



Emergency
Services
Commissioner

Quick Look Report

***Hazardous Materials Incident
Nuplex Resins, December 2011***

2 April 2012

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Compliance with Standards

Standard ¹	Level of Compliance	NOTES
Emergency Management Manual Victoria (EMMV)	Compliant	Part 3 – State Emergency Response Plan Part 8, Appendix 9 - Evacuation Guidelines
Rural City of Wangaratta Municipal emergency Management Plan (MEMP) Appendix D - Relief Centres	Partially Compliant	Building identified as the relief centre was not identified in the MEMP as a relief centre and was not ideal for a Relief Centre
Ambulance Victoria Emergency Response Plan 2009 (established in accordance with State Health Emergency Response Plan)	Compliant	Ambulance Victoria complied with all relevant sections of the AVERP for this event
Emergency Management Team Practice Note (May 2009, OESC)	Compliant	All requirements for small-scale incident were met
CFA/DSE Public Information Section Guidelines – Version 7, October 2011	Partially Compliant	Issues with timeliness and accuracy of information Templates required modification
Emergency Alert User Guide – Version 3.9, October 2011	Compliance Not Required	Emergency Alert not used for this event
Victoria Police Manual – Policy Rules, March 2011	Compliant	Police operations were compliant with all relevant sections of this manual
EPA & WorkSafe MOU	Compliance Not Required	This MOU was considered but is not operationally focussed and therefore can not be assessed against with relation to this report
CFA SOP 9.16 – Media Management	Compliant	Incident Controller conducted interviews supporting community information

¹ Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language, which defines quality and safety criteria.

Standard	Level of Compliance	NOTES
CFA SOP 10.09 – Hazmat Response	Compliant	
CFA SOP 10.22 (1/12/2007) – Hazmat Detection Arrangements	Compliant	Hazmat detection teams were arranged and onsite for the incident as per the SOP requirements
CFA SOP 8.02 – Incident Controller (CFA as Control Agency)	Compliant	Incident Controller arrangements were in accordance with this SOP
CFA SOP 8.04 – Transfer of Control	Compliant	No issues identified
Victorian Warning Protocol	Partially Compliant	Issues with timeliness and accuracy of information
Memoranda of Understanding with Emergency Broadcasters	Compliant	
OESC Practice Note – Emergency Broadcasting (version 3)	Compliant	There were however technical issues with either OSOM or Edge FM's email system which may need analysing.
Fire Services Commissioner Policy: Strategic Control Priorities – State Controller's Intent (FSCPOLICY001/2011)	Compliant	Warnings were issued, but for reasons described in the text, issues related to timeliness, relevance and tailored to assist community members to make informed decisions about their safety were identified
Fire Services Commissioner Guidance Note 01/2011: Incident Management: Incident Controller's Guide	Compliant	Albeit in the context of 'bushfire', the principles of this guidance note apply and were generally followed throughout the Nuplex incident.

<p>Compliant <i>Complies with the intent of the standard</i></p> <p>Partially Compliant <i>Complies with some but not all content of the standard</i></p> <p>Non Compliant <i>Does not comply with the intent of the standard</i></p> <p>Compliance Not Required <i>Documents considered by assessment team for context, but not required for this event.</i></p>

Introduction

The Emergency Services Commissioner (ESC) at the request of the Fire Services Commissioner (FSC) undertook a quick look assessment of the hazardous materials incident that occurred at Nuplex Industries (Nuplex) in Wangaratta on 19 December 2011.

The intent of this assessment is to identify where improvements have been realised and/or to identify where improvements can be made. Stakeholders are encouraged to consider the observations detailed in this report in view of continuous improvement to all aspects of emergency management activities relating to both hazardous materials events and emergency events in general.

Terms of reference

1. The Control Strategies implemented by the Incident Controller for this multi agency incident.
2. The effective issuing of Community Advice and Warnings to assist the community make informed decisions regarding their safety. In particular, the means by which evacuation was conducted and the lessons learnt from this action.
3. The issues that were identified relating to interoperability during this multi agency operation.

Quick look assessment methodology

The quick look assessment examined the response to operations, interoperability and issuing of information and warnings during the event.

The assessment team comprised of staff from the Office of the Emergency Services Commissioner (OESC) and agency subject matter experts seconded from Metropolitan Fire and Emergency Services Board (MFB) and Victoria Police. The assessment team interviewed agency personnel from Country Fire Authority (CFA), Victoria Police, Ambulance Victoria (AV), Environment Protection Authority (EPA) Victoria, Rural City of Wangaratta, Department of Human Services (DHS), WorkSafe and Nuplex. The methodology used for this quick look assessment included:

- a desktop analysis
- the gathering of information through group and/or one-on-one interviews with those involved in the incident
- an assessment of documents prepared and distributed prior to, during and immediately after the event
- a community survey

The Control Agency (Country Fire Authority)

Part 7 of the *Emergency Management Manual Victoria* (EMMV) identifies CFA as the control agency for incidents involving hazardous materials, high consequence dangerous goods or dangerous goods within its defined control boundaries.

