



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

RWE Generation UK Plc
Cowes Gas Turbine Power Station
Kingston Road
East Cowes
Isle of Wight
PO32 6JS

Variation application number

EPR/WP3835LR/V006

Permit number

EPR/WP3835LR

Cowes Gas Turbine Power Station

Permit number EPR/WP3835LR

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 2 of the notice comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the large combustion plant sector published on 17th August 2017. Only activities covered by this BAT Reference Document have been reviewed and assessed.

Outline any key changes made as a result of the permit review.

This variation makes the below changes following the review under Article 21(3) of the Industrial Emissions Directive (IED) and the consolidation of the Environmental Permitting Regulations that came into force on the 4 January 2017:

- Revised emission limits and monitoring requirements for emissions to air applicable from permit issue in table S3.1. The ability to comply with the BAT-AELs from permit issue has been confirmed by the operator;
- Removal of Table S3.3 titled 'Annual Limits' from the permit. BAT-AELs in table S3.1 have been set for NO_x, SO₂ and dust which supersede the Annual limits.
- Inclusion of a 1.4MWth gas oil Emergency Generator in the permit
- Permit condition 2.3.7 has been included in the permit with corresponding improvement condition IC10 requiring the operator to submit a report in relation to potential black start operation of the plant.

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

RWE Generation UK Plc own and operate an open cycle gas turbine power station in East Cowes on the Isle of Wight. This power station provides power to the national grid in the peak lopping mode; as such the periods of operation are typically short.

The power station is made up of 2 generating units, each consisting of 4 Rolls Royce Olympus oil fired gas turbines. Each unit of 4 gas turbines drives an A.C generator through a power turbine that runs perpendicular to the line of the gas turbine. Each generating unit has a generating capacity of 70 MW(e) or 270MWth. The generating units are air cooled, and the exhaust gases from each generating unit are discharged through an individual 85m high stack.

The gas turbines are fuelled by gas oil that is stored on site within 4 storage tanks each with a capacity of 4,600m³. The gas oil storage tanks are located adjacent to the banks of the River Medina as the fuel is typically delivered to the installation by sea tanker. The off-loading of the fuel to the site is through a jetty on the river, where during fuel delivery booms are deployed to ensure that in the event of an accident the fuel would be contained. Gas oil is delivered to the turbine halls within an underground pipe line system powered by pumps located within the pump house adjacent to the storage tanks. Lubrication oil is stored within tanks located within each turbine hall. An independent fire control system, powered by three engines is located within the Fire Protection Building.

There are no process waters generated within the installation. Collected water (from surface water run off, water collected within the bunded areas [oil incident drains] and deluge water in the event of a fire) is directed to a water storage and treatment plant. This consists of a number of emergency storage and retention tanks, traps to remove solid materials, and oil water separators.

The power station is located within an industrial area, on the banks of the River Medina, to the south of East Cowes. Immediately north of the installation are industrial units, including fuel delivery and storage. Immediately to the south and east of the installation is an industrial complex. There are residential properties to the north and the east of the installation at a distance of 120 m to the east and 350 m to the north.

The River Medina that runs adjacent to the installation boundary forms part of the Solent and Southampton Water Special Protection Area (SPA) and Ramsar and the Solent Maritime Special Area of Conservation (SAC). There are a total of six other European Designated Habitats sites within the vicinity of the installation. These include the Briddlesford Copse SAC (5 km to the SSE), the New Forest SPA, SAC and Ramsar (9 km to the NW), the Portsmouth Harbour SPA and Ramsar (11 km to the NE), the Solent and Isle of Wight Lagoons SAC (11 km NNE) and South Wight Maritime SAC (14 km to the S).

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 WP3835LR	Duly made 31/03/06	
Request to extend determination period	10/07/06	Response dated 12/07/06
Request to extend determination period	28/11/06	Response dated 06/12/06
Permit determined EPR/WP3835LR	22/12/06	Permit issued to RWE NPOWER Plc
Variation determined MP3937MV issued EPR/WP3835LR/V002	19/02/07	Permit issued variation to Sulphur Dioxide emission limits
Agency initiated variation determined EPR/WP3835LR/V003	23/02/12	Permit issued updates to Schedule 1 and 2 sections
Application EPR/WP3835LR/V004 (variation)	13/11/14	Application for name change to RWE Generation UK Plc
Variation determined EPR/WP3835LR/V004	02/12/14	Varied permit issued to RWE Generation UK Plc
Regulation 60 Notice sent to the Operator	31/10/14	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. The permit is also updated to modern conditions
Regulation 60 Notice response	31/03/15	Response received from the Operator.
Variation determined EPR/WP3835LR/V005	18/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Regulation 61 Notice sent to the Operator	01/05/18	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and

