

Permit Variation Application Report

Prepared by: Arthian Ltd

For: Saltend Cogeneration Company Ltd

Site: Saltend Power Station

Date: 13/08/2025

Document Ref: 2025-REP-001

Issue-01

www.arthian.com

Quality Assurance

Issue Record

Issue	Description	Date	Author	Reviewer	Approver
1	Issue	13/08/2025	KB	KB	RH

Staff Detail

Initials	Name	Position
KB	Kate Brady	Principal Consultant
RH	Richard Howarth	Manager, Waste and Resource Management

Revision Detail

Rev No.	Detailed Description of Change	Ref. Section



Contents

1. Introduction 1

1.1 Background 1

1.2 Variation purpose 1

1.3 Pre-application advice 2

1.4 Application information..... 4

2. Non-Technical Summary 7

Tables

Table 1 List of activities being varied 1

Table 2 Pre-application advice 3

Drawings

CE-SE-2319-DWG01 Figure 3 Rev B Site Layout Plan

Appendices

Appendix A EMS Summary

Appendix B Air Quality Assessment

Appendix C Ecological Air Quality Assessment

Appendix D Thermal Discharge Assessment

Appendix E BAT Review



1. Introduction

1.1 Background

- 1.1.1 Arthian Ltd (‘Arthian’), were commissioned by Saltend Cogeneration Company Limited (**the Operator**) (trading as Triton Power), to prepare and submit an application to vary their Environmental Permit.
- 1.1.2 The Operator operates a power station at Saltend Power Station, Saltend Chemicals Park, Hedon Road, Hull, HU12 8GA (the Site). The Site is centred on National Grid Reference (NGR) TA 15994 27848.
- 1.1.3 The Site is operated in accordance with Environmental Permit reference EPR/QP3539LE (the Permit).
- 1.1.4 A recent variation of the Permit (EPR/QP3539LE/V010) was issued in February 2024 to remove a boiler which is not in operation and increase the operating hours of a back-up boiler.
- 1.1.5 The following recent variations were undertaken:
- EPR/QP3539LE/V010 – Remove a Secondary boiler which was not in operation and increase the operating hours of a back-up boiler.
 - EPR/QP3539LE/V011 – Temporarily increase the annual average limit for NOx.

1.2 Variation purpose

- 1.2.1 The purpose of this permit variation application is to:
- Increase the water discharge temperature from 28°C to 40°C;
 - Add a Secondary (SEC) boiler (which was removed in V010).
- 1.2.2 Part C3, Table 1a of the variation application requires a list of the activities being varied. This is produced below in Table 1.

Table 1 List of activities being varied

Name	Installation Schedule 1 ref	Description of installation activity	Description of activity change
AR1	Section 1.1 Part A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	Gas turbine(s)	Add new SEC boiler (LCP299)
AR2	Directly Associated Activity	Process cooling waters	Increase maximum temperature of discharge from 28°C to 40°C.



Discharge water temperature increase

- 1.2.3 The purpose for increasing the discharge temperature is because with warmer weather in recent years, the Site has been close to the maximum temperature discharge limit due to the incoming water temperature being higher, rather than any change to the site processes.
- 1.2.4 To prevent breaches in the discharge temperature, the Site wish to increase the discharge temperature.
- 1.2.5 Detailed work has been undertaken to see if discharging effluent at 40 degrees centigrade would impact the receiving environment within the dock area. The work carried out includes:
- Defined the site setting, including nearby protected habitats
 - Defined the baseline conditions within the dock via water quality survey
 - Modelled annual average 98th percentile temperatures compared to no discharge
 - Conservatively assessed impacts to receiving environment compared to no discharge. Impacts to temperature profile, water quality indicators and protected environments were considered.
- 1.2.6 The modelling concluded that the proposed discharge was “not expected to cause adverse impacts to migratory fish nor shellfish waters via direct thermal water quality pathways”.
- 1.2.7 Changes to water quality were predicted to be “negligible” and supports a conclusion of “no deterioration”.
- 1.2.8 More information is provided in the Thermal Discharge report, See Appendix D.
- 1.2.9 Part C6 Section 1 Q1.3 of the application forms asks for the name of the receiving water body. The box is ticked for ‘coastal water’, though the discharge is into St George’s Dock, rather than direct to a coastal water.
- 1.2.10 Part C6 Section 1 Q1.7 of the application forms asks if the discharge point is above the mean low water spring tide

Secondary boiler (A5)

- 1.2.11 A recent variation of the Permit (EPR/QP3539LE/V010) was issued in February 2024 to remove the boiler which was out of operation. This variation looks to include its replacement back into operation. The application will include another Large Combustion Plant with a thermal input of >50MW. It will be renamed LCP299.
- 1.2.12 An Air Quality Assessment has been prepared to assess the impacts of the new boiler to air and nearby receptors. The assessment concludes “*“...the air quality impacts of the plant at the Saltend Power Station site in Hull can be considered as not significant for both human and ecological receptors”*”.

