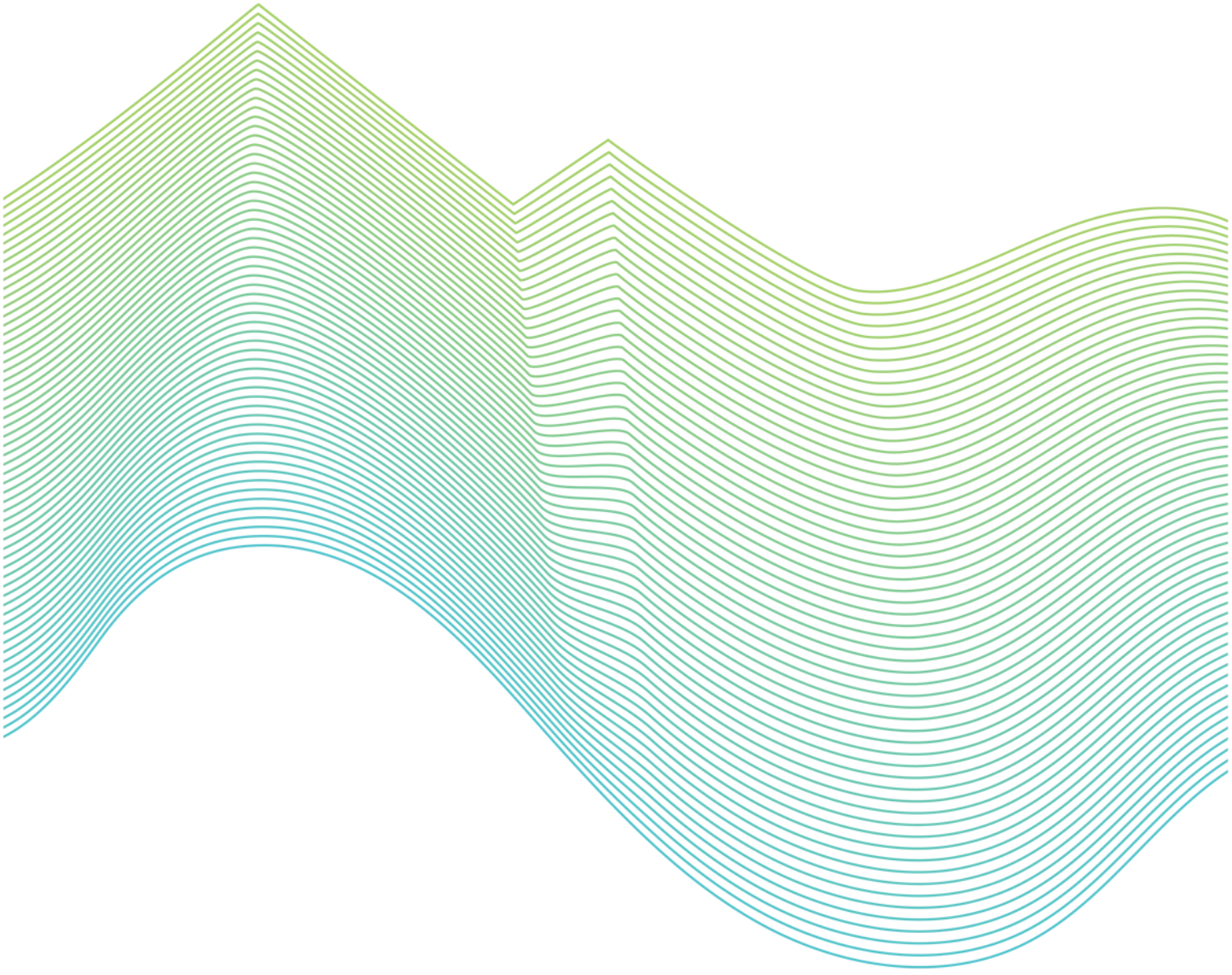
Hydro Tasmania

Annual Environmental Review Report

Tamar Valley Power Station

1 July 2023 to 30 June 2024



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ABBREVIATIONS

AER	Annual Environmental Review	GJ	Giga Joules	NOx	Nitrous Oxides
AETV	AETV Pty Ltd	hrs	Hours	NO_2	Nitrous Dioxide
ANZECC	Aus & NZ Environment and Conservation Council	Hz	Hertz	O_2	Oxygen
BBPS	Bell Bay Power Station	I1	Inline monitoring point at WWRP outlet	OCGT	Open Cycle Gas Turbine
BOD	Biochemical Oxygen Demand	I2	Inline monitoring point on the discharge sump flume	PCBs	Polychlorinated Biphenyls
CCGT	Combined-Cycle Gas Turbine	IBC	Intermediate Bulk Container	pH	Potential of hydrogen: measure of acidity and alkalinity
COD	Chemical Oxygen Demand	kL/hr	Kilolitres per hour	SCADA	Supervisory Control and Data Acquisition
COO	Chief Operating Officer	L	Litres	SS	Suspended Solids
COVA	COVA Thinking Pty Ltd (formerly SEMF Pty Ltd)	LAeq	A-weighted equivalent sound pressure	SW	Stormwater
CT	Cooling Tower	Ltn	Launceston	T	Tonnes
D1–D4	DB WQ monitoring locations (D1 to D4)	M1–M4	Near shore water quality monitoring locations	TEER	Tamar Estuary and Esk Rivers
dBA	A-Weighted Decibels	m	Metres	T/Hr	Tonnes per Hour
DB	Donovans Bay	m^3	Cubic metres	THMs	Trihalomethanes
0C	Degrees Celsius	m^3/hr	Cubic metres per hour	TN	Total Nitrogen
DO	Dissolved Oxygen	mg/L	Milligrams per litre	TP	Total Phosphorus
DP1	Discharge Point No.1	mg/m^3	Milligrams per cubic metre	TPH	Total Petroleum Hydrocarbons
DP2	Discharge Point No.2	ML	Mega litres	TSS	Total Suspended Solids
EMS	Environmental Management System	ML/yr	Mega litres per year	WW	Wastewater
EPA	Environment Protection Authority (Tasmania)	N/A	Not Applicable	FT8s	Pratt and Whitney turbines
EPN	Environment Protection Notice No. 7898/1 -	NATA	National Association of Testing Authorities	NS	Near Shore

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1.0 Executive Summary

The Tamar Valley Power Station (TVPS) is situated at Bell Bay on land adjacent to the Tamar Estuary in northern Tasmania. The TVPS has been operated by AETV Pty Ltd (AETV) since it came into full operation as a gas fired base load station on 19 September 2009. AETV is a wholly owned subsidiary of Hydro Tasmania (Hydro).

The TVPS is operated in accordance with the requirements of Environment Protection Notice (EPN) No. 7898/1 which was finalised and formally issued by the Environment Protection Authority Tasmania on 20 November 2012.

AETV has submitted an Annual Environmental Review (AER) report for the TVPS to the Environment Protection Authority (EPA) every year (as required by Condition RP1 of the EPN), commencing in 2010.

This AER report has been prepared by COVA Thinking Pty Ltd (COVA) on behalf of AETV for the reporting period of 1 July 2023 to 30 June 2024 to provide:

- Description of relevant operational management and environmental monitoring results
- Synopsis of environmental performance
- Discussion of compliance with the conditions of EPN 7898/1 (and applicable amendments issued to the EPN).

Key points regarding environmental performance over the reporting period:

- AETV operated the TVPS in an environmentally conscious manner during the 2023/24 reporting period, to meet and where possible exceed the requirements of the EPN and AETV commitments as outlined in previous AERs.
- The Mitsubishi CCGT was successfully recommissioned for less than a month of the reporting period, with an efficient restart on 7 June 2024. While it represented a temporary change to the operation of the site compared to the past 5 years, the CCGT is approved under the EPN and did not cause any environmental concerns.
- Based on the operational information and environmental monitoring results, there has been no appreciable change in the way the site is operated, the power station is well maintained and comprehensive environmental programs are in place, hence much of the current AER is consistent with the past several reporting years.

AETV is committed to operating the TVPS in an environmentally conscious manner, implementing additional precautionary measures as it deems necessary to improve internal management of environmental issues.

AETV is a wholly owned subsidiary of Hydro Tasmania (Hydro).

Hydro's Executive General Manager, Assets and Infrastructure (GM A&I) acknowledges the contents of this AER.

SIGNED STATEMENT OF ACKNOWLEDGEMENT	
Hydro GM A&I Signature:	
Hydro GM A&I Name:	Jesse Clark
Date:	8/12/2024

2.0 Introduction

2.1 Brief Site Description

The TVPS is located at 4055 East Tamar Highway at Bell Bay in northern Tasmania and is operated by AETV Pty Ltd (AETV). AETV is a wholly owned subsidiary of Hydro Tasmania.

Under Schedule 2 of the Environmental Management and Pollution Control Act 1994 (EMPCA), the TVPS is regulated as a level 2 Fuel Burning activity and is required to operate in accordance with the requirements of EPN No. 7898/1. A copy of the EPN, issued by the EPA (EPA, 2012) is provided in Appendix A.

A summary of the power generating equipment utilised on-site is summarised in Table 1. The location of operational facilities on-site is shown in Figure 1.

Table 1: Power generating equipment used on-site during the reporting period

Units	Description	Location
Unit 201	Mitsubishi Combined Cycle Gas Turbine (CCGT)	Facility No. 3
Unit 104	Rolls Royce Trent Open Cycle Gas Turbine (OCGT)	Facility No. 2
Units 101A, 101B, 102A, 102B and 103A	Pratt & Whitney OCGT (hereafter referred to as the FT8s)	Facility No. 1
Unit 103B	This unit was taken offline during the 2017/18 reporting period and has remained permanently in a state of long term in situ storage	

2.2 Operational Overview

There has been no change in the operational equipment used at the TVPS for power generation since the previous reporting period, nor notable changes in procedures for their operation.

Unit 201 and the associated CT operated for less than a month during the reporting period after being in dry lay-up since June 2019. Dry conditions in Tasmania and availability of gas led to the decision to temporarily restart Unit 201. Recommissioning commenced on 27 May 2024 with Unit 201 fully operational from 7 June 2024. Prior to this, power during the reporting period was predominantly generated by Unit 104 and occasionally by the FT8s (Units 101A, 101B, 102A, 102B and 103A).

While AETV schedules proposed periods of turbine operation of these units for the year, the actual timing of their operation is altered by the following:

- Hydro directives regarding power system capacity requirements
- Variation in the electricity and gas markets
- Availability of turbine units for commercial operation
- Requirement for maintenance works.

The general operation of power generating equipment during the reporting period and monitoring completed each month is outlined in Table 2 while turbine operating hours and fuel usage is provided in Table 6 (Section 3.5.1).

Figure 1: TVPS operational facilities layout


DP2
EAST TAMAR HIGHWAY
DP1
ACCESS ROAD
BIG BAY
5445700N
5445600N
5445500N
5445400N
5445300N
491700E
491800E
491900E
492000E
492100E
492200E
LEGEND
1 PRATT & WHITNEY OPEN CYCLE GAS TURBINE (OCGT), FT8's (PEAKING PLANT)
2 ROLLS ROYCE TRENT OPEN CYCLE GAS TURBINE (OCGT)
3 MITSUBISHI COMBINED CYCLE GAS TURBINE (CCGT) & HEAT RECOVERY STEAM GENERATOR (HRSG)
4 WORKSHOPS
5 CHEMICAL STORAGE
6 WATER STORAGE
7 WATER TREATMENT PLANT
8 GATEHOUSE
9 OFFICE
10 DOMESTIC WASTE WATER TREATMENT SYSTEM
11 COOLING TOWER
12 WASTEWATER RETENTION POND (WWRP)
13 STORMWATER SETTLEMENT POND
14 FLUME
15 GAS LET DOWN STATION (TASGAS)
16 FORMER BELL BAY POWER STATION (HYDRO)
OPERATIONAL SITE BOUNDARY
EQUIPMENT LOCATION BOUNDARY
DISCHARGE POINTS:
DP1 - TREATED WASTEWATER
DP2 - STORMWATER
TAMAR VALLEY POWER STATION - BELL BAY
FIGURE 01
OPERATIONAL FACILITIES LAYOUT
COVA
Stronger Together
1800 00 COVA
covathinking.com
Date: 5th APRIL 2019
Prepared by: COVA Pty Ltd
Project Number: 2946.018
Client: AETV Pty Ltd
NOT TO SCALE
N

Table 2: TVPS operational and monitoring overview (1 July 2023 to 30 June 2024)

	July 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	June 24
ENVIRONMENTAL MONITORING FOR EPA REPORTING:												
WWRP Discharge (Monthly)	18-Jul-23	14-Aug-23	12-Sep-23	17-Oct-23	21-Nov-23	06-Dec-23	09-Jan-24	06-Feb-24	05-Mar-24	16-Apr-24	14-May-24	05-Jun-24
Inline WW Discharge Temperature	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Stormwater Discharge (Quarterly)	-	-	12-Sep-23	-	-	06-Dec-23	-	06-Feb-24	-	-	No flow	05-Jun-24
Donovans Bay (Quarterly)	-	-	Exemption	-	-	Exemption	-	-	Exemption	-	-	Exemption
Near Shore Temp (M1 to M4) (Quarterly)	18-Jul-23	14-Aug-23	12-Sep-23	17-Oct-23	21-Nov-23	06-Dec-23	09-Jan-24	06-Feb-24	05-Mar-24	16-Apr-24	14-May-24	05-Jun-24
In-faunal assemblages (Triennial)	-	-	Exemption	-	-	-	-	-	-	-	-	-
Stack (Air)	-	09-Aug-23	-	-	29-Nov-23	-	-	29-Feb-24	-	-	Exemption for all units	20/6/24 (U201)
Environmental Noise Survey (Annual)	-	-	-	-	-	-	-	-	-	-	-	Scheduled (U201)
OPERATIONAL & ADDITIONAL ENV. MONITORING (Internal):												
Other parameters – Inline WWRP Discharge Water Quality	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Additional Stormwater Discharge Sampling (As required)	-	-	-	17/10/2023 31/10/2023	2/11/2023 21/11/2023	06-Dec-23	09-Jan-24	-	-	-	-	24/6/2024
Inspection Field Notes (Monthly)	18-Jul-23	14-Aug-23	12-Sep-23	17-Oct-23	21-Nov-23	06-Dec-23	09-Jan-24	06-Feb-24	05-Mar-24	16-Apr-24	14-May-24	05-Jun-24
TYPICAL EQUIPMENT OPERATIONAL USAGE:												
Rolls Royce Trent OCGT (Unit 104)	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Intermittent	Not avail.
Mitsubishi CCGT (Unit 201)	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Dry lay-up	Return to Service 27/5	Operational from 7/6
Pratt & Whitney OCGTs (FT8s) - Units 101A/101B, 102A/102B, 103A	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)	As needed (103A not operational)

2.3 Review of EPN 7898/1

While the operational profile of TVPS has changed significantly since 2012 to one where normal operation is on an intermittent basis rather than continuous, the site nonetheless remains an integral part of Hydro Tasmania's energy strategy. The current EPN No. 7898/1 for the site contains conditions that are sensible and applicable to a continuously operating facility but are not practicable in the context of an intermittently operating facility.

Hence, a review of the current EPN has been gradually conducted in consultation with the EPA. The review has identified a number of necessary and proposed amendments to the site's EPN due to the availability of long-term information relating to site operating conditions and environmental monitoring. An EPN Review Report was submitted in August 2023 to the EPA to formally facilitate discussion on conditions for an amended or new EPN.

A key objective of this review is to ensure an EPN is in place that is reflective of TVPS operations and flexible to the potentially changing nature of those operations yet will continue to build on the existing best practice environmental management currently undertaken at the site. AETV is continuing to progress the EPN review with the EPA to achieve the stated objective.

2.4 Scope and Structure of AER

This AER has been prepared in accordance with the requirements of Condition RP1 of the EPN, with a signed copy submitted to the Director of the EPA and the document made publicly available. The objective of the AER is to provide an overview of the environmental management, monitoring and performance of the TVPS during the previous reporting period from 1 July 2023 to 30 June 2024.

The AER sections are structured to address elements of Condition RP1 of EPN 7898/1. These elements are referenced as subsection numbers for the condition in **Table 3**.

Table 3: Location of EPN Condition RP1 related information within this AER

RP1	Summary of EPN Requirement	Location in AER
1.0	A publicly available AER for the activity must be submitted to the Director by the new date of 30 September annually (Approved by Director of the EPA on 26 March 2018).	(The AER in general)
1.1	A statement by the General Manager or Chief Executive Officer, acknowledging the contents of the current AER. AETV's Chief Operating Officer assumes this responsibility.	Executive Summary
1.2	A listing of any complaints received from the public during the reporting period and any actions that have resulted.	Section 3.3
1.3	A listing of environmental incidents and non-compliance with EPN conditions that occurred during the reporting period, with details of any mitigation or preventative actions implemented in response.	Section 3.4
1.4	A summary of any environment related procedural or process changes that have been implemented during the reporting period.	Section 3.2
1.5	A summary of the monitoring data required by the Director. Presentation of data in graphical form where possible, including comparison with the historical results. Mention any special causes and system changes that have impacted on the parameters monitored. Explanation of significant deviations between actual results and any predictions made in previous reports.	Section 4

1.6	Inclusion of a summary of fulfilment of environmental commitments made for the reporting period, with an indication of results of the actions implemented and explanation of any failures to achieve such commitments.	Section 6
1.7	A summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Detail any initiatives or programs planned to avoid, minimise, re-use or recycle wastes over the next reporting period.	Section 3.5.2
1.8	A copy of Hydro's most recent Tamar Valley Site Incident Response Plan.	Appendix B

3.0 Operational Management

3.1 TVPS EMS Roadmap

As a subsidiary of Hydro, TVPS operations are integrated into relevant management systems developed for the wider organisation. Hydro implements a third-party certified ISO 14001:2015 environmental management system (EMS) which to date, has been broadly applied to TVPS. The Hydro EMS is fundamental in providing the framework for managing TVPS's environmental aspects and impacts. Furthermore, the importance of integrating the systematic framework underlying an EMS into TVPS's everyday leadership, business and operational practices is acknowledged.

An EMS roadmap is currently under development to convey how the existing environmental management approach at TVPS aligns with the overarching Hydro EMS framework. Once complete, an action plan will be developed to enhance the existing effective and proactive approach undertaken at TVPS through ensuring a coordinated approach is being implemented for environmental planning, commitment to action, reviewing progress, making changes as required, and communicating with all stakeholders. Ultimately, the EMS roadmap will facilitate continuous improvement in environmental management at TVPS and provide access to the key information and documents that are fundamental to the implementation and maintenance of an EMS.

3.2 Environment-related Procedural / Process Changes

Key environment-related procedural or process changes implemented during the reporting period include:

- Low growing vegetation removed in July 2023 from site boundary to comply with legislation to protect major assets.
- During August 2023 stack testing, U101A, U102A and U102B were operated temporarily without water injection as part of ongoing investigation into elevated NOx levels.
- Annual maintenance outage for Unit 103 commenced in September but was extended due to mechanical issues found when recommissioning and remained unavailable for service for the rest of the reporting period.
- Ongoing management of FT8 operational hours while reviewing non-compliant stack results in November and planning next actions due to these units operating close to the EPN NOx limit.

3.3 Summary of Complaints

No formal complaints were received by AETV from the public during the reporting period relating to the operation of the TVPS. No complaints or reportable incidents were recorded by the EPA.

3.4 Environmental Non-Compliance Incidents

No significant environmental incidents occurred on-site during the reporting period. However, AETV reported one stack testing non-compliance event and three discharge water quality related events to the EPA during the reporting period. In all instances, non-compliance events were managed promptly, and an appropriate level of investigation completed to identify the cause and ensure suitable controls were implemented where necessary. Investigations found discharge water quality non-compliances to be isolated events while the stack testing non-compliance is an ongoing issue being managed accordingly. All findings were communicated to the EPA within the agreed timeframe.

A summary of the reportable non-compliance incidents during the AER reporting period is provided in **Table 4**.

It is noted, incidents at the site are managed in accordance with the TVPS Incident Response Plan. The current version of this plan is provided in Appendix 2.

Table 4: Summary of reportable non-compliance events during 2023/24

Date	Monitoring Frequency	Non-compliant Result /EPN Limit	Non-compliance Event Description and Action
12-Sep-23	DP2 - SW Quarterly	Oil and Grease 6 mg/L (EPN Limit - 5 mg/L)	Investigation – Given the measurement uncertainty of +/-2 associated with the analytical procedure, it is not possible to conclude that the result definitely represents a breach of the emission limit. A brief investigation was completed finding that vegetation clearing works (required for fire management) undertaken at the site during August/Sept 2023 disturbed some stormwater drains hence these may not have been effectively operating. Action - AETV collected a follow-up sample from the stormwater outfall (DP2) during the October monthly monitoring event. Notification - EPA notified on 4/10/23 and replied on 11/10/23 - satisfied with proposed action and requested to review follow-up sample results.
31-Oct-23	DP2 - SW Quarterly	Oil and Grease 9 mg/L (EPN Limit - 5 mg/L) TPH 2.51 mg/L (EPN Limit – 0.5 mg/L)	Investigation – Follow-up sample from DP2 during October verified the September result with further sampling conducted. Investigation found oil in the triple interceptor system (located before the SW pond) with a potential source of this oil from a FT8 unit leak. Valve on this unit was closed and no further operation occurred until all issues were resolved. In addition, upon further scrutiny, a hole in the pipe of the spinclear system was identified which impacts the operation of the oil removal from water, hence this was considered to be part of the reason for hydrocarbon emissions to the SW pond. The spinclear system was repaired immediately. It was noted that SW Pond discharge had been minimal over previous weeks before this non-compliance event hence any hydrocarbon emissions that reported to the stormwater pond were contained at the time. Action – - Triple interceptor pit pumped out - Booms across SW pond regularly replaced - Spill response trailer was deployed to skim oil and return filtered water to SW pond to reduce the likelihood of discharge - Monitoring of the SW pond water quality on a monthly basis until levels return to normal - In the medium-term, planning to clean out the SW pond is being progressed with the intention to this as soon as practicable. Notification - EPA notified on 10/11/23 and replied on 28/11/23 (after site inspection) - satisfied with investigation and corrective actions, requested to review follow-up monthly sample results.
29/30-Nov-23	Quarterly Stack Testing	Unit 101B - 81 (25 MW) Unit 102B - 80 (25 MW) (EPN Limit – 70 as NO2 @ 15 % O2)	Investigation - The issue of high nitrogen oxides continues to cause concern. Over the last 12 months a number of tests have been run which did not find anything abnormal that would explain high NOx levels. Prior to this stack testing event, work to replace thermocouples was completed and there are plans to replace orifice plates on the water injection system as the next step in the process of elimination. Action - There was no operation of the FT8 units since this stack testing event occurred and it is expected that there will be minimal operation in the near term due to Unit 104 being the preferred unit to start. Notification - EPA notified on 18/12/23 and replied on 21/12/23 - satisfied with action taken and required notice on any increase in utilisation of FT8 units.

Date	Monitoring Frequency	Non-compliant Result /EPN Limit	Non-compliance Event Description and Action
9-Jan-24	DP1 Monthly	Suspended Solids 15 mg/L (EPN Limit - 10 mg/L)	Investigation – Sudden and large input into the WWRP from the demin and permeate storage tanks early in the month likely stirred up the sludge from the bottom which may have impacted the TSS result. Also, water quality of the Curries River Dam water supply deteriorated which required an increase in the flocculant dose rate to improve the filtration of the raw water, this in turn adds to the suspended solids load within the pond. Action - Desludging of the pond planned for 14/2/24, which should improve TSS levels. Notification - EPA notified on 24/1/24 and replied on 31/1/24 - satisfied with action taken and no further requirements.

3.5 Relevant Operational Data

3.5.1 Fuel Usage and Operating Hours

The total gas consumption of power generating equipment at the TVPS including when FT8s were operated as synchronous condensers during the reporting period was 2,196,698 GJ. This is equivalent to approximately 49,431 T of gas (using the conversion factor 44.44 GJ/T, from National Pollutant Inventory Combustion in Boilers Manual Version 3.6 December 2011) (NPI, 2011).

Table 5 below provides a summary of compliance with maximum quantities as prescribed in EPN Condition Q1 for fuel usage and power generation.

Table 5: Compliance with maximum quantities as per EPN Condition Q1

Details	Maximum Quantities	Summary for the 2023/24 AER reporting period
Condition Q1(1) 77 T/hr of total capacity to consume fuel	15.58 T/hr	This fuel was consumed over a total of approximately 3,173 hours (without synchronous condensers), resulting in an average consumption (fuel usage efficiency) of 15.58 T/hr. Unit 201 was offline for 11 of the 12 months of the reporting period so fuel consumption was well below the prescribed EPN limit.
Condition Q1(1.4) 100 hrs / 12-month period burning distillate fuel	N/A	All power generating equipment at the TVPS was operated on natural gas. No distillate fuel (diesel) was consumed.

An improvement in fuel usage efficiency was recorded when the FT8s open cycle gas turbines (OCGTs) were operated as generating equipment with synchronous condensers (10.00 T/hr) compared to without (15.58 T/hr). Operating the FT8s as synchronous condensers plays an important role in system control.

Further information regarding operational hours and fuel (gas) usage of all turbines during the reporting period is provided in Table 6 and Table 7, presenting fuel usage as “with” and “without” synchronous condensers.