Wangaratta is a designated CFA area and therefore CFA was the control agency for the Nuplex incident at Wangaratta on 19 December 2011.

Nuplex (Wangaratta)

Nuplex is Australia's largest manufacturer and distributor of technical materials, resins and polymers for use by the paint, ink, adhesive, fibre-reinforced plastics, paper and textile industries. Nuplex operates from a number of locations throughout Australia, with one of its

operations located in Gibson Street, Wangaratta. The Wangaratta site manufactures resin-based polymers, employs 16 full time staff and is located in a small industrial estate South of Wangaratta city. Residential areas are located directly to the north and east of the Nuplex site.



Figure 1: Location Map for Nuplex

Event Description

At approximately 8.10pm on 19 December 2011, a chemical incident occurred at the Nuplex chemical plant in Wangaratta. The incident was caused by an uncontrolled chemical reaction in a reactor vessel, which released an extremely 'odorous' vapour dispersing over the surrounding community.

Wangaratta CFA responded to the incident and the Senior Station Officer established control as the Incident Controller. After assessing the situation, the Incident Controller determined that the predominant concern was for public safety in relation to the dispersal of the odorous vapour. The primary control strategy was then to evacuate the residential area immediately downwind of the incident.

On arrival of the District 23 Operations Manager (OM) at 8.53 pm, control of the incident was transitioned to the OM who supported the evacuation strategy. As the incident would involve a number of agencies, the OM established an Emergency Management Team (EMT) comprising representatives from CFA, Victoria Police, AV, local government, EPA and Nuplex to ensure that a coordinated approach to the management of the incident was achieved.

CFA crews wearing breathing apparatus doorknocked the residential area within 300 metres downwind of the incident providing situational information and encouraging residents to evacuate. This area was extended a further 200 metres, where residents were advised to stay indoors and close windows, seal doors and turn off air conditioners. Emergency Alert (EA) was not used to support the evacuation.

Approximately 100 households evacuated with many relocating to a relief centre established at the Ovens College Hall. Five people, aged from nine to 75, were taken to hospital with mild symptoms of respiratory illness, nausea, eye irritation and sore throats and all were discharged the following morning. St John Ambulance assisted AV with the triage at the relief centre.

An investigation by the CFA hazmat detection unit team and officers from EPA found that although an odour was present, detection equipment did not find any measurable amounts of toxic emissions in the air. It was determined that one of the chemicals involved was extremely odorous and dispersed quickly over a wide area. Residents at the relief centre were advised it was safe to return to their homes following this assessment and by 3.30am the following morning the incident was declared safe.

Following the incident, representatives from EPA, WorkSafe and an independent environmental consultancy assisted Nuplex in determining an appropriate clean up program and investigated the cause of the incident.

The EMT maintained an active role during this period to ensure that the clean up process considered any risks to the community and prevented any further escalation of the incident. To ensure that appropriate risk mitigation measures would be in place for the clean-up emergency management agencies requested that detailed plans were prepared by Nuplex. These took an additional 14 days to prepare prior to the clean up commencing.

Event Preparedness

Nuplex management informed the assessment team that they had a site emergency management plan, which was enacted by staff on the night of the incident and involved isolating chemical supply lines and activating the installed fire alarm. Management highlighted that, had they not taken the action they did, the situation could have been significantly worse.

Wangaratta CFA have a pre-incident response plan established for Nuplex, which was used and provided the first responding crew with details of the premises layout, occupancy and hazardous materials stored on the site.

Relief and recovery arrangements are generally identified in the Rural City of Wangaratta Municipal Emergency Management Plan (MEMP).

Command, Control and Coordination

Incident management

CFA established control and an EMT for the incident. The control point was located adjacent to the Nuplex property and the incident was managed from this location.

The control strategies implemented by the Incident Controller were in accordance with the Fire Services Commissioner's Strategic Control Priorities². The strategic control priorities were developed to articulate and formalise the focus on primacy of life and issuing community information and warnings to assist people to make decisions about their safety, and to communicate other priorities as listed below:

- Protection and preservation of life is paramount – this includes:
 - safety of emergency services personnel, and
 - safety of community members including vulnerable community members and visitors/tourist located within the incident area.

² The Fire Services Commissioner - Strategic Control Priorities - State Controller's Intent

- Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety.
- Protection of critical infrastructure and community assets that supports community resilience.
- Protection of residential property as a place of primary residence.
- Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability
- Protection of environmental and conservation assets that considers the cultural, biodiversity, and social values of the environment.

The strategic control priorities are applicable to the management of incidents of any scale and type and as such have been applied to this assessment.

On arrival at Nuplex, the CFA Senior Station Officer assumed the role of Incident Controller and consulted with Nuplex staff. It was determined that the incident was contained to the site however, the immediate concern was the dispersion of an odorous vapour downwind of the incident throughout a residential area.

