

WorkSafe New Zealand

Genesis Energy LPG Incident

Port Marlborough 24th January 2020

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

Contents

Outline	2
Background	2
Sequence of events:	3
Worksafe actions undertaken in response to incident:	4
Outcomes and Consequences	8
Analysis of contributing factors	9
Failings under the Health and safety at Work (Hazardous Substances) Regulations 2017	10
Failings under The Health and safety at Work (Hazardous Substances) regulations 2017	Error! Bookmark not defined.
Failings under Health and safety at Work (General Risk and Workplace Management) regulations 2016	10
Failings under Health and safety at Work Act 2015	Error! Bookmark not defined.
Practical step for NZTA to take	Error! Bookmark not defined.
Practical Steps available for Kiwi rail to take:	Error! Bookmark not defined.
Practical Steps available to Maritime to take:	Error! Bookmark not defined.
Worksafe Learnings:	Error! Bookmark not defined.

Outline

This report details a minor gas leak that occurred at the Port of Marlborough, in Picton on 24 January 2020 by a Genesis Energy Limited, LPG transportable container, while on board the Interislander ferry Aratere, during its crossing of the Cooks Strait.

Genesis Energy Limited company number 936775, (hereinafter referred to as Genesis) owns and operates the LPG retail distribution of LPG throughout New Zealand and owns the transportable container that was leaking.

KiwiRail Holdings Limited, (hereinafter referred to as KiwiRail) is a state- owned enterprise responsible for all rail operations in New Zealand and also operates the Interislander ferry service.

GasCo and Pipeline Limited, company number 848856, (hereinafter referred to as GasCo and Pipeline) is a contractor to Genesis Energy for mechanical and engineering issues.

Uhlenberg Haulage Limited, company number 204758, (hereinafter referred to as Uhlenberg Haulage) is a transportation company engaged by Genesis Energy to transport LPG and fill containers at KiwiRail facility in New Plymouth. Uhlenberg Haulage is the PCBU responsible for filling the transportable container EURU 5145558 that leaked on 24 January 2020.

Background

Liquigas was established in 1981 to allow LPG retailers to enter the market without having to establish their own distribution and delivery infrastructure. Liquigas have facilities in Christchurch and Dunedin in the South Island; New Plymouth and Auckland in the North Island.

The LPG originates from wells in the Taranaki region and from Australia when demand exceeds supply. The Liquigas facilities are refuelled via coastal shipping with a dedicated LPG tanker. Product is transferred via pipeline and pumped into storage tanks at each location.

There are currently four main major LPG retailers currently operating in New Zealand: First Gas, Genesis Energy, Ogas and Elgas.

Genesis are a relatively new player in the market having only recently purchased the retail LPG distribution from Todd Corporation's Nova Energy. This acquisition was formally approved on 1 August 2017.

Nova originally set up an alternative model for the distribution of LPG to the South Island and Genesis have continued to use this model to distribute LPG. The alternate model utilises UN transportable containers that are rail freighted from New Plymouth to Christchurch and Dunedin where they are transferred to road transport for movement to Genesis bulk storage sites along with other industry bulk installations. When empty, the transportable containers are returned to New Plymouth for refilling.

Sequence of events:

We know that the transportable container involved in the incident on the 24 January 2020 at Port Marlborough originated from a KiwiRail siding at 321 Smart Road New Plymouth. Documentation shows that it was filled on the 22/01/2020 by Genesis's contractor, Uhlenberg Haulage.

The transportable containers are owned by Genesis and I am advised by Cameron Jardine, General Manager LPG Operations at Genesis that they have 72 such containers in the fleet. The container that encountered problems at the Port had a current pressure vessel certificate of inspection issued by Stork Technical Services NZ Ltd, with an expiry date of 31/10/2020. The container's official number is recorded as NO 168273 and the client identification number is EURU 5145558. The capacity of the transportable container is 24,600 Litres.

