Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

EP SHB Limited

South Humber Bank Power Station
South Marsh Road
Stallingborough
North East Lincolnshire
DN41 8BZ

Variation application number

EPR/MP3235LY/V008

Permit number

EPR/MP3235LY

South Humber Bank Power Station
Permit number EPR/MP3235LY

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 that all the conditions of the permit have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made and contains all conditions relevant to this permit.

The South Humber Bank Power Station (SHBPS) installation currently comprises a Combined Cycle Gas Turbine (CCGT) power station, which consists of two combined cycle gas turbine phases fired by natural gas with a gross electrical capacity of 1,375MW. The CCGT facility will continue to operate as previously permitted.
There are two operators and two processes at the installation. The primary purpose (operated by EP SHB Limited) is to operate a Combined Cycle Gas Turbine (CCGT) Power Station, consisting of three Large Combustion Plants (LCPs). The net thermal input of the LCPs is as follows:
LCP49 – one 491MWth CCGT,
LCP50 – two CCGT's combined 982MWTh,
LCP51 – two CCGT's combined 982MWTh

The secondary purpose (operated by National Grid Gas plc) is the addition of an odourising agent to the natural gas fed to the CCGTs.
The CCGT installation has a nominal output of 1260 MW of electricity from 2 combined cycle gas turbine units and can operate to a base load or demand following regime.

The first module consists of 3 gas turbines, 3 associated electricity generators, 3 heat recovery steam generators, steam turbine and associated electricity generator. The second module consists of 2 gas turbines, 2 associated electricity generators, 2 heat recovery steam generators, steam turbine and associated electricity generator.

GT13 is a single unit which vents into a dedicated stack at release point A1. GT11 and GT12 vent into a common stack at release point A2. Similarly, GT21 and GT22 vent into a common stack at release point A3.
Boiler feed water is supplied from towns water via 2 demineralisation plants (1 on each module).
Water from the deepwater channel in the estuary is used for direct ("once through") cooling and returned to the deepwater channel. Apart from the inlet and outlet culverts/ponds the 2 modules have separate cooling water systems.

A gas oil fired auxiliary boiler provides steam during start-up of the first module following a complete shutdown. The auxiliary boiler and gas turbine use low NO_X technology to minimise releases at source.

This variation permits the operation of a two-stream, Energy from Waste (EfW) facility fired by refuse derived fuel (RDF) with a combined thermal input of 240MWth, a gross electrical output of 49.9MWe and a nominal thermal export of 84.1MWth. The EfW facility has the capability to export all steam generated (approximately 211MWth) to the CCGT power plant when not producing electricity for direct export.
The EfW facility will operate using fuel with a range of Net Calorific Values (NCV) between 9MJ/kg and 14MJ/kg, with a design average NCV of 11MJ/kg.

The EfW facility will include the following operations:

- incoming and outgoing weighbridges capable of fully automatic recording of deliveries;
- fuel reception hall and storage area;
- a shredder;
- fully automated overhead cranes for the feeding of fuel;
- a grate-based combustion system comprising two combustion lines, with both primary and secondary combustion air;

- a water tube boiler of vertical or horizontal arrangement for each combustion line;
- auxiliary burners for start-up and ensuring the minimum combustion temperature (850°C), as required by the Waste Incineration Best Available Techniques Reference document (WI-BRef), is maintained during normal operation;
- a flue gas treatment (FGT) system including:
    - acid gas abatement using the addition of a lime or sodium-based reagent;
    - abatement of oxides of nitrogen using a Selective Non-Catalytic Reduction (SNCR) system with the addition of ammonium hydroxide or urea;
    - activated carbon addition for the absorption and removal of dioxins,
    - mercury, and heavy metals from the flue gas;
    - bag filters for the removal of ash and FGT residue.
- two stacks, containing one flue per boiler;
- an ash conveying and storage system, including an over-band magnet and ferrous metal storage;
- a water treatment system;
- a steam turbine and generator;
- an air-cooled condenser (ACC);
- associated electrical distribution and connection equipment; and storage tanks for raw materials including water, diesel, and FGT reagents.

The EfW facility covers an area of 7.3 hectares lying largely within the existing permit boundary of the SHBPS, on land crossed by the cooling water pipelines supplying abstracted water from the River Humber for use at the CCGT power station.

This variation of the permit includes an extension of the permit boundary of the SHBPS to include additional land between the existing permit boundary and South Marsh Road.
The Site is located off South Marsh Road, Stallingborough on the South Humber Bank between the towns of Immingham and Grimsby; both over 3 km from the Site. The surrounding area is characterised by a mix of industrial and agricultural land use with the main settlements being the villages of Stallingborough, Healing and Great Coates. The nearest settlement is the village of Stallingborough over 2 km away. The area surrounding the Site is in agricultural use immediately to the south, west and north-west. There is a concentration of industrial land uses on the South Humber Bank along the bank of the Humber Estuary. A large polymer manufacturing site (Synthomer (UK) Limited) and the NEWLINCS waste management facility are both located to the north of the Site beyond South Marsh Road.

The Humber Estuary lies adjacent to the east of the installation. The closest residential properties are located approximately 1 km west. These are Poplar Farm located on South Marsh Road, and Primrose Cottage accessed via Station Road north of the A180. The eastern boundary of the installation borders the Humber Estuary, SSSI, SAC, SPA and Ramsar site.

The schedules specify the changes made to the permit.
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/MP3235LY	Duly made 22/03/06	
Additional information requested (site visit)	06/07/06	
Additional Information Received		04/08/06
Permit determined	12/12/06	
Application EPR/MP3235LY/V002	29/10/10	
Variation issued	14/12/10	
Variation determined EPR/MP3235LY/V003	11/03/13	Environment Agency initiated Variation, to incorporate Eel Regulations improvement condition

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/MP3235LY/V004 (Billing reference) MP3235WK	29/09/14	Environment Agency Initiated Variation issued, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/14.
Regulation 60 Notice sent to the Operator	17/12/14	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.
Regulation 60 Notice response	31/03/15	Response received from the Operator.
Additional information received	24/11/15	Response to request for further information (RFI) dated 20/10/15.
Variation determined EPR/MP3235LY/V005	23/12/15	Varied and consolidated permit issued in modern condition format.
Notified of change of company name and registered office address	04/09/17	Name and registered address changed to EP SHB Limited, Berger House, 36-38 Berkeley Square, London, W1J 5AE.
Variation determined EPR/MP3235LY/V006	15/09/17	Varied permit issued to EP SHB Limited.
Variation application EPR/MP3235LY/V007	Duly made 26/11/18	Application to amend the set of minimum start-up and shut-down conditions for LCP49 and LCP50
Variation determined EPR/MP3235LY/V007	18/12/18	Varied and consolidated permit issued.
Variation Application EPR/MP3235LY/V008	Duly made 08/05/19	Application to include an energy from waste facility within the installation.
Schedule 5 Notice	02/07/19	Response received 26/07/19
Additional information requested	22/08/19	Clarification of Schedule 5. Response received 30/08/19.
Revised site plan	10/10/19	Emission points added
Additional information requested	19/12/19	Revised HRA. Received 07/01/20
Additional information requested	09/01/20	Clarification of HRA. Received 10/01/20.
Consolidated Variation Notice issued. EPR/MP3235LY/V008	25/03/20	

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
National Grid Gas PLC	QP3535LG	12/12/06

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 and consolidates

Permit number

EPR/MP3235LY

Issued to

EP SHB Limited ("the operator")

whose registered office is

Berger House
36-38 Berkeley Square
London
W1J 5AE

company registration number 02571241

to operate a regulated facility at

South Humber Bank Power Station
South Marsh Road
Stallingborough
North East Lincolnshire
DN41 8EZ

to the extent set out in the schedules.