Table 6: TVPS turbines operating hours and calculated total fuel usage (1 July 2022 to 30 June 2023)

Month	Mitsubishi Unit		Rolls Royce Unit		FT8 Units							
	Unit 201 CCGT		Unit 104 OCGT		Unit 101 A / B		Unit 102 A / B		Unit 103 A / B		Gas Use GJ	Diesel GJ
	Op Hrs	Gas Use GJ	Op Hrs	Gas Use GJ	Op Hrs	Sync Hrs	Op Hrs	Sync Hrs	Op Hrs	Sync Hrs		
Jul-23	0:00	0	43:20	24195	3:39	0:00	9:34	0:00	0:00	43:27	5269	0
Aug-23	0:00	0	106:00	57740	38:54	0:00	19:01	0:00	0:00	25:09	25228	0
Sep-23	0:00	0	72:08	39026	16:18	0:00	24:24	0:00	0:00	425:27	18859	0
Oct-23	0:00	0	57:22	32062	3:16	544:33	4:55	427:10	0:00	0:03	3255	0
Nov-23	0:00	0	39:33	23224	3:38	0:00	1:23	215:34	0:00	0:00	2330	0
Dec-23	0:00	0	130:04	67356	0:00	0:00	4:55	0:00	0:00	0:00	1748	0
Jan-24	0:00	0	229:39	125596	0:00	1:06	1:52	0:00	0:00	0:00	826	0
Feb-24	0:00	0	37:47	19894	21:51	84:00	23:18	0:00	0:00	0:00	20658	0
Mar-24	0:00	0	21:50	11197	7:16	1:45	10:25	0:55	0:00	0:00	8371	0
Apr-24	0:00	0	57:33	36123	9:45	0:00	17:00	0:00	0:00	0:00	13697	0
May-24	0:00	4	591:11	324506	374:44	0:00	323:26	0:00	0:00	0:00	319332	0
Jun-24	574:23	937916	0:00	2	138:28	0:00	154:44	0:00	0:00	0:00	78284	0
Total	**574:23**	**937920**	**1386:27**	**760921**	**617:49**	**631:24**	**594:57**	**643:39**	**0**	**494:06**	**497857**	**0**
Compared to 2022/23	**0:00**	**4.00**	**1223:12**	**678,515**	**166:21**	**1043:4**	**160:40**	**239:03**	**124:30**	**1021:1**	**157,191**	**0**

Table 7: Summary of TVPS turbine fuel usage and efficiency

	Without synchronous condensers		With synchronous condensers	
Total gas usage (as GJ):	2,196,698	GJ	2,196,698	GJ
Total gas usage (as Tonnes):	49,431	T	49,431	T
Total operating hours:	3173.00	Hrs	4942.00	Hrs
Fuel usage (efficiency):	15.58	T/hr	10.00	T/hr
EPN total capacity to consume fuel:	77.00	T/hr	77.00	T/hr

3.5.2 Waste Management

Wastes generated by the TVPS operation are managed in accordance with the waste management hierarchy. Generation of waste materials is minimised where possible, and generated wastes are separated, reused, recycled and disposed of in an approved manner. A summary of the types and quantities of primary solid and liquid waste materials generated on-site and their management are provided in Table 8.

Further waste improvements initiated by AETV which are not shown included regular review of waste management practices on-site, raising personnel awareness during internal meetings, consideration of how waste will be

managed in project planning, and discussions with waste contractors regarding collection frequency in order to ensure optimal efficiency.

Table 8: Solid and liquid waste materials management summary

Month	General Waste	Recycled Paper	Recycled Cardboard	Comingled Recycling	Liquid Waste	Batteries
Jul-23	9	-	-	-	8000	
Aug-23	6	-	-	-	8000	
Sep-23	9	-	1100	-	8000	
Oct-23	6	-	1100	480		
Nov-23	9	-	1100	480	8000	449
Dec-23	9	-	1100	480		
Jan-24	9	-	1100	-		460
Feb-24	9	-	1100	480	8000	
Mar-24	9	720	-	-		
Apr-24	9	-	1100	-	8000	
May-24	9	-	-	480	8000	
May-24	-		-		1600*	
Jun-24	18		1100	480	8000	
Total	**111 m^3**	**720 L**	**8,800 L**	**2,880 L**	**65,600 L**	**909 kg**
Compared to 2022/23	**111 m^3**	**0 L**	**6,600 L**	**2,160 L**	**61,200 L**	**0 kg**

* Oily liquid waste removed by oil recycling business

3.5.3 Water Usage

While there is no compliance limit for water usage in the EPN, AETV reports water usage in the AER to provide context for process and treated wastewater discharge discussions. Water usage information improves understanding of the changes in WWRP operation, discharge WQ and flow rates.

A large volume of raw water is supplied annually to the TVPS from either of two water supplies:

- Treated water from the Chimney Saddle; and
- Untreated water from the Curries River Dam.

The water source is varied by Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater) based on the status of its water storage levels.

Regardless of the source, raw water distributed to the site is split between two lines with some directed to the raw water tank for treatment and some transferred straight to the CT. Once treated, this water is directed to the CT and blended to ensure the water quality is suitable for use within this system.

A summary of the raw water supply sources and volumes stored and consumed on-site during the reporting period are summarised in Table 9. It is noted that whilst Unit 201 was not in operation during the reporting period, water

is utilised in the cooling towers as it is a requirement of the insurance company to keep them full over the summer months to lower the fire risk.

Table 9: Total raw water supply, storage and usage

MONTH	RAW WATER SUPPLY		STORAGE IN RAW WATER TANK (M3)	USE IN COOLING TOWERS (M3)	COMMENTS
	CURRIES RIVER DAM (UNTREATED)	CHIMNEY SADDLE (TREATED)			
Jul-2023			2,593	33	Unit 201 Offline
Aug-2023			5,036	0	Unit 201 Offline
Sep-2023			3,652	0	Unit 201 Offline
Oct-2023			8,616	57,071	Topping up CT*
Nov-2023			3,713	622	Topping up CT*
Dec-2023			5,853	0	Unit 201 Offline
Jan-2024			9,437	748	Topping up CT*
Feb-2024			8,616	3,754	Topping up CT*
Mar-2024			3,948	699	Unit 201 Offline
Apr-24			4,159	0	Unit 201 Offline
May-24			30,126	5,641	Filling cooling tower
Jun-24			76,616	57,071	Unit 201 online 7/6/24
Total	**10 months**	**2 months**	**162,365**	**125,638**	

* Topping up cooling tower due to evaporation but Unit 201 Offline

4.0 Environmental Performance

4.1 Overview

AETV has continued to implement its operational and environmental monitoring (including sampling, collection of monitoring data and investigations) and reporting programs as outlined in Table 10. An overview of the timing of environmental monitoring and correlation of operational equipment usage and water supply during the reporting period is shown in Table 2.

Table 10: AETV's operational and environmental monitoring and reporting

Operational	Environmental
Incidents and complaints	Environmental incidents
Procedural and operational equipment changes	Stack emission testing
Compliance with EPN maximum quantity regulatory requirements	Treated wastewater (WW) water quality and flow both inline (I1&I2) and at discharge point (DP1)
Water usage (from two sources)	Treated stormwater (SW) discharge water quality measured at DP2
Turbine operational hours and fuel usage	Nearshore discharge temperature (other parameters on a voluntary basis)
Solid and liquid waste produced	Donovans Bay water quality sampling (quarterly) and biological survey (triennial) - exemption from March 2023
Hazardous materials	Equipment noise calibration
Emergency response and contingency plan	Site-wide environmental noise survey
	Site inspections

4.2 Atmospheric Monitoring

AETV undertake air quality monitoring as required by EPN 7898/1 which involves quarterly testing of stack emissions from all power generating equipment when under full load and normal operating conditions (as operational logistics permitted), with FT8s tested in a rotational manner. The location of power generating equipment is as shown on Figure 1.

However, the equipment to be used for power generating and the duration of its use is difficult for AETV to accurately plan, due to fluctuations in the national electricity and gas market. Given this, some equipment is not operational when specialist air consultants are available to undertake testing. Furthermore, the intermittent operation of the power station as well as overall reduced usage of some units may result in low hours of operation since the last stack testing event. This leads to a situation of monitoring for the sake of monitoring.

As mentioned in the previous AER, these issues are being considered as part of a review of the site's EPN, currently underway in consultation with the EPA. This review is establishing the effectiveness of existing monitoring conditions in context of the intermittent operation of the power station.

4.2.1 Stack Emission Results and Testing Frequency

The timing of quarterly stack emission monitoring events that were undertaken during the reporting period and a summary of results for each power generation unit are summarised in Table 11, with comparison to the applicable EPN limit for each unit.

Table 11: Stack testing results NOx (as NO2 @ 15 % O2)

Unit	Turbine	EPN Limit	9 Aug 23	29 Nov 23	29 Feb 24	20 Jun 24
Unit 101A	Pratt & Whitney OCGT	**70**	**70**	**70**	No Test	No Test
Unit 101B	Pratt & Whitney OCGT	**70**	No Test	**81**	No Test	No Test
Unit 102A	Pratt & Whitney OCGT	**70**	**66**	**66**	No Test	No Test
Unit 102B	Pratt & Whitney OCGT	**70**	**68**	**80**	No Test	No Test
Unit 103A	Pratt & Whitney OCGT	**70**	No Test	No Test	No Test	No Test
Unit 103B	Pratt & Whitney OCGT	**70**	Out of service since in 2018			
Unit 104	Rolls Royce Trent OCGT	**60**	**60**	**53**	**53**	No Test
Unit 201	Mitsubishi CCGT	**60**	Offline			**54**

Compliance with EPN Condition *A2 Emission Limits* was achieved with the exception of Unit 101B and 102B during the November 2023 quarterly monitoring event. Despite considerable work to identify the underlying cause of the elevated NOx concentrations from these units in recent years, this is an ongoing issue that AETV is committed to investigating and making necessary changes until it is resolved. The EPA acknowledged the stack test exceedance notification and the maintenance work on Pratt and Whitney OCGTs undertaken by AETV, including recent work to replace thermocouples. The action plan to conduct identified maintenance work and limit use of Units 101B and 102B over the following months was approved by the EPA.

Compliance with EPN Condition *A3 Stack Testing Frequency* is required when gas turbines are being utilised for commercial purposes. Similar to previous years, TVPS gas turbines were commercially operated in an intermittent manner which can be summarised as follows for the reporting period:

- Unit 101 and Unit 102 OCGT were used sparingly for most of the reporting period, particularly after the results of the November 2023 stack testing identified NOx emissions from Unit 101B and 102B were above the EPN emission limit.
- Unit 103A OCGT was not available for generation during the reporting period due to ongoing operational issues.
- Unit 104 was the most utilised OCGT during the reporting period, operating on regular basis up until late May 2024 when it became unavailable due to a pump issue.
- Unit 201 was in lay-up for the first 11 months of the reporting period hence stack testing was only required once in June 2024.

Due to low operational hours for Unit 101 and 102 between December 2023 and February 2024, AETV requested an exemption from the quarterly stack testing for these units on 16 February 2024 (Unit 103 and Unit 201 were non-operational). The EPA approved this request in a letter dated 21 February 2024. Ongoing low utilisation of all OCGTs from March 2024 led to AETV requesting an exemption from the quarterly stack testing for Unit 104 on 8 May 2024. The EPA approved this request in a letter dated 15 May 2024.

An unexpected change in generation requirements for the State in mid-May 2024 resulted in the decision to recommission Unit 201 in late May. Unit 201 was restarted on 7 June 2024 and continued on full operation for the remainder of the month. Units 101 and 102 continued to be used sparingly, however a lightning strike at TVPS late in June 2024 resulted in some damage to all units, further reduced availability of these units.

4.2.2 Summary of Compliance with Other Conditions

The EPA approved the operation of Unit 103A without water injection as part of a turbine performance investigation completed by AETV in April 2023. As part of ongoing investigations and as required under Condition A5 (1) of the EPN, AETV sought permission from the EPA on 20 June 2023 to operate the other available Pratt and Whitney turbines without water injection. The EPA approved this request on 27 July 2023.

The purpose of the ongoing investigation was to gain further understanding of the issues presenting so to rule out any mechanical, controls or water injection issues in Units 101A, 102A and 102B. Baseline measurements were collected while these units were operating without water injection and profiled against the manufacturer's specifications. Once the turbines' performance was established, water injection was reintroduced to tune water flow for optimal operation and determine its effectiveness.

The testing of Units 101A, 102A and 102B without water injection was completed during the monitoring event held in early August 2024. The results have been used to inform ongoing investigations into elevated NOx emissions from the Pratt and Whitney turbines.

4.3 Noise Monitoring

4.3.1 Noise Sources and Continuous Monitoring

Up until late May 2024, there were no notable additions of equipment or changes to the site operations during the reporting period that would add to the noise profile for the site and require an update to the site-wide environmental noise survey, or site noise emissions model.

However, as discussed in Section 2.2, Mitsubishi CCGT (Unit 201) was recommissioned from 27 May 2024 and restarted on 7 June 2024, ending a five-year non-operational period for this turbine. Correspondence with the EPA regarding restart of Unit 201 confirmed the requirement to conduct an environmental noise survey and update the site's noise model.

AETV continued to monitor noise emissions from the operation during the AER reporting period using a permanent (calibrated) noise monitoring station located on-site.

Noise data collected by this permanent monitoring station is reviewed regularly and supports early identification of potential issues. The continuous site data also provides the means to follow-up noise complaint/s in the event one should be received.

4.3.2 Annual Environmental Noise Survey 2024

An exemption had been granted by the EPA from completing the annual noise survey for the past two years (2022 and 2023). This was on the basis that there had been no operational changes at the TVPS since the last environmental noise survey was completed on 28-29 April 2021. Prior to June 2024, the operational status of TVPS was the same as the past two years.

The restart of Unit 201 in June 2024 was considered an operational change in context of the typical intermittent operation of the site hence required the annual environmental noise survey to be conducted for 2024. A noise specialist was engaged in June 2024 however a range of factors influenced the timing of survey work. The environmental noise survey was completed in early July 2024 and the noise model survey work was completed in early August. The results of this work will be reported in the 2024/25 AER.

4.4 Discharge and Receiving Water Quality Monitoring

AETV monitors the WQ of discharges from the TVPS and potential impact on the ambient receiving environment through inline probes and the collection of regular grab samples from locations as specified in the EPN and shown in Figure 2.

Description of the discharge and receiving environment water quality monitoring locations and sampling frequency are detailed in Table 12.

Table 12: Discharge and receiving environment water quality monitoring

Location	Description of Monitoring	Frequency
I1 & I2	Monitoring of water quality parameters in WWRP discharge via: ▪ I1 on the outlet of the WWRP ▪ I2 in the discharge flume sump.	Continuous and Monthly
DP1	Monitoring of water quality parameters in WWRP wastewater emissions discharged into DB, with inclusion of additional voluntary parameters: COD; Total petroleum hydrocarbons (TPH); and Trihalomethanes (THM).	Monthly
M1-M4	Monitoring of receiving environment temperature at NS locations for comparison with that of treated wastewater discharge from DP1.	Monthly
M1-M4	Monitoring using field and laboratory analysis of WQ (eutrophication) parameters at NS locations. This was originally an EPN requirement but is now undertaken on a voluntary basis. NOTE: Samples for laboratory analysis recently ceased in May 2022.	Monthly
D1-D4	Monitoring of WQ parameters in the receiving environment for DP1 and DP2 (via using field and laboratory analysis) at two locations within DB and two background locations for comparison within the Tamar Estuary.	Quarterly but exemption from March 2023
DB	In-faunal assemblages	Triennal
DP2	Monitoring of treated stormwater discharge water quality (DP2).	Quarterly
T1 and T2	Tamar River WQ monitoring as specified in the EPN has not been triggered, so is not currently required.	Not applicable

In summary, the TVPS operation has two discharges into DB which have potential to impact on the receiving environment if not treated and managed effectively:

- DP1 for discharge of treated wastewater (WW)
- DP2 for discharge of treated SW.

All samples for WQ monitoring are collected in accordance with approved Australian Standards and analysed by National Association of Testing Authorities (NATA) approved methods in a laboratory that is accredited by NATA.

The exception being free chlorine testing which the EPA has approved to be undertaken on-site in accordance with accepted methodology and trained personnel. Training record and equipment calibration records are maintained by AETV.

Field measurements are collected using appropriately calibrated equipment.

Figure 2: TVPS water quality monitoring locations

LEGEND

- DP — DISCHARGE POINT WATER QUALITY MONITORING SITE
- D — WATER QUALITY MONITORING SITES
- M — NEAR SHORE AMBIENT WATER QUALITY
- T — TAMAR RIVER MONITORING LOCATIONS T1 & T2 (NO LONGER REQUIRED TO BE MONITORED)
- T — INLINE WATER QUALITY MONITORING SITES (I1 – INLINE AT WWRP, I2 – INLINE AT SUMP)
- AMBIENT DIFFUSE & POINT SOURCES OF CONTAMINATION
- OPERATIONAL SITE BOUNDARY

COORDINATES FOR OFFICIAL DISCHARGE POINTS (OUTFALLS)			
MONITORING LOCATION	DESCRIPTION	LATITUDE	LONGITUDE
DP1	WASTE WATER DISCHARGE PIPE INTO DONOVANS BAY	41° 8" 24.8' S	146° 54" 4.6' E
DP2	STORMWATER DISCHARGE POINT INTO DONOVANS BAY	41° 8" 15.5' S	146° 54" 7' E

TAMAR VALLEY POWER STATION - BELL BAY

FIGURE 02
WATER QUALITY MONITORING LOCATIONS

COVA Stronger Together 1800 00 COVA covathinking.com ACN 117 482 814

Date: 5th APRIL 2019
Prepared by: COVA Pty Ltd
Project Number: 2946.018
Client: AETV Pty Ltd

NOT TO SCALE

N

4.5 Wastewater Monitoring (DP1)

4.5.1 Overview of WWRP Operations

The WQ of treated WW released via DP1 under normal operating conditions was typically within acceptable limits.

Similar to past reporting periods, limited operation of power generating equipment during the 2023/24 reporting period presented the following notable operational issues related to the WWRP:

- Unit 201 and associated cooling tower were offline for a significant duration of the reporting period, again resulting in limited flow throughput in the WWRP and discharge of treated WW via DP1.
- The low flow environment within the WWRP is now routinely maintained to stabilise WQ by frequent manual operation of the WWRP outlet valve and dosing with sodium hypochlorite to:
  - Rebalance DO, pH and BOD levels; and
  - Manage algal growth.

4.5.2 DP1 Wastewater Discharge Flow Rate (normal operations)

As shown in Table 13, the daily WW discharge to DB was compliant with the EPN limit of 5 ML/day and 550 ML/yr when under normal operating conditions. The low DP1 average flow rate per day is due to Unit 201 and associated CT being offline for a significant part of the reporting period. Similar to the previous 12-month period, the manual operation of the WWRP outlet valve (i.e. an atypical operation) was required to manage out-of-specification WQ.

Table 13: DP1 wastewater discharge flow rate

DP1 Wastewater Discharge	Discharge Flow Rate (1 July 2023 to 30 June 2024)	Units
Average flow rate per hour	**12.18**	kL/hr
Calculated flow rate per hour (based on EPN Limit of 5 ML/day)	208.33	kL/hr
DP1 Average flow rate per day	**0.29**	ML/day
Maximum flow rate per day	**2.44**	ML/day
EPN limit (Condition Q1 (1.2))	5	ML/day
DP1 Maximum flow rate per year	**58.74**	ML/yr
EPN limit (Condition Q1 (1.3))	550	ML/yr

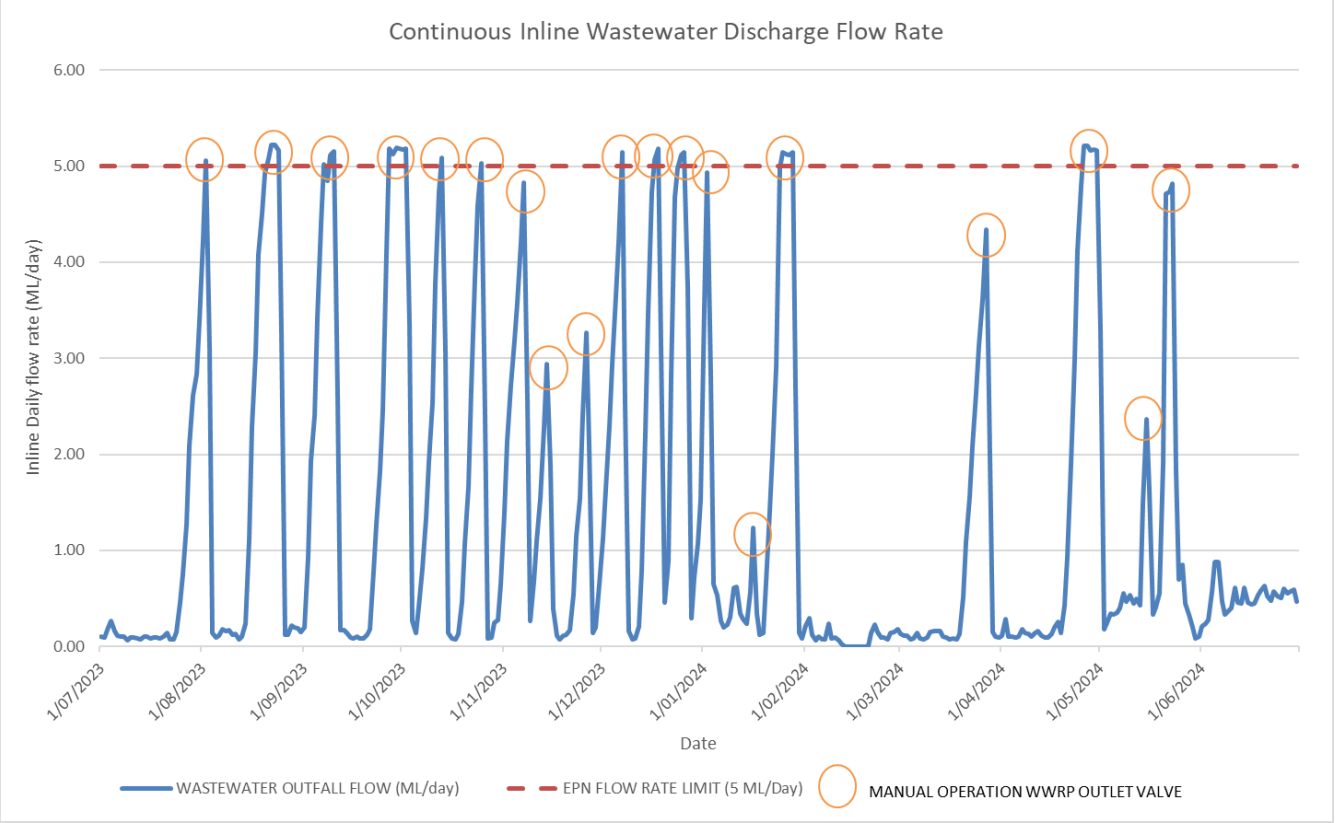
4.5.3 Influence of WWRP Outlet Closure on Discharge Flow Rate

The manual closure of the WWRP outlet valve has been previously identified to result in a false flow rate being recorded. This is due to the retention of water until conditions within the WWRP return to within EPN limits before its release. This elevated water level on the v-notch weir is measured by a non-contact ultrasonic level sensor and is calculated as a high flow and initial surging discharge flows upon reopening of the outlet valve records as false readings ranging from greater than 208 kL/hr with a maximum of 5.22 ML/day. These readings are disregarded when calculating flow rate at DP1 against the requirements of the EPN.

There were 19 periods of manual operation of the WWRP outlet valve during the reporting period, each period typically ranging from 5 to >10 days in duration (peaks associated with these periods are shown on Figure 3by an orange circle). Twelve of these peaks extend above the EPN limit of 5 ML/day.

Similar to the previous reporting period, review of the flow rates shown in Figure 3, with elimination of the false flow rate spikes (periods of atypical operation), shows low and variable flow rates during this reporting period again relates to the low WWRP water throughput associated with Unit 201 being offline and intermittent power generation during peak load demand events.

Figure 3: Wastewater discharge inline flow rate compared to EPN limit (5 ML/day)



4.5.4 Monthly DP1 Discharge Wastewater Quality

A summary of monthly treated wastewater discharge results recorded at DP1 is provided in Table 14. Water quality parameters measured in treated wastewater released from discharge point (DP1) were consistently within acceptable levels of EPN compliance during the reporting period, with the exception of one single parameter non-compliance event as reported in Table 4 (elevated suspended solids result in January 2024).

Inline readings are an indicator that WWRP may not be operating effectively and allow AETV to promptly identify potential issues and facilitate timely implementation of management measures. It is evident from the number of occasions when manual operation of the WWRP outlet valve has occurred (19), that the current WWRP intervention strategy and dedicated equipment continues to allow for earlier identification of potential WQ imbalances and improved management.

Table 14: TVPS Wastewater Retention Pond (WWRP) & In-Line Water Quality (Monthly) Monitoring Test Results

DATE	OUTFALL DISCHARGE POINT MONTHLY GRAB SAMPLE (DP1) MONITORING								IN-LINE MONITORING [1]			
Parameter	**Total SS* (mg/L)**	**pH**	**Free Chlorine (mg/L)**	**BOD* (mg/L)**	**Total P* (mg/L)**	**Ammonia (mg/L)**	**Total N* (mg/L)**	**DO (%)**	**Flow [2] kL/hr**	**Temp [3] (deg. C)**	**pH**	**DO (%)**
EPN Limit (max)	**10**	**6.5-8.5**	**0.1**	**5**	**1**	**0.5**	**5**	**80-100%**	**208.33 kL/hr**	**+/- 7 Deg.C**	**6.5-8.5**	**80-100%**
18/07/23	9	7.73	0.04	<2	0.13	0.06	0.7	94.10	2.60	10.30	8.06	105.00
14/08/23	<5	7.84	0.04	<2	0.13	0.09	0.7	90.40	6.10	10.40	8.06	107.90
12/09/23	<5	7.9	0.04	<2	0.09	0.01	0.7	91.80	5.38	13.70	7.69	110.00
17/10/23	<5	7.92	0.03	<2	0.03	<0.01	0.4	98.30	2.37	15.36	8.35	127.70
21/11/23	<5	7.88	0.02	<2	0.07	<0.01	0.6	94.18	5.30	22.40	9.07	137.64
6/12/23	<5	7.88	0.03	6[#]	0.09	0.06	0.4	105.0[#]	0.00	20.90	8.00	118.00
9/01/24	**15**	7.9	0.04	2	0.11	0.01	0.6	99.60	11.70	21.10	8.22	121.00
6/02/24	6	8.43	0.03	2	0.06	0.02	0.4	95.40	3.20	21.70	8.58	134.07
5/03/24	<5	7.91	0.02	2	0.04	0.04	0.5	94.80	3.09	18.80	8.03	113.40
16/04/24	<5	7.88	0.02	<2	0.04	0.08	0.4	95.40	5.31	16.80	8.47	121.00
14/05/24	<5	7.8	0.04	<2	0.1	0.09	1	97.00	19.41	13.60	7.85	112.00
5/06/24	<5	7.86	0.03	<2	0.12	0.09	1	97.20	24.66	11.60	7.76	115.80

* SS = Suspended Solids; BOD = Biochemical Oxygen Demand; P = Phosphorous; N = Nitrogen; DO = Dissolved Oxygen

1. Continuous WWRP inline data is linked to DCS investigation levels with alarms set to alert when action may be required

2. Max discharge of wastewater to Donovans Bay = 5 ML per day = 208.33 kL/hr

3. Temperature investigation criteria = +/- 7 degrees Celsius of the ambient temperature in Donovans Bay

[#] December 2023 BOD and DO results not reported as WWRP was not discharging during this period. Monthly sample was collected at WWRP weir rather than DP1 outfall due to valve closure and dosing of the pond over an extended period (late Sept 2023 to early January 2024).

