Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Saltend Cogeneration Company Limited

Saltend Cogeneration Plant
Saltend Power Station
Hedon Road
Hull
HU12 8GA

Variation application number

EPR/QP3539LE/V011

Permit number

EPR/QP3539LE

Saltend Cogeneration Plant
Permit number EPR/QP3539LE

Introductory note

This introductory note does not form a part of the notice

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

This variation is for the following:

- Inclusion of the Medium Combustion Plant Directive (MCPD) requirements for 2025
- Time limited derogation increasing the annual NOx limit on all LCPs from 40 to 50 mg/m^3.

The rest of the installation is unchanged and continues to be operated as follows:

The installation is operated by Saltend Cogeneration Company Limited (SCCL) and generates up to 1,200MW of electrical output by burning natural gas. Electricity is exported primarily to the National Grid Transmission System with an additional supply of electricity and steam going to the Saltend Chemicals Park. Export of electricity from the installation started at the beginning of 2000.

The installation falls under the following Industrial Emissions Directive (IED) Schedule 1 listed activity description:

Section 1.1 Part A(1)(a) – Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.

The installation is located on a 10.5 hectare site at National Grid Reference TA160279. It is adjacent to the Saltend Chemicals Park, which traverses along the north and eastern boundary of the site. Beyond the Saltend Chemicals Park to the north lies the A1033 Hedon Road with a number of residential properties which border the business park and variety of small factory units and garages. Adjacent to this is the Yorkshire Water Limited Wastewater Treatment Works. Further to the west beyond the Saltend Chemical Park at approximately 7km distant lies the city of Hull, which lies in turn within the administrative area of Hull City Council. Directly to the south of the site is the Humber Estuary and to the south-east is the village of Paull at approximately 1.1km from the site.

Immediately to the west of the site is Fleet Drain, which runs south into the Humber Estuary. Further to the west is the Queen Elizabeth and King George dock where cooling water is respectively abstracted and discharged.

The combined cycle gas turbine (CCGT) plant uses an indirect water cooling system which incorporates forced draft low level cooling towers with make-up water abstracted from the Kind George dock. Discharge from the cooling towers and boiler is treated prior to discharge via above/underground pipework to the Queen Elizabeth dock.

The Humber Estuary is a Special Area of Conservation (SAC) and a Special Protection Area (SPA) but does not receive any direct discharges from the prescribed processes at the installation. All process and surface waters are directed to the storm water basin prior to treatment and final discharge into the Queen Elizabeth dock.

The water treatment plant uses towns' water providing water for steam generation and incorporates reverse osmosis and ion exchange units.

Gas is brought to the site via an underground pipeline via the National Transmission System (NTS) to an above ground installation (AGI). The AGI and gas pipeline are maintained by the Operator.

LCP300, LCP301 and LCP302 – CCGTs

The primary process at the installation is the generation of electricity in a CCGT cogeneration plant using three large gas turbines at 727.7MWth each with 65m stacks discharging through emission points A1 to A3.

Each gas turbine is equipped with low NOx burners, a steam turbine, and a heat recovery steam generator (HRSG). In addition to the electricity exported to the National Grid transmission system the cogeneration plant also produces electricity and up to 240 tonnes/hour of steam for the adjacent Saltend Chemicals Park.

In an emergency, LCP300 and LCP302 operate in Trip to House Load mode to ensure the continuation of the supply of electricity to the adjacent Saltend Chemicals Park.

Emission limit values at emission points A1 and A3 do not apply in this operational mode. Permit condition 2.3.5 limits this type of operation to 500 hour/year.

LCP298

LCP298 is a 73.1MWth start-up gas boiler with a 45m stack discharging through emission point A4. It replaced the 153.19MWth secondary boiler LCP299. It is used to replace up-to 50% of the capacity of LCP299 until a permanent replacement is sought. In the interim, it will provide a portion of the steam requirement to the Saltend Chemicals Park. It will continue to be used to start one of the CCGT units, for auxiliary heating and gland sealing.

Other plant and activities at the site include:

- The operation of the Medium Combustion Plant comprising five diesel generators with a net rated thermal input of 6MW each to be used as emergency plant to facilitate start-up of the sites gas turbines providing ‘Black Start’ of the power plants main generating units. If required, the generators can provide ‘Black Start’ start-up supplies to other power stations. The engines will vent combustion gases through a single 40m multi-flue stack, with one flue for each of the five individual generators.
- The storage and site distribution of a variety of raw materials including chemicals used in the treatment of effluent from the on-site sewage treatment plant, treatment of circulating cooling water and demineralised water used for the generation of steam.
- Associated turbine equipment including generators, associated turning gear and transformers for the generation and export of electricity.
- Three oil lubrication systems including storage tanks provide lubrication for the gas turbine, generator, steam turbine and associated turning gear.

Other on-site activities include maintenance and disposal of waste from plant operation and cleaning activities.