The notice shall take effect from 25/03/2020

Name	Date
Philip Lamb	**25/03/2020**

Authorised on behalf of the Environment Agency

Schedule 1

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

All conditions renumbered as result of consolidated permit.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/MP3235LY

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/MP3235LY/V008 authorising,

EP SHB Limited ("the operator"),

whose registered office is

Berger House
36-38 Berkeley Square
London
W1J 5AE

company registration number 02571241

to operate an installation at

South Humber Bank Power Station
South Marsh Road
Stallingborough
North East Lincolnshire
DN41 8EZ

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

Name	Date
Philip Lamb	**25/03/2020**

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 recovered with a high level of energy efficiency and energy is used efficiently in the activities.

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

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

1.2.2 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

1.2.3 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall review the viability of Combined Heat and Power (CHP) implementation at least every 4 years, or in response to any of the following factors, whichever comes sooner:

(a) new plans for significant developments within 15 km of the installation;

(b) changes to the Local Plan;

(c) changes to the UK CHP Development Map or similar; and

(d) new financial or fiscal incentives for CHP.

The results shall be reported to the Agency within 2 months of each review, including where there has been no change to the original assessment in respect of the above factors

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;

(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.

1.5 Multiple operator installations

1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator of the installation of the same information.

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").

2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

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 For the following activities referenced in schedule 1, table S1.1: LCP49, LCP 50 and LCP 51. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" revision 1 dated February 2015 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 (AR2) waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 table S2.2 and

(b) it conforms to the description in the documentation supplied by the producer or holder; and

(c) it having been separately collected for recycling, it is subsequently unsuitable for recovery by recycling.

2.3.6 For the following activities referenced in Schedule 1, Table S1.1: (A1) Auxiliary boiler. The activities shall not operate for more than 500 hours per year.

2.3.7 For the following activities referenced in schedule 1, table S1.1: (A1) LCP49, LCP 50 and LCP51. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5

2.3.8 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.

2.3.9 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.

2.3.10 For the following activities referenced in schedule 1, table S1.1 (AR2) waste fuel shall not be charged, or shall cease to be charged, if:

(a) the combustion chamber temperature is below, or falls below, 850°C; or

(b) any continuous emission limit value in schedule 3 table S3.1(a) is exceeded; or

(c) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than during abnormal operation or periods of OTNOC; or

(d) Any continuous emission limit value in schedule 3 table S3.1(b) is exceeded other than during abnormal operation; or

(e) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than during abnormal operation; or

(f) there is a stoppage, disturbance or failure of the activated carbon abatement system.

2.3.11 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall have at least one auxiliary burner in each line which shall be operated at start up, shut down and as required during operation to ensure that the operating temperature specified in condition 2.3.10 is maintained as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.10 is maintained in the combustion chamber, such burner(s) shall be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.

2.3.12 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall record the beginning and end of each period of “abnormal operation”.

2.3.13 For the following activities referenced in schedule 1, table S1.1 (AR2) during a period of “abnormal operation” or OTNOC, the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.

2.3.14 For the following activities referenced in schedule 1, table S1.1 (AR2) where, during “ abnormal operation”, on an incineration line, any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:

(a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to stoppages, disturbances or failures of the abatement plant, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;

(b) there is a technically unavoidable stoppage, disturbance or failure of the activated carbon abatement system for a total of 4 hours uninterrupted duration;

(c) the cumulative duration of “ abnormal operation” periods over 1 calendar year has reached 60 hours;

(d) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 (a).

(e) continuous emission monitors or alternative techniques to demonstrate compliance with the emission limit value(s) for particulates, TOC and / or CO in schedule 3 table S3.1 (a), as detailed in the application or as agreed in writing with the Environment Agency, are unavailable.

2.3.15 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:

(a) when the failed equipment is repaired and brought back into normal operation;

(b) when the operator initiates a shut down of the waste fuel combustion activity, as described in the application or as agreed in writing with the Environment Agency;

(c) when a period of four hours has elapsed from the start of the “abnormal operation”;

(d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached on an incineration line.

2.3.16 For the following activities referenced in schedule 1, table S1.1 (AR2) bottom ash and APC residues shall not be mixed.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

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, S3.2 and S3.3.

3.1.2 The limits given in schedule 3, subject to condition 3.2.1shall not be exceeded.

3.1.3 Total annual emissions from the emission points set out in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.

3.1.4 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S 3.5. Additional samples shall be taken and tested and appropriate action taken, whenever:

(a) disposal or recovery routes change; or

(b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.

3.2 Emissions limits and monitoring for emission to air for incineration plant

3.2.1 The limits for emissions to air apply as follows:

(a) The limits in table S3.1 shall not be exceeded except during periods of abnormal operation or OTNOC.

(b) The limits in table S3.1 (a) shall not be exceeded.

(c) The limits in table S3.1 (b) shall not be exceeded except during abnormal operation.

3.2.2 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1, S3.1(a) and S3.1(b); the Continuous Emission Monitors shall be used such that;

(a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages of the emission limit values:

- Carbon monoxide 10%
- Sulphur dioxide 20%
- Oxides of nitrogen (NO & NO_2 expressed as NO_2) 20%
- Particulate matter 30%
- Total organic carbon (TOC) 30%
- Hydrogen chloride 40%
- Ammonia 40%

(b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.2.2 (a).

(c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period , the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour. The number of half-hourly averages so validated shall not exceed 5 per day;

(d) daily average values shall be calculated as follows:

(i) for the daily average values in table S3.1, the average of valid half hourly averages over a calendar day excluding half hourly averages during periods of abnormal operation and OTNOC. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;

(ii) for the daily average values in table S3.1(a), the average of valid half hourly averages over a calendar day excluding half hourly averages during periods of abnormal operation. The daily average value shall be considered valid if no more than five half-hourly values in any day have been determined not to be valid;

(e) no more than ten daily average values per year shall be determined not to be valid.

3.3 Emissions of substances not controlled by emission limits

3.3.1 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.

3.3.2 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.

3.3.3 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.

