



single
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engineering

RICHARDS BAY GAS POWER 2	
TITLE	DECOMMISSIONING & REHABILITATION PLAN
DOC NO	7381-1-GEN-RP-01
REV	A
DATE	2020/08/28


REV	DATE	DESCRIPTION	BY	APPR
A	2020/08/04	Issued for Information	KG	KG
B	2020/08/28	General Update	AC	KG

Approved by Client*

Signature: _____


Date: _____

Name: _____

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1 INTRODUCTION

1.1 Background

RBGP2 is planning to construct a 400MW power plant that will consist of 6 by turbines and associated Balance of Plant. This plant will be bid into the RMPPP with power contracted to Eskom under a PPA of 20 year duration.

The document is based on the typical gas turbine generators. The final gas turbine generator selection has not yet been made.

The decommissioning & rehabilitation plan at the end of useful life is required to be defined, agreed and included in the project financial planning.


1.2 Purpose

The purpose of this rehabilitation plan is to:

- Identify remediation measures required in terms of the existing RBIDZ lease for the property, other statutory requirements and responsible practice.
- Identify precautionary measures to be undertaken during the operational life of the plant.
- Identify options for extension of the life of the plant
- Rehabilitation measures on plant decommissioning

2 ABBREVIATIONS

Abbreviation	Meaning
BOP	Balance of Plant
C&M	Care and Maintenance
DCS	Distributed Control System
DME	Department of Minerals and Energy
EDG	Emergency Diesel Generator
FEED	Front End Engineering Design
FW	Fire Water
GCB	Generator Circuit Breaker
GIS	Gas Insulated Switchgear
GTG	Gas Turbine Generator
GSU	Generator Step Up
HSE	Health, Safety and Environment
LPG	Liquid Petroleum Gas
LTSC	Long Term Service Contract

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LSP	Lighting and Small Power
MCC	Motor Control Centre
MDB	Main Distribution Board
O&M	Operations and Maintenance
OEM	Original Equipment Manufacturer
PPA	Power Purchase Agreement
RBGP2	Richards Bay Gas Power 2
RFP	Request for Proposal
RMPPP	Reserve Margin Power Purchase Programme
RO	Reverse Osmosis
SCADA	Supervisory Control and Data Acquisition
SDP	Site Development Plan
SLD	Single Line Diagram
UPS	Uninterruptible Power Supply
VRLA	Valve Regulated Lead Acid

3 REFERENCE DOCUMENTS AND DRAWINGS

The following reference documents and drawing are applicable:

	Number	Title
1.	7381-INFO-SI-43-B	Site Plan, Phase 1


The following external documents and drawing are applicable:

	Number	Rev	Owner	Title
1.			RBGP2	RBIDZ lease document
2.	SANS 10400			The Application of the National Building Regulations

4 SITE DATA

The Site is located on Erf 17455, 17443 and 17442 within the RBIDZ Zone 1F.

Richards Bay has a humid subtropical climate that borders a tropical savanna climate. There are warm wet summers and mild moist to dry winters.

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Site Elevation:	47m
Minimum Dry Bulb Temperature:	8°C
Maximum Dry Bulb Temperature:	40°C
Minimum Relative Humidity:	23%
Maximum Relative Humidity:	93%
Average annual rainfall:	1228mm
Corrosion:	Highly corrosive coastal environment Recommended corrosion protection specification ISO12944 Class 5I, high durability.

5 CODES AND STANDARDS

Current versions of standards, codes and recommendations of the following organisations shall apply for design, construction, testing and commissioning of the plant:

International Standards (shall prevail)

- ISO International Standardisation Organisation
- IEC International Electrotechnical Commission

National Standards

- ANSI American National Standards Institute
- BSI British Standards Institution
- DIN Deutsches Institut für Normung
- EN European Standards
- SANS South African National Standards


Equivalent recognised standards and regulations applicable could be used.