The transportable container EURU 5145558 was loaded onto the freight sailing of the Aratere from Centre Port Wellington departing at 10.45 pm on the 23/01/2020, arriving Port Marlborough at 1.55 am on the 24/01/2020. There were 8 containers in total on the ferry sailing. Rail carriages have a permanent deck inside the ferry where they are lashed down. The transportable containers are loaded on the starboard inner (fully laden) Wellington to Picton, and on the return sailings on the starboard outer (empty). Deck ventilation and drainage points need to be risk assessed to ensure that they are operating safely and effectively and that there is no chance of the LPG flowing to lower decks or the bilge through drainage points. The freight sailings do not allow members of the public to be on board and a limited number of commercial vehicle drivers are permitted (12-14) in accordance with the International Maritime Dangerous Goods Code (IMDG). The Aratere is the only Cook Strait Ferry that KiwiRail can use for the movement of transportable containers mounted on rail carriages. Rail carriages are stored on Level 2 of the Ferry. There are 31 crew on a normal ferry crossing.

During the crossing at approximately 2.5 hours into the 3.25 hour journey, LPG was detected by the crew during a regular inspection of the cargo. A portable gas detector was employed to try and find the source however the detector did not detect a flammable concentration. Maritime New Zealand (MNZ) rules prescribe requirements for ventilation and gas detection on the Aratere. All transportation decks have fixed LPG gas detection systems consisting of 16 detector heads. These are Xgard Type 5 and Xgard Infrared LPG detectors. The gas detectors are mounted at a height of 260mm from the deck to the sensor head. The detectors are calibrated using propane and pentane, both suitable gases for early detection of a hydrocarbon leak. They were last calibrated in October 2019 and are due for recalibration in April 2020 in accordance with Part 24A of (Carriage of Cargoes- Dangerous Goods) of the maritime Rules

All rail carriages are examined prior to departure using a TXO process. This involves a roll by inspection as the train is leaving. It is a mandatory requirement and assessed as part of staff competency assessments. Recording of issues is by exception. If there is an issue it is recorded in the incident management system

The vessel berthed at 2.10am and the shunt crew were advised that LPG smells had been detected, but the source had not been determined. The containers were unloaded onto the siding.

At 6.00 am, there was a change of shift and further checking was undertaken of the transportable containers in the siding. A container was identified at this stage to be leaking and on closer inspection a hissing sound could be heard emanating from behind a metal plate locked into place covering the valves on the container.

Fire and Emergency New Zealand (FENZ) were immediately notified and a 200 m cordon was established around the container initially by KiwiRail and the Port area evacuated. The Duty manager for Interislander, Police and Line Haul managers for KiwiRail notified.

The road at Dublin Street, which is the main road to the Port was closed at 6.44am. Due to staffing issues from Police, HEB contractors arriving at work stepped in to take control of traffic management to free up Police for other duties.

FENZ made contact with Genesis at 6.47 am and were advised that a technician was being dispatched from Christchurch. FENZ indicated that this was not acceptable as it was a 5 hour drive from Christchurch. FENZ indicated that they would provide a helicopter for the technician if required. Cameron Jardine from Genesis responded to FENZ at 7.36am advising that an electrician from Blenheim would now respond. Mr Jardine indicated that he was not initially aware that the technician who had been despatched initially would have been coming from Christchurch. The Blenheim electrician had been trained for working in hazardous areas, however had received no direct training in respect of how to operate a transportable container and was "coached through" identifying and isolating the leak. This was effected by 9.43am; almost 4 hours after the leak had been detected. It was determined that the leak had occurred at the ullage valve which was located under the metal shield that is locked in place during transportation. Liquigas, risk assessment data, for tank wagons suggest leakage from a 2mm diameter opening under full tank pressure will release around 3 kg/min of LPG. Under most atmospheric conditions this will disperse to under the lower flammable limit within 3 metres from the leak point. An ullage valve that was not seating properly would release significantly less LPG. There was no visible gas haze which is also indicative that the leak was minor. Genesis have advised that they are not able to determine the amount of product lost.

WorkSafe were advised of the incident by Jane Burke, Health and Safety Business Partner at Genesis. Response reviewed the information from this incident and determined it was a Category 3 Incident, as no harm had occurred, and there was no immediate risk of harm. A letter was sent to both PCBU's advising that no further action would be taken at this time, the scene was lifted and the file was closed. Ms Burke indicated that Genesis would supply WorkSafe with a copy of their incident report on completion of their in-house investigation. This report was received by Worksafe on 22 April 2020.

