Code of Practice

Upstream Polyethylene Gathering Networks– CSG Industry

Companion Paper CP-02-001

Competency

Rev 1

June 2019

Important note on use of the APGA Code of Practice for Upstream Polyethylene Gathering Networks in the Coal Seam Gas Industry.

This Code of Practice has been developed for the use of organisations involved in the CSG industry, primarily in Australia and New Zealand.

Contents

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Preface

Companion Papers have been developed by the Working Group responsible for the *APGA Code of Practice for Upstream PE Gathering Networks – CSG Industry* (the Code) as a means to document technical information, procedures and guidelines for good industry practice in the coal seam gas (CSG) industry.

Since 2008, the development of the LNG export industry based in Gladstone, Queensland, with its related requirement for a large upstream CSG supply network of pipelines and related facilities presented the impetus for significant improvements in design and best practice approach.

The principal motivation since the initial development of the APGA Code of Practice was safety and standardisation in design and procedures and to provide guidance to ensure that as low as reasonably practicable (ALARP) risk-based requirements were available to the whole CSG industry. Accordingly, the Code is focused solely on this industry and the Gathering Networks and associated pipelines using locally manufactured PE100 pipeline. The Code is a statutory document within Queensland.

The incorporation of Companion Papers since Version 4 of the Code is intended to provide information and best practice guidelines to the Industry, allowing the Code to be limited to mandating essential safety, design, construction and operation philosophies and practices.

Companion Papers form part of the suite of documents together with the Code and are intended to:

a) be used in the design, construction and operation of upstream PE Gathering Networks;
b) provide an authoritative source of important principles and practical guidelines for use by responsible and competent persons or organisations; and
c) assist the gas industry to become a positive and valuable member of the community including landholders.

Companion Papers should be read in conjunction with the requirements of the Code to ensure sound principles and practices are followed. These documents do not supersede or take precedence over any of the requirements of the Code.

A key role of the Companion Papers is to provide the flexibility to incorporate endorsed industry practices and emerging technologies expeditiously, as/when necessary.

A related benefit is that the Companion Papers can be referenced by the wider resources industry which uses similar PE Gathering Networks for gas or water handling, including coal bed methane (CBM) in underground coal mines; mine de-watering; the emerging biogas industries (agricultural, landfill, etc.); or any development with similar characteristics (e.g. shale gas).

Other useful references to support CSG Field Development include:

- Agreed joint arrangements between the Landholder and operating company as detailed in a Conduct and Compensation Agreements;
- Queensland Government Acts and Regulations, developed in association with the industry, covering the direct and indirect issues from the beneficial use of CSG produced water to weed management, monitored by the GasFields Commission (under its own Act); and

- Safer Together publications which address many of the industry-wide issues, specifically standardised inductions; 4WD vehicle usage and monitoring and heavy vehicle Land Transport, in particular drilling and construction water transfer and handling.

1 Scope

The scope of this Companion Paper is the definition of available competencies for the various types of practitioners using the APGA Code of Practice Upstream PE Gathering Networks – CSG Industry referred to simply as the Code of Practice in this document.

A significant change since Version 4 of the Code of Practice is the incorporation of risk-based design in lieu of a fixed 'risk' design factor based on the use of physical and procedural measures for risk mitigation in accordance with the location or sub-location class. Effective and safe application of risk-based design is dependent on the competency of the personnel performing, reviewing and approving the design hence the importance of the competencies required in this Companion Paper.

The CSG industry is innovating and adapting quickly in the current market and the Code of Practice allows flexibility to adopt innovative practices provided that there is appropriate justification and third-party review to confirm that safety and compliance is maintained and enhanced. Appropriate justification and third-party review are somewhat reliant on competent people reviewing and approving the innovative practices hence the importance of a documented competency system able to demonstrate that the people involved at all phases are competent to perform their roles.

As detailed in this paper, CSG Gathering Networks involve a wider range of operating variables throughout their lifetime and are often subject to various changes in comparison to conventional gas and water transmission pipelines, or gas distribution systems. The networks also primarily handle untreated gas and water, with various impurities, rather than sales quality gas or treated potable water. The APGA Code of Practice specifically requires approval of many documents therefore a broad understanding of PE Gathering Networks is required by managers approving the various stages of CSG gathering systems including the design, construction, commissioning, testing, operations and maintenance phases. Such understanding should include the Acts and Regulations relevant to the industry. A summary of these are available on the GasFields Commission website.