Status log of the permit		
Description	Date	Comments
		variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Regulation 61 Notice response.	02/11/18	Response received from the Operator.
Additional information in response to regulation 61(1) Notice EPR/FP3835LS/V006	04/06/19	Response to request for information providing further information regarding compliance with BAT6, BAT10 and BAT17.
Additional information in response to regulation 61(1) Notice EPR/FP3835LS/V006	15/07/19	Response to request for information providing further information regarding compliance with BAT9
Additional information in response to regulation 61(1) Notice EPR/FP3835LS/V006	02/10/19	Response to request for information providing further information regarding compliance with BAT38.
Additional information in response to regulation 61(1) Notice EPR/FP3835LS/V006	13/01/20	Response to request for information confirming that operator can comply with the JEP document that details fuel characterisation requirements in order to meet compliance with BAT9.
Variation determined EPR/WP3835LR/V006 (Billing ref: NP3609PE)	02/03/20	Varied and consolidated permit issued. Effective from 02/03/20

End of introductory note

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/WP3835LR

Issued to

RWE Generation UK Plc (“the operator”)

whose registered office is

Windmill Hill Business Park

Whitehill Way

Swindon

Wiltshire

SN5 6PB

company registration number 03892782

to operate a regulated facility at

Cowes Gas Turbine Power Station

Kingston Road

East Cowes

Isle of Wight

PO32 6JS

to the extent set out in the schedules.

The notice shall take effect from 02/03/20

Name	Date
Maxine Evans	02/03/20

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/WP3835LR

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/WP3835LR/V006 authorising,

RWE Generation UK Plc (“the operator”),

whose registered office is

Windmill Hill Business Park

Whitehill Way

Swindon

Wiltshire

SN5 6PB

company registration number 03892782

to operate a regulated facility at

Cowes Gas Turbine Power Station

Kingston Road

East Cowes

Isle of Wight

PO32 6JS

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

Name	Date
Maxine Evans	02/03/20

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;
- (c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (d) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

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

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

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

2 Operations

2.1 Permitted activities

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

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red 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: LCP 284 and LCP 285. The activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” dated December 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: LCP 284 and LCP 285. The activities shall not operate for more than 500 hours per year.
- 2.3.6 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 S1.4
- 2.3.7 The emission limit values from emission points A1 and A2 listed in table S3.1 and S3.1a of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective in accordance with the report submitted in response to improvement condition IC10.
- 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.

2.4 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.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

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

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1 and S3.2; and
 - (b) process monitoring specified in table S3.3.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

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

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

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule; and
- (d) where condition 2.3.5 applies the hours of operation in any year.

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

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

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

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 (a)(i), 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.

In any other case:

- (e) the death of any of the named operators (where the operator consists of more than one named individual);
- (f) any change in the operator's name(s) or address(es); and
- (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

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
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP284 and LCP285: GT for production of electricity. 2 units of 4 gas turbines feeding to a single alternator. Each unit has a rated output 70MW(e) giving a total of 140MW(e). The rated thermal input for each unit is 270MWth giving a combined total of 540MWth Emergency Generator 1.4MWth	From receipt of gas oil fuel and delivery to the generating unit to discharge of exhaust gases to air through two 85m high stacks. This includes the delivery, storage use and disposal of lubrication oils. For LCP284 and LCP285, operating hours limited to 500 per year as per Condition 2.3.5. The emergency generator shall be operated for no more than 500 hours per year, as a rolling average over a 5 year or 3 year period respectively.
Directly Associated Activity			
A2	Directly associated activity	Fire protection system	Storage of foam, water and fuel for pumps, operation of pumps.
A3	Directly associated activity	Water treatment	Collection of surface drainage and incident drainage removal of oils and discharge to River Medina

