

CHAPTER 1

Introduction

DOCUMENT REVISION RECORD

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1 INTRODUCTION

This Safety Case contains the assessment by DBP of its systems, processes and procedures that allow it to safely operate the DBNGP and maintain a work environment for its staff, contractors and Other Protected People that, as far as is practicable, is free from risk. It demonstrates that DBP provides and maintains an effective case for safety capable of systematically and continually identifying and assessing hazards and undertaking risk reduction measures to eliminate or minimise the risks to personnel, public, pipeline and environment to a level that is “as low as reasonably practical”, over the life of the DBNGP.

DBP view this Safety Case as a document that applies to the entire business that sets out how we do our work to create an environment that supports DBP’s goal of **ZERO HARM** to our people, asset and the environment. It outlines the nature and results of safety studies, together with the management practices in place, to ensure the continued safety of the operation, maintenance and construction of the DBNGP.

This Safety Case represents the development of the asset and its operation since 1984 to a stage where five major enhancements have been successfully completed and transitioned into safe operation and asset management. It also reflects DBP’s anticipated ongoing development and reliability requirements through the inclusion within the SMS of an increased recognition of the expected future emphasis on Project activity (as defined below in Section 5.1). It is recognised that the future construction activities that DBP will undertake will include more than just Major Construction Projects as is the past.

Table 1 in Section 5.3 maps the areas within the SMS where DBP have included references to the minimum requirements for safe working procedures associated with Project activity. In many cases, there is no difference between the safety management applied to maintenance, operations and construction activity. The same procedure or minimum requirements are to be implemented for all types of work (eg VSSMS, Fitness for Work, Working at Heights). Where there is a difference it is clearly set out that some difference exists between the manner in which each activity is implemented.

Once this Safety Case is approved by DMP, it will be the formal document describing the way DBP will comply with the regulatory and legal obligations under the Petroleum Pipeline Act 1969 (“PPA”), Petroleum Pipelines (Safety of Management of Pipeline Operations) Regulations 2010 (“MoSoPO”) and the conditions applied by Pipeline Licence PL40 in the operation, maintenance and construction of the DBNGP.

2 HISTORY OF THE GROWTH OF THE DBNGP AND THE OWNERSHIP

The State Government of Western Australia constructed and commissioned the DBNGP in 1984/ 1985. The DBNGP transports gas from the Karratha Gas Plant operated by Woodside on the Burrup Peninsula, to the commercial, industrial and domestic markets in the south west of Western Australia. Since that initial development, new supplies of gas have been added to the Pipeline from Tubridgi (1991 - 200x atCS2) and Varanus Island (1992 - current CS1) with further gas supply inlet points for Devil Creek (under construction), Pluto, Gorgon, Macedon and (potentially) Wheatstone planned for completion during the next 5 years.

In addition, there has been a phased program of expanding the capacity of the DBNGP over the last 20 years. With Additional Compressor Station projects in 1989, the Stage 1 Capacity Expansion increased pipeline's transmission capacity to 425 TJ/day. The Stage 2 Capacity Expansion Project completed in 1997 involved the installation of an additional compressor at CS6 and the construction of a new Compressor Station CS9 near Gingin. In 1999, Stage 3A Expansion involved the installation of one additional compressor at each of the CS2, CS4 & CS7, and the construction of a new Compressor Station CS10 at Kwinana. This took the pipeline transmission capacity to 513 TJ/day.

DBP took over the ownership of the DBNGP in 2004. DBP's ownership structure is described in Figure 1. As from that point, DBNGP (WA) Nominees Pty Limited ("Nominees") has held Pipeline Licence 40, which permits that entity to operate the DBNGP. Nominees have executed an Operating Agreement with DBNGP (WA) Transmission Pty Limited ("Transmission") to act as the Operator of the DBNGP.