6 SITE IMPROVEMENTS


6.1 POWER PLANT (INCLUDING OVERALL CONSTRUCTION OFFICES AND LAYDOWN AREA)

The power plant comprises 6 by gas turbines and associated BOP.:

<u>SITE WORKS</u>	
Roads	Concrete Roads as indicated on the site plan. Heavy vehicle high volume traffic for propane delivery. Heavy duty low volume traffic elsewhere

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Foundations and piling	<p>Piled foundations for gas turbines and alternator</p> <p>Misc foundations for GTG auxiliaries, BOP, buildings and piping/ cabling supports</p>
Hard surfacing	Hard surfacing as required for building access and maintenance
Buildings	<p>Buildings as required for:</p> <ul style="list-style-type: none"> • Workshop & Warehouse building. Steel or RC frame with brick infill building (partially double volume). • Electrical and Control Building: RC frame with brick infill building on two levels. • Mechanical BOP Building: Steel/RC frame with brick infill building. • GIS building: RC frame with brick infill building with cabling basement below GIS switchgear. • Gatehouse: Single level brick building. • HSE office: Single level brick building. <p>Piling may be required for GIS building and electrical and control building.</p>
Construction and laydown area temporary buildings	<p>Various prefabricated and steel frame construction structures as required for construction supervision and equipment laydown</p> <p>Temporary roads</p> <p>Utilities and services</p> <p>Various light bases and foundations for buildings and structures</p> <p>All buildings and structures recovered at completion of construction.</p> <p>Bases demolished and removed at completion of construction.</p>
Landscaping	Nominal landscaping
Fencing	Security fencing of site boundary

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<u>GAS TURBINES</u>	
6 by gas turbines with alternator and auxiliaries.	Foundations and piling required for gas turbines and alternator. Miscellaneous foundations for GT auxiliaries
<u>FUEL CONDITIONING</u>	
Fuel conditioning of propane required for gas turbines. Conditioning comprises vaporisation, heating and pressurisation. Heating b.m.o. heating oil with GT waste heat recovery and back up boilers	Foundations for all plant and boilers
<u>POWER EVACUATION</u>	
One GCB and set of Iso phase busbar per gas turbine generator	Foundations for all GCB and steelwork support structures.
One GSU transformer per gas turbine generator	Piled foundations, bund and blast walls for each transformer.
132kV power evacuation cabling <ul style="list-style-type: none"> One set per gas turbine generator from GSU transformer to GIS switchroom 2 sets from GIS switchroom to INDUS substation 	Cables installed in sand filled concrete ducts with concrete slab over
GIS switchgear	Switchgear installed in GIS building
Indus substation upgrade	2 by additional incomer bays for Power Plant connection to electrical distribution network The extension will be handed over the UMthlathuze municipality on completion.

WATER/AIR/DRAIN

<p>Potable water</p> <ul style="list-style-type: none"> • Raw fire water tank • Pumps and piping 	<p>Tank foundation piled.</p> <p>Miscellaneous foundations for pumps and pipework supports</p>
<p>Fire water</p> <ul style="list-style-type: none"> • Tank included above • Diesel fire pump • Electrical fire pump • Jockey Pumps and piping 	<p>Fire pumps and jockey pumps installed in mechanical building.</p> <p>Miscellaneous foundations for pipework support</p>
<p>Fire protection</p> <ul style="list-style-type: none"> • FW piping • Hydrants • GSU transformer deluge systems 	<p>FW piping direct buried in ground or on pipe racks</p> <p>Fire hydrants throughout site.</p> <p>FW deluge system for GSU transformers</p>
<p>Demineralised water</p> <ul style="list-style-type: none"> • Demineralised water tank • RO/EDI demineralised water plant • Piping 	<p>Tank foundation piled.</p> <p>RO/EDI plant installed in mechanical building</p> <p>Miscellaneous foundations for pipework support</p>
<p>Instrument air system</p> <ul style="list-style-type: none"> • Instrument air compressors and dryers • Buffer vessels • Piping 	<p>Air compressors, dryers and buffer vessels in mechanical building.</p> <p>Miscellaneous foundations for pipework support</p>
<p>Oily water system</p> <ul style="list-style-type: none"> • Oily water separator sumps with oil residue pumps • Oily water separator • Sludge tank • Piping 	<p>Concrete oily water separator sumps and associated pumps.</p> <p>Packaged oily water separator with support steelwork</p> <p>Prefabricated sludge tank</p> <p>Oily water pipework installed in ground</p> <p>Miscellaneous foundations for oily water separator, sludge tank and pipework support</p>
<p>Turbine wash water</p> <ul style="list-style-type: none"> • Waste wash water tanks • Piping 	<p>Buried prefabricated tanks.</p> <p>Turbine waste wash water pipework installed in ground</p>