3.3.4 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.

3.4 Odour

3.4.1 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.

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to 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.

3.5 Noise and vibration

3.5.1 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.

3.5.2 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.

3.6 Monitoring

3.6.1 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 table S3.2;

(b) process monitoring specified in table S3.4;

(c) residue quality in table S3.5

3.6.2 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 continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Environment Agency. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.2. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.

3.6.4 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.

3.7 Monitoring for Large Combustion Plant

3.7.1 For the following activities referenced in schedule 1, table S1.1, AR1, 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.

3.7.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.7.7, 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.

3.7.3 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.

3.7.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.7.5 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.

3.7.5 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.

3.7.6 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.

3.7.7 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 Table S3.1 the validated hourly, monthly 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. However, 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 two thirds of the period (40 minutes). 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; and

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

3.8 Fire prevention

3.8.1 For the following activities referenced in schedule 1, table S1.1 (AR2) the operator shall take all appropriate measures to prevent fires on site and minimise the risk of pollution from them including, but not limited to, those specified in any approved fire prevention plan.

3.8.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to a risk of fire, submit to the Environment Agency for approval within the period specified, a fire prevention plan which prevents fires and minimises the risk of pollution from fires;

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

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.

4.2 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 For the following activities referenced in schedule 1, table S1.1 (AR2) 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 using the annual report form specified in schedule 4, table S4.3a or otherwise in a format agreed with the Environment Agency. 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 resource efficiency metrics set out in schedule 4 table 4.2a; and

(c) the performance parameters set out in schedule 4 table 4.3a.

(d) the functioning and monitoring of the incineration plant in a format agreed with the Environment Agency. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

4.2.3 For the following activities referenced in schedule 1, table S1.1 (AR1) 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.

4.2.5 For the following activities referenced in schedule 1, table S1.1: LCP49, LCP50 and LCP51. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

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 (a)(i) or 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, 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:

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

(d) 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 reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP 49(GT13):CCGT for production of electricity and steam. LCP 50 (GT11&GT12):CCGT's for production of electricity and steam. LCP51 (GT21&GT22):CCGT's for production of electricity and steam. Auxiliary gas oil boiler. Limited to < 500 hours/ yr operation. (42 MWth input)	From receipt of gas through to discharge of exhaust gases and generation of electricity From receipt of gas oil through to discharge of exhaust gases and export of steam to the steam systems.
AR2	S5.1 A1 (b)	The incineration of non-hazardous waste in a waste incineration plant with a capacity of 3 tonnes per hour or more.	From receipt of waste to emission of exhaust gas and disposal of waste arising. Waste types and quantities as specified in Table S2.2 of this permit.
	Directly Associated Activity		
AR3	Directly associated activity	Water treatment. Demineralisation of water.	Receipt of water and other raw materials through to the export to boiler feed system and drains.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR4	Directly associated activity	Cooling water system	From inlet ports to discharge ports.
AR5	Directly associated activity	Raw materials handling and storage. Receipt storage and handling of water treatment chemicals, fuel and lubricating oils, turbine cleaning chemicals and all other raw materials	From receipt of raw materials to their point of use
AR6	Directly associated activity	Waste handling and storage	From generation to the removal from the installation.
AR7	Electricity Generation	Generation of 49.9 MWe electrical power using a steam turbine from energy recovered from the flue gases.	Generation of electrical power using steam from the Energy from Waste facility

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to section 2.1 and 2.2 excluding Appendix A (Application site report, February 2006) in the application	22/03/06
Receipt of additional information to the application	Revised Application Site Report July 2006	04/08/06
Information submitted as part of a variation	Information provided in non technical summary	29/10/10
Response to regulation 60(1) Notice – request for information dated 17/12/14	Compliance route and operating techniques identified in response to questions 2 (chosen compliance route), 4 (LCP configuration), 5 (Net rated thermal Input), 6 (start up and shut down), 9ii (ELV Limits), 11 (monitoring requirements).	Received 31/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 20/10/2015	Further details provided on Net rated thermal input and Start up and Shut down thresholds for the gas turbines.	24/11/15
Application EPR/MP3235LY/V007	Document referred as “REF: Minor technical change to permit MP3235LY (amendment 1 to include additional information in appendix 1) 26/11/18” including information on operating techniques for start-up and shut-down thresholds for the gas turbines GT11, GT12 and GT13 operating in low-load combustion mode.	26/11/18
Application for variation EPR/MP3235LY/V008	Application form Part C3. Document “Environmental Permit Application – Supporting Statement” Dated December 2018	Duly Made 08/05/19

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Response to Sch 5 notice dated 02/07/19	Response to questions 1-20	26/07/19
Additional information	Response to questions 1, 2 and 3.	30/08/19