The site operates an environmental management system (EMS) certified to ISO14001.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/QP3539LE/A001	22/03/2006	Received
Additional information received	30/08/2006	
Additional information received	08/02/2007	
Additional information received	14/02/2007	
Permit determined EPR/QP3539LE	25/05/2007	Permit issued to Saltend Cogeneration Company Limited

Status log of the permit		
Description	**Date**	**Comments**
Variation determination EPR/QP3539LE/V002	11/03/2013	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.
Variation issued EPR/QP3539LE/V003	29/09/2014	Environment Agency Initiated Variation issued, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 01/10/2014.
Regulation 60 Notice sent to the Operator	31/10/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	31/03/2015	Response received from the Operator.
Additional information received	17/07/2015	Response to request for further information (RFI) dated 18/05/2015.
Additional information received	05/10/2015	Response to RFI dated 28/09/2015.
Additional information received	20/10/2015	Response to RFI dated 20/10/2015.
Additional information received	09/11/2015	Response to RFI via telephone dated 06/11/2015.
Variation determined EPR/QP3539LE/V004	22/12/2015	Varied and consolidated permit issued. Variation effective from 01/01/2016.
Variation application EPR/QP3539LE/V005 received (variation and consolidation)	19/02/2018	Application to update the registered address and amend errors in Table S1.4.
Variation determined EPR/QP3539LE/V005	07/03/2018	Varied permit issued.
Variation application EPR/QP3539LE/V006 received (variation and consolidation)	10/06/2019	Application for black start operation. Medium Combustion Plant comprising five diesel generators.
Regulation 61 Notice sent to the Operator	01/05/2018	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for LCP.
Regulation 61 Notice response.	22/10/2018	Response received from the Operator.
Additional information received	30/07/2019 19/08/2019	Response to request for further information sent 25/06/19. BAT Conclusions 1, 3, 4, 40, 41 and 42.
Variation determined EPR/QP3539LE/V007	30/09/2019	Varied and consolidated permit issued.
Variation determined EPR/QP3539LE/V006	23/12/2019	Varied and consolidated permit issued.

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/QP3539LE/V008	19/08/2020	Environment Agency initiated variation to include black start conditions for LCPs and to remove TNP conditions. Varied and consolidated permit issued.
Variation determined EPR/QP3539LE/V009	18/03/2022	Environment Agency initiated variation to remove 'Note 2' from table 3.1a (which became S3.1). Varied permit and consolidated permit issued.
Application Variation EPR/QP3539LE/V010 received.	Duly made 18/12/2023	Application to remove existing secondary boiler LCP299, to remove emergency diesel generator and to increase the operating hours of the start-up boiler LCP298 to run unlimited hours by removing the 500 hours/year operating limit.
Variation determined EPR/QP3539LE/V010 (Billing ref: AP3546QQ)	28/02/2024	Consolidated Permit issued to Saltend Cogeneration Company Limited
Regulation 61 Notice sent to the Operator	22/05/24	Issue of a Notice under Regulation61(1) of the EPR. Environment Agency initiated review and variation to vary the permit to implement the Medium Combustion Plant Directive (MCPD).
Application Variation EPR/QP3539LE/V011 received	Duly Made 08/07/24	Application for NOx derogation
Regulation 61 Notice response	23/08/24	Response received from the Operator
Additional information received	29/10/24	Revised CBA
Variation determined EPR/QP3539LE/V011	XX/XX/XX	Consolidated Permit issued to Saltend Cogeneration Company Limited

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number

EPR/QP3539LE

Issued to

Saltend Cogeneration Company Limited ("the operator")

whose registered office is

Saltend Power Station
Saltend Chemicals Park
Hedon Road
Hull
East Riding of Yorkshire
HU12 8GA

company registration number 03274929

to operate a regulated facility at

Saltend Cogeneration Plant
Saltend Power Station
Hedon
Hull
HU12 8GA

to the extent set out in the schedules.

The notice shall take effect from xx/xx/20xx

Name	Date

Authorised on behalf of the Environment Agency

Schedule 1

The following conditions were varied as a result of the application made by the operator:

2.3.13 LCP 300, LCP 301 and LCP 302 must not operate for a combined total of 17,900 hours per annum, whilst an emission limit of 50 mg/m^3 oxides of nitrogen (NO and NO_2 expressed as NO_2), as a yearly average, is in place.

Table S3.1 emission limits referred to by condition 3.1.2

The following conditions were varied as a result of an Environment Agency initiated variation:

2.3.12 For medium combustion plant specified in Schedule 1 Table S1.1:

(a) The operator must keep periods of start-up and shut down of the medium combustion plant as short as possible.

(b) There shall be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993

3.5.5 For Medium Combustion Plant specified in Schedule 1 Table S1.1 monitoring measurements shall be carried out within four months of the issue date of the permit.

3.5.6 Monitoring of MCP shall not take place during periods of start-up or shut down.

4.1.3 The operator shall maintain a record of the type and quantity of fuel used and the total annual operating hours for each MCP.

