

Safety Lines

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Update: Pressure Equipment, Cranes and Passenger Ropeways Regulations

The PECPR Regulations are in the final development stage. A small project team within the Occupational Safety and Health Service is fine tuning the regulations at this time. This fine tuning is expected to be finished by the end of June at which stage the regulations will be sent to the legal drafters at the Parliamentary Counsel Office (PCO).

OSH hopes to get the final version of the regulations back from PCO within two weeks. While to date we have excellent service from PCO, this part of the timeline depends on the legislative priorities of the government and, as such, is outside PCO's or OSH's control.

Once the final version is received from PCO it will take a further four weeks for the draft to go through the standard parliamentary process. If this all goes smoothly and regulations are agreed to there is a further 28 day period before they come in to force.

At the earliest then you should expect the new regulations about mid September 1998.

The latest changes to the draft regulations include the following:

- The threshold pressure for pressure equipment has been lowered to 50 kPag. This aligns with

regulations in Australia and Europe and while more equipment now comes within the scope of these regulations, we are able, via regulation 6, to exempt certain equipment as appropriate.

- We have deleted the recognition provisions for Accreditation bodies and Certification bodies and we have identified these organisations more positively in the regulations. Having OSH recognise these organisations caused problems for the relationship between the regulations and the HSE Act. Also, these organisations already have recognition from another government department.
- We have made provision for OSH to recognise standards of generally accepted industry practice and standards of generally accepted design practice. Having recognised these documents, we will publish a notice in the Gazette to this effect. In order to reach a wider readership we will also publish this notice in *Safety Lines*.

A copy of the draft regulations is available on the OSH website at <http://www.osh.dol.govt.nz>. We suggest you keep an eye on this website and on Safeguard for further updates.



Extended Inspection Periods to AS/NZS 3788

Provision has been made in the draft Pressure Equipment Cranes and Passenger Ropeways Regulations for the Secretary to grant exemptions affecting the period of certification. Such exemptions will enable controllers, who have appropriate management systems in place for their equipment, to utilise inspection periods up to the maximum periods scheduled in AS/NZS 3788. (See Safety Lines No. 33)

Where an exemption is being sought a primary requirement of the controller's management system is that it provides for:

- The identification and analysis of safety risks.
- The identification of critical plant and highest priority components.
- A risk based inspection programme.

The controller should, prior to applying for an exemption, demonstrate to their inspection body that appropriate risk analysis has been carried out and that a risk based inspection programme has been put in place.

In an application to the Secretary for an exemption the controller must include statements which, amongst other things, includes a commitment to operating within a quality management system and to conformance with an inspection and test plan approved by their inspection body.

The controller's application must be supported by statements from their inspection body certifying that they have reviewed all process and historical data relevant to the equipment for which the exemption is being sought and that the inspection and test plan is in accordance with 'Risk Based Inspection' principles and AS/NZS 3788.

The following guidelines describe in detail the information and statements required from controllers and inspection bodies in respect of an application for an extension of inspection periods.

From the Controller

A letter of application seeking recognition (or an extension of existing recognition) in the terms of the 'recognition' provisions of the draft Pressure Equipment, Cranes and Passenger Ropeways Regulations.

This letter is to provide:

1. A schedule of the pressure equipment for which extended inspection periods are being sought. This schedule shall include the unique identification numbers issued for the equipment by the inspection body responsible for its initial certification.
2. Statements certifying that:
 - The equipment will be operated within an OSH recognised quality management system of appropriate scope which will include inspection, testing and monitoring of process and operating parameters affecting the life of the equipment.
 - The equipment will be inspected and tested in accordance with an inspection and test plan approved by their inspection body.
 - The equipment will be operated within any process and operating parameters nominated in the inspection and test plan.
 - All persons responsible for management and implementation of the ITP are competent and trained in accordance with the requirements of the draft PECPR Regulations.
 - Their inspection body may have access at any time, to any equipment and records they require, for the purpose of monitoring and review of the inspection and test programme.

