2012 by Hon Trevor Khan MLC.

3 Inspection report, dated 9 August 2011, tendered on 17 February 2012 by Hon Trevor Khan MLC.

Appendix 4 Answers to questions on notice

15 November 2011

- Orica Limited

17 November 2011

- Orica Limited

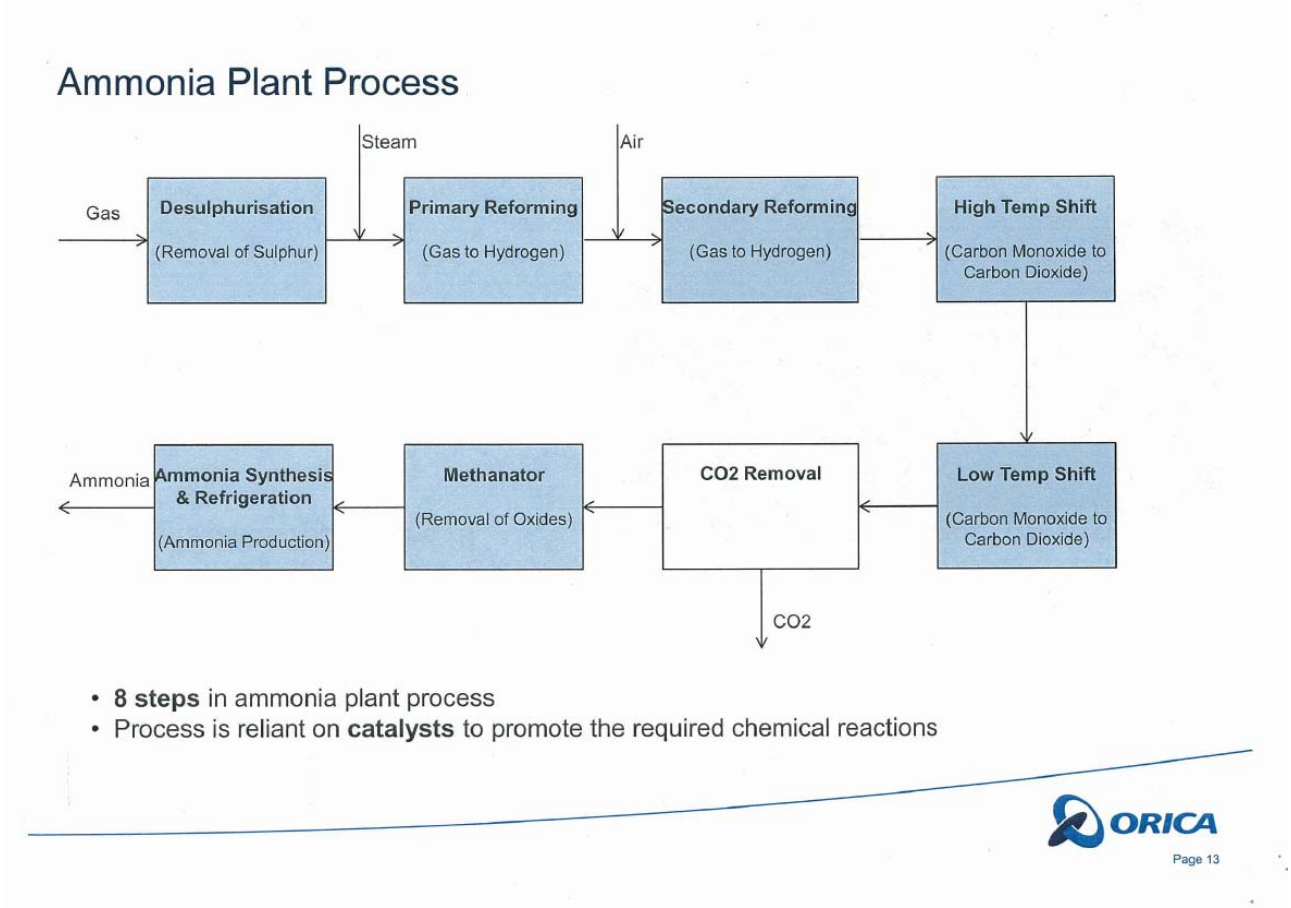
21 November 2011

- Premier of NSW
- Office of Environment and Heritage
- Workcover NSW
- Ministry of Health

7 December 2011

- Orica Limited

Appendix 5 Ammonia plant process



Source: Orica Presentation, 14 November 2011, p 13.

Appendix 6 Minutes

Minutes No. 1
Wednesday 7 September 2011
Select Committee on the Kooragang Island Orica chemical leak
Room 1136, Parliament House, Sydney, 2:00pm

1. Members present
Mr Borsak (Chair)
Ms Faehrmann (Deputy Chair)
Mr Foley
Mr Kahn
Mr Mason-Cox
Mr Searle
Mrs Pavey

2. Meeting declared open
According to Standing Order 213(1), the Committee Clerk declared the meeting open.

3. Tabling of resolution establishing the Committee
The Committee Clerk tabled the resolution of the House of 25 August 2011 establishing the Committee.

4. Committee membership
The Committee Clerk tabled the minutes of the House of 6 September 2011, reporting nominations for membership of the Committee.

5. Election of Chair
According to Standing Order 213(2), the Committee Clerk called for nominations for the Chair.

Mr Foley moved: That Mr Borsak be elected Chair of the Committee.

There being no further nominations, the Committee Clerk declared Mr Borsak elected Chair.

6. Election of Deputy Chair
The Chair called for nominations for the Deputy Chair

Mr Foley moved: That Ms Faehrmann be elected Deputy Chair of the Committee.

There being no further nominations, the Chair declared Ms Faehrmann elected Deputy Chair.

7. Procedural motions
Resolved, on the motion of Mr Searle:

Filming, broadcasting and still photography of public proceedings
That the Committee authorises the filming, broadcasting and still photography of the public proceedings of the Committee, in accordance with the resolution of the Legislative Council of 18 October 2007.

Publishing transcripts of evidence
That, unless the Committee decides otherwise, the Committee authorises the publication of transcripts of evidence taken at public hearings.

Publishing answers to questions on notice
That, unless the Committee decides otherwise, the Committee authorises the publication of answers to questions on notice.

Media statements
That, unless the Committee decides otherwise, media statements on behalf of the Committee may be made only by the Chair.

Inviting witnesses
That, unless the Committee decides otherwise, arrangements for inviting witness are to be left in the hands of the Chair and the Committee Clerk, after consultation with the Committee.

8. Conduct of Inquiry
The Committee noted that the resolution of the House establishing the Committee stipulates that the Committee cannot meet again until the first sitting week after the publication of the final report of the inquiry by Brendan O'Reilly, and that the O'Reilly report is due on 30 September 2011.

Resolved on the motion of Mr Foley: That the Committee meet on Monday 10 October 2011, at 1pm and, at that meeting, consider the O'Reilly report and determine the Inquiry schedule including the call for submissions, advertising the inquiry and other matters.

Resolved on the motion of Mr Foley: That the Chair issue a press release advising of the outcome of the election of the Chair and Deputy Chair and of the Committee's decision to await the O'Reilly report before commencing its submission phase.

Adjournment
The Committee adjourned at 2:25pm, until Monday 10 October 2011 at 1:00pm.