Table S1.1 referred to by condition 2.1.1, limits of specified activity updated

Table S2.1 referred to by condition 2.3.4

Table S4.1 referred to by condition 4.2.3

Table S3.1 emissions monitoring referred to by condition 3.5.1

Schedule 7 referred to by condition 2.2.1, updated to include MCP emission points

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/QP3539LE

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/QP3539LE/V010 authorising,

Saltend Cogeneration Company Limited ("the operator"),

whose registered office is

Saltend Power Station
Saltend Chemical Park
Hedon Road
Hull
East Riding of Yorkshire
HU12 8GA

company registration number 03274929

to operate an installation at

Saltend Cogeneration Plant
Saltend Power Station
Hedon Road
Hull
HU12 8GA

to the extent authorised by and subject to the conditions of this permit.

Name	Date

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;

(c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(d) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 The activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" dated November 2022 or any later version unless otherwise agreed in writing by the Environment Agency.

2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan , and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP300 and LCP302 operating in Trip to House Load mode, the activities shall not operate for more than 500 hours per year.

2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP300, LCP301, LCP302 and LCP298. The end of the start-up period and the start of the shut-down period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.

2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP300, LCP301, LCP302. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.

2.3.8 For the following activities referenced in schedule 1, table S1.1: AR1 (medium combustion plant). The activities shall not operate for more than 500 hours in emergency use per annum.

2.3.9 The emission limit values from emission points A1, A2, A3 and A4 listed in table S3.1 of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective.

2.3.10 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.11 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.3.12 For medium combustion plant specified in Schedule 1 Table S1.1:

(a) The operator must keep periods of start-up and shut down of the medium combustion plant as short as possible.

(b) There shall be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993

2.3.13 LCP 300, LCP 301 and LCP 302 must not operate for a combined total of 17,900 hours per annum, whilst an emission limit of 50 mg/m^3 oxides of nitrogen (NO and NO_2 expressed as NO_2), as a yearly average, is in place.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

(a) point source emissions specified in tables S3.1 and S3.2; and

(b) process monitoring specified in table S3.3.

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

3.5.5 For Medium Combustion Plant specified in Schedule 1 Table S1.1 monitoring measurements shall be carried out within four months of the issue date of the permit.

3.5.6 Monitoring of MCP shall not take place during periods of start-up or shut down.

3.6 Monitoring for Large Combustion Plant

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:

(a) for the continuous measurement systems fitted to the LCP release points defined in tables S3.1 the validated hourly, monthly, yearly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;

(b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;

(c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;

(d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;

(e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system;

(f) any day, in which more than three hourly average values are invalid shall be invalidated;

(g) to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least:
(i) 20 minutes of the period for open cycle turbines and engines; and

(ii) 40 minutes of the period for all other combustion appliances.

Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.1.3 The operator shall maintain a record of the type and quantity of fuel used and the total annual operating hours for each MCP.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the annual production/treatment data set out in schedule 4 table S4.2; and

(c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days' notice before implementation of any part of the site closure plan.

4.3.7 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity ref.	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	Section 1.1 Part A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP300: 727.7 MWth Gas Turbine (GT) for production of electricity and steam. LCP301: 727.7 MWth GT for production of electricity and steam. LCP302: 727.7 MWth GT for production of electricity and steam. LCP298: 73.1 MWth natural gas fired start-up boiler for production of steam for starting the CCGT, auxiliary heating, gland sealing and the production of steam for the Saltend Chemicals Park.	From receipt of natural gas to discharge of exhaust gases and wastes, and the generation of electricity and steam for export.
		Medium Combustion Plant comprising 5 diesel generators with a net rated thermal input of 6MW each used as emergency plant to facilitate 'Black Start' of the installations LCP300, 301 & 302; and if required the generators can facilitate 'Black Start' of other LCP located at other power stations.	From receipt of fuel to release of products of combustion to air. Each generator shall be operated for testing no more than 15.5 hours per year. For 'Black start' each generator shall be operated for no more than 72 hours per 'Black Start' event. Must not exceed 500 hours operation per generator per annum.
	Directly Associated Activity		
AR2	Directly associated activity	Surface water drainage.	From handling and storage of site drainage to discharge to the site surface water system and final discharge to the Queen Elizabeth dock.
AR3	Directly associated activity	Water treatment, reverse osmosis, ion exchange water treatment.	From receipt of raw materials to dispatch of treated effluent, process cooling waters and dirty water system to final discharge.
AR4	Directly associated activity	Miscellaneous utility systems including fire pumps, lubricating and control systems.	From receipt of raw materials to dispatch for use.

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

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Variation Application EPR/QP3539LE/V010	Compliance and operating techniques identified in BAT Conclusions document	Duly made 18/12/2023

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**“Minimum start up load” (MSUL) Load in MW and as percent of rated (gross) power output (%)**	**“Minimum shut-down load” (MSDL) Load in MW and as percent of rated (gross) power output (%)**
A1 Unit LCP300	160 MW; 40%	160 MW; 40%
A2 Unit LCP301	160 MW; 40%	160 MW; 40%
A3 Unit LCP302	160 MW; 40%	160 MW; 40%
A4 Unit LCP298	20 tonnes/hour steam export	20 tonnes/hour steam export

Table S1.5 Dry Low NOx effective definition	
Emission Point and Unit Reference	**Dry Low NOx effective definition** **Load in MW and as percent of rated power output (%) or when two of the criteria listed below for the LCP or unit have been met, whichever is sooner.**
A1 Unit LCP300	160 MW; 40%
A2 Unit LCP301	160 MW; 40%
A3 Unit LCP302	160 MW; 40%

Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Gas oil [Note 1] or an equivalent substitute to be agreed in writing with the environment agency	Less than 0.1% w/w sulphur content
Note 1: Definition in Schedule 6 Interpretation section of this permit.	