Each individual Operating Company has the responsibility to structure their management systems to meet their risk management policies within legislative requirements. The management system should identify key staff and their required core competencies covering engineers, technicians, approvers and operators as detailed in this Companion Paper.

Using competent people for the engineering, construction, operation and approval roles of coal seam gas Gathering Networks is important in order to achieve a safe and cost-effective operations. The scope of this Companion Paper includes the competencies available for application in all phases of the asset lifecycle which aligns with the scope of the Code of Practice.

2 Introduction

2.1 General

Competency is defined as the capability that a person has in order to perform an activity or function effectively and reliably. It is expressed in terms of:

- the desired outcomes;
- the scope of the task or function;

- the main elements which enable competency, such as knowledge, skill, expertise and experience; and
- the capabilities and roles and functions that can be performed.

There are numerous references throughout the Code of Practice to the requirement to use competent personnel to perform various functions. This companion paper aims to assist in defining the competencies recommended. This Companion Paper is intended to be used:

- To provide guidance in developing training programs;
- To provide guidance in assessment of competency;
- To provide a framework for assurance that competent people are performing the various functions described in the Code of Practice;
- To assist in recruitment of the right people to perform the right functions; and
- To provide guidance to individuals and companies to create career development plans.

2.2 CSG Specific Competencies

CSG field design is complex and requires competent people to effectively address the complex issues involved.

The water Gathering Networks operate at higher pressures than the gas networks, they can utilise two-way flow to support drilling activities, flow and fluid composition can vary over time and the network contains various treatment options to achieve beneficial use targets. PE water pipelines can also be used to support the transport of water used for hydraulic fractionation and drilling purposes.

Section 4.6.3 of the Code of Practice lists the personnel and competencies required to determine each of the design factors using the fit for purpose methodology. It requires this process to be subject to a third-party review by a competent designer or assessor.

Section 2.2.2.2 of the Code of Practice covers training and competency for the operations phase of the asset lifecycle. It requires that personnel shall be competent to perform the specific tasks and functions they are responsible for conducting. It also requires the Operator to establish and maintain procedures for identifying and providing the training needs of all personnel. To be able to demonstrate that personnel are competent to perform the specific tasks and functions they are responsible for conducting, it is recommended that the required competencies for each role be defined so that personnel can be assessed against the required competency and training needs established.

There has been significant work done by various organisations to define many of the competencies required for designing, approving, constructing and operating PE Gathering Networks, however, not all required competencies have been defined to date.

The Australian Pipelines and Gas Association in particular has begun several initiatives to address the competency and training needs for PE water pipelines and Gathering Networks.

In general, personnel competency can be split into four main categories: engineers, technicians, operators and approvers.

For engineers, a selection of relevant competency standards are published by the Australian Pipelines and Gas Association and APGA members can download these from https://www.apga.org.au/pipeline-engineer-competency-standards.

As a pre-requisite for being assessed against these competency standards, engineers practicing in Queensland or designing assets located in Queensland are required by legislation to be Registered Professional Engineers in Queensland (RPEQ) and it is recommended that engineers designing assets in all locations be registered on the National Engineering Register (NER) in the specific area of practice of Oil and Gas Pipeline Engineering.

For technicians, no specific set of competencies has yet been developed for PE pipe in the coal seam gas industry. The most relevant competencies for the gas network are contained in the national Gas Industry Package UEG-11.

For operators, the UEG-11 training package and the PMA Chemical, Hydrocarbons and Refining Training Package defines the most relevant competencies which are in widespread use within the gas industry, however, these do not specifically address the competencies required for the water issues encountered within the CSG industry. Skill sets in PMA are defined as single units of competency, or combinations of units of competency from an endorsed training package, which link to a licence or regulatory requirement, or defined industry need. Industry has supported the creation of a range of skill sets, mainly in safety and incident preparedness/response areas. The PMA Units of Competency and Skill Sets can be found at PMA Units of Competency and Skill Sets.

In general, managers responsible for approving the various stages of PE gathering systems in the coal seam gas industry should ensure that there is a broad understanding within their design teams of the community's expectations in relation to the various components of acceptable CSG field development (including the properties of CSG gas and produced formation water (PFW) and its conversion for beneficial use) and their influence on CSG system design. Approvers should also have basic 'CSG competencies' including familiarisation with the legal aspects under which CSG development shall occur, the relevant Acts, Codes of Practice, Standards, Companion Papers and how these are used to deliver and operate CSG developments.