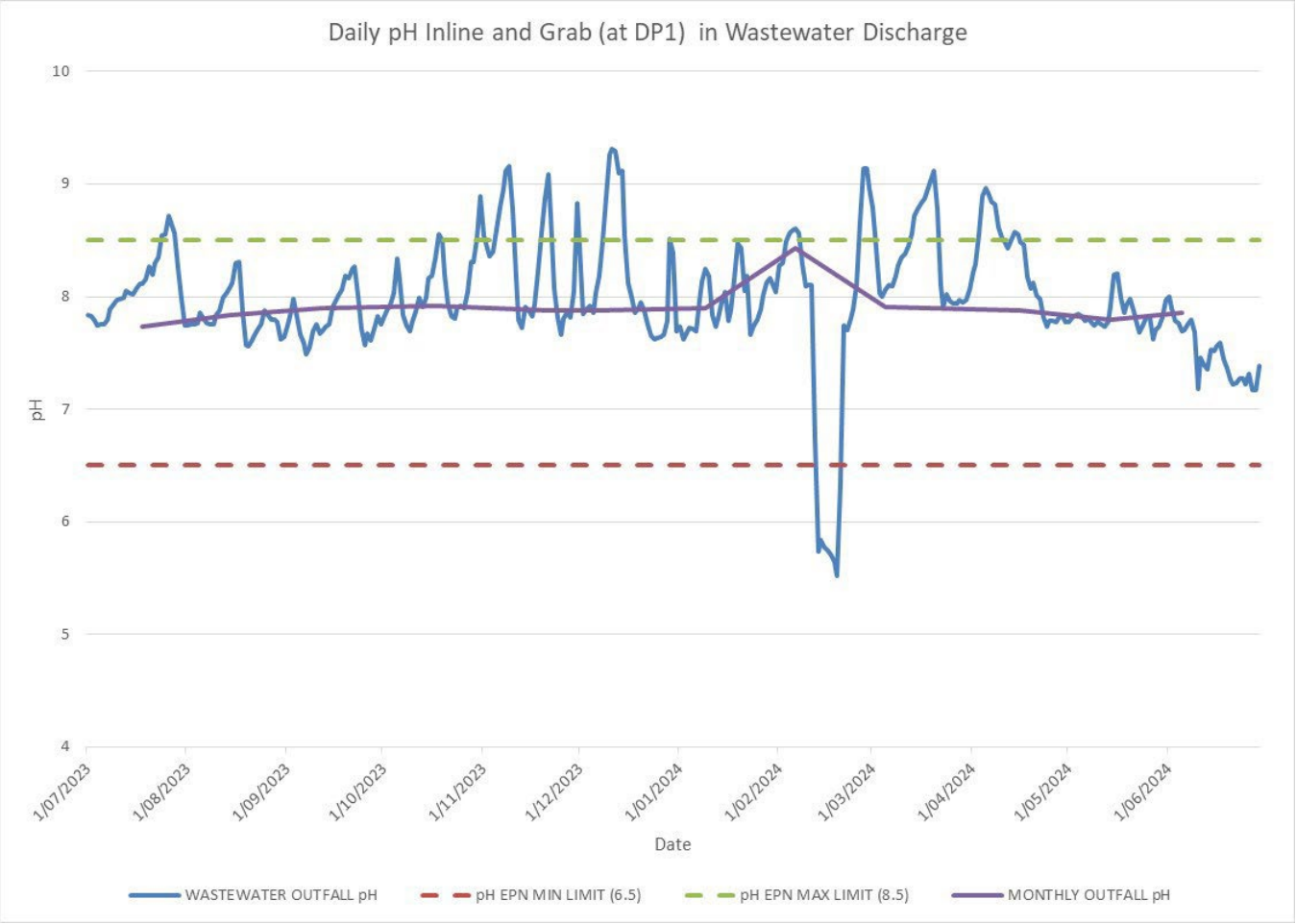
4.5.5 Daily Average Discharge Wastewater Quality (Inline I1 and I2)

Inline water quality data measured at I1 (WWRP outlet) and I2 (prior to DP1) are reviewed daily. Records are maintained of all measurements with the results used to proactively manage water quality discharged at DP1. A brief discussion on the results and the range of actions undertaken is provided in this section.

Comparison of inline and monthly outfall pH levels

Daily and monthly inline pH levels were compliant with the prescribed EPN pH range (6.5 to 8.5 pH units) when under normal operating conditions. Increasing pH readings at the WWRP outlet provide the means to identify when it is necessary to verify the water quality at outfall DP1. Depending on pH results at DP1, as determined through a grab sample, this leads to action taken at the WWRP which is usually closure of WWRP outlet valve. This action facilitates manual dosing of the pond with sodium hypochlorite to bring the out of specification WQ back to within acceptable limits (Figure 4). Dosing of sodium hypochlorite also elevates the pH for a short period.

Figure 4: Comparison of daily inline and monthly outfall (DP1) pH levels

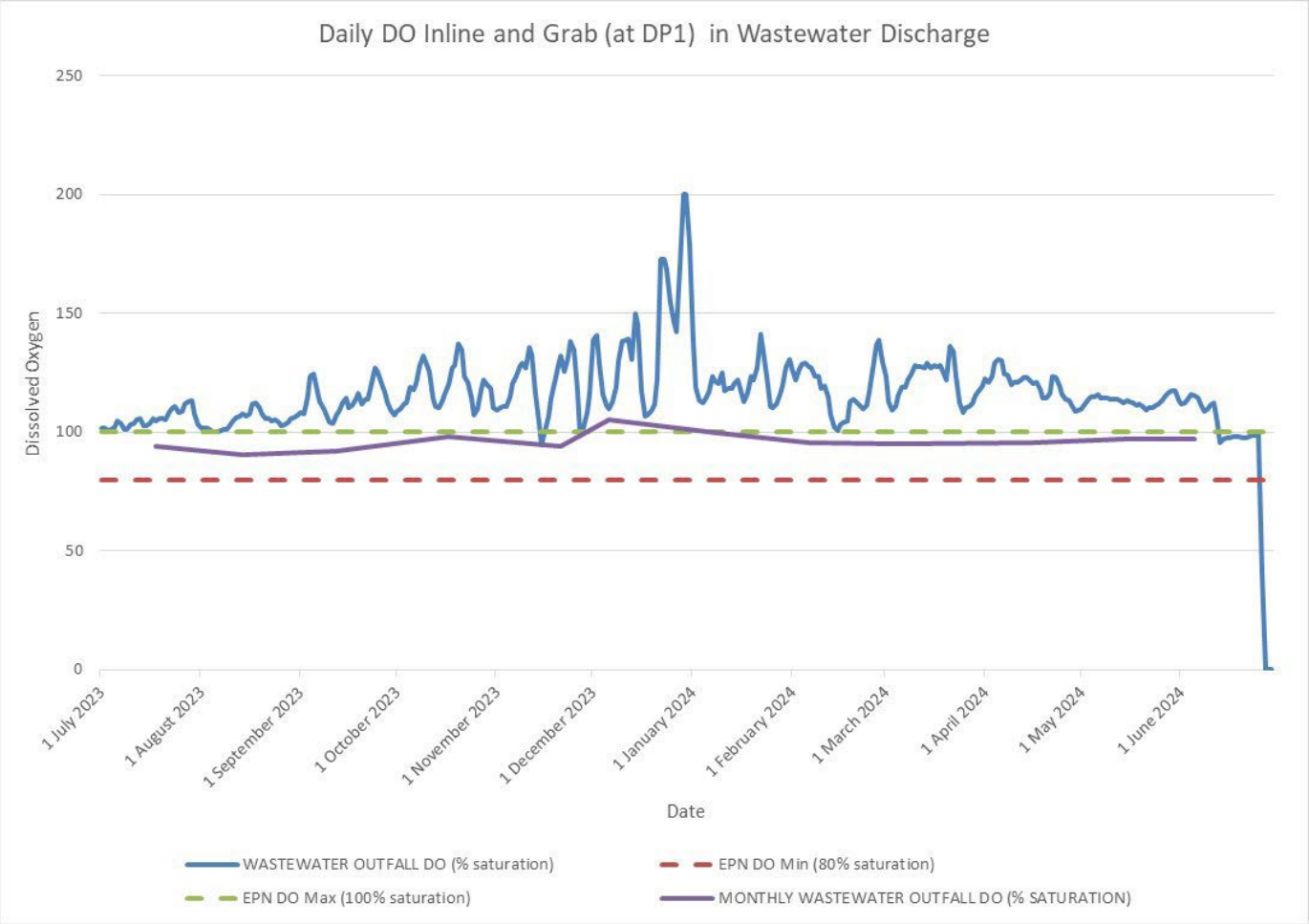


DO in wastewater discharge

As observed in previous reporting periods, the DO measured inline within the WW discharge pipe was frequently recorded at levels above the EPN upper limit of 100% saturation (Figure 5). This is due to turbulence within the pipe, aeration caused by wind over the surface of the pond, aquatic photosynthesis and the temperature of the pond water.

When measured at the end of pipe discharge point (DP1) during monthly grab sampling however, the DO level of WW discharge was consistently recorded at levels within the EPN DO range of 80 to 100% saturation, with the exception of one slightly elevated result in December 2023. The result was recorded during an extended period of nil to very minor discharge from the WWRP hence is not considered an indicator of non-compliance at DP1 when considered in context of other atypical operational factors. Hence DO levels at DP1 are considered compliant with EPN limits.

Figure 5: Daily DO inline and grab (at DP1) in wastewater discharge (% saturation)



Ongoing Investigation of WWRP stability and improved operation

Manual operation of the WWRP outlet valve under low flow / out-of-specification WQ conditions has been the primary means during the reporting period of managing ongoing instability in DP1 outflow due to low flow conditions (caused by the non-operational status of Unit 201). However, AETV are proactive in managing WWRP stability in other ways, including:

- Monthly inspections of the WWRP and associated monitoring equipment
- Scheduled maintenance activities such as desludging the pond
- Maintaining the performance of the silt boom
- Ensuring operational issues that influence WQ conditions are quickly resolved, ie coagulant dosing.

4.6 Stormwater Monitoring (DP2)

Treated stormwater discharged from the SW pond via DP2 was sampled on a quarterly basis. Laboratory analysis of SW discharge samples showed all parameters to be within EPN limits, except for the September 2023 sample which had a slightly elevated level of oil and grease at 6 mg/L compared to EPN limit of 5 mg/L. The EPA was notified of this non-compliant result and the ensuing incident is outlined in Table 4.

A summary of quarterly SW WQ results for the reporting period is provided in Table 15.

Table 15: TVPS Stormwater Water Quality (Quarterly) Monitoring Test Results

DATE				Total Petroleum Hydrocarbons					COMMENTS
Parameter	**Total SS* (mg/L)**	**Oil and Grease (mg/L)**	**BOD* (mg/L)**	**C6 -C9 Fraction**	**C10 -C14 Fraction**	**C15 -C28 Fraction**	**C29 -C36 Fraction**	**C10-C36 Fraction (sum)**	
EPN Limit (max)	**20**	**5**	**15**	**0.5 mg/L =500 µg/L[1]**					
12/09/23	<5	**6**	3	<20	<50	<100	<50	<50	Quarterly sample
17/10/23	6	**14**	5	<20	<50	<100	70	70	Additional sample
31/10/23		**9**		<20	<50	**320**	**2190**	**2510**	Additional sample
21/11/23	<5	<5	5	<20	<50	<100	90	90	Quarterly sample
6/12/23	7	<5	7	<20	<50	<100	90	90	Additional sample
9/01/24		<5		<20	<50	120	16	280	Additional sample
6/02/24	<5	<5	6	<20	<50	<100	120	120	Quarterly sample
14/05/24									No sample as no discharge
5/06/24	Missing	<5	Missing	<20	<50	<100	<50	<50	Quarterly sample [2]

* SS = Suspended Solids; BOD = Biochemical Oxygen Demand

1. Monitoring results in table are reported in µg/L

2. Missing data due to issue with COC sent to lab; additional sample collected in August

4.7 Tamar River Monitoring

4.7.1 Water Temperature Comparison

The discharge water temperature at DP1 (and inline at I1 and I2) were consistently within the prescribed +/- 7 degrees Celsius of the ambient water temperature (EPN Condition E4) measured at nearshore locations within Donovans Bay. Figure 6 indicates there is no significant variation between temperature results at the WWRP and DP1 compared with near shore results. However, November and December 2023 temperature results show slightly more difference between monitoring sites than is typical in this reporting period. It is noted similar differences have been recorded in previous years hence, the results are consistent with seasonal and long-term trends as shown in Figure 7.

Figure 6: Water temperature comparison (near shore, inline and outfall DP1)

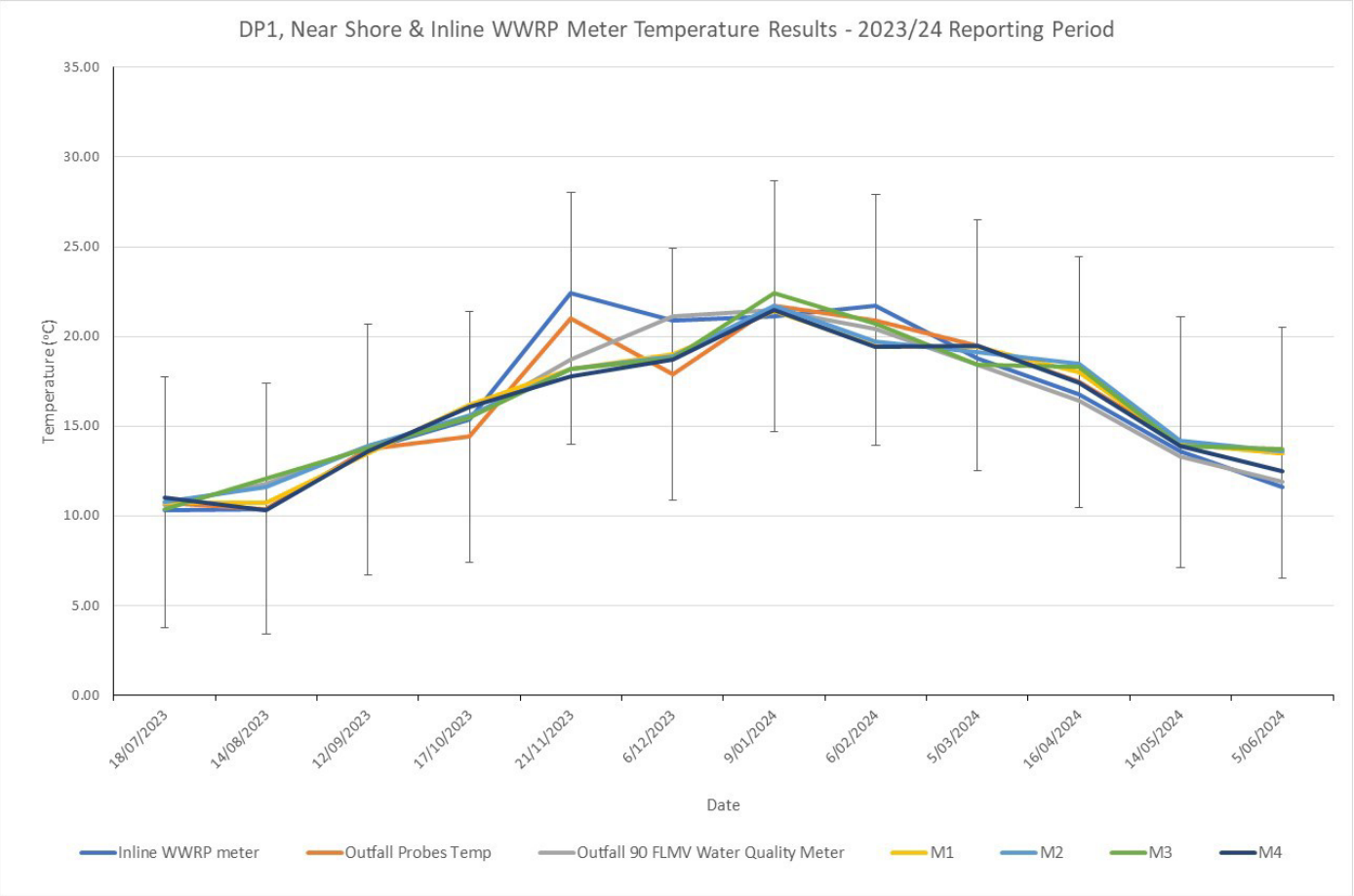
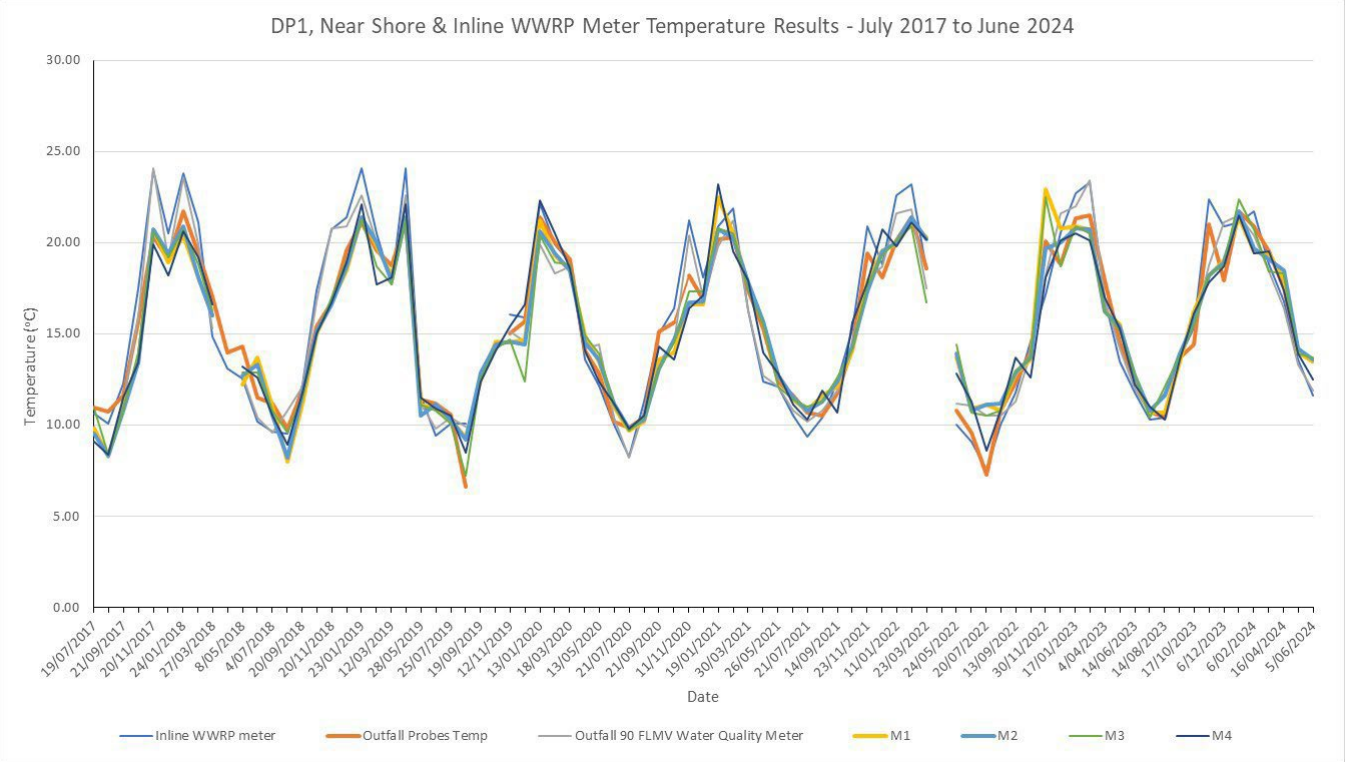


Figure 7: Long-term water temperature comparison (July 2017 to June 2024)



4.7.2 Donovans Bay Monitoring

Both the treated WW from the TVPS operation (DP1) and treated SW (DP2) discharge into DB. The Bay has a wide opening onto the well flushed Tamar Estuary.

The EPA granted approval in May 2023 to discontinue the routine ambient monitoring while the activity is operating at reduced operational capacity. The suspension of the quarterly and biological monitoring of Donovan's Bay required by Condition M6 is due to monitoring data demonstrating that there has been no impact to the biological communities or water quality of the nearfield ambient environment. However, this suspension only applies during low utilisation of the plant and as such, the operation of the plant must be monitored for any change including increase in utilisation of power generating equipment and/or discharge of wastewater.

4.7.3 Voluntary Near Shore Water Quality Monitoring

AETV continues to voluntarily monitor WQ within the near shore (NS) environment on a monthly basis. The NS WQ monitoring locations are shown on **Figure 1**.

This monitoring has been undertaken to date as an additional precautionary measure to facilitate early detection of potential issues within the Bay should they arise (prior to 2015, this monitoring was a requirement of the EPN). However, given the ongoing reduced and intermittent operation of the site, this monitoring is predominantly useful for ambient water temperature data (refer to Section 4.7.1).

5.0 Other Important Environmental Matters

5.1 Engagement with Regulators and Other Stakeholders

AETV maintains correspondence with the regulators as required to ensure transparency in operational aspects and environmental management practices. One meeting was hosted by AETV with the EPA during the reporting period, including:

- 3 June 2024 – Meeting held at TVPS with site's regulatory officer to continue discussions on the draft revised EPN and other operational matters including the restart of Unit 201.

AETV completed other regulatory reporting requirements including:

- National Pollutant Inventory (NPI) report
- National Greenhouse and Energy Reporting (NGER Scheme).

5.2 AETV Site Inspections and Internal Audits

During the reporting period, AETV continued to conduct routine daily inspections of the TVPS plant, with monthly inspections conducted concurrently with monthly WQ sampling. The monthly site inspections during the reporting period noted:

- WWRP and outfall WQ meter readings (inline, portable and outfall sample)
- WWRP and outfall access, general operational issues and tide status
- NS portable WQ meter readings
- Periodic (monthly) site walkover daily inspection observations
- SW pond and outflow conditions.

In addition to recording the effective daily operation of the TVPS, the site inspections monitored the following issues during the reporting period to identify the need for any required remedial works:

- WWRP maintenance
- Waste management issues
- Areas of vegetation and weeds requiring management and/or control.

Proactive internal auditing (non-regulatory) included:

- Hazardous chemical compliance audit – reviewed hazardous chemical register and inventory management in addition to inspection of storages and review of handling practices.

6.0 Summary of Commitments

The commitments in Table 16 below are in addition to those prescribed in the EPN. These commitments relate to ongoing measures, specific environmental and maintenance improvement works for implementation during the 2024/25 AER reporting period and works for implementation in the future which will be reported in the next AER.

In addition to these commitments, the following notable maintenance activities are proposed for implementation over the next twelve (12) month reporting period: Routine outages for each of the power generating units including:

- Unit 104 – 14/07/2024 to 06/09/2024
- Unit 102 – 22/09/2024 to 07/10/2024
- Unit 103 – On extended outage 25/9/2023 to 31/12/2024 due to mechanical issues requiring OEM assistance (could be extended further)
- Unit 101 – 27/10/2024 to 11/11/2024
- Unit 201 – 19 to 30 May 2025 (to keep it on the 10-day return to service)

TVPS operational notes:

- Mitsubishi CCGT Unit 201 was temporarily operational from early June 2024 until end of August 2024 before once again being placed in dry layup with a maintenance schedule for a 10 day return to service.
- The peaking plant units will remain available and on standby to meet generation demands and capacity needs as required.

Table 16: Summary of additional commitments for implementation

Ref	Issue / Opportunity for Improvement	Commitments	Status of Implementation in 2023/24	Actions for 2024/25
Noise Control				
1	Ongoing operation of (and recalibration as needed) of a permanent noise monitoring station next to the site to provide ongoing noise emission monitoring data for the operation and assist with trouble shooting any noise issues or complaints. Further investigation may be required if noise complaints are received.	AETV will continue to operate (and recalibrate as needed) the permanent noise monitoring station.	Actions continued to be undertaken as described, they are ongoing. No noise issues required implementation of additional management measures.	Implementation of commitment is ongoing.
EMS Roadmap				
2	As a subsidiary of Hydro, TVPS operations are integrated into relevant management systems developed for the wider organisation. Hydro implements a third-party certified ISO 14001:2015 environmental management system (EMS) which to date, has been broadly applied to TVPS.	An EMS roadmap will be developed to convey how the existing environmental management approach at TVPS aligns with the overarching Hydro EMS framework. Once complete, an action plan will be developed to enhance the existing effective and proactive approach undertaken at TVPS through ensuring a coordinated approach is being implemented.	Review of an internal EMS gap analysis completed for TVPS to inform development of the EMS Roadmap.	Develop the TVPS EMS Roadmap and associated action plan.