1.3 Pre-application advice

- 1.3.1 Pre-application discussions were undertaken between the Operator and the Environment Agency (reference EPR/QP3539LE/V010).



1.3.2 The pre-application advice covered a number of proposals including the replacement of boiler LCP299, and increasing the maximum permitted temperature of the discharge.

1.3.3 The pre-application advice relating to this application is summarised in Table 2 below.

Table 2 Pre-application advice

	Pre-app discussion point	Environment Agency advice
1	Increase in water discharge temperature	<p>The proposal is to increase water discharge temperature during periods of hot weather. They requested parity on this issue with other similar sites, however the Environment Agency noted that each decision must be site-specific and take into account surrounding environmental considerations, therefore we cannot confirm at this stage the same approach can be applied here. Advice on TraC temperature targets the Environment Agency uses for thermal discharges, and the corresponding mixing zones, are provided in the attached document. An alternative to a flat increase in the absolute discharge temperature could be the application of a 99 percentile limit. This could help the applicant with operation during short periods of warm weather and permit a limited number of exceedances throughout the year.</p> <p>The operator must demonstrate that such a temperature increase will not have a detrimental effect on the surrounding environmental features. The operator confirmed that there are no chemical dosing volume changes planned, and it is assumed recirculation is not presently occurring. They are also not currently continuously monitoring intake dock water temperatures.</p> <p>Discussion covering modelling requirements where the Environment Agency confirmed this needs to illustrate the extent of the thermal plume such a temperature increase would cause. The operator should be able to obtain information for this aspect, for example water depths, volumes and changes, from the local port authority. As the dock is a restricted waterway, the model parameters need to include the actual size, depth and volume of the dock. The operator will consider how to obtain this data, and noted that shipping could affect this. The operator confirmed that weekly spot-checks on temperature are completed by a service chemist during daylight hours at two data points – this has been ongoing for many years. Although there is currently no continuous monitoring happening at the abstraction point, it is done on an ad hoc basis so there is data available. The Environment Agency noted that stratification could also impact the thermal mixing of any discharge. It is likely that, due to the shape and restricted nature, the docks stratify at periods throughout the year. Stratification is the separation of a body of water into layers due to density differences and can inhibit overturning/mixing of waters. Increases in discharge temperature may prolong any stratified period within the dock, potentially impacting any habitats existing within the dock through processes such as deoxygenation. If data is presently available through previous monitoring campaigns, it would be worth considering the dissolved oxygen concentrations in the dock to determine what stratification is present throughout the year, and to what extent would an increase in temperature impact this in future. Additionally, if available, it would be worth considering what habitats are present within the dock, and how temperature increases may impact these in future.</p>
2	Addition of the new SEC boiler (replacing LCP 299)	The Environment Agency would expect this new SEC boiler to have new plant ELVs assigned (see below tables).



