

Determination of an Application for a PPC Permit under the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973)

Decision Document recording the decision-making process

Note: all references to the "PPC Regulations" are to the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973), as amended.

Administrative details

Application date and Agency reference ("the Permit Application")

Esso Petroleum Company Limited **BW9816IE**

Permit number (the "Permit")

BW9816IE

Applicant (the "Applicant")

Esso Petroleum Company Limited

Address/location of installation (the "Installation")

Dale Road
Hubberston
Milford Haven
Pembrokeshire
SA73 1DR

Name of Account Officer

Mark Broom

Signature of Account Officer:

Signature of Authorising Officer:

All relevant documents have been sent to the IPPC Public Registers

Purpose of this document

The Decision Document ("DD") explains how the Applicant's Permit Application has been determined and why the specific conditions in the Permit have been imposed. It is a record of the decision-making process to show how all relevant factors and legislative requirements have been taken into account.

It should be noted that the Permit contains many conditions taken from the Agency's standard PPC Permit template. These standard conditions were developed by the Agency having regard to the legal requirements of the PPC Regulations and other relevant legislation. This Decision Document does not include an explanation for these standard conditions, but does provide an explanation and justification for the emission limit values (ELVs), the choices made between optional standard conditions and for additional conditions which have been imposed in order to take installation-specific factors into account.

Summary of the decision

A Permit for the Applicant to operate the Installation has been granted by the Agency, subject to the conditions set out in the Permit. Where the Permit includes standard Agency Permit conditions (see above), these have been considered to be appropriate for the Installation, in particular in ensuring that all appropriate measures will be taken against pollution and that no significant pollution will be caused. The Agency considers that in its decision to issue the Permit and in the conditions included therein, it has taken into account all relevant considerations and legal requirements.

This installation has not been built and some of the conditions eg improvement conditions and pre-operational conditions reflect this fact.

Description of the Permitted Installation

A non-technical summary of the activities covered by the Permit is contained within the Application. There is also a description of the Installation included in the Introductory Note to the Permit.

The South Hook installation covers the receipt, storage and vapourisation of liquefied natural gas (LNG) at a purpose built and designed LNG terminal.

Glossary of terms used in this Decision Document

"*Application*" means the application for this Permit, together with any response to a Notice served under Schedule 4 to the PPC Regulations, and any other written information provided by the Operator for consideration in the determination of the Permit.

"*Applicant*" means...Esso Petroleum Company Limited

"*Operator*" means...Esso Petroleum Company Limited, although it is almost certain that Esso will transfer any PPC permit to a new joint venture between themselves and Qatargas.

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PART A – ADMINISTRATIVE INFORMATION RELATING TO THE APPLICATION AND INFORMATION ABOUT THE APPLICANT

The Agency's determination procedure

A1 "Duly made" check on Application received

The Application was determined to be duly made as submitted on 17/11/03.

A2 Consultation on the Application

The Application was advertised by the Applicant according to the requirements of Part 1 of Schedule 4 to the PPC Regulations on 18/12/2003 & 19 December 2003 in the Milford Mercury and the London Gazette respectively.

The Agency sent copies of the Application to the following statutory consultees in accordance with Part 2 of Schedule 4 to the PPC Regulations:

- Pembrokeshire Local Health Board [*the Health Board in whose area the installation will be operated*]
- Pembrokeshire County Borough Council [*the LA regulator in whose area the installation will be operated*]
- Food Standards Agency; (FSA)
- Countryside Council for Wales; (CCW)
- Health and Safety Executive; (HSE)
- Milford Haven Harbour Authority; (MHHA)
- South Wales Sea Fisheries Committee (SWSFC)
- Secretary of State for Wales. (WAG)

The Agency also sent copies of the Application to the following non-statutory consultees:

- Pembrokeshire Coast National Park {PCNP} (as the process straddles the boundary between PCC and the National Park).

A3 Consideration of consultation responses

Responses were received from the following statutory and non-statutory consultees:

HSE
SW SFC
WAG

No responses were received from the above statutory/non-statutory consultees.

PCC
FSA
PCNP

No responses were received from members of the public during the determination period.

All responses have been considered by the Agency in determining the Application. The ways in which material responses have been taken into account are summarised in the appendix to this document

A4 Matters of commercial confidentiality or national security

The Operator has made no claim for commercial confidentiality and the Agency has not received any information in relation to this Application which appears to be confidential in relation to any party. There are no matters involving national security.

