

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/BS3824IJ
The Operator is: Solvay Interox Limited
The Installation is: Baronet Road Chemicals
This Variation Notice number is: EPR/BS3824IJ/V007

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 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.

The operator has submitted a response 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 includes specific details relating to each LCP, necessary for accurate implementation of 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 consolidated 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:

- 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. As well as implementing the chapter III IED compliance of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue.

The introduction of new template conditions makes the Permit consistent with our current general approach and philosophy and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to chapter III review.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

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
Derogation	As set out in Article 15(4) of the IED
ELV	Emission limit value set out in either IED or LCPD
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
MSUL/MSDL	Minimum start up load/minimum shut-down load
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 Consolidated 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 Consolidated Variation Notice contains several standard conditions that concern the operation of the non-LCP part of the installation taken from the existing permit and several conditions concerning the LCP part of the installation 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

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 31 October 2014 requiring the Operator to provide information for each LCP they operate, including:

- The type of plant, size and configuration,
- The proposed compliance route(s),
- Minimum start up and shut down loads,
- For all LCPs, 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 31 March 2015.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

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 Consolidated 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 Consolidated 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.	Not applicable
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.	2.2.1.4, Table 2.2.3
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;	Not required
37	Provisions for malfunction and breakdown of abatement equipment including notifying the EA.	Not applicable
38	Monitoring of air emissions in accordance with Ann V Pt 3	2.10, 2.14
40	Multi-fuel firing	Not applicable
41(a)	Determination of start-up and shut-down periods	2.1.4, Table 2.1.2
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 O ₂ 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.	6.3
Ann V Pt 1	Emission limit values	2.2.1.3, Table 2.2.2
Ann V Pt 1	For plants operating less than 500 hours per year, record the used operating hours	Not applicable

IED Article Reference	IED requirement	Permit condition
Ann V Pt 1(6(1))	Definition of natural gas	6.1
Ann V Pt 2	Emission limit values	Not applicable
Ann V Pt 3(1)	Continuous monitoring for >100 MWth for specified substances	Not applicable
Ann V Pt 3(2, 3, 5)	Monitoring derogations	Table S4.2 for SO ₂ and dust calculation
Ann V Pt 3(4)	Measurement of total mercury	Not applicable
Ann V Pt 3(6)	EA informed of significant changes in fuel type or in mode of operation so can check Pt 3(1-4) still apply	2.3.1 Schedule 1, Table S1.2
Ann V Pt 3(7)	Monitoring requirements	Not applicable
Ann V Pt 3(8,9,10)	Monitoring methods	2.14
Ann V Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	2.2.1.3, Table 2.2.2
Ann V Pt 7	Refinery multi-fuel firing SO ₂ derogation	Not applicable

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 2.1.1 of the Consolidated 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:

- **LCP 85** is changed to **LCP 330**

This LCP consists of 1 x 30.452 MWth and 1 x 29.646 MWth Boilers, which vent via multiple flues of height 40 m within a single windshield at emission points A8 and A9. The units burn natural gas only, the use of gas oil for standby purposes having been discontinued.

Compliance Route

The operator has proposed to operate this LCP under the TNP (in respect of NO_x emissions) and ELV (in respect of CO emissions) compliance routes.

Net Rated Thermal Input

The Applicant has stated (in email dated 23/10/15) that the Net Thermal Input of the LCP is 60.1 MWth (ie 30.452 + 29.646 MWth). They have justified this figure by providing notification that the boilers underwent detailed performance testing in January 1995 (and reported in March 1995) by the boiler suppliers Senior Thermal Engineering Ltd, in accordance with BS 845-

1:1987 - "Methods for assessing thermal performance of boilers for steam, hot water and high temperature heat transfer fluids". The operator confirms that the boilers have not been modified in a way that would affect the rating since then.

We are satisfied that this represents a valid method of justification.

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, both in terms of the output load (i.e. electricity, heat or power generated) (MW); and this output load as a percentage of the rated thermal output of the combustion plant (%). We agree with these definitions and have set these thresholds in the Permit in table 2.1.2 accordingly

Emission limits

For ELV Compliance Plant

For those substances not requested under the TNP route, we have incorporated ELVs into table 2.2.2 of the permit as follows:

Parameter	Existing mg/m ³	Reference Period	Annex V mg/m ³	New Permit limit mg/m ³
CO	None	95%ile of daily averages	110	110

- In respect of CO emission limits, there was no ELV in the permit so we have included the standard IED ELV for periodic sampling of 110 mg/m³.
- NOx is considered for TNP compliance (see below).
- The operator proposed limits for SO₂ (10 mg/m³) and dust (5 mg/m³). Limits required by IED (35 and 5 mg/m³ respectively) have been incorporated into the permit as the method of monitoring is by calculation.

For TNP Compliance Plant

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.

Parameter	Existing mg/m ³	Reference Period	Annex V mg/m ³	New Permit limit mg/m ³
NOx	240	95%ile of daily averages	55	240

The operator has proposed a TNP limit for NOx of 240 mg/m³ (unchanged from the existing permit) which we have accepted and have incorporated into the permit.

Reporting efficiency

DEFRA guidance requires the Agency to ensure that the efficiency of plant using fossil fuels is maximised and regularly recorded. The conditions in section 2.7 *Energy Efficiency* of the varied permit require this.

Notifications

As there is no abatement plant associated with the LCP, Schedule 1 *Notification of abnormal emissions*, Part C (which takes account of abatement plant malfunction and breakdown notification requirements) is not required and has therefore not been included.

Monitoring & standards

As there is no CEM required in this LCP, continuous measurement of oxygen, water vapour, temperature and pressure have not been included in table 2.2.2.

Direct monitoring of sulphur dioxide and dust emissions have not been included in the monitoring regime. However:

- SO₂ emissions from natural gas firing will be reported on the basis of the fuel sulphur content without continuous or periodic monitoring since only trace quantities of sulphur are present in UK natural gas.
- Dust emissions from natural gas firing will be reported on the basis of emission factors without continuous or periodic monitoring. Emission factors for the dust calculation are those which are published periodically in the compliance protocol referenced in condition 2.1.3 and the operator is required to comply with this. Natural gas is an ash-free fuel and high efficiency combustion does not generate additional dust.

In addition, condition 2.2.8.1 has been amended to remove the requirement to monitor smoke density. This condition was appropriate when the operator burned oil as the fuel, but as gas is now the only fuel and is ash-free, smoke density monitoring is no longer required.

A row has been included in the ELV table 2.2.2 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.

Standards for assessing the quality of information provided by the measurement devices are required as specified in condition 2.14.2.

Resource efficiency metrics

As this is a non-ESI plant, additional reporting metrics have not been included in the permit.

Additional Chapter II IED requirements

Condition 2.10.11 (periodic groundwater monitoring) has been added in compliance with IED requirements. In addition, updated conditions 5.1.1 and 5.1.2 (relating to notifications) (modern template conditions 4.3.1 and 4.3.2) have replaced the existing conditions in compliance with IED requirements.