Ref	Issue / Opportunity for Improvement	Commitments	Status of Implementation in 2023/24	Actions for 2024/25
WWRP Wastewater Quality Management				
3	Elevated levels of suspended solids have been occasionally recorded in WWRP discharge in the past, leading to non-compliance with the EPN limit. This is largely attributed to the water supplied from Curries River (untreated water) to the site which naturally contains higher levels of suspended solids.	AETV will continue to: - Communicate with TasWater regarding the need for prior notice of change to raw water source supplied to the site; - Use a proprietary polymer (added to the CT water) to flocculate and enable skimming of particulates from the wastewater stream when operating on Curries River water; and - Operate and maintain the silt boom on the surface of the WWRP.	Actions continued to be undertaken as described, they are ongoing.	Implementation of commitment is ongoing.
4	The current low flow conditions through the WWRP (due to the intermittent operation of the plant) lead to elevated levels of pH and DO which would exceed EPN limits at DP1 if actions are not promptly undertaken (e.g. manual closure of the WWRP outlet valve and manual hypochlorite dosing). To allow for timely response to atypical operating conditions, AETV operate a number of WQ meters [inline (I1 and I2), outfall (DP1), SWAN AMI SAC254 analyser] to measure WQ in treated WW being discharged to DB. Use of the WQ meters is critical to compliance as they enable improved monitoring of a wide range of parameters, providing the means to better predict issues within the WWRP as they happen.	AETV will continue to: - Monitor WQ of the treated WW from WWRP being released for discharge via DP1 to DB using the inline and outfall meters; - Regularly inspect and re-calibrate these monitoring devices to ensure effective operation of equipment, with replacements provided as needed; and - Undertake scheduled monthly cleaning of probes and re-calibration with a hand-held meter.	Actions continued to be undertaken as described, and they are ongoing. Routine inspections of the probes and review of data obtained has identified an issue with their performance in the current location within the WWRP. This is potentially due to variable water levels and temperature in the pond hence review of the probe location is considered required to determine if performance can be improved through placement in a new location.	Implementation of commitment is ongoing. Investigate placement of pH and DO probes in WWRP to improve performance.
Wastewater Retention Pond Desludging Operations				
5	Sludge accumulates in the WWRP and requires regular removal to ensure continued effective operation of the WW treatment system. This sludge needs to be tested to ascertain its suitability for reuse and/or approved method of disposal based on the level of contaminants it contains. A methodology was approved for dewatering and reuse of sludge for a previous desludging operation (Hydro, 2015).	When routinely removing sludge from the WWRP, AETV will: - Test the concentrations (totals and TCLP) of metals in the sludge; and - Manage the dewatering and reuse of sludge in accordance with: - The original methodology developed for a desludging operation; and - As appropriate for its soil classification based on IB105 (EPA, 2018c).	Due to low flow, WWRP sludge volume slowly accumulates hence is typically desludged on an as needed basis. Routine monitoring of the pond sludge level enables this work to be scheduled appropriately. During the reporting period, desludging of WWRP was undertaken on 14-16 February. Sludge sampling results confirmed the material was acceptable to store and reuse on site.	AETV is preparing a scope of works for the potential construction of a dedicated sludge dewatering facility on-site. However, at present, this is subject to ongoing availability of suitable alternatives.

Ref	Issue / Opportunity for Improvement	Commitments	Status of Implementation in 2023/24	Actions for 2024/25
Hazardous Chemicals Management				
6	The CCGT must be maintained in 'dry layup' if not operated for extended periods. This is due to corrosion issues that are likely to occur if the CCGT is retained in a state of 'wet layup'. The application of film forming substances are being investigated for use in the CCGT to improve corrosion protection and flexibility of operation.	AETV will: Undertake modelling to establish the potential environmental impact of using these types of substances; and Liaise with the EPA regarding the introduction of a film forming substance for use at the site in the event a suitable product is identified.	Preliminary investigation of substances has been undertaken.	Progress investigation and establish potential environmental impacts if used in the operation of the CCGT.
7	Sulphuric acid pump skid bunding – It has been determined if there were a major leak/pipe failure within the sulphuric acid pump skid, the bunding is not sized adequately to contain the full volume of the sulphuric acid tank.	AETV will: - Identify and review feasible options to address the issue, such as raise the bund wall; - Implement preferred option; and - Ensure the system will return any spillage to the acid tank bunding which is the correct capacity to hold 5 kL.	Key works have been completed including installation of a valve on the bulk tank which remains closed when not in operation. While the above action has significantly reduced the risk, further works are planned and may include actions such as raising the bund wall.	Review completed works to re-evaluate the risk and develop plan to undertake any remaining work required.
Stormwater Management – Discharge Quality				
8	Elevated levels of oil and grease have been occasionally recorded in SW discharge in the past, leading to non-compliance with the EPN limit. These elevated results have been attributed to issues such as minor oil spills on site, and maintenance of oily-water separators located before the SW pond.	AETV will continue to: - Monitor WQ of the SW being released for discharge via DP2; - Maintain oily-water separators and containment equipment at the SW pond; and - Raise awareness regarding spill management on site.	Proposed improvements to existing oil containment were delayed due to desludging requirement prior to installation. However, actions continued to be undertaken as described including: - Operation of oil soak booms on the surface of SW pond. - Oil spill response trailer has been deployed on the site.	Installation of an oil containment boom to complement existing boom.
9	Desludging the SW pond to return the volume to full capacity. An analysis of the sludge is required prior to any work to determine how it should be managed.	Following completion of necessary project planning steps, AETV will progress the following work: - Obtain necessary approvals; and - Complete sludge removal works when practicable.	The following work was completed during the reporting period: - Pond capacity assessment. - Sludge testing to inform management options. - Plan to clean out the pond based on capacity assessment and sludge testing. Observations and monitoring of the SW pond continued throughout the reporting period to inform timing of this work.	Obtain approval from relevant authority to progress cleaning out the pond as soon as practicable.

7.0 References

Author	Reference Title
ANZECC/ ARMCANZ, 2018	*National Water Quality Management Strategy. Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Water Quality Guidelines for aquatic ecosystems). Australian and New Zealand Environment Conservation Council, and Agriculture and Resource Management Council of Australia and New Zealand. August 2018.
ANZECC/ ARMCANZ, 2018a	*DGVs for aquatic ecosystems of coastal and marine waters of Tasmania*. ANZECC. August 2018.
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Aquenal, 2021	*Biological Survey of Donovans Bay*, October 2020. Report for AETV Power and COVA, 44 pp.
COVA, 2023	Annual Environmental Review: 2022-2023 – Tamar Valley Power Station – Final. Project No. 2946.023. COVA Thinking Pty Ltd. Dated 30 October 2023.
EPA, 2012a	*Environment Protection Notice 7898/1* issued to Aurora Energy (Tamar Valley) Pty Ltd, for the Operation of a Gas Fired Power Station at the Tamar Valley Power Station, Bell Bay, Tasmania. Environment Protection Authority Tasmania. Dated 20 Nov 2012.
EPA, 2016b	Correspondence titled: *Variation of Stack Testing Frequency*. EPA Acting Manager, Environmental Operations North. Environment Protection Authority Tasmania. Dated 5 October 2016.
EPA, 2018c	Correspondence titled: *Approval to undertake analyses using a non-NATA accredited laboratory*. EPA Deputy Director. Environment Protection Authority Tasmania. Dated 2 July 2018.
EPA, 2023d	Correspondence titled: *Aurora Energy (Tamar Valley) Pty Ltd Request to Operate Pratt and Whitney Turbine Without Water Injection*. Environment Protection Authority. Dated 27 July 2023.
EPA, 2024e	Correspondence titled: *Tamar Valley Power Station, Request for Stack Testing Exemption (Pratt and Whitney turbines)*. Environment Protection Authority. Dated 21 February 2024.
EPA, 2024f	Correspondence titled: *Tamar Valley Power Station, Request for Stack Testing Exemption (Rolls Royce Unit 104)*. Environment Protection Authority. Dated 15 May 2024.
Ektimo, 2023a	*AETV Pty Ltd, Georgetown, Emission Testing Report, Compliance Testing Quarter 3 - 2023* (Report No. R015348) (Ektimo Pty Ltd, 30 August 2023)
Ektimo, 2023b	*AETV Pty Ltd, Georgetown, Emission Testing Report, Compliance Testing Quarter 4 - 2023* (Report No. R016152) (Ektimo Pty Ltd, 15 December 2023)
Ektimo, 2024c	*AETV Pty Ltd, Georgetown, Emission Testing Report, Compliance Testing Quarter 1, 2024* (Report No. R016642) (Ektimo Pty Ltd, 12 March 2024)
Ektimo, 2024d	*AETV Pty Ltd, Georgetown, U201 Emission Testing Report* (Report No. R017299) (Ektimo Pty Ltd, 28 June 2024)
Hydro Tasmania, 2024	*Tamar Valley Site Incident Response Plan*, Rev 2.0 (Hydro Tasmania, January 2024).
NPI, 2011	*National Pollutant Inventory Combustion in Boilers Manual Version 3.6 December 2011* – www.npi.gov.au

Appendix 1 – EPN 7898/1 (r1)

ESO-1

THIS IS THE DOCUMENT MARKED ESO-1
REFERRED TO IN THE AFFIDAVIT OF
SWORN AT HOBART IN TASMANIA THIS
7TH DAY OF DECEMBER 2012 BEFORE ME:

JUSTICE OF THE PEACE
NUMBER 2198

ENVIRONMENT PROTECTION NOTICE No. 7898/1

Issued under the *Environmental Management and Pollution Control Act 1994*

Issued to: **AURORA ENERGY (TAMAR VALLEY) PTY LTD**
ACN 123 391 613
LEVEL2 21 KIRKSWAY PL
HOBART TAS 7000

Environmentally Relevant Activity: **The operation of a gas fired power station (ACTIVITY TYPE: Fuel Burning)**
TAMAR VALLEY POWER STATION, EAST TAMAR HWY
BELL BAY TAS 7253

GROUNDS

I, Alexander Schaap, Director, Environment Protection Authority, being satisfied in accordance with section 44(1)(d) and (e) of the *Environmental Management and Pollution Control Act 1994* (the EMPCA) and in relation to the above-mentioned environmentally relevant activity that:-

it is desirable to vary the conditions of a permit (see table below); and

it is necessary to secure compliance with the general environmental duty,

hereby issue this environment protection notice to the above-mentioned person as the person responsible for the activity.

Permit No.	Date Granted	Granted By
DA 2007/072	25 September 2007	George Town Council

PARTICULARS

The particulars of the grounds upon which this notice is issued are that:

1 Because the permit conditions need to be varied to reflect changed management or operations practices.

2 Because the permit conditions need to be varied to reflect current or updated terminology and/or to clarify the meaning of the conditions.

3 Because the permit conditions need to be varied to reflect current regulatory practice.

4 Because the permit conditions need to be varied to reflect continuous improvement consistent with the objectives of EMPCA.

5 The permit conditions need to be varied to ensure that there are adequate safeguards against environmental harm or nuisance being caused by the activity.

6 The permitted quantity of materials processed and/pr produced by the activity needs to be varied to reflect the maximum daily and annual wastewater discharge levels.

Further details of the particulars are contained in Schedule 4 of this notice.

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue: 20 NOV 2012

DEFINITIONS

Unless the contrary appears, words and expressions used in this Notice have the meaning given to them in Schedule 1 of this Notice and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Notice, the EMPCA prevails to the extent of the inconsistency.

REQUIREMENTS

In accordance with s.44(3) of the EMPCA, the person responsible for the activity is required to comply with the conditions contained in Schedule 2 of this Notice. These conditions prevail over the terms of the permit to the extent of any inconsistency.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice, that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding 1000 penalty units in the case of a body corporate or 500 penalty units in any other case (at the time of issuance of this Notice one penalty unit is equal to $130.00).

NOTICE TAKES EFFECT

This Notice takes effect on the date on which it is served upon you.

APPEAL RIGHTS

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in the notice, within 14 days from the date on which the notice is served, by writing to:

The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
Hobart TAS 7001

Signed: _____

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date: 20 NOV 2012

Table Of Contents

Attachments

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue: 20 NOV 2012

Schedule 1: Definitions

Aboriginal Relic has the meaning described in section 2(3) of the *Aboriginal Relics Act 1975*

Activity means any environmentally relevant activity (as defined in section 3 of EMPCA) to which this document relates, and includes more than one such activity

Authorized Officer means an authorized officer under section 20 of EMPCA

Best Practice Environmental Management or **'BPEM'** has the meaning described in Section 4 of EMPCA.

CCGT Combined Cycle Gas Turbine

commissioning means the period from the date of initial testing of each new gas turbine, to the date the permit holder has certified official acceptance of that gas turbine as complying with the permit holder's performance specifications.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

DRP means Decommissioning and Rehabilitation Plan

Emergency Response And Contingency Plan means the most recent verion of the plan as submitted to the Director in the Annual Environmenal Review.

EMP means the Tamar Valley Power Station Development Proposal and Environmental Management Plan prepared by Alinta Energy Pty Ltd dated June 2007.

EMPCA means the *Environmental Management and Pollution Control Act 1994.*

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance and **Pollutant** each have the meanings ascribed to them in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils and chemicals.

Eutrophication Monitoring Program means the 'Proposed Chhlophyll-a Sampling Regime for Tamar Valley Power Station' prepared by SEMF Pty Ltd dated March 2010 as approved by the Director on 29 April 2010 and as ammended from time to time with the written approval of the Director.

noise means acoustic energy as measured as sound pressure.

noise sensitive premises includes residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

Nominated Exhaust Points means;
(1) one stack of one Pratt and Whitney Open Cycle Gas Turbine per sampling event. Each of the stacks of the three machines is to be sampled on a rotating basis.
(2) the Rolls Royce Trent Open Cycle Gas Turbine stack, and
(3) the Mitsubishi Combined Cycle Gas Turbine stack.

OCGT Open Cycle Gas Turbine.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Planning Authority means the Council(s) for the municipal area(s) in which The Land is situated.

Stack Test means the taking of measurements and the collection of samples for analysis from within a chimney, stack or flue.

start-up and shut-down means
start up operations before exhaust gas temperature reaches 500 °C and for a period not exceeding 15 minutes thereafter; and
shut down operations after exhaust gas temperatures decrease below 500 °C.

Stormwater means water traversing the surface of the land as a result of rainfall.

Tasmanian Noise Measurement Procedures Manual means the Noise Measurement Procedures Manual dated July 2004 issued by the Director of Environmental Management in accordance with regulation 25 of the *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2004* and includes any subsequent versions of the document.

The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The land falls within the area defined by:

1 CT 131620/1 and
2 land denoted as 'Lot 2' on the plan shown at Attachment 1

Waste has the meaning ascribed to it in Section 3 of EMPCA

Wastewater means all process water generated by the activity and discharged to Discharge Point 1.

Water Quality And Biological Monitoring Program means the 'Updated Tamar River and Donovans Bay Sampling Program' prepared by GHD Pty Ltd dated November 2008 and as ammended from time to time with the written approval of the Director.

Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

1 The activity must not exceed the following limits:

1.1 77 tonnes per hour of total capacity to consume fuel. (Annual fees are derived from this figure.)

1.2 5 megalitres per day of discharge of wastewater to Donovans Bay

1.3 550 megalitres per annum of discharge of wastewater to Donovans Bay

1.4 100 hours per 12 month period of burning of distillate fuel

General

G1 Compliance with EMP and BPEM

The Land must be developed and used, and the activity on The Land must be carried out and monitored, in accordance with the environmental management measures set down in the Environmental Management Plan ('EMP'), and in accordance with best practice environmental management, unless otherwise specified in these conditions or contrary to EMPCA.

G2 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G3 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G4 No changes without approval

1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the *Land Use Planning and Approvals Act 1993*, or approved in writing by the Director:

1.1 a change to a process used in the course of carrying out the activity; or

1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or

1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G5 Hazard Identification

The hazard identification and risk management program dated March 2008, as ammended from time to time with the written approval of the Director, must be implemented.

G6 Complaints register

1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

1.1 the time at which the complaint was received;

1.2 contact details for the complainant (where provided);

1.3 the subject-matter of the complaint;

1.4 any investigations undertaken with regard to the complaint; and

1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.

2 Complaint records must be maintained for a period of at least 3 years.

Atmospheric

A1 Stack testing facilities

1 The following stack testing facilities must be maintained at all nominated exhaust points:

1.1 sampling positions must be in accordance with Australian Standard AS 4323.1 (*Stationary source emissions - selection of sampling positions*), or as approved in writing by the Director;

1.2 safe sampling platforms must be located to allow access to the sampling positions and safe access to these sampling platforms must be provided; and

1.3 all necessary services required for the test method prescribed must be provided.

A2 Emission limits

1 Except during start-up and shut-down, the concentration of substances (given for a dry gas at 0 °C and an absolute pressure of 101.325 kPa) listed below in emissions from the nominated exhaust points must not exceed the limits specified below.

2 Emission limits (mg per cubic metre)

Machine	NO_x (expressed as 15% O_2)
Mitsubishi CCGT operating on natural gas	60
Pratt and Whitney OCGT operating on gas	70
Pratt and Whitney OCGT operating on distillate	110
Rolls Royce Trent OCGT operating on gas	60
Rolls Royce Trent OCGT operating on distillate	110

A3 Stack Testing Frequency

1 Stack tests must be carried out for any new gas turbines within 2 months of the completion of commissioning for that particular machine, and quarterly thereafter unless otherwise approved by the Director.

2 The stack of a Pratt and Whitney gas turbine must be sampled quarterly unless otherwise approved by the Director.

3 Stack tests must occur when the turbines are operating under full load and normal operating conditions.

A4 Emission limit exceedances

In the event that an emission limit is exceeded, the Director must be notified of the exceedance within 48 hours

A5 Operation of Pratt and Whitney turbines

1 Except during start-up and shut-down, or as otherwise approved by the Director, the Pratt and Whitney gas turbine units must not be operated without water injection.

2 A register of gas turbine operation without water injection must be maintained for a period of at least 3 years and be made available for inspection by an authorised officer upon request. The register must, as a minimum, record the following detail:

2.1 Gas turbine unit operated without water injection;

2.2 Date and time that operation without water injection commenced;

2.3 Duration of operation without water injection; and

2.4 Brief description of reason operation without water injection was required.

Decommissioning And Rehabilitation

DC1 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

DC2 DRP requirements

Unless otherwise approved in writing by the Director, a draft Decommissioning and Rehabilitation Plan (DRP) for the activity must be submitted for approval to the Director within 30 days of the Director being notified of the planned cessation of the activity or by a date specified in writing by the Director. The DRP must be prepared in accordance with any guidelines provided by the Director.

DC3 Rehabilitation following cessation

1 Following permanent cessation of the activity, and unless otherwise approved in writing by the Director, The Land must be rehabilitated including:

1.1 stabilisation of any land surfaces that may be subject to erosion;

1.2 removal or mitigation of all environmental hazards or land contamination, that might pose an on-going risk of causing environmental harm; and

1.3 decommissioning of any equipment that has not been sold.

2 Where a Decommissioning and Rehabilitation Plan (DRP) has been approved by the Director, rehabilitation must be carried out in accordance with that plan.

DC4 Temporary suspension of activity

1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.

2 During temporary suspension of the activity:

2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and

2.2 If required by the Director, the person responsible must prepare and implement a Care and Maintenance Plan to the satisfaction of the Director.

3 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

Discharge

DS1 Authorised Discharge Points

Wastewater and stormwater from the activity must only be discharged from the authorised discharge points, as specified below:

Authorised Discharge Point	Purpose	GPS Coordinates Northings	GPS Coordinates Eastings
Discharge Point 1 (Refer Attachment 2)	Point of discharge of wastewater to Donovans Bay	5445700	491740
Discharge Point 2 Refer Attachment 2)	Point of discharge of stormwater to Donovans Bay	5445832	491758

Effluent Disposal

E1 Emission Limits

1 The pH of wastewater discharged to Discharge Point 1 must be between 6.5 and 8.5.

2 The Dissolved Oxygen concentrations must be between 80% and 100% saturation.

3 The concentrations in discharged wastewater of substances or measures listed in Column 1 of the table below must not exceed the limits specified in Columns 3 and 4 at the point at which effluent is discharged to water when measured in the units specified in Column 2. For the purpose of this condition '90th percentile' means the value at which the relevant parameter is exceeded by no more than 10 percent of all sample results over the twelve month period.

Column 1	Column 2	Column 3	Column 4
Parameter	**Unit**	**90th percentile**	**Maximum**
Biochemical Oxygen Demand	mg/L		5
Total Suspended Solids	mg/L	8	10
Ammonia Nitrogen	mg/L		0.5
Total Nitrogen	mg/L	0.5	1
Total Phosphorus	mg/L	0.5	1
Free Chlorine	mg/L		0.1

E2 Stormwater Emission Limits

Stormwater discharged from Discharge Point 2 must not exceed the limits specified below

Parameter	Maximum (mg/L)
Total Suspended Solids	20
Biochemical Oxygen Demand	15
Total Petroleum Hydrocarbons	0.5
Oil and Grease	5

E3 Stormwater

1 Polluted stormwater that will be discharged from The Land must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.

2 Notwithstanding the above, all stormwater that is discharged from The Land must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside the Land.

3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained on The Land. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

4 Stormwater discharged in accordance with this condition must not be directed to sewer without the approval of the operator of the sewerage system.

E4 Discharge Water Temperature

1 In the event that the temperature of wastewater discharged to Discharge Point 1 exceeds the investigation level, which is +/-7 degrees Celsius of the ambient water temperature in Donovans Bay, the Director must be notified within 24 hours. The notification must include, but not be limited to:

1.1 The duration and extent of the temperature exceedance; and

1.2 A timeline for providing:

1.2.1 an explanation as to why the investigation level was exceeded; and

1.2.2 strategies to limit the temperature to less than +/-7 degrees Celsius of the ambient water temperature in Donovans Bay, or demonstrate that the reported levels would not cause or threaten environmental harm.

<u>Hazardous Substances</u>

H1 Spill kits

Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials.

H2 Storage and handling of hazardous materials

Unless otherwise approved in writing by the Director, environmentally hazardous material held on The Land, including chemicals, fuels and oils, must be located within impervious bunded areas or spill trays which are designed to contain at least 110% of the total volume of material.

Monitoring

M1 Dealing with samples obtained for monitoring

1 Any sample or measurement required to be obtained under these conditions must be taken and processed in accordance with the following:

1.1 Australian Standards, NATA approved methods, the American Public Health Association Standard Methods for the Analysis of Water and Waste Water or other standard(s) approved in writing by the Director;

1.2 samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a laboratory approved in writing by the Director, for the specified test;

1.3 results of measurements and analysis of samples and details of methods employed in taking measurements and samples must be retained for at least three years after the date of collection; and

1.4 noise measurements must be undertaken in accordance with the Tasmanian Noise Measurement Procedures Manual.

M2 Location of Monitoring Points

For the purpose of this Notice the following sample location points are to be used (refer Attachment 2), unless otherwise approved in writing by the Director.

Monitoring Program	Sampling Location	Purpose	Northing	Easting
Tamar River	T1	The site at which wastewater would be discharged from an outfall pipe into the Tamar Estuary (if required)	5445674	491271
Tamar River	T2	Control / Reference site	5445065	491900
Donovans Bay	D1	Monitors quality of effluent being released from Discharge Point 1	5445700	491740
Donovans Bay	D2	Monitors water quality in Donavans Bay	5445696	491624
Donovans Bay	D3	Background site representative of a small bay	5444393	492744
Donovans Bay	D4	Background site representative of a small bay	5443846	491669
Effluent Quality	Discharge Point 1	Monitors quality of wastewater dischaged to Donovans Bay	5445700	491740
Stormwater Quality	Discharge Point 2	Monitors quality of stormwater discharged to Donovans Bay	5445832	491758

M3 Wastewater Monitoring

Samples of wastewater discharge must be collected by grab sampling at Discharge Point 1, and must be analysed for the parameters specified below at the sampling frequency specified, unless otherwise approved in writing by the Director.

Parameter	Unit	Frequency
Flow		Continuous
Temperature	Degrees C	Continuous
pH	unit	Daily
Dissolved Oxygen	%	Daily
Biological Oxygen Demand	mg/L	Monthly
Total Suspended Solids	mg/L	Monthly
Ammonia	mg/L	Monthly
Total Nitrogen	mg/L	Monthly
Total Phosphorus	mg/L	Monthly
Free Chlorine	mg/L	Monthly

M4 Tamar River Monitoring

The Water Quality And Biological Monitoring Program must be implemented following any commencement of discharge to the Tamar River through an outfall, unless otherwise approved in writing by the Director.

M5 Stormwater Monitoring

Samples of stormwater discharge must be collected by grab sampling at Discharge Point 2 and must be analysed for the parameters specified below using the sampling frequency specified, unless otherwise approved in writing by the Director.

Parameter	Unit	Frequency
Total Suspended Solids	mg/L	Quarterly
Biochemical Oxygen Demand	mg/L	Quarterly
Total Petroleum Hydrocarbons	mg/L	Quarterly
Oil and Grease	mg/L	Quarterly

M6 Donovans Bay Monitoring

Samples must be collected in accordance with the water quality and biological monitoring program at sample locations D1, D2, D3 and D4. Samples must be analysed for the parameters specified below using the sampling frequency specified, unless otherwise approved in writing by the Director.

Paramater	Unit	Frequency
Ammonia as N	mg/L	Quarterly
Nitrite + Nitrate as N	mg/L	Quarterly
TKN as N	mg/L	Quarterly
Total Phosphorus as P	mg/L	Quarterly
Chlorophyll a	mg/m^3	Quarterly
pH	unit	Quarterly
Dissolved Oxygen	mg/L	Quarterly
ORP	mV	Quarterly
Conductivity	uS	Quarterly
Turbidity	NTU	Quarterly
In-faunal assemblages		Biennially

M7 Eutrophication Monitoring

Samples must be collected and analysed in accordance with the Eutrophication Monitoring Program, unless otherwise approved in writing by the Director.

Noise Control

N1 Operation Noise Emission Limits

1 Noise emissions from the activity, except within Noise Limit Areas A and B (refer attachment 3), when measured at any noise sensitive premises and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

1.1 45 dB(A) between the hours of 0700hrs and 1800hrs (Day time); or

1.2 40 dB(A) between the hours of 1800hrs and 2200hrs (Evening time); or

1.3 35 dB(A) between the hours of 2200hrs and 0700hrs (Night time).

2 Noise emissions from the activity when measured at any noise sensitive premises within Noise Limit Area A and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

2.1 45 dB(A) between the hours of 0700hrs and 1800hrs (Day time); or

2.2 40 dB(A) between the hours of 1800hrs and 2200hrs (Evening time); or

2.3 38 dB(A) between the hours of 2200hrs and 0700hrs (Night time).

3 For the purpose of these conditions '**Noise Limit Area A**' is defined as the area bounded by the low water mark of the Tamar River and a straight line joining Point Rapid to Middle Point as indicated on the map in Attachment 3.

4 Noise emissions from the activity when measured at any noise sensitive premises within Noise Limit Area B and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

4.1 50 dB(A) between the hours of 0700hrs and 1800hrs (Day time); or

4.2 50 dB(A) between the hours of 1800hrs and 2200hrs (Evening time); or

4.3 50 dB(A) between the hours of 2200hrs and 0700hrs (Night time).

5 For the purpose of these conditions '**Noise Limit Area B**' is defined as PID 2954828, George Town Golf Course, as indicated on the map in Attachment 3.

6 If the combined level of noise from the activity and the normal ambient noise exceeds the noise levels specified above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise level by at least 5 dB(A).

7 The time interval over which noise levels are averaged must be between 10 - 20 minutes.

8 Measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the Tasmanian Noise Measurement Procedures Manual.

9 The noise limit or limits applicable at any specific noise sensitive premises can be varied by the Director provided that the occupiers and owners of the noise sensitive premise give their consent in writing to the variation and to any conditions attached to the variation.