Pre-app discussion point	Environment Agency advice																																																																																												
	Boilers: natural gas																																																																																												
	<table border="1"> <tr> <td>TABLE</td> <td>1.1.1</td> </tr> <tr> <td>Type</td> <td>Boiler</td> </tr> <tr> <td>Age</td> <td>Permitted after publication of the LCP BREF</td> </tr> <tr> <td>Operating Hours</td> <td>Unlimited</td> </tr> <tr> <td>Fuel</td> <td>Natural gas</td> </tr> </table>						TABLE	1.1.1	Type	Boiler	Age	Permitted after publication of the LCP BREF	Operating Hours	Unlimited	Fuel	Natural gas	Back																																																																												
TABLE	1.1.1																																																																																												
Type	Boiler																																																																																												
Age	Permitted after publication of the LCP BREF																																																																																												
Operating Hours	Unlimited																																																																																												
Fuel	Natural gas																																																																																												
	<table border="1"> <tr> <th colspan="7">NOx limits (mg/Nm³)</th> </tr> <tr> <th>Averaging</th> <th>IED (Annex V Part 2) - New</th> <th>BREF (Table 25 BAT-c)</th> <th>Expected permit limits</th> <th>Basis</th> <th>Limits apply</th> <th>Monitoring</th> </tr> <tr> <td>Annual</td> <td>None</td> <td>60</td> <td>60</td> <td>BREF</td> <td>MSUL/MSDL to baseload</td> <td rowspan="4">Continuous</td> </tr> <tr> <td>Monthly</td> <td>100</td> <td>None</td> <td>100</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>Daily</td> <td>110</td> <td>85</td> <td>85</td> <td>BREF</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>95th %ile of hr means</td> <td>200</td> <td>None</td> <td>200</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td></td> <td colspan="7"> <table border="1"> <tr> <th colspan="7">CO limits (mg/Nm³) – indicative in <i>italics</i></th> </tr> <tr> <th>Averaging</th> <th>IED (Annex V Part 2) - New</th> <th>BREF</th> <th>Expected permit limits</th> <th>Basis</th> <th>Limits apply</th> <th>Monitoring</th> </tr> <tr> <td>Annual</td> <td>None</td> <td>15</td> <td>15</td> <td>BREF</td> <td>MSUL/MSDL to baseload</td> <td rowspan="4">Continuous</td> </tr> <tr> <td>Monthly</td> <td>100</td> <td>None</td> <td>100</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>Daily</td> <td>110</td> <td>None</td> <td>110</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>95th %ile of hr means</td> <td>200</td> <td>None</td> <td>200</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> </table> </td> </tr> </table>							NOx limits (mg/Nm ³)							Averaging	IED (Annex V Part 2) - New	BREF (Table 25 BAT-c)	Expected permit limits	Basis	Limits apply	Monitoring	Annual	None	60	60	BREF	MSUL/MSDL to baseload	Continuous	Monthly	100	None	100	IED	MSUL/MSDL to baseload	Daily	110	85	85	BREF	MSUL/MSDL to baseload	95 th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload		<table border="1"> <tr> <th colspan="7">CO limits (mg/Nm³) – indicative in <i>italics</i></th> </tr> <tr> <th>Averaging</th> <th>IED (Annex V Part 2) - New</th> <th>BREF</th> <th>Expected permit limits</th> <th>Basis</th> <th>Limits apply</th> <th>Monitoring</th> </tr> <tr> <td>Annual</td> <td>None</td> <td>15</td> <td>15</td> <td>BREF</td> <td>MSUL/MSDL to baseload</td> <td rowspan="4">Continuous</td> </tr> <tr> <td>Monthly</td> <td>100</td> <td>None</td> <td>100</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>Daily</td> <td>110</td> <td>None</td> <td>110</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>95th %ile of hr means</td> <td>200</td> <td>None</td> <td>200</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> </table>							CO limits (mg/Nm ³) – indicative in <i>italics</i>							Averaging	IED (Annex V Part 2) - New	BREF	Expected permit limits	Basis	Limits apply	Monitoring	Annual	None	15	15	BREF	MSUL/MSDL to baseload	Continuous	Monthly	100	None	100	IED	MSUL/MSDL to baseload	Daily	110	None	110	IED	MSUL/MSDL to baseload	95 th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload
NOx limits (mg/Nm ³)																																																																																													
Averaging	IED (Annex V Part 2) - New	BREF (Table 25 BAT-c)	Expected permit limits	Basis	Limits apply	Monitoring																																																																																							
Annual	None	60	60	BREF	MSUL/MSDL to baseload	Continuous																																																																																							
Monthly	100	None	100	IED	MSUL/MSDL to baseload																																																																																								
Daily	110	85	85	BREF	MSUL/MSDL to baseload																																																																																								
95 th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload																																																																																								
	<table border="1"> <tr> <th colspan="7">CO limits (mg/Nm³) – indicative in <i>italics</i></th> </tr> <tr> <th>Averaging</th> <th>IED (Annex V Part 2) - New</th> <th>BREF</th> <th>Expected permit limits</th> <th>Basis</th> <th>Limits apply</th> <th>Monitoring</th> </tr> <tr> <td>Annual</td> <td>None</td> <td>15</td> <td>15</td> <td>BREF</td> <td>MSUL/MSDL to baseload</td> <td rowspan="4">Continuous</td> </tr> <tr> <td>Monthly</td> <td>100</td> <td>None</td> <td>100</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>Daily</td> <td>110</td> <td>None</td> <td>110</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> <tr> <td>95th %ile of hr means</td> <td>200</td> <td>None</td> <td>200</td> <td>IED</td> <td>MSUL/MSDL to baseload</td> </tr> </table>							CO limits (mg/Nm ³) – indicative in <i>italics</i>							Averaging	IED (Annex V Part 2) - New	BREF	Expected permit limits	Basis	Limits apply	Monitoring	Annual	None	15	15	BREF	MSUL/MSDL to baseload	Continuous	Monthly	100	None	100	IED	MSUL/MSDL to baseload	Daily	110	None	110	IED	MSUL/MSDL to baseload	95 th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload																																															
CO limits (mg/Nm ³) – indicative in <i>italics</i>																																																																																													
Averaging	IED (Annex V Part 2) - New	BREF	Expected permit limits	Basis	Limits apply	Monitoring																																																																																							
Annual	None	15	15	BREF	MSUL/MSDL to baseload	Continuous																																																																																							
Monthly	100	None	100	IED	MSUL/MSDL to baseload																																																																																								
Daily	110	None	110	IED	MSUL/MSDL to baseload																																																																																								
95 th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload																																																																																								

1.4 Application information

- 1.4.1 Payment of the application fee (substantial variation) has been paid using payment reference **PSCAPPSALTE003** on 13 August 2025.
- 1.4.2 This application report is accompanied by the relevant application forms, Part A, Part C2, Part C3, Part C6 and Part F1.
- 1.4.3 Part C2, question 3d, requests a summary of the Site's EMS. The EMS summary is enclosed as Appendix A.
- 1.4.4 The Site operates in accordance with a written EMS which is accredited to ISO 14001 and which has been considered as part of the original permit application. There will be minimal change to the existing EMS. The Management of Change procedure within the existing EMS will be implemented following the Permit variation to reflect the change. Anticipated procedures which will be updated will include the monitoring procedure, Site and equipment maintenance, Contingency plan.
- 1.4.5 Part C2, questions 4 – the environmental risk associated with the proposed emission limits change is considered in Appendix B and C – Air Quality Assessment and associated Eco Assessment and Appendix D Thermal Assessment for the impact to habitats as a result of the proposed temperature increase.
- 1.4.6 Part C6, question 8f asks what the maximum expected temperature change of the incoming water supply will be. The site currently monitors temperature at the discharge and also monitors ambient air temperature. Historically, inlet temperatures have not been monitored. However, it has been observed that discharge temperatures increase alongside higher ambient temperatures in general. This has been observed consistently and independent of any change to site activities.