Initial control strategies considered related to:

- safety of onsite staff and emergency services organisation (ESO) personnel resulting in confirmation that Nuplex staff were accounted for and safe deployment of emergency services personnel
- safety of the adjacent community which resulted in the evacuation strategy
- mitigating the liberation of vapour from the chemical reactants. The Incident Controller confirmed with Nuplex staff that the reaction would not escalate and in fact was abating before fire service attendance
- providing information and warnings to the community, which resulted in information being disseminated via the CFA State Public Information Officer.

Based on advice from Nuplex staff, the CFA incident response plan and reviewing Material Safety Data Sheets (MSDS), the Incident Controller initiated an evacuation by doorknocking residents directly downwind of the incident. This was considered the most appropriate and achievable approach during the initial stages of the response based on the consideration for public safety.

Shortly after the doorknock was initiated, the OM attended the incident (8.53 pm) and control of the incident was transferred from the Senior Station Officer to the OM in accordance with CFA Standard Operating Procedure (SOP) 8.01 – Transfer of Control. This allowed the Station Officer to concentrate on operations for the remainder of the incident, in particular the coordination of the doorknock. The OM continued with strategic oversight of the evacuation strategy and immediately called an EMT (approximately 9.00 pm) to ensure all support agency personnel were briefed on the transfer of roles and provided them with the opportunity to contribute to the management of the incident.

The Incident Controller advised the CFA State Duty Officer of the incident in accordance with State Control Centre (SCC) SOP S1.01.

The CFA Wangaratta mobile communications vehicle was established on scene as the control point, from which the IMT and EMT operated. The assessment team heard that although there was no documented incident action plan (IAP), the control strategies were clearly articulated to all on scene personnel and agencies involved via the EMT.

The CFA State Duty Officer deployed the CFA Hazmat Detection Unit from Corio, which provided specialist chemical detection and analysis equipment and trained personnel who undertook an analysis of the affected area. The Dandenong unit was also considered

however, at the time the relevant analysing equipment was being serviced. The MFB Hazmat Detection Unit was not considered.

The personnel on the Hazmat Detection Unit arrived on scene at 1.02 am (20/12/11) and consulted with the CFA Scientific Officer whilst analysing the residential area neighbouring the Nuplex site. They did not detect any chemical emissions throughout the surrounding area, only onsite at Nuplex.

Multi-Agency Interoperability Arrangements

Emergency Management Team

The EMT was established by the Incident Controller (D23 Operations Manager) soon after his arrival and included representatives from CFA, AV, Victoria Police, EPA, Nuplex and Rural City of Wangaratta. Information received by the assessment team indicated that the EMT operated effectively and supported the Incident Controller in the management of the incident. It was noted that WorkSafe and the Rural City of Wangaratta may have been able to participate more proactively in the EMT during the incident.

Although Rural City of Wangaratta representatives were participating in the incident EMT, the Municipal Emergency Resource Officer (MERO) disengaged to establish the Municipal Emergency Coordination Centre (MECC), which was located at the Wangaratta government offices in central Wangaratta. Information from a number of interviewees, including the MERO, indicated that a 'virtual MECC' at the scene might have been more applicable for this incident.

AV responded rapidly and established both representation in the EMT and a Health Incident Management Team (HIMT) in accordance with the Ambulance Victoria Emergency Response Plan which is established under the State Health Emergency Response Plan (SHERP).

The assessment team heard from a number of people interviewed, including Rural City of Wangaratta representatives that they had a better understanding of their organisation's role in larger events such as bushfires and flood events where there is more time to establish the emergency management arrangements and when specialist facilities are utilised. Some were uncertain as to level of engagement with the EMT they should have offered. All agencies identified the utility of an EMT and this was well facilitated by CFA.

The EMT continued to meet during the recovery/clean-up phase of the incident and undertook a proactive role, which included a decision-making role with Nuplex management regarding the commencement of the clean up process.

This approach was implemented by the EMT due to the significant community impact of the incident and to mitigate any further impact potentially resulting from clean up activities. Victoria Police and the EMT maintained control regarding the clean up process as Nuplex could not demonstrate that a robust risk assessment had been undertaken or that there were measures in place to prevent another incident during the clean up. There were a number of imperatives that needed to be considered by Nuplex before clean up arrangements were agreed upon by the EMT, the highest priority being the safety of local residents and local tourism.

The assessment team considered this methodology presented good practice with regard to public safety being the highest priority.

Transition from response to the clean up/recovery

The transition from response to the recovery/clean-up phase of the incident occurred once the Incident Controller, in consultation with the support agencies and Nuplex, agreed that the incident was contained. At the same time the relief centre manager was advised that it was safe for members of the community to return to their homes (at approximately 3.30am on Tuesday 20 December 2011).

Authority and process for clean up

EPA informed the assessment team that it made a formal written request to Victoria Police, for CFA to be designated as the 'lead agency' during the clean up phase as EPA did not have capacity to undertake the role and CFA had an established the control structure.