Rachel Callinan
Clerk to the Committee

Minutes No. 2
Monday 10 October 2011
Select Committee on the Kooragang Island Orica chemical leak
Parkes Room, Parliament House, Sydney, 1:00pm

1. Members present
Mr Borsak (Chair)
Ms Faehrmann (Deputy Chair)
Mr Foley
Mr Khan
Mr Mason-Cox
Mr Searle
Mrs Pavey

2. Minutes
Resolved, on the motion of Mr Foley: That Minutes No 1 be adopted.

3. Correspondence
The following item of correspondence received was noted:

- 22 September 2011 – Letter from Mr Graeme Liebelt, Managing Director and CEO, Orica Limited, inviting the Committee to tour its facilities at Kooragang Island.

4. Report of the review into the Orica chemical leak
The Committee noted the release of the report of the review into the response to the Orica chemical leak on behalf of the Premier's Department by Mr Brendan O' Reilly.

5. Conduct of the Inquiry

Submissions

Resolved, on the motion of Ms Faehrmann: That the Committee call for submissions with a closing date of 4 November 2011.

Advertising

Resolved, on the motion of Ms Faehrmann: That the Committee advertise the call for submissions in the *Newcastle Herald*, *The Post* and the *Newcastle Star*.

Invitations to make submissions

Resolved, on the motion of Mr Khan: That the Committee invite the stakeholders listed in the attachment to the Agenda to make a submission and that Members notify the Secretariat of any additional stakeholders to invite by c.o.b Tuesday 11 October 2011.

Site visit

Resolved, on the motion of Ms Pavey: That the Committee accept the invitation extended by Orica Ltd to tour the facilities at Kooragang Island and 14 November 2011 be proposed as the date of the site visit.

Hearings

Resolved, on the motion of Ms Pavey: That the Committee hold a hearing and a forum in the Newcastle/Stockton area on 14 November 2011, with 15 November as a reserve day.

Resolved, on the motion of Mr Foley: That the Committee hold a hearing in Sydney on Thursday 17 November 2011, with Friday 18 November as a reserve day.

Resolved, on the motion of Mr Foley that the following witnesses be invited to appear at the hearings:

Newcastle/Stockton hearing:

- Mr Frank Rigby
- Stockton Residents Group
- Editor of the 'Stockton Messenger, Ark Griffin ???
- Orica Kooragang Island – Site Manager, Shift Manager.
- AWU Shop Steward
- Newcastle City Council (general invitation to counsellors and senior staff who wish to attend)

Sydney hearing:

- Orica: Graeme Liebelt, General Manager (and such staff as he may suggest)
- Premier
- Environment Minister and relevant departmental staff including Lisa Corbyn and Greg Sullivan
- Supervisor/manager of the OEH Environment Hotline
- Health Minister and relevant departmental staff including Kerry Chant
- Minister for Finance and Services and relevant staff from WorkCover.

Reporting time frame

Resolved on the motion of Mr Searle: That the Committee note that the resolution of the House establishing the Committee stipulates that the Committee is to report by the last sitting day of the second sitting week of 2012.

Media release

Resolved, on the motion of Mr Foley: That the Chair issue a media release advising that: the Committee is calling for submissions with a closing date of 4 November 2011; the Committee has accepted Orica's invitation to undertake a tour of the facilities and will hold a public hearing and forum in the Newcastle/Stockton area on 14/15 November and a hearing in Sydney on 17 November 2011; and that the Committee will invite a number of witnesses to the hearings including the Premier, the Minister for the Environment, the Minister for Health, the Minister for Finance and Services and Departmental officials.

6. Adjournment

The Committee adjourned at 1:55pm, *sine die*.

Rachel Callinan
Clerk to the Committee

Minutes No. 3
Thursday 20 October 2011
Select Committee on the Kooragang Island Orica chemical leak
Room 1136, Parliament House, Sydney, 2:00pm

1. Members present

Mr Borsak (Chair)
Ms Faehrmann (Deputy Chair)
Mr Foley
Mr Khan
Mr Mason-Cox
Mr Searle
Mrs Pavey

2. Minutes

Resolved, on the motion of Mr Foley: That Minutes No 2 be confirmed.

3. Correspondence

The Committee noted the following items of correspondence received:

- 14 October 2011 – Letter from the Premier advising that he is unable to attend a hearing on 17 or 18 November as he will be overseas, and noting that he may be available on 21 November.
- 17 October 2011 – Email response from Mr Brendan O'Reilly declining the Select Committee's invitation to make a submission to the Inquiry.

4. Hearing dates and witnesses

Resolved, on the motion of Mr Foley: That the Premier be invited to attend the public hearing on Monday 21 November at a time identified by the Premier.

Resolved, on the motion of Mr Foley: That the Minister for the Environment, Minister for Health and the Minister for Finance and Services be invited to attend the public hearing on either Thursday 17 November or Monday 21 November, noting the Committee's preference that they appear at the earlier date.

Resolved, on the motion of Mr Foley: That the hearing schedules reflect the following allocation of time:

- The Premier to give evidence for up to 1 hour and 30 minutes
- Minister for the Environment to give evidence for up to three hours
- Minister for Health to give evidence for up to 1 hour and 30 minutes
- Minister for Finance and Services to give evidence for up to 1 hour.

Resolved, on the motion of Mr Mason-Cox: That the opening statement of the Government witnesses be limited to five minutes and any time taken over this limit is to be deducted from the Government members question time.

The Committee Director informed the Committee that Orica have requested that Mr Warren Ashbourne, Shift Manager, Orica Kooragang Island site, not be invited to appear.

Resolved, on the motion of Mrs Pavey: That Mr Stuart Newman, Site Manager, and Mr Warren Ashbourne, Shift Manager, Orica Kooragang Island site, both be invited to attend the public hearing in Stockton/Newcastle as previously resolved.

5. Adjournment

The Committee adjourned at 2:18pm, *sine die*.

Rachel Callinan
Clerk to the Committee

Minutes No. 4
Wednesday 9 November 2011
Select Committee on the Kooragang Island Orica chemical leak
Members' Lounge, Parliament House, Sydney, 10:01 am

1. Members present

Mr Borsak (Chair)
Ms Faehrmann (Deputy Chair)
Mr Foley
Mr Khan
Mr Mason-Cox
Mr Searle
Mrs Pavey

2. Minutes

Resolved, on the motion of Mr Foley: That Minutes No. 3 be confirmed.

3. Submissions

3.1 Consideration of publication of public submissions:

Resolved, on the motion of Mr Foley: That the Committee authorise the publication of Submission No.s 1-5, No. 7, No. 9, No. 11 (except for Part 4 and Tabs 13-19, 24, 26, 28, 30), No.s 12-15, No.s 17-21, No. 23.

3.2 Consideration of publication of submissions with requests for name suppression

Resolved, on the motion of Mr Foley: That the Committee authorise the publication of Submission No. 6 and No. 8 with the exception of the name and other identifying details of the authors which are to remain confidential at the author's request.

3.3 Consideration of publication of submissions with possible adverse mention

Resolved, on the motion of Mr Foley: That the Committee authorise the publication of Submission No. 22 with the exception of the names of identified medical professionals which are to remain confidential.

3.4 Consideration of requests for confidentiality

Resolved, on the motion of Mr Mason-Cox: That Submission No. 10 and No. 11 (partial) remain confidential.

3.5 Consideration of request for confidentiality of Orica submission

Resolved, on the motion of Mr Khan: That the Secretariat write to Orica requesting that it provide its reasons for requesting confidentiality and request that Orica respond to the Committee by 5 pm on Thursday 10 November 2011 and that the Committee will publish the submission in full if Orica does not respond to the request.