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP1	A written procedure shall be submitted to the agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency	Completed
IP2	A procedure shall be submitted to the Agency for approval. The procedure shall outline how incidents are reviewed with specific reference to impact on the application site report and site protection and monitoring plan. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency	Completed
IP3	A written report shall be submitted to the Agency for approval. The report shall contain the results of the review of inspection procedures to ensure compliance with indicative BAT guidance in Section 2.2.9 of Technical Guidance Note "IPPC Sector Guidance Note Combustion Activities." Where appropriate the report will include dates for the revision of relevant procedures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	Completed
IP4	The Operator shall undertake a review of the BAT listed within the Combustion Sector TGN IPPC S1.01 Section 2 for Oxides of Nitrogen which will enable them to achieve the ELV given within the TGN for the release to air from the gas turbines. The review shall include, but not be limited to, all of the relevant techniques listed within the TGN, the reduction in the level of pollutants (for each option) and the costs of achieving the reduction (for each option). The report shall include a timetable to implement any proposed changes as appropriate. The Operator shall implement the proposals as agreed in writing with the Environment Agency.	Completed
IP5	A written report shall be submitted to the Agency for approval. The report shall contain a Closure and decommissioning plan that is consistent with indicative BAT guidance in Section 2.11 of Technical Guidance Note "IPPC Sector Guidance Note Combustion Activities." The report will include evidence of relevant procedures to ensure that the plan is subject to review following incidents and at an appropriate frequency. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP6	The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency „"Safe Passage of Eel"" Regulatory Position Statement version 1 dated July 2012. The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:- - Providing a written proposal for the installation of an eel screen. - Providing a written proposal to the modification of existing screening arrangements. - Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage of eels [of SI 2009/3344] either without change or with mitigation measures. - Providing a written response setting out a case for an exemption In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen. Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage of Eel Regulatory Position Statement version 1 dated July 2012. The proposals shall be implemented in accordance with the Environment Agency's written approval.	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP7	The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency ''Safe Passage for Eel'' Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference IP6 The Environment Agency has determined that the site does not comply with the requirements for safe passage of eel and the Operator is now required to complete a cost benefits appraisal of best available technique with reference to the Environment Agency ''Safe Passage for Eel: Guidance on Exemptions'' as a screening tool. a) If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique. b) If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency ''Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures. In all cases, the submission shall contain relevant timescales in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012 (as amended 2013). The proposals shall be implemented following written approval of the Environment Agency. Whilst undertaking this Improvement Condition, the Operator shall be operating under exemption from the requirements to place eel screen diversion structures pursuant to Regulation 17(5)(a) of the Eels (England and Wales) Regulations 2009. The exemption will remain in place until the Environment Agency has provided written approval that the Improvement Condition has been deemed complete.	Received 30 June 15, under assessment by the Environment Agency
IP8	For LCPD LCP 114, LCP 115 and LCP 116 (now LCP 49, LCP50 and LCP51 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	Completed
IP9	The Operator shall submit a written report to the Environment Agency on the implementation of its Environmental Management System (EMS) and the progress made in the certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified.	Within 12 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP10	The Operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission points A17 and A18, identifying the fractions within the PM_{10}, and $PM_{2.5}$ ranges. On receipt of written approval from the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results.	Within 6 months of the completion of commissioning.
IP11	For Activity AR2 the Operator shall submit a written report to the Environment Agency on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions and confirm that the Environmental Management System (EMS) has been updated accordingly	Within 4 months of the completion of commissioning.
IP12	For Activity AR2 the Operator shall submit, for approval with the Environment Agency, a methodology (having regard to Technical Report P4-100/TR Part 2 Validation of Combustion Conditions) to verify the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load, minimum turn down and overload conditions.	Report for approval to be submitted at least 2 months before validation testing or as agreed in writing with the Environment Agency.
IP13	For Activity AR2 the operator shall notify the Environment Agency of the proposed date(s) that validation testing is planned for.	Notification at least 3 weeks prior to validation testing
IP14	For Activity AR2, during commissioning the operator shall carry out validation testing to validate the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load and most unfavourable operating conditions. The validation shall be to the methodology as approved through pre-operational condition IP12.	Validation tests completed before the end of commissioning
IP15	For Activity AR2 the operator shall submit a written report to the Environment Agency on the validation of residence time, oxygen and temperature whilst operating under normal load, minimum turn down and overload conditions. The report shall identify the process controls used to ensure residence time and temperature requirements are complied with during operation of the incineration plant.	Report submitted within 2 months of the completion of commissioning.
IP16	For Activity AR2 the Operator shall submit a written report to the Environment Agency describing the performance and optimisation of: • The Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NOx).The report shall include an assessment of the level of NOx, N_2O and NH_3 emissions that can be achieved under optimum operating conditions. • The lime injection system for minimisation of acid gas emissions • The carbon injection system for minimisation of dioxin and heavy metal emissions.	Within 4 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP17	For Activity AR2 the Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values, i.e. Cd, As, Pb, Cr, Mn, Ni and V A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant EQS/EAL. In the event that the assessment shows that an environmental standard can be exceeded, the report shall include proposals for further investigative work.	15 months from the completion of commissioning
IP18	For Activity AR2 the Operator shall submit a written summary report to the Environment Agency to confirm that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 and Table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3. The report shall include the results of calibration and verification testing.	Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning. Full summary evidence compliance report to be submitted within 18 months of completion of commissioning.
IP19	For Activity AR2, during commissioning, the operator shall carry out tests to demonstrate whether the furnace combustion air will ensure that negative pressure is achieved throughout the reception hall. The tests shall demonstrate whether air is pulled through the reception hall and bunker area and into the furnace with dead spots minimised. The operator shall submit a report to the Environment Agency, for approval, summarising the findings along with any proposed improvements if required.	Within 3 months of completion of commissioning.
IP20	For Activity AR2 the operator shall carry out a programme of dioxin and dioxin like PCB monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether dioxin emissions can be considered to be stable.	Within 3 months of completion of commissioning or as agreed in writing with the Environment Agency
IP21	For Activity AR2 the operator shall carry out a programme of mercury monitoring over a period and frequency agreed with the Environment Agency. The operator shall submit a report to the Environment Agency with an analysis of whether the waste feed to the plant can be proven to have a low and stable mercury content.	Within 3 months of completion of commissioning or as agreed in writing with the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IP22	For Activity AR2 the Operator shall submit a report to the Environment Agency for approval on start-up and shut-down conditions over the first 12 months of operation. The report shall identify any amendments to the start-up and shut-down definitions that were described in the application.	Within 15 months of completion of commissioning or as agreed in writing with the Environment Agency

Table S1.4 Pre-operational measures for the energy from waste facility	
Reference	**Pre-operational measures**
PO1	Dosing of cooling water system with biocide. At least 4 weeks prior to commencing to dose, the operator shall submit a request to commence for approval by the Agency. This request shall include confirmation the continuous monitoring of the pH of the discharge has been initiated and shall outline the techniques to be used to ensure compliance with the conditions outlined in table S3.2
PO2	For Activity AR2, prior to the commencement of commissioning, the Operator shall send: • A summary of the site Environment Management System (EMS);and • A copy of the full OTNOC management plan which shall be prepared in accordance with BAT 18 of the BAT conclusions to the Environment Agency and obtain the Environment Agency's written approval to the EMS summary and the full OTNOC management plan. The Operator shall make available for inspection all documents and procedures which form part of the EMS. The EMS shall be developed in line with the requirements set out in Environment Agency web guide on developing a management system for environmental permits (found on www.gov.uk) and BAT 1 of the incineration BAT conclusions. The EMS shall include the approved OTNOC management plan. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.
PO3	For Activity AR2, prior to the commencement of commissioning, the Operator shall send an updated version of the Fire Prevention Plan (FPP) to the Environment Agency and obtain the Environment Agency's written approval to it. The FPP shall be based on Environment Agency Fire Prevention Plan Guidance for Environmental Permits (May 2018) and Waste Industry Safety and Health Forum Guidance (WASTE 28 Reducing fire risk at waste management sites issue 2 – April 2017). The final FPP must be in place prior to commissioning.

Table S1.4 Pre-operational measures for the energy from waste facility	
Reference	**Pre-operational measures**
PO4	For Activity AR2, prior to the commencement of commissioning, the Operator shall send a report to the Environment Agency, and obtain the Environment Agency's written approval to it, which will contain a comprehensive review of the options available for utilising the heat generated, including operating as CHP or supplying district heating, by the waste incineration process in order to ensure that it is recovered as far as practicable. The review shall detail any identified proposals for improving the recovery and utilisation of heat and shall provide a timetable for their implementation
PO5	For Activity AR2, prior to the commencement of commissioning, the Operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a protocol for the sampling and testing of incinerator bottom ash for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
PO6	For Activity AR2, prior to the commencement of commissioning, the Operator shall submit to the Environment Agency, and obtain the Environment Agency's written approval to it, a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PO7	For Activity AR2, prior to the commencement of commissioning, the Operator shall submit a written report to the Agency, and obtain the Environment Agency's written approval to it, detailing the waste acceptance procedure to be used at the site. The waste acceptance procedure shall include the process and systems by which wastes unsuitable for incineration at the site will be controlled. The procedure shall be implemented in accordance with the written approval from the Agency.
PO8	For Activity AR2, no later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the computational fluid dynamic (CFD) modelling. The report shall explain how the furnace has been designed to comply with the residence time and temperature requirements as defined by Chapter IV and Annex VI of the IED whilst operating under normal load and the most unfavourable operating conditions (including minimum turn down and overload conditions), and that the design includes sufficient monitoring ports to support subsequent validation of these requirements during commissioning.
PO9	For Activity AR2, prior to the commencement of commissioning, the Operator shall submit a report, and obtain the Environment Agency's written approval to it, on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.