A5 Further information requirements

The Application was deemed duly made by the Agency, but further information was required in order for the Agency to be able to determine the Application. Further information was requested from the Applicant by notice/letter as follows:

Clarification of the noise issues and the water discharge arrangements which changed during the determination period. The changes to the water release were clarified by a note sent to the Agency in March 2004 and the noise issues were discussed in a meeting on 11 March 2004. Rae Crawford (Exxon) emailed through details of the noise monitoring to address the noise monitoring issues raised during the determination.

Formal clarification of the Noise monitoring and further clarification of the aquatic impacts and Habitats issues were addressed using a Schedule 4 Notice. The opportunity to clarify some consultee questions was also taken. The Schedule 4 notice was issued on 11/05/2004 and the response (dated 10/06/2004) clarified the noise, accident, some consultee responses and the aquatic discharge issues.

A6 The Applicant

The Agency is satisfied that the Applicant (now the Operator) is the person who will have control over the operation of the Installation after the grant of the Permit, and that the Operator will be able to operate the Installation so as to comply with the conditions that have been included in the Permit

Esso Petroleum are a large organisation and they should be more than capable of complying with the conditions of the permit.

A6.1 OPRA profile

The Agency is satisfied that the OPRA profile submitted with the Application remains accurate following the determination of the Application, and it will be used as the basis for subsistence and other charging, and for all other relevant purposes at the commencement of the Permit. In accordance with the Agency's OPRA Scheme however, the Operator's OPRA profile for the installation may change over time. However the OPRA score is based on the assumption that there will be certain pre-operational conditions that ensure systems and procedures are in place before operation. If these are not implemented, then the EP OPRA score may need to be reviewed.

Note the EP OPRA scheme has changed between the determination of the PPC permit and the operational phase of this permit. Any changes to EP OPRA will be reviewed to see how the changes affect this score for this permit.

The submitted EP OPRA, not EP OPRA 2, score for this permit is 190 of which 75 points is accounted for by the complexity and 75 points from the Operators Management performance. The latter category appears high because of the lack of procedures etc being available. This

score can be expected to reduce before the installation is operational. An EP OPRTA 2 Notice was sent out to Esso, on 23 June 2004, for this site but a reply does not have to be submitted until 4 August 2004 after which time the new score will be reviewed.

PART B – THE INSTALLATION AND ITS MANAGEMENT

B1 Permit Section 1.1.1 - The permitted activities

The principal listed activity at the Installation falls within the activity description in Section 1.1 Part A(1)[a] of Part 1 of Schedule 1: *“Burning any fuel in an appliance with a rated thermal input of 50 Megawatts or more”*. The Agency considers that this constitutes the “stationary technical unit”.

The Agency considers that the following activities are directly associated with the stationary technical unit and therefore form part of the Installation:

- There are no listed directly-associated activities relating to the operation of the combustion activities
- off loading LNG, storing LNG and flaring of natural gas are not specifically described in the PPC Regulations but are an inherent part of the combustion process in that the LNG is used as fuel, the combustion process is there because the LNG facilities are located on site and the LNG storage facilities do have releases to the environment (vents and flares). This decision has been discussed by the PPC interpretation group. The installation also includes the jetty because the two pipelines that are used to transfer LNG from the ship to the tanks, are routed to circulate the LNG to and from the jetty to keep the pipelines cold so avoiding pressure problems when off loading cold LNG into hot pipelines.

The stationary technical unit and its directly-associated activities described above, together constitute the Installation. The definition of the LNG installation was considered over a number of meetings by the IPPC Interpretation Group. At their meeting on 8 June 2004, they agreed with this definition. Similar interpretations have been made at the Petroplus LNG and Isle of Grain LNG terminals.

B2 Permit Condition 1.1.2 – Identification of exempt waste activities

This is a standard condition of all Permits but it is understood that it is not the Operator's intention to undertake any waste activities which are exempt from Waste Management Licensing (ie. activities listed in Schedule 3 of the Waste Management Licensing Regulations 1994) on the same site, which are not part of the Installation.

B3 Permit Section 1.2 - Site plan

The Applicant has provided a plan which the Agency considers is satisfactory for showing the site of the Installation and its extent. This plan is included in the Permit as Schedule 5, and the Operator is required to carry on the Permitted activities within the site boundary.

B4 Permit section 1.5 - Minor operational changes; (Changes allowed within the scope of this Permit)

The Permit constrains the Operator to operate the activities subject to the limits and conditions in the Permit. However the Operator may make minor changes as defined within the Application by notifying the Agency in writing under Conditions 1.5.1 -1.5.4.