- 1.4.7 A conservative approach has been taken with the risk assessment (Appendix D, Thermal Discharge Assessment) in assessing the possible risks of discharging up to 40 deg centigrade. The assessment concludes that even at this temperature, there would be no adverse impact.
- 1.4.8 Part C3, Table 3 asks about the technical standards for each activity. The BAT review for the Site is included as Appendix E.
- 1.4.9 Part C3, question 3a1 asks what documents from the Operating Techniques table refer to older applications and what information has changed. The Operating Techniques table does appear to reference some documents from prior applications. However it is not possible to tell what specific information has changed as a result of this application. Changes associated with this application will be operational and updates will be undertaken to communicate changes to site staff e.g. any change to discharge temperature limit.
- 1.4.10 In reviewing the Operating Techniques Table, it seems that there may be documents referenced within that might be more appropriately referenced in the Permit Status Log rather than the Operating Techniques, e.g. reference to compliance and monitoring requirements which will be dictated by the permit itself or reference to a modelling assessment.



Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/QP3539LE/A001	The response to section 2.1, and 2.2 in the Application.	22/03/2006
Receipt of additional information to the application	Responses to question 2 detailing clarification on boiler thermal input rating, emission limits to water, release points to air, gas odourisation, cooling water discharge impact, pipe-work maintenance and environmental improvement plan.	30/08/2006 08/02/2007 14/02/2007
Response to regulation 60(1) Notice – request for information dated 31/10/2014	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (LCP configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9i,iii (proposed ELV's)	31/03/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 18/05/2015	Compliance route and operating techniques identified in response to questions 6 (MSUL/MSDL), 9i,ii (proposed ELV's), 11 (monitoring requirements).	17/07/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 28/09/2015	Compliance route and operating techniques identified in response to questions 6 (MSUL/MSDL), 9i,ii (proposed ELV's).	05/10/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 13/10/2015	Compliance route and operating techniques identified in response to question 2 (compliance route).	20/10/2015
Receipt of additional information to the regulation 60(1) Notice. requested during telephone call 09/10/2015	Operating techniques for LCP300 and LCP302 in Trip to House Load service (TTHL). 500 hour operation only.	09/11/2015
Response to regulation 61(1) Notice – request for information dated 01/05/2018 EPR/QP3539LE/V007	Compliance and operating techniques identified in response to the BAT Conclusions for LCP published on 17 August 2017	22/10/2018
Additional information in response to regulation 61(1) Notice EPR/QP3539LE/V007	Compliance and operating techniques identified in response to BAT Conclusions 1, 3, 4, 40, 41 and 42.	30/07/2019
		19/08/2019
Variation Application EPR/QP3539LE/V006	The response to questions in Section 3, 4, 5 and 6 of Part C3 of the application form. Supporting documents: Document 001 – Design & Access Statement; document 002 – Environmental Management System Summary; Document 004 – Black Start Description and Plant Test Requirements; Document 005 – Block Plant (showing locations of new generators on site).	28/03/2019
Additional information received via email.	Detailed Air Dispersion Modelling (Version 5 dated 23/10/2019)	23/10/2019