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Sewerage and waste water system	<p>Sewerage and waste water pipework in ground and laid to falls.</p> <p>Waste water comprises RO brine</p> <p>Connection to RBIDZ sewerage system at site boundary.</p> <p>Miscellaneous foundations for oily water separator, sludge tank and pipework support</p>
Storm water system	<p>Storm water collection from roads and hard surfacing.</p> <p>Storm water pipework in ground and laid to falls.</p> <p>Storm water delivered to storm water channel at site boundary</p>
<u>ELECTRICAL SYSTEMS</u>	
Construction power	<p>All equipment and prefabricated bases recovered and removed at completion of construction.</p> <p>Buried cabling recovered as scrap or abandoned.</p>
Back up power Diesel emergency generators with diesel fuel storage	<p>2 by emergency diesel generators with concrete plinth.</p> <p>Above ground steel diesel storage tank with support steel and concrete bunded base.</p>
Station and auxiliary transformers	<p>2 by oil filled station transformers with concrete plinth</p> <p>6 by oil filled station auxiliary transformers with concrete plinth and in buildings</p>
MV auxiliary switchgear	Indoor MV switchgear installed in the electrical building
LV distribution boards and MCCs	<p>Main distribution board in electrical room.</p> <p>Sub distribution boards in buildings</p> <p>MCCs for mechanical BOP in mechanical building</p>
MV and LV cabling	<p>MV cabling and LV cabling installed on cable ladders, in ducts and direct buried.</p> <p>Concrete bases as required for above ground cable ladders.</p> <p>Sleeves and drawpits required for cable installed in ducts</p>
Earthing grid	<p>Buried earth system with earth rods to provide an equipotential platform.</p> <p>Substation earthing system to limit step and touch potentials.</p>


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	Earth mats for all transformers and generators.
Lightning protection	Lightning protection system linked to buried conductors with earth rods to protect buildings and equipment from the effects of lightning strike.
Site lighting	Perimeter security lighting. Site and street lighting. Cabling direct buried and in ducts.
<u>CONTROLS/COMMUNICATIONS SYSTEMS</u>	
Communications cabling	Communications cabling installed on cable tray, trunking and duct. Concrete bases as required for above ground cableways. Sleeves and drawpits required for cable installed in ducts
Communications systems	DCS and SCADA systems equipment installed in plantrooms and buildings. LAN and telephone systems in buildings. Fire alarm systems in buildings with central Fire Alarm Panel in Electrical Control room Security system including CCTV.


6.2 PROPANE ISLAND

The Propane Islands comprises tanker offloading, buffer storage and pumping:


<u>SITE WORKS</u>	
Roads	Concrete Roads as indicated site plan. Heavy vehicle high volume traffic for propane delivery. Heavy duty low volume traffic elsewhere
Foundations and piling	Piled foundations for propane tanks Misc. foundations for offloading structures, BOP, buildings and piping/ cabling supports

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Hard surfacing	Hard surfacing as required for building access and maintenance
Buildings	Buildings as required for: <ul style="list-style-type: none"> • Mechanical BOP: Steel/RC frame with brick infill building. • Gatehouse: Single level brick building. • HSE and admin office: Single level brick building.
Landscaping	Nominal landscaping
Fencing	Security fencing of site boundary
<u>TANKER OFFLOADING</u>	
4 by tanker offloading bays plus 4 by unfitted tanker offloading bays.	Support steelwork for all tanker bays installed. Future bays equipped with propane island in operation. Miscellaneous foundations for support steelwork and equipment
<u>FUEL STORAGE</u>	
Propane tanks	Propane tanks buried with perimeter retaining wall. Piling and concrete tank cradles may be required.
<u>FUEL DISTRIBUTION AND PRESSURISATION</u>	
Fuel distributed from buffer tanks and pressurised to delivery pressure and temperature at the site boundary	Fuel distribution pipework installed on pipe racks. Pumps and heating. Heating b.m.o. heating oil supplied from the power island Foundations for all piping support structures, pumps and heat exchangers.

