

Environment Agency

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive 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/BS5428IP
The Operator is: INOVYN ChlorVinyls Limited
The Installation is: Runcorn Halochemicals Manufacturing
This Variation Notice number is: EPR/BS5428IP/V007
The date of issue is: 16 March 2016

What this document is about

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 by the European Commission of updated decisions on BAT conclusions.

We have reviewed the permit for this installation against the revised BAT Conclusions for the Chlor-Alkali production industry sector published on 9 December 2013 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions (BATc) for Chlor-Alkali Production as detailed in document reference 2013/732/EU. 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 considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach 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 the new BAT Conclusions.

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

1. Our decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review of operating techniques within the Installation against BATc.
5. Annex 2 – Review and assessment of derogation request(s) made by the operator in relation to BATc which include an Associated Emission Level (AEL) value.
6. Annex 3 – Improvement Conditions
7. Annex 4 – Review and assessment of changes that are not part of the BATc derived permit review.

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 that updates the whole permit.

We consider that, in reaching our 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 many 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 to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 22/05/2015 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BATc document.

The Notice required that where the revised standards are not currently met, the operator should provide information that

- describes the techniques that will be implemented before 9 December 2017 (4 years from BATc publication date), which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 9 December 2017 (4 years from BATc publication date) and confirms the date when the operation of those processes will cease within the installation or explains why the revised BAT standard is not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BATc.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT AEL) described in the BATc Document, the Regulation 60 Notice required that the Operator make a formal request for derogation from compliance with that AEL

(as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 60 Notice response from the Operator was received on 21/08/2015. We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review. The operator did not ask for derogation of any aspect of the 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.

2.2 Review of our own information in respect to the capability of the installation to meet revised standards included in the BATc document

Based on our records and previous experience in the regulation of the installation we have no reason to consider that the operator will not be able to comply with the techniques and standards described in the BATc.

2.3 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need some clarification of the information provided in the response in order to complete our permit review assessment. An email from the operator containing the clarification was received on 2 March 2016.

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.

Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the Chlor-Alkali production industrial sector were published by the European Commission on 9 December 2013. There are 17 BATc. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Variation Notice.

It should be noted that downstream plant, such as the sodium hypochlorite manufacturing plant, that use chlorine as a raw material are excluded from consideration of this review, in accordance with the scope described in the BATc document. They will be considered in subsequent IED reviews.

Our assessment of the Narrative BAT Conclusions based upon the information provided by the operator in his response to the Regulation 60 Notice, was carried out in accordance with our technical guidance note 368_15 Narrative BAT Determination Matrix dated 20 January 2016. Narrative BAT Conclusions are those which have no BAT-AELs set.

In terms of the first stage of the narrative BATc assessment guidance:

1. The Environment Agency sector group identified none of the 17 BATc as a priority for the chlor-alkali sector or this installation in particular; and
2. Neither the sector group nor the compliance officer identified any of the BATc, not already identified by the operator in his response to the notice, where we believe this installation is possibly not in compliance; and
3. The status of each BATc reported by the operator in his response to the notice is indicated in the following table.

The overall status of compliance with the BAT conclusion is indicated in the tables as

- NOT APPLICABLE
- CURRENTLY COMPLIANT
- COMPLIANT IN THE FUTURE (within 4 years of publication of BATc)
- NOT COMPLIANT

In his response to the notice, the operator addressed aspects of operation of the Hg cell plant that will not be relevant after the plant ceases operation by no later than 9 December 2017 (for example the use of hydrogen off-gas and brine purity). These aspects have been considered “Not Applicable” in the following assessment tables.

Summary of status types	Summary of the status of each BAT Conclusion requirement
BATc that are not applicable to this installation	BAT 4, BAT 5, BAT 6, BAT 7 (in part), BAT 8, BAT 9, BAT 10, BAT 11, BAT 12, BAT 13, BAT 14, BAT 15, BAT 16.
BATc where we accept the operator's Reg 60 notice response that they are currently compliant and no further explanation is required.	None
BATc where we accept the operator's Reg 60 notice response that they are currently non-	BAT 1, BAT 2 (in part),

Summary of status types	Summary of the status of each BAT Conclusion requirement
compliant and will only become compliant on plant closure prior to the 4 year deadline.	
BATc where improvements will be undertaken on site within the 4 year period in order to achieve compliance with the narrative and/or BAT-AEL prior to the 4 year deadline	BAT 2 (in part), BAT 3, BAT 7 (in part), BAT 17.