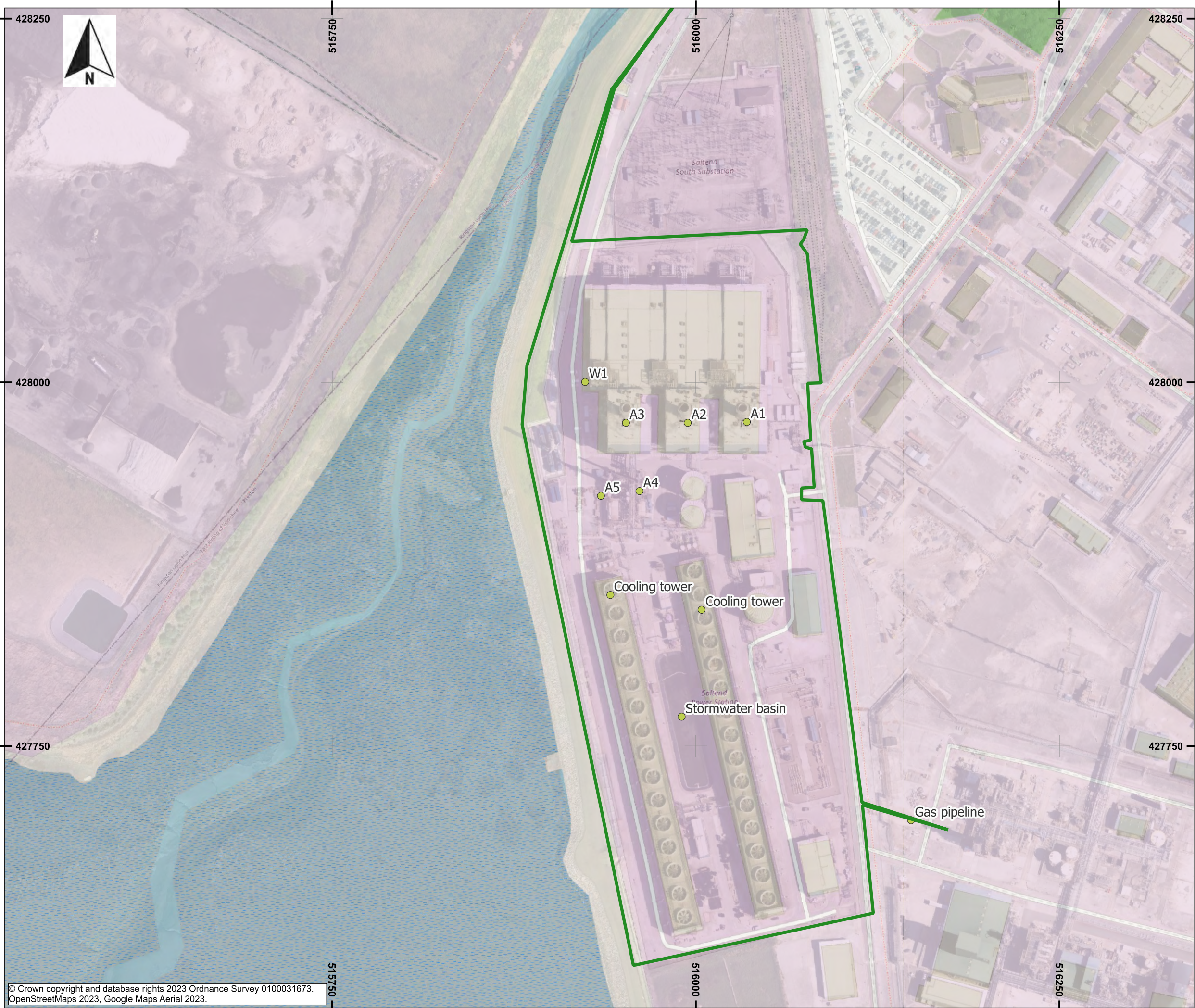
2. Non-Technical Summary

- 2.1.1 Saltend Cogeneration Company Limited (**the Operator**) (trading as Triton Power), are replacing a Large Combustion Plant on site, which had been taken out of commission a few years previously.
- 2.1.2 A recent variation of the Permit (EPR/QP3539LE/V010) was issued in February 2024 to remove the boiler which was out of operation. This variation looks to include its replacement back into operation.
- 2.1.3 In addition, there is a need to increase the maximum permitted temperature of the cooling tower blowdown water discharge. The maximum discharge temperature has been observed to increase above the maximum permitted temperature (28 deg C) as a result of increasing ambient temperatures of the inlet water, taken from St Georges Dock.
- 2.1.4 An Air Quality Assessment (Appendix B) and ecological assessment (Appendix C) has been completed and concludes that “...*the air quality impacts of the plant at the Saltend Power Station site in Hull can be considered as not significant for both human and ecological receptors*”.
- 2.1.5 An assessment of the effects of increasing the discharge temperature has been prepared. This thermal assessment (Appendix D) concludes that the discharge is “...*not expected to cause adverse impacts to migratory fish nor shellfish waters via direct thermal water quality pathways*”.
- 2.1.6 Changes to water quality were predicted to be “*negligible*” and supports a conclusion of “*no deterioration*”.



Drawing CE-SE-2319-DWG01 Figure 3 Rev B Site Layout Plan





Legend:

Permit boundary

Final Revision:	Date:	Description:	By:	Chk:
-----------------	-------	--------------	-----	------

Arthian Ltd
Science, Technology & Prototyping Centre
University of Wolverhampton Science Park
Glaisher Drive, Wolverhampton
WV10 9RU

Client:

Saltend Cogeneration Company Ltd

Site: Saltend Power Station

Drawing Title: **Installation layout**

Date: 7 / 8 / 2025	Scale: 1:2,500	Paper Size: A3 (420×297mm)
-----------------------	-------------------	-------------------------------

Drawn By: KB	Checked By: KB	Status: FINAL	Final Revision: -
-----------------	-------------------	------------------	----------------------

Drawing Ref: CE-SE-2319-DW01	Drawing No: Permit 'Fig 3' Rev B
---------------------------------	--

