

ICL PUBLIC INQUIRY
before
THE RIGHT HONOURABLE LORD GILL

PROPOSED FINDINGS IN FACT ON BEHALF OF JOHNSTON OILS LTD(JGAS)

1. Johnston Oils Ltd(JGas) is an oil and gas distribution company which supplies liquefied petroleum gas(LPG) to domestic, industrial and commercial users.¹
2. On or about 15 August 1969 Calor Gas Ltd entered into a contract with ICL Plastics Ltd for the delivery, installation and commissioning of a 2000kg bulk storage tank, and supply of LPG to ICL Plastics Ltd's premises at Grovepark Mills, Hopehill Road, Glasgow.²
3. Under the terms of the contract Stockline Plastics Ltd was responsible for the installation of all pipework downstream of the first stage regulator of the installation,³ and thereafter was responsible for its maintenance.⁴
4. The pipework downstream of the first stage regulator was owned by Stockline Plastics Ltd and remained in its ownership at 11 May 2004.⁵
5. On or about 10 February 1998 JGas entered into a contract with ICL Plastics Ltd for the delivery, installation and commissioning of a 1000kg bulk storage tank, and supply of propane gas(LPG) to ICL Plastic Ltd's premises at Grovepark Mills,⁶ The contract was in force at the date of the tragedy on 11 May 2004.
6. Stockline Plastics Ltd remained responsible for the maintenance of the pipework downstream of the first stage regulator, and continued to be throughout the duration of the contract between Stockline Plastics Ltd and JGas.⁷

¹ Evidence of Alan Elliott on day 03 at page 88.

² Document 012770.

³ Evidence of Maurice Coville on day 02 at page 52.

⁴ Evidence of Henry Betts on day 02 at page 128, evidence of William Delaney on day 03 at pages 16 and 30, evidence of Kenneth Platt on day 03 at page 48.

⁵ Evidence of Alan Elliott on day 03 at page 107

⁶ Evidence of Alan Elliott on day 03 at page 90. (documents 012054,012055).

⁷ Evidence of Alan Elliott on day 03 at pages 105 to 107, 121, 129 to 131, Document(003573/012829).

7. At all material times David Inglis was a CITB (Construction Industry Training Board) accredited engineer who had sat, and passed modules specific to LPG tank changeovers including the installation of LPG bulk storage tanks.⁸
8. As part of his duties as an engineer Mr Inglis, following a new LPG bulk storage tank installation, or on the exchange of a bulk storage tank, or following the change of a first stage regulator, would on each occasion check all visible pipework from the tank to the first stage regulator for leaks with leak detector fluid, and thereafter would carry out a pressure test on the remaining pipework which was not visible from the first stage regulator to the external shut off valve outside premises in order to detect any leaks.⁹
9. On, or about 26 March 1998 Mr Inglis, then an employee of IB Contracts Ltd, and contracted by JGas, installed one 1000kg bulk storage tank at the premises of ICL Plastics Ltd in substitution for the tanks previously installed by Calor Gas Ltd¹⁰. The bulk storage tank was connected to the first stage regulator by means of a length of copper pipe supplied by Calor Gas Ltd and which remained in situ upstream of the first stage regulator at the termination of the contract between Calor Gas Ltd and Stockline Plastics Ltd.¹¹
10. Having installed the tank, Mr Inglis checked all visible pipework from the tank to the first stage regulator for leaks with leak detector fluid, and thereafter carried out a pressure test on the remaining pipework, including buried pipework, from the first stage regulator to a valve at the oven to which the pipework was connected in order to detect any leaks.¹²
11. Throughout the duration of the contract between ICL Plastics Ltd and JGas the LPG pipework at the ICL premises had no external shut off valve.¹³
12. On, or about 29 November 1988 Mr Inglis attended at the premises of ICL Plastics Ltd on which occasion he replaced the existing bulk storage tank with a similar tank of the same dimensions, and thereafter carried out leak detection tests as narrated in finding in fact 10.¹⁴

⁸ Evidence of David Inglis on day 04 at pages 03 and 04.

⁹ Evidence of David Inglis on day 04 at pages 18 to 20.

¹⁰ Evidence of Alan Elliott on day 03 at page 95 (documents 012076, 012077). Evidence of David Inglis on day 04 at page 36.