B5 Permit section 2.11 - Closure and decommissioning; (Prevention of deterioration of the site)

The Applicant has provided a Site Report as required by paragraph 1 of Part 1 of Schedule 4 to the Regulations, the main elements of which are:

The site is contaminated from its previous use as an oil refinery and that this contamination will be dealt with before construction of the installation.

The Agency considers that this report adequately describes the condition of the site and in particular identifies any substance in, on or under the land that may constitute a pollution risk.

The site was an oil refinery site that needs to be remediated before the LNG installation can be built. So unusually, the submitted site report can not fully demonstrate the status of the site before use. Therefore a pre-operational condition (1.6.1 D in Table 1.6.1) covering the 'final' site condition before construction is required not only for the PPC site report issues but also for planning. The report needs to be acceptable for both purposes (planning and PPC).

B6 Permit Section 2.12 - Multiple Operator installations

This is not a multi-Operator installation

Management

B7 Permit Section 1.3 - Overarching Management Condition

Condition 1.3.1 in the Permit is a standard condition but, based upon the information submitted in the Application the Agency is satisfied that appropriate management systems and management structures are in place for this Installation, and that sufficient financial, technical and manpower resource is available to the Operator to ensure compliance with all the Permit conditions.

B8 Permit Section 2.3 - Management

B8.1 Staffing and Training

The information provided in response to Questions in Section 2.3 of the Application indicates that the installation will be operated by an adequate number of staff, who are suitably trained and supervised. Appropriate written operating instructions will be available, and a system will be in place for the recording of staff training.

B8.2 Operation and Maintenance

The information provided in response to Questions in Section 2.3 of the Application indicates that the installation will be operated and maintained in compliance with the Conditions in the Permit.

The Operator will have a formal maintenance system which includes maintenance planning, programmed preventative maintenance, breakdown history and recording of all maintenance done.

B8.3 Incidents and Complaints

The information provided in response to Questions in Section 2.3 of the Application indicates that there will be a suitable incident/complaint logging and response system in place.

Note the initial cooling down of the LNG storage tanks may lead to prolonged flaring which may be noisy. Once cold, there should be minimal flaring.

PART C: DETERMINATION OF PERMIT CONDITIONS

C1. Operating conditions and BAT determination

C1.1 Permit Section 2.1 In-Process controls – the Applicant's proposed techniques

All the PPC permit application submissions have been included in this section of the permit. Not all the Schedule 4 responses have been included because they were written to clarify specific issues either for the Habitats reviews or consultee queries. So only questions relevant to the permit operation have been included from the Schedule 4 responses (ie responses 4, 6, 7, & 10).

C1.2 General summary of the aspects considered in determining BAT for the installation

Indicative BAT for reheating LNG is submerged combustion vapourisers. The main pollutant from this process is aerial NO_x together with some aqueous nitrate containing effluent. At Phase 1, no significant pollution is predicted either alone or in combination. After phase 2, the levels of NO_x within the site are high (at 70% PEC) but do not exceed current EA thresholds or EQSs. The impact of this pollutant will be confirmed by the ambient NO_x monitoring (pre-operational, post phase 1 and post phase 2). The site lies right next to the Milford Haven Waterway which is a SAC and a further 9 SACs and/or SPAs are within 10 kms of this facility.

There are only a limited number of methods to reheat LNG. Four were detailed in the PPC application although a fifth method which is feasible in theory but not currently at this site.

- 1 Using SCVs (higher operating costs but lower investment)
- 2 Using waste heat from a power station – none proposed but may be a possibility in the future. A real option if there was an existing powerstation already on this site (eg Petroplus). High capital cost but lower running costs and more energy efficient.
- 3 Using ambient heat from seawater – the impact is too big and some SCVs would be required as back up. High capital cost but lower running costs.
- 4 Using geothermal energy – the resource could not be confirmed. High capital costs but low running costs.
- 5 Using the 'cold' generated from vapourising LNG to freeze food or to preserve food in a cold store. This option was not explicitly described in the PPC application. No opportunity currently exists in this area for such a facility.