The assessment team was advised that this approach was carried out in accordance with section 16(c) of the *Emergency Management Act 1986* and that the incident remained active with CFA maintaining the incident control role, at the direction of Victoria Police. This occurred after the EPA had formally requested Victoria Police to designate CFA as the 'lead agency' during the clean up phase.

The CFA State Commander for the incident advised the assessment team that CFA undertook the role of lead agency in accordance with section 97 of the *Country Fire Authority Act 1958*. This section relates to section 66 of the *Environment Protection Act 1970* under which CFA is designated as a 'protection agency' and when requested, enables CFA to manage and control a scenario, such as the Nuplex clean up phase.

Although this scenario is not a common occurrence, it appeared to provide a good practice approach. Legislation, state or agency policy and the emergency management arrangements do not provide the clarity for transitioning from response to clean-up, rehabilitation and recovery for this type of emergency.

Multi-agency interoperability

The assessment team heard strong pre-established relationships between the emergency services and other key agencies in the Wangaratta area contributed to the effectiveness of the EMT and the response to this incident.

The assessment team were not advised by those interviewed of any issues relating to interoperability. Radio communication between agencies was not seen to be an impediment to the management of the incident in this case, as the conduit for agencies for information was via the EMT representatives.

DHS operate at regional level during an emergency, which works during events such as large bushfires and floods. Although DHS regional personnel were in contact with the Rural City of Wangaratta Environmental Health Officer, they identified a need to improve communication between themselves and the EMT at the incident level. The assessment team heard that DHS and AV have acknowledged this issue and will explore the establishment of a process for engaging with the EMT when an incident is managed from the scene.

DHS supported the Rural City of Wangaratta and the community in relation to relief and welfare during the evacuation, particularly with arranging overnight accommodation for a small number of evacuees.

Municipal Emergency Coordination Centre (MECC)

The MERO and Municipal Emergency Response Coordinator (MERC) initially established the MECC at the Wangaratta local government offices. The MECC was relocated to the works depot due to the potential impact of the vapour dispersion on the facility. The Rural City of Wangaratta noted that the redundancy site for the MECC, which is in another room of the same building, may not be appropriate for some events and were addressing the issue.

The assessment team heard varying accounts as to the effectiveness of communication between the EMT and the MECC. This included discussion as to whether there was a need for an established MECC (remote from the scene) or a 'virtual' MECC operated by the MERO on scene as part of the EMT. A consensus was that a 'virtual' MECC was the most appropriate approach for this type of incident.

The Incident Controller was of the opinion that a 'virtual' MECC would have been more efficient and effective and the MECC in its established form did not value add to the incident.

Environment Protection Authority and WorkSafe

Nuplex is an EPA licensed premises and both EPA and WorkSafe have a regulatory role in relation to the operation of premises. These agencies supported the management of the incident with technical expertise. EPA was represented on the EMT during the response and clean up phases of the incident.

In accordance with the Occupational Health & Safety Regulation 2007, WorkSafe's Inspector issued an Improvement Notice which had the effect of ceasing activity at the workplace until certain actions had been undertaken.

WorkSafe issued Nuplex with a 'cessation order' that specifically applied to the process that caused the incident. This enabled the incident to be investigated. The assessment team heard it would have been beneficial for WorkSafe to have been more proactive in the EMT, both during the response and post incident clean up phase, particularly in expediting the clean up.

Evacuation

The assessment team heard that a comprehensive assessment of the incident was carried out by the first responding fire crew who quickly determined that the chemicals were contained, but the liberation of an odorous vapour was the predominant issue. This led to the immediate consideration for evacuation of nearby residents and workers in the adjacent factories. The focus of the evacuation was on the textile factory adjacent to Nuplex and the Sisely Road residential area directly downwind of the incident. CFA personnel commenced the evacuation at approximately 8.32 pm via doorknocking of over 100 properties (Appendix 2).

Victoria Police managed the evacuation by appointing an Evacuation Manager, and by supporting reception at the relief centre and establishing roadblocks. The Red Cross supported the relief centre in processing the registration of evacuees. Victoria State Emergency Service (VICSES) assisted the operation with lighting at the roadblocks and relief centre.

The assessment team was informed that some confusion arose in relation to the location of the relief centre for evacuees. The Evacuation Manager (located at the relief centre) made a decision independently of the EMT to send evacuees to an alternate location to the one that was identified by the EMT. This highlights the need for a better understanding of where the Evacuation Manager is best located to support the Incident Controller, Police Commander and Health Commander.

The Incident Controller advised EA was not used for the following reasons:

- concerns that overuse would impact its effectiveness during other emergencies
- lack of specific information to provide potentially affected community
- other warning outlets – emergency broadcasters, website, and social media – would provide necessary community coverage.

The Incident Controller acknowledged that EA should have been used to support the evacuation of residents and provide community information.