¹¹ Evidence of David Inglis on day 04 at pages 10 to 11.

¹² Evidence of David Inglis on day 04 at pages 36 to 39.

¹³ Evidence of David Inglis on day 04 at page 39

¹⁴ Evidence of Allan Elliott on day 03 at page 97 (documents 012108, 012109). Evidence of David Inglis on day 04 at pages 18, 19 and 43.

13. On 08 April 2002 Mr Inglis attended at the premises of ICL Plastics Ltd on which occasion he replaced the first stage regulator of the LPG bulk storage tank, and thereafter carried out leak detection tests as narrated in finding in fact 10.¹⁵
14. On 10 May 2004 Thomas Dudgeon, a delivery driver employed by JGas, made a delivery of LPG to ICL Plastics Ltd. Mr Dudgeon, acting in accordance with filling instructions, filled the tank to 80% capacity thereby delivering 509 litres of LPG.¹⁶
15. At the time of the delivery on 10 May 2004, Mr Dudgeon did not carry out any form of pressure test on the pipework of the LPG installation, nor did that form part of his duties as a delivery driver.¹⁷

¹⁵ Evidence of David Inglis on day 04 at pages 18,19 and 44. (Document 012388).

¹⁶ Evidence of Thomas Dudgeon on day 03 at pages 78 to 80. (Document 012589).

¹⁷ Evidence of Thomas Dudgeon on day 03 at page 87.

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THE RIGHT HONOURABLE LORD GILL

**SUBMISSIONS ON BEHALF OF JOHNSTON OILS LTD(JGAS) REGARDING THE
TYPE OF INSPECTION OR OVERSIGHT REGIME WHICH WOULD BE
APPROPRIATE TO ENSURE THE SAFE AND PROPER INSTALLATION AND
MANAGEMENT AND INSPECTION AND OVERSIGHT OF LPG PIPES ON SMALL
COMMERCIAL PREMISES**

1. The following submissions regarding appropriate regimes are based on an immediate response to the evidence heard at Stage One of the Inquiry, and are made without the benefit of the research and analysis which would be essential in order to establish whether they would be both practical and effective. The Inquiry is invited to hear evidence from appropriately qualified witnesses at Stage 2 of the Inquiry to consider the merits of these provisional suggestions.

2. New Installations:

Insofar as new installations at commercial premises are concerned it is understood that, whilst in the majority of cases pipework is laid by the supplier of LPG, it is nevertheless open to the customer to make his own arrangements. It is submitted that in order to ensure that pipework is laid to an appropriate standard, it would be desirable if in all cases the supplier was responsible for the laying of the pipework, to certify that the pipework had been laid to an appropriate standard prior to the commissioning of the installation, and to produce as laid drawings identifying accurately the location of pipework. Thereafter, it is submitted that the customer should be responsible for the maintenance of all pipework downstream of the first stage regulator. It is submitted that the mechanics of how such a regime would operate is a matter upon which the Inquiry would require to hear evidence.

3. Insofar as the maintenance of such pipework is concerned it is submitted that the level of maintenance required is less demanding where the pipework laid is polyethylene. Nevertheless it is submitted that the customer should be required to certify on an annual basis whether the environment in which the pipework was laid has altered in any respect, for example, the laying of tarmac over an area above pipework which had previously been grass, and to provide copies of risk assessments held in relation to the installation including the pipework. It may be that such the record of such certification could be maintained by the supplier. It is submitted that the mechanics of how such a regime would operate is a matter in respect of which the Inquiry would require to hear evidence.

4. Existing Installations:

The Inquiry heard evidence from a number of witnesses that the condition of buried pipework can only be ascertained accurately by the excavation of that pipework in its entirety. In those cases where it is known that the pipework is polyethylene it is submitted that there would be no necessity to excavate. However, in those cases where LPG was supplied prior to the use of polyethylene it is submitted that the safe oversight of LPG pipework can only be achieved by the introduction of a regime which requires the excavation of, or replacement of that LPG pipework. It is submitted that the mechanics of how such a regime would operate is a matter in respect of which the Inquiry would require to hear evidence.

