Safety Lines

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ENGINEERING SAFETY NEWSLETTER, OCCUPATIONAL SAFETY AND HEALTH SERVICE

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Management of Substances Hazardous to Health

An *Approved Code of Practice for the Management of Substances Hazardous to Health* (MOSHH code) was released by the Occupational Safety and Health Service in July 1997. It sets out a generic approach to assist in the management of hazardous substances in the workplace, and compliance with relevant safety sections of the Health and Safety in Employment Act 1992.

You need this information if you:

- Employ people that are required to work with or may be exposed to hazardous substances;
- Manufacture or supply hazardous substances to be used in a workplace; or
- Work with, or may come into contact with, hazardous substances in your job.

This code and supporting documents also provide an essential reference for occupational health professionals and those involved in giving advice on health and safety requirements.

The MOSHH code provides information on:

- Requirement for the provision of information on hazardous substances, including labelling and Material Safety Data Sheets;
- Conducting an assessment of risks posed by the use of hazardous substances;
- Preventing or controlling exposure to hazardous substances;
- Monitoring exposure to hazardous substances and the health of workers; and
- Training and supervision of employees.

The MOSHH package contains the following documents:

- The code itself;
- A practical guide and workbook for completing a MOSHH assessment;
- *Guidelines for Workplace Health Surveillance*;
- *Guidelines for the Preparation of Material Safety Data Sheets in New Zealand*;
- A brief guide on the code for employers;
- A brief guide on the code for employees; and
- A display poster.

For more information on the MOSHH code and how it could apply to your workplace, contact your nearest OSH office.

Copies of the MOSHH package can be obtained by contacting:

Julie Watterson
Occupational Safety and Health Service
PO Box 3705, Wellington
Tel: (04) 915 4317 Fax: (04) 499 0891

Inspection Bodies Performing Design Verification and Design Verifiers

The following table is an update of an article that was published in an earlier *Safety Lines*. It lists those organisations able to provide design verification services and includes the certified design verifiers employed by them and the categories of equipment for which these persons are certified.

Independent Design Verification Services Ltd	P S-L Wong	Unfired pressure vessels Pressure Piping B Cranes Boilers C Boilers Aii
	L L Wong	Unfired pressure vessels Pressure Piping B Boilers C Boilers Aii
M&I Safety Inspection Services Ltd	F Y Chu	Unfired pressure vessels Pressure Piping B Cranes Boilers C Boilers Aii
	C L Wakeling	Boilers Aii
	E Tsamandakis	Unfired pressure vessels Pressure Piping B Cranes Boilers Aii
	J S D'Souza	Unfired pressure vessels Pressure Piping B Boilers C
New Zealand Worley	M J Cryns	Pressure Piping B
	T R Milliken	Pressure Piping B Unfired pressure vessels
	G D Notley	Pressure Piping B
SGS New Zealand Ltd	M W Parsons	Unfired pressure vessels Pressure Piping A
	P L Higgins	Unfired pressure vessels Boilers C
	R W Dove	Cranes

Explanation of Boiler and Pressure Piping Categories

Boilers Part Ai	Electrode boilers, calorifiers, hot water boilers and electric boilers with design pressure not exceeding 150 kPa.
Boilers Part Aii	Electrode boilers, calorifiers, hot water boilers and electric boilers with design pressure exceeding 150 kPa (includes Part Ai).
Boilers Part B	Boilers with design pressures not exceeding 1000 kPa.
Boilers Part C	Boilers with design pressures exceeding 1000 kPa (includes Part B).
Pressure Piping Part A	Pipework and fittings with design pressures not exceeding 1000 kPa.
Pressure Piping Part B	Pipework and fittings with design pressures exceeding 1000 kPa (includes Part A).

B31.1 Power Piping - Code Case 168

Engineering Safety brings to the attention of its readers Code Case 168 *Use of Ultrasonic Examination in Lieu of Radiography for B31.1 Application* released by ASME in June 1997.

This code case significantly alters the NDT that may be applied to certain piping fabricated in accordance with B31.1.

Table 136.4 of B31.1 and appended notes only permit ultrasonics to be used in lieu of radiography when "... it is impractical to use a combination of radiographic parameters such that a maximum geometric unsharpness of 0.07 in. 2.0 mm cannot be obtained ...".

Code case 168 now permits ultrasonics to be substituted for radiography provided, amongst other requirements, ... "The ultrasonic examination is performed using an ultrasonic system capable of recording the ultrasonic examination data, including scanning positions, to facilitate the analysis of the scan data by a third party and the repeatability of subsequent examinations should they be required".

Persons contemplating the use of ultrasonics in lieu of radiography should read Code Case 168 in order to get the complete picture. In particular they should note the requirement for an ultrasonic system capable of recording the test data. Ultrasonic testing using manual methods of examination and recording would not comply with the requirements of Code Case 168.