Relief centre

The MEMP identified the Wangaratta Performing Arts Centre as a location for a relief centre, however this facility was directly downwind of the incident and was in the impact zone.

The assessment team heard that the Rural City of Wangaratta initially established a relief centre at the Wangaratta Performing Arts Centre. When consideration was being given to an alternative site for the relief centre council officers advised the CFA that the Old Ovens

College Hall was not suitable due to its state of disrepair. CFA determined that the Old Ovens College Hall was fit for purpose at the time and entry was gained to establish the relief centre at the hall. When council officers arrived at the hall, evacuees were already being received.

The Incident Controller indicated that he used the best available information at the time in determining the Old Ovens College Hall to be the relief centre and was not aware that the building was in a poor state of repair. The assessment team noted that there appeared to be a level of uncertainty in relation to the communication of information regarding the condition of the building.

Local Government is responsible for the provision of relief centres and the Rural City of Wangaratta believe they were at risk of a breach of public safety due to the condition of the hall.

The Rural City of Wangaratta indicated that the MEMP will be reviewed in relation to relief centre locations and redundancy for the MECC as a result of the incident.

Community Information and Warnings

CFA issued eight advice/warning messages in relation to the incident. The initial three warnings were issued as Watch and Act messages, with the following five messages issued as Advice messages.

CFA uses the One Source One Message (OSOM) system to publish community advice and warnings to its website, social media channels (Facebook, Twitter), official emergency broadcasters and other incident appropriate recipients. The decision was made to issue community advice via the OSOM system.

The *CFA/DSE Public Information Guidelines v7 (October 2011)* refers to a number of changes introduced for the 2011/12 bushfire season, specifically that:

- warnings and advice messages must be timely, relevant and tailored
- improvements to OSOM include the addition of a suite of hazmat templates.

Timely warnings and advice

The assessment team was informed that the CFA State Public Information Officer (PIO) was notified of an incident at 8.58pm, with further incident information at 9.03pm that provided limited detail. Detailed information was provided to the PIO at 9.33pm by the Incident Controller, which enabled the first official CFA warning; *Watch and Act*, to be issued at 9.46pm. The doorknock evacuation was underway by this time.

At the time of the incident, hazmat templates were not available in the OSOM system. OSOM messages for the incident were therefore constructed by modifying existing 'bushfire' templates. This resulted in some misleading information relating to the incident being published and delays in the issuing of warning messages.

CFA observed unofficial community advice appeared through social media (Twitter) 48 minutes before the first warning was published.

Findings from the community survey, commissioned post event, indicated that the local community would have preferred to receive some 'general' information from the emergency services earlier, even just to acknowledge what was known or unknown about the situation at the time.

Doorknock operation

Following the decision to evacuate the residential area within 300 metres downwind of the incident, CFA personnel commenced a doorknocking operation. Residents were provided with

information about the incident as to enable them to make an informed decision about their safety. They were also encouraged to consider the option of evacuating to a relief centre.

The initial residential area was extended a further 200 metres in diameter. Residents within the extended area were encouraged to consider evacuating to a relief centre. Residents that advised they wished to remain at home were advised to stay inside, close windows, seal doors and turn off air conditioners.

The assessment team noted that the first community warning; *Watch and Act*, was issued through OSOM at 9.46pm. This message included a relocation/shelter-in-place recommendation and advice that a systematic doorknock was underway.

Results from the community survey conducted indicated that the local community were generally dissatisfied with communications from the emergency services during the event. However, respondents who were doorknocked indicated they were generally satisfied with the conduct of the alerting process. Some residents advised that it was disconcerting to unexpectedly answer the door to people wearing breathing apparatus.

The assessment team observed that the use of Emergency Alert (EA) to support the evacuation of residents was considered and that the EMT recognise this incident as a good learning for the value of EA as one of many ways to warn a community.

Community meeting

The Rural City of Wangaratta in collaboration with CFA, Victoria Police, AV, EPA and Nuplex conducted a community meeting on the evening of 20 December 2011. Approximately 40 people attended the meeting where agencies provided information and clarity relating to concerns with the management of the incident and actions to be taken over the following days. The assessment team heard that the community was responsive and appreciative of the information provided and for the opportunity to contribute.

Relevant warnings and advice

Message content

The assessment team noted the first two Watch and Act warnings and last Advice message contained references to bushfire preparedness, including *“follow your bushfire survival plan and prepare for a bushfire in your area ... contact the Victorian Bushfire Information Line for more information on fires.”* Some messages also contained spelling and grammatical errors.

Twitter reaction:

@I_enigma "may cause at risk people the aged". No edit of bushfire text: "prepare for a bushfire in your area". Accuracy inspires confidence

@CFA_Updates pains me to say it but poor work. Numerous spelling mistakes and also "bushfire" advice?? :-(

@deshuis @CFA_Updates agreed, sorry but I don't have chemical fires on my bushfire plan

Feedback received on the CFA website:

"Absolutely horrendous spelling and grammar. A typo in the newspaper is understandable but in an official emergency warning? Not so much. 1 minute of proofreading shows 3 spelling mistakes, 2 grammatical errors, and an unnecessary repetition error."