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to section 2.1, excluding 2.1.3 and 2.1.5, and 2.2 in the Application	31/03/06
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance route(s) and operating techniques identified in response to questions 2 (compliance route), 4 (configuration of each LCP), 6 (minimum start up and shut down load),	Received 24/03/15
Response to regulation 61(1) Notice – request for information dated 22/05/18 EPR/WP3835LR/V006	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	02/11/18
Additional information in response to regulation 61(1) Notice dated 22/05/19 EPR/WP3835LR/V006	Response to request for information providing further information regarding compliance with BAT6, BAT10 and BAT17.	04/06/19
Additional information in response to regulation 61(1) Notice dated 22/05/19 EPR/WP3835LR/V006	Response to request for information providing further information regarding compliance with BAT9.	15/07/19
Additional information in response to regulation 61(1) Notice dated 22/05/19 EPR/WP3835LR/V006	Response to request for information providing further information regarding compliance with BAT38.	02/10/19
Additional information in response to regulation 61(1) Notice dated 22/05/19 EPR/WP3835LR/V006	Response to request for information confirming that fuel characterisation will be undertaken in accordance with the Joint Environment Programme (JEP) Characterisation of Power Plant Fuels for Compliance with LCP BREF Conclusion BAT9 (JEP19EMB01 & JEP19EMC01 October 2019).	13/01/20

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement Conditions IC1 – IC7 have been completed and have been removed from this table as part of application EPR/WP3835LR/V006.		
IC8	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP284, LCP 285. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ol style="list-style-type: none"> Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), Performance test results after a significant modification (quoting the specified standards or test codes), Manufacturer's contractual guarantee value, Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; Operational efficiency data as verified and used for heat accountancy purposes, Data provided as part of Due Diligence during acquisition, <p>*Performance test results shall be used if these are available.</p>	29/05/20
IC9	For LCPD LCP 240 and 241 (now LCP 284 and 285 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 LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.'	29/05/20
IC10	<p>A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation.</p> <p>The plant can be operated as set out in condition 2.3.7 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.</p>	12 months from variation issue

Table S1.4 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 (%)	"Minimum shut-down load" Load in MW and as percent of rated power output (%)
A1 LCP284	1MW; 1.42%	1 MW; 1.42%
A2 LCP285	1MW; 1.42%	1 MW; 1.42%

Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Gas oil	Not exceeding 0.1% w/w sulphur content

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
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 [Point A1 on site plan in Schedule 7]	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP No. 284 Gas turbine fired on oil	250 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A1 [Point A1 on site plan in Schedule 7]	Carbon monoxide	LCP No. 284 Gas turbine fired on oil	-	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A1 [Point A1 on site plan in Schedule 7]	Sulphur dioxide	LCP No. 284 Gas turbine fired on oil	66 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A1 [Point A1 on site plan in Schedule 7]	Dust	LCP No. 284 Gas turbine fired on oil	10 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP No. 285 Gas turbine fired on oil	250 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Carbon monoxide	LCP No. 285 Gas turbine fired on oil	-	Daily average	Concentration by calculation, every 2	As agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Sulphur dioxide	LCP No. 285 Gas turbine fired on oil	66 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Dust	LCP No. 285 Gas turbine fired on oil	10 mg/Nm ³	Daily average	Concentration by calculation, every 2 years	As agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
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
A3 - A6 [Points A3 - A6 on site plan in schedule 7]	-	Gas generating cell ventilation via duct	-	-	-	-
A7 - A10 [Points A7 - A10 on site plan in schedule 7]	-	Power turbine enclosure ventilation via duct	-	-	-	-
A11 - A16 [Points A11 - A16 on site plan in schedule 7]	-	Turbine hall ventilation via outlet fan	-	-	-	-
A17 - A19 [Points A17 - A19 on site plan in schedule 7]	-	Fire protection building ventilation via duct	-	-	-	-
A20 - A22 [Points A20 - A22 on site plan in schedule 7]	-	Fire protection pumps via stack	-	-	-	-
A23 - A26 [Points A23 - A26 on site plan in schedule 7]	-	Fuel oil storage tanks via breather vent	-	-	-	-
A27 - A31 [Points A27 -A31 on site plan in schedule 7]	-	Battery room number 1 ventilation via vents	-	-	-	-
A32 - A40 [Points A32 -A40 on site plan in schedule 7]	-	Battery room number 2 ventilation via vents	-	-	-	-

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 on site plan in schedule 7	-	Effluent treatment plant	-	-	-	-

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
LCP 284 and LCP285	Net electrical efficiency	After each modification which that could significantly affect these parameters	By calculation	-

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A1, A2	Every 2 years,	1 January
Carbon Monoxide	A1, A2	Every 2 years	1 January
Sulphur dioxide	A1, A2	Every 2 years	1 January
Dust	A1, A2	Every 2 years	1 January

Table S4.2 Resource Efficiency Metrics	
Parameter	Units
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m ³
Water Abstracted from Borehole Source	m ³
Water Abstracted from Estuarine Water Source	m ³
Water Abstracted from Sea Water Source	m ³
Water Abstracted from Mains Water Source	m ³
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 S4.3 Chapter III Performance parameters for reporting to DEFRA and other Performance parameters		
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 (Load Factor)	Annually	hr

Table S4.4 Reporting Forms		
Media/parameter	Reporting format	Agency recipient
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	National and Area Office
LCP	Form IED HR1 – operating hours	National and Area Office
Air	Form IED PM1 - discontinuous monitoring and load.	Area Office
Resource Efficiency	Form REM1 – resource efficiency annual report	National and Area Office

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

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

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

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

“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.