N2 Comprehensive Site-Wide Noise Survey

1 Unless otherwise approved in writing by the Director, the comprehensive site-wide noise survey conducted in 2010 must be updated upon completion of the replacement, repair or addition of equipment that is a significant source of noise and where the equipment may increase or adversely alter the level and/or character of the noise emitted from the site. Equipment may be grouped to facilitate the measurement process. Where an item of equipment has more than one significant source of noise, each significant source of noise must be measured.

2 The survey must include:

2.1 The identification of all significant sources of noise on site;

2.2 Estimation of the spatial location, including elevation, of each item of equipment with respect to a well-established coordinate system; and

2.3 Sound pressure level measurements of each item of equipment to allow the determination of the one-octave band sound power levels being emitted.

3 The results from this survey must be used to predict the spatial distribution of A-weighted sound pressure levels, resulting only from the activities on site, to beyond a resultant level of 25 dB(A). This calculation must be based on a method, and meteorological conditions approved by the Director.

4 A report must be forwarded to the Director within six weeks of the completion of the survey detailing:

4.1 The positions of the identified items of equipment;

4.2 One-octave band sound power spectra of all identified sources;

4.3 Details of the prediction methodology; and

4.4 Contours of the predicted sound pressure levels equal to or above 25 dB(A).

N3 Record Of Noise Generating Activities

1 The person responsible must make and retain written or electronic records of the various operational activities and changes to operational activities, on the land, that have the potential to change the level and/or character of noise emitted from the site.

2 These records must include, but should not be limited to, the start of commissioning of major plant and equipment and any major start-ups and shutdowns of major plant and equipment.

3 These records must be provided to the Director within two weeks of any written request to do so.

N4 Noise Survey Requirements

1 Unless otherwise approved in writing by the Director, an annual noise monitoring survey must be carried out.

2 The survey must include, but is not necessarily limited to, the following:

2.1 A minimum of six measurement locations must be used, with one location established as a control location outside the likely influence of the proposed activity; and

2.2 Measurements must be made during day, evening and night times (as defined in these conditions) at each location to establish the acoustic environment, including any influence from the activity.

3 Measurements must include:

3.1 The equivalent continuous (Leq) and L_1, L_{10}, L_{50}, L_{90} and L_{99} A-weighted sound pressure levels measured over a period of between 10 and 20 minutes; and

3.2 One-third octave and narrow-band spectra (10 to 1000 Hz with 1 Hz resolution) over suitably representative periods of not less than 1 minute.

4 Detailed subjective descriptions of the sounds at each location and details of meteorological conditions relevant to the propagation of noise must be recorded at each measurement site.

N5 Noise Survey Report Requirements

1 A noise survey report must be forwarded to the Director within 60 days from the date the noise survey is carried out. The noise survey report must include the following:

1.1 The results of the measurements required by these conditions,

1.2 A map of the area surrounding the activity with the site boundary, measurement locations, and sensitive uses clearly marked on the map,

1.3 Any other information that will assist with interpreting the results and whether the activity is in compliance with these conditions and EMPCA, and

1.4 Recommendations of appropriate mitigation measures to manage any noise problems identified by the noise survey

Operations

OP1 Contact Person

1 The Director must be provided with written notification of telephone and/or pager contact details of a person who can respond to an incident relating to the activity, at any specified time, 24 hours a day.

2 The Director must be notified within 24 hours if:

2.1 The person who can respond to an incident relating to the activity ceases to be the person who can respond to an incident relating to the activity; or

2.2 There are changes to the telephone and/or pager contact details of the person who can respond to an incident relating to the activity.

OP2 Training and Competency

1 The operations manual must be kept in a location which is accessible by relevant operators at all times and must be made available to an authorised officer upon request.

2 Operators must be adequately trained so that they are competent to operate the activity such that it meets the requirements of this Notice and does not breach the EMPCA.

OP3 Emergency Response and Contingency Plan

The Emergency Response and Contingency Plan must be implemented unless otherwise approved in writing by the Director.

OP4 Fire Management Plan

1 A Fire Management Plan must be developed in accordance with the requirements of Tasmania Fire Service.

2 The activity must be undertaken in accordance with the plan which has been approved in writing by the Tasmania Fire Service. Any amendment to the plan must be approved in writing by the Tasmania Fire Service.

OP5 Plant and Equipment

1 All plant and equipment used in the activity must be:

1.1 maintained in accordance with the manufacturer's specifications;

1.2 operated in a proper and efficient manner in accordance with the manufacturer's specifications; and

1.3 operated by personnel holding technical qualifications or levels of competency consistent with any relevant standard defined by the Australian National Training Authority or otherwise approved in writing by the Director.

OP6 Flow Monitoring Equipment

1 Flow monitoring equipment must be installed to measure discharge from Discharge Point 1;

2 Equipment that is required to monitor flow must measure to +/-5% of true value;

3 Flow monitoring equipment must be calibrated in accordance with the manufacturer's specifications or at least once every 12 months; and

4 Calibration details must be recorded and kept for a minimum of 2 years.

OP7 Stormwater Management

1 Stormwater must be managed in accordance with the following measures:

1.1 Perimeter cut-off drains must be constructed at strategic locations on the land to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All practicable measures must be implemented to retain sediment transported along these drains on the land, such measures may include provision of appropriately sized and maintained sediment settling ponds; and

1.2 Drains must have sufficient capacity to contain run-off that could reasonably be expected to arise during a 24 hour, 1 in 20 year rainfall event. Maintenance activities must be undertaken regularly to ensure that this capacity is maintained.

OP8 Design and Maintenance of Settling Ponds

1 Sediment settling ponds must be designed and maintained in accordance with the following requirements unless otherwise approved in writing by the Director:

1.1 ponds must be designed to successfully mitigate reasonably foreseeable sediment loss which would result from a 1 in 20 year storm event;

1.2 discharge from ponds must occur via a stable spillway that is not subject to erosion;

1.3 all dam walls must be stable and treated with topsoil and vegetated or otherwise treated in such a manner as to prevent erosion; and

1.4 ponds must be regularly cleaned out such that there is sufficient capacity to manage a 1 in 20 year storm event. Sediment removed during this cleaning must be securely deposited such that sediment will not be transported off the site by surface run-off.

Reporting

RP1 Annual Environmental Review

1 A publicly available Annual Environmental Review must be submitted to the Director annually by 30 April. The Review must include but not be limited to the following information:

1.1 A statement by the General Manager or Chief Executive Officer acknowledging the contents of the current Annual Environmental Review;

1.2 A listing of any complaints received from the public during the reporting period and any actions that have resulted;

1.3 A listing of environmental incidents and/or incidents of non compliance with permit or EPN conditions that occurred during the reporting period, and any mitigation or preventative actions that have resulted from such incidents;

1.4 A summary of any environment related procedural or process changes that have been implemented during the reporting period;

1.5 A summary of the monitoring data required by the Director. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;

1.6 A summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments;

1.7 A summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed; and

1.8 A copy of the most recent version of the Emergency Response and Contingency Plan.

Schedule 3: Information

Legal Obligations

LO1 Notification of incidents under section 32 of EMPCA

1 A person responsible for an activity that is not a level 2 activity or a level 3 activity must notify the relevant Council, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as the result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause an environmental nuisance.

2 A person responsible for an activity that is a level 2 activity or a level 3 activity must notify the Director, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as a result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause an environmental nuisance.

3 A person responsible for an environmentally relevant activity must notify the Director, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as a result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause serious or material environmental harm.

4 The Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

5 Follow up reports can be emailed.

6 Any notification given by a person in compliance with this section is not admissible in evidence against the person in proceedings for an offence or for the imposition of a penalty (other than proceedings in respect of the making of a false or misleading statement).

7 A person is required to notify the relevant Council or the Director of an incident despite the fact that to do so might incriminate the person or make the person liable to a penalty.

8 Any notification referred to in subsection (1), (2) or (3) must include details of the incident, its nature, the circumstances in which it occurred and any action that has been taken to deal with it.

9 For the purposes of subsections (1), (2) and (3):

9.1 a person is not required to notify the relevant Council of an incident if the person has reasonable grounds for believing that the incident has already come to the notice of the Council

9.2 a person is not required to notify the Director of an incident if the person has reasonable grounds for believing that the incident has already come to the notice of the Director;

LO2 EMPCA

The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of those requirements.

LO3 Storage and handling of Dangerous Goods and Dangerous Substances

1 The storage, handling and transport of dangerous goods and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:

1.1 *Dangerous Goods (Road and Rail Transport) Act 2010*;
1.2 *Dangerous Goods (Road and Rail Transport) Regulations 2010;*
1.3 *Dangerous Substances (Safe Handling) Act 2005;*
1.4 *Dangerous Substances (Safe Handling) Regulations 2009;*
1.5 *Workplace Health and Safety Act 1995*; and
1.6 *Workplace Health and Safety Regulations 1998.*

LO4 Aboriginal relics requirements

1 The *Aboriginal Relics Act 1975*, provides legislative protection to Aboriginal heritage sites in Tasmania regardless of site type, condition, size or land tenure. Section 14(1) of the Act states that; Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director:
   1.1 destroy, damage, deface, conceal or otherwise interfere with a relic;
   1.2 make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, casting or other means that involve direct contact with the carving or engraving;
   1.3 remove a relic from the place where it is found or abandoned;
   1.4 sell or offer or expose for sale, exchange, or otherwise dispose of a relic or any other object that so nearly resembles a relic as to be likely to deceive or be capable of being mistaken for a relic;
   1.5 take a relic, or permit a relic to be taken, out of this State; or
   1.6 cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic.
2 If a relic is suspected and/or identified during works then works must cease immediately and the Tasmanian Aboriginal Land and Sea Council and the Aboriginal Heritage Office be contacted for advice before work can continue. In the event that damage to an Aboriginal heritage site is unavoidable a permit under section 14 of the *Aboriginal Relics Act 1975* must be applied for. The Minister may refuse an application for a permit, where the characteristics of the relics are considered to warrant their preservation.
3 Anyone finding an Aboriginal relic is required under section 10 of the Act to report that finding as soon as practicable to the Director of National Parks and Wildlife or an authorized officer under the *Aboriginal Relics Act 1975*. It is sufficient to report the finding of a relic to Aboriginal Heritage Tasmania to fulfil the requirements of section 10 of the Act.

LO5 Change of responsibility

If the person who is or was responsible for the activity ceases to be responsible for the activity, they must notify the Director in accordance with Section 45 of the EMPCA.

Other Information

OI1 Waste management hierarchy

1 Wastes should be managed in accordance with the following hierarchy of waste management:
   1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;
   1.2 waste should be re-used or recycled to the maximum extent that is practicable; and

1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue:

20 NOV 2017

SCHEDULE 4
Further Particulars of the Grounds

The following table provides further grounds for varying conditions of PCE No. 7467 as they relate to conditions in Schedule 2 of this Notice.

Condition Schedule 2	PCE No. 7467	Grounds
Q1	Q1	Varied to reflect actual operations while maintaining the maximum allowable volume of wastewater discharged, per annum, from the activity.
G1	G1	Condition varied to clarify wording of condition and to reflect revised standard condition.
G2	G2	Condition varied to clarify wording of condition and to reflect revised standard condition.
G3	G3	No change.
G4	G4	Condition varied to clarify wording of condition and to reflect revised standard condition.
G5	G6	Condition varied to establish a responsibility for the implementation of the hazard identification and risk management program.
G6	G9	Condition varied to clarify wording of condition and to reflect revised standard condition.
A1	A1	No change.
A2	A2	Condition varied to clarify wording of condition and to reflect increase to NOx emission limit in line with the Environment Protection Policy (Air Quality) 2004.
A3	A3	Condition varied to reflect completion of commissioning and to establish the frequency for ongoing stack testing.
A4	A4	No change.
A5	A5	Condition varied to clarify wording of condition and to establish required detail of gas turbine operation register.
DC1	DC1	Condition varied to clarify wording of condition and to reflect revised standard condition.
DC2	DC2	Condition varied to clarify wording of condition and to reflect revised standard condition.
DC3	DC3	No change.
DC4	Nil	A new Condition to establish the responsibility for the timely notification of the temporary suspension of the activity and to prevent environmental harm occurring during that suspension to secure compliance with the general environmental duty
DS1	DS1	Condition varied to clarify wording of condition and to specify defined discharge point locations.
E1	E1	Condition varied to clarify wording of condition and to specify emission limits.

E2	E4	No change
E3	E5	Condition varied to clarify wording of condition and to reflect revised standard condition.
E4	Nil	A new condition reflecting the approved discharge water temperature investigation level and to establish a responsibility for the timely notification of any exceedance including duration and timeline for providing required additional information in order to ensure secure compliance with the general environmental duty.
H1	H1	Condition varied to clarify wording of condition and to reflect revised standard condition.
H2	H2	Condition varied to clarify wording of condition and to reflect revised standard condition.
M1	M1	Condition varied to clarify wording of condition and to reflect revised standard condition.
M2	M3	Condition varied to clarify wording of condition, to reflect completion of commissioning and to and to specify defined sample location points.
M3	M4	Condition varied to clarify wording of condition, to reflect completion of commissioning and to clarify the specified wastewater monitoring requirements.
M4	M5	Condition varied to establish the responsibility to undertake the Water Quality And Biological Monitoring Program prior to outfall discharge.
M5	M6	Condition varied to clarify wording of condition, to reflect completion of construction and to establish the responsibility for on-going stormwater discharge monitoring.
M6	M7	Condition varied to clarify wording of condition, to reflect completion of commissioning and to establish the responsibility for the on-going monitoring of Donovans Bay in accordance with the Water Quality And Biological Monitoring Program.
M7	Nil	New condition to establish the responsibility for eutrophication monitoring in accordance with the Eutrophication Monitoring Program to ensure compliance with the general environmental duty.
N1	N1	Condition varied to clarify wording of condition and to reflect additional Noise Limit Area.
N2	N2	Condition varied to clarify wording of condition, to reflect completion of commissioning and to establish the responsibility for the updating of the site noise survey.
N3	N3	No change.
N4	N4	Condition varied to clarify wording of condition, to reflect completion of commissioning and to establish the responsibility for the annual noise monitoring survey.
N5	N5	No change.

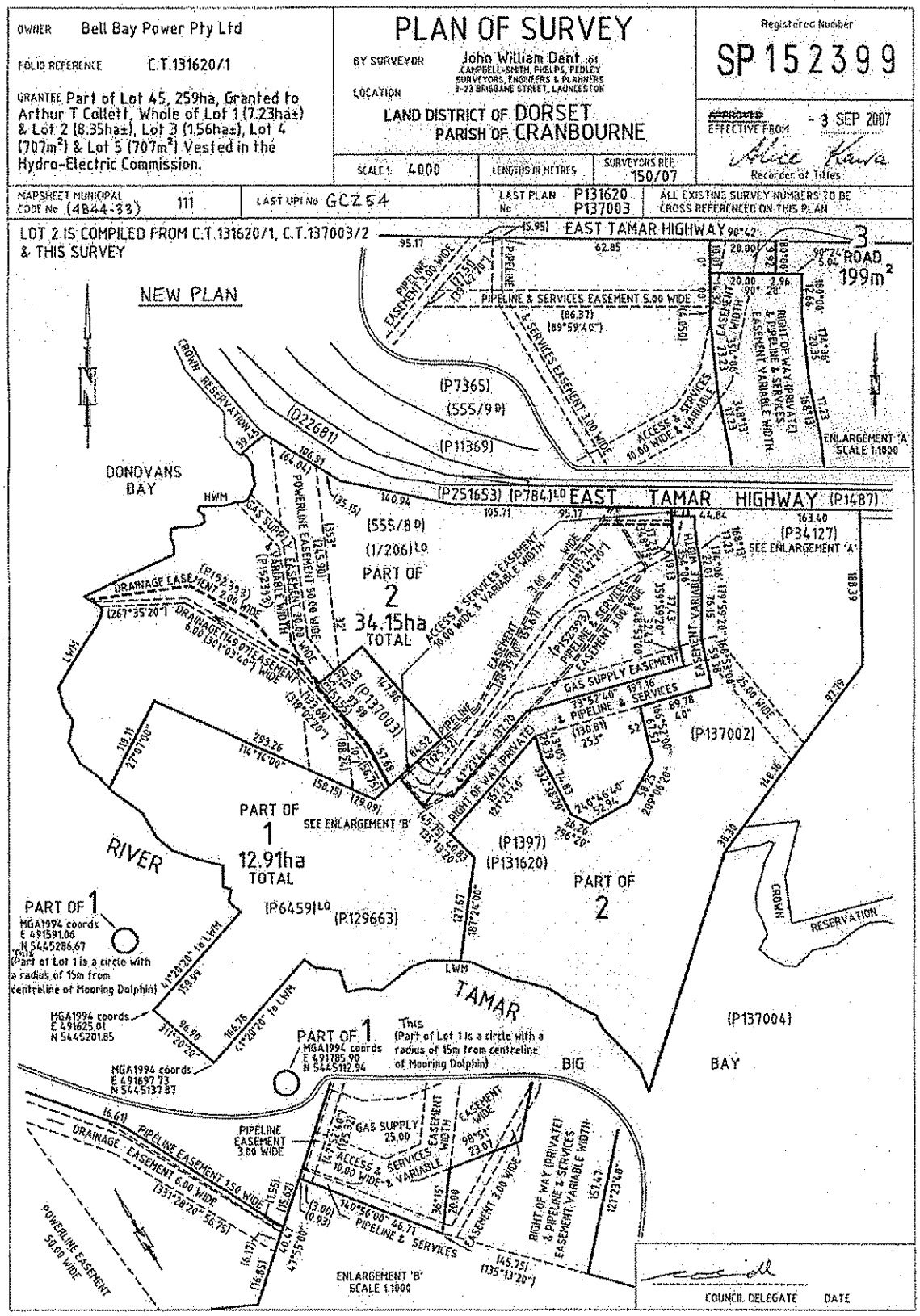
DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY Date of Issue 20/04/2011

OP1	OP1	Condition varied to clarify wording of condition and to reflect completion of commissioning.
OP2	OP2	Condition varied to clarify wording of condition, to reflect completion of commissioning and to establish the responsibility to make the operations manual available upon request.
OP3	OP3	Condition varied to clarify wording of condition and to reflect completion of commissioning.
OP4	OP4	Condition varied to clarify wording of condition and to reflect completion of construction.
OP5	OP5	No change.
OP6	OP6	No change.
OP7	OP7	Condition varied to remove redundant clauses.
OP8	OP8	Condition varied to clarify wording.
RP1	RP1	Condition varied to clarify wording of condition and to establish the responsibility for the timely submission of an annual environmental review.
	G5, G7, G8, B1, B2, CN1, E2, E3, M2, M8, M9, WM1	Conditions no longer applicable.

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of Issue 20 NOV 2012

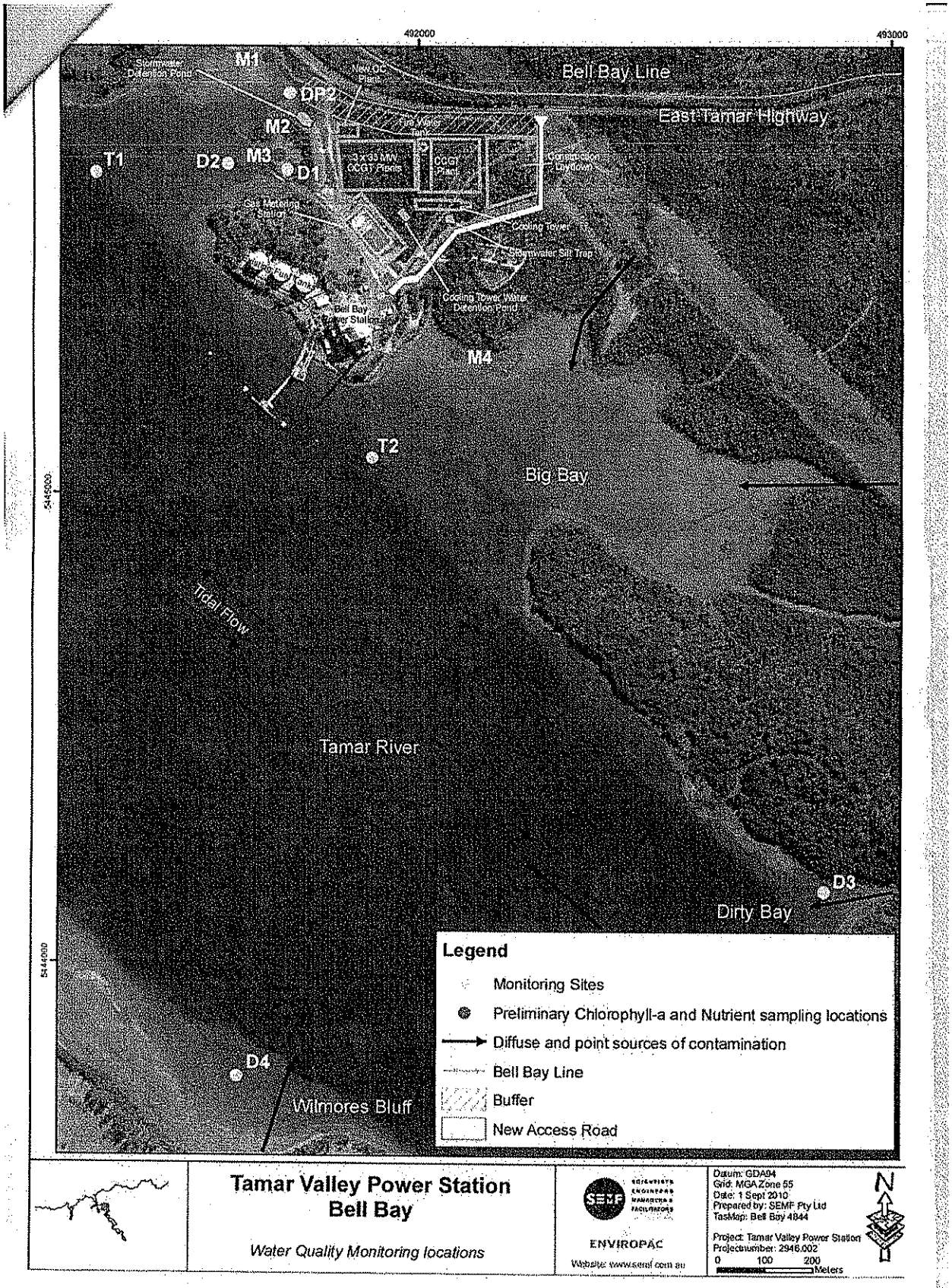
Attachment 1: The Land



DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue: 20 NOV 2012

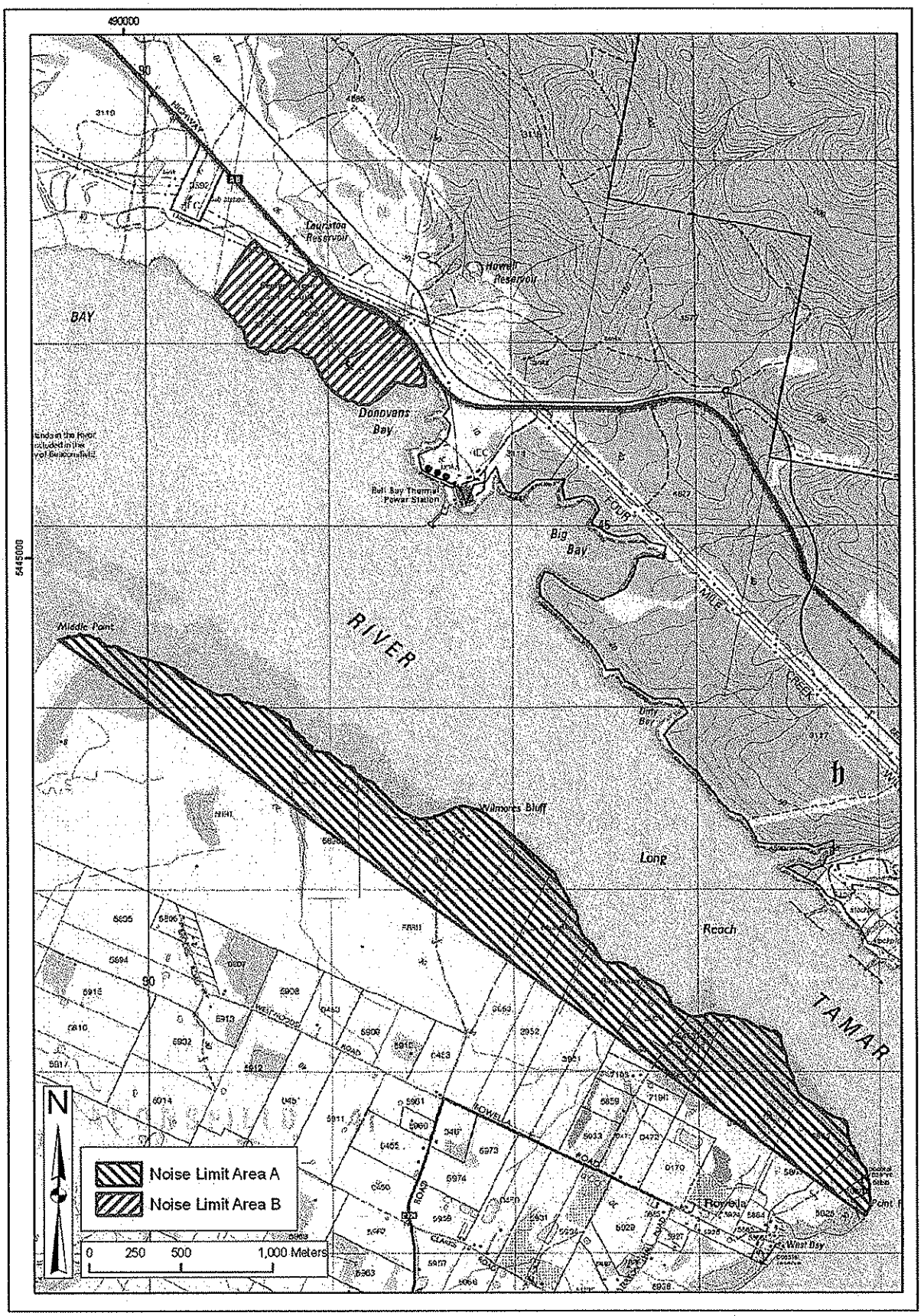
Attachment 2: Sample Location Points



DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue: 20 NOV 2012

Attachment 3: Noise Limit Areas A & B



DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue: 20 NOV 2012

Appendix 2 – TVPS Incident Response Plan

Emergency Contact (24/7)

TVPS Control room
(03) 6380 2240 or;
0438 355 547
Gen Ops
(03) 6230 5657

Tamar Valley Site

Incident Response Plan

Tamar Valley Power Station:
Lat: -41° 08.38386811' Long: +146° 54.41156004'

What3Words
bookworm.uttering.gladly

Hydro Tasmania

Document control

Title:	Tamar Valley Site Incident Response Plan		
Author:	Ashlee Geard, Andrew Lockett	*Date Created:*	February 2022
Document Number:	**HSE12-AERP-PL-TV-001**	*Date Reviewed*	January 2024
Document Owners:	Assets and Infrastructure	*Date Effective:*	July 2022
Document Update Frequency:	Review document for changes – Annually	*Due Date:*	July 2024

Record of amendments

Revision	Notes	Author	Date
1.10 –	Old version transferred from TVPS document control system (Q Pulse) to Hydro Tasmania	Chris Ashley	August 2020
2.0	Minor amendments inclusion of What3Words and change to GPS coordinates to align to emergency radio control room. Document to adopt the Hydro Tasmania process and template	A. Geard and T Salmon	February 2022
2.10	Updated contact details and formatting and reviewed document for currency.	D Quinton & A Lockett	January 2024

Approvals

Issue	Date:	Name	Signature
These approvals represent the commitment by Hydro Tasmania to abide by this document in responding to Incidents and to ensure training of staff in its use is conducted.			
Version 2.0			

This document content cannot be amended or changed in any way without the express approval of Hydro Tasmania. Original signed at location.