Appendices



Appendix A EMS Summary



Contents

1	Context	3
1.1	Company Profile	3
1.2	Purpose of Manual	3
1.3	Integrated Management System Scope	3
2	Policy	3
2.1	Corporate Health, Safety and Environmental Policy	3
2.2	Local Quality, Environmental, Health and Safety Policy	3
3	Organisation	4
3.1	Organisation and Structure	4
3.2	Responsibility	4
3.2.1	Senior Management	4
3.2.2	Integrated Management System Representatives	4
3.2.3	Compliance Review Committee	5
3.2.4	Management Review Committee	5
3.2.5	Function / Departmental Manager	5
3.2.6	All Employees	6
4	Integrated Management System Requirements	6
4.1	Integrated Management System Documents	6
4.2	Quality, Environmental, Health & Safety Policy	6
4.3	Planning	6
4.3.1	Aspects and Impacts	7
4.3.2	Legal and Other Requirements	7
4.3.3	Objectives, Targets and Programme(s)	7
4.4	Implementation and Operation	7
4.4.1	Resources, Roles, Responsibility and Authority	7
4.4.2	Competence, Training and Awareness	7
4.4.3	Communication	8
4.4.4	Documentation	8
4.4.5	Control of Documents	8
4.4.6	Operational Control	8
4.4.7	Emergency Preparedness and Response	9
4.5	Checking	9
4.5.1	Monitoring and Measurement	9
4.5.2	Evaluation of Compliance	9
4.5.3	Nonconformity, Corrective Action and Preventative Action	9
4.5.4	Control of Records	10
4.5.5	Internal Audit	10
4.6	Management Review	11

Appendix B Air Quality Assessment



Appendix C Ecological Air Quality Assessment



Appendix D Thermal Discharge Assessment



Appendix E BAT Review



BAT No.	Topic	Brief Description	BAT	Applicable BAT-AEL/AEELs	Operating to BAT?	BAT-AEL derogation needed?	Explanation of how compliance with BAT is met or confirmation of action that will be taken to ensure compliance with BAT by
General BAT Conclusions							
1	EMS	Improve overall performance	Implement and adhere to an EMS that incorporates key features identified		Yes - Compliant		Site holds IMS certification to ISO 14001:2015, ISO 9001:2015 45001:2018 certification, that covers EMS items (i) through (xiii)
2	Efficiency	Determine net electrical efficiency and/or net total fuel utilisation and/or net mechanical efficiency	Carry out a performance test at full load.		Yes - Compliant		Not applicable to LCPs 298 (boilers). Not applicable to proposed A5 emission point.
3	Monitoring of process parameters	Monitor key process parameters for emissions to air and water specified in the corresponding table.	Monitoring of specified process parameters.		Yes - Existing boiler will be compliant using CEMS taken from LCP 299 Yes - Proposed A5 emission point will be compliant using CEMS in the same configuration as LCP 299.		LCPs 298: Oxygen, temperature & pressure determined continuously. Flow determined periodically. Water vapour not required (dry extractive sample). Compliant. Proposed A5 emission point: Oxygen, temperature & pressure determined continuously. Flow determined periodically. Water vapour not required (dry extractive sample). Compliant. No waste water from flue gas treatment. Water discharge point W1 uses MCERTS equipment as speified by the sites environmental permit and is audited under the Minimum requirements for self-monitoring of flow: MCERTS performance standard. Continuous measurement for flow, temperature and pH.
4	Monitoring of emissions to air	Monitor emissions to air with at least the frequency in the corresponding table and in accordance with the EN standards.	Monitor emissions to air with at least the frequency in the corresponding table and in accordance with the EN standards.		Yes - Will be compliant using CEMS taken from LCP 299 and proposed A5 emission point.		LCPs 298: NOx & CO monitored continuously. Compliant. Proposed A5 emission point: NOx & CO & SO2 monitored continuously. Compliant.
5	Monitoring of emissions to water from flue-gas treatment	Monitor emissions to water with at least the frequency in the corresponding table and in accordance with the EN standards.	Monitor emissions to water with at least the frequency in the corresponding table and in accordance with the EN standards.		N/A		LCPs 298: Not applicable - no flue-gas treatment Proposed A5 emission point - no water generated during flue gas treatment No waste water from flue gas treatment. Water discharge point W1 uses MCERTS equipment as speified by the sites environmental permit and is audited under the Minimum requirements for self-monitoring of flow: MCERTS performance standard. Continuous measurement for flow, temperature and pH.
6	Environmental performance	Improve general environmental performance	A variety of techniques		Yes - Compliant		BAT 6b, c & d applicable for to LCP 298 and proposed A5 emission point- regular planned maintenance & upgrades of plant in line with BAT. BAT 6a & e not applicable for LCP 298 and proposed A5 emission point - no choice of fuel supply (national gas transmission system).
7	Reduce emissions of ammonia to air	Reduction of ammonia emissions where SCR or SNCR is used.	BAT is to optimise the design and/or operation and to meet associated AELs.	NH3 <= 3 - 10 mg/Nm3	N/A		Not applicable to LCP 298 - no SCR/SNCR. Proposed A5 emission point - NH3 <= 5mg/Nm3.