The Applicant chose SCVs which is indicative BAT for this duty. The main impacts from this operation are

Aerial NO_x
Aquatic nitrates and thermal releases
Fugitive VOCs
Flaring
Noise; and
Accidents

There is a decision to be made between flaring excess methane and venting this pollutant. Releases of methane are prevented by a boil off gas collection system (the BOG compressor etc). In the event that the BOG can not be used, Esso are proposing a low and a high pressure flare rather than venting methane. The flare will also be used to start up the LNG tanks which will take several days of flaring to get the tanks cold enough to store LNG (-163C). The noise (and light) from this operation will be infrequent. Accidental releases from this facility could be significant. The facility will be a top tier COMAH site. The storage tanks will be of the full containment design ie the outer tank can withstand a leak from the inner tank. Furthermore there will only be connections into the tank from the top to minimise the risk of leakage.

C2. Justification for ELVs or equivalent technical parameters set for specific emissions

The following emission limit values (or “equivalent measures” or “technical parameters”) have been included in the Permit for the reasons described:

C2.1 Permit section 2.2.1 - Emissions to air

The standard conditions 2.2.1.1, 2.2.1.2 (table of release points) and 2.2.1.3 (ELV & Monitoring) tables have been used.

Table 2.2.1 includes all the release points given in Figure 2.3.5 because this diagram includes all the Phase 1 (A1 – A10) and Phase 2 (A11 – A19) release points because both phases are included in the PPC application and are permitted under this PPC permit.

Table 2.2.2 only includes limits for oxides of nitrogen because this is the only significant pollutant released to air from the SCVs. The Applicant quoted the 140 mg/m³ (natural gas fired boiler with flue gas recirculation and low NOx burners) performance standard (from the IPC guidance note S3 1.01 (Combustion processes, supplementary guidance note). The SCV release level should be lower (107 mg/Nm³) but it may depend upon the type of SCV used – smaller SCVs, lower NOx concentrations or larger SCVs & high concentration but similar mass flows of NOx overall. The ELV for the SCVs will need to be reviewed once some operational data has been obtained. Monitoring of oxides of nitrogen and carbon monoxide to the relevant ISO standards is required. The Applicant offered CEMS on two SCVs and quarterly for all SCVs. The use of carbon monoxide monitoring with no limits has been applied because of the need to ensure the SCVs are operating efficiently.

The standard annual mass release condition (2.2.1.4) has been deleted therefore no condition applies.

C2.2 Permit Conditions 2.2.2.3 - 2.2.2.6 - Emissions to water (other than sewer)

The aquatic limits applied are based upon several factors. There are two discharges to the aquatic environment; the site drainage and the neutralised effluent from the SCVs. The site drainage is maintaining the current arrangements from the old Esso site before any remediation of the site has been carried out. With this development, the old refinery site will be remediated so the loadings from the site drainage will be less. Note there is a large bed of Eelgrass and a previously unknown deposit of Red Maerl next to the discharge of the current site drainage into the Haven.

For the Neutralised effluent, release point W2, the three issues are temperature, nitrate and pH. The limits have been assessed against the Habitats directive requirements of no significant impact. Since the thermal load is small, the impact of this small flow on the Haven will be

insignificant. The pH issue will also not be significant because the discharge is tidal. Lastly the loading of nitrate is also small on the Haven. The limits applied have been based upon the Application (pH 6 – 9; Nitrate at 75 mg/l nitrate (the application quotes sodium nitrate at 100 mg/l which are essentially the same and the temperature limit applied is 30°C as described in the application.

C2.3 Permit section 2.2.2.7 - 2.2.2.10 - Emissions to sewer

There are no proposed releases to sewer from this installation. The standard conditions have been deleted and the 'no condition applies' phrase has been used for conditions 2.2.2.8, 9 & 10.

C2.4 Permit section 2.2.3 - Emissions to groundwater

The standard conditions 2.2.3.1, 2 & 3 have been used in this permit.

C2.5 Permit section 2.2.4– Fugitive releases - Air

The standard conditions have been used.

C2.6 Permit section 2.2.5 – Fugitive releases – water etc

The standard conditions have been used.

C2.7 Permit section 2.2.6 - Odour

On consideration of the Application, the Agency considers that the activities to be carried out at the installation have the potential to cause odour, but that such odour is not likely to cause annoyance and that the Applicant's proposals in respect of odour control represent BAT. Agency therefore considers that the standard Condition 2.2.6.1 is appropriate and sufficient.

Since the LNG releases will only be from a major release of gas, the consequences of an LNG release will not be odour but from explosion. Odourising of the LNG is not required to meet the Transco specification so odour releases of odourant are not an issue.]