Table of contents

1 Glossary and Abbreviations

Abbreviation / Term	Definition
AAC	Assembly Area Controller
AETV Pty Ltd	Fully owned subsidiary of Hydro Tasmania
Assembly Area	A designated and sign posted safe place where personnel assemble in the event of an emergency
CEO	Chief Executive Officer
FAC	Forward Area Controller
SDS	Safety Data Sheet
PM	Production Manager
SEC	Site Emergency Co-ordinator
TVPS	Tamar Valley Power Station
CCR	Central Control Room
OMT	Operator Maintainer Technician
BBPS	Bell Bay Power Station
BBEP	Bell Bay Energy Precinct includes TNGP, TasNetworks & TVPS

2 Introduction

This Site Incident Response Plan (SIRP) has been developed to be specific to this and surrounding assets and provides guidance to all personnel responding to incidents. Refer to the State Owned Energy Business Incident Management Plan – Operational Edition (SOEB IMP – Op Edition) for full definitions.

This SIRP provides guidance for site personnel in responding to incidents. It defines who does what, gives guidance and considerations around certain documented scenarios, enabling those with responsibilities under the plan to use their own experience and judgement to best manage the required response.

Good preventative processes such as risk management programs and asset management plans define the preventative and preparedness activities to be conducted by A&I in support of this objective, these being:

- identify foreseeable events that could endanger the safety of people and/or damage HT assets;
- procedures to be followed in responding to such events;
- preventative actions to be carried out by personnel to minimise the risk of such events occurring;
- preparedness actions to be carried out by personnel to maintain its capability to respond appropriately to adverse and emergency events (including collaboration with external emergency agencies) largely via the delivery of training, drills and annual review of the Site Incident Management Plan and related documentation review; and
- A comprehensive risk review has been conducted at each asset and this plan reflects hazards and risks identified at this asset. This risk review is kept as a separate document.

This SIRP operates in conjunction with the SOEB IMP – Ops Edition and is intended as guidance to staff in the management of consequences of operational incidents (Level 1 or Level 2) as well as operational components of Level 3 incidents.

2.1 Aim

The aim of this SIRP is to guide incident response and recovery activities of staff, Operational Managers/Leaders relating to:

- Service restoration to a level which existed prior to the disruptive event occurring or better;
- protection and welfare of staff, contractors and members of the public from harm;
- minimising the impact on the environment;
- restoration of damaged or degraded assets;
- protection and restoration of an organisation's reputation;
- minimising any negative financial impact to the organisation;
- minimising regulatory non-compliance and restore compliance as soon as possible; and
- minimising risk to shareholders and office holders.

2.2 Incident definition

An incident is defined as:

An actual or perceived disruption to normal business of the entity which threatens our people, assets, products, the community or the environment.

An incident can include any of or multiples of the following, whether accidental or intentional:

- An injury or fatality to staff, contractors or public as part of an Entity activity;
- a missing staff member, contractor or member of the public as part of an Entity activity;
- natural physical disasters such as fire, flood, drought, or storms;
- major supply and transmission outages;
- loss of access, damage or unavailability of assets, infrastructure, network transmission;
- interruptions to business activities or critical business functions (e.g. pandemic);
- cyber security incidents (denial of service, SCADA system, corporate network disruption)
- data loss or system breach;
- damage or loss of information technology systems (communication systems);
- activities which result in a negative environmental impact; and
- security incidents.

Incident Management Plans are designed to manage the consequences of an internal or external event which impacts on our business processes. The **all hazards** approach enables the same process to be followed for any incident.

2.3 Scope

This plan is to be used to manage operational (Level 1 and Level 2) incidents of any nature as well as operational components of Level 3 incidents (See Section 1.4 for detail on Incident Response Levels and Section 2.2 on Responsibilities).

The operational components of Level 3 refer to:

- Level 1 and Level 2 Incident Managers operating to achieve the strategic objectives communicated by the Executive; and
- Continuing Level 1 and Level 2 Incident Management Team operational activities under the leadership of Level 1 and Level 2 Incident Managers unless otherwise directed by a member of the Executive Management Team.

Site specific/technical response and recovery plans (eg Business Continuity, Disaster Recovery, Contingency Plans and Standard Operating Procedures) remain the responsibility of subject matter experts. If required, these plans will be used in their full capacity concurrently with the SOEB IMP.

2.4 Incident response levels

There are 3 levels of incident response used within Hydro Tasmania. The Power System Emergency Management Plan (PSEMP) lists 5 levels. Levels 1 to 3 relate to an Entity response while Levels 4 and 5 are used to denote management of the incident by AEMO or the Jurisdiction System Security Coordinator (JSSC). Level 4 and 5 incidents are managed by the Hydro Tasmania as a Level 3 incident.

Figure 1: The levels of response to an Incident.

Table 1: Incident response levels

Site Incident (Local Incident) – Level 1 as per Guide in Table 2 overleaf
Any unusual situation which is beyond normal business and processes to deal with effectively: • is outside usual operating conditions; • can cause, or has caused, harm to people (including the public), assets or the environment; • requires an immediate or timely response; • relates to a single site; and • **can** be controlled by local resources and site response plans.
Business Unit/Area Incident – Level 2 as per Guide in Table 2 overleaf
Any unusual situation which is beyond the capacity of local management structures and processes to deal with effectively and impacts a number of sites or a business unit: • Is outside of usual operating conditions; • can cause, or has caused, harm to people (including the public), assets or the environment; • requires an immediate and coordinated response across a number of sites or a business unit; and • **can** be controlled by internal response and recovery plans.
Entity Incident – Level 3 as per Guide in Table 2 overleaf
Any unusual situation is beyond the capacity of normal management structures and processes to deal with effectively. It impacts a number of business units and requires management/support from the Executive: • Is outside of usual operating conditions; • can cause, or has caused, arm to people (including the public), assets, the environment, or business reputation; • requires an immediate and coordinated response across the whole business; • **cannot** be controlled by local resources; and • requires the support of the Entity's Executive Management Team

Table 2: Incident Severity Guide

The incident level declared for an incident is guided by ay one or more of these examples provided

ALL HAZARDS Incident Rating Guide										
Incident Lead			Lead Agency	LEVEL	PSEMP	PEOPLE	ENVIRONMENT	ASSET	REPUTATION	LEGAL
Local Incident Management Team (Site)	Unit/Area Incident Management Team (Business Unit/Area/Multiple Sites)	Entity Executive Management Team	**JSSC, Impacted Entity Executives and AEMO**	**5**	Jurisdiction intervenes in normal market operations in response to the power system emergency					
			AEMO and Impacted Entity Executives	**4**	Overall system integrity is being impacted and requires a coordinated response					
			Entity Executive	**3**	**Entity Incident** Widespread incident affecting a **single industry participant** requiring strategic direction by Entity executive	Fatality/ injury causing loss of quality of life /long term disability /impact on health /threat to public safety	Extreme environmental harm; local species destruction; widespread chronic contamination with doubtful recovery; extensive clean up required	Actual or potential for serious internal business continuity and commercial impact or power supply is significantly disrupted	Persistent, negative public exposure – dramatic undermining of stakeholder confidence. Extensive media attention.	Considerable penalties & prosecutions. Multiple law suits & potential jail terms
			Entity Business Unit/Area Manager or Leader	**2**	**Area Incident** Significant and noticeably affects the participant's ability to deliver service and impacts on the community	Medical emergency/ restricted work duty injury /Confirmed missing person /single lost time injury/ Reversible impact on health	Moderate environmental impact; clean up restricted to the area of the asset	Potential commercial impacts to local businesses and NEM participants	Systemic incidents – some limited media attention.	Serious breach of law; report to authority, prosecution and/or moderate penalty.
			Entity Site Manager or Leader	**1**	**Site (Local) incident** can be dealt with by **local resources, local site** or control room supervisor normally manages this incident	Injury – site treatment and review. Suspected missing person	Low environmental impact; rapid clean up; restricted to areas already impacted by the operation	Commercial impact limited to repair and restoration costs (no significant unbudgeted expenditure)	Slight impact/isolated impact – negligible or no media attention.	Minor non-compliance and breaches required to be reported.

3 Incident management processes

3.1 Incident management activation

Any member of staff and contractors who identify a developing incident are required to report the potential or actual incident as early as possible. Where it is safe and possible to do so they should control the situation by ensuring any persons affected by the incident are secure and safe, try to prevent further damage to assets and prevent any further impact on the environment.

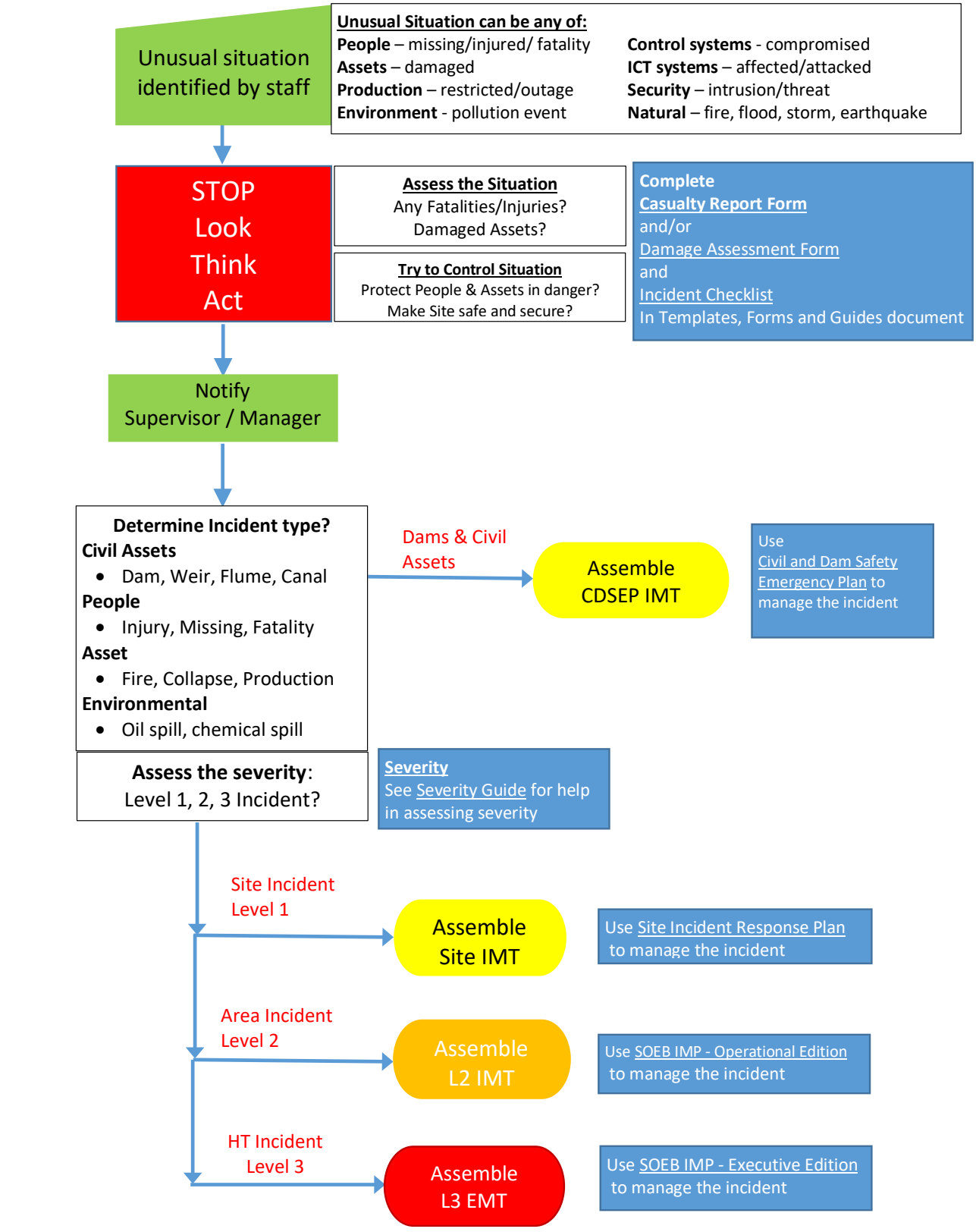
Where the incident is of sufficient scale or impact, the person managing the incident should escalate management of the incident to more senior members of the Entity through normal escalation mechanisms. The overriding approach to be applied in determining the level of incident response is:

Prudent overreaction followed by rapid de-escalation.

This means it is better to over-react if unsure and then de-escalate if warranted, rather than under-react.

Incident Reporting and Activation Flowchart is shown overleaf.

Figure 2: Incident Reporting and Activation Flowchart

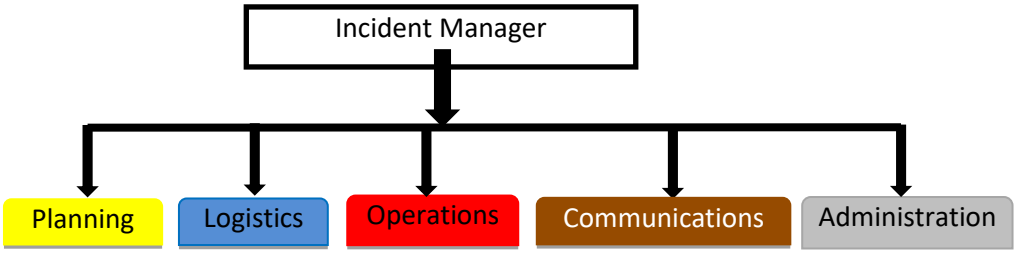


CDSEP = Civil & Dam Safety Emergency Plan
EMT = Executive Management Team
IMT = Incident Management Team
SIRP = Site Incident Response Plans (formerly Site Adverse Event Response Plans)
SOEB IMP = State Owned Energy Business Incident Management Plan
TFG = Templates Forms Guides

3.2 Incident Management Team

On being notified of a developing or occurring incident, an Incident Manager should be appointed to manage the incident. On appointment, the Incident Manager should assemble an Incident Management Team in accordance with the Entity Incident Management System in use (See the IMS Reference Guide for further details). The Incident Management Team structure will be dependent on the type and scale of the incident. The Incident Management Team structure is shown below.

Figure 3: IMT Structure



In the instance where an incident scale grows requiring escalation from Level 1 incident management to a Level 2 incident management, the Level 1 Incident Management Team is maintained although they now fill the role of the Operations Function in the Level 2 response. The Level 1 Incident Manager is utilised as the Operations Officer. The Level 1 Incident Manager still maintains responsibility as the site contact/manager who translates instructions into specific site activities. The other functions (logistics, planning, communications and administration) may be absorbed into the Level 2 Incident Management Team or maintained if required for the site response.

Similarly, where an incident grows to require activation of a Level 3 response (Executive Management Team), the Level 2 Incident Management Team relinquish responsibility for management of the incident to the Executive Management Team. They do not demobilise but fulfil the role of the Operations Function within the Executive Management Team. As above, the functions (logistics, planning, communications and administration) may be absorbed into the Level 3 Executive Management Team or maintained if required for the operational response. It is recommended the communications function be transferred to the Executive Management Team but the capacity to author and issue situation reports be maintained at the Level 1 and Level 2 Incident Management Teams.

3.2.1 Responsibilities

The Level 1 and Level 2 Incident Management Team will manage all aspects of the operational response to the incident. This will include coordinating activities for:

- The restoration of services;
- The restoration of systems required for services;
- Mitigation of any impact on the environment by the activities of the Entity;
- Protection and restoration of assets damaged or degraded;
- Protection of employees, contractors and public at Entity sites;
- Activities which will restore any legal compliance; and
- Public and media messaging.

If the incident escalates to Level 3, the Executive Management Team will manage activities relating to:

- Strategic coordination of resources for the incident;
- Liaison with employee, employee families, shareholders, Board and regulators;
- Protection and restoration of negative reputational impacts;
- Managing financial impacts to the Entity;
- Liaison with external parties on legal implications or compliance; and
- Coordination of media and public messaging (the Level 2 messaging activity is relinquished).

3.3 Issues in managing incidents

The Incident Management Team should focus at all times on the management of consequences while considering the following in determining activities. Each issue can have a short, medium and long term implications. For Level 3 incidents, the strategic objectives will be provided by an Executive Management Team member.

3.3.1 Notification

Consider the stakeholders who need to be notified of the occurrence and status of the incident. Stakeholders will vary according to the scale and type of incident but can include, amongst others:

- Shareholders;
- state emergency response agencies;
- industry partners, such as Hydro Tasmania, TasNetworks, AEMO;
- regulators for electricity, water, dams;
- customers;
- board;
- staff;
- impacted communities; and
- media.

3.3.2 Communication

Include the response objectives, timeframe, media releases and stakeholder information during situation awareness briefings to the Incident Management Team.

Ensure situation reports are issued regularly to internal (staff and managers/leaders) and external stakeholders.

3.3.3 Stakeholder expectations

The management of each stakeholder group should be tailored to their service expectation of the Entities.

3.3.4 Situation awareness

The Incident Management Team needs to be aware of the status of the incident in terms of scale and impact. Always seek information on the status of the incident response, including:

- What information do you need (now and in the future) to create a reliable picture of the incident?
- What information is available to you to manage the incident? Internally and externally;
- How reliable is the information you have? Accurate/factual vs hearsay. Confirmed vs unconfirmed;
- What assumptions have been made when information is lacking? Confirm these as quickly as possible.

3.3.5 Impacts

Assess and review the damage/impact of the incident on assets, employees, services, the community, industry partners and the environment. Some impacts may not be immediately obvious and may develop as the incident progresses.

In determining the impacts of the incident consider the range of possible impacts which may eventuate. These can range from best case to worst case as well as the likely impact.

3.3.6 Opportunities

Consider opportunities for learning from the incident.

3.4 Management by objectives

Setting clear objectives for the management of the incident will provide clarity in the response. The Incident Manager is responsible for setting and assigning objectives.

Objectives are set to determine the desired outcomes of the incident and can be short, medium and long term depending on the nature and scale of the incident.

Once objectives for the incident have been developed, strategies on how to achieve these should be developed. Strategies will need to cater for all objectives, and should include short, medium and long term strategies.

3.5 Protection priorities

The Incident Management Team should consider the following priorities (in order) in determining the activities for the management of the incident. In descending order, the priorities are:

1. Safety of employees, contractors and the public;
2. Critical Infrastructure Assets;
3. Environment;
4. Business/Reputation.

There may be competing priorities which exceed the resources available. The Incident Management Team managing the incident should endeavour to achieve the greater good or the least bad option.

3.6 Stakeholder priorities

The priorities, listed in order, among the Entity's stakeholders are as follows:

1. Employees;
2. Employee Families;
3. Customers, contractors & Suppliers;
4. Board members; and
5. External Stakeholders, including but not limited to:
    - Shareholders
    - Department of State Growth, SEMC, AEMO, other Regulatory bodies; and
    - The community.

3.7 External and internal communications

The Incident Manager is responsible for approving communications for issue, including external and internal communications. A member from the Corporate Communications Team should be included in the Incident Management Team. For electricity supply incidents, a protocol exists for the notification of relevant authorities.

Ensure that all media enquiries are forwarded to the Communications Officer on the Incident Management Team and that all media interviews are undertaken by authorised personnel.

3.8 Recovery considerations

Planning for the recovery should ideally commence at the appointment of the Incident Manager or shortly after. Depending on the incident type and severity, the recovery process may take an extended period of time. Each recovery plan will be specific to the nature of the event. These key issues include:

- Damage/impact assessment including employees and community impact;
- recovery objectives;
- key recovery activities and priorities;
- resources and personnel required to execute activities;
- project timeframe to full recovery and milestones;
- management and reporting structure;
- finance arrangements; and
- stakeholder communication.

3.9 Incident Operations Centre

During an Incident, the Incident Manager is responsible for establishing an Incident Operations Centre (IOC) at a safe, secure location close to the location of the event where all communication channels are available (i.e. landline, mobile phone, satellite phone, radio [TMR] and IT services).

In the event of an incident at the Tamar Valley Power Station Site the Incident Operations Centre (IOC) would initially be located close to the incident in the early stages, but then would need to be established somewhere like the Tamar Valley Power Station Office or a facility nearby. When considering the location for the IOC the following needs to be considered.

- Location of incident
- weather
- type of response required
- possible duration of the incident. i.e. will it go for a day or several days
- access to facilities, IT, phones, faxes etc.
- allow for external emergency services, phone lines, it access, meal/toilet facilities
- do not hesitate to ask for more personnel and equipment (It is easy to send away if not needed)

It is essential that all communications related to the incident be routed through this IOC in order that the Incident Manager has current information on which to base his team's decisions and that the information being conveyed to the Incident Manager is accurate. Depending on the incident the Incident Manager will liaise directly with the person onsite and if needed form an IOC in Hobart and utilise the SOEB Incident Management Plan (Operational Edition) to assist those directly dealing with the event. (Refer: Section 1 for the Incident Definitions/Severity).

The table below shows suggested locations for an IOC.

Table 3: Regional Incident Operations Centres

Region	Suggested IOC	Address	Location
North Region	Trevallyn Power Station	Elouera St, Trevallyn	-41° 25.35930242'S, +147° 06.69991356'E Tools.deduct.crass
North Region Great Lake Area	Poatina Power Station; or Trevallyn Power Station	Poatina Rd, Poatina Elouera St, Trevallyn	-41° 48.70522245'S, +146° 55.15143096'E Excite.banner.docking -41° 25.35930242'S, +147° 06.69991356'E Tools.deduct.crass
North West Region Mersey-Forth Area	Gowrie Park	Gowrie Park, via Sheffield	-41° 28.14689532S', +146° 12.94770187' 'E Detained.contesting.leans
North West Region West Coast Area	Mackintosh		-41° 41.97702168'S, +145° 38.76876575'E bonbons.furthest.westerners
South Region Gordon Area	Gordon Power Station Pedder Wilderness Lodge		-42° 44.43265536'S, +145° 58.96201200'E Unscrewed.unsettled.salts -42° 46.11695297'S, +146° 02.77061588'E Occupational.spoonfuls.surely
South Region Lower Derwent Area	Liapootah Power Station	Wayatinah	-42° 22.57995351'S, +146° 30.60519207'E Honey.galley.affirmative
South Region Upper Derwent Area	Tungatinah Power Station		-42° 17.80914888'S, +146° 27.39769953'E Dashed.acrobat.soda
North Region	Tamar Valley Power Station	East Tamar Hwy George Town	-41° 08.38386811' S +146° 54.41156004' E Bookworm.uttering.gladly
North Region King Island Area	Currie Depot		-39° 56.32563268' S +143° 53.52752600' E Canoe.hallways.decoration
North Region Flinders Island Area	Whitemark Depot		-40° 06.97864981'S, +148° 01.74250968'E Layout.horizons.doorbell

4 Contact Numbers

The most up to date list of contact numbers is maintained in a separate document referred to as Tamar Valley Power Station Contacts Directory and Telephone listing. The following numbers are only reviewed annually and may be out of date. They have been included should a printed version of this document be the only reference available during an emergency.