Section 3 of this Companion Paper lists the relevant competencies that are detailed on these web sites. While it is recognised that not all competencies required for all tasks and functions related to PE pipe for coal seam gas applications have been addressed, due to the risk-based nature of the Code, it is recommended that design teams possess the required CSG competencies either from experience, internal training courses or that available from recognised industry training providers. Further competencies are expected to be defined over time and added to the web site references.

3 Plastic pipe competency standards

3.1 Engineers

The documented competency standards directly applicable to PE pipe are shown in Table 3-1 below.

Table 3-1 – List of APGA Plastics Pipe Competency Standards

Category	ID	Competency	DES	CON	OPS
onshore	PP001	Key concepts in Standards for design, construction and operation of plastics pipe	x	x	x
onshore	PP002	Fundamentals of Plastics Pipe Design	x		
onshore	PP003	Elevated temperature design for plastics pipe	x		
onshore	PP004	Cyclic loading design	x		
onshore	PP005	Low temperature plastics pipe design	x		
onshore	PP006	Design and planning for hydrotest and pneumatic testing for plastics pipe	x	x	
onshore	PP007	Execution of hydrotest and pneumatic testing for plastics pipe	x	x	
onshore	PP008	Fundamentals of Plastics Pipe Construction	x	x	
onshore	PP009	Quality assurance and quality control in plastics pipe construction		x	
onshore	PP010	Construction – Trenchless technology for plastics pipe	x	x	
onshore	PP011	Construction – curving of plastics pipe	x	x	

onshore	PP012	Welding and jointing fundamentals for plastics pipe	x	x	x
onshore	PP013	Construction – Welding and joint installation and inspection and NDT for plastics pipe		x	
onshore	PP014	Asset management for plastics pipe		x	x
onshore	PP015	Fundamentals of operations of plastics pipe	x		x
onshore	PP016	Operations – control for plastics pipe			x
onshore	PP017	Operations – repair for plastics pipe		x	x
onshore	PP018	Operations – hot tapping for plastics pipe	x	x	x
onshore	PP019	Plough-in – design and construction	x	x	

Note: As many of these competency standards do not currently address large diameter (DN 500+) PE pipelines, and remain primarily focused on gas service, additional competency standards are expected to be developed over time.

3.2 Approvers

Approvers should ensure that the personnel responsible for utilising both risk-based and fit-for-purpose design methodologies to optimise their Field Development layouts for each field, have a detailed understanding of the technical and practical challenges related to the installation and operation of PE networks. ISO, ASTM and other standards used for PE Gathering Networks do not address all of the issues around large diameter PE Gathering Networks so approvers need to recognise the particular competencies required when their Gathering Networks contain large diameter PE pipe and fittings.

3.3 Technicians and operators

The documented competency standards for technicians and operators directly applicable to PE pipe are shown in Table 3-2 below. Note that PMA also has relevant competency standards which can be used instead or in addition to the UEG - Gas Industry Training Package.

Table 3-2 – List of Relevant Units of Competency in UEG

Code and Title	Usage	Release
UEGNSG004 - Locate, prove and protect utility assets	Current	1
UEGNSG005 - Prepare to work in the gas industry	Current	1
UEGNSG006 - Use a portable gas detector to locate escape	Current	1
UEGNSG106 - Coordinate repair of pipeline, facilities and equipment	Current	1
UEGNSG108 - Operate and monitor pipeline control systems	Current	1
UEGNSG109 - Control field pipeline operations	Current	1
UEGNSG110 - Supervise technical operations for gas distribution or transmission	Current	1
UEGNSG111 - Produce maintenance strategies and plans for a gas facility	Current	1
UEGNSG113 - Manage a utilities industry WHS management system	Current	1
UEGNSG114 - Coordinate and monitor implementation of a risk management plan for a utilities industry facility	Current	1
UEGNSG115 - Manage gas systems projects	Current	1
UEGNSG116 - Manage gas industry physical resources	Current	1
UEGNSG117 - Plan and implement the data acquisition and metering requirements of a gas system	Current	1
UEGNSG118 - Select and commission equipment to meet pressure and temperature control specifications	Current	1
UEGNSG119 - Manage workplace risk in a gas industry facility	Current	1
UEGNSG120 - Manage gas system environmental compliance	Current	1
UEGNSG121 - Prepare safe design specifications of a gas system	Current	1
UEGNSG123 - Manage financial resources in a gas industry facility	Current	1