BAT No.	Topic	Brief Description	BAT	Applicable BAT-AEL/AEELs	Operating to BAT?	BAT-AEL derogation needed?	Explanation of how compliance with BAT is met or confirmation of action that will be taken to ensure compliance with BAT by
8	Prevent or reduce emissions to air	Prevent or reduce emissions to air during normal operating conditions.	Ensure, by appropriate design, operation and maintenance, that the emission abatement systems are used at optimal capacity and availability.		Yes - Compliant		<p>LCP 298 is designed and operated as per design.</p> <p>Proposed A5 emission point will be designed and operated as per design, and SCR will be verified during commissioning but not used whilst firing on natural gas due to combustion tuning and design of boiler.</p>
9	Environmental performance and reduce emissions to air	Inclusion of a number of elements in the quality assurance/quality control programmes for all the fuels used, as part of the EMS.	Techniques (i), (ii) and (iii).		Yes - Compliant		<p>All 3 techniques employed for the LCP 298;</p> <p>(i) Regular analysis of fuel as part of fuel gas metering system validation.</p> <p>(ii) Continual monitoring of fuel composition by chromatograph.</p> <p>(iii) Boiler is run to design.</p> <p>These 3 techniques will also be employed for the proposed A5 emission point.</p>
10	Reduce emissions to air and/or water	Prevent or reduce emissions to air during other than normal operating conditions (OTNOC).	A variety of techniques.		Yes - Compliant		<p>Environmental aspects/impacts reviewed annually to take into account emissions from OTNOC for the LCP 298 and the proposed A5 emission point.</p> <p>CEMs continually in service for LCPs 298 and proposed A5 emission point - CO and NOx emissions monitored.</p> <p>Water discharge point W1 uses MCERTS equipment as speified by the sites environmental permit and is audited under the Minimum requirements for self-monitoring of flow: MCERTS performance standard. Continuous measurement for flow, temperature and pH.</p>
11	Monitoring of emissions to air and/or to water	Monitoring of emissions to air and/or to water during OTNOC.	Appropriately monitor emissions to air and/or to water during OTNOC.		Yes - compliant		<p>Direct monitoring of emissions (air & water) for the LCP 298 and proposed A5 emission point.</p> <p>Water discharge point W1 uses MCERTS equipment as speified by the sites environmental permit and is audited under the Minimum requirements for self-monitoring of flow: MCERTS performance standard. Continuous measurement for flow, temperature and pH.</p>
12	Energy efficiency	Increase the energy efficiency for units operated ≥1500 h/yr	A variety of techniques		Yes - compliant		<p>BAT 12a, b, c, d, e, f, g, h, i, p, & r, all applicable & already implemented</p> <p>BAT j not applicable - units are already CHP.</p> <p>BAT k not applicable - no demand for low-temperature heat (plant already CHP).</p> <p>BAT l not applicable - CHP already optimised though plant design.</p> <p>BAT m & n not applicable - no FGD.</p> <p>BAT o not applicable - gaseous fuel</p> <p>BAT s not applicable - existing gas turbine plant.</p>

BAT No.	Topic	Brief Description	BAT	Applicable BAT-AEL/AEELs	Operating to BAT?	BAT-AEL derogation needed?	Explanation of how compliance with BAT is met or confirmation of action that will be taken to ensure compliance with BAT by
13	Reduce water usage and the volume of contaminated waste water discharged	Reduce water usage and the volume of contaminated waste water discharged	Use of one or both of the techniques specified in the associated table.		N/A		BAT 13a & b not applicable - seawater cooling with water treatment chemicals & burning gaseous fuels.
14	Prevent contaminated of uncontaminated waste water and to reduce emissions to water	Prevent contaminated of uncontaminated waste water and to reduce emissions to water	Segregate waste water streams and to treat them separately, depending on the pollutant content.		Yes - compliant		Water treatment effluent treated prior to discharge to surface water. Sewage effluent treated prior to discharge to surface water. Boiler blowdown recycled back through water treatment plant process to avoid discharge & recover heat.
15	Reduce emissions to water	Reduce emissions to water from flue-gas treatment	A variety of techniques	Specify applicable AEL(s) here	N/A		Not applicable to LCP 298 or proposed emission point A5 - no flue-gas treatment - no water generated in flue gas treatment.
16	Reduce waste sent for disposal	To reduce the quantity of waste sent for disposal	A variety of techniques		Yes - compliant		Waste hierarchy incorporated into site procedures & project planning. All waste handled through licenced contractor, segregated at source & 100% landfill avoidance through RDF or non-recyclable waste.
17	Reduce noise emissions	To reduce noise emissions	A variety of techniques		Yes - Compliant		BAT 17a, b, c & d already implemented for the existing plant equipment and proposed A5 emission point. BAT 17e applicable to new projects & considered in design phase. However, this is not applicable to the proposed A5 emission point as this will be built upon the same plot of land the old boiler was built on.
Combustion of solid fuels (coal and/or lignite)							
18	Environmental performance	Improve overall performance	Techniques in associated table.		N/A		Not applicable - gaseous fuel
19	Efficiency	Increase efficiency	Techniques in associated table.	Specify applicable AEEL(s)	N/A		Not applicable - gaseous fuel
20	Prevent or reduce emissions of NOx	Prevent or reduce emissions of NOx emissions to air while limiting CO and N ₂ O emissions to air from the combustion of coal and/or lignite.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
21	Prevent or reduce emissions of SOx, HCl and HF	Prevent or reduce emissions of SOx, HCl and HF emissions to air from the combustion of coal and/or lignite.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
22	Reduce dust and particulate-bound metal emissions	Reduce emissions of dust and particulate-bound metal emissions to air from the combustion of coal and/or lignite.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
23	Prevent or reduce emissions of mercury	Prevent or reduce emissions of mercury emissions to air from the combustion of coal and/or lignite.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
Combustion of solid fuels (solid biomass and/or peat)							