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP300-CCGT						
A1 Note1	LCP300 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	40 Note 2 mg/m^3 When DLN is effective to baseload	Yearly average	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to base load. 50 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	60 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Carbon Monoxide	50 mg/m^3 When DLN is effective to baseload	Yearly average	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to base load 55 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 Note1	LCP300 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 Note1	LCP300 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1	LCP300 Gas turbine fired on natural gas	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
A1	LCP300 Gas turbine fired on natural gas	Water vapour	-	-	Continuous as appropriate to reference	BS EN 14181
A1	LCP300 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous as appropriate to reference	Traceable to national standards
A1	LCP300 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous as appropriate to reference	Traceable to national standards
A1	LCP300 Gas turbine fired on natural gas	Stack Gas Volume Flow	-	-	Continuous	BS EN 16911 & TGN M2
A1	LCP300 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change.	BS EN 15259
LCP301-CCGT						

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2	LCP301 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	40 Note 3 mg/m^3 When DLN is effective to baseload	Yearly average	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to base load. 50 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	60 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Carbon Monoxide	50 mg/m^3 When DLN is effective to baseload	Yearly average	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to base load 55 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
				within a calendar year		
A2	LCP301 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A2	LCP301 Gas turbine fired on natural gas	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Water vapour	-	-	Continuous as appropriate to reference	BS EN 14181
A2	LCP301 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous as appropriate to reference	Traceable to national standards
A2	LCP301 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous as appropriate to reference	Traceable to national standards
A2	LCP301 Gas turbine fired on natural gas	Stack gas Volume Flow	-	-	Continuous	BS EN 16911 & TGN M2
A2	LCP301 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
LCP302-CCGT						
A3 Note1	LCP302 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	40 Note 4 mg/m^3 When DLN is effective	Yearly average	Continuous	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 Note1	LCP302 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 When DLN is effective to base load 50 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	60 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Carbon Monoxide	50 mg/m^3 When DLN is effective to baseload	Yearly average	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to base load 55 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Carbon Monoxide	55 mg/m^3 When DLN is effective to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 Note1	LCP302 Gas turbine fired on natural gas	Sulphur Dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3	LCP302 Gas turbine fired on natural gas	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
A3	LCP302 Gas turbine fired on natural gas	Water Vapour	-	-	Continuous as appropriate to reference	BS EN 14181
A3	LCP302 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous as appropriate to reference	Traceable to national standards
A3	LCP302 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous as appropriate to reference	Traceable to national standards
A3	LCP302 Gas turbine fired on natural gas	Stack gas volume flow	-	-	Continuous	BS EN 16911 & TGN M2
A3	LCP302 Gas turbine fired on natural gas	As required by the implementation Document for BS EN 15259	-	-	Pre-operation and when there is significant operational change	BS EN 15259
LCP298-start-up boiler						
A4	LCP298 Start-up boiler fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	100mg/m^3 MSUL/MSDL to base load	Yearly average	Continuous	BS EN 14181
A4		Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	100mg/m^3 MSUL/MSDL to base load	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	110mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4	LCP298 Start-up boiler fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	140mg/m^3 MSUL/MSDL to base load	95% of validated hourly averages within a calendar year.	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Carbon Monoxide	40mg/m^3 MSUL/MSDL to base load	Yearly average	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Carbon Monoxide	100mg/m^3 MSUL/MSDL to base load	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Carbon Monoxide	110mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Carbon Monoxide	200mg/m^3 MSUL/MSDL to base load	95% of validated hourly averages within a calendar year.	Continuous	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Sulphur dioxide	35mg/m^3	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A4	LCP298 Start-up boiler fired on natural gas	Dust	5mg/m^3	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A4	LCP298 Start-up boiler fired on natural gas	Oxygen	-	-	Continuous as appropriate to reference	BS EN 14181
A4	LCP298 Start-up boiler fired on natural gas	Water vapour	-	-	Continuous as appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4	LCP298 Start-up boiler fired on natural gas	Stack gas temperature	-	-	Continuous as appropriate to reference	Traceable to national standards
A4	LCP298 Start-up boiler fired on natural gas	Stack gas pressure	-	-	Continuous as appropriate to reference	Traceable to national standards
A4	LCP298 Start-up boiler fired on natural gas	Stack gas volume flow	-	-	Continuous	BS EN 16911 & TGN M2
A4	LCP298 Start-up boiler fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A6	Potterton Boiler gas system relief valves and vents	-	-	-	-	-
A8	Emergency fire pumps	-	-	-	-	-
A9 – A66	Air system relief valves	-	-	-	-	-
A67 – A96	Gas system relief valves	-	-	-	-	-
A97 – A158	Steam system relief valves	-	-	-	-	-
A159 – A164	Hydrogen system relief valves	-	-	-	-	-
A165 – A168	Carbon dioxide system relief valves	-	-	-	-	-
A169	Water treatment bulk acid tank	-	-	-	-	-