Table S1.4 Pre-operational measures for the energy from waste facility	
Reference	**Pre-operational measures**
PO10	For Activity AR2, at least three months before (or other date agreed in writing with the Environment Agency) the commencement of commissioning, the Operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance notes M1, M2 and M20. The report shall include the following: • Plant and equipment details, including accreditation to MCERTS • Methods and standards for sampling and analysis • Details of monitoring locations, access and working platforms
PO11	For Activity AR2, no later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the use of flue gas recirculation (FGR) for the abatement of emissions of oxides of nitrogen, or shall provide justification for not using FGR.
PO12	For Activity AR2, no later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the use of either ammonium hydroxide or urea in the SNCR system.
PO13	For Activity AR2, no later than one month after the final design of the furnace and combustion chamber, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the use of either lime or sodium hydroxide in the acid gas abatement system.
PO14	For Activity AR2, prior to the commencement of commissioning, the operator shall submit a CQA Validation Report, on those below ground structures including the fuel storage and IBA bunkers, designed to contain liquids or wastes, to the Environment Agency for approval. Commissioning shall not commence until approval of the CQA Validation Report has been given.
PO15	For Activity AR2, no later than one month after the final design, the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the boiler feed water treatment plant with the arrangements for the disposal of any effluent.
PO16	For Activity AR2, no later than one month after the final design the operator shall submit a written report to the Environment Agency, and obtain the Environment Agency's written approval to it, of the details of the site drainage system including discharge points to water and sewer.
PO17	For Activity AR2, at least 3 months before the commencement of commissioning (or other date agreed in writing with the Environment Agency) the Operator shall submit, for approval by the Environment Agency, a methodology (having regard to Technical Report P4-100/TR Part 2 Validation of Combustion Conditions) to verify the residence time, minimum temperature and oxygen content of the gases in the furnace whilst operating under normal load, minimum turn down and overload conditions.

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**"Minimum start up load"** **Load in MW and as percent of rated power output (%) and /or when two of the criteria listed below for the LCP have been met.**	**"Minimum shut-down load"** **Load in MW and as percent of rated power output (%)**
A1 (GT13)	Circuit breaker closed and stress <60%	75 MW; 40%
	GT release is given with -32 and -45 curve fuel ratio balanced	
	Relative Power >45%	
A2(GT11)	Circuit breaker closed and stress <60%	75 MW; 40%
	GT release is given with -32 and -45 curve fuel ratio balanced	
	Relative Power >45%	
A2(GT12)	Circuit breaker closed and stress <60%	75 MW; 40%
	GT release is given with -32 and -45 curve fuel ratio balanced	
	Relative Power >45%	
A3(GT21)	Circuit breaker closed and stress <60%	75 MW; 40%
	GT release is given with -32 and -45 curve fuel ratio balanced	
	Relative Power >45%	
A3(GT22)	Circuit breaker closed and stress <60%	75 MW; 40%
	GT release is given with -32 and -45 curve fuel ratio balanced	
	Relative Power >45%	

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Natural gas	Supplied from national grid
Gas oil	Not exceeding 0.1% w/w sulphur content
Urea or ammonium hydroxide	To be confirmed
Hydrated lime	---

Table S2.2 Permitted waste types and quantities for incineration plant	
Maximum quantity	**753,500te per annum**
Waste code	**Description**
WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING	
Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing	
02 01 03	Plant-tissue waste
02 01 04	Waste plastics (except packaging)
02 01 07	Wastes from forestry
Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation	
02 02 03	Materials unsuitable for consumption or processing
Wastes from the dairy products industry	
02 05 01	Materials unsuitable for consumption or processing
Wastes from the baking and confectionery industry	
02 06 01	Materials unsuitable for consumption or processing
Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)	
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials
WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD	
Wastes from wood processing and the production of panels and furniture	
03 01 01	Waste bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES	
Wastes from the textile industry	
04 02 15	Wastes from finishing other than those mentioned in 04 02 14
04 02 21	Wastes from unprocessed textile fibres
04 02 22	Wastes from processed textile fibres

Table S2.2 Permitted waste types and quantities for incineration plant	
Maximum quantity	**753,500te per annum**
Waste code	**Description**
WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED	
Packaging (including separately collected municipal packaging waste)	
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 09	Textile packaging
Absorbents, filter materials, wiping cloths and protective clothing	
15 02 03	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
WASTES NOT OTHERWISE SPECIFIED IN THE LIST	
	End-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 03	End-of-life tyres
16 01 19	Plastic
CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
Concrete, bricks, tiles and ceramics	
17 02 01	Wood
17 02 03	Plastic
Other construction and demolition wastes	
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE	
Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)	
19 02 03	Premixed wastes composed only of non-hazardous wastes
19 02 10	Combustible wastes other than those mentioned in 19 02 08 and 19 02 09
Wastes from aerobic treatment of solid wastes	
19 05 01	Non-composted fraction of municipal and similar wastes
19 05 02	Non-composted fraction of animal and vegetable waste
Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 01	Paper and cardboard
19 12 04	Plastic and rubber
19 12 07	Wood other than that mentioned in 19 12 06
19 12 08	Textiles

Table S2.2 Permitted waste types and quantities for incineration plant	
Maximum quantity	**753,500te per annum**
Waste code	**Description**
19 12 10	Combustible waste (RDF)
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS	
Separately collected fractions (except 15 01)	
20 01 01	Paper and cardboard
20 01 08	Biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 25	Edible oil and fat
20 01 38	Wood other than that mentioned in 20 01 37
20 01 39	Plastics
Garden and parks wastes (including cemetery waste)	
20 02 01	Biodegradable waste
20 02 03	Other non-biodegradable wastes
Other municipal wastes	
20 03 01	Mixed municipal waste
20 03 03	Street-cleaning residues
• Any edible oil and fat under municipal wastes (EWC code: 20 01 25) accepted on Site will only comprise solid wastes.	
• Plastics under municipal wastes (EWC code: 20 01 39) accepted on Site will only comprise contaminated plastics, which are not suitable for recycling.	