Since acquisition of the DBNGP in 2004, DBNGP (WA) Nominees Pty Ltd has increased the capacity of the DBNGP to accommodate an increase in the consumer gas demand. Stage 4 and Stage 5A Expansion Projects commissioned in 2006 and 2008 respectively achieved this objective. These projects included installation of additional compression units at existing compressor stations CS1, CS2, CS3, CS4, CS6, CS7, CS9 and CS10, upgrades to the existing facilities at compressor stations, and installation of additional pipeline loops. The loops were installed directly downstream of each of the ten compressor stations, totalling approximately 217km for Stage 4 and 571km for Stage 5A. Stage 4 increased pipeline transmission (firm T1) capacity to 640 TJ/day and Stage 5A took it to 731 TJ/day.

Additional outlet points have also been constructed at Maitland Estate, CS1 (to deliver gas into the Goldfields Gas Pipeline), approximately 30km downstream of CS2 (to deliver gas into a CNG plant servicing the Exmouth Power Station), and Kemerton (to deliver gas to the Kemerton Power Station) to meet the customer requirements for additional gas deliveries. Various other laterals and meter stations have been added since 2004. Stage 5B expansion project, completed in April 2010, has taken the pipeline full haul (firm T1) capacity to 845 TJ/day. This project was an extension of Stage 5A project, and added another 440km pipeline in loops 0-10 and included additional upgrade works at compressor stations.