Worksafe actions undertaken in response to incident:

I was initially contacted by my team leader, Myles Brennan as a result of news coverage of the incident around lunchtime on 24 January 2020. I was tasked to contact the Nelson office to offer assistance as a technical specialist for hazardous substances. Nelson office were not aware of the incident until my call advising them of the incident. I heard nothing further from the Nelson office.

I subsequently contacted KiwiRail to source more information over the incident and I was advised at this point that WorkSafe had released the scene. (Response had released the scene at 12.35pm on the day of the incident). I then phoned Genesis and after a considerable delay was given Cameron Jardine's name and number to call. Cameron Jardine is the General Manager LPG Operations. Cameron advised that the transportable container had been leaking through the ullage valve, that a repair had been effected, and that no further leaks had been detected after 9.30 am that morning. I enquired as to how the repair had been carried out but Cameron could not answer the question. I

also enquired about security overnight for the transportable container, which again he could not answer.

The above information (that the valve was no longer leaking and overnight security arrangements), was obtained from James House, Head of Regulatory at KiwiRail when he called at 4.55pm to advise that the LPG transportable container would be moved from Picton at 5.00pm Sunday and would arrive in Christchurch on Monday morning. A subsequent call was then received from Cameron Jardine advising that WorkSafe (Response) had not released the scene in writing. Genesis were reluctant to move the container until they had written consent to do so. Genesis had contacted the On Call inspector from WorkSafe's Nelson Office requesting a written release, however the inspector would not release the scene and suggested that Genesis contact High Hazards Unit (despite it already being released earlier that day). On the basis that I was aware that Response had released the scene earlier in the day and it was documented on file, had confirmation that the container was safe to move and knew that it was not ideal to leave the container in a built up area I sent a text to Cameron releasing the scene. This enabled the container to travel to Christchurch where it could be unloaded without further delay.

When the container arrived in the rail yard at Christchurch around 2.00am on 25 January 2020, GasCo and Pipeline conducted a leak test of the container and found no further leaks. A certificate certifying it was free of leaks was issued by GasCo and Pipeline. The container was later placed onto road transport and taken to the Genesis depot at 5 Quadrant Drive Hornby Christchurch.

The LPG container arrived at Genesis depot at approximately 9.30 am. Southern Bulk Transport delivered the container to the depot and it was placed under the spray cage. Genesis treated the container as if it were a "leaker" and as a result a Job Safety Analysis sheet (JSA) had been prepared by Stuart Ferguson, the Christchurch Depot Manager for Genesis. Stefan Rosborough, the Managing Director for GasCo and Pipeline also attended and we were both inducted and worked through the JSA.

The driver from Southern Bulk Transport admitted that he had not undertaken any leak test prior to removing the container from the rail yard and onto his vehicle, instead only relying on the previous check undertaken by GasCo and Pipeline at 2.00 am. The driver was able to produce documentation from the container that must be readily available for inspection under the Land Transport Rule for the carriage of Dangerous Goods. Copies of these documents that included the pressure vessel certificate of inspection (issued by Stork Technical Services Ltd) and the Genesis "ISO Check Sheet" that is completed by Uhlenberg Haulage after the container is filled and leak checked. Another form is completed by the driver after the transportable container has been emptied of its contents. This form is placed into a document capsule on the frame and accompanies the transportable container back to the North Island.

The driver from Southern Bulk Transport completed checks and started to commence connecting hoses from the pumping equipment that was mounted on the trailer to the container for delivery. Stefan Rosborough stopped him at this point after noticing that the seals on the hoses were teflon and not rubber and requested that they be changed prior to delivery commencing. The seals were changed. Delivery was attempted using the trailer pumping system and internal pipework, however there appeared to be a fault and delivery was again suspended. Hoses from the underground LPG tank were then used and the fixed plant from the depot was used to effect the delivery.

The trailer unit used to move the transportable container from the rail yard to the Genesis depot has a TAN of 10022, registration number Q710H, and had a tank wagon

in-service compliance certificate which expired on 6 December 2019. I pointed out the expired certificate to Stuart Ferguson and Stefan Rosborough. Stefan commented that there was confusion over the requirement for in-service compliance certificates for trailers amongst the LPG industry. I advised that I would have my decision to issue an improvement notice for an in service compliance certificate peer reviewed before issuing. I had an assurance from Genesis that the trailer would be taken off the road for repairs in any case. The improvement notice to obtain an in-service compliance certificate was issued on 19 February 2020 and an additional notice for replacing all teflon seals on the delivery hoses with seals that were appropriate for LPG was also issued.