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	70 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	75 mg/m^3	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	140 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Carbon Monoxide	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	100 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Carbon Monoxide	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	100 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22]	Carbon Monoxide	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	200 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Sulphur dioxide	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	At least every 6 months	Concentration by calculation as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Oxygen	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Water Vapour	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Stack gas temperature	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Stack gas pressure	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	Stack gas volume flow	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Continuous	BS EN16911 &TGN M2
A1[GT13] A2[GT11/GT12] A3[GT21/GT22	As required by the Method Implementation Document for BS EN 15259	LCP No 49 LCP No 50 LCP No 51 Gas turbines fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A4	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	Auxiliary Boiler 42 MWth Input	300mg/m³[1][2]	-	-	-
A4	Sulphur Dioxide	Auxiliary Boiler 42 MWth Input	-[1][2]	-	-	-
A4	Dust	Auxiliary Boiler 42 MWth Input	-[1][2]	-	-	-

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4	Carbon Monoxide	Auxiliary Boiler 42 MWth Input	150mg/m³[1][2]	-	-	-
A5	-	Phase 1 emergency gas oil generator	-	-	-	-
A6	-	Phase 2 emergency gas oil generator				
A7	-	Phase 1 gas oil back up firewater pump	-	-	-	-
A8	-	Phase 2 gas oil back up firewater pump	-	-	-	-
A9	-	GT13 fuel gas vent	-	-	-	-
A10	-	GT12 fuel gas vent	-	-	-	-
A11	-	GT11 fuel gas vent	-	-	-	-
A12	-	GT22 fuel gas vent	-	-	-	-
A13	-	GT21 fuel gas vent	-	-	-	-
A14	-	All steam vents	-	-	-	-
A15	-	Raw material storage tank vents	-	-	-	-
A16	-	All building ventilation vents	-	-	-	-
A17 A18	Particulate matter	Incinerator stack	30 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Particulate matter	Incinerator stack	5 mg/m^3	daily average	Continuous	BS EN 14181

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A17 A18	Total Organic Carbon (TOC)	Incinerator stack	20 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Total Organic Carbon (TOC)	Incinerator stack	10 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Hydrogen chloride	Incinerator stack	60 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Hydrogen chloride	Incinerator stack	6 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Hydrogen fluoride	Incinerator stack	4 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Hydrogen fluoride	Incinerator stack	1 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Carbon monoxide	Incinerator stack	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 A18	Carbon monoxide	Incinerator stack	50 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Sulphur dioxide	Incinerator stack	200 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Sulphur dioxide	Incinerator stack	30 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Incinerator stack	400 mg/m^3	½-hr average	Continuous	BS EN 14181
A17 A18	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Incinerator stack	120 mg/m^3	daily average	Continuous	BS EN 14181
A17 A18	Cadmium & thallium and their compounds (total)	Incinerator stack	0.02 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A17 A18	Mercury and its compounds	Incinerator stack	0.02 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
A17 A18	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Incinerator stack	0.3 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A17 A18	Ammonia (NH_3)	Incinerator stack	No limit set	½-hr average and / or daily average	Continuous	BS EN 14181 and BS EN 15267-3
A17 A18	Nitrous oxide (N_2O)	Incinerator stack	No limit set	½-hr average and / or daily average	Continuous	BS EN ISO 21258

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A17 A18	Dioxins / furans (I-TEQ)	Incinerator stack	0.04 ng/m^3 or 0.06 ng/m^3 if long term limit is specified by the Environment Agency after completion of IP20	periodic over minimum 6 hours, maximum 8 hour period or value over sampling period of 2 to 4 weeks for long term sampling	Monthly for first 6 months and accelerated monitoring as agreed through IC11, quarterly for following 6 months and then bi-annually; or long term monitoring if specified by the Environment Agency after completion of IP20	BS EN 1948 Parts 1, 2 and 3 Or long term sampling method if specified by the Environment Agency after completion of IP20
A17 A18	Dioxins / furans (WHO-TEQ Humans / Mammals, Fish, Birds)	Incinerator stack	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3

Table S3.1 Point source emissions to air. As shown on Site Plan fig 11 in Schedule 7						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A17 A18	Dioxin-like PCBs (WHO-TEQ Humans / Mammals, Fish, Birds)		No limit set	periodic over minimum 6 hours, maximum 8 hour period or value over sampling period of 2 to 4 weeks for long term sampling	Monthly for first 6 months and accelerated monitoring as agreed through IP20, quarterly for following 6 months and then bi-annually; or long term monitoring if specified by the Environment Agency after completion of IP20. No monitoring is required if emissions have been shown to be below 0.01 ng/m^3 as agreed with the Environment Agency.	BS EN 1948 Parts 1, 2 and 4 Or long term sampling method if specified by the Environment Agency after completion of IP20
A17 A18	Benzo (a)pyrene	Incinerator stack	No limit set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS ISO 11338 Parts 1 and 2.

[1] Auxiliary boiler operation is limited to 500 hours per calendar year.

[2] Emissions monitoring required if auxiliary boiler operates continuously for more than 24 hours and subject to a maximum of 1 test per 6 month period.

Table S3.1(a) Point source emissions to air during abnormal operation of incineration plant – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A17 and A18	Particulate matter	Incinerator stack	150 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure
A17 and A18	Total Organic Carbon (TOC)	Incinerator stack	20 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure
A17 and A18	Carbon monoxide	Incinerator stack	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181 during abatement plant failure

Table S3.1(b) Point source emissions to air during OTNOC – emission limits (IED Annex VI limits) and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A17 and A18	As specified in the OTNOC management plan as approved after completion of pre-operational condition PO1	Incinerator stack		As specified in the OTNOC management plan as approved after completion of pre-operational condition PO1		
A17 and A18	Particulate matter	Incinerator stack	30 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Particulate matter	Incinerator stack	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Total Organic Carbon (TOC)	Incinerator stack	20 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Total Organic Carbon (TOC)	Incinerator stack	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Hydrogen chloride	Incinerator stack	60 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Hydrogen chloride	Incinerator stack	10 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Hydrogen fluoride	Incinerator stack	4 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Hydrogen fluoride	Incinerator stack	1 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Carbon monoxide	Incinerator stack	100 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Carbon monoxide	Incinerator stack	50 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Sulphur dioxide	Incinerator stack	200 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Sulphur dioxide	Incinerator stack	50 mg/m^3	daily average	Continuous measurement	BS EN 14181
A17 and A18	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Incinerator stack	400 mg/m^3	½-hr average	Continuous measurement	BS EN 14181
A17 and A18	Oxides of nitrogen (NO and NO_2 expressed as NO_2)	Incinerator stack	200 mg/m^3	daily average	Continuous measurement	BS EN 14181