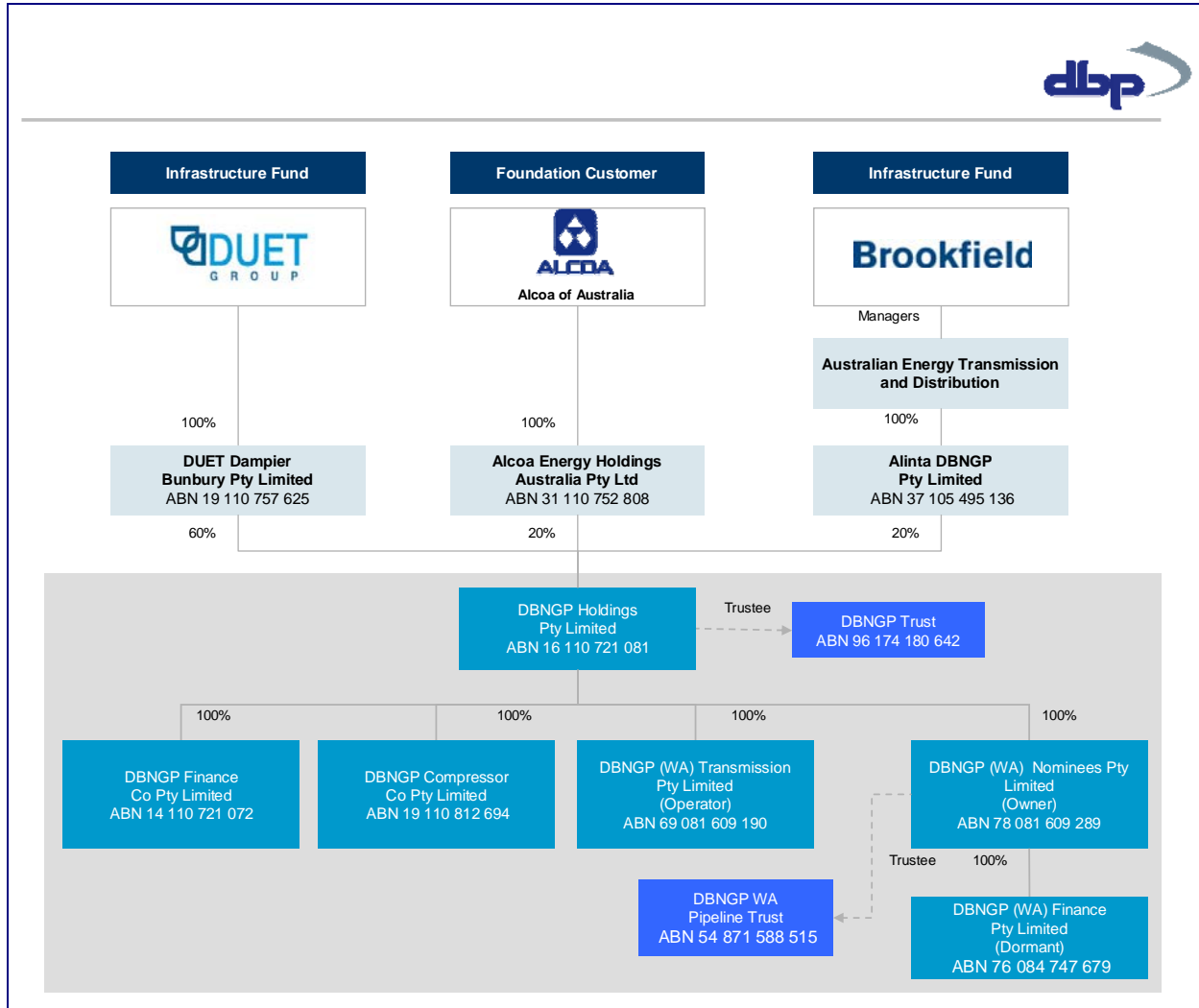


Figure 1 – DBP Ownership Structure

3 ZERO HARM

In 2007, DBP embraced the ambitious HSE target of **ZERO HARM**. Since that time, the company has implemented a number of initiatives to create and support a consistent culture within DBP to enable the achievement of this target. These initiatives include, but are not limited to:

- Safety Environment Initiative Plan;
- Vehicle Speed and Safety Management System;
- Driver Alertness Trackers;
- HSE Dashboards;
- JASPER;
- HSE Intranet;
- Fitness For Work Program;
- Zero Harm Bulletins;
- Zero Harm Week; and
- Zero Harm Principles.

Additionally the focus and priority of HSE within the business is such that it receives the (joint) highest weighting in the DBP performance scorecard, which is tracked and reported directly to the board.

4 DBNGP SAFETY CASE

The Safety Case applies to all personnel working on the DBNGP (including contractors), Other Protected Persons, as defined in the PPA and members of the public insofar as they interact with the pipeline or its facilities. It covers all aspects of the DBNGP Operation including design, construction, operation and maintenance. The current version of the Safety Case shall be made available to all relevant employees and contractors via hard copies and/or electronically. As relevant, and as far as is practicable, it will be provided to, explained or made available to any member of the public who needs to interact with the DBNGP or its facilities.

The DBNGP Safety Case is described in the following three Chapters:

- Chapter 2 - Facility Description (FD)
- Chapter 3 - Safety Management System (SMS)
- Chapter 4 - Formal Safety Assessment (FSA)

The Facility Description (FD) provides details of the operation of the DBNGP, the configuration of the pipeline and associated facilities and the measures identified in the formal safety assessment to reduce any identified risks to a level that is as low as is reasonably practicable (ALARP). The configuration of the pipeline and associated facilities includes an overview of the pipeline, including general description, structural details, primary functions, hazardous materials and inventory, pipeline safety features and systems, interaction with third parties, environmental conditions and a set of the drawings for the DBNGP.

The Safety Management System (SMS) comprises five key principles providing a framework for the management of health, safety, asset integrity and environmental risks associated with the pipeline and associated facilities. It provides mechanisms for review and evaluation of the systems and processes implemented to provide a safe working environment and to assess the compliance with the Safety Case obligations. The SMS is an integral part of the overall management system at DBP and references associated departmental policies, procedures and work instructions.

The Formal Safety Assessment (FSA) represents an overview of the historical risk assessments undertaken on the pipeline and laterals (including all above ground facilities) together with the results of all recent hazard assessments for expansion and minor project additions.