Genesis had previously advised that the leak had occurred at the ullage valve. It is my understanding that there are only two scenarios which could have led to a leak through the ullage valve. Firstly, during filling the ullage valve ices over and does not completely close, or secondly the seat of the valve does not seat correctly. In both instances a small release of product can occur. The ullage valve on this container was a Swagelok branded valve with the following specifications: 316 0000500329 SS BVM4- SH. It was visually apparent that the pin on the ullage valve had been knocked as it was not sitting horizontal to the bleed valve. I did discuss this with GasCo and Pipeline and was advised that whilst the valve may have been knocked it did not affect the performance of the valve. It was also observed that the ullage gauges on other transportable containers used by Genesis were of a different brand, namely Rego, so there was a lack of consistency with the equipment being used.

On completion of delivery the transportable container and trailer would be taken to GasCo and Pipelines yard in Annex Road where it would be gas freed and the ullage valve removed for examination, repairs to be effected to the trailers pumping equipment and a current in-service compliance certificate issued before the trailer could be put back into service. I requested that I be onsite to observe the removal of the valve.

I was looking for a UN number for the transportable container to check that it was in compliance with Part 16, Subpart 5 of the Health and Safety at Work (Hazardous Substances) Regulations 2017, (hereinafter referred to as the **Hazardous Substances Regulations**), which requires transportable containers to comply with Chapter 6.7 of the UN Model regulations. I could not initially find the stamp but have since located the valid UN mark on the transportable container frame. There does however appear to be some discrepancies in the markings on the container and the documentation provided. The container had a plate indicating that it was manufactured in France, yet documentation The certificate of inspection issued for the pressure vessel also has a mistake citing the manufacturer as being CIMZ, which I believe should be CIMC (China). The container was degassed on the 28 January by GasCo and Pipeline at their premises on Annex Road. I met with Stewart Ferguson from Genesis onsite and observed the removal of the ullage valve. After its removal the bent pin was more obvious. There was nothing immediately obvious that would indicate a fault with the valve.

Following on with the possibility that the valve had iced up and not closed off my attention was then drawn to the filling operation in New Plymouth to ensure that correct procedures post filling had been undertaken. A soap and water test is required to be undertaken to ensure that there is no gas leaking after filling has been completed. Documentation that accompanied the container indicated that a check had been carried out by the contracted filler, Uhlenberg Haulage. After a phone call with Cameron Jardine on 11 February 2020 advising of a visit by WorkSafe MHF inspectors scheduled for the following day. I was verbally given an accurate account of the filling procedure which had been established by Nova and continued by Genesis, for the filling of the transportable containers at the KiwiRail siding in Smart Road, New Plymouth. I was told

that a tank wagon undertook multiple trips between Kupe or McKee gas distribution plants (Todd facilities) and the rail siding at Smart road. One tank wagon would be used to fill two transportable containers. I was also told that the loading of the containers was undertaken under a spray cage.

An inspection of the facilities at the KiwiRail siding was organised by the MHF team in New Plymouth. Donna Wong and Paul Bishop visited the facility on 12 February 2020. As a courtesy, Genesis were advised that the visit was to take place. It was revealed during these discussions with the MHF team and KiwiRail that WorkSafe was made aware that Genesis had ceased all filling of LPG containers at the rail siding until their investigation into the incident had concluded. Verbal advice from KiwiRail suggested that filling at New Plymouth was immediately suspended after the incident at Picton. KiwiRail also issued a Safety, Health and Environment Alert to their staff on 25 January 2020, advising of the incident and the steps to be taken in the event of an LPG leak from a transportable container.