C2.8 Permit section 2.2.7 - Emissions to land

Standard condition 2.2.7.1, 2 and 3 were used in this permit. The decision document template says that for condition 2.2.7.4 when it is not used 'no condition applies' phrase should be used.

C2.9 Permit section 2.9 - Noise (and vibration)

On consideration of the Application, the Agency considers that the activities to be carried out at the installation have the potential to cause noise, but that such noise is not likely to cause annoyance and that the Applicant's proposals in respect of noise and vibration control represent BAT. Agency therefore considers that the standard condition 2.9.1 is appropriate and sufficient. A complete ban on the testing of noisy equipment at certain times (Condition 2.9.2) is also necessary.

C2.10 Permit section 2.13 - Transfer to effluent treatment plant

There is no on-site effluent treatment plant

C3. Other BAT considerations – (where not covered in general section above)

C3.1 Permit section 2.4 - Efficient use of raw materials

The Agency has assessed the proposals set out in the Application (section 2.2 page 12), and that they are consistent with the use of BAT and the standard Conditions 2.4.1.1-3 are sufficient and appropriate regard having been given to minimising their use and to ensuring that materials with the lowest practicable environmental impact are used.

C3.2 Permit section 2.5 - Waste storage and handling

The Agency considers that the Applicant has appropriate measures in place for the storage and handling of waste to prevent releases during normal operations and to minimise the potential for accidental releases. The standard Permit Conditions 2.5.1 is considered to be appropriate and sufficient for the Permit to be issued. However further requirements in respect of waste storage and handling have been included as a pre-operational condition (1.6.1.7).

C3.3 Permit section 2.6 - Waste recovery or disposal

The Agency has considered the proposals in the Application for the avoidance of waste production and in respect of such waste as is produced, its potential recovery. (See section 2.6 of the application). The Agency is satisfied that the proposals show that waste production will be avoided as far as possible, and where produced will be recovered insofar as that is technically and economically possible. The Agency is further satisfied that the proposals show that the installation will be operated in such a way that waste which is unable to be recovered can be disposed of so as to avoid or reduce impact on the environment. Standard Conditions 2.6.1 – 2.6.3 are considered to be appropriate and sufficient for the Permit to be issued.

This LNG process is not a major or significant producer of waste and no additional requirements to regulate the recovery and/or disposal of waste from this site are required.

C3.4 Permit section 2.7 - Energy efficiency

The Agency has considered the information in the Application in respect of energy efficiency, including that for the Applicant's energy management system. (See Section 2.7 p 45) The Agency is satisfied that at the commencement of the Permit, the installation should be operated in an energy efficient manner, and that Standard Conditions 2.7.1 – 2.7.3 are appropriate and sufficient. The Agency has noted that this installation is not subject to a Climate Change Agreement because it is classified as an exempt activity in that it uses energy to produce a fuel.

In respect of Condition 2.7.1, the Operator is required to report the standard information which is set out in Table S4.1 in Schedule 4 of the Permit for annual reporting. No additional data has been requested because of the simplicity of operations at this installation.

Note this facility will also fall within the Emissions trading scheme (ETS) for carbon dioxide and Esso have applied as a New Entrant to the carbon trading scheme.

C3.5 Permit section 2.8 - Accident prevention and control

The Agency has considered the accident management plan submitted under Section 2.8 of the Application and considers that the Applicant has a suitable system in place to identify, assess and minimise the environmental risks and hazards of accidents and their consequences. Standard Condition 2.8.1 in the Permit is appropriate and sufficient to ensure that the necessary measures will be taken to prevent accidents and to limit their consequences.

The Agency has taken into account that the site is subject to COMAH and considers that Standard Condition 2.8.1 is consistent with, and does not conflict with, any obligations on the Operator under those Regulations. This site is (July 2004) has completed the submission of a pre-construction safety report. It will also have to submit a pre-operational safety report.

C4. Other legal requirements relevant to the determination of the Application and to the setting of ELVs and other conditions of the Permit

C4.1 Waste Management Licensing Regulations 1994

Not applicable for this installation.

C4.2 The Conservation (Natural Habitats etc) Regulations 1994

The continued use of BAT by the Applicant in operating the installation will meet the requirements of these Regulations. CCW were consulted as part of the PPC consultation process and an Appendix 7 was completed for this application. No significant impact due to this installation to the three Habitats (Pembrokeshire Marine cSAC Milford Haven Waterway, Castle Martin SPA, Limestone cliffs of SW Wales) sites was found.