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<u>WATER/AIR/DRAIN</u>	
Fire water <ul style="list-style-type: none"> • Fire water tank • Fire pumps • Jockey Pumps and piping 	Tank foundation piled. Fire pumps and jockey pumps installed in mechanical building. Miscellaneous foundations for pipework support
Fire protection <ul style="list-style-type: none"> • FW piping • Hydrants 	FW piping direct buried in ground or on pipe racks Fire hydrants throughout site. FW deluge system for offloading area
Instrument air system	Instrument air system as required for intrinsically safe controls.
Sewerage and waste water system	Sewerage pipework in ground and laid to falls. Connection to RBIDZ sewerage system at site boundary.
Storm water system	Storm water collection from roads and hard surfacing. Storm water pipework in ground and laid to falls. Storm water delivered to storm water channel at site boundary
<u>ELECTRICAL SYSTEMS</u>	
Construction power	All equipment and prefabricated bases recovered and removed at completion of construction. Buried cabling recovered as scrap or abandoned.
Back up power Diesel emergency generators with diesel fuel storage	2 by EDG with concrete plinth. Above ground steel diesel storage tank with support steel and concrete banded base.
Transformers	2 by oil filled transformers with concrete plinth
LV distribution boards and MCCs	Main distribution board in electrical room. Sub distribution boards in buildings MCCs for mechanical BOP in mechanical building
LV cabling	LV cabling installed on cable ladders, in ducts and direct buried. Concrete bases as required for above ground cable ladders. Sleeves and drawpits required for cable installed in ducts

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Earthing grid	Buried earth system with earth rods to provide an equipotential platform. Earth mats for all transformers and generators.
Lightning protection	Lightning protection system linked to buried conductors with earth rods and masts to protect buildings and equipment from the effects of lightning strike.
<u>CONTROLS/COMMUNICATIONS SYSTEMS</u>	
Communications cabling	Communications cabling installed in cable trunking and in duct. Concrete bases as required for above ground cableways. Sleeves and drawpits required for cable installed in ducts
Communications systems	DCS and SCADA systems equipment installed in plantrooms and buildings. LAN and telephone systems in buildings. Fire alarm systems in buildings with central Fire Alarm Panel in Electrical Control room

7 REMEDIATION REQUIREMENTS

The remediation requirements at the end of plant life are defined in:


- RB IDZ lease
- Local Authority by laws
- Provincial and National laws.

7.1 RB IDZ Lease Requirements

The RB IDZ lease expires 3 years after the termination of the last PPA entered between RBGP2 and the power purchaser.

The lease includes a rehabilitation obligation on the part of the developer as set out in the relevant clauses as below extracted from the lease agreement. The rehabilitation plan must be submitted together with the SDP and approve by RB IDZ,

- 7.24.5. it is to compile a site development plan for the purpose of co-ordinated allocation of land use rights and restrictions, which plan shall include a landscape rehabilitation plan, and must be approved by the Local Authority prior to construction commencing;

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11.5. If the Tenant erects a specialised structure on the premises which can only reasonably be used for a process used by the Tenant and cannot reasonably be used by other persons that may occupy the premises then the Landlord may require the Tenant to provide a guarantee for the rehabilitation of the site at the termination of the lease, which guarantee shall be in the form of –

11.5.1. A guarantee from a first line bank; and/or

11.5.2. Sureties from shareholders whose financial position is, in the opinion of the Landlord, sufficient to cover the sureties.


And may require the Tenant to increase the amount of the guarantee from time to time to meet the full costs of rehabilitation: Provided that, at the sole discretion of the Landlord, the Tenant may in place of such guarantee, cede to the Landlord or its nominee, to the satisfaction of such tenant or nominee, all intellectual property necessary to operate such power plant should the lease be terminated.

7.2 Local Authority by laws

- City of uMhlathuze Disaster Management Bylaws
- City of uMhlathuze Electricity Supply Bylaws
- City of uMhlathuze Environmental Health Bylaws
- City of uMhlathuze Flammable Liquids Bylaws
- City of uMhlathuze Nuisances Bylaws
- City of uMhlathuze Solid Waste Bylaws
- City of uMhlathuze Stormwater Management Bylaws
- City of uMhlathuze Spatial Planning and Land Use Bylaws
- Municipal Systems Act (32/2000) and Water Services Act (30/2007): Water Services Bylaws

7.3 Provincial and National

- Major Hazard Installations Regulations as per Government Gazette No 22506 where applicable White Paper on Energy Policy of South Africa (1998)
- The Kyoto Protocol, 1997
- United Nations Framework Convention on Climate Change and COP21 – Paris Agreement
- National Climate Change Response Policy White Paper (2011)
- Integrated Energy Plan (2012)
- Integrated Resource Plan (2010 – 2030)
- National Development Plan
- National Energy Act (Act No. 34 of 2008)
- Electricity Regulation Act (Act No. 4 of 2006)
- Gas Utilisation Master Plan