Recertification of Design Verifiers

Design verifiers are reminded that their certification is for a finite period and that some certificates will begin to expire from May 1998. IPENZ advise that the recertification process will have provision for:

- A review of the candidates job history for the preceding certification period;
- A competency check; and
- Where considered appropriate, an oral interview by an IPENZ panel.

Further information on this process is available from:

John Gardiner
Institution of Professional Engineers New Zealand
PO Box 12241, Wellington
Tel: 04 474 8932 Fax: 04 473 2324

SAFETY ALERT

A *Safety Lines* reader has brought to our attention a safety hazard arising from the operation of under 15 HP boilers using time clocks for start up.

Boilers have been arranged to start on a time clock signal without supervision from a competent person and without being converted for operation as an unattended boiler.

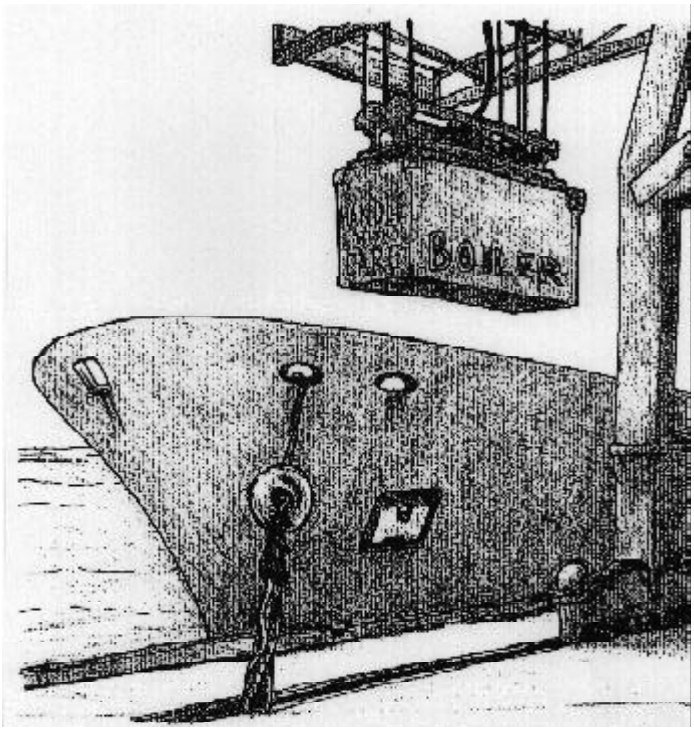
In one instance such a boiler started successfully but later developed a fuel oil leak which sprayed oil on to the refractory lined combustor fitted into the boiler furnace. This caught alight and although a fusible link operated to isolate the fuel supply tank, the residual oil in the fuel train, along with the delay in staff discovering the fire, was sufficient to severely damage the boiler and cause it to be replaced.

In general, under 15 HP boilers are not equipped to the standard required by the *Approved Code of Practice for the Design, Operation, Maintenance and Servicing of Boilers* and are not suitable for unsupervised start up.

If boilers are to be automatically started without supervision then they should be upgraded to unattended status in accordance with the requirements of the code of practice.

Advertisement

Trans-Tasman Mutual Recognition Act



The Trans-Tasman Mutual Recognition Act (TTMRA) comes into effect on 1 May 1998 with the objective of removing regulatory barriers to the movement of goods and service providers between Australia and New Zealand.

Under the Act, goods that may be lawfully sold in Australia may be sold in New Zealand without the need to conform with any of the requirements relating to sale that are imposed by or under the law of New Zealand, e.g.,

- A requirement that the goods satisfy standards relating to their composition, performance, production or quality.
- A requirement that the goods be inspected, passed or similarly dealt with in or for the purposes of New Zealand.

Also, under the Act, if a person is registered to practise an occupation in Australia, they will be entitled to register and practise in New Zealand.

Similarly, New Zealand goods will be able to be sold in Australia and persons registered to practise an occupation in New Zealand will be entitled to register and practise in Australia.

While sale requirements for goods will be overridden by the TTMRA, nothing in the Act affects the operation of any laws of New Zealand regarding the inspection of goods within New Zealand as long as the laws are directed at matters affecting health, safety and the environment.

Equipment coming within the scope of the draft Pressure Equipment Cranes and Passenger Ropeways Regulations (PECPR)

Equipment coming within the scope of the draft PECPR Regulations will not be exempt from the Act and hence PECPR equipment that can be lawfully sold in Australia may be sold in New Zealand. However, under these draft regulations, safety considerations would require such equipment to have a certificate of inspection, from an accredited inspection body, before it can be put into operation. To get this certificate, importers/controllers will, amongst other requirements, need to provide documented proof that the equipment has been design verified and inspected during fabrication to the same standard as similar equipment manufactured in New Zealand.