C4.3 CROW

The continued use of BAT by the Applicant in operating the installation will meet the requirements of this Act. CCW were consulted as part of the PPC consultation process. No significant impact due to this installation to the SSSIs was found.

C4.4 Dangerous Substances Directive

The continued use of BAT by the Applicant in operating the installation will meet the requirements of this Directive. Nitrates can be classified as a List 2 dangerous substance but the impact of this release on the Haven was considered as part of the Habitats assessment.

C4.5 Solvent Emissions Directive

This Directive is not applicable to this Installation.

C4.6 Groundwater Regulations 1998

The continued use of BAT by the applicant in operating the installation will meet the requirements of these Regulations.

C4.7 Environment Act 1995 – Section 4 (Pursuit of Sustainable Development)

The continued use of BAT by the Applicant in operating the installation will meet the requirements of this Act

C4.8 Environment Act 1995 – Section 7 (Pursuit of Conservation Objectives)

The continued use of BAT by the Applicant in operating the installation will meet the requirements of this Act

Note the Applicant has already agreed to set aside part of the old refinery site for the management of conservation objectives. This approach was agreed at the planning stage for the development with the (two) planning authorities.

C4.9 Human Rights Act 1998

The continued use of BAT by the Applicant in operating the installation will meet the requirements of this Act. The initial cooling down of the LNG storage tanks will lead to flaring of natural gas for a number of days. This level of flaring may cause concern to local residents. Therefore before receiving LNG at this facility a public communications strategy is required. One would expect local residents to be informed, AMs, MPS and councillors to be made aware of the issue and the local papers and the Council made aware of the start up on this important facility. This requirement has been implemented by the use of a pre-operational condition (1.6.1.9).

C4.10 Relevant Secretary of State Directions

There are no Secretary of State Directions made under the Pollution Prevention and Control (England and Wales) Regulations 2000, as amended, which are relevant to the determination of this application.

Note that as the Installation is a number of aggregated combustion plants that have a total thermal input of more than 50 MW, it does not fall within the Large Combustion Plant Directive (LCPD) for which there is a Secretary of State Direction. It is not technically practicable to have one release point for all the SCVs so aggregation is not possible and the LCPD Direction does not apply. Furthermore the SCVs can be viewed as directly 'reheating' the LNG which also means the LCPD does not apply.

C5 Other conditions included in the Permit

C5.1 Permit section 1.4 - The Improvement Programme

The Improvement Conditions described below have been imposed on the Operator for the reasons given in the table below.

A single item covers the anticipated development of Phase 2 and places a requirement for a program for the construction, commissioning and operation of Phase 2.

C5.2 Permit section 1.6 - Pre-operational conditions

Construction of the LNG facility at South Hook has not started. Phase 1 of this development is due to be operational towards the end of 2007 with phase 2 due on line around 2009. There are 8 pre-operational conditions that reflect the need to have certain systems in place that can be in place at the time of application (eg EMS, Accident plan, maintenance systems, complaint handling). There are others that need to be in place before operation (eg waste storage facilities and labelled discharge points). The remaining item covers the need for a public communications strategy for start up because flaring of methane will be prolonged for a number of days.

A series of issues need to be resolved following completion of the detailed design for the installation. There is an additional condition requiring the Applicant to notify the Agency in writing of the completion of detailed design so fixing the response dates for the following pre-operational conditions.