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- Gas-to- Power programme
- KZN Provincial Growth and Development Strategy (PGDS) 2011-2030 (Version 29.2- September 2013)
- KZN Department of Economic Development and Tourism Strategic Plan 2013/14- 2017/18
- KwaZulu Natal Provincial Spatial Development Framework (PSDF)
- KwaZulu Natal Climate Change Response and Sustainable Development Plan
- King Cetshwayo District Municipality (UDM) Integrated Development Plan (IDP) (2012/2013-2014/2015)
- King Cetshwayo District Municipality (UDM) Spatial Development Framework (SDF) (2012)
- uMhlathuze Local Municipality (ULM) Integrated Development Plan (IDP) (2012-2017)
- uMhlathuze Spatial Development Framework (2007)
- Environmental Management Framework (EMF) for Richards Bay Port Expansion Area and Industrial Development Zone (IDZ) (2011)

8 PRECAUTIONARY MEASURES DURING THE LIFE OF THE PLANT

The Power Plant and Propane Island is designed operate for at least the anticipated duration of the initial PPA to be entered into with Eskom following a successful bid under the RMPPP or other Power Purchase Programme. The anticipated duration of the initial PPA on which financial modelling is based is 20 years.

The rehabilitation costs at conclusion of the last PPA is influenced by the O&M procedures. Best practice to be followed includes:

- Gas turbines maintained in accordance with OEM recommendations. A LTSC will be entered into with the OEM. The LTSC ensures that the gas turbines achieve the design life with maximum residual value.
- The O&M Contractor will follow the OEM recommended daily and routine maintenance procedures for gas turbines and other equipment. As above this with ensure the plant achieves the design life and maximises residual value.
- Prevention of ground contamination through properly maintenance, monitoring and operation of the oily water system, turbine waste water disposal, proper handling of new and used oil and other chemicals and proper procedures for handling of EDG diesel.

A properly maintained and operated plant can significantly contribute to low rehabilitation costs through maximising the residual value of equipment and avoiding ground contamination.


9 OPTIONS FOR PLANT TO EXTEND THE USEFUL LIFE

The planned duration of the initial PPA is twenty years. This is subject to the conditions of the DME RMPPP RFP.

The power plant is specifically designed to suit the requirements of the gas turbines. It is not suitable for repurposing for other uses.

The options to extend the life of the plant include:

- Extension provisions contained in the PPA.

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- Entering a new PPA with the DME or other Government body
- Entering a new PPA with the private sector. This could include a PPA with RB IDZ, Umthlathuze Municipality or wheeling to Consumers.

10 REHABILITATION PLAN ON PLANT DECOMMISSIONING

The RB IDZ lease includes a 3 year period on expiry of the last PPA to allow for plant decommissioning and rehabilitation of the site. The rehabilitation plan is required to be submitted together with the SDP for approval by the RB IDZ prior to commencement of construction.


The major components of the rehabilitation comprise:

- Ordered shutdown of plant operations including implementation of C&M programmes to maintain value of all plant with potential for resale.
- Dispose of all chemicals required for maintenance preferably by selling on or alternatively disposal in an environmentally responsible manner. All tanks to be emptied, any potentially polluting residue cleaned out and disposed of in an environmentally sensitive manner.
- Disassemble all equipment. Equipment to be resold to be disassembled, packed and moved to storage. Equipment to be scrapped to be disassembled and disposed of in an environmentally responsible manner.
- Demolish all above ground structures and remove rubble.
- Demolish all foundations and remove rubble. Piles to be cut off 2m below final ground level and indicated on plans.
- Test for soil contamination. Remediate any contamination.
- Level site to near original ground levels. Seed with indigenous grasses.


The anticipated remediation measures are as set out below. The actual remediation measures will be dependent on the condition of equipment and potential for resale of used equipment. Where there is no potential for resale equipment will be removed for sale as scrap.

10.1 POWER PLANT (INCLUDING OVERALL CONSTRUCTION OFFICES AND LAYDOWN AREA)

SITE WORKS	
Roads	Concrete Roads to be broken up and rubble disposed of.
Foundations and piling	Foundations to be broken up and rubble disposed of. Piles to be cut off 2m below final ground level. Pile positions to be recorded on plans.
Hard surfacing	Hard surfacing to be broken up and rubble disposed of.