Donna and Paul went ahead with their visit and took a number of photos that were forwarded on to me. The photos show that a spray cage has been constructed over the area where the road tank wagon stands to refuel the transportable containers. The area over the rail where transportable containers are located while being filled also has a spray cage. The spray cage over the transportable containers does not cover all containers in the train. Photos indicate the trains can contain up to 10 LPG transportable container on the siding. There are no buffers (inert substance) between each wagon and I have noticed trains transporting LPG on the main trunk lines also do not provide a buffer between each wagon. This is a simple safety precaution that was implemented when LPG was first transported on the rail in New Zealand and after an incident in the United States where a derailment caused a Boiling Liquid Expanding Vapour Explosion (BLEVE) killing 12 people. Previous regulations in New Zealand required a buffer to be provided between rail carriages transporting LPG containers.

KiwiRail provided WorkSafe with the Genesis LPG road/rail emergency response plans for Smart Road, New Plymouth. After reviewing the document I have found that references in the document are out of date and there is no record of the plan being tested. There is no hazardous area drawing for the site and I note from the photos that there is a diesel powered generator which falls within the hazardous area around the LPG transportable containers on the siding. All potential ignition sources within a hazardous area should be excluded. An improvement notice will be issued to Genesis to provide an accurate hazardous area drawing, exclude sources of ignition from the area and update their emergency response plan. I also note that there does not appear to be any shelter or area established where the driver waits/observes during the transfer operations at this facility. There is also no system in place to ensure that the driver does remain with the road tank wagon whilst the transfer takes place. The process can take up to 2 hours to complete. At the Genesis depot in Christchurch a shelter and seat have been provided for the driver along with a button that has to be pressed at intervals or an alarm is activated. This will also be noted as an improvement for Genesis.

I have been in contact with Swagelok New Zealand - the New Zealand supplier of the ullage valve. Swagelok have agreed to return the valve to the United States for laboratory analysis and reporting back to WorkSafe. Genesis have been supplied with the documentation and procedures for the analysis and agreeable to the return of the valve to the company.

Outcomes and Consequences

Genesis have currently ceased using the alternative model by using transportable containers via the rail network to supply the South Island with LPG. Product is currently being supplied through Liquigas facilities.

On this occasion the leak was minor and FENZ treated the incident accordingly - only placing a 200 meter condone around the LPG transportable container at Picton. A larger event would trigger an 800 meter condone which would have a huge impact on the town (see attached drawing showing perimeters of 200 meter and 800 meter condones) With the 200 meter cordon in place there was huge disruption to the town and after speaking to a number of people in the area at the time of the incident, traffic continued to pour into the township. A meeting called by FENZ which I attended on the 27 February 2020 to discuss the incident highlighted the issues of a volunteer Fire Brigade and the availability of other resources such as Police and other emergency services at Port Marlborough in Picton.

Other vessels were due to dock at Picton the morning of the incident, a cruise ship with 1500 passengers was prevented from berthing along with another KiwiRail ferry A Blue-bridge ferry was ready to depart and this was also delayed. There was considerable inconvenience for an extended period of time due to the length of time before a suitably qualified person was available to remedy a minor leak.

During the course of the meeting I was advised of another incident involving a leaking LPG transportable container on the rail system belonging to Nova (now Genesis). The previous incident occurred on the 14 April 2018, where LPG was found to be leaking from the manway of a transportable container. FENZ believed that this incident was a greater hazard than the recent incident in Picton. FENZ staff under guidance from a contractor tightened the manway bolts. It was reported that Stork Technical Services New Zealand carried out an investigation and found that incorrect gaskets used to seal the manways of the containers was the cause of the leak. I will obtain an assurance from Genesis that all manway gaskets have been checked and are fitted with correct gaskets.

Analysis of contributing factors

LPG is a highly flammable gas with a hazardous substance classification as 2.1.1A. The Hazardous Substances Regulations prescribe controls for the safe use, storage and transport of these gases along with Approved Codes of Practice.

Genesis used approved UN approved transportable containers for the transport of the LPG from the filling facility at the KiwiRail siding in Smart Road, New Plymouth to bulk storage depots in Christchurch and Dunedin. The transportable containers had current pressure vessel certificate of inspection issued by Stork Technical Service New Zealand, as well as documentation from Lloyd's Register for the tank frame. Genesis have indicated in their Incident report of 22 April 2020 that the two and a half and five yearly inspections that are required to be undertaken under 6.7 of the UN Model regulations have been conducted. Worksafe will request copies of the inspection certificates to be made available to WorkSafe.