From the Inspection Body

A letter supporting the controllers application for recognition (or an extension to an existing recognition). The letter is to include statements certifying that:

1. The relevant process and historical data, required to assess the inspection and test plan for the equipment concerned, have been reviewed.
2. The inspection and test plan has been examined and that:
 - It is in accordance with 'Risk Based Inspection' principles.
 - All damage mechanisms have been identified.
 - The inspection procedures are appropriate in respect to determining the accumulated damage.

- There has been an adequate review and appropriate incorporation of the historical inspection data for the equipment.
 - It is in conformance with the requirements of AS/NZS 3788 1996 for extended inspection periods.
-
3. They (the inspection body) will periodically review the inspection and test plan and will notify the controller of any changes that are necessary in order to maintain the integrity of the certificates of inspection issued for equipment covered by the plan.

4 *Swift Survey and Client Readership Survey Results*

The following article was prepared by the assessor responsible for putting together and reporting the results of our recent 'Swift' and 'Client Readership' surveys. Ed.

Swift Survey

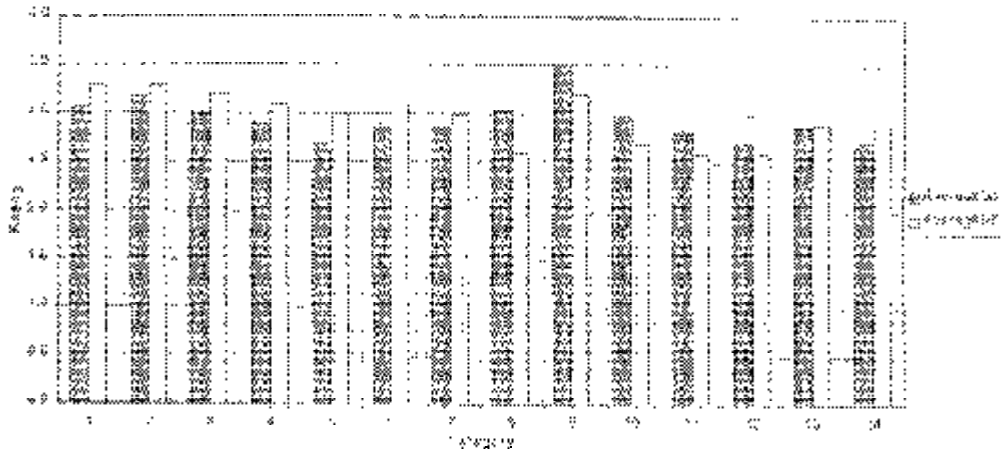
The results of the survey, including a comparison of last year's and this year's ratings, are shown on the chart *Swift Survey*.

Readers are reminded that the client response relates to the following questions and that answers are ranked on a scale of 0-4.

0 = disapprove/no, 4 = approve/yes.

1. Do we **meet your needs and expectations**?
2. How do you rate the **quality of our service** with respect to **reliability**?
3. How do you rate the **quality of our service** with respect to **responsiveness**?
4. How do you rate the **quality of our service** with respect to **assurance**?
5. How do you rate the **quality of our service** with respect to **empathy**?
6. Do you feel that we **understand your point of view**?
7. Do we assist and help you towards **finding solutions to your problems**?
8. Do you feel you are being appropriately **informed on engineering safety issues directly affecting your business**?
9. Can you **contact us** easily when needed?
10. Do you feel you are being appropriately **informed on resolution of your enquiries**?
11. Do we help you in **improving safety standards** within your organisation?
12. Do you feel that we **make your concerns our priority**?
13. Do we **respond to your enquiries within your deadlines**?
14. Do you feel that we **display flexibility in meeting your needs**?

Swift Survey Results



Commentary on the *Swift* Survey

From a *Safety Lines* mailing list of over two thousand, one hundred and eleven readers completed the *Swift* Survey. This compares with one hundred and ninety four replies received from last year's survey.

It appears on the basis of this limited response that while our respondents perception is that Engineering Safety's performance has dropped slightly in some categories, it is also their perception that it has significantly improved in others, such as:

Keeping readers informed on safety issues affecting their business (8).