Code and Title	Usage	Release
UEGNSG131 - Compile a gas industry technical report	Current	1
UEGNSG132 - Carry out basic work activities in a gas industry work environment	Current	1
UEGNSG136 - Carry out transmission pipeline construction work activities	Current	1
UEGNSG141 - Apply workplace health and safety regulations, codes and practices in the gas supply industry	Current	1
UEGNSG142 - Conduct isolations under the permit to work system for gas industry work sites	Current	1
UEGNSG200 - Conduct butt fusion of large diameter polyethylene gas pipeline systems	Current	1
UEGNSG204 - Coordinate and conduct gas distribution pipeline repair and modifications	Current	1
UEGNSG207 - Coordinate construction, laying and testing of gas distribution pipelines	Current	1
UEGNSG210 - Supervise and monitor contract staff for work on distribution pipelines	Current	1
UEGNSG212 - Construct, lay and connect a gas distribution service to a plastic main	Current	1
UEGNSG213 - Construct, lay and connect a gas distribution service to a steel main	Current	1
UEGNSG216 - Commission or decommission gas distribution pipelines	Current	1
UEGNSG217 - Launch and recover PIGs in a gas distribution pipeline	Current	1
UEGNSG218 - Carry out surveillance on gas distribution assets	Current	1
UEGNSG219 - Conduct excavations in the utilities industry	Current	1
UEGNSG220 - Construct and lay polyethylene gas distribution mains	Current	1

Code and Title	Usage	Release
UEGNSG221 - First on site response to gas pipeline emergencies	Current	1
UEGNSG223 - Construct and lay steel gas distribution pipelines	Current	1
UEGNSG225 - Perform routine maintenance on distribution pipeline facilities and equipment	Current	1
UEGNSG226 - Assist with the construction, laying and connection of gas distribution services to mains	Current	1
UEGNSG227 - Assist with the construction and laying of gas distribution mains	Current	1
UEGNSG229 - Prepare simple drawings of as laid gas mains and services	Current	1
UEGNSG305 - Coordinate gas transmission pipeline repairs and modifications	Current	1
UEGNSG308 - Identify, evaluate and control threats to transmission pipelines	Current	1
UEGNSG310 - Supervise and monitor contract work	Current	1
UEGNSG311 - Site control of third party works in the vicinity of a transmission pipeline	Current	1
UEGNSG314 - Liaise with third party and the community to maintain pipeline integrity and community safety	Current	1
UEGNSG319 - Custody transfer metering and gas quality analysis	Current	1
UEGNSG324 - Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	Current	1
UEGNSG325 - Coordinate the operation of relevant plant and equipment for transmission pipeline construction	Current	1
UEGNSG326 - Coordinate and monitor staff and contractors	Current	1
UEGNSG327 - Coordinate transmission pipeline construction operations	Current	1
UEGNSG330 - Coat metallic pipelines	Current	1

Code and Title	Usage	Release
UEGNSG331 - Establish right of way access for transmission pipeline construction	Current	1
UEGNSG332 - Undertake hydro-testing for transmission pipeline construction	Current	1
UEGNSG333 - Work in proximity of transmission pipeline construction plant and equipment	Current	1
UEGNSG342 - Maintain pipeline easements	Current	1
UEGNSG344 - Commission or decommission gas transmission pipelines	Current	1
UEGNSG346 - Launch and recover PIGs in gas transmission pipelines	Current	1
UEGNSG347 - Perform routine maintenance on transmission pipeline facilities and equipment	Current	1
UEGNSG348 - Supervise the operation of plant and equipment for the construction of gas transmission pipelines	Current	1
UEGNSG349 - Carry out surveillance of gas transmission pipelines	Current	1
UEGNSG350 - First response to a gas facility event	Current	1
UEGNSG352 - Check and report on gas station conditions	Current	1
UEGNSG353 - Carry out aerial surveillance of gas transmission pipelines	Current	1
UEGNSG354 - Control excavations in the vicinity of gas transmission pipelines	Current	1
UEGNSG355 - Monitor and report on cathodic protection systems	Current	1
UEGNSG356 - Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	Current	1
UEGNSG411 - Maintain cathodic protection systems	Current	1
UEGNSG412 - Install cathodic protection systems	Current	1
UEGNSG506 - Respond to gas infrastructure emergencies	Current	1