Design verification and fabrication inspection is required in New Zealand under the draft PECPR Regulations and is similar to systems operating in the UK and Europe. Although these systems have not been mandated in any of the Australian States or Territories, Australian industry has taken the initiative and accredited inspection bodies are being established.

In conclusion, Engineering Safety recommends that importers/controllers ensure that equipment imported from Australia has been design verified and inspected to a standard appropriate for New Zealand.

- *Inspection bodies are accredited, in New Zealand and Australia by International Accreditation New Zealand (IANZ) and National Association of Testing Authorities (NATA) respectively. IANZ and NATA have a mutual recognition agreement for calibration and testing, and are putting in place a similar agreement for inspection bodies.*
- *The above article is not a definitive comment on the TTMRA. Safety Lines readers who have an interest in this area are advised to obtain a copy of the TTMRA and/or contact Graham Boxall, Senior Advisor - Competition and Enterprise, Ministry of Commerce, for further information. Ed.*

Safety Lines 1997: Publications Index

Engineering Safety is preparing an index of all published *Safety Lines* articles this should be included in the June issue. *Ed.*

Swift Survey '98

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Once again it is time for Engineering Safety's annual *Swift Survey*.

This year we have included the questionnaire with *Safety Lines* and expanded it to cover *Safety Lines* readership and client statistics.

Your response to the questionnaire will be valuable in gauging our performance and in adapting and improving the service we provide for our clients.

This survey is carried out in accordance with the purchase agreement between OSH and the Minister of Labour. The results will be published in the next issue of *Safety Lines* along with a summary of the supplementary comments provided by respondents. As always, all information published in *Safety Lines* will be anonymous and persons taking part in the survey will not be identified.

We have cast our survey 'net' to a wider section of clients this year; we look forward to pencils being sharpened and a good percentage return.

For your convenience a stamped addressed envelope has been provided for return of the survey document.

Proposed Amendment to AS 1548 -1995

Engineering Safety advises readers of a proposed amendment to AS 1548 - 1995 *Steel plates for pressure equipment* affecting the manufacturing tolerance on plate thickness.

The background to setting the current thickness tolerance for AS 1548 plate and the reasons for the proposed amendment are as follows.

In the 1988 edition of AS 1548 the tolerance was - NIL and + X. This suited New Zealand pressure vessel fabricators as it lined up with BS 1501, the standard covering materials specified in the pressure vessel standard BS 1500 and its successor BS 5500.

Since then a number of changes have taken place in Europe. BS 1501 has been withdrawn and replaced by BS EN 10028 which calls up EN 10029: 1991 as the applicable dimensional standard. BS EN 10029 states that—"Unless *otherwise agreed at the time of ordering, class B as specified in EN 10029 applies to the tolerance on thickness of plates"*. This class permits a tolerance on thickness of -.3 mm + X mm.

This tolerance conforms with BS 5500 which requires the calculated nominal thickness of a vessel to "*include the amount of any negative tolerance permitted by the specification to which the material is ordered"*. Similarly, other primary pressure vessels standards used in New Zealand have provision for negative tolerances on thickness which are compatible with the amendments proposed for AS 1548.

From a steel manufacturer's perspective the proposed change to the thickness tolerance of AS 1548 plate would allow some rationalisation of grades. It would also closely align AS 1548 with EN and ASTM standards and raise the possibility of its eventual dual certification.

Fire Tube Boiler Furnace Defects

Engineering Safety has been given results of an inspection carried out on a fire tube boiler which had been subject to 100 % magnetic particle inspection (MPI) of the furnace welds. This special inspection was carried out by an inspection body, at the owner's request, because of the boiler's age.

The boiler was manufactured by Anderson Engineering in 1963 and is a mechanically stoked, coal-fired, two-pass twin furnace unit with plain/bowling ring furnace construction. It is one of three identical boilers installed at the particular location.

The boiler had been well maintained, did not appear to have been over fired, but has served in various roles since commissioning.

MPI revealed approximately 14 crack-like indications from plate discontinuities and furnace welds. These had depths between 3 and 17 mm in plate of 18 mm thickness. The worst defects were:

- A crack 17 mm deep by 60 mm long in the furnace to front tube plate weld running parallel to the furnace longitudinal axis.
- Circumferential tramline cracks between 2 and 7 mm deep in the first strake of one furnace. It appeared this may be related to an earlier repair to rolling damage.

This boiler is now under repair. The owner has arranged for an annual MPI inspection of the affected area and for furnace areas of the other two boilers to be similarly inspected at their next survey.

There are many ageing fire tube boilers in use in New Zealand and Engineering Safety strongly recommends that owners and controllers ensure that appropriate inspection of these units, particularly furnace areas, are carried out.