4. Hearings

Notices of hearings
The Committee noted the hearing schedules for 15, 17 and 21 November.

Consideration of Orica's response regarding the Committee's invitation to Mr Ashbourne
Resolved, on the motion of Mr Searle: That the Committee decline Orica's request that Mr Newman and Mr Ashbourne give their evidence in private but grant the request that the witnesses have a lawyer present in an advisory capacity, and that the Committee write to Orica advising of its decision and request confirmation of the witnesses by 5 pm on Thursday 10 November 2011.

Consideration of requests to appear at hearings
Resolved, on the motion of Ms Faehrmann: That Mr Michael Osbourne, Councillor, Newcastle City Council, and Ms Sharon Claydon, Councillor, Newcastle City Council be invited to attend the public forum on 14 November 2011.

Resolved, on the motion of Mr Searle: That the Nature Conservation Council of NSW and the Total Environment Centre be invited to attend the public hearing on 17 November 2011.

Resolved, on the motion of Mr Mason-Cox: That the Committee decline Ms Lynda Newman's request to attend the hearing on 17 November 2011 on the basis that her submission concerns the Orica facilities at North Botany Bay.

5. Other business

Participating members
The Committee noted Ms Faehrmann's advice that she will be absent from the public hearing on Monday 21 November 2011 and that Mr Buckingham will attend as a participating member.

Public forum
Resolved, on the motion of Ms Faehrmann: That in the event that the maximum number of people do not register to participate in the public forum the Committee open the floor to discussion after the last speaker.

6. Next meeting
14 November 2011, 10.30 am, Parliament House (for visit to Stockton for site visit to Orica Kooragang Island, public forum and public hearing).

7. Adjournment
The Committee adjourned at 10.33 am.

Rachel Callinan
Clerk to the Committee

Minutes No. 5
Friday 11 November 2011
Select Committee on the Kooragang Island Orica chemical leak
Room 1153, Parliament House, Sydney, 1.30 pm

1. Members present
Mr Borsak (Chair)
Ms Faehrmann (Deputy Chair)
Mr Khan
Mr Mason-Cox
Mr Searle
Mrs Pavey

2. Apologies
Mr Foley

3. Communication from Orica
The Committee Director provided the Committee with a file note of her conversation earlier today with Mr Chris Hansen and Mr John Emmerig representing Orica.

Discussion ensued.

Resolved, on the motion of Mr Khan: That:

- the Committee authorises the publication of Submission No. 16, Orica;
- the submission be placed on the Committee's web page; and
- the Secretariat notify Orica of its decision.

Resolved, on the motion of Mr Searle: That:

- the Committee decline the request made by Orica for Mr Stuart Newman and Mr Warren Ashbourne to give evidence at the Committee's hearing on 15 November 2011 entirely *in camera*;
- the Committee write to Orica to advise of its decision, noting that during the giving of evidence in the public hearing the witnesses may request that their answer to particular questioning be given *in camera*, stating their reasons, and the Committee will consider the request;
- the Committee's letter requests that Orica notifies the Committee by 6.00pm Friday 11 November whether Mr Newman and Mr Ashbourne accept the Committee's invitation to appear at the public hearing; and
- if Mr Stuart Newman and Mr Warren Ashbourne decline the Committee's invitation, or do not respond by 6.00pm today, the Chair is authorised to issue a summons to Mr Newman and Mr Ashbourne to appear from 9.00am to 11.00am at the public hearing to be held at the Stockton RSL on 15 November 2011.

4. Next meeting

14 November 2011, 10.30 am, Parliament House (for visit to Stockton for site visit to Orica Kooragang Island, public forum and public hearing).

5. Adjournment

The Committee adjourned at 1.59 pm.

Rachel Callinan
Clerk to the Committee

Minutes No. 6
Monday 14 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
Site visit to Orica, Kooragang Island, at 2:00 pm

1. Members present

Mr Borsak, *Chair*
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Also present from the Secretariat

Ms Rachel Callinan, Director
Ms Velia Mignacca, Principal Council Officer

3. Site visit to Orica, Kooragang Island

The Committee and Secretariat staff attended the Orica site at Kooragang Island.

The Committee was provided with a briefing by the following staff of Orica, Kooragang Island:

- Mr Stuart Newman, Site Manager
- Mr Warren Ashbourne, Shift Supervisor, and
- Mr Peter McGrath, Ammonia Plant Manager.

Also present were:

- Ms Sarah Jones, Orica legal representative
- Mr John Emmerig, Orica legal representative.

The Committee conducted a tour of the inspection of the Orica site accompanied by the above individuals.

4. Adjournment

The Committee adjourned at 4:30 pm until Monday 14 November 2011, 5:30pm, Public Forum.

Rachel Callinan
Clerk to the Committee

Minutes No. 7
Monday 14 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
The Auditorium, Stockton RSL, Stockton at 5:20 pm

1. Members present
Mr Borsak, *Chair*
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Submissions
Resolved, on the motion of Ms Pavey: That the Committee authorise the publication of submissions 24 and 26.

3. Request from Orica to have legal adviser present with Mr Liebelt
The Committee Director conveyed a request made by Mr Hansen on behalf of Mr Liebelt, that Mr Liebelt appear at the hearing on 17 November with a legal adviser, Mr John Emmerig, present.

Resolved, on the motion of Ms Pavey: That the Committee agree to Mr Liebelt's request to have an adviser present during his appearance before the Committee at 10.00am on 17 November 2011.

4. Public forum
The public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and the forum proceedings.

The following individuals appeared before the Committee:
- Clr Michael Osborne
- Ms Vicki Warwyck
- Ms Barbara Whitcher
- Clr Sharon Claydon
- Mr Shane Gately
- Mr John Hayes
- Ms Lyn Kilby
- Mr Keith Craig
- Revd Colin Talbot
- Mr Bill Todhunter
- Mr James Giblin
- Ms Lesley Newling
- Mr Alan McMaster
- Ms Vera Deacon.

The public forum concluded and the public and the media withdrew.

5. Adjournment
The Committee adjourned at 6:40 pm until Tuesday 15 November 2011, 9:00am, Public hearing.

Rachel Callinan
Clerk to the Committee

Minutes No. 8
Tuesday 15 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
The Auditorium, Stockton RSL, Stockton at 9:10 am

1. Members present
Mr Borsak, *Chair*
Ms Faehrmann, *Deputy Chair* (until 11.15am)
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Apologies
Mr Foley

3. Timing of questions
Resolved on the motion of Mr Searle: That the timing of questioning for today's hearing be divided as follows: Opposition 20 minutes, Government 20 minutes and Ms Faehrmann 10 minutes, with the remainder divided evenly.

4. Public hearing
The witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:
- Mr Stuart Newman, Site manager, Orica, Kooragang Island site
- Mr Warren Ashbourne, Night shift supervisor, Orica, Kooragang Island site.

Also present in an advisory capacity to the witnesses, as previously resolved: Mr John Emmerig.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Ms Kate Johnson, Interim Chairperson, Stockton Community Action Group
- Mr Keith Craig, Member, Stockton Community Action Group
- Ms Jemma Sergeant, Stockton Community Action Group.

The evidence concluded and the witnesses withdrew.

The following witness was sworn and examined:
- Mr Frank Rigby, Stockton resident.

The evidence concluded and the witness withdrew.