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A170	Sodium hypochlorite storage tank	-	-	-	-	-
A171	Sulphuric acid storage tank	-	-	-	-	-
A172 – A176	5 x 6MWth diesel generators used as emergency plant to facilitate 'Black Start'	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	No Limit	Periodic	After 500 operating hours have elapsed and no less frequent than every 5 years	BS EN 14792
		Carbon Monoxide	No Limit	Periodic	After 500 operating hours have elapsed and no less frequent than every 5 years	BS EN 15058
Note 1: Emission limit for emission points A1 and A3 do not apply when the units are operating in "Trip to house load" mode of operation.						
Note 2: Emission limit is 50 mg/m^3 until 31st December 2026, from 1st January 2027, the emission limit reverts back to 40mg/m^3						
Note 3: Emission limit is 50 mg/m^3 until 31st December 2028, from 1st January 2029, the emission limit reverts back to 40mg/m^3						
Note 4: Emission limit is 50 mg/m^3 until 31st December 2027, from 1st January 2028, the emission limit reverts back to 40mg/m^3						

Table S3.2 Point Source emissions to water (other than sewer – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
W1 Emission to Queen Elizabeth dock	CW system blow-down and water treatment plant discharge	pH	6-9	Instantaneous	Weekly spot sample	BS6068-2.50
W1 Emission to Queen Elizabeth dock	CW system blow-down and water treatment plant discharge	Flow	1,000,000m^3/day	24 hour period beginning 00.01hours	Continuous	Permanent sampling access not required
W1 Emission to Queen Elizabeth dock	CW system blow-down and water treatment plant discharge	Oil or grease	No visible emission	24-hour flow proportional sample	Fortnightly	Permanent sampling access not required
W1 Emission to Queen Elizabeth dock	CW system blow-down and water treatment plant discharge	Temperature	Ambient temperature + 8°C (Max 28°C)	24 hour period beginning 00.01hours	Continuous	Calibrated digital thermometer (UKAS approved)
Note 1: Emission point on site plan in schedule 7 of this permit.						

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
W1	Cooling water outlet temperature	Continuous	Not applicable	
LCP300, LCP301, LCP302	Net electrical efficiency	After each modification that could significantly affect this parameter	EN standards or equivalent	-
LCP298	Net total fuel utilisation	After each modification which could significantly affect these parameters	EN Standards or equivalent	-

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of Nitrogen	A1, A2, A3, A4	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Carbon Monoxide	A1, A2, A3, A4	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Sulphur Dioxide	A1, A2, A3, A4	Every 6 months Every 2 years	1 January, 1 July 1 January
Dust	A4	Every 6 months	1 January, 1 July
Emissions to air (MCP) Parameters as required by condition 3.5.1	A172 – A176	After 500 operating hours have elapsed And no less frequent than every 5 years from date of acceptance of first monitoring measurements under condition 3.5.1	1 January
Emissions to Water Parameters as required by condition 3.5.1	W1	Every 6 months	1 January, 1 July

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m^3
Water Abstracted from Borehole Source	m^3
Water Abstracted from Estuarine Water Source	m^3
Water Abstracted from Sea Water Source	m^3
Water Abstracted from Mains Water Source	m^3

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
Gross Total Water used	m^3
Net water used	m^3
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovery to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption/position statement	t

Table S4.3 Chapter III Performance parameters for reporting to DEFRA		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO_x for each LCP	Annually	t
Total Emissions to Air of SO_2 for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr
Generator[Note1] operation for testing: • Total hours for the site • Total hours per generator • Total number of runs per generator Generator[Note1] operation to facilitate 'Black Start': • Total hours for the site • Total hours per generator • Total number of runs per generator	Annually	hours
Note 1: Emergency plant to facilitate 'Black Start' as referred to in Table S1.1.		

Table S4.4 Reporting forms				
Media/ Parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
Air & Energy	Form IED AR1 – SO2, NOx and dust mass emission and energy	01/01/16	National	2017
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/2015

Table S4.4 Reporting forms				
Media/ Parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
Air	Form IED CON1 – continuous monitoring LCP299	01/01/16	Area Office	2019
Air	Form IED CON2 – continuous monitoring LCP300, LCP301, LCP302	01/01/16	Area Office	2019
CEMs	Form IED CEM – Invalidation Log Only for LCPs with CEMs	01/01/16	Area Office	31/12/2015
Air	Form IED PM1 – discontinuous monitoring and load	01/01/16	Area Office	31/12/2015
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/2015
Water	Form water1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/2015
Air	Emissions to Air Reporting form (MCP reporting)	N/A	Area Office	08/03/2021

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable.