5. Role of Health and Safety Executive:

The Health and Safety Executive has a crucial role in ensuring compliance with health and safety requirements. The Inquiry heard considerable evidence from employees of the HSE which suggested that in the period with which the Inquiry has been concerned, there were a number of administrative failings together with a lack of resources which rendered the role played by the HSE to be less effective than is desirable for the proper oversight of the commercial use of LPG. It is not known whether those administrative failings and issues of resources have been addressed. However, in order that this aspect of the regulatory regime is effective, it is submitted that it would be appropriate for the Inquiry to hear evidence at Stage 2 of the Inquiry to ascertain what steps have been taken to remedy the deficiencies which were identified in the course of evidence at Stage 1 of the Inquiry.

Peter Gray QC

Advocates' Library

Edinburgh

29 July 2008

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before

THE RIGHT HONOURABLE LORD GILL

SUBMISSIONS ON BEHALF OF JOHNSTON OILS LTD REGARDING MEASURES WHICH COULD HAVE PREVENTED THE TRAGEDY OF 11 MAY 2004

1. Whilst the immediate cause of the tragedy of 11 May 2004 was the leaking of propane gas from a buried, corroded pipe into an unventilated void, it is submitted that the underlying cause was the combination of three facts: the failure to apply corrosion protection to the pipework at the time of installation in 1969, or thereafter, and to inspect its condition at any time; and the failure to assess the implications of running pipework containing a flammable substance through a basement, and latterly an unventilated void. It is submitted that there were a number of measures which could have been taken by ICL Plastics Ltd which would have brought to its attention the potential dangers, and enabled the company to take appropriate steps to avert such danger. Equally, the Health and Safety Executive (HSE) had a number of opportunities over a period of years to detect the failings of ICL Plastics or its subsidiary companies, and it is submitted that a number of relatively simple administrative measures together with the application of adequate resources would have ensured that the HSE would have been in a position to detect those failings, to identify the potential dangers which resulted from those failings, and to ensure that steps were taken to remove the dangers identified.
2. Measures which could have been taken by ICL Plastics Ltd:

Following the installation of the pipework in 1969, at no time did ICL Plastics Ltd, or any of its subsidiaries carry out a risk assessment of the buried pipework, nor did they at any time appoint a person with sufficient training, experience or knowledge to undertake such a risk assessment. Had such an assessment been carried out by a suitably qualified person, it is very likely that a recommendation would have been

made at some point prior to the tragedy that the condition of the pipework be ascertained by excavation. Excavation of the pipework would have revealed that the pipework was not laid in suitable backfill, did not have protection against corrosion and, as a consequence, remedial works, or replacement would have been required.

In 1973 the level of the yard beneath which the pipework was buried, was raised. No steps were taken at that time to inspect the pipework which was visible or to seek appropriate advice regarding measures which should be taken to ensure the integrity of the pipework which was to be buried as a result of the works.

In 1983 a steel floor structure was installed at the premises by Stockline Plastics Ltd. It is understood that the structure was of a type that would have required a building warrant in that it involved an alteration to the building. No application was made for a warrant. Had an application been made, consideration would have been given to the impact that the structure would have on the building, and in particular the newly formed basement. A particular concern from the perspective of Building Control would have been the issue of ventilation. The fact that LPG ran through the basement would have been a material factor in any assessment of ventilation.¹ It is submitted that had an application been made the dangers associated with LPG pipework in basements and/or unventilated voids would have been identified and averted.

3. Measures which could have been taken by the HSE:

The Inquiry heard evidence that between 1981 and 1992 a number of visits were made by inspectors of the HSE to the premises at Grovepark Mills in relation to LPG, and in particular the position of the bulk storage tank. The evidence of a number of HSE witnesses² was to the effect that during this period there was no particular awareness on the part of the HSE to consider underground pipework in relation to bulk LPG tanks despite the fact that Factory Inspectorate Circular FIC28643, published in November 1980, and subsequent revisions provided information on “recommended standards for the installation, commissioning and inspection of underground pipes conveying LPG” and made reference to the fact of the failure of

¹ Evidence of Stuart Murie on day 08 at page 92.