| Ref | Requirement | Due date | Justification |
|---------|--|--|---|
| 1.6.1 A | The Operator shall submit a report to the Agency, at the Reporting Address, detailing the choices available on the design of the SCVs (size (MWth input), performance, emission rates, number & efficiency). The selected design shall be justified for the installation as a whole. | 3 Months following completion of the detailed design | The final design and procurement of these devices has not been confirmed at the time of determination. |
| 1.6.1 B | The Operator shall confirm to the Agency, at the Reporting Address, the Noise monitoring locations and frequencies referred to in outline in the PPC application. Any choice of noise monitoring location shall be justified. | 3 Months following completion of the detailed design | These locations have not been detailed during the determination period. |
| 1.6.1 C | The Operator shall confirm to the Agency, at the Reporting Address, the Ambient NOx monitoring locations and ambient NOx monitoring methods and frequencies referred to in outline in the PPC application. Each choice of NOx monitoring location shall be justified. | 3 Months following completion of the detailed design | These locations and monitoring methods have not been detailed during the determination period. |
| 1.6.1 D | The Operator shall prepare a report on the final site condition after remediation. A copy of the report shall be sent to the Agency at the Reporting Address. | 3 Months following completion of the detailed design | This development is being built on contaminated land and the site has to be remediated before construction. The final site report is the final remediation report before construction can start. Therefore this issue can not be closed out under the site is remediated. |
| 1.6.1 E | The Operator shall review the discharge W1 for List 2 Dangerous Substances metals (EC Directive 76/464/EEC) and prepare a monitoring strategy for these substances. A copy of the strategy shall be sent to the Agency at the Reporting Address. | 3 Months following completion of the detailed design | The site has some list 2 metals present and the aqueous monitoring for List 2 metals needs to be carried out on release point W1. |
| 1.6.1 F | The Operator shall submit detailed proposal to the Agency, at the Reporting Address, on the Waste storage arrangements at this site. | 3 Months following completion of the detailed design | These locations have not been detailed during the determination period. |
| 1.6.1 G | The Operator shall submit detailed proposal to the Agency, at the Reporting Address, on the oil storage bunding arrangements at this site. | 3 Months following completion of the detailed design | The standard of bunding on large oil refineries has been an issue in recent years. The use of compacted earth bunds is no longer acceptable. This item is aimed to find out the detailed bund design. |

C5.3 Permit section 1.7 - Off-site Conditions (including Off-site monitoring)

The Agency considers that it is not necessary to impose any off-site Conditions. NOx releases were considered for off site monitoring but the impact of the NOx releases lies within the Esso owned area and the monitoring of ambient NOx levels before and after commissioning therefore does not fall into the 'off site' definition and the offsite condition does not apply.

C5.4 Permit section 2.10 - On-site monitoring

The Agency has decided that emissions monitoring should be carried out for the parameters listed in Tables 2.2.2 and 2.2.5, using the methods and to the frequencies it has specified in those Tables. (See Condition 2.10.1.) These monitoring requirements have been imposed in order to adequately monitor the releases to the environment from this Installation.

- 2.2.2 The Applicant offered to install NOx CEMS on two SCVs with quarterly discontinuous NOx monitoring on all SCVs. The current NOx continuous and discontinuous monitoring method is ISO 10849. Carbon monoxide discontinuous monitoring has been added to ensure good combustion. The current discontinuous monitoring method for CO is ISO 12039. The Applicant should be capable of monitoring to these standards, frequencies and range of parameters.
- 2.2.8 The Applicant offered to install aquatic CEMs for TOC and pH with the discontinuous monitoring of BOD and Turbidity on a monthly basis. BOD should not be a major issue for an LNG SCV facility. The Installation is to be built on an old refinery site. Therefore it is prudent to include monthly discontinuous monitoring for suspended solids and oil & grease.

In addition, environmental monitoring requirements have been set by the Agency in Condition 2.10.2 based on the Applicants submission. However the Applicant states NOx monitoring will be carried out but no details of the locations and method has been provided. This issue will be confirmed by the use of a pre-operational condition (1.6.1 C in Table 1.6.1).

The applicant has detailed the process variables that will be monitored. These process variables are described in Table 2.10.4 of the Application. Rather than repeat this information, condition 2.10.3 refers directly to the Table 2.10.4 in the Application.

The standard text for condition 2.10.4 has been used but the Applicant offered monthly noise monitoring but not with LA max (fast) but included the LA10, T at unspecified locations. The noise locations monitoring locations will be confirmed by the use of a pre-operational condition (1.6.1 B in Table 1.6.1). There is no reason why the standard MCERTS condition 2.10.7 should be excluded from the PPC permit.

C5.5 Permit section 3. - Records

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

C5.6 Permit section 4. - Reporting

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

The reporting forms used for the releases to air are based on those currently being used for the Corus Port Talbot PPC reporting forms. They have been split into NO_x continuous and discontinuous NO_x and carbon monoxide (CO) forms. These forms ask for details of the monitoring methods and for NO_x details of the CEMS output at the time of monitoring (on the two SCVs fitted with CEMS at the time of discontinuous monitoring is carried out). The flaring and/or venting of gas to air may be significant. A quarterly report on the mass of gas vented and flared by month will help to show if flaring and/or venting is an issue.

The water releases also follow the format in use at Corus Port Talbot and they too have been split into continuous and discontinuous reporting formats.

C5.7 Permit section 5. - Notifications

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

C6. Other principal considerations taken into account in the determination process

This LNG facility is one of three similar developments in the UK that have either been or are being permitted around the same time.