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“average of samples obtained during one year” means the average of the values obtained during one year of the periodic measurements taken with the monitoring frequency set for each parameter.

“background concentration” means such concentration of that substance as is present in:

for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“Black Start” means the procedure to recover from a total or partial shutdown of the UK Transmission System which has caused an extensive loss of supplies. This entails isolated power stations being started individually and gradually being reconnected to other power stations and substations in order to form an interconnected system again.

“Trip to House Load start” means the operating mode that, upon notification of a system-wide emergency (or similar) from the National grid, reducing either one or both of the operational LCP’s 300 and 302 to approximately 100 MW electrical output to ensure the continuation of the supply of electricity to the Saltend Chemicals Park adjacent. The operating mode will then also be available to the National Grid for Black Start operation.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“calendar monthly mean” means the value across a calendar month of all validated hourly means. “CEN” means Commité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“commissioning” means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1 or as agreed with the Environment Agency.

“daily average” means the average over a period of 24 hours of validated hourly averages obtained by continuous measurements.

“disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste. “DLN” means dry, low NOx burners.

“DLN” means dry, low NOx burners.

“emergency plant” means a plant which operates for the sole purpose of providing power at a site during an onsite emergency and/or during a black start and which does not provide balancing services or demand side response services.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“emissions to land” includes emissions to groundwater.

“Energy efficiency” means the annual net plant energy efficiency, the value for which is calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“gas oil” includes diesel and is defined in Article 3(19) of the MCPD.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“hazardous property” has the meaning in Annex lll of the Waste Framework Directive.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“malfunction” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MCR” means maximum continuous rating.

“medium combustion plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and the Council on the limitation of emissions of certain pollutants into air from medium combustion plants.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“Net electrical efficiency” means the ratio between the net electrical output (electricity produced minus the imported energy) and the fuel/feedstock energy input (as the fuel/feedstock lower heating value) at the combustion unit boundary over a given period of time.

“Net total fuel utilisation” means the ratio between the net produced energy minus the imported electrical and/or thermal energy and the fuel energy input at the combustion unit boundary over a given period of time. For a combustion unit.

“non-emergency plant” means a plant which provides balancing services or demand side response services.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“SI” means site inspector.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

• in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

• in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or

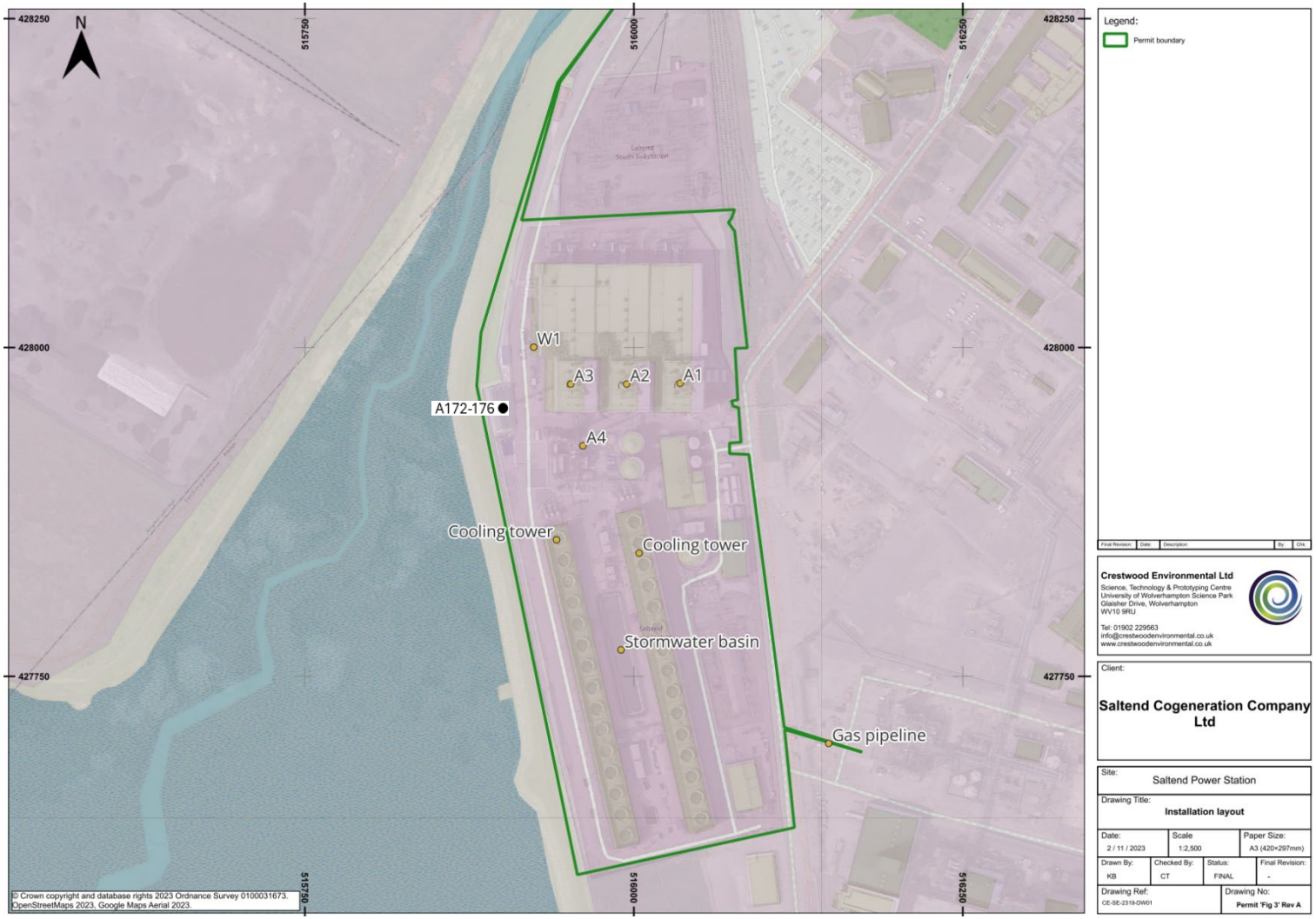
• in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or