The following witness was sworn and examined:
- Mr Ark Griffin, Editor, Stockton Messenger.

The evidence concluded and the witness withdrew.

The public hearing concluded and the public and the media withdrew.

5. Adjournment
The Committee adjourned at 1:00 pm until Thursday 17 November 2011 at 10:30 am, public hearing.

Rachel Callinan
Clerk to the Committee

Minutes No. 9
Thursday 17 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
Jubilee Room, Parliament House, Sydney at 9:48 am

1. Members present
Mr Borsak, *Chair*
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Confirmation of previous minutes
Resolved, on the motion of Mrs Pavey: That draft Minutes Nos 5, 6, 7 be confirmed.

Resolved, on the motion of Mrs Pavey: That draft Minutes No 8 be amended to insert the following after Item 3.

3. Answers to questions on notice
Resolved, on the motion of Mr Searle: That witnesses appearing before the Committee during this inquiry be asked to provide answers to questions within 21 days of receipt of the marked up transcript.

4. Publication of Orica presentation
Resolved, on the motion of Ms Pavey: That the powerpoint presentation document provided by Orica as part of the briefing at the Kooragang Island plant on Monday 14 November 2011 be published.

Resolved, on the motion of Ms Pavey: That Minutes No 8, as amended, be adopted.

5. Submissions
Resolved, on the motion of Mr Khan: That the Committee agree to the request made by the author of submission No 25 to keep the submission confidential.

6. Other business
Ms Faehrmann advised that Mr Jeremy Buckingham will be attend the hearing on Monday 21 November 2011 as a participating member between 9:00am until 1:15 pm.

7. Public hearing

The witnesses, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witness was sworn and examined:

- Mr Graeme Liebelt, Managing Director and Chief Executive Officer, Orica Limited.

Also present in an advisory capacity to the witness, as previously resolved: Mr John Emmerig.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:

- Mr Pepe Clarke, Chief Executive Officer, Nature Conservation Council
- Mr Jeff Angel, Executive Director, Total Environment Centre

The evidence concluded and the witnesses withdrew.

The public hearing concluded and the public and the media withdrew.

8. Additional witnesses

Resolved, on the motion of Mr Khan: That Orica2's Sustainability Manager and the head of Orica's Crisis Management Team, Mr James Bonner, be invited to appear before the Committee together for a total of three hours on a date to be confirmed by the Secretariat in consultation with the Committee.

9. Adjournment

The Committee adjourned at 1:00 pm until Monday 21 November 2011 at 9:00 am, Public Hearing.

Rachel Callinan
Clerk to the Committee

Minutes No. 10
Monday 21 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
Room 1136, Parliament House, Sydney at 8:30 am

1. Members present

Mr Brown (subsequently elected *Chair*)
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Resignation of Mr Borsak and nomination of Mr Brown

The Committee noted the advice of the Clerk of the Parliaments on Friday 18 November that Mr Borsak had resigned from the Committee causing a Cross Bench vacancy on the Committee.

The Committee noted the Clerk of the Parliament's subsequent advice on Friday 18 November that Mr Brown had nominated himself to fill the vacancy from the Cross Bench and that, as there were no further nominations, Mr Brown fills the vacancy created by Mr Borsak.

3. Election of a Chair

The Committee noted that Mr Borsak's resignation from the Committee caused a vacancy in the position of Chair.

According to Standing Order 213(2), the Committee Clerk called for nominations for the Chair.

Mr Mason-Cox moved: That Mr Brown be elected Chair of the Committee.

Mr Searle moved: That Ms Faehrmann be elected Chair of the Committee.

The Clerk informed the Committee that, there being two nominations, a ballot would be held.

Ballot conducted.

The Clerk announced the result of the ballot as follows:

Mr Brown: 4 votes

Ms Faehrmann: 3 votes.

Mr Brown, having a majority of the members present and voting, was therefore declared elected Chair of the Committee.

4. Confirmation of previous minutes
Resolved, on the motion of Mr Foley: That draft Minutes No 9 be confirmed.

5. Correspondence
The Committee noted the following item of correspondence sent:

- 11 November 2011 – From Chair to Mr Liebelt regarding Orica's submission and witness appearances.

6. Hearing
Resolved, on the motion of Mr Khan: That the timing for questioning for today's hearing be divided as follows: Opposition 20 minutes, Cross Bench 20 minutes, Government 20 minutes, with the remainder divided evenly.

Resolved, on the motion of Mr Khan: That if the Ministers and Premier exceed 5 minutes in their opening statement that the excess time be deducted from the Government's time for questioning.

7. Adjournment
The Committee adjourned at 8:50 am until 9.00am, Jubilee Room.

Rachel Callinan
Clerk to the Committee

Minutes No. 11
Monday 21 November 2011
Select Committee on the Kooragang Island Orica Chemical Leak
Jubilee Room, Parliament House, Sydney at 9.00 am

1. Members present
Mr Brown, *Chair*
Ms Faehrmann, *Deputy Chair (from 4.30pm)*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle
Mr Buckingham (*participating member, from 9.20am – 12.45pm*)

2. Public hearing

The witness, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters. The Chair welcomed the Hon Greg Pearce MLC, Minister for Finance and Services and noted that he did not need to be sworn as he had sworn an oath to his office as a member of Parliament.

The Minister was examined by the Committee.

The evidence concluded and the witness withdrew.

The Chair welcomed the Hon Jillian Skinner MP, Minister for Health before the Committee and noted that she did not need to be sworn as she had sworn an oath to her office as a member of Parliament.

The following departmental witness was sworn:

- Dr Kerry Chant, Deputy Director General, Population Health & Chief Health Officer, NSW Ministry of Health.

The Minister and the departmental witness were examined by the Committee.

The evidence concluded and the witnesses withdrew.

The Chair called for a short adjournment until 11:45am.

The Chair re-opened the hearing at 11.45am and made a statement regarding the broadcasting of proceedings and other matters.

The Chair welcomed the Hon Barry O'Farell MP, Premier, and noted that he did not need to be sworn as he had sworn an oath to his office as a member of Parliament.

The Premier was examined by the Committee.

The evidence concluded and the Premier withdrew.

The Chair called for an adjournment until 4:30 pm.

The public hearing adjourned at 12:45 pm until 4.30 pm, the public and the media withdrew.

The Chair re-opened the hearing at 4.30pm and made a statement regarding the broadcasting of proceedings and other matters.

The Chair welcomed the Hon Robyn Parker MP, Minister for Environment and noted that she did not need to be sworn as she had sworn an oath to her office as a member of Parliament.

The following departmental witnesses were sworn:

- Ms Lisa Corbyn, Chief Executive, Office of Environment and Heritage
- Mr Greg Sullivan, Deputy Chief Executive, Environment Protection and Regulation Group, Office of Environment and Heritage
- Ms Linda Roy, Manager (Information Centre), Office of Environment and Heritage Environment Hotline.

The Minister and the departmental officers were examined.

The evidence concluded at 7.05 pm and the Minister and department witnesses withdrew.

The public and the media withdrew.

3. Deliberative

3.1 Correspondence

The Committee noted the following item of correspondence received:

- 21 November 2011 – to Director from Ms Bernadette Grant, Director, Legal Group, Workcover, requesting that Tab 32 attached to Workcover's submission be now treated as confidential as it contains that names of individual workers at the Orica plant and details of medical testing carried out in respect of those workers.

Mr Khan moved: That Tab 32 be treated as confidential.