BAT No.	Topic	Brief Description	BAT	Applicable BAT-AEL/AEELs	Operating to BAT?	BAT-AEL derogation needed?	Explanation of how compliance with BAT is met or confirmation of action that will be taken to ensure compliance with BAT by
AEELs	Energy efficiency	BAT-associated energy efficiency levels (BAT-AEELs)	Associated AEELs.	Specify applicable AEEL(s)	N/A		Not applicable - gaseous fuel
24	Prevent or reduce emissions of NOx	Prevent or reduce emissions of NOx emissions to air while limiting CO and N ₂ O emissions to air from the combustion of solid biomass and/or peat.	A variety of techniques and associated AELs	Specify applicable NOx AEL(s) and indicative levels for CO	N/A		Not applicable - gaseous fuel
25	Prevent or reduce emissions of SOx, HCl and HF	Prevent or reduce emissions of SOx, HCl and HF emissions to air from the combustion of solid biomass and/or peat.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
26	Reduce dust and particulate-bound metal emissions	Reduce emissions of dust and particulate-bound metal emissions to air from the combustion of solid biomass and/or peat.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
27	Prevent or reduce emissions of mercury	Prevent or reduce emissions of mercury emissions to air from the combustion of solid biomass and/or peat.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
Combustion of liquid fuels (HFO and/or gas-oil-fired boilers)							
AEELs	Energy efficiency	BAT-associated energy efficiency levels (BAT-AEELs)	Associated AEELs.	Specify applicable AEEL(s)	N/A		Not applicable - gaseous fuel
28	Prevent or reduce emissions of NOx	Prevent or reduce emissions of NOx emissions to air while limiting CO and N ₂ O emissions to air from the combustion of HFO and/or gas oil in boilers.	A variety of techniques and associated AELs.	Specify applicable Nox AEL(s) and indicative levels for CO	N/A		Not applicable - gaseous fuel
29	Prevent or reduce emissions of SOx, HCl and HF	Prevent or reduce emissions of SOx, HCl and HF emissions to air from the combustion of HFO and/or gas oil in boilers.	A variety of techniques and associated AELs.	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
30	Reduce dust and particulate-bound metal emissions	Reduce emissions of dust and particulate-bound metal emissions to air from the combustion of HFO and/or gas oil in boilers.	A variety of techniques and associated AELs.	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
Combustion of liquid fuels (HFO and/or gas-oil-fired engines)							
31	Energy efficiency	BAT-associated energy efficiency levels (BAT-AEELs)	Specified techniques and associated AEELs.	Specify applicable AEEL(s)	N/A		Not applicable - gaseous fuel
32	Prevent or reduce emissions of NOx	Prevent or reduce emissions of NOx emissions to air from the combustion of HFO and/or gas oil in reciprocating engines.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
33	Prevent or reduce emissions of CO	Prevent or reduce emissions of CO and volatile organic compounds from the combustion of HFO and/or gas oil in reciprocating engines.	A variety of techniques and associated AELs	Specify applicable NOx AEL(s) and indicative levels for CO	N/A		Not applicable - gaseous fuel
34	Prevent or reduce emissions of SOx, HCl and HF	Prevent or reduce emissions of SOx, HCl and HF emissions to air from the combustion of HFO and/or gas oil in reciprocating engines.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
35	Reduce dust and particulate-bound metal emissions	Reduce emissions of dust and particulate-bound metal emissions to air from the combustion of HFO and/or gas oil in reciprocating engines.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel
Combustion of liquid fuels (gas oil fired gas turbines)							
36	Energy efficiency	BAT-associated energy efficiency levels (BAT-AEELs)	Specified techniques and associated AEELs.	Specify applicable AEEL(s)	N/A		Not applicable - gaseous fuel
37	Prevent or reduce emissions of NOx	Prevent or reduce emissions of NOx emissions to air from the combustion of gas oil in gas turbines.	A variety of techniques		N/A		Not applicable - gaseous fuel
38	Prevent or reduce emissions of CO	Prevent or reduce emissions of CO from the combustion of gas oil in gas turbines.	A variety of techniques and associated AELs	Specify applicable AEL(s)	N/A		Not applicable - gaseous fuel

[illegible]