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Buildings	Building above ground structures to be demolished in accordance with best practice. Material recycled where practical. Rubble disposed of.
Landscaping	Site to be restored to original levels and seeded with indigenous grasses on completion of reinstatement.
Fencing	Fencing to be removed. Materials recycled where practical. Foundations to be broken up and disposed of.
<u>GAS TURBINES</u>	
6 by gas turbines with alternator and auxiliaries.	Gas turbine C&M to be implemented. Gas turbines to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. Foundations and piling as above.
<u>FUEL CONDITIONING</u>	
Fuel conditioning of propane required for gas turbines.	Fuel conditioning C&M to be implemented. Fuel conditioning to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. Foundations as above.
<u>POWER EVACUATION</u>	
One GCB and set of Iso phase busbar per gas turbine generator	GCB and iso phase busbar to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. Support steelwork to be dismantled and sold as scrap. Foundations as above.
One GSU transformer per gas turbine generator	GCB and iso phase busbar to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. Foundations and piles as above.


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132kV power evacuation cabling	<p>Cables installed in sand filled concrete ducts with concrete slab over</p> <p>Cable to be recovered and sold as scrap.</p> <p>Concrete ducts to be broken up and rubble disposed of.</p>
GIS switchgear	<p>GIS switchgear to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p>
<u>WATER/AIR/DRAIN</u>	
<p>Potable water</p> <ul style="list-style-type: none"> • Raw fire water tank • Pumps and piping 	<p>Potable water tank to be cut up and steel sold as scrap. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations and piles as above.</p>
<p>Fire water</p> <ul style="list-style-type: none"> • Tank included above • Fire pumps • Jockey Pumps and piping 	<p>Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations and piles as above.</p>
<p>Fire protection</p> <ul style="list-style-type: none"> • FW piping • Hydrants • GSU transformer deluge systems 	<p>Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Buried piping at depth below 1m to be abandoned and indicated on plan.</p> <p>Foundations and piles as above.</p>
<p>Demineralised water</p> <ul style="list-style-type: none"> • Demineralised water tank • RO/EDI demineralised water plant • Piping 	<p>Demineralised water tank to be cut up and steel sold as scrap.</p> <p>Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations and piles as above.</p> <p>Any unused chemicals to be sold or properly disposed of.</p> <p>RO/EDI plant to be dismantled, any potentially harmful residue cleaned, recycled where practical and balance properly disposed of.</p>
<p>Instrument air system</p> <ul style="list-style-type: none"> • Instrument air compressors and dryers 	

<ul style="list-style-type: none"> • Buffer vessels • Piping 	<p>Compressors and dryers to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p>
<p>Oily water system</p> <ul style="list-style-type: none"> • Oily water separator sumps with oil residue pumps • Oily water separator • Sludge tank • Piping 	<p>Concrete oily water separator sumps and associated pumps to be cleaned and residue disposed of. Separators to be broken up and disposed of.</p> <p>Packaged oily water separator with support steelwork to be cleaned and residue disposed of. To be disposed of as scrap.</p> <p>Prefabricated sludge tank to be cleaned and residue disposed of. To be disposed of as scrap.</p> <p>Oily water pipework installed in ground to be cleaned, recovered and disposed of as scrap.</p> <p>Foundations as above.</p>
<p>Turbine wash water</p> <ul style="list-style-type: none"> • Waste wash water tanks • Piping 	<p>Waste wash water tanks to be cleaned and residue disposed of. To be recovered disposed of as scrap.</p> <p>Turbine waste wash water pipework installed in ground to be cleaned and residue disposed of. To be recovered and disposed of as scrap.</p>
<p>Sewerage and waste water system</p>	<p>Pipework to be flushed.</p> <p>Pipework below 1m to be abandoned and indicated on plan. Recovered pipework to be sold as scrap.</p> <p>Foundations and concrete as above.</p>
<p>Storm water system</p>	<p>Pipework below 1m to be abandoned and indicated on plan. Recovered pipework to be sold as scrap.</p> <p>Foundations and concrete as above.</p>
<p><u>ELECTRICAL SYSTEMS</u></p>	
<p>Back up power</p> <p>Diesel emergency generators with diesel fuel storage</p>	<p>EDG to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Above ground steel diesel storage tank with support steel to be flushed and sold as scrap.</p> <p>Foundations and concrete as above.</p>