Mr Searle moved: That the motion of Mr Khan be amended by omitting all words after 'Tab 32' and inserting 'be made public with the names of the workers deleted to ensure anonymity'.

Amendment put and passed.

Original question, as amended, put and passed.

3.2 Additional questions on notice

Resolved, on the motion of Mr Searle: That members submit any additional questions on notice for today2's witnesses to the Secretariat by 5.00pm Wednesday 23 November 2011.

4. Adjournment

The Committee adjourned at 7.10 pm, *sine die*.

Rachel Callinan
Clerk to the Committee

Minutes No. 12
Wednesday 7 December 2011
Select Committee on the Kooragang Island Orica Chemical Leak
Jubilee Room, Parliament House, Sydney at 9:45 am

1. Members present

Mr Brown, *Chair*
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Mitchell (participating)
Mr Searle

2. Apologies

Mrs Pavey.

3. Participating member

The Committee noted that Mrs Mitchell is in attendance as a participating member for the hearing.

4. Minutes

Resolved, on the motion of Mr Mason-Cox: That draft Minutes Nos 10 and 11 be confirmed.

5. Submissions

Resolved, on the motion of Ms Faehrmann: That the Committee authorise the publication of supplementary submissions 4a, 4b and 19a.

6. Other business

6.1 Communication with the Secretariat

The Chair advised the Committee of a phone call between the Director and a witness to this inquiry in which it was disclosed that the witness had received negative comments and emails following the appearance of the witness before the Committee.

Discussion ensued.

Resolved, on the motion of Mr Searle: That the Chair write to the witness on behalf of the Committee to express the Committee's concern and to offer any assistance or advice that may be required.

6.2 Further hearings

Resolved, on the motion of Ms Faehrmann: That the Committee defer consideration of whether to hold further hearings for this inquiry until after receipt of the answers to questions on notice from Mr Liebelt, and that after receipt of the answers Members are to indicate to the Secretariat, within 72 hours, whether they wish to hold more hearings.

7. Public hearing

The witness, the public and the media were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:

- Ms Sheree Woodroffe , Sustainability Manager, Orica Kooragang Island
- Mr James Bonner, Head, Crisis Management Team, Orica Kooragang Island.

Mr Bonner made an opening statement and tendered his opening statement to the Committee.

Ms Woodroffe made an opening statement and tendered her opening statement to the Committee.

The Chair called for a short adjournment from 11.30 am.

The Chair re-opened the hearing at 11.45 am.

The evidence concluded at 12.50 pm and the witnesses withdrew.

The public and the media withdrew.

8. Adjournment

The Committee adjourned at 12.50 pm, until Friday 17 February 2012 at 9.30 am for the report deliberative.

Rachel Callinan
Clerk to the Committee

Minutes No. 13
Thursday 16 February 2012
Select Committee on the Kooragang Island Orica Chemical Leak
Members Lounge, Parliament House, Sydney at 1.00 pm

1. Members present
Mr Brown, *Chair*
Ms Faehrmann, *Deputy Chair*
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

2. Submissions
Resolved, on the motion of Ms Pavey: That the Committee authorise the publication of Supplementary Submission 16a, Orica Limited.

3. Proposed amendments to the Chair's draft report
The Chair tabled proposed amendments to the Chair's draft report that incorporate the information contained in Supplementary Submission 16a.

4. Adjournment
The Committee adjourned at 1.05 pm.

Steven Reynolds
Clerk to the Committee

Draft Minutes No. 14
Friday, 17 February 2012
Room 1254, Parliament House, Sydney, at 9.30am

5. Members present
Mr Brown (Chair)
Ms Faehrmann (Deputy Chair)
Mr Foley
Mr Khan
Mr Mason-Cox
Mrs Pavey
Mr Searle

6. Minutes
Resolved, on the motion of Mr Searle: That draft Minutes Nos. 12 and 13 be adopted.

7. Correspondence
The Committee noted the following items of correspondence:

Received:

- 7 December 2011 – Mr Chris Eccles, Director General, Department of Premier and Cabinet to Chair, providing advice on the Premier's question on notice on 21 November 2011.
- 13 December 2011 – Blake Dawson to Chair, providing answers to questions taken on notice from Orica Limited from hearings on 15 November and 17 November 2011.
- 13 December 2011 – Hon Robyn Parker MP, Minister for Environment and Heritage to Chair, providing answers to questions taken on notice from hearing on 21 November 2011.
- 13 December 2011 – Hon Greg Pearce MLC, Minister for Finance and Services to Chair, providing answers to questions taken on notice from hearing on 21 November 2011.
- 15 December 2011 – Hon Jillian Skinner MP, Minister for Health, providing answers to questions taken on notice from hearing on 21 November 2011.
- 9 January 2012 – Blake Dawson to Chair, providing answers to questions taken on notice from Orica Limited from hearing on 7 December 2011.

8. Submissions

Resolved, on the motion of Mr Mason-Cox: That the Committee authorise the publication of supplementary submissions 4c and 16b.

9. Document tendered at public hearing 21 November 2011

Resolved, on the motion of Ms Faehrmann: That the Committee authorise the publication of the following document tendered by Dr Kerry Chant, Deputy Director General, Population Health and Chief Health Officer, NSW Ministry of Health:

- Map of Stockton sampling site, Office of Environment and Heritage

10. Tabled documents

Mr Khan tabled the following documents from the return to the order for papers by the Legislative Council:

- Hunter Region file note, dated 9 August 2011
- Inspection report, dated 9 August 2011

11. Consideration of Chair's draft report

The Chair submitted his draft report entitled *Kooragang Island Orica chemical release*, which, having been previously circulated, was taken as being read.

The Chair informed the Committee that he would circulate his Chair's Foreword following the meeting, for the Committee's information.

Chapter 1 read.

Resolved, on the motion of Mrs Pavey: That Chapter 1 be adopted.

Chapter 2 read.

Resolved, on the motion of Mr Foley: That Chapter 2 be adopted.

Chapter 3 read.

Resolved, on the motion of Mr Khan: that following paragraph 3.44 a new paragraph be inserted to read:

The Committee understands that there was also a limited number of monitoring devices such that whilst the presence of condensate could be identified, the amount/quantity in the deaerator and SP8 vent stack could not be determined by the plant operators during the start-up phase.

Resolved, on the motion of Mr Searle: That Chapter 3, as amended, be adopted.

Chapter 4 read.

Mr Khan moved: That paragraph 4.4 be amended by omitting the first sentence and inserting a new sentence to read: 'The lack of timely communication by Orica with the NSW Government and the community heightened anxiety for residents and was the focus of much ire during the Committee's public forum.'

Question put and resolved in the negative.

Mr Khan moved: That paragraph 4.21 be amended by omitting the final sentence.

Question put and resolved in the negative.

Mr Foley moved: That Chapter 4, be adopted.

Question put.

The Committee divided:

Ayes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle

Noes: Mr Khan, Mr Mason-Cox, Mrs Pavey

Question resolved in the affirmative.

Chapter 5 read.

Resolved, on the motion of Mr Khan: That paragraph 5.8 be amended by omitting the words after the word 'representatives' which read 'including Mr Graeme Liebelt, Managing Director and Chief Executive Officer of Orica Limited, and Ms Sherree Woodroffe, Sustainability Manager of Orica Kooragan Island'

Resolved, on the motion of Mr Khan: That following paragraph 5.19 a new paragraph be inserted to read:

'No attempt was made by Orica on the evening of 8 August 2011, by employees of Orica to inspect the area of Stockton immediately downwind of the site.'