BAT Conclusion	Summary of BAT Conclusion requirement for Chlor-Alkali Industry	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
1	BAT for the production of chlor-alkali is to use one or a combination of the techniques given in BAT 1. The mercury cell technique cannot be considered BAT under any circumstances.	<p>NOT COMPLIANT:</p> <p>The operator uses mercury cell technology to manufacture chlorine. This is not BAT and the operator has committed to shut down the unit by no later than 09/12/17.</p> <p>Condition 1.1.2 has been included in the permit to specify the commitment is met.</p>
2	In order to reduce emissions of mercury and to reduce the generation of waste contaminated with mercury during the decommissioning or conversion of mercury cell plants, BAT is to elaborate and implement a decommissioning plan that incorporates all of the listed features [1].	<p>COMPLIANT IN THE FUTURE:</p> <p>All the features of the BATc document will be incorporated in the decommissioning plan except for the following:</p> <p>NOT COMPLIANT:</p> <ul style="list-style-type: none"> Floor is not impervious. However decommissioning will take place in a defined area within the cellroom meeting the features of BAT 2. No facilities to use aspirated equipment fitted with activated carbon filters. The decision on the fate of the buildings – to demolish or to reuse – is not yet made so the decision to treat the surface with an impervious coating will be made at a later date. Main building vents do not have treatment facilities. However working areas for activities such as high pressure water jetting will be carried out in tented zones with carbon adsorption on the ventilation points. The existing laundry (for Hg contaminated clothing) is located away from this area. The regime for controlling operator work wear during decommissioning will be reviewed by the operator. <p>Improvement condition 7 in Annex A of the permit requires the operator to periodically report on the progress made in achieving BAT 2, in respect of the preparation of a decommissioning plan.</p>
3	In order to reduce emissions of mercury to water during the decommissioning or conversion of	<p>COMPLIANT IN THE FUTURE:</p> <p>The operator is installing a plant using the techniques of oxidation and ion exchange to achieve the BAT-</p>

	mercury cell plants, BAT is to use one or a combination of the listed techniques [1].	AEL for Hg emissions to water during decommissioning. The only outfall to water that will be involved in the decommissioning activities is W2. (Other outfalls associated with this plant will be separated from the mercury decontamination activities.)
		<p>Table A.2.7 in condition 2.2.2.3 of Annex A includes the BAT-AEL Hg limit for cellroom decommissioning activities.</p> <p>Improvement condition 7 in Annex A of the permit requires the operator to periodically report on the progress made in achieving BAT 3, in respect of the installation of equipment for the abatement of Hg in the discharge to water.</p> <p>Improvement condition 6 in Annex A of the permit requires the operator to periodically report on the progress made in achieving BAT 3, in respect of the achievement of the BAT-AEL for Hg concentration in discharge.</p>
4	In order to reduce the generation of waste water, BAT is to use a combination of the listed techniques.	NOT APPLICABLE: The plant will be shut down at this stage.
5	In order to use energy efficiently in the electrolysis process, BAT is to use a combination of the listed techniques.	NOT APPLICABLE: The plant will be shut down at this stage.
6	In order to use energy efficiently, BAT is to maximise the use of the co-produced hydrogen from the electrolysis as a chemical reagent or fuel.	NOT APPLICABLE: The plant will be shut down at this stage.
7	BAT is to monitor emissions to air and water by using monitoring techniques in accordance with EN standards with at least the minimum frequency given below. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	<p>NOT APPLICABLE (in part):</p> <p><u>Emissions to air:</u> There will be no releases to air as the plant will be shut down at this stage.</p> <p>COMPLIANT IN THE FUTURE:</p> <p><u>Emissions to water:</u> The operator shall monitor emissions of Hg to water on a daily basis during cellroom decommissioning activities (there is a BAT-AEL requirement during decommissioning (BAT 3))</p> <p>Monitoring of free chlorine (Cl₂) in the discharge to water during decommissioning is not required as the BAT-AEL is considered by us not to extend into this period.</p> <p>Similarly monitoring of other non-Hg and non-free Cl₂ substances in the discharge to water during decommissioning is not required as the BATc is considered by us not to extend into this period.</p> <hr/> <p>Condition 2.2.2.5 in Annex A specifies monitoring requirements.</p> <p>Improvement condition 7 in Annex A of the permit requires the operator to periodically report on the progress made in achieving BAT 7, in respect of the methodology for emissions monitoring.</p>