Being easily contactable (9).

Keeping readers informed on resolution of their enquiries (10).

Helping readers improve safety standards (11).

Some respondents raised the question of Engineering Safety being under resourced and this appears to have affected their perception of our performance. We have passed these comments onto OSH management.

The matter most frequently commented on as being important to respondents is promulgation of the PECPR Regulations. For an update on progress in this area please see the lead article, 'Update Pressure Equipment, Cranes and Passenger Ropeways Regulations', in this issue of *Safety Lines*. Like many of our readers we also have difficulties with the regulations in their present form. We look forward to their promulgation.

We will be doing our best to improve performance in those areas identified as requiring attention by the *Swift Survey*. If there are other aspects of our service not covered by the survey, with which you are not happy, please advise us so that we have the opportunity to correct any problems. We have a policy of replying to queries within 14 working days. Although hard pressed on occasions we try hard to meet this deadline.

Our thanks to all who have taken the time to reply to our survey and for the many constructive comments and expressions of appreciation for our efforts.

Safety Lines Readership Survey

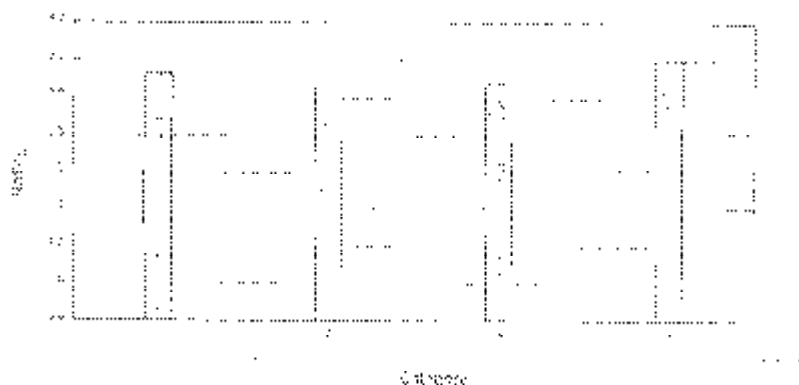
The results of the survey are shown on the chart *Safety Lines* readership survey. There was no corresponding survey last year.

The client response relates to the following questions and the answers are ranked on a scale of 0-4.

0 = disapprove/no, 4 = approve/yes.

1. What is your **overall rating** of *Safety Lines* newsletter?
2. What is your **rating** of *Safety Lines* format?
3. Is the **information** in *Safety Lines* **relevant** to your job?
4. Are *Safety Lines* articles **easy to read and understand**?

Readership Survey Results



Commentary on Readership Survey

One hundred and thirty-one readers, from a mailing list of over two thousand, completed the *Safety Lines* readership Survey.

The response rate to this survey and a lack of earlier surveys precludes any firm conclusions as to the effectiveness and relative performance of *Safety Lines*. However, the general comments received indicate that readers find our newsletter useful and informative. These comments range from "You can always do better!" through to praise such as "Overall excellent efforts!" and "Keep up the good work!"

The readers' evaluation of *Safety Lines* shown in the *Safety Lines* Readership Survey chart also appears to support this impression.

A number of respondents suggested broadening the scope of *Safety Lines* to cover other OSH issues. However, while we may use *Safety Lines* to draw attention to recent OSH publications and other relevant matters of general interest, we must not lose focus on those areas with which we are most concerned. Viz. pressure equipment, cranes and passenger ropeways. Readers who would like a broader coverage of OSH related matters are referred to publications, such as *Safeguard* and *Safeguard Update*. These are both very good sources of information on a fairly broad range of occupational health and safety issues.

Our thanks to all of you who have taken the time to reply to this survey and for providing many constructive comments on *Safety Lines*.

Assessors for Steam Plant and Steam Driven Vehicle Qualifications

Persons with appropriate experience and qualifications are now being sought to act as assessors for the EN Chem unit standards covering steam plant and/or steam driven vehicles.