"Come on now, I know it's vital to send out a warning quickly, but what good is a quick warning if that warning makes barely any sense? Obviously one can overlook the errors in this particular article and grasp the base message, but still, the principle applies."

Sourced from CFA

Authorisation

When a message is drafted in OSOM and the situation allows, it is viewed and approved by the Incident Controller or State Duty Officer before being published. If the Information Officer is working remotely from the scene or Incident Control Centre (ICC), verbal confirmation of messages is sought. Verbal message confirmation was utilised during the Nuplex incident.

Confirmation that messages had been published to the CFA website, Twitter and Facebook accounts was undertaken by the PIO.

Tailoring and disseminating warnings and advice

Official emergency broadcasters

The OSOM system provides users with a series of prescribed distribution lists – statewide (mandatory) and CFA region. The PIO advised the assessment team that during the Nuplex incident, the ‘*statewide mandatory list*’ was not available as a default. This resulted in a manual selection of message recipients, including emergency broadcasters, from all available contacts. The assessment team observed that this matter should be examined by CFA as to determine why this occurred.

This resulted in all but the last Advice message – confirming the incident ‘*all clear*’ – being sent to only one emergency broadcaster (Edge FM/3NE). This limited message dissemination and negated information contained in the warnings, which included the call to action ‘listen to ABC local radio, commercial and designated community radio stations’.

The assessment team received advice from Edge FM/3NE (Edge) that the station did not receive any warnings via email from the CFA. CFA advised it did not receive any reports that its emails were not delivered. Initially Edge were verbally advised, after hours, of the incident by CFA through the radio station’s business hours number and following advice broadcast appropriate agency community advice and warnings.

Further updates were sourced by Edge from CFA, suggesting a problem may exist with the either the OSOM system or Edge’s email system. The assessment team observed that this issue should be investigated separately.

The assessment team noted that the Incident Controller was proactive in providing community information through regular media interviews.

Social media

A major strength of social media, particularly Twitter, is its potential for messages to spread to reach and share messages with a wider audience than is generally following an account, through the use of hashtags³. Using hashtags in front of keywords ensures tweets are viewable and therefore potentially shareable by people who might not be following an account but are interested in a certain topic. Hashtags used during this incident included #wangaratta and #hazmat.

The assessment team noted that the majority of CFA Update tweets used the #bushfire hashtag even though it was a hazmat incident. This could have been due to the absence of hazmat templates in OSOM which were installed on the ‘live’ system five days after the Nuplex incident.

It was also noted that many postings provided positive feedback in relation to the response to the incident.

³ The # symbol, called a hashtag, is used to mark keywords or topics in a Tweet. It was created by Twitter users as a way to categorise messages.

<https://www.facebook.com/cfavic?sk=wall&filter=1>

CFA (Country Fire Authority)

Well done to all the emergency services, local council, Nuplex staff, and community members involved in last night's chemical spill response. CFA Incident Controller Stewart Kreltszheim says the area is now safe.

<https://www.facebook.com/cfavic?sk=wall&filter=1>

Bill Corcoran Top job and well done to all involved...

20 December 2011 at 08:09 · Like

<https://www.facebook.com/cfavic?sk=wall&filter=1>

Simone Leary Well done CFA for the updates, information and yet another fantastic job. You help keep us safe and our community thanks each and every one of you.

<https://www.facebook.com/cfavic?sk=wall&filter=1>

Julia Sweetser Thanks CFA you are appreciated!

19 December 2011 at 22:03 · Like · 4

Community survey

An independent community survey was commissioned by the OESC to inform the assessment team of communications between the emergency service agencies and the community, specifically the provision of warnings and public information and community response.

A phone survey of more than 80 householders helped build a picture of community experiences during the incident and in the period following, including the experiences of those evacuated as part of the agency response to this incident.

Methodology

Properties within the affected area (Appendix 2) around the Nuplex site were identified for a limited, random household survey to identify resident / household knowledge of the chemical incident, and any action taken during, or following the incident.

Telephone numbers to call were identified by using a map of the affected zone (provided by OESC), a total of 161 landline telephone numbers were generated.

All phone numbers were called to seek response to the survey, with a final sample of 81 respondents participating. This represents quite a high 'response rate' (50%) in comparison to typical telephone research surveys, this indicated that the community was quite engaged and willing to give feedback on this topic.

Survey results

The survey identified that all householders interviewed were aware of the chemical incident on the 19 December 2011.

Survey results indicated that two thirds of residents first became aware of the incident by noticing something unusual (smell, sound). Only a small proportion of residents reported that the emergency services alerted them about the incident (12% as they were being evacuated, 4% from police preventing them from entering area).

