

Air Products (BR) Limited
Queensway, Spencer Works,
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30th January 2017.

Natural Resources Wales
Rivers House
St Mellons Business Park
St Mellons
Cardiff
CF3 0EY

Attention: Mr Tony Leakey.

Re IPPC Permit number BL 2459.

Dear Mr Leakey

Please find enclosed:

Environmental Management Report for year ending December 2016.

Yours sincerely



T C Ryan
Plant Manager

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30th January 2017.

Natural Resources Wales
Rivers House
St Mellons Business Park
Fortran Rd
St Mellons
Cardiff
CF3 0EY

Attention: Mr T Leahey.

Re IPPC Permit number BL 2459. Permit condition 4.1.4

Dear Mr Leahey.

From previous meeting (28-04-2003) with the IPPC Inspector it was confirmed that Air Products had a management system, but would not apply for 3rd party accreditation. This was followed up with communications to Dr G Richards and accepted by him on 19th December 2003. The following is an extract from the letter sent to the IPPC inspector 01-11-2003

Llanwern Hydrogen Installation Management Systems

Objective

This report contains a review of the management systems of the installation to address improvement item 9.1, namely.

"A report shall be sent to the Agency on establishing an Environmental Management System having regard to section 2.1 of the relevant IPPC Sectorial or other Technical Guidance. The report shall include any proposals to implement such a programme."

General

The plant is 13 years old, being first commissioned in April 2002 and the management systems were documented in the PPC application V3145 section 2.1. The plant management systems structures have not changed significantly during the period of plant operation.

Two formal reviews of the management systems were completed at the start of plant operation. In January 2003 the plant completed its OPRA self-assessment and In August 2003 there was a review (audit) of the plant management systems operation, based on the plant EHS self-assessment.

Three OMA audits have been carried out by the EA, the first in 2003, the second in 2008 and one in 2013. Another is scheduled for March 2016.

The relationship between Air Products management system and ISO 14001, and how we demonstrate compliance, is documented in our procedure 01-12-01 Environmental Management systems. The site operating personnel are trained in the requirements of the EHS management system.

EHS Audit

An audit was carried out against the Air Product management system requirements. An individual

independent of the business line management carried out the audit. The plant scored 86% against Air Products Procedural requirements and there were no major identified environmental non-conformances for the hydrogen plant. This also indicates conformance to the ISO 14001 requirements.

EP OPRA

The OPRA system is a self-assessment against the Environment Agency's criteria for management systems. The plant EP OPRA (attached) shows an overall 'A' rating for the plant management systems.

Third Party Assessment

The site forms part of Air Products EN ISO 9001 certification for European Operations and all EH&S and Quality critical documents are controlled accordingly. The management system is in accordance with the requirements of ISO 14001 and Chemical Industries Responsible Care ® systems. End of extract

Please also see below the Llanwern site specific KPI's for 2015 with target results

	Goal or Objective	Responsible Person.	Due By	Measure
1.	Safety Management System Audit Findings Compliance: Follow up and close out all audit action items.	Plant Manager	Ongoing	Zero C-E APSAM NCR's overdue Zero A-B APSAM audit NCR's > 3mo overdue without response.
2.	Fully engage with the Basic Safety Process within our operating Facilities. Fully compliant Focus on Behavioural safety	Plant Manager & all staff	Ongoing	Score min 95% compliance for the year Summary sheets fully filled in and correctly tally chart scored
3.	Analyse all serious Incidents. I.e. ensure Apollo Root Cause Analysis (ARCA) is carried out and follow up on all recordable incidents and those near miss incidents allocated a high potential for fatality.	Plant Manager	As required	Forward to Line Mgrs to review RCA's Notify Mgt in 24 hrs All incidents and High PFA near misses to be RCA within 1 month.
4.	EH&S Training to achieve the Vol 2 minimum standards	Plant Manager	Ongoing	Ensure 100% compliance of all site personnel
5.	Achieve or beat statistical performance targets as defined by Corporate EH&S targets	Plant Manager & all staff	Ongoing	Zero Contractor and zero Employee Recordable incidents
6.	APSAM compliance score. Monthly action review for quarter on quarter improvement	Plant Manager & all staff	Ongoing	Maintain > 95% compliance.
7.	Environmental Incidents	Plant Manager	Ongoing	Zero reportable Environmental incidents
8.	Encourage Near Miss/ Incident Reporting Improvements Close out all associated action items by target date	Plant Manager & all staff	Ongoing	Continue to report near misses using Incident Tracking. Approved <3 months

9.	Complete all Preventative Maintenance Safety tasks.	Plant Manager & all staff	Ongoing	PSV's to be re-tested before SAP compliance date.
10	Crisis management. Complete all data entry	Plant Manager	Ongoing	Reviewed in September 2015.

From the meeting after start up the following points were noted and acted upon

Objective	Target	Date	Actions	Areas
Maintain compliance with permit conditions	Zero non compliances, air emissions line line with design	01/10/2004	Complete improvement items, run and maintain plant to design	All
Review Water emissions	Report to review emission since start up and BAT	31/12/2003	Complete BAT report	Water
Review Energy use	Report to set targets	30/05/2004	Complete	Gas
Incident prevention	Zero incidents	01/10/2004	Operate and maintain to design	Emergency
Noise	Report to review emissions since start up and BAT	01/01/2004	Complete	Noise
APSAM Audit and assessment Score	>85%	01/10/2004	on going	All

The low PH in the water emission analysis reported in Q4 of 2015 was a one off due to the low PH pf the supplied Tata Steel demin water supply. Since then Tata Steel have made changes to their boiler packages and the recent results show no significant approach to the ELV. We are also now trending our water analysis results to pick up any changes in the results.

There are no specific BAT reference documents that cover small scale hydrogen plants such as Llanwern, however reference can be made to the EIGA document BEST AVAILABLE TECHNIQUES FOR THE CO-PRODUCTION OF HYDROGEN, CARBON MONOXIDE & THEIR MIXTURES BY STEAM REFORMING IGC Doc 183/13/E and the Refineries BREF (2015) <section 3.14> as well COMMISSION IMPLEMENTING DECISION of 9 October 2014 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions, for the refining of mineral oil and gas. BREF on LVOC also contains references to hydrogen production but his is currently under review

We have conducted a review against the applicable requirements of these documents, noting that this plant is small capacity standalone and therefore there are no significant possibility of heat integration with any nearby plants

The plant performance exceeds the relevant ELVs, of note that there is no ELV identified for CO and meets the relevant BATs

I hope that the above satisfies the requirement of section 4.1.4 of the permit.
If you require further information, please do not hesitate to contact me

Yours sincerely

A handwritten signature in blue ink that reads "T C Ryan". The signature is written in a cursive style with a large 'R' and a trailing flourish.

T C Ryan.
Plant Manager

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