Anyone interested in undertaking this work should apply to:

Carl Ammon
New Zealand Dairy Industry
Training Organisation
PO Box 488 Hamilton Mail Centre
Hamilton
Phone (07) 839 7370 Fax (07) 839 7606

Future Publications of *Safety Lines*

Engineering Safety advises readers that due to budgetary restraints *Safety Lines* will be published quarterly instead of every two months as at present.

In spite of this restriction we expect to be able to keep clients informed of any developments through the OSH web site at <http://www.osh.dol.govt.nz>

At present *Safety Lines* is included on this web site along with much other useful occupational safety and health data; it is our intention to use this facility to fill the gaps between quarterly publications.

Comparison of European and Australian Pressure Equipment Conformity Assessment Criteria

The following is a summary of a paper prepared by an Engineering Safety Group staff member for the IPENZ professional review process.

Australian Standard 3920.1 Assurance of Product Quality - Part 1 is widely used in New Zealand for determining design verification and inspection requirements for pressure equipment.

EC Directive No. 97/23/EC is similarly used in the European Community for pressure equipment. It is expected that equipment complying with this EC directive would be admissible to New Zealand once the pending Mutual Recognition Agreement between New Zealand and the EC comes into effect. Ed.

The contemporary 'global village' era has resulted in rapidly falling trade barriers and is imposing technical criteria for conformity assessment of equipment.

These methods of conformity assessment are also applied to pressure equipment.

A particular requirement of the New Zealand pressure equipment industry is that it must remain open and be able to accommodate the various major 'international' pressure equipment standards that have been recognised for use in New Zealand. At the same time the industry must be internationally competitive and be able to adapt to overseas trends and industry needs.

The Joint Standards Australia/Standards New Zealand committee ME/1/21 has recently released the following draft standards:

- DR 97531 *Pressure equipment hazard levels*, and
- DR 97532 *Pressure equipment conformity assurance*.
(These are intended to replace AS3920.1.)

These drafts and the recent availability of Directive No. 97/23/EC of the European Community have prompted this analysis.

The objective of this analysis is to compare New Zealand conformity assessment criteria for pressure equipment, as set out in the draft standards, with those of the European Community, as set out in EC directive. It also comments on significant differences between the draft standards and the EC directive.

A number of assumptions have been introduced to enable a direct comparison. It is considered that these do not affect the validity of the conclusions that have been drawn.

The analysis synthesised and compared the two sets of conformity assessment criteria for notional pressure equipment. The first step was to reproduce the

demarcation lines from the EC Directive conformity assessment tables and then superimpose the 'pV' criteria of the draft standards. These data are shown on the same logarithmic chart to enable a direct comparison of EC hazard criteria (I, II, III, IV) with Australian Standard hazard levels (E, D, C, B, A).

The conformity assessment criteria for both the draft standards and the EC directive are based on the following parameters:

- The equipment design pressure
- The volume of the vessel or pipe diameter
- The fluid contained by the equipment.

The particular parameters used depend on the equipment being assessed and the contained fluid.

Conclusions

1. Pressure vessels containing gases, boilers and fired heaters are assessed under both the draft standards and the EC directive on the basis of the product of pressure and volume. The hazard rating and inspection and testing requirements of the draft standards and EC directive are similar for this equipment. (See Tables 1 and 3).
2. Pressure vessels and pressure piping containing liquids are assessed under the draft standards using different criteria to those used by the EC directive. The EC directive sets demarcation lines based predominantly on pressure while the draft standards use pressure/volume product criteria. Hence, it would be possible for the same equipment, depending on its volume, to be given the highest hazard rating using the draft standard and the lowest under the EC directive or, vice versa. (See Table 2). There could also be a similar variance between design verification and inspection requirements.
3. Pressure piping containing gas is assessed under the draft standards using different parameters to those used by the EC directive. The EC directive sets demarcation lines based predominantly on pipe diameter while the draft standards use the product of pressure/diameter. Hence, it would be possible for the same piping system, depending on its design pressure, to be given a hazard rating using the draft standard which is quite different to that which would be assessed under the EC directive. (See Table 4). There could also be a similar variance between design verification and inspection requirements.