Code and Title	Usage	Release
UEGNSG507 - Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices	Current	1
UEGNSG508 - Remotely check and report on gas station conditions	Current	1
UEGNSG511 - Operate gas infrastructure to meet nominated demand	Current	1
UEGNSG512 - Control centre communication with gas industry stakeholders	Current	1
UEGNSG513 - Manage emergencies and critical incidents for gas infrastructure	Current	1
UEGNSG514 - Managing and controlling field activities	Current	1
UEGNSG515 - Use control centre systems to monitor and control gas infrastructure	Current	1

4 Competency assessment

4.1 General

Competency assessment is the process of determining whether personnel are competent. Effective competency assessment requires being clear about the objectives of competency assessment, the principles and tools available for effective application, and the process to be used.

The principal objective of competency assessment is to enable an employer to determine whether personnel are competent, both generally and in particular competencies.

The secondary objective is to enable personnel and their company to plan career development and training to raise levels of competency to the level required for each role with corresponding responsibilities.

Competency can result from a mix of inputs. Any assessment of competency should consider the inputs (training, knowledge and experience) as well as outputs of demonstrated expertise and capability.

Competency assessment requires evidence of knowledge, practical experience and expertise. While objective measures, such as completion of courses or having had particular experience are essential, it is not possible, nor wise, to rely solely on them and assessment will involve use of judgement. This will require a range of information about the person being assessed. Information required typically includes:

- Courses successfully completed, including specialised CSG-specific courses;
- Achievements as part of a track record;
- Roles held and organisations worked for;
- Experiences obtained; and
- References from people who worked with the candidate.

4.2 Engineers

Engineers practicing in Queensland or designing assets located in Queensland are required to be Registered Professional Engineers in Queensland (RPEQ) in accordance with the Professional Engineers Act 2002 and the Professional Engineers Regulation 2003 or be working under the direct supervision of an RPEQ engineer. The registration of engineers is administered by the Board of Professional Engineers of Queensland (BPEQ). It is recommended that engineers working in the coal seam gas industry related to PE pipe be registered on the National Engineering Register (NER) in the specific area of practice of Oil and Gas Pipeline Engineering. The process for becoming a registered engineer in the specific area of practice of Oil and Gas Pipeline Engineering is recognised by the BPEQ as a means of obtaining registration as an RPEQ.

The assessment process for assessing engineers for the NER and RPEQ status is an appropriate assessment process that can be used for all engineers practicing in the coal seam gas industry related to PE pipe.

This process involves a qualified engineer to complete their personal Competency Portfolio providing the input information for each competency claimed. A typical format for such a Competency Portfolio can be downloaded from: APGA Pipeline Engineering Competency Portfolio.

Each competency claimed in the Competency Portfolio is graded as to the level of competency achieved in accordance with Table 4-1.

Table 4-1 –Competency Grades

Competent?	Progressive Rating Scale	The book test
No	0: No knowledge or experience in field	Is there a book on this?
No	1: Meets few competency requirements (some knowledge, minor experience)	Has the book and is reading it
No	2: Meets a substantial proportion of competency requirements (substantial knowledge, useful experience and puts into practice)	Has read the book and applying it
Yes	3: Meets all knowledge and experience requirements	Knows the book and applies it without help
Yes	4: Exceeds competency requirements (Knowledge and experience requirements materially exceeded, recognised by peers)	Teaches on what is in the book

Yes	5: Greatly exceeds competency requirements (Knowledge and experience greatly exceed requirements, recognised by the industry as an expert)	Writes the book providing practical examples

Note. For CSG activities, “the book” as referenced in the above table can be considered to comprise the following suite of documents:

- APGA Code of Practice for Upstream PE Gathering Networks – CSG Industry;
- Companion Papers associated with this Code;
- Relevant Acts and Regulations; and
- GasFields Commission Queensland paper “On New Ground” (June 2017), as updated (Details in References Section).

For registration on the NER or as an RPEQ, the assessor is assigned by the registering authority. Outside of this formal process, the assessor can be the manager of the individual being assessed. The assessor reviews the Competency Portfolio against the requirements in the appropriate Competency Standard then meets the candidate to confirm that the competencies claimed have been obtained by the candidate and adjusts the level of competency obtained in accordance with Table 4-1.