After filling of containers it is a requirement for all valves to be checked for leaks. The check sheet completed for the transportable container involved in this incident indicated that the check had been carried out. KiwiRail are then advised by Uhlenberg Haulage that the transportable containers are ready to be removed from the rail siding. There is very little evidence to support any supervision of activities undertaken by the contractor Uhlenberg Haulage. Filling procedures and training records requested from Genesis have now been provided. The training records do not adequately cover the requirements prescribed in regulation 4.5 of the Hazardous Substances Regulations.

I have been verbally advised by Genesis that they have determined the cause of the leak being due to a coating on the ullage valve being incompatible with LPG. They advise that the coating had eroded so that the valve was not seating properly allowing a small leak to occur. Of the 72 containers that Genesis own only 10 of the containers are fitted with Swagelok ullage valves. The remaining 62 containers are fitted with Rego ullage valves. I have been verbally advised by Cameron Jardine that all Swagelok ullage valves are to be replaced. I have not been given a time line for this to be completed. The valve is now to be sent to Swagelok for an analysis on the valve, however since Genesis have sectioned the valve, any analysis has been compromised. Worksafe have requested Genesis to provide a copy of any reports produced by Swagelok following analysis of the ullage valve.

A contributing factor to the failure of the valve could have originated from the companies engaged by Genesis to fill the transportable containers. Uhlenberg Transport training records provided by Genesis indicate that these operators have not received adequate training with operation of valves on the transportable containers. Constant overtightening of the valve or the use of tools on the valve could have damaged the seat and induced the valve to fail.

There appears to be a systemic failure from Genesis which is highlighted in the number of practical steps that Genesis need to undertake, and have been detailed further on in this report. Potentially the failures have occurred as a result of Genesis being relatively inexperienced in this field having only recently taken over LPG retail distribution from Nova Energy in 2017.

FENZ determined that this leak was of a minor nature and evacuated accordingly. Gas detectors on board the vessel and portable detectors which are calibrated to indicate for a flammable concentration at 25% of the lower explosive level (LEL) were not activated, and there was no visible vapour cloud.

At this stage of the investigation I do not believe that this incident met the threshold for a notifiable incident under Section 24 of the Health and Safety at Work Act 2015 (hereinafter referred to as the **HSW Act**). A notifiable incident means an unplanned or uncontrolled incident in relation to a workplace that exposes a worker or any other persons to a serious risk to that person's health or safety arising from an immediate or imminent exposure to (a) an escape, a spillage, or a leakage of a substance.

I would support any further remediation measures to be managed using improvement notices.

After considering all of the evidence we consider that Genesis have committed the following breaches:

Failings under the Health and safety at Work (Hazardous Substances) Regulations 2017 (the Hazardous Substances regulations)

- a. A breach under **regulation 4.5** of the Hazardous Substances Regulations, in that observation of the training documentation from the contractors who filled the transportable container, confirmed that their training and instruction does not meet the requirements of subclause (3);

A breach under **regulation 4.5** of the Hazardous Substances regulations, in that the electrician engaged to undertake the work on the ullage valve during the incident did not have any previous experience working on transportable containers; and

- b. A breach under **regulation 5.7** of the Hazardous Substances regulations, in that observation of the emergency management documentation for their filling operation at the rail siding in New Plymouth confirmed that aspects of it were not up to date.

Failings under Health and safety at Work (General Risk and Workplace Management) regulations 2016 (the GRWM Regulations)

- c. A breach under **regulation 23** of the GRWM Regulations, in that there is a diesel powered generator (ignition source hazard) in close proximity (within 3 meters) of the LPG transportable containers parked at the siding where the filling takes place and Genesis have provided no evidence to confirm they have identified this as a hazard and managed the risks in accordance with regulations 5-8 of the GRWM Regulations.