A Major Accident Event (“MAE”) risk assessment process has been undertaken to determine those risks that are capable of causing more than one fatality in the event the identified risk transpires. The outcomes of the MAE review have been set out in the FSA and the principle Performance Standards Measurements for the controls are included in the SMS.

Whilst the literal definition of MAE has been used in the formal assessment conducted by DBP, the MAE workshops that were conducted gave the same consideration to other identified hazards and threats to the safety of the pipeline or people interacting with it that may cause single fatalities or serious injury potential. This work is not included in the discussion of MAEs in the Safety Case but has been used directly in the development of the updated Asset Management Plan currently being completed.

DBP has also assessed risks that occur outside the Licence Area or which are not connected with a pipeline operation, as defined and considered what risk mitigation controls are available and their implementation.

DBP considers that the DBNGP Safety Case is best utilised as a business document. Therefore, by assessing the risks to health and safety in respect to MAEs as defined and in addition more broadly than is required by that definition, is appropriate for the purpose of attempting to achieve Zero Harm. It is seen as an appropriate way of focussing attention on all events that have the potential to cause serious harm to people.

Chapters 2, 3 and 4 contain extensive cross references between the chapters to provide comprehensive information without unnecessary duplication.

4.1 Revision K Development

This Revision addresses Safety Case Response Notes provided by DMP relating to the initial submission of Revision K of the DBNGP Safety Case.

This revision maintains compliance with the Guidelines for the Preparation and Submission of Facility Safety Cases (2nd Edition), issued by Petroleum and Electricity Division of the Department of Industry, Science and Resources.

Due to the significant changes to the regulatory obligations since May 2010 with the implementation of MoSoPO regulations and Part III of the PPA, a comprehensive review of all DBP systems and procedures related to safe operation and construction of the DBNGP has been necessary.

The extensive assessment of all risks facing the operation, including MAE risks, has demonstrated a need for implementation of further risk treatments to continue improving the control environment. An Action Plan has been developed to close out all required actions arising from the assessment activity and is well advanced towards completion.

4.2 Implementation and Ongoing Review Process

DBP has several methods of assessing its business processes such that those associated to the Safety Case will be regularly reviewed and assessed for improvement potential.

Annually the business conducts a comprehensive business strategy planning process which leads to a business plan that guides the overall business operation for the following year. Key performance indicators for the business and individuals are determined from these reviews. The performance of the Safety Case is now to be an integral part of this business planning process. The achievement of compliance with Safety Case obligations is considered in each business plan, reinforcing the importance of Safety Case review and improvement to the highest management levels in DBP.

Compliance monitoring and Internal Audit reviews will be conducted throughout the year to maintain clear knowledge of how well the safe working procedures are being implemented.

4.3 Amendments and Approval

The DBNGP Safety case is submitted to DMP under the provisions of the Petroleum Pipeline Act 1969 and the Petroleum Pipelines (Management of Safety of Pipeline Operations) Regulations 2010. In the case of conflict between the Safety Case and the applicable legislation, the latter shall prevail.

DBP hazard assessment processes are embedded within the business and may identify a change in operation or a new or increased risk. Where a change in operation or a new or increased risk is identified, a decision will be made as to whether these are already adequately dealt with in the current Safety Case or whether they trigger the need for a review of the Safety Case and a new application to DMP for assessment of an amended Safety Case.

Because the processes, (policies, procedures, work instructions, etc) implemented to ensure safe Operation of the pipeline may change from time to time but without affecting the validity of the Safety Case, they are not embedded into the SMS but rather are referenced and included in an attachment to the SMS. In this way, when any non-substantial change occurs to any of the processes, there is no need to review the Safety Case so long as the change does not cause any non-compliance with the underlying regulatory framework and does not compromise the safety of any person involved with the DBNGP. Changes to processes will only be accepted where they are demonstrated to be a part of the continual improvement process at DBP and where they demonstrate improvement in the effectiveness of the Safety Management System.