4.1 Critical First Response

Position	Name	Contact Number
Emergency Services	Police, Fire, Ambulance	000
Gas Control (TNGP Pipeline Operator)	Emergency Contact Number (Pipeline Operations)	1800 195 666 (1300 557 505)
AEMO	Emergency Contact Number (alternate)	02 8884 5146 or (07 3347 3153)
Hydro Tasmania Control	Generation Control	03 6230 5569
Tas Networks Control	Transmission Control (HV) Distribution Control (LV)	(03) 6274 3704 (03) 6274 3711

4.2 Internal TVPS

Position	Name	Contact Number
Production Manager	Andrew Lockett	0418 127 069
OMT Lead	Marc Davey	0458 847 818
Electrical Lead	Marcus Greenwood	0400 906 552
Instrument Lead	Gene Wells	0439 885 038
Mechanical Lead	Justin Hayes	0408 120 660
WTP Lead	Kathy Shanley	0408 841 819
Technical Manager	Tony Szabo	0439 898 459
Executive GM A&I	Jesse Clark	0429 868 785
Chairman (CEO Hydro Tas)	Ian Brooksbank	0419 475 311
TVPS Central Control Room	Operator	03 6380 2240
Hydro Media Representative	On call HT communications	0409 722 359
Acting GM of Asset Initiatives & TVPS	Scott Geappen	0428 375 498

4.3 External

Position	Contact Number
Tasports Bell Bay	03 6380 3111 03 6380 3175 AH
Environmental Systems and Contracting (Oil and chemical spill equipment)	03 6442 4892 0418 174 709
Veolia Environmental services	03 6332 6500
Paneltech	03 6343 2026
WorkSafe Tasmania	1300 366 322
Environmental Protection Authority (EPA)	1800 005 171
George Town Council	03 6382 8800

4.4 Secondary External Numbers

External Business	Contact Numbers
Tasmanian Fire Service (Fire Comm)	03 6230 8420
Tasmanian Police – General	6230 2111 131 444
State Emergency Service	03 6336 3790
Director of Gas Safety (Andrew Ayton)	03 6477 7150 0438 381 712
Gas Specialist (WST) (Tery Tobias)	(03) 6777 2852 0407 630 568
Palisade (gas pipeline owner)	03 9522 3308
Worksafe Inspector	03 6336 2236
District Operations	03 6237 3115
TasNetworks Central Control Room	03 6274 3705

5 Raising the Alarm and Initial Response

5.1 Raising the Alarm

Raising the Alarm at Tamar Valley Power Station can be achieved manually by the following methods:

- **Dialling 333** on any site telephone will put you in contact with the Duty Operator in the Central Control Room. Communicate details of incident/emergency, location, persons injured, nature of emergency to the Duty OMT. After determining the nature of the incident, the Duty OMT can determine if an evacuation is required and activate the site wide emergency evacuation alarm. Subsequent **calls regarding the emergency should be via Central Control Room internal phone number 2240 or external 6380 2240.**
- Contact the Central Control Room **via mobile phone 0438 355 547 or 2- way radio**. **DO NOT USE A MOBILE PHONE IN THE AREA OF A SUSPECTED GAS LEAK OR IN A BATTERY ROOM.**
- Activating siren on **North wall of the Central Control Room.**
- **If at Bell Bay Power Station** Each work party must carry a station radio. Raise Central Control Room **on the radio** or phone **6380 2240.**

5.2 Initial Response by Persons at scene of initial Incident

- Raise the Alarm **by any of the above methods.**
- Make the area safe, if possible.
- Assist any injured persons and await further instructions from the Central Control Room or, if unsafe, proceed to your nearest designated emergency evacuation assembly area. All subsequent contact with Central Control Room should be via **Operations Radio, internal phone number 2240 or external 6380 2240.**

5.3 Evacuation Procedure

- On hearing the alarm, immediately stop work and make the work area safe.
- Exit buildings/work area, using closest exits, looking for hazards.
- Personnel evacuating site must proceed to the nearest emergency evacuation assembly area and swipe access card at reader and await instruction from the Assembly Area Coordinator. Evacuation assembly area No 1 is situated on the Tamar Highway side of the administration building and Evacuation assembly area No 2 is on the North Road opposite the FT8 site entrance gates.
- Production personnel, Production and Office Manager must proceed to the Central Control Room if safe to do so remaining in radio contact.
- All other site personnel (including AETV Plant Performance) must report to the nearest evacuation assembly area
- Emergency Evacuation assembly areas, the most senior person at each location should assume the role of Assembly Area Coordinator for that group and contact the Central Control Room using the fixed 2-way radio station located at each of the assembly areas or on 6380 2240 and advise of exact location and identity of persons assembled and await further instructions.
- Remain within listening distance of the 2-way radio as the radio network is the primary communications tool. Avoid using mobile phones as the system can become congested and / or tie up the land line. Also only allows one on one conversation preventing rapid dissemination of information.
- Follow instructions given by the Assembly Area Coordinator

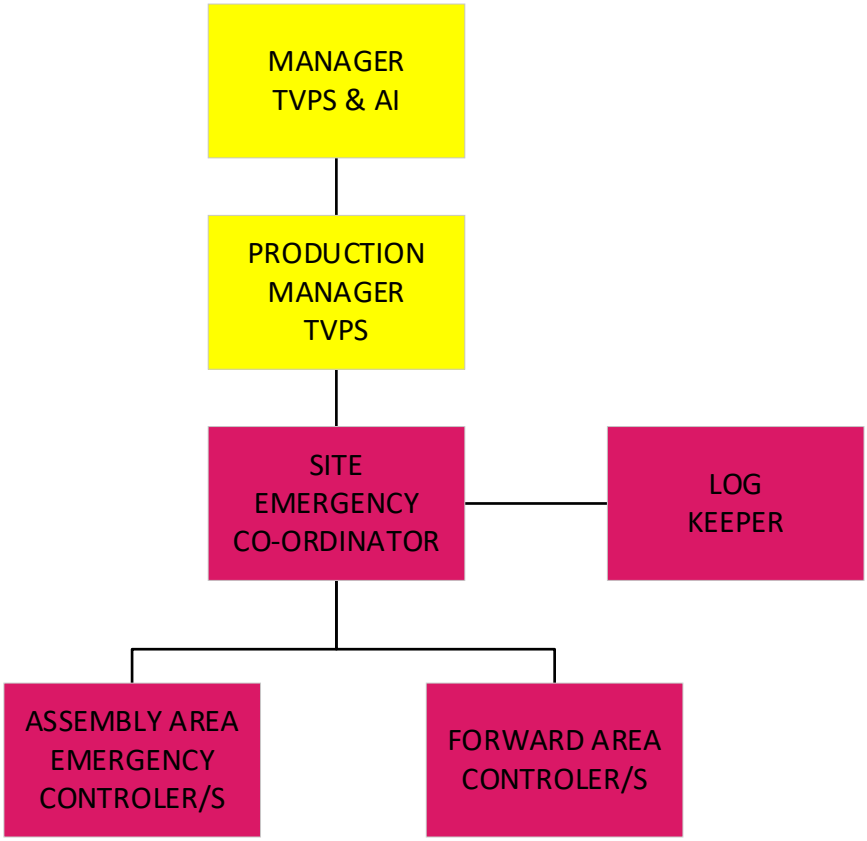
- If access to the nearest evacuation assembly area is impaired by a hazardous situation, i.e. gas leak or chemical spill, persons should assemble at the alternate evacuation assembly area. If the location of the chemical or gas leak is known observe the windsock and move up wind, away from the Incident Site.
- If circumstances prevent persons physically assembling in either one of the two designated assembly areas, the most senior person at each location should assume the role of Assembly Area Coordinator (AAC) for that group. The AAC contacts the Central Control Room using the fixed 2-way radio if one present or on 6380 2240 and advise of exact location and identity of persons assembled and await further instructions.
- Remain within listening distance of the 2-way radio as the radio network is the primary communications tool.
- Follow instructions given by the Assembly Area Coordinator.

5.4 Communication Management

The most pressing issue early in the emergency is ensuring communication channels are open and managed. All persons involved are reminded that;

- 2-Way radios are the primary tool for communicating onsite during an emergency. Radios allow a wide range of people to be immediately made aware of the evolving situation.
- The use of mobile phones is secondary as many minutes may be lost finding and dialling then informing each individual in turn rather than multiple people.
- All communication with external parties needs to go through the Site Emergency Co-Ordinator (SEC). Individuals calling ambulances or fire services will just add confusion to both the emergency management on site and the emergency services trying to respond. They may not realise that the separate calls are related to the same incident.
- Only report facts and be aware that 2-way radios are open channels so avoid identifying casualties by name.

6 TVPS Emergency Management Structure



In the event on an emergency, initial response staffing will be provided by on-shift AETV Power personnel. This may well consist of only 1 person with initial back up from security, on call, available AETV staff as required and emergency services. The AETV emergency response is led by the **Site Emergency Co-ordinator (SEC)**.

This role will be initially the most senior operator on-shift in the Central Control Room. For more extreme emergency situations the Site Emergency Co-ordinator could interchange with an external emergency service, for example the Tasmanian Fire Service.

Due to the variances in on-shift personnel availability, this Emergency Response Plan must rely on support from State Emergency Services and agencies. These external expert teams provide the physical response to the emergency and implement the strategies and tactics as agreed by the Site Emergency Co-ordinator.

The **Forward Area Controller** (FAC) will be nominated by the Site Emergency Co-ordinator. This will be the person dispatched to the incident site. The FAC manages personnel, resources and information flow at the incident location.

The **Assembly Area Controller(s)** (AAC) is the most senior AETV Power employee present at the assembly. The AAC manages personnel, resources and information flow at the Emergency Assembly Area.

The **First Aid Team** is appointed under the direction of the SEC.

The **Log Keeper** will maintain a log of all key communications and provide support to the SEC as required.

Production Manager will ensure that all appropriate management actions are being taken during the emergency, the emergency is being handled appropriately in accordance with this Plan and the operating and unaffected plant remains effectively controlled.

Head Asset Initiatives & TVPS is responsible for keeping stakeholders including the CEO and third parties informed regarding the emergency, as appropriate and will initiate any escalation as per the Entity Incident Management System, severity guide as

Detailed response and guidance **Checklists** for the various incident scenarios and for each member of the Tamar Valley Power Station Emergency Response Organisation are held in the Central Control Room.

7 Roles & Responsibilities

7.1 Prior to the Incident

Note – boxes □ can be used as tick sheet if necessary

The Production Manager is responsible for:

- ❑ Maintaining and updating these Emergency Procedures;
- ❑ Maintaining the personnel training plan;
- ❑ Maintaining the equipment and resources for incident combat;
- ❑ Periodic auditing and testing of these Emergency Procedures;
- ❑ Ensuring personnel are available, on a rostered basis, for any out of hours incident;
- ❑ Function testing and operational checks on all detection systems.

All Station personnel are responsible for:

- ❑ Completing visual inspections of plant as required by the station condition-monitoring schedule;
- ❑ Being available out of hours on a rostered basis in case of an incident;
- ❑ Maintaining a visual surveillance during working hours for potential incidents;
- ❑ Reporting any work or activity, which may compromise the effectiveness of protection systems to the duty operator, as it occurs.
- ❑ Familiarising themselves with this Plan and understanding their role and responsibilities in an emergency.
- ❑ Every person must register site attendance by utilising the swipe card facility.

The Duty Operator is responsible for:

- ❑ Ensuring awareness of the status of the station's protection system at all times.

All Personnel and Visitors responsible for:

- ❑ Reporting incidents and emergency situations immediately by contacting the Central Control Room.

7.2 During the Incident

All Production Personnel

- ❑ Report to the Central Control Room.

All Other persons including Plant Performance, Contractors & Visitors

- ❑ Report to Emergency Assembly Area (visitors must have received brief site induction and be under supervision of their sponsor)

Office Manager

- ❑ Report to the Central Control Room.

Production Manager

- ❑ Report to the Central Control Room.
- ❑ Ensures that appropriate emergency response actions are taking place.
- ❑ Ensures effective control of the operating or unaffected plant operations is taking place.
- ❑ May take over the function of Site Emergency Co-Ordinator (SEC) leaving the Duty Operator in control of the operating plant, or may designate another suitable person to act as SEC.
- ❑ Plan for rostering personnel to the various roles in the event of a protracted emergency.
- ❑ Keep the Chief Operating Officer (or delegate) informed and participate in the development of appropriate media statements if required.

Site Emergency Co-ordinator

- Wear the red safety vest and red helmet provided for recognition (located in the Central Control Room Emergency Response bin).
- Control the Emergency from the Central Control Room or if this is not possible, from the primary evacuation assembly area.
- Assess the incident/emergency and define emergency Alert Level in accordance with the Alert Levels given in Section 3.
- Appoint a Forward Area Controller to monitor the incident site.
- Appoint a Log Keeper and ensure a documented log of events and actions is maintained.
- Ensure First Aiders are assigned, and first aid is administered for injured persons where possible.
- If manpower is available appoint a suitably trained resource as a Fire Systems Monitor to be located at the applicable fire suppression station, but only if safe to do so.
- Notify the Production Manager.
- Contact external emergency services.
- Communicate with Forward Area Controller/Assembly Area Controllers.
- Confirm action plan with the unassigned operators.
- Notify external agencies as per Statutory Incident Reporting Procedure.
- Appoint a person to take tag board firstly to CCR for production staff check off and then to area coordinator for remaining staff check off

Forward Area Controller

- Wear the red safety vest and red helmet provided for recognition (located in the Central Control Room Emergency Response bin);
- Liaise with Site Emergency Co-ordinator:
- Evaluate the extent of the emergency;
- Evaluate casualty numbers;
- Liaise with the emergency services;
- Isolate equipment where possible;
- Ensure safety of personnel at site.

Assembly Area Controller/s

- Assembly Area Controller at Admin assembly area to collect all tags of personal on site.
- Conduct head count and inform Site Emergency Coordinator of names of those not assembled
- Wear the red safety vest and red helmet provided for recognition (stored in Central Control Room emergency bin)
- Ensure communication equipment is available and serviceable;
- Account for station personnel at the evacuation assembly area
- Maintain communication with Site Emergency Coordinator;
- Liaise with the Site Emergency Co-ordinator re personnel at Assembly Area;
- Record all movements in/out of station;
- Keep site secure;
- Ensure safety of personnel;
- Direct Emergency Services to emergency site.
- Appoint person to print a copy of the evacuation list within 10 minutes of the start of the evacuation and thereafter as required by the Site Emergency Co-ordinator
- Appoint person to maintain a log of personnel entering and leaving the site during the emergency
- Remain in communication with the Site Emergency Co-ordinator
- Appoint person to direct Emergency Services to the Central Control Room or to the site of the emergency if directed to do so by the Site Emergency Co-ordinator

All Non-Production personnel

- Take immediate action to raise alarm and evacuate station as necessary in accordance with the evacuation directions given by the Site Emergency Co-ordinator, taking care to avoid further danger/damage to personnel or equipment, e.g. fire, acid, caustic, etc.
- Report to Assembly Area Controller and remain in communication with Central Control Room as far as practical. Assist with incident combat and clean up in cooperation with the Site Emergency Co-ordinator.

Log Keeper

- Ensure all incoming and outgoing calls are recorded noting who made or received call, summary of conversation and time.
- Record notable events, reports and instructions including times.
- Assist in manning telephone and communicating information to external parties.

The First Aid Personnel

- Liaise with Site Emergency Co-ordinator.
- Provide First Aid to casualties.

Fire Systems Monitor

- Stand by the applicable fire suppression system (pumps, CO2, Water Mist) in the event of a fire emergency if safe to do so.
- Confirm that the system is operational and remain so as required.
- Manually intervene to activate or restart as required.

All other personnel and visitors

- Evacuate to the designated Assembly Area as directed by the Site Emergency Co-ordinator. Swipe access card to acknowledge arrival at assembly area.
- Remain at the Assembly Area until the all clear is given or instructed to relocate by the Site Emergency Co-ordinator or the Assembly Area Controller. Swipe access card to depart assembly area after emergency is declared over.

7.2.1 After the Incident

Station Personnel will:

- Provide details for incident report;
- Participate in debrief.

The Production Manager will:

- Ensure all materials and resources used during the incident are replenished and/or paid for;
- Conduct debrief as soon as possible;
- Ensure all reports are complete;
- Manage the incident recovery and site rehabilitation
- Coordinate Station recommissioning.
- Ensure the Emergency Plan, Site Contact Lists and Check Lists remain current

8 Identified risks – relevant to the Tamar Valley Site

The table below lists events identified as relevant to this site following a rigorous risk identification and assessment process.

Table 4: Hazards at Tamar Valley Power Station Site

Incident Category	Incident
Significant accident	1. Significant accident
Missing person	2. Missing person
Environmental Hazard	3. Environmental Hazard (Oil spill, fuel/chemical spill)
Fire	4. Fire – Structural (asset/equipment/building)
	5. Fire - Bushfire
	6. Fire – Natural gas
Explosion	7. Explosion (Asset/equipment/ natural gas)
Flood	8. Flood – (Cooling tower, WPT and storm water)
Intentional Harm	9. Intentional Harm (Vandalism/intruder)
Terrorism	10. Terrorism

See the Incident Management System Templates, Forms, Guides and Checklists (TFG) supporting document for the checklists relating to the above events

9 Site overview

9.1 Station Description

TVPS is located 40 minutes north of Launceston and 10 minutes south of George Town, in Northern Tasmania. Access to the facility is restricted and controlled by either security personnel or site personnel. The facility has a secure permitter fence with numerous vehicular access points.

The TVPS facility comprises:

- A base load Combined Cycle unit (208MW) - a Mitsubishi M701DA gas turbine and a SC1F-35.4 steam turbine
- A 58 MW Rolls Royce Trent 60 open cycle unit
- Three 40 MW, Pratt & Whitney FT8 Twin Pac Units – dual fuel
- Water treatment plant
- Cooling tower
- Administration facility
- Security gate house
- First aid room
- Several chemical storage areas
- 3 workshops/storage areas
- 8 switchyards
- Wastewater retention pond
- Several laydown areas
- Sealed internal road network
- Water storage tanks for fire and process water
- Two bunded diesel tanks totally 500,000L capacity
- Gas reticulation network
- Water reticulation network
- Back-up generator supply
- 2 TasNetworks 22kV external supplies

The emergency map shown in Section 10 of this Plan highlights some of the key features of the facility

9.2 Map Coordinates

What3Words is being utilised by emergency services to accurately and easily identify a location. A physical location can be described using the unique 3 words identified instead of having to outline the GPS coordinates. All Hydro Tasmania sites, emergency assembly points and helicopter landing areas have been given a What3Words reference.

10 Dangerous goods

Tamar Valley Power Station, due to the gas supply and large holding capacity of Diesel fuel, is classified as a **- Manifest Quantity Workplace (MQW)** under Work Health, Safety Act and Regulations 2012. The station was previously registered as Large Dangerous Substances under previous legislation – Dangerous Substances (Safe Handling) Act 2005.

10.1 Bulk Storage Tanks - Diesel

Two 250,000 Litre storage tanks exist to provide diesel to the dual fuel FT8 units and Rolls-Royce Trent 60. The tanks are fully bunded.

10.2 Other surface storage tanks

Various substances are stored across the site in up to 10,000 L containers (shown as chemical storage areas on the map in Section 10). All containers are clearly labelled and bunded.

10.3 Other

Minor quantities ranging from 1000L down to 205L or less of other Hazardous Substances and Dangerous Goods are located in the chemical storage areas shown on the map in section 10. These include hydrocarbons, substances used in the water treatment plant and various other substances used in day to day management of the facility. Flammable goods are kept in flammable goods cabinets. Storage of chemicals is in accordance with Safety Data Sheets, including maintaining minimum separation distances. A Chemical Manifest is available in hard copy and also available online.

10.4 Bulk quantities of hydrocarbons/chemicals/gases within asset

See attached manifest appendix D

11 Emergency equipment

11.1 Safety equipment available

The station has the following equipment. Utilise the **Incident Checklists in the TFG** document.

Item	Location (see map)
Barriers Various (see list)	Workshop (mechanical)
Barrier Tape Red/White	Central Control Room Emergency Response bin
Confined Space Entry Fan	Workshop (mechanical)
Emergency Lighting/Compressors	Coates Hire (6326 6686)
First Aid Kit	Central Control Room
First Aid Kit	Chemical Laboratory
First Aid Kit	Workshop (mechanical)
First Aid Kit, Stretchers, Oxygen and other general equipment	First Aid Room
Defibrillator	Central Control Room
Defibrillator	Front Entrance of the OCGT Site
Defibrillator	Central Control Package switching PPE cabinet
Defibrillator	First Aid Hut
Full Body Harness (s)	Workshop (mechanical)
Hand Tools	Workshop (mechanical)
Low Voltage Electrical Rescue Kit	Peaking plant
Low Voltage Electrical Rescue Kit	201 MCC
Low Voltage Electrical Rescue Kit	WTP
Low Voltage Electrical Rescue Kit	Central Control Room
Minor Oil Spill Kit	Unit 101
Minor Oil Spill Kit	Unit 102
Minor Oil Spill Kit	Unit 103
Minor Oil Spill Kit	Workshop (mechanical)
Chemical Spill Kit	Water Treatment Plant
Chemical Spill Kit	Workshop (mechanical)
Liquasweep Absorbent (Chemicals, Oils, Paints etc)	Shipping Container WTP, FT8 Oil Store, Main Warehouse
Portable Lighting	Workshop (mechanical)
Portable Pumps	Coates Hire/Workshop
Safety Signs (portable) (see list)	Workshop (mechanical)
Suction Truck	Veolia 03 6332 6500
Oil Recovery	Hagen Oil 6334 4664
SF6 Spill Kit	Workshop (Electrical)
Various Automatic Deluge Systems	All GT Enclosures
Fire Hoses	Various Locations
Hydrants	Various Locations

11.2 Accident

Ensure one person takes control – Utilise **Incident Checklists in the TFG** document

- Ensure safety of response personnel
- Stabilise the patient/patients – Always consider spinal injuries
- Utilise oxygen if available
- Ensure the patient/Patients are warm – Consider power station floors to be cold
- Ensure someone goes to and escorts emergency personnel in and ensures their safety.

11.3 Working at Heights – Ladder Incidents

Incident

- Render assistance if safe to do so.
- Always ensure basic first aid is the priority **D R S A B C D**
- Has the incident been a fall from level to another level or are they still suspended.
- Was a harness used or was it a free fall.
- Always assume potential spinal injuries and give appropriate First Aid to ensure no further injuries.

Things to consider:

- If the person is suspended, can a ladder or EWP or a Crane Basket be used to safely rescue them.
- Can they rescue themselves, self-descend?
- If hanging in a harness and conscious can they hook up and stand in their suspension trauma straps or use some rope to stand in to take the pressure off their legs.

If conscious:

- Try to get them to move their legs in the harness and push against any footholds, if possible get them to move their legs as high as possible and the head as horizontal as possible. Where these movements are possible, this will help keep the blood flowing to and from the legs. In some instances, the harness design and/or any injuries received may prevent this movement.

Suspension trauma or orthostatic intolerance results from a harness restricting blood flow from the legs. Harness restriction leads to pooling of blood in the legs which reduces the return blood flow to the heart. The brain, kidneys, and other organs are then deprived of blood and oxygen which leads to a lack of consciousness, serious injury and then death. A lack of consciousness can occur after as little as five minutes.

11.4 Environmental/oil spills

Oil Spill - Oil spill combat equipment is given below **–** refer **Incident Checklists in the TFG** document

Each Kit/s onsite should contain the following.

- Absorb Pillows
- Blotterup Pads
- Blotterup Pillows
- Barrier Booms (use on water)
- Barrier Booms (use of land)
- Mop, Bucket
- Spare equipment in storage shed and response Trailers.

A copy of the Tamar Valley Station Oil Spill Response Plan can be found at the bottom of this Plan.

11.5 Fire and exit routes

11.5.1 Fire detection

Stations are equipped with various fire detection systems including:

- Workshop/Offices – Thermal heat and smoke detectors
- Station – VESDA, Thermal heat and smoke detectors
- Unit 201
    - Gas turbine CO_2 automatic fire suppression system.
    - Steam turbine automatic water mist suppression system
    - MCC cables automatic water mist suppression system
- Unit 104
    - Gas turbine CO_2 automatic fire suppression system.
- Units 101, 102 and 103
    - Gas turbine automatic water mist suppression system
    - Auxiliary control house water mist suppression system

Activation of the Station Fire Alarm

- The site Tag board to show personnel located inside the power station grounds and main office complex is located in the hallway outside the control room.
- Break glasses are located prominently around the site.
- A fire panel is located inside the control room to show what alarms have been activated and where.

11.5.2 Escape – general

Consider the following:

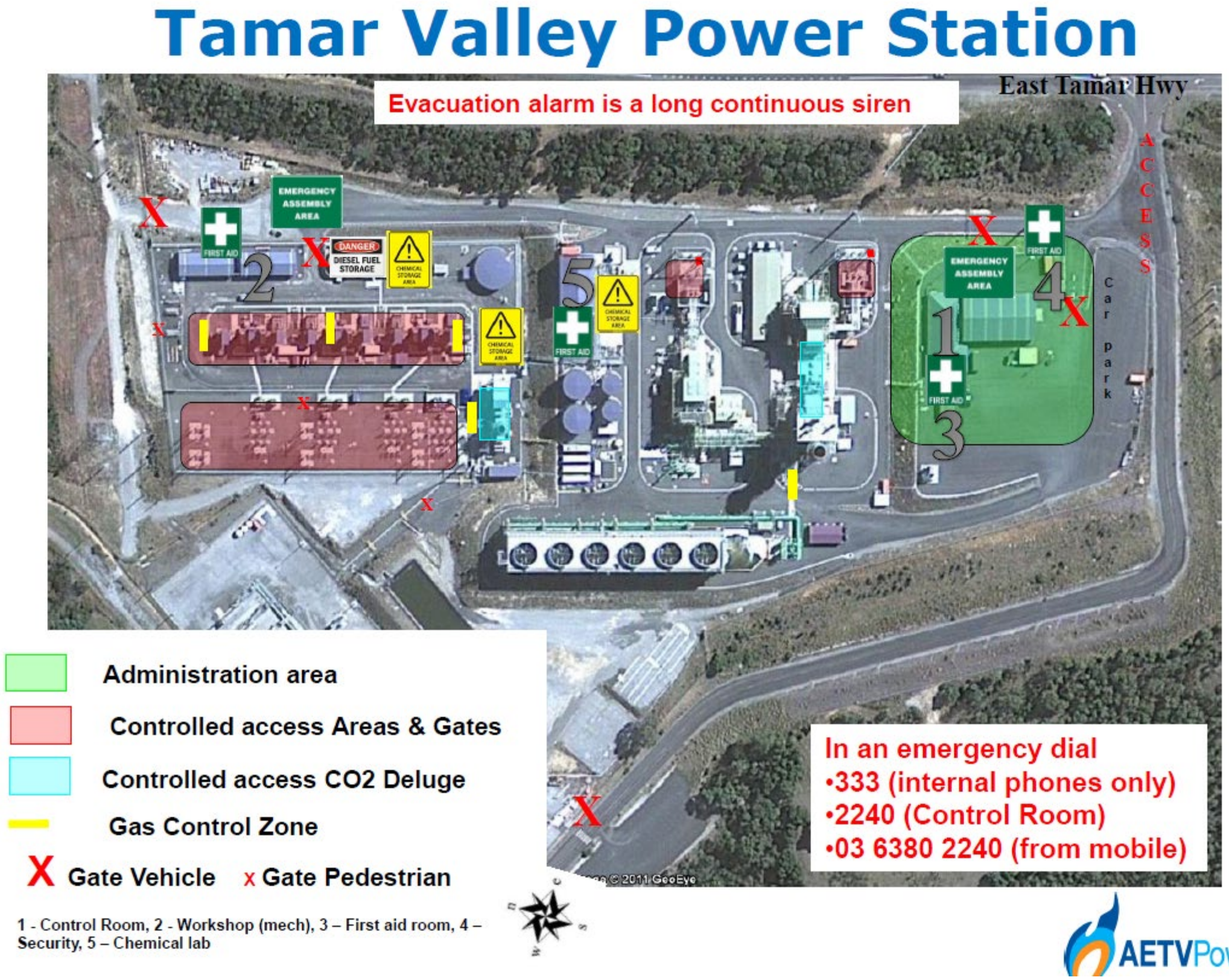
- Operations personnel report to the control room to co-ordinated response
- Emergency controller to appoint someone to collect Emergency/evacuation tags for those present on site.
- Everyone else to move directly to one of the two designated evacuation assembly areas.
- Assembly Area Controller to conduct head count and report outcome to the Emergency Controller

11.6 Gas Leak

TVPS has internal procedure "Fuel gas leak and reporting procedure - DOC22". This document designed to assist its staff in identifying, monitoring, responding to and mitigating gas leak emergencies. The Plan includes notification of and liaison with the emergency services (e.g. Tasmania Police, State Emergency Service) that are responsible for coordinating the emergency response outside of Hydro Tasmania's area of responsibility.