Resolved, on the motion of Ms Faehrmann: That following paragraph 5.19 a new paragraph be inserted to read:

'The Committee expresses its concern that Orica attempted the start up procedure with a temporary repair made to the stack.'

Resolved, on the motion of Mr Khan: That paragraph 5.20 be amended by inserting between the words 'was' and 'inadequate' the word the word 'grossly'.

Resolved on the motion of Mr Khan: That paragraph 5.20 be amended by finishing the paragraph after the second sentence and creating a new paragraph commencing with the third sentence.

Resolved, on the motion of Mr Khan: That following paragraph 5.22 a new paragraph be inserted to read:

Whilst evidence was taken from Mr Graeme Liebelt, Managing Director and Chief Executive Officer of Orica Limited, he was unable to provide any detailed evidence relating to the incident or the actions taken by employees of the company following the incident on 8 August.

Resolved, on the motion of Mr Khan: That Finding 1 be amended by inserting the between the words 'was' and 'inadequate' the word 'grossly'.

Resolved, on the motion of Ms Faehrmann: That Finding 1 be amended by omitting the word 'staff' after the word 'Orica'.

Resolved, on the motion of Ms Faehrmann: That Finding 2 be amended by inserting after the words 'all relevant factors' the words 'in a professional and expert manner'.

Resolved, on the motion of Mr Khan: That paragraph 5.26 be amended by inserting at the end of the first sentence the words ', however, they did not take any samples to confirm the presence of Chromium VI'.

Resolved, on the motion of Mr Khan: That following paragraph 5.34 a new paragraph be inserted to read:

> The inability of any representative of Orica who gave evidence to the Inquiry to explain why it took nearly two hours to visit the resident's home is a matter of continuing concern to the Committee, particularly in view of the fact that Orica had carried out an internal investigation.'

Mr Khan moved: That Finding 3 be amended by omitting all words that read:

> 'The delay in identifying the potential for an off-site impact of the leak meant that the actions of Orica's Crisis Management Team were not as timely as they could have been. As a result Orica did not respond to the report of the leak into the Stockton communit as quickly as the seriousness of the incident required.'

And inserting instead a new Finding 3 to read:

> The failure of Orica to inspect the area of Stockton, immediately downwind of the site, until approximately midday on 9 August 2011 was an inadequate response by the company to the incident.

Ms Faehmann moved: That the motion of Mr Khan be amended by inserting before the word 'inadequate' the word 'wholly'.

Amendment put.

The Committee divided.

Ayes: Ms Faehrmann

Noes: Mr Brown, Mr Foley, Mr Khan, Mr Mason-Cox, Mrs Pavey, Mr Searle

Question resolved in the negative.

Original question put and resolved in the affirmative.

Resolved, on the motion of Mr Khan: That paragraph 5.43 be amended by finishing the paragraph after the first sentence and creating a new paragraph commencing with the second sentence.

Resolved, on the motion of Mr Khan: That following paragraph 5.43 new paragraphs be inserted to read:

> "A file note prepared by Hamish Rutherford of OEH records a telephone call received by him at approximately 10.30 on 9 August 2011 of the incident.
>
> The file note records the telephone conversation with Ms. Sherree Woodroffe as follows:
>
> > 'Ms Woodroffe reported that around 6.30pm yesterday evening they had an incident while trying to reduce a catalyst in the NH3 Plant leading to the emission of Hexavalent Chromium aerosol via a vent to atmosphere....I'm not yet clear on what went wrong in the process in this part of the plant. We will need to do our investigations. At this stage it was believed fallout was contained to the premises'."

Resolved, on the motion of Mr Khan: That paragraph 5.43 be amended by omitting the words 'Following this conversation, at 10.28am, the Sustainability Manager telephoned OEH to report the incident'.

Resolved, on the motion of Mr Khan: That following paragraph 5.46 a new paragraph be inserted to read:

> 'Pursuant to a standing order 52 motion, a contemporaneous noted of Mr Hamish Rutherford reveals in part:

"12.15 – Inspection with Peter Matthews (OEH). Briefing provided by Stuart Newman (Plant Manager Orica) – confirmed initial briefing earlier in day...extent of particulate fallout greater than first thought, with fallout on cars in car park and unconfirmed reports of fallout in Stockton. They are investigating. I advised that Orica should start thinking about its communication Strategy in Stockton, however, regardless, should notify the Department of Health's Public Health Unit re the incident".'

Resolved, on the motion of Mr Khan: That the following paragraph 5.66 be omitted:

'5.66 Apart from the delay in notifying OEH, issues have emerged with respect to the extent and accuracy of the information that Orica conveyed. OEH has claimed that Orica reported the fallout was 'contained on the premises', although this is disputed by Orica. If Orica did fail to disclose the potential for an off-site impact in its initial notification to OEH it would be a matter for concern, given evidence previously discussed in this chapter indicating that:

- the height and force of the emission, as well as the direction of the wind at the time, suggested the potential for impact in Stockton
- prior to contacting OEH, Orica had received a report from a resident of Stockton of possible fallout at her property, at 9.45 am on 9 August 2011
- at approximately the same time as Orica contacted OEH, at 10.30 am on 9 August 2011, the General Manager of Orica Mining Services, Australia-Asia, was informed by an Orica manager that "evidence had emerged that the emission had possibly gone off-site.'

and a new paragraph be inserted to read:

'The committee concludes that the initial report by phone by the sustainability manager to OEH was to the effect that the fallout was contained on the premises.'

Resolved, on the motion of Mr Khan: That following paragraph 5.66 a new paragraph be inserted to read:

'The committee accepts the evidence contained in the file note of Hamish Rutherford. The committee notes that the failure to disclose offsite impact is compounded by the following factors:

- the height and force of the emissions, as well as the direction of the wind at the time, suggested the impact in Stockton.
- prior to contacting OEH, Orica had received a report from a resident of Stockton of possible fallout at her property at 9.45am on 9 August 2011.
- the evidence contained in the contemporaneous note of Hamish Rutherford in the conversation with Stuart Newman, there had been identified fallout on cars in the car park. This fallout could have only been present on cars that had been onsite on the evening of 8 August 2011.
- at approximately the same time as Orica contacted OEH, 10.30am on 9 August 2011, Mr James Bonner, the General Manager of Orica Mining Services was informed by an Orica manager that 'the emission had possibly gone offsite.'

Mr Khan moved: That following paragraph 5.70 a new Finding be inserted to read:

"There was an excessive delay in Orica's reporting of the incident to OEH on 9 August 2011."

Ms Faehrmann moved: That Mr Khan's motion be amended by omitting the word 'excessive' and inserting instead 'unacceptable'.

Amendment put and passed.

Original question, as amended, put and passed.

Resolved, on the motion of Ms Faehrmann: That Finding 4 be amended by inserting after the words 'being engaged' the words 'and are all aware of their individual responsibilities under the plan'.

Resolved, on the motion of Ms Faehrmann: That Finding 4 be amended by inserting before the words 'Orica staff' the words 'It is unacceptable that'.

Resolved, on the motion of Mr Khan: That following Finding 4 a new Finding be inserted to read 'In Orica's initial report of the incident to OEH, there was a failure to disclose the prospect that the emissions had escaped offsite'.