Where the changes have an adverse impact on, or contravene the commitments made in the Safety Case (either singularly or cumulatively), the proposed change will be rejected.

DBP will review and provide an updated copy of the safety case to the DMP for approval, in the event of a change or a result of cumulative changes that affects or will affect the integrity, effectiveness or validity of the Safety Case in terms of objectives, scope, systems, risk control measures in place and/or risk results, including:

- developments in technical knowledge or in the assessments of hazards, relevant to the pipeline make it appropriate to do so; or
- modifications, where there is a significant cumulative increase in the overall risk levels in relation to the pipeline; or
- a modification of the pipeline that has the potential to significantly influence the level of specific risks or the ranking of risk contributors; or
- significant changes to the Safety Management System in relation to the pipeline; or
- proposed dismantling, decommissioning or removal of the pipeline or any part of it; or
- change of ownership or operator; or
- every five years or at such intervals as specified by the Minister; or
- a request by the Executive Director of Resources Safety Division of DMP; or
- significant changes resulting from a serious incident; or
- significant changes to the organisational structure or working arrangements that have an impact on the Safety Management System

In the above circumstances, the following will be provided as part of a submission process for approval:

- DBP will provide DMP with a package consisting of:
 - an outline of the change and why it is considered a Substantial Change; and
 - a proposed Project Plan, including a proposed schedule, to progress the Safety Case amendment and resubmission for DMP review; and
 - once DMP accept the Project Plan, a revised Safety Case within the scheduled time proposed.

5 DEFINITIONS AND ABBREVIATIONS

Throughout the Safety Case, relevant abbreviations are used for the purpose of brevity and ease of reading. The glossary of defined terms used is set out below rather than being included within each section of the Safety Case.

5.1 Definitions

ALARP:

A level of risk that is mitigated by all physical, procedural and behavioural controls that can practicably be applied and where it is assessed that the level of risk cannot be reduced further without the expenditure of costs that are grossly disproportionate to the benefits gained.

DBNGP: Dampier to Bunbury Natural Gas Pipeline

Within this Safety Case DBNGP is used as a general term to cover the pipeline and all facilities associated with the pipeline, such as mainline valves, compressor stations and meter stations.

Land Classification

- (a) R1 is rural land that is unused, undeveloped or is used for rural activities such as grazing, agriculture and horticulture. Rural applies where the population is distributed in isolated dwellings. Rural includes areas of land with public infrastructure serving the rural use; roads, railways, canals, utility easements.
- (b) R2 is rural residential land that is occupied by single residence blocks typically in the range 1 ha to 5 ha or is defined in a local land planning instrument as rural residential or its equivalent. Land used for other purposes but with similar population density shall be assigned Rural Residential location class. Rural Residential includes areas of land with public infrastructure serving the Rural Residential use; roads, railways, canals, utility easements.

NOTE: In Rural Residential societal risk (the risk of multiple fatalities associated with a loss of containment) is not a dominant design consideration.

- (c) T1 is residential land that is developed for community living. Residential applies where multiple dwellings exist in proximity to each other and dwellings are served by common public utilities. Residential includes areas of land with public infrastructure serving the residential use; roads, railways, recreational areas, camping grounds/caravan parks, suburban parks, small strip shopping centres. Residential land use may include isolated higher density areas provided they are not more than 10% of the land use. Land used for other purposes but with similar population density shall be assigned Residential location class.

MAE: Major Accident Event

An event connected with a pipeline operation, including a natural event, having the potential to cause multiple fatalities of persons engaged in the operation or other protected persons.

Operation:

For the purposes of this Safety Case, the term "Operation" includes design, construction, operation and maintenance of the DBNGP. The term "operation" (with small 'o') does not include design, construction and maintenance.