Recommendations

Recommendations in relation to Genesis Energy

Taking into account all duty holder factors, the relatively minor nature of the risk, the fact that no harm occurred to any worker, and the willingness of the company to cooperate with Worksafe, it is recommended that Improvement Notices should be used to remedy the following actions:

- a. Demonstrate, in accordance with section 34 of the HSW Act, that they have consulted, co-operated with and co-ordinated their LPG transportable container filling and transportation activities with all other PCBU's who have a duty in relation to these activities (including engagement with FENZ, Police and relevant territorial authorities);
- b. Provide a dead man alarm at the filling operation at the rail siding in New Plymouth to ensure that the driver remains with the road tank wagon whilst the filling of the transportable container takes place;

- c. Provide FENZ with the key to the metal plate covering the ullage valve on their transportable container fleet;
- d. Replace the remaining Swagelok ullage valves with the same brand of valve used on the other Genesis transportable containers; and
- e. Demonstrate that the manway gaskets on their transportable container fleet were replaced as was advised following the previous, more serious, incident on 14 April 2018.

Recommendations in relation to KiwiRail

It is recommended that WorkSafe engage with Maritime New Zealand to ensure that the following matters are followed up by KiwiRail:

- a. Ensuring all staff involved with LPG transportable containers (and other hazardous substances containers) on the Aratere are adequately trained and aware of the procedures for identifying and responding to incidents.
- b. Carrying out an assessment on the Aratere to determine if the location of the fixed gas detectors on the vessel are in a position where they would be activated in a leak; and
- c. Carrying out an assessment on the Aratere to determine if any drainage points on the rail deck would allow LPG to drain to another level and whether the ventilation meets the minimum requirements prescribed in the Maritime Rules – Part 24A: Carriage of Cargoes- Dangerous Goods.

WorkSafe Learnings

Triage model assessment of high potential incidents

There was some confusion around the release of the scene. At 12:35pm on the day of the incident, WorkSafe's Response team released the scene. However, later that afternoon Genesis contacted the on-call inspector in Nelson seeking confirmation in writing that the scene had been released. Genesis were reluctant to move the container until they received written consent to do so. The on-call inspector discussed this matter with the on-call manager who decided that the scene should not be released and that Genesis should contact the High Hazards Unit to discuss further. Genesis subsequently, contacted Lyn Osmers who provided written confirmation to release the scene. (

Lyn was not aware at this stage that Genesis had contacted the on-call inspector. This information only became available on 27 January 2020 when the Guardian assessment file was sent from Worksafe Response to Lyn).

Lyn was aware that Response had earlier released the scene, had received confirmation that the container was safe to move, and knew that it was not ideal to leave the container in a built up area. This enabled the container to travel to Christchurch, where it could be unloaded without further delay.

It is recommended that in any future incident of this nature, if the general inspectorate has not been assigned to lead the follow up work, then the team that does lead the work should ensure that the local assessment manager is aware of their activities.

Contacting FENZ through their Communication Centre rather than trying to directly contact the officer controlling the incident.

FENZ have also requested that WorkSafe use their Communications centre when trying to obtain information around an incident and not request to speak with the Fire Chief who is at the scene. Lyn Osmer was advised by FENZ that the local WorkSafe office often ask to speak direct to the Fire Chief in charge when an incident occurs, instead of going through their Communications Centre. This is a distraction for the Fire Chief who is often still at the scene and is working to control the incident response.

It is recommended that WorkSafe should contact the FENZ Communication Centre in the first instance, when trying to obtain information around an incident rather than requesting to speak with the Fire Chief.

The FENZ Area Commander, Grant Heywood advised that he will make it a priority to establish a Regional Hazardous Substance Coordinating Committee which will involve all parties likely to be involved in an incident at Port Marlborough, Picton. Worksafe should attend these meetings wherever possible. Currently, the six hazardous substances inspectors in Health and Technical Services attend these meeting in the regional areas where they have been established. Experience inspectors should attend these meetings, if they are held in locations where a hazardous substances inspector is not permanently located. These meeting are important forums for information sharing and building links with emergency responders and other regulators at the local level.

It is recommended that WorkSafe should ensure it has a presence at regional Hazardous Substances Coordination Committees to ensure it maintains strong connections with emergency responders and other regulators with an interest in hazardous substances at the local level.

Approval

Signoff and approval

Inspector	
Comments:	
Signature:	
Name:	Lyn Osmer
Date:	April 2020

Team Leader	Manager
Comments:	Comments:
Signature:	Signature:
Name: Myles Brennan	Name: Paul Molloy
Date: April 2020	Date: April 2020

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982