8	In order to reduce channelled emissions of chlorine and chlorine dioxide to air from the processing of chlorine, BAT is to design, maintain and operate a chlorine absorption unit that incorporates an appropriate combination of the listed features.	NOT APPLICABLE: The mercury chlorine plant will be shut down at this stage.
9	The use of carbon tetrachloride for the elimination of nitrogen trichloride or the recovery of chlorine from tail gas is not BAT.	NOT APPLICABLE: The plant will be shut down at this stage.
10	The use of refrigerants with a high global warming potential, and in any case higher than 150 (e.g. many hydrofluoro-carbons (HFCs)), in new chlorine liquefaction units cannot be considered BAT.	NOT APPLICABLE: The plant will be shut down at this stage.
11	In order to reduce emissions of pollutants to water, BAT is to use an appropriate combination of the listed techniques.	NOT APPLICABLE: The plant generating chlorine will be shut down at this stage. (The BAT-AEL for Hg emissions under BAT 2 applies during decommissioning activities so protection is maintained.)
12	In order to reduce emissions of chloride to water from the chlor-alkali plant, BAT is to use a combination of the techniques given in BAT 4.	NOT APPLICABLE: The plant will be shut down at this stage.
13	In order to reduce emissions of free chlorine to water from the chlor-alkali plant, BAT is to treat waste water streams containing free chlorine as close as possible to the source, to prevent stripping of chlorine and/or the formation of halogenated organic compounds, by using one or a combination of the listed techniques.	NOT APPLICABLE: The mercury chlorine plant will be shut down at this stage.
14	In order to reduce emissions of chlorate to water from the chlor-alkali plant, BAT is to use one or a combination of the listed techniques.	NOT APPLICABLE: The plant will be shut down at this stage.
15	In order to reduce emissions of halogenated organic compounds to water from the chlor-alkali plant, BAT is to use a combination of the listed techniques.	NOT APPLICABLE: The plant will be shut down at this stage.
16	In order to reduce the quantity of spent sulphuric acid sent for disposal, BAT is to use one or a combination of the techniques given below. The neutralisation of spent sulphuric acid from chlorine drying with virgin reagents is not BAT.	NOT APPLICABLE: The plant will be shut down at this stage and there will no generation of spent sulphuric acid.
17	In order to reduce contamination of soil, groundwater and air, as well as to	COMPLIANT IN THE FUTURE: To reduce contamination of soil, groundwater and air,

	<p>halt pollutant dispersion and transfer to biota from contaminated chlor-alkali sites, BAT is to devise and implement, a site remediation plan that incorporates all of the listed features.</p>	<p>a closure plan will be developed to incorporate the listed features. Following plant closure a structured programme of decontamination will be pursued with the aim of removing all equipment but leaving the building structure in place until the business decides what to do with the area. Any remaining building structures will be decontaminated during the programme. If the buildings are demolished the land will be available for future industrial use.</p> <p>Condition 2.10.8 of the CORE part of the permit requires periodic monitoring of groundwater and soil. The operator has carried out an extensive investigation of the condition of the ground on which this activity is carried out (there is over 100 years of chemical plant operation on this site) and maintains a site protection and monitoring programme and reports routinely to the Environment Agency on findings.</p> <p>The operator also maintains an emergency response and monitoring plan in order to manage incidents in the event of such occurrences.</p> <p>Improvement condition 7 in Annex A of the permit requires the operator to periodically report on the progress made in achieving BAT 17, in respect of the preparation of a site remediation plan.</p>
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Note [1]: In this table “listed features” and “listed techniques” means the features or techniques listed for each of the specified BATc in the BATc document 2013/732/EU.

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.

Annex 2: Assessment, determination and decision where an application(s) for Derogation from BATc with associated emission levels (AEL) has been requested.

The Operator did not request derogation from compliance with any AEL included within the BATc as part of their Regulation 60 Notice response.

Annex 3: Improvement Conditions

Based on the information in the Operator’s Regulation 60 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BATc are achieved by the installation. These improvement conditions are set out below – justification for them is provided at the relevant section of the decision document (Annex 1, above).

Reference	Improvement Condition	Completion date
6	The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the BAT	Progress reports by

Reference	Improvement Condition	Completion date
	<p>conclusion AELs where BAT is currently not achieved, but will be achieved before 9 December 2017. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1. Current performance against the BATc AEL. 2. Methodology for reaching the AELs. 3. Associated targets / timelines for reaching compliance by 9 December 2017. <p>The report shall address the following BATc:</p> <ul style="list-style-type: none"> • BAT 3 	<p>09/06/16 09/12/16 09/06/17</p>
7	<p>The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved, but will be achieved before 9 December 2017. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1. Methodology for achieving BAT. 2. Associated targets / timelines for reaching compliance by 9 December 2017. <p>The report shall address the following BATc:</p> <ul style="list-style-type: none"> • BAT 2, BAT 3, BAT 7, BAT 17 	<p>Progress reports by 09/06/16 09/12/16 09/06/17</p>

Annex 4: Review and assessment of changes that are not part of the BATc derived permit review.

Condition 2.2.1.4 in Annex A (regarding the lifetime emissions of mercury to air) is modified to remove part (a) of the condition and to indicate new dates in Table A.2.5 appropriate to the Chlor-Alkali production review under IED.

Table A.2.9 in Condition 2.2.2.6 (regarding the lifetime emissions of mercury to water) is modified to indicate new dates appropriate to the Chlor-Alkali production review under IED.

The Common Waste Water (CWW) BAT review has not yet been published (although it is imminent) and has not been included in the Chlor-Alkali Production review.

We considered the Marine Policy and Marine Plan, in accordance with our guidance *Marine Planning: a guide for our regulatory decision making, OI 65_15* because this activity discharges effluent indirectly into the River Mersey and its Estuary. There is no Plan yet for this part of the North West Coast of the UK. We consider that the variation satisfies the requirements of the Policy because:

- The conditions in the variation comply with the BRef Note.
- This is an existing activity and the purpose of the variation is to reduce the levels of pollution to the environment (including the marine environment). The overall impact on the marine environment is therefore one of improvement.