² Evidence of Sue Ann Johnston on day 04 at page 90, evidence of John Ives on day 05 at pages 29 to 36, evidence of Alistair McNab on day 06 at page 77 to 80, and 94, and evidence of John Powell on day 07 at page 103.

pipework as a result of corrosion.³ It is submitted that had the HSE taken the measure of putting in place a system to bring to the attention of its inspectors the dangers associated with buried pipework which may be subject to corrosion, that the condition of pipework would have been investigated in the course of visits by inspectors of HSE to Grovepark Mills in relation to the position of the LPG bulk storage tanks.

The Inquiry heard evidence from HSE Inspector Alistair Gunn that at the time of his visits to Grove Park Mills in January and February 1982, he was aware of FIC 28643 and the risks associated with corrosion of underground pipes and, further, was aware of the recommendation in FIC 28643 that “after 10 years all pipes carrying LPG and particularly those not installed to current standards, should, if reasonably practicable, be uncovered and physically examined”. Mr Gunn accepted that he was aware that the pipework at Grovepark Mills was at least 10 years old but did not consider it part of the scope of his remit when visiting the premises at Grovepark Mills to investigate the issue of underground pipework.⁴ In his evidence Mr Gunn stated that responsibility for investigating underground pipework lay with front line HSE inspectors⁵. It is submitted that the evidence discloses a lack of clarity in relation to where responsibility lay within the hierarchy of the HSE inspectorate to investigate such matters, and that had the HSE taken the measure of putting in place a system whereby inspectors had a clear understanding of their duties, that the condition of buried pipework would have been investigated in the course of visits by inspectors prior to 1988, particularly having regard to the known age of the pipework.

In a report dated 22 August 1988 Mr Alan Tyldesley (HSE Specialist Inspector) recommended that “...part of the underground pipework carrying LPG vapour into the building should be excavated...”⁶. This recommendation was not insisted upon by the HSE and a counter-proposal which did not involve excavation was accepted. Had the HSE taken the measure of insisting that Mr Tyldesley’s recommendation was implemented it would have been established that the pipework was not laid in suitable backfill, did not have adequate protection against corrosion and, as a consequence, remedial works, or replacement would have been required.

³ Evidence of Alistair Gunn on day 04 at page 105. FIC28643(001040)

⁴ Evidence of Alistair Gunn on day 04 at page 104

⁵ Evidence of Alistair Gunn on day 04 at page 124.

⁶ Report of 22 August 1988(011446).

Following upon acceptance of the counter-proposal to Mr Tyldesley's recommendation, no immediate steps were taken by the HSE to ensure that the counter-proposal was implemented. According to Mr Tyldesley, it was not his role, nor would it have been practical for him to have taken such steps. It is submitted that there did not appear to be any system in place within the HSE to ensure the implementation of recommendations or counter-recommendations, whether as a result of a lack of resources, or otherwise. It is submitted that had the HSE taken the measure of putting in place such a system, it would have been established that no excavation of pipework had been carried out, and the same could have been enforced by improvement notice. Subsequent excavation would have established that the pipework was not laid in suitable backfill, did not have protection against corrosion and, as a consequence, remedial works, or replacement would have been required.

On 14 December 1987 an explosion occurred in the basement of premises occupied by Lightweight Body Armour Ltd of Northamptonshire. It was established that the cause of the explosion was the leakage of LPG through a corroded gas pipe which was buried in the ground immediately adjacent to the outside wall of the basement. A report of the incident and its causes was prepared by an inspector of the Field Consultancy Group of the HSE on 13 January 1988⁷. According to John Ives, retired principal inspector of HSE who gave evidence to the Inquiry, he was neither aware of the existence of the report nor of any system within the HSE for such reports to be made available to general inspectors.⁸ According to Alan Tyldesley, formerly HSE specialist inspector of fire and explosion hazards, he was unaware of the existence of the report and did not tend to receive reports emanating from inspectors in England and Wales. It is submitted that had the HSE taken the measure of ensuring an adequate system for the distribution of such reports to HSE inspectors, the dangers associated with corroded pipework in conjunction with pipework in basements would have been highlighted, and ought properly to have resulted in the issue being investigated by inspectors in the course of visits to the Grovepark Mills prior to the tragedy of 11 May 2004.

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29 July 2008

⁷ Report of FCG Inspector Harding 13 January 1988(011510)

⁸ Evidence of John Ives on day 05 at page 83