Feedback from the survey also indicated that 57% of residents sampled advised that the emergency services did not visit their home. The remaining 43% of residents sampled did have the emergency services visit their homes and the majority followed the advice they received from emergency services and evacuated.

However, 40% of residents stated they received no advice on what to do. This was driven largely by those who had not been evacuated – 80% of the residents that did not evacuate stated they had not received any advice.

General levels of community satisfaction with communication during the incident and overall management of the incident were low; however, those respondents who were doorknocked indicated they were satisfied with the conduct of the alerting process.

The survey identified that the residents who had been evacuated as part of the incident were more likely to be satisfied with the communications they received during the incident, as well as the overall handling of the incident.

It was also noted that 10% of respondents indicated that a disabled person resided at that location. The two main issues identified, access difficulties to telecommunications and the inability to self evacuate.

The survey results support the need for timely and coordinated dissemination of community warnings and advice to all affected community members through a range of warning methods and a review of the protocol and systems.

Observations

Table 1: Observations

Multi Agency & Interoperability Arrangements		
ToR	Activity	Observation
	EMT establishment, operation and communication	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Incident Management Structure established in a timely manner. ➤ Early establishment and operation of the EMT Good facilitation and leadership of EMT. The use of EMT in advising and making complex decisions for an unusual incident for this community was invaluable. ➤ Continued function of the EMT post incident during Nuplex clean up operations. ➤ Victoria Police provided leadership post incident in relation to the EMT. ➤ Nuplex involvement at EMT assisted both response and recovery activities. <p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ DHS representatives identified the need to improve communication between incident EMT level and DHS regional level during response – via Health Commander at Health IMT level? ➤ Some support agencies were unclear as to their roles, responsibilities and level of engagement with the EMT during incidents such as hazardous materials.
	Local Government support & MECC establishment & effectiveness	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Local Government activated in a timely manner and provided support and resources. <p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ The establishment of a 'virtual' MECC at the incident scene was considered by some to be a good option instead of a 'traditional' MECC set up at a remote facility for incidents such as Nuplex. ➤ Rural City of Wangaratta identified that having a redundancy for the MECC at the same location in a scenario such as Nuplex was not appropriate and will consider contingencies for alternate MECC locations.

Multi Agency & Interoperability Arrangements		
ToR	Activity	Observation
	Agency roles & responsibilities	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Pre event strong and established relationships between the emergency services and other key agencies in the Wangaratta area contributed to the effectiveness of the EMT and response to this event. ➤ Victoria Police leadership in coordinating the transition from response to clean-up. ➤ Requirements for a risk assessment and clean up strategy taking into consideration the potential for the incident to re-escalate and impact the community again. ➤ AV debrief model was effective and viewed as a good practice for future multi-agency debriefs.
		<p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ At the request of EPA, Victoria Police delegated CFA to be lead agency to provide oversight of the clean up process. Although this scenario is not a common occurrence, it appeared to provide a good practice approach. ➤ Legislation, state or agency policy and the emergency management arrangements does not provide the clarity for transitioning from response to clean-up, rehabilitation and recovery for this type of emergency. ➤ The authority and process for the designation a 'protection agency' as lead agency post response in regards to clean up/recovery did not appear to be clearly understood across agencies: <ol style="list-style-type: none"> 1. Application of the delegation of control (EM Act 1986, Section 16) 2. Designation of a protection agency (EPA Act 1970, Section 66) 3. Authority is a protection agency (CFA Act 1958, Section 97)
Command & Control		
ToR	Activity	Observation
	Control structure including roles & responsibilities	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ State Controller's Intent was considered for the event with an understanding of the Strategic Priorities. ➤ Continued operation of the EMT ➤ Incident control was effective for the incident. ➤ Health Commander role was effectively undertaken throughout the incident.
		<p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ An Incident Action Plan was not documented for the incident however, control strategies were clearly articulated through the EMT. ➤ The assessment team noted that a Standard Operating Procedure for Incident Action Planning exists for bushfire (SOP J3.03). There is no comparable SOP for hazardous materials incidents, particularly for long duration events.

Coordination		
ToR	Activity	Observation
	Appropriateness of coordination arrangements	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Victoria Police undertook their role as Emergency Response Coordinator in accordance with the requirements of the EMMV Part 3. Coordination continued via the EMT post incident for the clean up.
Evacuation		
ToR	Activity	Observation
	Agency roles & responsibilities	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Implementation of welfare arrangements by DHS to support Rural City of Wangaratta and community during the evacuation, particularly with alternate accommodation arrangements. <p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ The Evacuation Manager operated from the relief centre. The operating locations for Evacuation Managers may need consideration in relation to being able to best support the Incident Controller, Police Commander and Health Commander during the planning and implementation of an evacuation.
	Process & public information	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Evacuation control strategy was defined quickly and implemented in a timely manner. ➤ Evacuation loop was completed where evacuees were informed of the situation and assisted with the return to their residences. <p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ EA was not used during the Nuplex chemical incident to support the evacuation.