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

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

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

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

“DLN” means dry, low NO_x burners.

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

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

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

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

“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.

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

“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.

“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.

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

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

“SI” means site inspector.

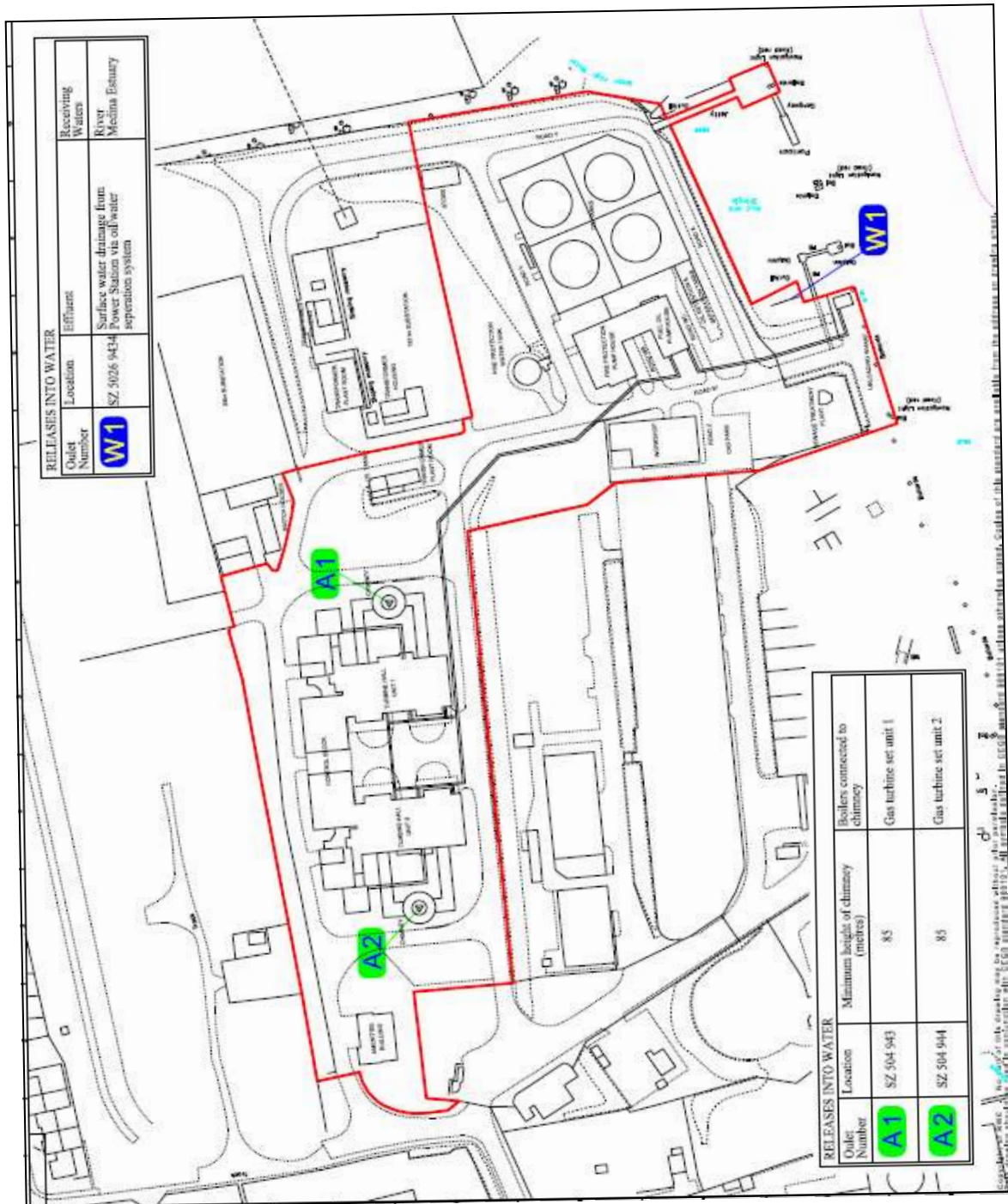
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



END OF PERMIT