

## ICL INQUIRY STATEMENT

### KEITH YOUNG

1. I am a retired Gas Engineer. I started work for Calor Gas in 1956 in Addlestone in Surrey. I retired from Calor Gas in November 1993.
2. When I retired from Calor Gas I started working for the Institution of Gas Engineers in December 1993.
3. I worked there up until December 1999. I started work as a Technical Officer with Shell Gas LPG and I worked there from January to December 2000.
4. I am a Chartered Engineer and a fellow of the Institution of Gas Engineers.
5. In terms of a new commercial installation, the first contact from Calor would be a salesman with technical knowledge. He would produce a specification and list of materials for the installation, and also a contract. The company had regional fitters who would do the work. The installation would comprise the tanks, first stage regulator, pipework (over or underground), isolation valve, second stage regulator and internal pipework to point of usage. For gas supply installation only it would be the tank and possibly the first stage regulator (for existing systems). If it was a new installation, and the customers had their own contractors, then Calor may only put in the tank. Calor would work to the following guidelines HSG34 [ICL/01272-01312], LPGITA Codes of Practice, Calor's own specifications and British Standards – but in the absence of any formal procedures, especially in the early days (1960's), Calor would draw up their own procedures. With a new installation, any safety information and the emergency service card would go to the customer.

6. The customer would be required to dig the trench and back fill it, even if Calor were laying the pipe. The engineer would report back if the trench or plinth were incorrect. The route of the pipework would be agreed between the salesman and the customer.

7. The responsibility for back filling the trench lay with the customer I don't remember specific information being given, but for polyethylene pipes you would want to avoid sharp objects.

8. If the customer had to lay the pipe, it would be down to the customer to follow the specification. If asked, Calor would provide assistance. If it was a larger factory then I would expect them to know, but for smaller commercial organisations, I may have provided advice.

9. In terms of pipework, I can go back to what was called "black wrapped pipe" which had a bitumen covering, then onto galvanised pipe, with corrosion protection tape or Denso tape, then onto plastic pipes. This was pioneered by British Gas Initially the pipes were PVC, but there were problems with them. Calor then developed a PE (Polyethylene) pipe for vapour lines. Calor never used PVC extensively.

10. It was not custom and practice, so far as I am aware, for the Calor fitter to check the customers pipes before they were buried and if it was an existing installation you couldn't visually check it. However if there were indications of a problem, the fitter would report back to Calor if he could see that this was the case.

11. In my experience, the types of problems that could occur with pipework were the use of pipework to the wrong specification, or if the pipes had not been Denso wrapped. In these circumstances, the fitter would report back to Calor.

12. For testing a new installation, Calor would pressure test the Calor installed pipework. For a factory, they may only test to the isolation valve on

the outside at the point of entry. All the factory appliances would be required to be turned off.

13. The procedure for the pressure test was set by Calor in the early days and subsequently by codes of practice from the LPGITA or CORGI or HSE. We would test the first stage pipework at twice the working pressure. This test would still be required for customer installed pipework. For vessel inspection, there was a 5 year visual inspection and a 10 year tank exchange. At the 10 year exchange, as you turn off the gas supply, you would pressure test as described above. My recollection is that pressure testing was not part of the 5 year test.

14. The customer was given a safety leaflet, which evolved over the years, and it mentioned pipework inspection – I think it mentioned “periodic inspection” – this would entail something like a 5 year visual inspection, tying in with the tank inspection every 5 years. I would not say that excavation was part of the testing regime, as it was not all that practical. I would only regard excavation necessary if a problem or a leak had been reported.

15. In terms of pipework going into a basement, I would be concerned. It should be avoided, especially joints, and it must be properly supported, and you could go to the measure of putting in gas detection equipment. LPG vapour is heavier than air and so pipework in basements and cellars should be avoided, especially where there was a source of ignition in the basement.

16. At Calor we would always be concerned at the mention of cellars, especially where gas was to be used in the basement. If pipework had to go into a basement, I would not allow it to go ahead, unless there were minimal joints and possibly gas detection equipment and protection from mechanical damage to minimise risk. To my knowledge it was not a Calor or HSE or written requirement at that time.

17. If a customer asked for advice on testing underground pipes, we would often do it for them, as good customer relations. We would advise them to

follow our procedures. Our technical manager would write to them with this information. This would be an unusual situation, as most people would either ask Calor to undertake the work as we were competent to do it or they had the experience in-house to do it.

18. I was shown a letter from Calor to its bulk LPG customers dated 15/12/1969 [ICL/11037-11040] which mentioned actions to be taken by tanker drivers and reporting back to the company about problems. Whether it was the responsibility of the customer or Calor was decided by the contractual arrangements, and if it was downstream of the tank, it was the customer's responsibility. It was my understanding that the first stage regulator, and indeed its fittings were the responsibility of the customer. This was all set out in the initial contractual documentation and the salesman's paperwork.

19. I was shown a letter dated 4 January 1989 [ICL/11479] from Maurice COVILLE, Calor Safety Inspector to John IVES, HSE, referring to paragraph II of his earlier letter. This is the standard Calor response, although I would expect HSE to respond. In my experience I have found the pressure test to be an absolutely adequate response.

20. I am not aware of any procedure for Calor to visit customer's premises proactively to check customer's installations. It was more through the tanker drivers or the 5 year procedure.

21. In 1987 there was an incident at the premises of the Lightweight Body Armour Limited. I visited the site for a short period. We got little co-operation from the company itself. The HSE were involved. Bob DOYLE and the Group Safety Inspector were competent and did the actual investigation. I cannot remember the actual pipework but it was an issue of corrosion and it was not a Calor installation. I understand it had been carried out on behalf of Lightweight Body Armour Limited but at the time we did not know who it was. My role may have been to assist Bob DOYLE or I went to ensure Head Office involvement. I came away satisfied that Calor had not been involved and that it was combination of a leak and a basement situation. The report would go to

the Technical Manager and Group Safety Manager. I suspect the report was fairly well circulated but in terms of the actual incident it was fairly self evident what had happened. The HSE were there and involved and so presumably within their organisation they may have done something. I don't remember if it was reported to the LPGITA as a matter of industry concern.

22. I have had experience of other underground pipework failures, though not with the same results. You do get leaks. It is only when you get leaks in confined spaces that you have serious problems. From my experience the modes of failure could be contractors cutting into the pipe, joint failure, maybe a regulator failed. I cannot think of any specific examples where corrosion protected pipework failed.

23. Denso tape has proved to be remarkably resilient over the years. The Calor requirement was galvanised pipe, Denso wrapped. I am not aware of any shelf life being specified anywhere.

I confirm that the contents of this statement are true.

Witness signature \_\_\_\_\_

Date \_\_\_\_\_