

Environment Agency

Review of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/BJ7506IM
The Operator is: SSE PLC
The Installation is: Snodland Paper Mill CHP
This Variation Notice number is: EPR/BJ7506IM/V006

What this document is about

All Environmental permits which permit the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), need to be varied to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes 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 IED provides a period of transition towards the new ELVs via Article 32, the Transitional National Plan (TNP). It also makes provision for plant that wish to be exempted from compliance with the new ELVs in Article 33, the Limited Life Derogation (LLD). Other derogations include limited operating hour regimes for sites using 500 hr or 1500 hr derogations. There are also options for exemption from emission limits based on operating hours.

The operator has submitted responses to our notice requiring information, issued under regulation 60(1) of the Environmental Permitting Regulations (EPR), which has provided us with information on which compliance route they wish to follow for each LCP. The response) also include specific details relating to each LCP, necessary for accurate implementation the IED requirements. A copy of the regulation 60 notice and the operator's response is available on the public register.

We have reviewed the permit for this installation, including all variations since the last permit consolidation, and referred to the operator's response to the regulation 60 notice requiring information. This is our decision document, which explains the reasoning for the variation notice that we have issued.

It explains how we have reviewed and considered the compliance routes and, where relevant, the emissions limits proposed by the Operator for each LCP on the installation. This review has been undertaken with reference to the:

- Chapter III and annex V of the IED
- “IED BAT Non-ESI Review Paper, 28 October 2014” produced by the Environment Agency (referred to as the “2014 Non-ESI BAT review paper” in this document)
- “Electricity Supply Industry – IED compliance protocol for Utility Boilers and Gas Turbines”, published by the Joint Environmental Programme.

It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

In this document we address our determination of substantive issues relating to the chapter III review.

How this document is structured

Glossary

1. Our decision
2. How we reached our decision
3. The legal framework
4. Key Issues

GLOSSARY

BAT	best available techniques
BREF	best available techniques reference document
CCGT	combined cycle gas turbine
Emergency use	<500 operating hours per annum
ELV	emission limit value set out in either IED or LCPD
GT	gas turbine
IED	Industrial Emissions Directive 2010/75/EC
LCP	large combustion plant – combustion plant subject to Chapter III of IED
LCPD	Large Combustion Plant Directive 2001/80/EC
LLD	Limited Life Derogation
MCR	Maximum Continuous Rating
MSUL/MSDL	Minimum start up load/minimum shut-down load
OCGT	Open Cycle Gas Turbine
Part load operation	operation during a 24 hr period that includes loads between MSUL/MSDL and maximum continuous rating (MCR)
TNP	Transitional National Plan

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow it to continue to operate the Installation, subject to the conditions in the Variation Notice,

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Variation Notice contains several conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information relating to the requirements of Chapter III of and Annex V to the IED

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 08/12/14 requiring the Operator to provide information for each LCP they operate, including:

- The type of plant, size and configuration.
- The proposed compliance route.
- Minimum start up and shut down loads.
- The proposed emission limits and how they accord with the 2014 BAT review paper.

The Regulation 60 Notice response from the Operator was received on 30/03/15.

We considered that the response did not contain sufficient information for us to commence determination of the permit review. We therefore issued a further information request to the Operator. Suitable further information was provided by the Operator on 18th September 2015.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any party.

3 The legal framework

The Variation Notice will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Meeting the requirements of the IED

The table below shows how each requirement of the IED has been addressed by the permit conditions.

IED Article Reference	IED requirement	Permit condition
30(6)	If there is an interruption in the supply of gas, an alternative fuel may be used and the permit emission limits deferred for a period of up to 10 days, except where there is an overriding need to maintain energy supplies. The EA shall be notified immediately.	N/a
32(4)	For installations that have applied to derogate from the IED Annex V emission limits by means of the transitional national plan, the monitoring and reporting requirements set by UK Government shall be complied with.	3.1.3 Schedule 3, Table S3.3
33(1)b	For installations that have applied to derogate from the IED Annex V emission limits by means of the Limited Life Derogation, the operator shall submit annually a record of the number of operating hours since 1 January 2016;	N/a
37	Provisions for malfunction and breakdown of abatement equipment including notifying the EA.	N/a
38	Monitoring of air emissions in accordance with Ann V Pt 3	3.5, 3.6
40	Multi-fuel firing	N/a
41(a)	Determination of start-up and shut-down periods	2.3.12 Schedule 1 Table S1.5
Ann V Pt 1(1)	All emission limit values shall be calculated at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O2 content of 6 % for solid fuels, 3 % for combustion plants, other than gas turbines and gas engines using liquid and gaseous fuels and 15 % for gas turbines and gas engines.	Schedule 6, Interpretation
Ann V Pt 1	Emission limit values	3.1.2 Schedule 3, Table S3.1
Ann V Pt 1	For plants operating less than 500 hours per year, record the used operating hours	2.3.11 4.2.2d
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6, Interpretation
Ann V Pt 2	Emission limit values	N/a
AnnV Pt 3(1)	Continuous monitoring for >100MWth for specified substances	N/a
AnnV Pt 3(2, 3, 5)	Monitoring derogations	N/a
AnnV Pt3(4)	Measurement of total mercury	N/a

IED Article Reference	IED requirement	Permit condition
AnnV Pt3(6)	EA informed of significant changes in fuel type or in mode of operation so can check Pt3 (1-4) still apply	N/a
AnnV Pt3(7)	Monitoring requirements	3.5.1 Schedule 3, Table S3.1
AnnV Part 3(8,9,10)	Monitoring methods	3.5, 3.6
AnnV Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.1.2 Schedule 3, Table S3.1
AnnV Pt7	Refinery multi-fuel firing SO ₂ derogation	N/a

4. Key Issues

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Variation Notice.

