



Bwrdd Iechyd Prifysgol  
Hywel Dda  
University Health Board

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Dyddiad/Date: 15 June 2017

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Dear Mr White

## **Environmental Permitting (England and Wales) Regulations 2010 Part A(1). Variation to existing permit EPR/YP3930EX/V004 to include 49.9 Mw Cogeneration Plant at Valero refinery.**

We welcome the opportunity to comment on this permit application. We have consulted with our colleagues at the Environmental Public Health Service (delivered collaboratively through Public Health Wales' Health Protection Team and Public Health England's Centre for Radiation, Chemical and Environmental Hazards Wales). This assessment is based on actual or potential health risks from environmental exposures to chemicals, noise from the proposed operations including emergencies and extreme environmental events such as flooding.

Any recommendations are for consideration by the Regulator and should be reflected in any permit conditions made (see rationale below).

### Proposed Operations

The proposed application, by Valero Energy Ltd, is for a Cogeneration Plant (Cogen) to serve the refinery. The plant will produce up to 49.9 megawatts electrical (MWe) output from the combustion of natural gas. Superheated

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Cadeirydd / Chair  
**Mrs Bernardine Rees OBE**

Prif Weithredwr/Chief Executive  
**Mr Steve Moore**

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steam will also be generated via a heat recovery steam generator. Operation will require connections to the refinery's steam infrastructure, as well as to natural gas and electrical distribution systems.

The plant will operate 24 hours per day as required by the refinery and will be subject to continuous emissions monitoring and use dry low NOx burners in line with BAT. Fugitive emissions may be generated under certain conditions (venting). A demineralisation plant will be installed as part of the process, to wash the gas turbine. This will use small quantities of acid and alkali, requiring storage on site. Some wash water will be sent to waste via the site treatment plant. Other chemicals associated with the process will include lubricating oils.

The proposed facility will be located on land within the existing refinery which lies on the south coast of the Milford Haven waterway. The site occupies a rural setting with the nearest residential receptors comprising single properties approximately 150 m south and southwest. The nearest community (Milford Haven) lies over 2 km to the north of the site across the waterway. Several major energy sites are located around the Haven.

The plant is not yet constructed and planning approval is currently being sought as a Development of National Significance. Environmental Public Health Wales has not received sight of the planning application and as such our comments relate solely to the operation of the plant should it be developed. Discussions with the Planning Inspectorate suggest the planning application will be provided for comment in the coming months.

### Overall Conclusion

We have some concerns over the current risk assessment, specifically in respect of potential impacts from noise and potential odour emissions in terms of human health and suggest that the Regulator seeks further justification from the applicant that these aspects will not be detrimental to nearby receptors as detailed below.

### Public Health Risk Assessment

A noise assessment has been submitted in support of the application. Monitoring of background levels at receptors was undertaken between January and March of this year. Additional noise contribution from the Cogen plant was assessed based upon manufacturer's data. Potentially significant adverse impacts upon the two nearest properties were identified, particularly at the residential property at Rhoscrowther. The assessment suggests that mitigation measures at the source (namely enclosure, barriers or re-siting) are not feasible and that in view of the noise from existing activities at the refinery it is unlikely that the proposed plant will cause further disturbance.

In addition to the above, it is noted that the background monitoring was undertaken during winter months when other sources such as plant cooling systems may not have been included. While accepting that the assessment is

likely to be conservative it may be prudent to seek further clarification on the impact of potential cooling system noise.

Noise can be detrimental to health and we would propose that the Regulator seeks to identify if there have been any complaints from local residents regarding existing noise and that the applicant has appropriate procedures for responding to any such complaints. We would also suggest that the Regulator establishes with the applicant whether any potential mitigation options at the receptors have been considered and whether such options are feasible.

The applicant has undertaken detailed modelling of atmospheric emissions from the process. This has used worst case meteorological conditions and source concentrations equivalent to emission limits. The assessment has considered emissions of nitrogen dioxide at all receptors for both human health and ecological impact and at the two Air Quality Management Areas recorded at Milford Haven and Pembroke. Carbon monoxide was not modelled as emissions are deemed to be insignificant. The assessment further included contributions from all potential future known proposed major developments in the region. In all cases contributions from the proposed operations were not found to be significant to health or to contribute significantly to existing background levels.

The assessment indicates that sulphur dioxide may also be produced as the process will combine refinery gases with the natural gas fuel. This parameter was only assessed against ecological receptors, on the basis that "changes in impact from this gas in terms of human health would be sufficiently small so as not to warrant a material consideration". It is possible that low concentrations of sulphur dioxide may result in odours, which whilst below concentrations known to cause physiological effects, can have adverse impacts upon health, particularly psychological. Such issues have arisen previously at refineries in this region. In light of this we would recommend that the Regulator seeks assurance that potential odour emissions from refinery gas combustion have been adequately considered by the applicant and if necessary that an odour assessment be undertaken for the proposed process, including during commissioning and maintenance operations.

The site operates an environmental management system (EMS), accredited to ISO14001 and falls within the requirements of COMAH Regulations. All chemicals and lubricants for the proposed process will be stored in suitably bunded tanks in accordance with the EMS. Any waste liquids will be handled by the existing site treatment system. A site condition report was not submitted as the application falls within the current permitted boundaries. Review of NRW maps suggests the site is not within an area at risk of flooding, while major surface waters are some distance away.

Any additional information obtained by the Regulator in relation to these comments should be sent to us for consideration. Such information could affect the comments made in this response.

Yours sincerely

A handwritten signature in black ink that reads "Steve Moore". The signature is written in a cursive style with a large, looping initial "S".

**Steve Moore**  
**Chief Executive**