If you require more information please get in touch with Engineering Safety. See contact details on the last page of this newsletter.

SHORT NOTES

Crane Operator Training

Owners and controllers of cranes who are considering training of new staff or, refresher courses for current operators, are reminded of the availability of following training schemes.

Power Crane Association	PCA has 37 registered unit standards on the NZQA framework, including thirteen national certificates and more to follow. Further information is available from: **PCA** **PO Box 30 074, Lower Hutt** **Tel (04) 569 9799 Fax (04) 569 6969**
Manufacturers	Crane manufacturers will provide training. This varies from training for a particular crane supplied by the manufacturer to courses for particular types of crane of any origin.
Importer/Supplier	Importer/supplier will provide training courses for cranes they supply.

Radio Control of Cranes

Radio control is now being included with new cranes and in the upgrade of existing cranes.

Safety Lines readers are advised that there is useful information on radio control in 31.7 of BS446 and 8.7.6 of AS 1418.1.

It is recommended that both these standards be perused when radio controls for cranes are being considered.

Ammonia Plant Safety

Engineering Safety has been given details of an ammonia leak which on investigation, highlighted a need for additional safety aids.

The recommendations that arose from this incident included:

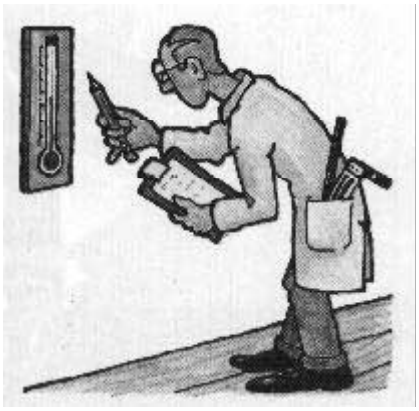
- The erection of wind socks so employees can check wind direction and move out of the path of any gas leak.
- The provision of alternative assembly points so that employees can assemble out of the path of an ammonia leak.
- The installation of a distinctive alarm for an ammonia leak so that employees can distinguish between an ammonia leak and some other emergency.

In this incident there was no warning that the alarm was caused by an ammonia leak and evacuees were injured when they moved into the gas path.

The above recommendations would apply to other sites where there is a gas hazard.

Extremes of Temperature

Information for employers, supervisors, medical personnel and employees.



Humans are warm-blooded, that is, we have the ability to regulate our internal temperature at around 37^{O}C. The body has several mechanisms to keep its internal or "core" temperature constant, such as sweating, shivering, and increasing or reducing the flow of blood to the skin.

Where people have to work in extremely hot or cold situations — for example if exposed to high radiant heat in a foundry, or if working outdoors in snow and wind — the body's temperature control mechanisms may fail. If the body's core temperature rises or falls by just 2^{O}C, then serious illness or even death may result. It's vital, therefore, that measures are taken to manage the hazards of work in extremes of temperature.

Who needs these guidelines?

You need the information in the ***Guidelines for the Management of Work in Extremes of Temperature***:

- If you are responsible for managing staff who work in extremes of temperature; or
- If you provide medical support to people who work in extremes of temperature; or
- If you work in extremes of temperature.

In the work situation, employers have a legal obligation under the Health and Safety in Employment Act 1992 to provide a safe place of work, and to identify, assess and control the hazards associated with work in extremes of temperature.

These comprehensive guidelines will assist employers and other parties to meet their obligations under the Act.

Supplementing the guidelines is an information folder ***What You Need to Know about Temperature in Places of Work***, dealing with situations where temperature causes discomfort without being potentially life-threatening.

Who needs the information folder?

Many of us don't work in situations where there's a risk of heat-related (or cold-related) medical conditions. But there may be certain times of the year—such as in midsummer, or during cold spells in winter—when working conditions become uncomfortable.

Written in an easy-to-read style, and attractively illustrated, this information folder answers the questions often asked when temperatures at work soar or plummet. For example: What is the most comfortable temperature range for people to work in? How can temperature be controlled if people feel too hot or cold? What are the legal requirements concerning temperature in the workplace?

Titles of information sheets in the folder are:

- An introduction to temperature at work.
- Factors that influence how hot or cold we feel.
- What you need to know about thermal comfort.
- What you need to know about thermal discomfort.
- Some basic facts on thermal stress.
- Control options for hot situations.
- Control options for cold situations.
- Methods of investigating thermal problems.
- Legislative aspects of temperature in workplaces.

To order, or for more information

Copies of the guidelines and or information folder can be obtained by contacting:

Julie Watterson
Occupational Safety and Health Service
PO Box 3705, Wellington
Tel: (04) 915 4317 Fax: (04) 499 0891

For more advice on temperature in places of work and how it could apply to your workplace, contact your nearest OSH office. We're listed in the Blue Pages of your telephone directory.

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