Table S3.1(b) Point source emissions to air during OTNOC – emission limits (IED Annex VI limits) and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard(s) or method(s)**
A17 and A18	Cadmium & thallium and their compounds (total)	Incinerator stack	0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A17 and A18	Mercury and its compounds	Incinerator stack	0.05 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
A17 and A18	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Incinerator stack	0.5 mg/m^3	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A17 and A18	Ammonia (NH_3)	Incinerator stack	No limit set	½-hr average and / or daily average	Continuous measurement	BS EN 14181
A17 and A18	Nitrous oxide (N_2O)	Incinerator stack	No limit set	½-hr average and / or daily average	Continuous measurement	BS EN ISO 21258
A17 and A18	Dioxins / furans (I-TEQ)	Incinerator stack	0.1 ng/m^3	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 (Discharge to River Humber deep water channel)	Flow	Cooling water with trivial contribution from water treatment plant and surface water	2,376,000m³/day 99,000m³ hour	Day Hour	Continuous Continuous	-
W1 (Discharge to River Humber deep water channel)	pH		5-9[1]	Continuous	See footnote {1}	-
W1 (Discharge to River Humber deep water channel)	Temperature		<8ºC <15ºC[2]	Continuous Continuous	Continuous Continuous	- -
W1 (Discharge to River Humber deep water channel)	Total oxidant (As chlorine)		0.1mg/l	To be agreed before dosing commences	-	-

{1} Continuous monitoring of pH is only required where biocide dosing has commenced.

{2} This is limited to the following activities:

(a) Maintenance work on the cooling water pumps.
(b) Repairs to leaks on the cooling water system.
(c) Clearing blockages on the main screens.
(d) Clearing of debris filters within the process.
(e) Investigations to identify condenser tube leaks.
(f) Running on steam by-pass following trips.
(g) Recommissioning.
(h) Optimisation of plant thermal efficiency performance.
(i) Other conditions agreed in writing with the Environment Agency.

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP49 (A1), LCP50 (A2), LCP 51 (A3)
		01/01/16 and subsequent years until 31/12/19 01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 30 April the following year	

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
As identified in the Application	Wind Speed and Direction	Continuous	Anemometer	
Location close to the Combustion Chamber inner wall or as identified and justified in Application.	Temperature (°C)	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A17 and A18	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A17 and A18	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A17 and A18	Exhaust gas flow	Continuous	Traceable to national standards	As agreed in writing with the Agency.
A17 and A18	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	
A17 and A18	Exhaust gas water vapour content	Continuous	BS EN 15267-3 BS EN 14181	Unless gas is dried before analysis of emissions.
Incineration plant	Gross electrical efficiency	Within 6 months of first operation and then within 6 months of any modification that significantly affects energy efficiency	Performance test at full load	25-35%

Table S3.5 Residue quality					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit**	**Monitoring frequency**	**Monitoring standard or method ***	**Other specifications**
Bottom Ash	TOC	<3%	Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
Bottom Ash	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.		Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
Bottom Ash	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions		Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
APC Residues	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.		Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
APC Residues	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions		Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	

Table S3.5 Residue quality					
Emission point reference or source or description of point of measurement	**Parameter**	**Limit**	**Monitoring frequency**	**Monitoring standard or method ***	**Other specifications**
Boiler ash	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.		Monthly in the first year of operation. Then Quarterly	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	
Boiler ash	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions		Before use of a new disposal or recycling route	Environment Agency Guidance, 'TGN M4 – Guidelines for Ash Sampling and Analysis'	

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 for activity AR1			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of nitrogen	A1, A2, A3, A4	Every 3 months	1 January, 1 April, 1 July, 1 October
Oxides of nitrogen	A4	Every 6 months	1January, 1July
Carbon Monoxide	A1, A2, A3, A4	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A1, A2, A3, A4	Every 6 months	1 January, 1 July
Dust	A4	Every 6 months	1 January, 1 July
Surface water monitoring Parameters as required by condition 3.5.1	W1	Every 3 months	1 January, 1 April, 1 July, 1 October

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Table S4.1a Reporting of monitoring data for activity AR2			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.6.1	A17 and A18	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
TOC Parameters as required by condition 3.6.1	Bottom Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1	Bottom Ash	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	Bottom Ash	Before use of a new disposal or recycling route	
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese,	APC Residues	Quarterly (but monthly for the	1 Jan, 1 Apr, 1 Jul and 1 Oct

Table S4.1a Reporting of monitoring data for activity AR2			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.6.1		first year of operation)	
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.6.1	APC Residues	Before use of a new disposal or recycling route	
Functioning and monitoring of the incineration plant as required by condition 4.2.2		Annually	1 Jan

Table S4.2: Resource Efficiency Metrics for activity AR1	
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
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 recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

Table S4.2a Annual production/treatment for activity AR2	
Parameter	**Units**
Total Waste Incinerated	tonnes
Electrical energy produced	KWh
Thermal energy produced e.g. steam for export	KWh
Electrical energy exported	KWh
Electrical energy used on installation	KWh
Waste heat utilised by the installation	KWh

Table S4.3 Chapter III Performance parameters for reporting to DEFRA for activity AR1		
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	t

Table S4.3a Performance parameters for activity AR2		
Parameter	**Frequency of assessment**	**Units**
Annual Report as required by condition 4.2.2	Annually	-
Electrical energy exported, imported and used at the installation	Annually	KWh / tonne of waste incinerated
Fuel oil consumption	Annually	Kg / tonne of waste incinerated
Bottom Ash residue	Annually	Route, tonnes and tonnes / tonne of waste incinerated
APC residue	Annually	Route, tonnes and tonnes / tonne of waste incinerated
[Ammonia / Urea] consumption	Annually	Kg / tonne of waste incinerated
Activated Carbon consumption	Annually	Kg / tonne of waste incinerated
[Lime / Sodium Bicarbonate] consumption	Annually	Kg / tonne of waste incinerated
Water consumption	Annually	Kg / tonne of waste incinerated

Table S4.3a Performance parameters for activity AR2		
Parameter	**Frequency of assessment**	**Units**
Periods of abnormal operation	Annually	No of occasions and cumulative hours for current calendar year for each line.

Table S4.4 Reporting forms for activity AR1				
Media/ parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air	Form IED AR1 – SO_2, NO_x and dust mass emission and energy	01/01/16	National	31/12/15
Air	Form IED RTA1 –TNP quarterly emissions summary log	01/01/16	National	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMS	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Air	Form PM1 discontinuous or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	19/10/06
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area office	19/10/06

Table S4.4a Reporting forms for activity AR2		
Media/parameter	**Reporting format**	**Date of form**
Annual Report as required by condition 4.2.2	Annual performance report template	25/03/20
Air	Form air 1 or other form as agreed in writing by the Environment Agency	25/03/20
Water and Land	Form water 1 or other form as agreed in writing by the Environment Agency	25/03/20
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	25/03/20
Water and raw material usage	Form WU/RM1 1 or other form as agreed in writing by the Environment Agency	25/03/20
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	25/03/20
Waste disposal/recovery	Form R1 or other form as agreed in writing by the Environment Agency	25/03/20

Table S4.4a Reporting forms for activity AR2		
Media/parameter	**Reporting format**	**Date of form**
Residue quality	Form residue 1 or other form as agreed in writing by the Environment Agency	25/03/20
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	25/03/20

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 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

“abatement equipment” means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

“abnormal operation” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices, during which the emissions into the air and the discharges of waste water may exceed the prescribed emission limit values for the pollutants affected.