The variation notice uses an updated LCP number in accordance with the most recent DEFRA LCP reference numbers. The LCP references have changed as follows:

- **LCP273** is changed to **LCP294**

LCP 294

This LCP consists of 1 x 140 MWth Combined Heat and Power Plant (CHP) comprising a Gas Turbine and Heat Recovery Steam Generator which vent via a common windshield at emission point A1. Emergency operation of the Gas Turbine in open cycle vents via stack A2. The units burn natural gas only.

Compliance Route:

The operator has proposed to operate this LCP under the TNP compliance route, with the open cycle operation of the gas turbine restricted to 500 hours per year.

For plant operating under the TNP, ELVs are set which have been derived for the period 2016 – 30 June 2020 (the duration of the TNP). At the end of this period it is expected that both Annex V and the revised LCP BREF will become applicable, in which case Annex V or the BAT conclusions must be achieved (whichever is stricter), or operators must have applied for a derogation from the BAT conclusion (if that is stricter: Annex V will apply in any event). The operator will apply, at the appropriate time, to vary the permit again to reflect this.

The operator's current proposals will see the closure of the combustion units before the end of the TNP.

Net Rated Thermal Input:

The Applicant has stated that the Net Thermal Input is 140MWth. They have justified this figure by stating it was based on the design specifications of 32% efficiency on a 46MW gas turbine.

The standard calculating the design specification, nor efficiency of the plant has not been specified in the response so the figure is not considered to be traceable.

We have set improvement condition IC1 to obtain further information on traceable rated thermal input by 31/12/16.

IC 1	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP294. 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> <ul style="list-style-type: none"> a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), b) Performance test results after a significant modification (quoting the specified standards or test codes), c) Manufacturer's contractual guarantee value, d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; f) Operational efficiency data as verified and used for heat accountancy purposes, g) Data provided as part of Due Diligence during acquisition, <p>*Performance test results shall be used if these are available.</p>
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Minimum start up load and Minimum shut-down load:

The Operator has defined the "minimum start up load" and "minimum shut-down load" for the LCP in their response to question 6 of the Reg 60, in terms of:

the output load (i.e. electricity, heat or power generated) (28MWe); and this output load as a percentage of the rated output of the combustion plant (>60%).

We agree with all of these definitions and have set these thresholds in table S1.5 of the permit accordingly. Standard permit condition 2.3.12 has been set to define the period of start up and shut down, referring to the thresholds in this table.

Emission limits:

The operators Regulation 60 response requested existing ELV`s to be retained for the period of the TNP. Existing ELV reference periods are different to those stated in the IED. Emission limits for NOx have therefore been transcribed from the existing permit into the common reference period detailed in Annexe 5 Part 4, accommodating the no-backsliding principle, as follows;

We have taken the max 2 hour mean as the 95%ile of hourly averages and the max 48hr mean and the 95%ile of daily mean, which is also set as the monthly mean of hourly averages.

We have set CO ELV`s as per Annexe 5. Although permitted ELV`s are currently higher, the lower limits should be able to be complied with.

SO2 and Dust have not been set ELV`s as the plant fires on Natural Gas. Monitoring requires for SO2 and Dust on Emission Point A1 are included as the TNP submission also covers these pollutants.

Parameter	Existing mg/m3	Reference Period	New Permit limit mg/m3	Reference Period
NO_x	105 mg/m3	95% 48 Hr Means	105	Monthly mean of validated hourly averages
	115 mg/m3	Max 48 Hr Mean	105	95% of validated daily means within a calendar year
	157 mg/m3	Max 2 Hr Mean	157	95% of validated hourly averages within a calendar year
CO	150 mg/m3	95% 48 Hr Means	100	Monthly mean of validated hourly averages
	165 mg/m3	Max 48 Hr Mean	110	Daily mean of validated hourly averages
	225 mg/m3	Max 2 Hr Mean	200	95% of validated hourly

				averages within a calendar year
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Reporting efficiency:

In order to ensure the efficiency of plant using fossil fuels or biomass is maximised and regularly recorded, condition 1.2.1(c), condition 4.2.2(b) and table S4.2 have been added to the permit.

A row has been included in table S3.1 which requires the operator to confirm compliance with BS EN 15259 in respect of monitoring location and stack gas velocity profile in the event there is a significant operational change (such as a change of fuel type) to the LCP.

Additional IED Chapter II requirements:

Condition 3.1.5 relating to protection of soil, groundwater and groundwater monitoring, has been added in compliance with IED requirements.

Conditions 4.3.1 and 4.3.2 relating to notifications have been amended in compliance with IED requirements.