

Second Pressure Equipment Workshop

PE 2016

Welcome Address

Dr Wolfgang Scholz
HERA

PE 2016 Workshop Committee

Name	Organisation	Function
Bruce Wylie	Beca	
Paul Dorrington	Energy and Extracts	
Holger Heinzl	HERA	<i>Workshop secretary</i>
Tom Knight	Index Engineering	
Kevin Koorey	MB Century	<i>Chair of workshop committee</i>
Michael Lee	Mighty River Power	
Francis Forsythe	Worley Parsons	
Wolfgang Scholz	HERA	

H&S procedure

Program – Opening session

9:15 Keynote Address

*Roger Griffiths – President of Welding
Technology Institute Australia (WTIA)*

10:00 Worksafe Update

*Stuart Wright - Technical Specialist –
Engineering Technical Programmes and
Support, WorkSafe*

10:30 Morning Tea

Mood in the Board Room

Mood in the Board Room

- **IPENZ: Graham Dilks, General Manager – Engineering Leadership**

Mood in the Board Room

- IPENZ: Graham Dilks, General Manager – Engineering Leadership
- **CBIP Chairman & End-user Methanex:
Malcolm Kelsen**

Mood in the Board Room

- CBIP Chairman & Enduser Methanex: Malcolm Kelsen

“On behalf of the Pressure Equipment Industry - I have 30 years of asset integrity management and compliance related expertise. I fully support the Pressure Equipment Workshop initiative and attended the 2014 workshop, however due to the current global financial constraints in the oil, gas and petrochemical industry, I am unable to attend the 2016 event, please accept my apology.”

Mood in the Board Room

- IPENZ: Graham Dilks, General Manager – Engineering Leadership
- CBIP Chairman & Enduser Methanex: Malcolm Kelsen
- **Inspection Industry: Emiel Verveer, SGS M&I, Technical Manager**

Mood in the Board Room

- IPENZ: Graham Dilks, General Manager – Engineering Leadership
- CBIP Chairman & Enduser Methanex: Malcolm Kelsen
- Inspection Industry: Emiel Verveer, SGS M&I, Technical Manager
- **PE Fabricator:**
 - » **Duncan Fraser, ACME**
 - » **Mike Lehan, Page & Macrae**
 - » **Peter Hutton, Fitzroy Engineering**

Summary – Business Climate

Summary – Business Climate

- **Very quiet for the last few years**
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - some geothermal work expected next year
 - but still ticking along as a sector

Summary – Business Climate

- Very quiet for the last few years
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - some geothermal work expected next year
 - but still ticking along as a sector
- **Competitiveness of local industry is maintained with several players competing**
 - **but relative high compliance cost for maintaining capability**
 - **relative competitive on pipe fabrication but offshore pressure vessel sourcing seems to grow (mainly from Korea and but also lower cost countries such as Vietnam)**

Summary – Business Climate

- Very quiet for the last few years
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - but still ticking along as a sector
 - some geothermal work expected next year
- Competitiveness of local industry is maintained with several players competing
 - but relative high compliance cost for maintaining capability
 - relative competitive on pipe fabrication but offshore pressure vessel sourcing seems to grow (mainly from Korea and but also lower cost countries such as Vietnam)
- **Trustworthy local relationships help win mainly servicing and smaller new jobs**

Summary – Business Climate

- Very quiet for the last few years
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - but still ticking along as a sector
 - some geothermal work expected next year
- Competitiveness of local industry is maintained with several players competing
 - but relative high compliance cost for maintaining capability
 - relative competitive on pipe fabrication but offshore pressure vessel sourcing seems to grow (mainly from Korea and but also lower cost countries such as Vietnam)
- Trustworthy local relationships help win mainly servicing and smaller new jobs
- **More focus on H&S with new legislation and Worksafe action provides opportunities**

Summary – Business Climate

- Very quiet for the last few years
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - but still ticking along as a sector
 - some geothermal work expected next year
- Competitiveness of local industry is maintained with several players competing
 - but relative high compliance cost for maintaining capability
 - relative competitive on pipe fabrication but offshore pressure vessel sourcing seems to grow (mainly from Korea and but also lower cost countries such as Vietnam)
- Trustworthy local relationships help win mainly servicing and smaller new jobs
- More focus on H&S with new legislation and Worksafe action provides opportunities
- **Exploring sector wide export opportunities/partnerships to build scale and compensate for fluctuations seems to be worth-while approach**