Community Information & Warnings		
ToR	Activity	Observation
	Issuing of information and warnings	<p><u>Worked Well</u></p> <ul style="list-style-type: none"> ➤ Doorknock operation initiated in a timely manner. ➤ Community meeting was conducted quickly, managed well and provided relevant information and explanation to the community <p><u>Improvement/Clarification Required</u></p> <ul style="list-style-type: none"> ➤ The residents of the surrounding area were aware of the incident due to the odour prior to any official public information being distributed. ➤ Time delay between the incident occurring and a warning issued. ➤ Unofficial social media accounts provided information 48 minutes before the first warning was published. ➤ Messages lacked quality assurance in relation to grammar, spelling and incorrect calls to action. Some warnings were issued with references to bushfire preparedness. ➤ OSOM system did not contain a template for hazmat incidents although referred to in the guidelines. Hazmat templates were available on OSOM after the event (23 December 2012). ➤ As there was no hazmat template on OSOM, automated warnings to Twitter were incorrectly tagged #bushfires. ➤ The 'statewide mandatory' recipient email list' was not available as a default through the CFA OSOM system. This resulted in a manual selection of message recipients, including emergency broadcasters, from all available contacts ➤ Edge FM/3NE (Edge) that the station did not receive any warnings via email from the CFA. CFA advised it did not receive any reports that its emails were not delivered. Initially Edge was verbally advised of the incident by CFA through the radio station's business hours number (after hours) and as such broadcast appropriate agency community advice and warnings. This suggests a problem may exist with the OSOM system or Edge's email system. This issue is should be investigated.

Definitions

Emergency Alert (EA)

Emergency Alert is a telephone warning system that emergency services can use to send alerts to communities via landline telephones based on the location of the handset, and to mobile phones, based on the service address of the phone.

Emergency Management Team (EMT)

An emergency management team is the team which assists a controller in formulating a response strategy and in its execution by all agencies, and which assists the Emergency Response Coordinator in determining resource acquisition needs and in ensuring a coordinated response to the emergency

Incident Controller

The Incident Controller is a member of the control agency whose role is to provide leadership and management to resolve the emergency at the incident site. This is the agency' forward controller and operates in close proximity to the incident.

Incident Management Team (IMT)

An incident management team comprises the Incident Controller and the personnel responsible for the other functions (principally planning, operations and logistics) forming the incident management system.

Municipal Emergency Co-ordination Centre (MECC)

A MECC is a facility which brings together key agencies to coordinate the provision of council and community resources during an emergency for the response and recovery effort. The MECC facilitates the activities of key personnel from local and state government agencies, emergency services and others required to assist.

Municipal Emergency Response Coordinator (MERC)

A member of Victoria Police appointed to a municipal district as municipal emergency response coordinator.

Municipal Emergency Resource Officer (MERO)

A municipal appointee responsible to the municipal council for ensuring the co-ordination of municipal resources to be used in emergency response.

One Source One Message (OSOM)

OSOM is the principle system used by fire services and VICSES in Victoria to issue information and warnings to the community and provides simultaneous warnings and information to the community via emergency broadcasters, the CFA, DSE and VICSES websites and other information mediums.

Standards

Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language, which defines quality and safety criteria.

Warning types

There are three distinct levels of alerts, which are to be used for community warnings within Victoria. The decision-making process will identify which of the following levels of alert will need to be issued to the community.

Advice – general information to keep you up-to-date with developments.

Watch and Act – it is likely that you may be impacted by the emergency. You may be in danger and should start taking action to protect your life and your family.

Emergency Warning – you will be impacted by the emergency. You are in danger and must take action immediately. This message may be preceded by the Standard Emergency Warning Signal.

Appendix 1 – Interviews

Organisation	Personnel Interviewed
Fire Services Commissioner	Fire Services Commissioner Executive Advisor Operations & Interoperability
Country Fire Authority	Operations Manager District 23 -Incident Controller, Wangaratta
	Acting Deputy Chief Officer Emergency Management – State Duty Officer
	Senior Station Officer Wangaratta Fire Brigade (1 st response crew)
	Acting Operations Manager District 23 – Clean up Oversight
	Corio Hazmat Detection Unit operators
	State Public Information Officer
Department of Health and Human Services	Manager Corporate Services Manager Emergency Management Director Health and Aged Care
Ambulance Victoria	Acting Regional Manager, Incident Health Commander Manager AV Emergency Management Unit
Environment Protection Authority	Regional Manager - North East Team Leader, Environment Protection Community Engagement Facilitator
Worksafe Victoria	Dangerous Goods Inspectors
Victoria Police	Regional Emergency Response Coordinator Police Commander Police Service Area Manager Municipal Emergency Response Coordinator
Rural City of Wangaratta	Director - Community Wellbeing Municipal Emergency Resource Officer Municipal Recovery Manager Environmental Health Officer
Nuplex Industries	Nuplex Management

Appendix 2 – Area considered the ‘hot zone’ and focus of evacuation