Resolved, on the motion of Mr Khan: That before the first sentence of paragraph 5.101 a new sentence be inserted to read 'The assertion contained in Orica's submission that OEH had advised Orica to contact NSW Health is consistent with the contemporaneous diary entry, referred to at paragraph 5.55'.

Resolved, on the motion of Mr Khan: That before paragraph 5.106 new paragraphs be inserted to read:

'On the basis of the existence of the contemporaneous diary entry by Hamish Rutherford and the contents of Orica's own submission, the committee concludes that Orica was advised to contact the Department of Health on 9 August 2011.

The committee concludes that it took approximately 23 hours for Orica to notify Health after being first advised to do so by OEH officer Hamish Rutherford.'

Resolved, on the motion of Mr Khan: That the second sentence of 5.107 be amended by omitting the following words 'Moreover, according to some of the evidence the Committee received (disputed by Orica), Orica did not notify Health even after being advised to do so by OEH' and inserting instead 'The Committee concludes that there is no clear explanation as to why it took approximately 23 hours after first being advised to contact Health by OEH'.

Resolved, on the motion of Ms Faehrmann: That Finding 7 be amended by omitting the words 'took too long to be initiated' and inserting instead 'was inadequate'.

Resolved, on the motion of Ms Faehrmann: That Finding 7 be amended by omitting the words 'was written so as to not alarm residents, when more accurate information about potential health risks was more appropriate' and inserting instead 'downplayed the potential health risks'.

Resolved, on the motion of Mr Khan: That Finding 7 be amended by inserting a new second paragraph to read 'Orica's failure to advise Health in a timely manner, and to fully apprise the Department of all the information available to it relating to the emission, did not assist a coordinated approach between Government departments.'

Resolved, on the motion of Mr Searle: That Chapter 5, as amended, be adopted.

Chapter 6 read.

Mr Khan moved: That paragraph 6.22 be omitted.

Question put.

The Committee divided:

Ayes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Noes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Question resolved in the negative.

Mr Searle moved: That following paragraph 6.23 a new paragraph be inserted to read:

'The Committee concludes that the Minister gave no explanation as to why she took 23 hours after being advised of the incident to take any steps to inform the public.'

The Committee divided:

Ayes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Noes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Question resolved in the affirmative.

Mr Khan moved: That paragraph 6.24 be amended by omitting the first sentence and instead inserting a new paragraph to read:

'The committee notes the comments of Mr Brendan O'Reilly in his report that:

"Coordinated, accurate and timely information to the public is important particularly during the operational recovery phase...

Government agencies handle numerous incidents, many of which require a single agency response, and do not require the deployment of additional resources other than that which are readily available. When an incident is on a larger scale, a different and more coordinated interagency response is required.'"

The Committee divided:

Ayes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Noes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Question resolved in the negative.

Resolved, on the motion of Mr Khan: That paragraph 6.24 be amended by inserting a new sentence after the first sentence to read:

'The committee notes the comments of Mr Brendan O'Reilly in his report that:

"Coordinated, accurate and timely information to the public is important particularly during the operational recovery phase...

Government agencies handle numerous incidents, many of which require a single agency response, and do not require the deployment of additional resources other than that which are readily available. When an incident is on a larger scale, a different and more coordinated interagency response is required.'"

Mr Khan moved: That a new paragraph 6.26 be inserted to read:

'The committee's view is that the notification of the public required a coordinated response between the OEH, Department of health and Fire and Emergency Services.

On this occasion, the delay arose from the misleading and incomplete information provided by OEH and the Department of Health.'

Mr Foley moved: That the motion of Mr Khan be amended by omitting the words:

'On this occasion, the delay arose from the misleading and incomplete information provided by OEH and the Department of Health.'

Amendment put and passed.

Original question, as amended, put and passed.

Mr Khan moved: That Finding 10 be omitted and a new finding be inserted to read:

'The delay by the Minister for the Environment in informing the public of the leak, weather by press statement or by other means, was caused by the misleading incomplete information given by Orica.'

The Committee divided:

Ayes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Noes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Question resolved in the negative.

Resolved, on the motion of Mr Khan: That a new finding be inserted after Finding 10 to read:

'The public should have been informed by a coordinated response between OEH, Health, and Fire and Emergency Services.'

Resolved, on the motion of Mr Searle: That Chapter 5 be recommitted for consideration of the Committee.

Mr Khan moved: That two new paragraphs be inserted before paragraph 5.163 to read:

'The committee notes that Mr Liebelt gave evidence before the Committee and was asked an extensive range of questions regarding his knowledge of the incident and the actions taken by the company subsequent to the incident. The Committee notes that Mr Liebelt did not display a clear knowledge of the events, or of his own company's practices or procedures.

It is noted that Mr Liebelt repeatedly refused to answer questions, after taking advice from the company's lawyer.'

Mr Foley moved: That the motion of Mr Khan be amended by omitting the word 'clear' before the word 'knowledge' instead inserting the word 'extensive' and inserting the word 'local' before the word 'practices.'

Amendment put and passed.

Original question, as amended, put and passed.

Resolved, on the motion of Mrs Pavey: That Chapter 5, as amended, be adopted.

Mr Khan moved: That paragraph 6.50 be omitted.

The Committee divided:

Ayes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Noes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Question resolved in the negative.

Resolved, on the motion of Mr Khan: That paragraph 6.58 be amended by omitting the words 'OEH acted irresponsibly, however, in not directly and immediately informing' and instead inserting the words 'The Committee is concerned that OEH did not immediately inform'.

Resolved, on the motion of Ms Faehrmann: That paragraphs 6.52-6.60 be amended by omitting the word 'adverse' and instead inserting the word 'negative'.

Resolved, on the motion of Ms Faehrmann: That Finding 11 be amended by omitting the word 'adverse' and instead inserting the word 'negative'.

Resolved, on the motion of Ms Faehrmann: That a new finding be inserted after Finding 11 to read:

'The Office of Environment and Heritage should have passed on to Minister Parker's office that calls had come through to the Environment Line reporting potential negative health impacts as a result of the incident'.

Resolved, on the motion of Ms Faehrmann: That paragraph 6.74 be amended by omitting the word 'many' before the word 'useful'.

Resolved, on the motion of Ms Faehrmann: That Recommendation 4 be amended by inserting the words 'and whether there are off-site impacts following all serious incidents' after the words 'onsite fallout'.

Mr Searle moved: That Chapter 6, as amended, be adopted.

Question put.

The Committee divided:

Ayes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Noes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Question resolved in the affirmative.

Chapter 7 read.

Resolved, on the motion of Ms Faehrmann: That Finding 13 be amended by inserting the sentence after the first sentence of the first paragraph to read 'However negative health impacts reported to the Environment Line from Stockton residents were not made public despite a strong public interest to do so'.

Resolved, on the motion of Ms Faehrmann: That Recommendation 6 be amended to read:

'That, if necessary, regulation be amended to require Health to approve any script used by any party concerned, for door knocking or other information dissemination, if Health is not the first source of information to affected residents.'

Resolved, on the motion of Ms Faehrmann: That a new paragraph be inserted after paragraph 7.139 to read:

'The Committee expresses its concern that despite the community asking whether there were any potential health impacts as a result of the leak, the calls to the Environment Line were only made public well after the event and only as a result of a Call for Papers and questioning during the Inquiry.'

Resolved, on the motion of Ms Faehrmann: That Chapter 7, as amended, be adopted.

Chapter 8 read.