• in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements

Schedule 7 – Site plan



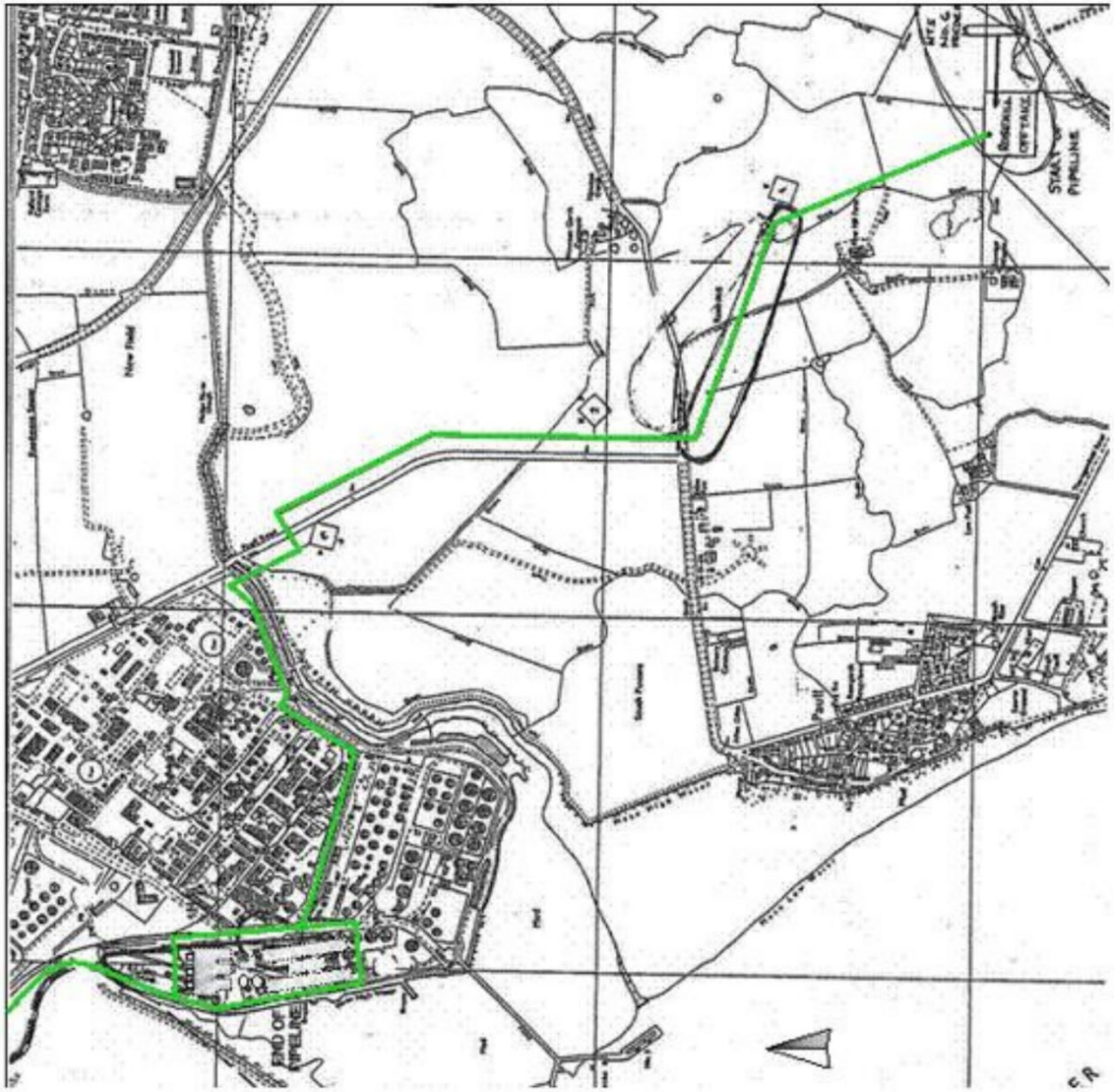


Fig 2.