Pipeline Operation:

An operation in connection with the construction, operation, inspection, maintenance or repair of a pipeline carried out on land that is specified in any licence as licence area and includes an operation in connection with the modification, reconstruction or decommissioning of a pipeline that is carried out on land that is specified in any licence as licence area.

Project:

Project references contained within this Safety Case refer to all activities which are not part of routine operations. These include, but are not limited to:

- Major system upgrades (e.g. CCVT);
- Greenfield construction (e.g. new meter stations);
- Major maintenance activities (e.g. stage 4 compressor bundle removal),;
- Organisational infrastructure replacement;
- Any significant non routine activity which relies on contractor support (e.g. underground coating surveys);
- Brownfield construction;
- Major Construction projects (eg Capacity Expansion, new pipeline systems); or
- Any non-routine activity that requires in excess of a roster period for completion.

5.2 Abbreviations

| | |
|-------|---|
| AC | Alternating Current |
| AGA | Australian Gas Association |
| ALARP | As Low As Reasonably Practicable |
| ANSI | American National Standards Institute |
| API | American Petroleum Institute |
| APIA | Australian Pipeline Industry Association |
| APPEA | Australian Petroleum Production Exploration Association Ltd |
| AS | Australian Standard |
| AVT | Accuracy Verification Test |
| ASCV | Anti-Surge Control Valve |
| BCA | Building Code of Australia |
| BEP | Burrup Extension Pipeline |
| BoD | Basis of Design |
| CAA | Civil Aviation Authority |
| CAR | Corrective Action Request |
| CASA | Civil Aviation Safety Authority |
| CC | Communications Controller |
| CCVT | Closed Circuit Vapour Turbine |
| CNG | Compressed Natural Gas |
| CMT | Crisis Management Team |
| CMS | Carnarvon Meter Station |
| CP | Cathodic Protection or Corrosion Protection |
| CPS | Carnarvon Power Station |
| CRS | Customer Reporting System |
| CS | Compressor Station |
| CSE | Confined Space entry |

| | |
|--------|---|
| DBNGP | Dampier to Bunbury Natural Gas Pipeline |
| DBP | Dampier Bunbury Pipeline- a common name for the DBNGP group of companies |
| DBYD | Dial Before You Dig |
| DC | Direct Current |
| DCVG | Direct Current Voltage Gradient |
| DEA | Diesel Engine Alternator |
| DF | Design Factor |
| DoC | Depth of Cover |
| DoCEP | Department of Consumer and Employment Protection |
| DOMGAS | Domestic Gas |
| DMP | Department of Mines and Petroleum |
| DPI | Department for Planning and Infrastructure (formerly Department of Land Administration) |
| DPUD | Department of Planning and Urban Development |
| DSAW | Double Submerged Arc Welded |
| EAP | Employee Assistance Program |
| EI | External Interference |
| EMT | Emergency Management Team |
| EPA | Environmental Protection Authority |
| EPCM | Engineering, Procurement and Construction Management |
| ERP | Emergency Response Plan |
| ERW | Electric Resistance Welded |
| ESD | Emergency Shut Down |
| FAR | Fatal Accident Rate |
| FBE | Fusion Bonded Epoxy |
| FC | Flow Computer |
| FEED | Front End Engineering Design |
| FERP | Field Emergency Response Plan |
| FFW | Fitness for Work |
| FD | Facility Description |
| FRCC | Field Response Control Centre |
| FSA | Formal Safety Assessment |
| GC | Gas Chromatograph |
| GEA | Gas Engine Alternator |
| GGPI | Goldfields Gas Pipeline Interconnect |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| GT/C | Gas Turbine/Compressor |
| GTR | Gas Transmission Regulations 1995-1998 |
| GUF | Gas Unaccounted For |
| HAZAN | Hazard Analysis |
| HAZID | Hazard Identification |
| HAZOP | Hazard and Operability |
| HDPE | High Density Poly-Ethylene |
| HELM | Heritage, Environment and Land Management |