Summary – Business Climate

- Very quiet for the last few years
 - mainly maintenance and replacement with some cyclic nature, no real new opportunities
 - but still ticking along as a sector
 - some geothermal work expected next year
- Competitiveness of local industry is maintained with several players competing
 - but relative high compliance cost for maintaining capability
 - relative competitive on pipe fabrication but offshore pressure vessel sourcing seems to grow (mainly from Korea and but also lower cost countries such as Vietnam)
- Trustworthy local relationships help win mainly servicing and smaller new jobs
- More focus on H&S with new legislation and Worksafe action provides opportunities
- Exploring sector wide export opportunities/partnerships to build scale and compensate for fluctuations seems to be worth-while approach
- **Emphasis on service provision versus new plant**

Summary – Staffing/Skills Issues

Summary – Staffing/Skills Issues

- **Fabrication**

- **difficulty to find experienced welders and professional engineers**
- **seems to be retained as in-house resources**
- **biggest issue consistent flow of work**

Summary – Staffing/Skills Issues

- Fabrication
 - difficulty to find experienced welders and professional engineers
 - seems to be retained as in-house resources
 - biggest issue consistent flow of work
- **PE Inspection and certification:**
 - *“Age gap and succession planning are a concern.*
 - *We have the veterans with 30-40 years of experience and then youngster who are just coming in.*
 - *There is no effective middle cadre to speak of.*
 - *It is also hard to find replacements quickly, as the job requires quite a unique combination of skills including technical competence, personnel integrity and industrial experience.*
 - *Even for experienced inspectors moving to New Zealand from overseas, it takes some time to become familiar with the regulatory system and achieve personnel certification required to carry out the work satisfactorily.*
 - *The industry however is still recruiting and needs to, as we have to counter the aging workforce”*

Summary – Staffing/Skills Issues

- Fabrication
 - difficulty to find experienced welders and professional engineers
 - seems to be retained as in-house resources
 - biggest issue consistent flow of work
- PE Inspection and certification:

“Age gap and succession planning are a concern. We have the veterans with 30-40 years of experience and then youngster who are just coming in. There is no effective middle cadre to speak of. It is also hard to find replacements quickly, as the job requires quite a unique combination of skills including technical competence, personnel integrity and industrial experience. Even for experienced inspectors moving to New Zealand from overseas, it takes some time to become familiar with the regulatory system and achieve personnel certification required to carry out the work satisfactorily. The industry however is still recruiting and needs to, as we have to counter the aging workforce”
- **Chartered Professional Engineer**
 - **Design Verifiers**
 - **17 on IPENZ register**
 - **seem to deal ok with workload**

Summary – Staffing/Skills Issues

- Fabrication
 - difficulty to find experienced welders and professional engineers
 - seems to be retained as in-house resources
 - biggest issue consistent flow of work
- PE Inspection and certification:

“Age gap and succession planning are a concern. We have the veterans with 30-40 years of experience and then youngster who are just coming in. There is no effective middle cadre to speak of. It is also hard to find replacements quickly, as the job requires quite a unique combination of skills including technical competence, personnel integrity and industrial experience. Even for experienced inspectors moving to New Zealand from overseas, it takes some time to become familiar with the regulatory system and achieve personnel certification required to carry out the work satisfactorily. The industry however is still recruiting and needs to, as we have to counter the aging workforce”
- Chartered Professional Engineer
 - Design Verifiers
 - 17 on IPENZ register
 - seem to deal ok with workload
- **PEI – CBIP**
 - **CBIP system seems to work ok**
 - **CBIP in good health**
 - **weakness total reliance on volunteers**
 - **more opportunity for skills development**

Summary – Staffing/Skills Issues

- Fabrication
 - difficulty to find experienced welders and professional engineers
 - seems to be retained as in-house resources
 - biggest issue consistent flow of work
- PE Inspection and certification:

“Age gap and succession planning are a concern. We have the veterans with 30-40 years of experience and then youngster who are just coming in. There is no effective middle cadre to speak of. It is also hard to find replacements quickly, as the job requires quite a unique combination of skills including technical competence, personnel integrity and industrial experience. Even for experienced inspectors moving to New Zealand from overseas, it takes some time to become familiar with the regulatory system and achieve personnel certification required to carry out the work satisfactorily. The industry however is still recruiting and needs to, as we have to counter the aging workforce”
- Chartered Professional Engineer
 - Design Verifiers
 - 17 on IPENZ register
 - seem to deal ok with workload
- PEI – CBIP
 - CBIP system seems to work ok
 - CBIP in good health
 - weakness total reliance on volunteers
 - more opportunity for skills development
- **Local distribution of available capability e.g. in NDT a challenge e.g. lower North Island**

CPD/Professional Training

CPD/Professional Training

- **Focus on PE design and fabrication not formal career pathway and therefore relies on mentoring and Chartered Professional Engineers registration in the category Design Verifier (pressure equipment)**

CPD/Professional Training

- Focus on PE design and fabrication not formal career pathway and therefore relies on mentoring and Chartered Professional Engineers registration in the category Design Verifier (pressure equipment)
- **Design verifier pathway seems to work (no known complaints according to IPENZ)**

CPD/Professional Training

- Focus on PE design and fabrication not formal career pathway and therefore relies on mentoring and Chartered Professional Engineers registration in the category Design Verifier (pressure equipment)
- Design verifier pathway seems to work (no known complaints according to IPENZ)
- **PEI:**
- **“Continuous professional development of inspectors is more important than ever in the fast changing technological world of today, where more and more information about metallurgy, failure mechanisms, advancements in NDT techniques etc. are leading to leaner and tighter designs and the operators are more and more inclined to delay intervals between outages.**
- **Most of the inspectors in industry are overstretched in terms of work and time for CPD.**
- **The geographic position of New Zealand also means that available training and development opportunities are fairly restricted locally and the required overseas travel adds to the expense of maintaining the technical know-how.**
- **In general we are able to qualify staff through CBIP within the specified timeframe, welding inspection is general the hardest qualification for the Inspectors as they are less exposed now to welding work like welder qualifications and welding procedures”**

CPD/Professional Training

- Focus on PE design and fabrication not formal career pathway and therefore relies on mentoring and Chartered Professional Engineers registration in the category Design Verifier (pressure equipment)
- Design verifier pathway seems to work (no known complaints according to IPENZ)
- PEI: “Continuous professional development of inspectors is more important than ever in the fast changing technological world of today, where more and more information about metallurgy, failure mechanisms, advancements in NDT techniques etc. are leading to leaner and tighter designs and the operators are more and more inclined to delay intervals between outages. But most of the inspectors in industry are overstretched in terms of work and time for CPD. The geographic position of New Zealand also means that available training and development opportunities are fairly restricted locally and the required overseas travel adds to the expense of maintaining the technical know-how. In general we are able to qualify staff through CBIP within the specified timeframe, welding inspection is general the hardest qualification for the Inspectors as they are less exposed now to welding work like welder qualifications and welding procedures”
- **End user: “New Zealand industry would benefit from more knowledge exchange, learnings and skill and expertise development particularly in the area of in service management of pressure equipment e.g. risk based assessment and execution strategies for equipment, understanding of damage mechanism, fitness for service and general equipment knowledge. For this and other similar events including formal training to be a success industry must support organisations like HERA, CBIP and other industry groups.”**

Guidance Documents

Guidance Documents

- **NZ specific focus on seismic performance of pressure equipment covered in local NZ IPENZ document PN19 – Seismic Resistant Pressure Equipment.**

Guidance Documents

- NZ specific focus on seismic performance of pressure equipment covered in local NZ IPENZ document PN19 – Seismic Resistant Pressure Equipment.
- **Facilitated by previous Engineering Practice Manager, Cameron Smart, using a working group of IPENZ members who were proficient in the design, installation and maintenance of pressure equipment.**

Guidance Documents

- NZ specific focus on seismic performance of pressure equipment covered in local NZ IPENZ document PN19 – Seismic Resistant Pressure Equipment.
- Facilitated by previous Engineering Practice Manager, Cameron Smart, using a working group of IPENZ members who were proficient in the design, installation and maintenance of pressure equipment.
- **Update through IPENZ system as IPENZ document.**