Installation boundary looking east showing natural gas pipeline.

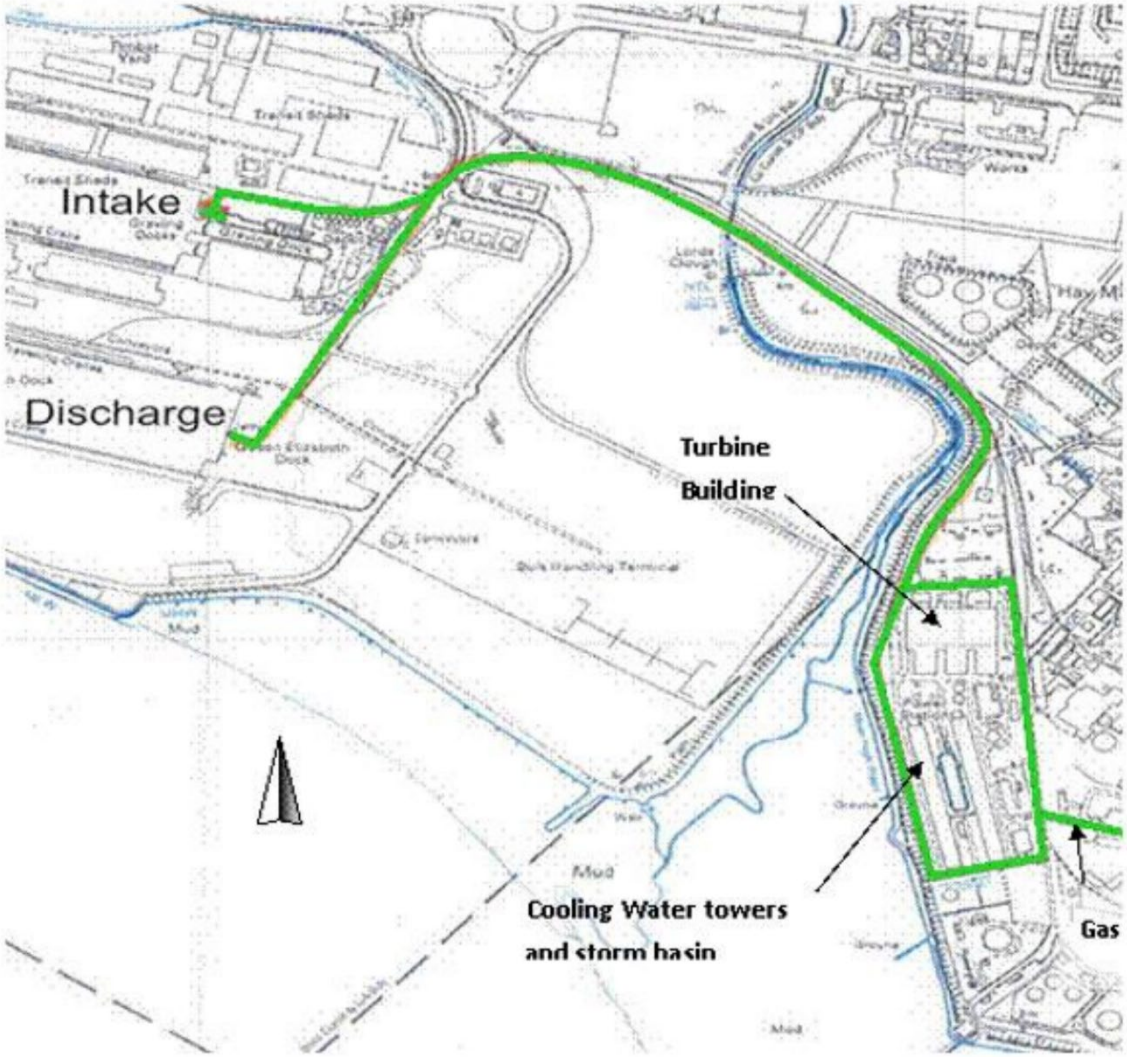


Fig 1.

Installation boundary looking north showing cooling water intake and discharge.

END OF PERMIT

Annex to conditions – Derogation under Industrial Emissions Directive

Derogation under Article 15(4) of Industrial Emissions Directive

DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

Operating techniques	We have considered the Operator's proposals. Our full reasoning is given in our decision document that accompanies the permit determination. In relation to the Large Combustion Plant Conclusion (2017) BAT 42, the operator applied for a time-limited derogation to increase the permitted annual NO_x ELV from 40 mg/m^3 to 50 mg/m^3. Whilst the derogated NO_x annual emissions limit of 50 mg/m^3 is in place, the gas turbines are limited to a combined total of 17,790 hours, on an annual basis. For each gas turbine, the derogation will end as listed below: ● Unit One – 31st December 2026 ● Unit Three – 31st December 2027 ● Unit Two – 31st December 2028 We considered the operator's justification for departure from BAT and accept it in the following respects and for the following reason: The achievement of emission levels associated with the best available techniques as described in the BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to *the technical characteristics of the installation.*