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Station and auxiliary transformers	Transformers to be dismantled and sold off for reuse or as spares. Any equipment not suitable for reuse sold as scrap. Foundations and concrete as above.
MV auxiliary switchgear	Switchgear to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.
LV distribution boards and MCCs	Switchgear to be dismantled and sold as scrap.
MV and LV cabling	Cable to be recovered and sold as scrap.
Earthing grid	Buried earth system cabling to be abandoned and indicated on plans. Concrete earth spike pits to be recovered and disposed of.
Lightning protection	Lightning protection system to be recovered and sold as scrap.
Site lighting	Lighting and cables to be recovered and sold as scrap.
<u>CONTROLS/COMMUNICATIONS SYSTEMS</u>	
Communications cabling	Communications cabling and ducts to be recovered and disposed of. Concrete bases to be broken up and disposed of.
Communications systems	Communications equipment to be recovered and sold as scrap.

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10.2 PROPANE ISLAND

<u>SITE WORKS</u>	
Roads	Concrete Roads to be broken up and rubble disposed of.
Foundations and piling	Foundations to be broken up and rubble disposed of. Piles to be cut off 2m below final ground level. Pile positions to be recorded on plans.
Hard surfacing	Hard surfacing to be broken up and rubble disposed of.
Buildings	Building above ground structures to be demolished in accordance with best practice. Material recycled where practical. Rubble disposed of.
Landscaping	Site to be restored to original levels and seeded with indigenous grasses on completion of reinstatement.
Fencing	Fencing to be removed. Materials recycled where practical. Foundations to be broken up and disposed of.
<u>TANKER OFFLOADING</u>	
4 by tanker offloading bays plus 4 by unfitted tanker offloading bays.	Offloading equipment to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. Support steelwork to be dismantled and sold as scrap. Foundations as above.
<u>FUEL STORAGE</u>	
Propane tanks	Propane tanks fill material to be recovered and stockpiled for use in reinstatement of levels on site. Retaining wall to be broken up and disposed of.

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	<p>Propane tanks to be cut up and steel sold as scrap. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations and piles as above.</p>
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FUEL DISTRIBUTION AND PRESSURISATION

Fuel distributed from buffer tanks and pressurised to delivery pressure and temperature at the site boundary	<p>Equipment to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations as above.</p>
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WATER/AIR/DRAIN

<p>Fire water</p> <ul style="list-style-type: none"> • Fire water tank • Fire pumps • Jockey Pumps and piping 	<p>Fire water tank to be cut up and steel sold as scrap. Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Foundations and piles as above.</p>
<p>Fire protection</p> <ul style="list-style-type: none"> • FW piping • Hydrants 	<p>Any equipment not suitable for reuse to be dismantled and sold as scrap.</p> <p>Buried piping at depth below 1m to be abandoned and indicated on plan.</p> <p>Foundations and piles as above.</p>
Instrument air system	Compressors and dryers to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap.
Sewerage and waste water system	<p>Pipework to be flushed.</p> <p>Pipework below 1m to be abandoned and indicated on plan. Recovered pipework to be sold as scrap.</p> <p>Foundations and concrete as above.</p>
Storm water system	<p>Pipework below 1m to be abandoned and indicated on plan. Recovered pipework to be sold as scrap.</p> <p>Foundations and concrete as above.</p>

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<u>ELECTRICAL SYSTEMS</u>	
Back up power Diesel emergency generators with diesel fuel storage	EDG to be dismantled, packed and sold off for reuse or as spares. Any equipment not suitable for reuse to be dismantled and sold as scrap. 5m ³ above ground steel diesel storage tank with support steel to be flushed and sold as scrap. Foundations and concrete as above
Transformers	Transformers to be and sold off for reuse or as spares. Any equipment not suitable for reuse sold as scrap. Foundations and concrete as above.
LV distribution boards and MCCs	Switchgear to be dismantled and sold as scrap.
LV cabling	Cable to be recovered and sold as scrap.
Earthing grid	Buried earth system cabling to be abandoned and indicated on plans. Concrete earth spike pits to be recovered and disposed of.
Lightning protection	Lightning protection system to be recovered and sold as scrap.
<u>CONTROLS/COMMUNICATIONS SYSTEMS</u>	
Communications cabling	Communications cabling and ducts to be recovered and disposed of. Concrete bases to be broken up and disposed of.
Communications systems	Communications equipment to be recovered and sold as scrap.