Guidance Documents

- NZ specific focus on seismic performance of pressure equipment covered in local NZ IPENZ document PN19 – Seismic Resistant Pressure Equipment.
- Facilitated by previous Engineering Practice Manager, Cameron Smart, using a working group of IPENZ members who were proficient in the design, installation and maintenance of pressure equipment.
- Update through IPENZ system as IPENZ document.
- **IPENZ delivered via Graeme Lindup 5 courses on PN19 in 2013. IPENZ advertised course again in 2014 but there weren't enough people interested to deliver it.**

Regulation / Legislation

Regulation / Legislation

- **Sector group is familiar with codes and standards (ASME/API dominant with BS/EN second and AS third, however as several standards are to be maintained this is costly)**

Regulation / Legislation

- Sector group is familiar with codes and standards (ASME/API dominant with BS/EN second and AS third, however as several standards are to be maintained this is costly)
- **Will be interesting if/when Worksafe intends to publish any changes in legislation.**

Regulation / Legislation

- Sector group is familiar with codes and standards (ASME/API dominant with BS/EN second and AS third, however as several standards are to be maintained this is costly)
- Will be interesting if/when Worksafe intends to publish any changes in legislation.
- **The requirement of safety cases from all high hazard facilities have definitely resulted in increased safety awareness among operators.**

Regulation / Legislation

- Sector group is familiar with codes and standards (ASME/API dominant with BS/EN second and AS third, however as several standards are to be maintained this is costly)
- Will be interesting if/when Worksafe intends to publish any changes in legislation.
- The requirement of safety cases from all high hazard facilities have definitely resulted in increased safety awareness among operators.
- **The challenges are that we have to work with outdated approved code of practices in both the pressure equipment and the cranes area.**

Regulation / Legislation

- Sector group is familiar with codes and standards (ASME/API dominant with BS/EN second and AS third, however as several standards are to be maintained this is costly)
- Will be interesting if/when Worksafe intends to publish any changes in legislation.
- The requirement of safety cases from all high hazard facilities have definitely resulted in increased safety awareness among operators.
- The challenges are that we have to work with outdated approved code of practices in both the pressure equipment and the cranes area.
- **New H&S Act with increased responsibility put on Directors will promote simplification of codes and standards**

Roger Griffith

- **BP Refinery Brisbane – Manager of Inspection Department for 28 years**

Roger Griffith

- BP Refinery Brisbane – Manager of Inspection Department for 28 years
- **2009 appointed Structural Integrity Technical Authority – accountability for refinery's compliance with internal and external regulations**

Roger Griffith

- BP Refinery Brisbane – Manager of Inspection Department for 28 years
- 2009 appointed Structural Integrity Technical Authority – accountability for refinery's compliance with internal and external regulations
- **Since 1991 on Technical Panel of International Operating Pressure Equipment (OPE) conference**

Roger Griffith

- BP Refinery Brisbane – Manager of Inspection Department for 28 years
- 2009 appointed Structural Integrity Technical Authority – accountability for refinery's compliance with internal and external regulations
- Since 1991 on Technical Panel of International Operating Pressure Equipment (OPE) conference
- **Helped set up AICIP**

Roger Griffith - WTIA

- **30 year association with WTIA
(Welding Technology Institute of
Australia)**

Roger Griffith - WTIA

- 30 year association with WTIA
- **Member of WTIA Pressure Vessel Panel and its Chairman since 1992**

Roger Griffith - WTIA

- 30 year association with WTIA
- Member of WTIA Pressure Vessel Panel and its Chairman since 1992
- **WTIA Pressure Equipment Smart Group member**

Roger Griffith - WTIA

- 30 year association with WTIA
- Member of Pressure Vessel Panel and its Chairman since 1992
- Pressure Equipment Smart Group member
- **Contributed to guidelines/standards and many publications**

Roger Griffith - WTIA

- 30 year association with WTIA
- Member of Pressure Vessel Panel and its Chairman since 1992
- Pressure Equipment Smart Group member
- Contributed to guidelines/standards and many publications
- **WTIA Florence Taylor Award holder and WTIA Honorary Fellow in 2015**

Roger Griffith - WTIA

- 30 year association with WTIA
- Member of Pressure Vessel Panel and its Chairman since 1992
- Pressure Equipment Smart Group member
- Contributed to guidelines/standards and many publications
- WTIA Florence Taylor Award holder and WTIA Honorary Fellow in 2015
- **Since May 2016 WTIA President**