Resolved, on the motion of Ms Faehrmann: That Finding 16 be amended by replacing 'encouraged' with 'required' and inserting 'much' after the words 'visit the site'.

Resolved, on the motion of Mr Foley: That Chapter 8, as amended, be adopted.

Chapter 9 read.

Resolved, on the motion of Ms Faehrmann: That Chapter 9 be adopted.

Mr Searle moved: That the draft report, as amended, be the report of the Committee and that the Committee present the report to the House, together with transcripts of evidence, submissions, tabled documents, answers to questions on notice and supplementary questions, minutes of proceedings and correspondence relating to the inquiry.

Question put.

The Committee divided:

Ayes: Mr Brown, Ms Faehrmann, Mr Foley, Mr Searle.

Noes: Mr Khan, Mr Mason-Cox, Mrs Pavey.

Question resolved in the affirmative.

Resolved, on the motion of Mrs Pavey: That dissenting statements be submitted to the Secretariat by 4 pm Monday 20 February 2012.

12. Adjournment

The Committee adjourned at 1.00 pm, sine die.

Steven Reynolds
Clerk to the Committee

Appendix 7 Dissenting statements

Dissenting Statement by Hon. Trevor Khan MLC and Hon. Matthew Mason-Cox MLC and Hon. Melinda Pavey MLC

The Government members of the Committee share with all members of the Committee, and indeed the wider community, concern regarding the events triggered by the release of Chromium VI from Orica's Kooragang Island plant on 8 August 2011.

Nevertheless, the Government members are not in agreement with the majority of the Committee on a number of matters, including:

Finding 10

The Government members of the Committee do not believe that Finding 10 has been phrased appropriately.

While the Government members do not believe that the delays in notifying the public were appropriate, the wording of Finding 10 reflects a motivation to blame the Environment Minister for the delay in notifying the public, when it is clear from the evidence before the committee that the delays in notification were a result of a lack of timely and appropriate communication by Orica to the Government, within the Government and between the Office of Environment and Heritage and the Minister.

The Government members note that despite a number of serious pollution incidents, no Environment Minister in the previous Labor Government sought to notify the public of these incidents.

The Government members of the Committee note the observations of the Premier that the 16 hour delay in notifying the appropriate authorities was unacceptable and that the delay in OEH notifying the Minister was also unacceptable.

The Government members of the Committee note the statement of Mr Brendan O'Reilly at page 35 of his review into the Orica Incident, which noted that at the time the Minister was informed of the Incident by OEH, 'the recovery operation was ongoing.'

Government members of the Committee also note Mr O'Reilly's further statement at page 35 of his review that 'Ministers do not become directly involved in operational matters. That is left to the experts.'

It is clear from the evidence that cultural change is required within the bureaucracy, to ensure that the public notification of these incidents is a priority. A number of reforms that the Government has put in place in response to the incident and the O'Reilly review seek to address this issue.

It is also clear from the evidence to the inquiry that the delays in notification of the public were directly attributable to the actions of Orica. Those actions include:

- The failure of Orica to understand the impacts upon the start up procedure of the modifications affected to the flue gas heat recovery coil;
- The inadequacy of Orica's plant operating procedures;
- The failure by Orica to adequately investigate the possibility of off-site impact on the evening of 8 August 2011;
- The delay by investigating the Stockton resident's report of off-site impact on 9 August 2011;
- The delay by Orica in notifying OEH;
- The failure by Orica to disclose, in its initial report to OEH of the Incident, that the emission had escaped off-site;
- The failure by Orica to notify Health of the escape of the emission off-site on 9 August 2011, despite having been advised to do so by OEH officers;
- The failure by Orica to make clear to Health, when it did finally notify Health, that the emission was of a solution of Chromium VI;

It is the view of the Government members of the Committee that the wording of Finding 10 is clearly inconsistent with the evidence presented to the Committee.

Minister's response to contact by Liebelt

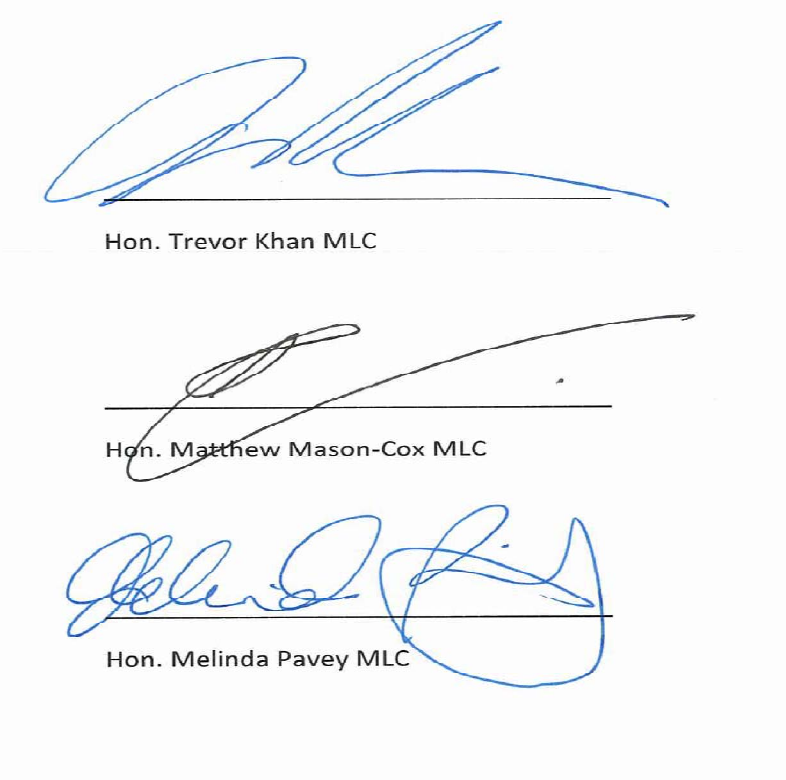
Government members note that paragraphs 6.53 and 6.54 of the Committee's report are inconsistent. While concluding that it was appropriate for the Minister to not communicate with Orica directly 'when legal proceedings were in the process of being initiated,' the Committee also contends that it would have been appropriate for the Minister to contact the CEO of Orica in the 'immediate aftermath.'

The Government members support the view of the Committee in paragraph 6.53, however, the Government members of the Committee cannot accept the finding of the Committee that it was appropriate for the Minister for the Environment to have made telephone contact with the CEO of Orica, Mr Graeme Liebelt, in the immediate aftermath of the Incident.

Based on the evidence of Mr Liebelt, he asserts that he attempted to speak to the Minister commencing on 15 August 2011, a full week after the Incident.

It is clear to the Government members that by the date of the first telephone call both the Government and the community at large was very aware of the failure of Orica to promptly report the Incident to OEH. It is reasonable to conclude that the commencement of criminal proceedings was well within the contemplation of OEH by that time. The Government members therefore conclude that the opportunity for discussions with Mr Liebelt had passed.
In addition, the Government members of the Committee observed that when Mr Liebelt gave evidence before the Committee his evidence lacked clarity and precision, even of his company's own local practices and procedures.

Having observed Mr Liebelt give evidence, the Government members of the Committee conclude that speaking to him by telephone would have provided the Minister with absolutely no assistance in performing her Ministerial functions. Indeed, it may well have exposed her to criticism that she was being influenced by the CEO of a company that had so profoundly let down the Stockton Community.



Hon. Trevor Khan MLC

Hon. Matthew Mason-Cox MLC

Hon. Melinda Pavey MLC