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

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

“APC residues” means air pollution control residues.

“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.

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

for emissions to surface water, the surface water quality up-gradient of the site; or

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.

“BAT conclusions” means Best Available Techniques (BAT) Conclusions published by the European Commission.

“bi-annual” means twice per year with at least five months between tests.

“bottom ash” means ash transported by the grate.

“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.

“CEM” Continuous emission monitor.

“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 new incineration plant that involves any operation of the furnace.

“daily average” for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

“dioxin and furans” means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

“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 NO_x burners.

“emissions to land” includes emissions to groundwater.

“Energy efficiency” the ISO base load net plant efficiency means the performance value established by acceptance testing following commissioning or performance testing following improvements made to the plant that could affect the efficiency.

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

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“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 or background concentration limit.

“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.

“incineration line” means all of the incineration equipment related to a common discharge to air location.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“ISO” means International Standards Organisation.

‘List of Wastes’ means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time

“LOI” means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

“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.

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“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.

“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.

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

“OTNOC” means operation other than normal operating conditions, excluding start-up and shut-down and periods of abnormal operation, as defined in the OTNOC management plan approved through pre-operational condition PO1 or otherwise as agreed in writing with the Environment Agency.

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenzo[ah]anthracene, Dibenzo[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“PCB” means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.

“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.

“start up” is any period, where the plant has been non-operational, [after igniting the auxiliary burner] until [waste][waste fuel] has been fed to the plant [in sufficient quantity to cover the grate and] to initiate steady-state conditions as described in the application or agreed in writing with the Environment Agency.

“shut down” is any period where the plant is being returned to a non-operational state [and there is no waste being burned] as described in the application or agreed in writing with the Environment Agency.

“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC. [In respect of Bottom Ash, this means the total carbon content of all organic species present in the ash (excluding carbon in elemental form).]

‘*Waste code’* means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

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.
- in relation to gases from incineration plants other than those burning waste oil, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 11% dry

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective

toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	**I-TEF**	**WHO-TEF**		
	1990	**2005**	**1997/8**	
		Humans / Mammals	**Fish**	**Birds**
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0003	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.3	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8_HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0003	0.0001	0.0001

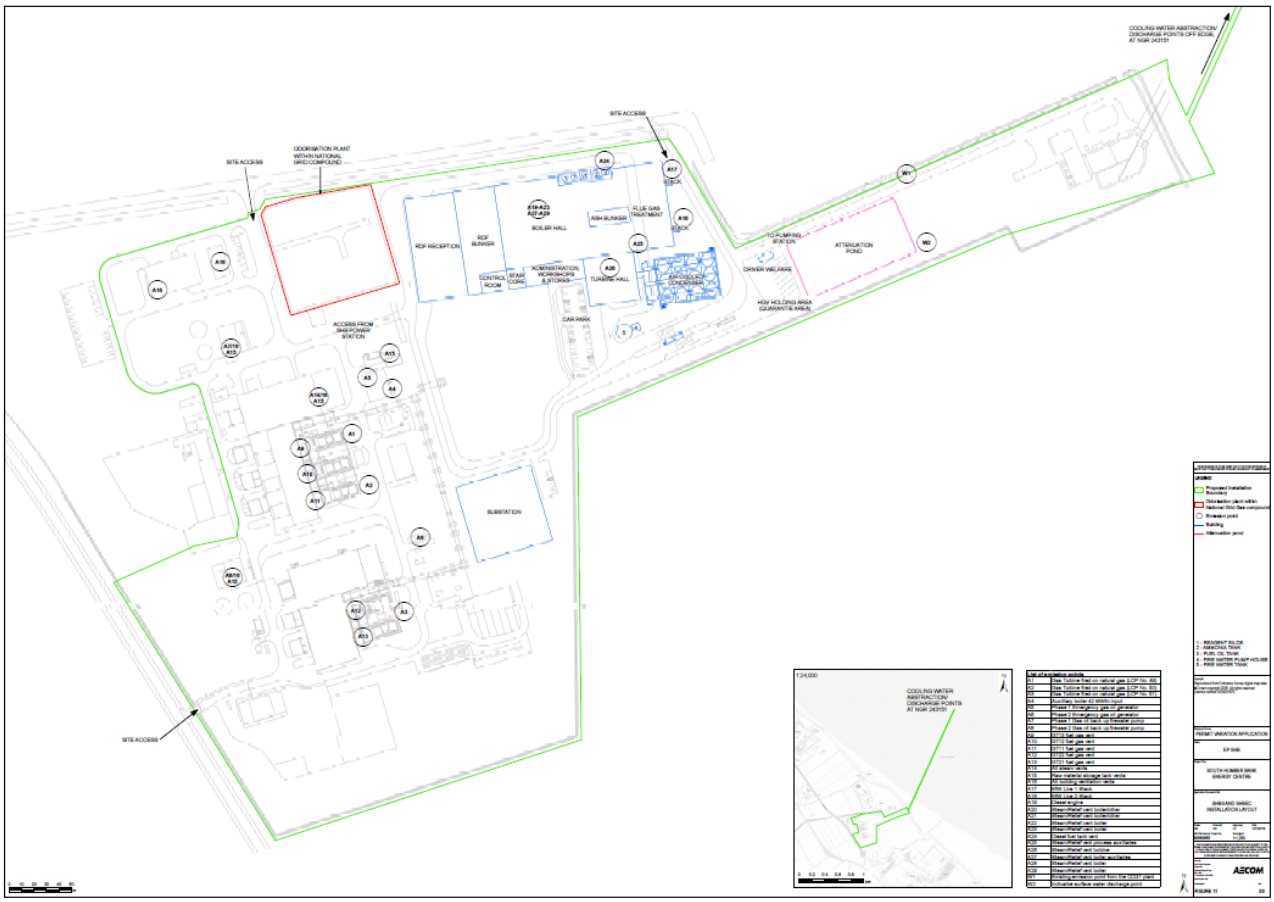
TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0003	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1

TEF schemes for dioxin-like PCBs			
Congener	**WHO-TEF**		
	2005	**1997/8**	
	Humans / mammals	**Fish**	**Birds**
3,3',4,4',5,5'-HxCB(169)	0.03	0.00005	0.001
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.00003	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.00003	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.00003	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.00003	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.00003	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.00003	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00003	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.00003	<0.000005	0.00001

“year” means calendar year ending 31 December.

Schedule 7 – Site plan

Site Plan Figure 11



END OF PERMIT