Pressure Equipment Conformity Assessment

Table 1
Pressure Equipment Category 1

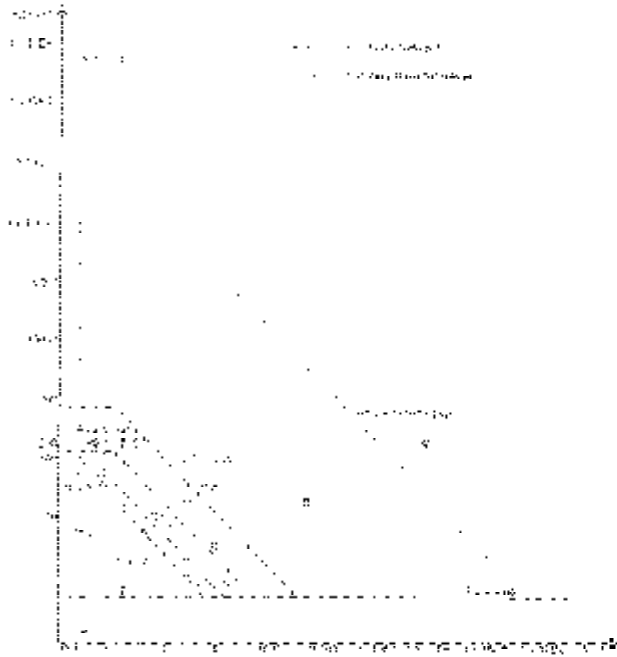


Table 2
Pressure Equipment Category 2

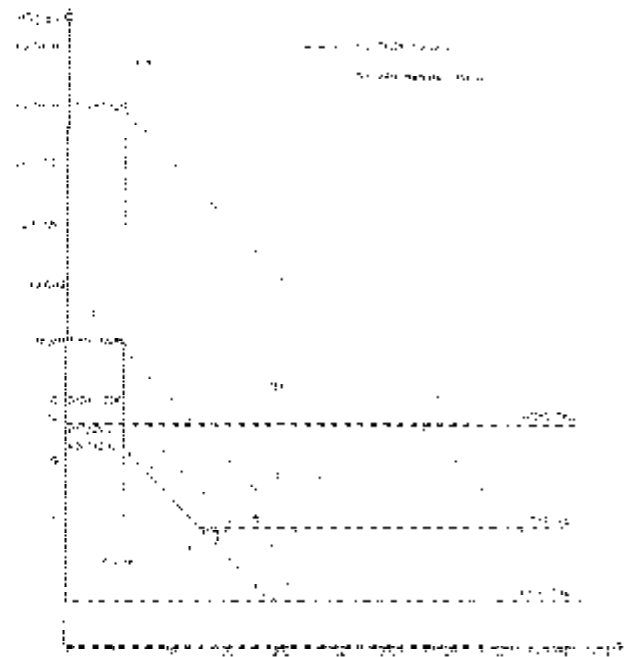


Table 3
Reaction

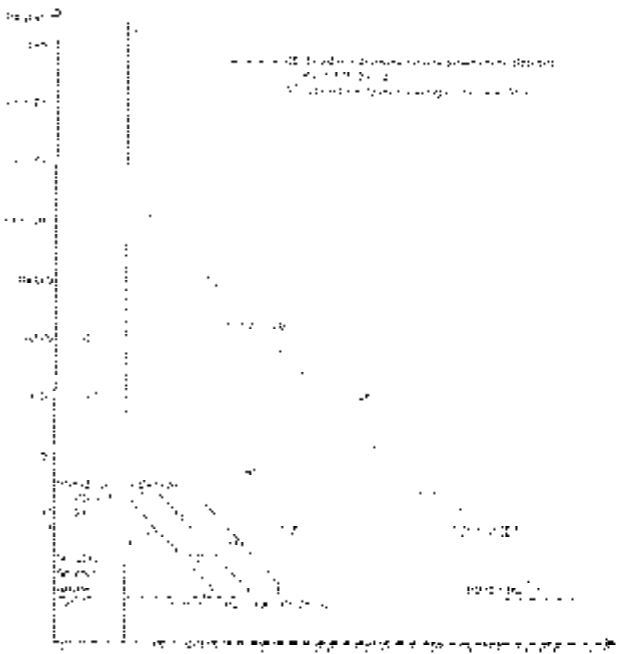
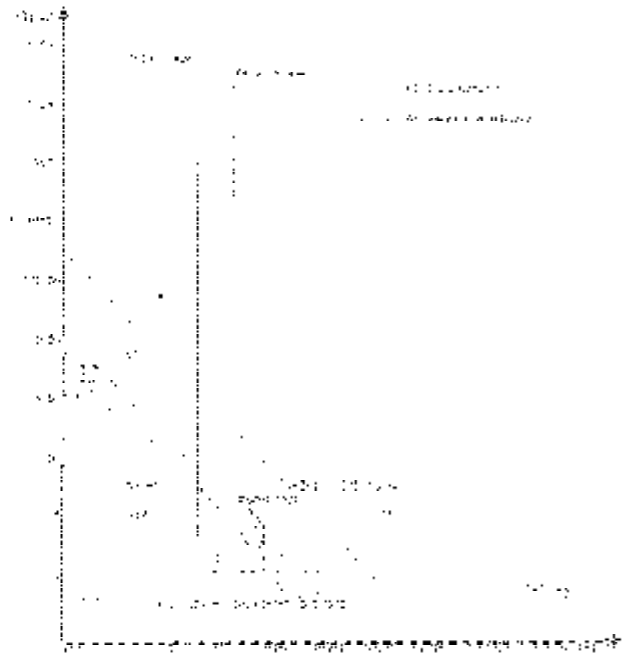


Table 4
Pressure Equipment Category 3



Inspection Bodies Performing Design Verification

Further to *Safety Lines* No. 37 Engineering Safety advises that the Croydon office of Lloyd's Register of Shipping - Industry Division is a recognised inspection body for the purpose of design verification.

Lloyd's provide design verification services for boilers, electrode boilers, calorifiers, hot water boilers, electric boilers and unfired pressure vessels.

They may be contacted at either of the following addresses:

**Lloyd's Register of Shipping
Industry Division
29 Wellesley Road
Croydon CR0 2AJ
United Kingdom**

or

**Lloyd's Register of Shipping
Price Waterhouse Centre
66 Wyndham Street
Auckland 1**

Engine Driver and Steam Plant Qualifications

Engineering Safety advises readers that with the phase-in of National Certificates to replace the Land Engine Drivers Certificates nearing completion, alternative arrangements have been made for management and administration of these qualifications. Enquiries relating to the LED qualifications should now be referred to:

**Bryn George
OSH, Department of Labour
PO Box 3705
Wellington
Phone (04) 915 4433 Fax (04) 915 4370**

Enquiries relating to Locomotive and Traction Engine Qualifications or National Certificates in Energy and Chemical Plant (Process Operation) should be referred to:

**Carl Ammon
New Zealand Dairy Industry Training
Organisation
PO Box 488 Hamilton Mail Centre
Hamilton
Phone (07) 839 7370 Fax (07) 839 7606**

NAFEMS Registered Analyst

Engineering Safety advises readers that Don Campbell a registered engineer with Matrix Applied Computing, Auckland has qualified as a Registered Analyst (Advanced) under the NAFEMS' registered analyst scheme. NAFEMS is an international organisation promoting finite element methods and standards.

We believe that Don may be the only registered analyst in New Zealand and certainly the only analyst qualified on the basis of work done in New Zealand. His registration covers analysis coming within the scope of the proposed 'Pressure Equipment Cranes and Passenger Ropeways Regulations'. His work experience includes finite element analysis work on pressure vessels, ships, general structures and military projects.

Safety Lines is a publication of the Engineering Safety Unit of the Occupational Safety and Health Service, Department of Labour, PO Box 3705, Wellington.

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