| | |
|-----------|---|
| HHV | Higher Heating Value |
| HI | Hamersley Iron |
| HR | Human Resources |
| HSE | Health, Safety and Environment |
| HV | High Voltage |
| IA | Instrument Air |
| IC | Impressed Current |
| IF | Insulating Flange |
| IJ | Insulation Joint |
| IMT | Incident Management Team |
| IRI | Industrial Risk Insurers |
| IRPA | Individual Risk Per Annum |
| IRTU | Intelligent Remote Terminal Unit |
| IT | Information Technology |
| ITR | Inspection and Test Records |
| ITP | Inspection Test Plan |
| IS | Intrinsic Safety |
| ISB | Intrinsic Safety Barrier |
| ISO | International Standards Organization |
| JHA | Job Hazard Analysis |
| JASPER | Job, Actions, Statistics, Performance, Events and Reporting |
| JHC | Job Hazard Checklist |
| KIMA | Kwinana Industries Mutual Aid |
| KJ or KJN | Kwinana Junction |
| KM | Kilometre |
| KP | Kilometre Point |
| KPI | Key Performance Indicator |
| LAN | Local Area Network |
| LED | Light Emitting Diode |
| LEL | Lower Explosive Limit |
| LPG | Liquefied Petroleum Gas |
| LTI | Lost Time Injury |
| LV | Low Voltage |
| MAE | Major Accident Event |
| MAOP | Maximum Allowable Operating Pressure |
| MDR | Manufacturer's Data Records |
| MEN | Multiple-Earthed Neutral |
| MLV | Main Line Valve |
| MoC | Management of Change |
| MS | Meter Station |
| MSDS | Material Safety Data Sheet |
| MTI | Medical Treatment Injury |
| NATA | National Association of Testing Authorities |
| NDT | Non Destructive Testing |
| NPI | National Pollution Inventory |
| NOx | Oxides of Nitrogen |

| | |
|--------|---|
| NPS | National Power Services |
| NS | Nominal Size |
| O&M | Operation and Maintenance |
| OHS | Occupational Health & Safety |
| OSA | Operating Services Agreement |
| P&IDs | Piping and Instrument Diagrams |
| PA | Public Address |
| PABX | Private Automatic Branch Exchange |
| PB | Planning Bulletin |
| PDM | Predictive Maintenance |
| PIG | Pipeline Internal Gauge |
| PIO | Permit Issuing Officer |
| PISA | Pipeline Integrity Supply Authorisation |
| PL | Pipeline Licence |
| PLC | Programmable Logic Controller |
| PM | Preventive Maintenance |
| PMP | Project Management Plan |
| POG | Pipeline Operators Group |
| PPE | Personal Protective Equipment |
| PPRS | Primary Pressure Reducing Skid |
| PTW | Permit to Work |
| PTWS | Permit to Work System |
| QRA | Quantitative Risk Assessment |
| RAM | Random Access Memory |
| RBM | Reliability Based Maintenance |
| RDAN | Remote Data Access Network |
| RFDS | Royal Flying Doctor Service |
| RoW | Right of Way |
| RTU | Remote Terminal Unit |
| SAA | Standards Association of Australia |
| SAW | Submerged Arc Welded |
| SCADA | Supervisory Control and Data Acquisition |
| SCC | Stress Corrosion Cracking |
| SCR | Signal Conversion Rack |
| SCRV | Station Cooled Recycle Valve |
| SECG | State Emergency Coordination Group |
| SECWA | State Energy Commission of Western Australia |
| SEIP | Safety & Environment Initiative Program |
| SIF | Safety Instrumented Function |
| SIL | Safety Integrity Level |
| SIS | Safety Instrumented System |
| SMS | Safety Management System |
| SMYS | Specified Minimum Yield Stress |
| STEL | Short Term Exposure Limit |
| S&TPRS | Secondary and Tertiary Pressure Reducing Skid |
| TJ/day | Terra Joule per day |