The questions typically asked during assessments include:

- Show us what you have been able to achieve in practice of your role;
- Show us how you have achieved what you did, and why you chose to act in particular ways; and
- Show us how you acquired the knowledge to enable you to do these things.

If it is found that the candidate does not have the appropriate competencies required for the role, a plan to develop the required competencies should be established. The plan will usually include a combination of training and experience working under the direction of a competent person. Section 5 describes external training options either already available or being developed.

4.3 Approvers

Organisations have the responsibility to define their own delegations of authority for approving documents and decisions. Assessing the competency of the approvers in the delegation of authority process is the responsibility of the organisation. In general, a system of measuring competency equivalent to that described for Engineers in Section 4.2 should be used for Approvers.

4.4 Technicians and Operators

Assessment of competencies in the Nationally Recognised Training System is performed by a Registered Training Organisation (RTO) in accordance with the Australian Qualifications Framework (AQF) after completion of the requirements defined in the Training Package.

A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s).

Issuance of Statements of Attainment must comply with the advice provided in the current AQF Implementation Handbook and the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Under the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

Certificate III level qualifications either in UEG 11 or PMA 5 are recommended for technicians and operators and a higher level for supervisory staff.

5 Training

5.1 General

5.1.1 Safer Together Induction

From 1 July 2016, all new coal seam gas industry starters are required to satisfactorily complete the Safer Together Industry Safety Induction prior to working on the development or operation of any facilities in the Queensland natural gas exploration and production industry. For more information visit: safertogether.com.au/isi.

5.1.2 White Cards and Green Cards

The white card is a credit card sized ID received after completing the workplace health and safety course (http://www.whitecardsafety.com/ohs-legislative-requirements.html). It is required in order to work on a building site in NSW, Queensland, South Australia and Victoria and demonstrates necessary training in safe work place practices. The card used to be green in colour and hence was referred to as a green card. It is now white but is still commonly known as the green card.

5.1.3 Major accident hazard awareness training

The Safer Together Working Group, in collaboration with Gasworks and the Queensland Fire and Emergency Services, has developed a two-to-three hour site-based training program, comprising a selection of outdoor demonstrations. Each demonstration has been structured to clearly portray a particular process safety concept, enable an interactive discussion about the relevant controls, and highlight relevant industry incidents where a major accident event has resulted. A customised mobile training rig and associated equipment for the training program has been built.

5.1.4 Driver training

The Safer Together Land Transport Working Group has reviewed existing arrangements to standardise light vehicle driver training requirements in parts of the industry (i.e. Tripartite Agreement for Recognition of Current Competence – Schedule E: Light Vehicle Driver Training).

The Safer Together Land Transport Working Group has reviewed the Heavy Vehicle National Law and Regulations and other related legislative requirements and has now developed a draft Heavy Vehicle Driver Competency Standard.

5.1.5 Engineers and Approvers

Specific coal seam gas training for engineers and managers responsible for approval of designs and operations processes is available to the industry.

As a minimum, an engineer should be able to demonstrate a Grade 3 level of competency as defined in Table 4-1 in the competencies that are specific to their role.

Approvers and Assessors should ensure that key documentation and decisions has been reviewed and approved by personnel with a minimum of Grade 3 competency in the relevant category.

5.2 Technicians and Operators

Training packages have been developed under the national system to meet the identified training needs of specific industries or industry sectors. The units of competency listed in Section 0 all have training packages developed to address the competency requirements. Participants are assessed as part of the training and are awarded progressive qualifications based on a point system. Details of the training packages available are provided at http://training.gov.au/Home/Tga.

Training and assessment using Training Packages must be conducted by an RTO that has the qualifications or specific units of competency on its scope of registration, or that works in partnership with another RTO as specified in the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012.

5.3 PE pipe welding training providers

Specific PE pipe and fittings welding training is available to the industry. A list of training courses and providers who offer accreditation for welders is available on the PIPA web site at https://www.pipa.com.au/index.php/welder-training/.

6 References

The following Companion Papers and documents should be referenced, as required, to optimise the use of this paper.

CP-04-006	System Design Considerations
CP-04-007	Water Management Aspects
CP-05-001	Safety in Construction
CP-11-004	Safety in Operations
CP-11-008	Suspension and Abandonment
On New Ground	GasFields Commission Queensland