- 1 Haven Energy, milford Haven – CCGT with back up of 2 SCVs but more being considered. Total thermal input to LNG reheating 226 MWth. Note at the time of determination of South Hook only 2 LNG storage tanks had been permitted under PPC although more tanks are being considered. The initial PPC permit has been issued for this development which is under construction.
- 2 South Hook 20 SCVs at 28 MWth each 460 MWth in total over both phases – 5 LNG tanks. Planned but not under construction.
- 3 Isle of Grain (Kent) {IoG}, 4 SCVs at 38 MW each giving at total of 152 MWth. Number of LNG tanks unknown. This facility is being converted from a peak storage facility to an import terminal so most of the LNG storage infrastructure is in place. Status unknown.

There are other LNG storage and reheat facilities in the UK. These facilities are mainly used for peak demand and are not designed to run constantly unlike the three facilities under development.

The proposals for South Hook are consistent with those being proposed at Haven Energy and to a large extent at the Isle of Grain. Note IoG have proposed venting not flaring of methane.

APPENDIX – Consultee responses

Summary of consultation responses received and the way in which they have been taken into account in the determination process:

Internal Consultees

| Response received from [consultee] | Brief summary of issues raised | Summary of actions taken or show how this has been covered |
|---|--|---|
| Water Resources Team | Water demand management and water metering could help minimise water use. Fire fighting water abstraction is not licensable by the EA. Impoundment issue raised and dewater notice may be required if the site is to be dewatered. | Raised with the Applicant during the determination. These issues will be reviewed during construction. |
| Pembrokeshire EM Team | Bathing water beaches identified as have been the current and proposed shell fish waters. The river/estuary confirmed as class 1/A | Provided the Habitats assessments are acceptable, then the aquatic issues raised will not need further consideration. Otherwise no real issues relevant to the PPC determination. |
| Biodiversity Team | CROW assessments required and Schedule Ancient Monuments identified. Otter have been known to use this site and if wetland areas were built into this development, then some of the aims of the local biodiversity action plans could be realised. | 10 'conservation' sites identified by the applicant. Appendix 11 produced for the 3 Habitats site sites – more than the Haven Energy development which only considered 1 such site. Part of the assessment also consider the potential impacts on the SSSIs which was insignificant for all SSSIs for this development. |
| Fisheries Team | Aquatic releases could have an effect on the migration of salmonid fish in the Haven | If there was large thermal released into the Haven then this issue may be a factor but the thermal release into the Haven is not significant. |
| Flood Defence Team | Land drainage consent may be required for the jetty. If a culvert is proposed then a separate land drainage consent would be required. | Not a PPC issue. |

External consultees

| Response received from consultee | Brief summary of issues raised | Summary of actions taken or show how this has been covered |
|--|---|--|
| Pembrokeshire County Council (PCC) | No response received | - |
| Health And Safety Executive (HSE) | COMAH report required but incorrectly state that these documents will be publicly available. The applicant outlines their risk assessment methodology which will be assessed when the pre-construction safety report. The emergency shutdown (ESD) arrangements need to be confirmed following discussions with HSE. Incorrect referencing of the ESD in the application. | Confirmation of ESD arrangements required – Schedule 4 question issued |
| Countryside Council for Wales (CCW) | Concerns over the link between the site drainage and the Milford Haven waterway during the construction phase from the jetty. | Confirm the 'concerns on the discharge from the jetty from normal non-construction related activities. |
| Milford Haven Port Authority (Harbour Authority) | The Port Authority have confirmed that they are more than satisfied with the systems, methods, procedures and mitigation measures outlined in the PPC application. | No issues raised. |
| South Wales Sea Fisheries Committee (SWSSFC) | Content that the aquatic impacts will not cause significant effect on the statutory interests of the SWSFC. | No actions required |
| Welsh Assembly Government | No comments to make | No actions required |
| National Public Health Service for Wales (on behalf of the Pembrokeshire Local Health Board) | No formal comment on the impact of this development on health related issues. No information on the releases from the site during abnormal operations. There is a lack of a formal EMS. The main risk factor is from an explosion which is a public safety issue and not a public health one. | Confirm the releases from abnormal or emergency operations. Schedule 4 question issued and an acceptable response was received from the Applicant. |
| Food Standards Agency | No response received | - |
| Pembrokeshire Coast National Park (PCNP) | No response received | - |

Public Consultation responses

None received during the determination period.