| | |
|-------|---|
| TSCC | Transportation Services Control Centre |
| TRU | Transformer Rectifier Unit |
| TWA | Time Weighted Average |
| UA | Utility Air |
| UC | Unit Controller |
| UCP | Unit Control Panel |
| UFSD | Unit Fast Shut Down |
| U/G | Under Ground |
| UHF | Ultra High Frequency |
| UKOOA | United Kingdom Offshore Operators Association |
| UPS | Uninterruptible Power Supply |
| UT | Ultrasonic Testing |
| UV | Ultra Violet |
| VDU | Visual Display Unit |
| VHF | Very High Frequency |
| W@H | Working at Heights |
| WA | Western Australia |
| WAN | Wide Area Network |
| WLPG | Wesfarmers LPG |
| WNE | WestNet Energy |
| WT | Wall Thickness |

5.3 Specific Project References in SMS

Table 1 below maps the areas within the SMS where DBP have included references to the minimum requirements for safe working procedures associated with Project activity.

Table 1 - Specific Project References in SMS

| SMS Section | SMS Section Title |
|-------------|---|
| 2.4.1 | HSE Representatives |
| 2.4.3 | HSE Committees |
| 2.4.4 | Pre Start Meetings |
| 2.4.9 | Safety Meetings Project |
| 2.5.2 | Resource Planning: Project |
| 4.2 | Project Management |
| 4.3 | Design, Procurement, Construction & Commissioning |
| 4.3.1.2 | Technical Specifications |
| 4.3.2 | Procurements |
| 4.3.3 | Construction |
| 4.3.3.1 | Inspection and Test Plans |
| 4.3.3.3 | Project Planning |
| 4.3.3.4 | Pre Commissioning |
| 4.3.4 | Commissioning |
| 4.3.5 | Project Interface and Handover |
| 4.3.6 | Handover and Integration of Projects |
| 4.5 | Construction Projects – Management of Change |
| 4.6.1 | Contractual Provision/Contractor Selection |

| | |
|----------|--|
| 4.6.2 | Safety Systems Applying to Contractor & Support Services |
| 4.6.3.1 | Materials and equipment : Projects |
| 4.6.6 | Construction Projects Safety Systems |
| 4.7.3 | Safe Work |
| 4.7.3.1 | Safe Work Procedures – Projects |
| 4.7.3.2 | Electrical Safety |
| 4.7.3.3 | Excavation holes and Floor openings |
| 4.7.3.4 | Cutting, Heating & Welding Operations |
| 4.7.3.5 | Working From Heights and Prevention of Falls |
| 4.7.3.6 | Ladders, Scaffolding, Fixed and Mobile Work platforms |
| 4.7.3.7 | Lifting Equipment and Rigging |
| 4.7.3.8 | Movement and Control of Vehicles and Mobile Plant |
| 4.7.3.9 | Traffic and Transport Management |
| 4.7.3.10 | No Go Zones on Pipeline Corridor and Within Facilities |
| 4.7.3.11 | Lasers Safety |
| 4.10.2.1 | Certificates/ Records of Qualifications |
| 4.10.3 | Induction |
| 4.10.3.1 | Site Induction Training |
| 4.10.3.2 | Project Specific Induction |
| 4.11.10 | Working Hours – Projects |
| 4.11.11 | Basic Amenities |
| 4.12.1 | First Aid Projects |
| 4.13.8 | Emergency Response- Projects 4.13.8.1 – Emergency Preparedness and Management 4.13.8.3 – Fire and Explosion Protection : Projects 4.13.8.4 – Interaction with External Agencies 4.13.8.5 – Emergency Response Training |
| 5.1.7 | Inspection, Testing and Monitoring – Projects 5.1.7.1 – Recording and Evaluation of Test Results |
| 5.2.4 | Statutory Reporting |