12 Appendices

12.1 Appendix A – Emergency Equipment Location & Egress Maps



12.2 Appendix B – Incident Checklists and Forms

See the **Templates, Forms, Guides and Checklists** (**TFG document**) for:

Incident Checklists and **Casualty Report Form** and **Damage Assessment Form**

Checklists for the following are available in the TFG document:

- Generic Checklist
- Significant Accident
- Missing Person(s)
- Environmental Hazard
- Fire – Structural
- Fire - Bushfire
- Flood – Station
- Flood – Dam/Canal
- Underground Collapse
- Intentional Harm (Assets and People)
- Terrorism
- Cyber Incident

The following forms are available in the TFG document:

- Casualty Report Form
- Damage Assessment Form

12.3 Appendix C - Emergency flip charts

Hydro Tasmania – Assets and Infrastructure

Emergency quick response – Flip Chart
TVPS Power Station

Emergency Contact (24/7)

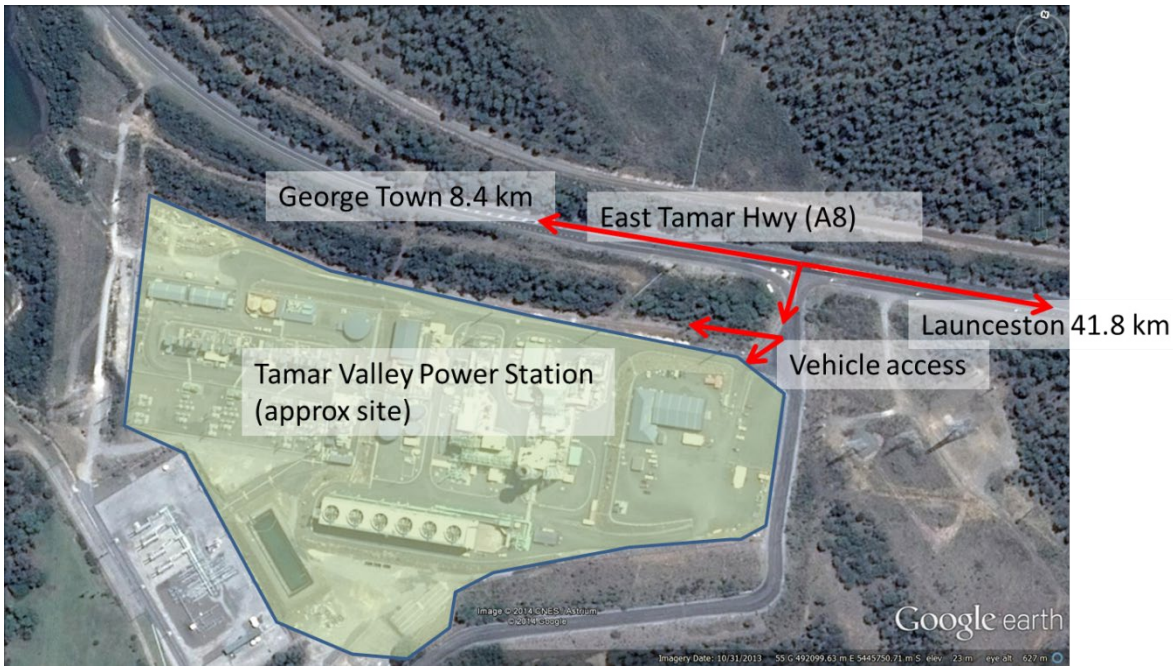
TVPS Control room 03 6380 2240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Tamar Valley Power Station:
Lat: -41° 08.38386811' Long: +146° 54.41156004'

What3Words
bookworm.uttering.gladly



Reporting an Incident

Emergency Contact (24/7)

TVPS Control room 03 6380 2240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

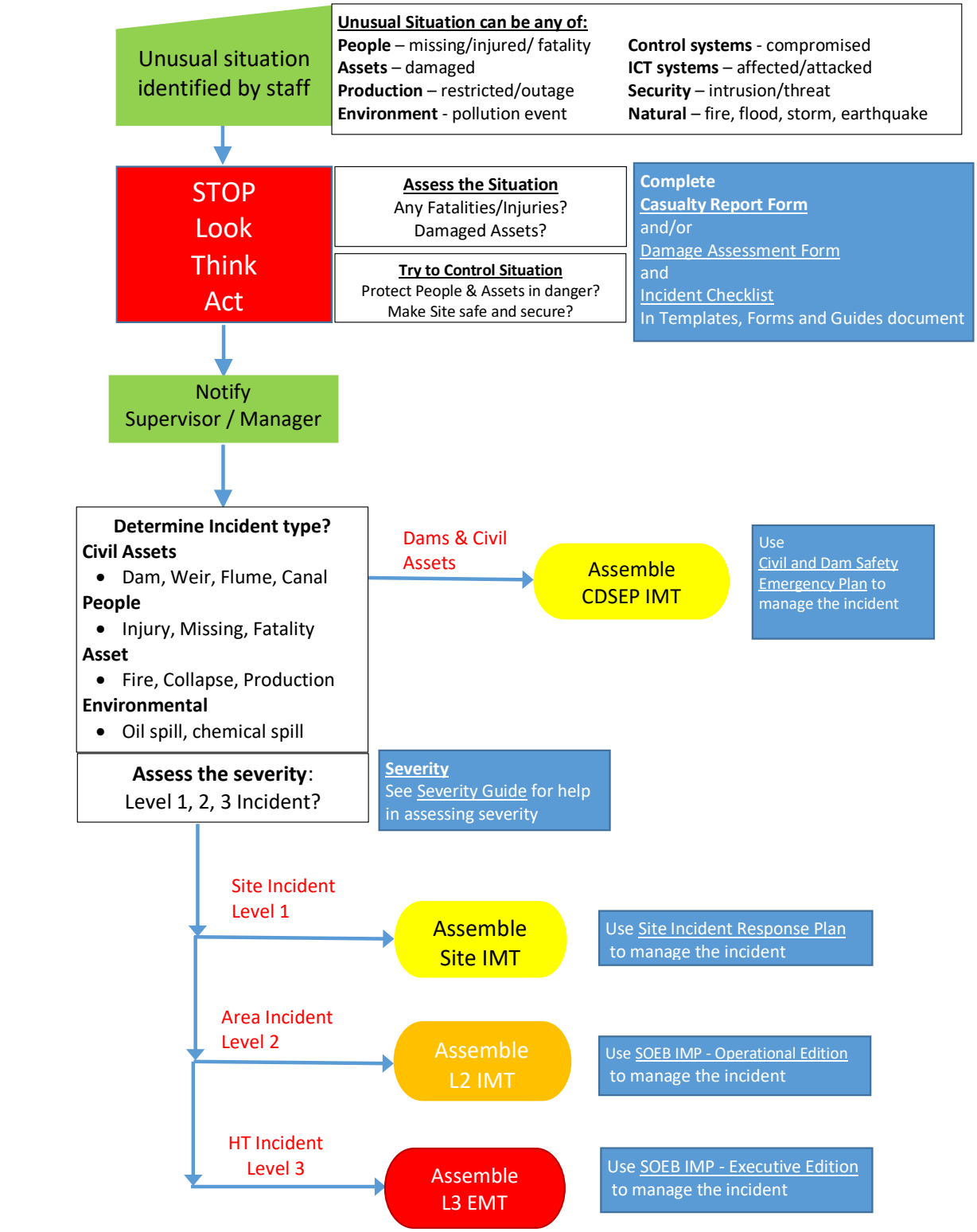
INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

The following information needs to be supplied:

- Full description of incident or warning
- Location of event, type of incident or injured person/s and type of injury
  - Your name and Company and site address
  - Contact phone number and or alternative means of communication
  - Ensure you tell them which state. i.e. Tasmania
- The easiest access route to that area
- Ask for the estimated time of arrival
- Send someone to the main road to guide the emergency vehicle or ambulance to site and then the scene.
- All other personnel depending on the incident should be directed to the Emergency Assembly Point at the front of the building and not leave these areas until directed.

Incident Reporting and Activation Flowchart



CDSEP = Civil & Dam Safety Emergency Plan
EMT = Executive Management Team
IMT = Incident Management Team
SIRP = Site Incident Response Plans (formerly Site Adverse Event Response Plans)
SOEB IMP = State Owned Energy Business Incident Management Plan
TFG = Templates Forms Guides

Injury and Medical Incident

Emergency Contact (24/7)

TVPS Control room 03 63802240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

- **Approach all incidents involving injured persons in the following sequence:**
- **The general rule is that an injured person will NOT be moved unless they are in danger.**

Note: *an unconscious person should be moved onto their side* to protect their airway, regardless of other injuries, or to relieve pain and suffering. This may vary depending on the level of training of the attending first aider and number of personnel.

D for DANGER – Survey the scene and ensure the area is SAFE to approach. Turn off all power and energy sources, check for fire and or explosion hazards. Do not endanger your own life unnecessarily.

R for RESPONSE – Speak to the injured person(s) to ascertain their level of consciousness. Unconscious person(s) take priority. If they do not respond, they should be turned carefully onto their side to protect the airway.

S for Send for Help – Ring, radio or get someone to go for help as soon as possible.

A for AIRWAY – Ensure the unconscious person(s) have a clear airway by opening their mouth and looking for any foreign material in the mouth. Clear from the mouth if necessary. If you cannot see anything in the mouth that should not be there, DO NOT put your fingers in. When the mouth is clear, gently extend the head backwards and slightly downwards to open the airway.

B for BREATHING – Check that the injured person is breathing by looking, listening and feeling for breath by placing your hand over their diaphragm and your cheek and ear down over the mouth and nose. If they are not breathing commence Expired Air Resuscitation.

C for CARDIO PULMONARY RESUSCITATION – Check that the injured person has adequate circulation by feeling for the pulse. *If circulation is adequate, check and control any bleeding.* If no pulse, commence Cardio Pulmonary Resuscitation CPR if you have been trained to do so.

D for DEFIBRILLATOR – Attach the **Defibrillator (AED)** as soon as available and follow its prompts

While waiting for the Ambulance – Make the person comfortable, maintain body temperature, and treat any injuries, and monitor and record vital signs – airway, breathing, pulse, and skin colour and conscious level.

If required, send someone to the main road intersection, (with a radio or mobile phone for communication) to guide the emergency vehicles and ensure no unauthorised persons enter the site (for example the media or general public).

Fire

Emergency Contact (24/7)

TVPS Control room 03 6380 2240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

- Alert other people, personnel
- Contact TasFire Service.
- If safe, move all vehicles and other items as appropriate to a safe area and to Emergency Assembly Points.
- Attend to human life in immediate danger. If safe to do so, put the fire out using appropriate firefighting equipment.
- Ensure no cylinders are involved or and review potential for a new fire.

Electrical fires (turn off power if safe to do so)

- Once out of the station, stay out. Do not allow people to go back into the station to get valuables. While exiting the building close doors if possible (but do not lock them) to slow the spread of the fire.
- Advise the Emergency Warden/ Site Manager/ Supervisor, who will take control of the situation. Obey all instructions.
- Proceed to the Emergency Assembly Points
- Attend to human life in immediate danger. If safe to do so, put the fire out using appropriate firefighting equipment ensuring a safe exit at all times.
- If required, send someone to the main road or nearest intersection (with a radio or mobile phone for communication) to guide the emergency vehicles and ensure that no unauthorised persons enter the site (for example the media or general public).

What you must do in the case of a Vehicle fire:

- If safe, park the vehicle away from buildings/air intakes, not on grassed areas or near other flammable items such as fuel storage etc.
- Shut down the engine, park wheels so the vehicle cannot roll away.
- Exit the vehicle and if safe, fight fire with appropriate fire extinguisher and/or fire unit. If possible stay up wind of the fire, avoiding toxic fumes.

Vehicle Accident

Emergency Contact (24/7)

TVPS Control room 03 6380 2240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

- If safe to do so give aid immediately
- Ensure vehicle is stable to prevent further injury to anyone
- Be aware of un-activated airbags etc.
- Ensure other traffic or onlookers do not cause a further accident

If required contact Emergency Services:

Call receiver will respond by asking for basic information

- Your name
- Where you are calling from (facility, nearest town and state)
- What and Where the incident is
- What level of assistance is required?
- Is the person breathing, conscious / unconscious, age
- Does the person need rescuing?

Vehicle accident involving electricity

- If the vehicle or mobile plant can be driven it should be driven clear to a distance of at least 8 metres.
- If the vehicle or mobile plant cannot be driven occupants should remain in the vehicle (unless there is a threat of fire).
- No one should touch or approach the vehicle. The emergency services must be contacted on **000** or TasNetworks on **13 2004**.
- If the vehicle is likely to catch fire, open the door, jump clear, landing with both feet together, avoid touching the ground and car simultaneously and hop away to a distance of at least 8 metres.
- If power lines are found on the ground;
- Keep well clear; **always assume that wires are live** and capable of killing people.
- Phone TasNetworks fault centre on **13 2004** or emergency services on **000** for help immediately.
- The area should be cordoned off and access prevented until the Emergency Services or TasNetworks staff arrives.

Environmental – Hazardous Substances - Gas

Emergency Contact (24/7)

TVPS Control room 03 6380 2240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

Hazardous Substance – gas

- Evacuate the immediate area; move personnel upwind and to higher ground, move to Emergency Assembly Points if possible.
- Consider threat of fire, explosion and potential hazardous properties.
- Ensure management and relevant authorities are notified.
- Establish an exclusion zone and ensure personnel are accounted for.
- Try to identify what substance, chemical or gas is involved. Arrange for MSDS so Emergency Response will be appropriate.
- Ensure other traffic or onlookers do not cause a further incident.

Oil, diesel, hydrocarbon spill

- Ensure safety of all personnel.
- Consider potential to contain PCB's
- Consider threat of fire, explosion and potential hazardous properties.
- Contain the Spill – plug it, bund it, boom it, soak it up, block drains to minimise spread.
- Ensure all contaminated material is disposed of into bags and placed in hydrocarbon bins.

If required, send someone to the front gate or nearest intersection (with a radio or mobile phone for communication) to guide the emergency vehicles and ensure that no unauthorised persons enter the site (for example the media or general public).

Working at Heights Incident

Emergency Contact (24/7)

TVPS Control room 03 63802240

FOR ANY OTHER CONTACT NUMBERS PLEASE REFER TO:

INCIDENT MANAGEMENT CONTACT DETAILS

Emergency Services 000 (Fire, Police, Ambulance)

- Alert other people personnel
- Contact Site Management to arrange emergency assistance both internal and external. i.e. SES, Ambulance and Police
- Render assistance if safe to do so.
- Has the incident been a fall from level to another level or are they still suspended.
- Always assume potential spinal injuries and give appropriate First Aid to ensure no further injuries.

Things to consider:

- If the person is suspended can a ladder or EWP or a Crane Basket be used to safely Rescue them.
- Can they rescue themselves, self-descend?
- If hanging in a harness and conscious can they hook up and stand in their suspension trauma straps or use some rope to stand in to take the pressure off their legs.

If conscious:

- Try to get them to move their legs in the harness and push against any footholds, if possible get them to move their legs as high as possible and the head as horizontal as possible. Where these movements are possible, this will help keep the bloods flowing to and from the legs. In some instances, the harness design and/or any injuries received may prevent this movement.

Always ensure basic first aid is the priority **D R S A B C D**

Suspension trauma or orthostatic intolerance results from a harness restricting blood flow from the legs. Harness restriction leads to pooling of blood in the legs which reduces the return blood flow to the heart. The brain, kidneys, and other organs are then deprived of blood and oxygen which leads to a lack of consciousness, serious injury and then death. A lack of consciousness can occur after as little as five minutes.

12.4 Appendix D – Chemical Manifest

AETV Power Station_Site Manifest201006221

12.5.1 **Emergency Scenario - Oil in river adjacent to Tamar Valley Power Station**

Possible first indications:

1. Observed by station personnel.

2. Reported by outside agency or member of the public.

Possible Causes:

1. Discharge via Storm Water Outlet at Donovan's Bay due to overload of the FT8 Site Separation Pit, the blind FT8 pit level switch or the combined cycle plant oily water separation system.
2. Discharge via retention pond due to spillage into it from external source.

Suggested Action:

Refer to Table No 2 below. Personal and public safety is paramount and is not to be jeopardised under any circumstances.

Equipment:

Oil spill kits located at:

Adjacent Unit 201, 104, 101, 102, 103 & FT8 Workshop

Adjacent oil storage containers

Adjacent steam turbine lub oil house

Adjacent Gas Turbine starting enclosure

Underground Services manual in Control Room

Sand Bags in FT8 Electrical Workshop

Fork Lift in Workshop

Keys:

TVPS Master

Note;- TVPS master key will open gate into sediment pond

Hazards:

Fire.

Slippery surfaces

Suggested Action Plan for Oil Spill Clean up

- ❑ Do not attempt any unsafe acts.
- ❑ Ensure there are no sources of ignition.
- ❑ Attempt to contain the oil spill using the equipment provided.
- ❑ Carry out any obvious measures to prevent further leakage(eg by closing valves)
- ❑ Summon assistance
- ❑ Notify EPA of the incident, with your estimation details of the quantity of oil, location, personnel, etc
- ❑ Separate oil from water using most effective method, this will involve the Tas Ports who have jurisdiction on the Tamar River.
- ❑ Complete an Incident Report
- ❑ The above forms are available on Q-Pulse

Table No 2: ***Action to be taken upon Notification of Oil in the river***

Step	Action	Contact	Note
1	Query any injuries		If Yes proceed from point 2 if No go to point 6
2	Query No of persons injured		
3	Query nature of injuries		
4	Query Location, name and contact of person reporting incident		Arrange for that person to attend injured
5	Notify ambulance	000	

6	Is a site evacuation required? If not advise duty OMT and or site management		
7	Query name and contact of person reporting incident		Arrange for that person to attend injured
8	Notify ambulance	000	
9	Identify drain emitting oily discharge		If from Sediment Pond proceed from point 7 if from retention pond proceed from point
10			
11	Shut down Spin clear pump at FT8 oily water separator		
12	Inspect oily water separator		From inspection hatch if oil is present proceed from point 10 if not from point
13	Inspect 101,102,103,104 Transformer bunds		
14	Shut down		
15	Sandbag sediment pond discharge		
16	Sandbag Interceptor inlets		

12.5.2 **Emergency scenario - Transformer oil leak**

Possible first indications:

1. Bucholtz Alarm may annunciate.
2. Winding temperature high alarm may annunciate.
3. Transformer may trip if in service.
4. Oil may be observed or an oil odour may emanate from the Transformer compound.

Possible Causes:

1. Transformer casing, pipe work or Conservator compartment leaking.

Suggested Action:

Refer to Table No 3 below; Personal and public safety is paramount and is not to be jeopardised under any circumstances.

Equipment:

Oil spill kits located at:

Adjacent Unit 201, 104, 101, 102, 103 & FT8 Workshop

Adjacent oil storage containers

Adjacent steam turbine lube oil house

Adjacent Gas Turbine starting enclosure

Underground Services manual in Control Room

Sand Bags in FT8 Electrical Workshop

Fork Lift in Workshop

Keys:

Operations Master key (Transformer compounds)

TVPS Master key (North Gate Site Drainage discharge)

Operational Master Key (Switchyard)

Hazards:

Fire

Pollution of the Tamar River, if the FT8 site drainage under ground chamber overloads.

Pollution of land if the Transformer oil leakage chamber overflows.

Note:

Oil filled equipment containing below 100 litres are not recorded due to non materiality.

Peaking Plant Inventories

The Oil containment tank at FT8 site holds 39,400 litres of oil (with a 44,600 litres total tank capacity)

Unit 104 Inventories

Rolls Royce Generator Transformer 21,000 litres.

Rolls Royce Unit Transformer 1,400 litres;

104 Hydraulic Oil tank 585 litres

104 Lube oil tank 1331 litres

104 Generator Lube Oil 2100 litres

FT8 Inventories

FT8 lube oil tanks 6 x 480 litres each

FT8 Generator Lube oil 3 x 1270 Litres

FT8 Hydraulic oil 3x 250 Litres Each

FT8 Generator Transformers (3x) 16,000 litres

FT8 Unit Transformers (4x) 760 litres

OCGT Reserve oil tanks 2 x 1270 litres each

Miscellaneous

Diesel Tanks 250,000 litres each (2x)

Waste oil store 1000

Flammable store 1000 litres (mixed petrol & diesel)

OCGT Oil store 2 x 2000 – 8000 litres each

Combined Cycle Inventories

CCGT lube oil tank nominal 17,000 Litres (capacity max 24,800 litres)

CCGT control oil 1000 litre

Steam Turbine lube Oil 15,000 litres nominal (capacity max 20,000)

CC Gas Turbine Generator transformer 73,000 litres

CC Gas Turbine Unit Transformer 9900 litres

Steam Turbine Generator Transformer 46,000 litres

Miscellaneous

Cooling tower fans 6X 100 litres each

Diesel Emergency Generator 3000 litres

CCGT oil store 9000 litres

Suggested Action Plan

- Do not attempt any unsafe acts.
- Ensure there are no sources of ignition.
- Carry out any obvious measures to prevent further leakage. eg. By closing valves or shutting down pumps.
- Ensure the integrity of the bund walls.
- Summon assistance.

Notify Power Station Manager of the incident, with your estimation details of the quantity of oil, location, personnel, etc. Complete incident report form

Table No 3: ***Action to be taken upon Notification of Transformer Oil leak***

Step	Action	Contact	Note
1	Query any injuries		If Yes proceed from point 2 if No go to point 6
2	Query No of persons injured		
3	Query nature of injuries		

4	Query Location, name and contact of person reporting incident		Arrange for that person to attend injured
5	Notify ambulance	000	
6	Is a site evacuation required? If not advise duty OMT and or site management		
7	If leak is major i.e. greater than a slow drip shut down corresponding unit and arrange assistance to isolate		
8	Ensure bund drain is shut if possible		
9	Prepare sand bags /spill kits to block off drains		
10	Arrange watch on down stream drains ,pits etc to prevent flow to river		

12.5.3 **Emergency scenario - Spillage of oil or fuel on land**

Possible first indications:

Spillage detected by TVPS personnel:

Spillage detected by others:

Possible Causes:

Punctured container:

Dropped container:

Rupture of Unit or Station Transformers (no bunds)

Leaking equipment or pipe work

Overfilled equipment including tanks

Mobile plant leaking oil or fuel

Assessment check list:

Is there a fire risk?

Is there any threat to human safety?

Is area of spill and its likelihood to spread?

If spill will enter Tamar River have Tas Ports been informed?

Is there any major threat to the environment?

Suggested Action:

Refer to Table No 4 below; Personal and public safety is paramount and is not to be jeopardised under any circumstances. Take fire precautions, further action taken will vary depending on the location and type of spill and its location but must be taken in conjunction with the MSDS. Every attempt is to be made to prevent spill entering station drains.

Equipment:

Oil spillage clean up kit (Located at each Gas Turbine)

Drain plug mats (Located at each Gas Turbine)

Mini oil booms (Located at each Gas Turbine)

Keys:

Operations Master key (Transformer compound)

Operations Master key (Main Gate Site drainage discharge)

Hazards:

Fire

Pollution of Tamar River if the site drainage pit overloads.

Pollution of Tamar River through direct stormwater drainage.

Pollution of land affected by spill.

Table No 4: ***Action to be taken upon Notification of Oil or Fuel leak***

Step	Action	Contact	Note
1	Query any injuries		If Yes proceed from point 2 if No go to point 6
2	Query No of persons injured		
3	Query nature of injuries		

4	Query Location, nature of incident, name and contact of person reporting incident		Arrange for that person to attend injured
5	Notify ambulance	000	
6	Is a site evacuation required? If not advise duty OMT and or site management		
7	Isolate leak if possible		
8	Contain and clean up		
9	Prepare sand bags /spill kits to block off drains		
10	Arrange watch on down stream drains, pits etc to prevent flow to river		See Appendix B – Site drainage

12.6 **Emergency scenario: - Spillage of chemical**

Possible first indications:

Spillage detected by TVPS personnel:

Spillage detected by Contract personnel

Possible Causes:

Punctured container:

Dropped container:

Spillage whilst decanting

Spillage whilst unloading from bulk

Assessment check list:

Are all personnel accounted for?

Have Emergency Services been notified?

Is there a fire risk?

Is there any threat to human safety?

Area of spill and its likelihood to spread?

If spill will enter Tamar River, have Tas Ports been informed?

Is there any major threat to the environment?

Can spill source be isolated?

Suggested Action:

Refer to Table No 5 below. Personal and public safety is paramount and is not to be jeopardised under any circumstances. Take fire precautions, further action taken will vary depending on the location and type of spill and its location but must be taken in conjunction with the SDS (previously known as MSDS). Every attempt is to be made to prevent spill entering station drains.

Equipment:

Acid spillage clean up kit (Located in Water Treatment Plant)

Drain mats (Located in Water Treatment Plant)

Fire hoses in Workshop (Located in Water Treatment Plant)

Keys:

Operations Master key (North Gate Site drainage discharge)

Hazards:

Fire

Pollution of Tamar River if the Site Drainage Pit overloads.

Pollution of Tamar River through direct drainage.

Pollution of land affected by spill.

Table No 5: ***Action to be taken upon Notification of Chemical Spill***

Step	Action	Contact	Note
1	Query any injuries		If Yes proceed from point 2 if No go to point 6
2	Query No of persons injured		
3	Query nature of injuries		
4	Query Location, nature of incident, name and contact of person reporting incident		Arrange for that person to attend injured

5	Notify ambulance	000	
6	Is a site evacuation required? If not advise duty OMT and or site management		
7	Isolate leak if possible		
8	Barricade Area		
9	Make sure SDS is available		Check for any compatibility issues, health warnings & PPE requirements, along with clean up instructions and disposal requirement.
10	Contain and clean up		
11	Prepare sand bags /spill kits to block off drains		
12	Arrange watch on down stream drains ,pits etc to prevent flow to river		