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HIRWAUN POWER PROJECT

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN [CEMP]

Hirwaun Power Limited

Final

CONTENTS

GLOSSARY

Above Ground Installation	AGI	Situated within the **Gas Connection site** (Work No 4A) and containing the MOC and PTF. *The other 'above ground installation' comprising the natural gas receiving station and compound is part of the **Power Generation Plant** site (Work No 2B).
Best Practicable Means	BPM	Best Practicable Means is a term applied with regulations on limiting pollutant discharges with regard to the abatement strategy.
Closed-Circuit Television	CCTV	Closed-Circuit Television
Outline Construction Environmental Management Plan (CEMP):	CEMP	Refers to this document and provides an outline of the main environmental considerations which should be considered during construction of the Project and considered further in the final CEMP.
Required CEMP	-	Refers to the CEMP required by the DCO as defined by RCTCBC
Final CEMP	-	Refers to the CEMP produced by the main contractor and agreed by RCTCBC
Construction Traffic Management Plan	CTMP	Construction Traffic Management Plan involves the management of pedestrians, vehicles and equipment, which are located on-site.
DCO Application	-	The application for a DCO made to the Secretary of State under section 37 PA 2008 in respect of the Project, required pursuant to section 31 PA 2008 because the Project constitutes a Nationally Significant Infrastructure Project under section 14 (1)(a) and section 15 PA 2008 by virtue of being an onshore generating station in England or Wales of 50 MWe capacity or more
Development Consent Order	DCO	Consent by a UK Government Minister for a Nationally Significant Infrastructure Project. A DCO can incorporate or override the need for a variety of consents which would otherwise be required for a development, including planning permission. A DCO can also include rights of compulsory acquisition. A DCO is made in the form of a Statutory Instrument.
The Developer	-	Means Hirwaun Power Limited (HPL)
Draft DCO	-	The draft DCO which accompanies the DCO Application (Document Number: [3.1])
Environment Agency (the equivalent body in Wales being Natural Resources	EA	Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs.

Wales)		
Ecological Management Plan	EcMP	Ecological Management Plan is a synthesis of all proposed mitigative and monitoring actions, set to a timeline with specific responsibility assigned and follow-up actions defined. It is normally incorporated as part of the Environmental Management Plan (EMP), one of the most important outputs of the environmental assessment process.
Electrical Connection	-	A new underground electrical cable connection to export electricity from the Power Generation Plant into the national electricity transmission system at the Rhigos Substation (Work No. 5 in the Draft DCO)
Electrical Connection Route Corridor	-	The route of the Electrical Connection (Work No. 5 in the Works Plan)
Environmental Health Officer	EHO	Environmental health officers make sure that people's living and working surroundings are safe, healthy and hygienic.
Environmental Statement	ES	The final document which provides a comprehensive discussion on the Environmental Impact Assessment.
Gas Connection	-	A new underground gas pipeline connection to bring natural gas to the Power Generation Plant from the existing high pressure gas network NTS in the vicinity of the proposed Project Site including the above ground infrastructure (AGI) for the gas pipeline at the point of connection to the NTS, as well as a new permanent access to the AGI (Works No. 3 & 4 in the Draft DCO);
Gas Connection Route Corridor	-	The route of the Gas Connection, including the site of the AGI and the new access to the AGI (Works No. 3 & 4 in the Works Plan).
Hirwaun Power Limited	HPL	Hirwaun Power Limited is a subsidiary established by Watt Power Limited (WPL). WPL has been established to develop flexible gas fired generation assets to support the UK Government drive to a low carbon economy. WPL is resourced through Stag Energy, a company founded in 2002;
Kilometres per Hour	Km/h	Measurement of distance travelled over an hour.
Mega Watt Electrical	MWe	Measurement of electrical power.
MIfA	MIfA	A Member of the Institute for Archaeologists
Ministry of Transport requirements	MOT	A compulsory annual test for safety and exhaust emissions of motor vehicles of more than a specified age.
Nationally Significant Infrastructure Project	NSIP	The Project constitutes a Nationally Significant Infrastructure Project (NSIP) by virtue of s.14(1)(a) and s.15 of the Planning Act 2008 (PA 2008) which include within the definition of a NSIP any onshore generating station in England or Wales of 50 MWe capacity or more.
National Transmission System	NTS	A network of gas pipelines throughout the United Kingdom that supply gas to power stations from natural gas terminals situated on the coast, and also gas distribution companies which lead indirectly to homes.

Natural Resources Wales	NRW	A regulatory authority and principal adviser to the Welsh Government on the environment, enabling the sustainable development of Wales' natural resources for the benefit of people, the economy and wildlife. Made up of the former Environment Agency Wales, Countryside Commission Wales and Forestry Commission Wales.
Personal Protective Equipment	PPE	Personal protective equipment refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury.
Planning Act 2008	PA 2008	UK legislation which passes responsibility for dealing with development consent applications for NSIPs to the Planning Inspectorate , who will examine applications and make recommendations for a decision by the relevant Secretary of State (the Secretary of State for Energy and Climate Change in the case of energy NSIP applications).
Power Generation Plant	-	A SCGT gas fired 'peaking' power generating plant capable of providing up to 299 MWe (Work No. 2 in the Draft DCO);
Power Generation Plant Site	-	The site of the Power Generation Plant (Work No. 2 in the Works Plan);
Project	-	The Power Generation Plant, the Electrical Connection and the Gas Connection together;
Project Site	-	The site of the Project corresponding to the Order Limits of the Draft DCO;
Rhondda Cynon Taf County Borough Council	RCTCBC	The administrative body and local planning authority and highways authority for the County Borough of Rhondda Cynon Taf.
Simple Cycle Gas Turbine	SCGT	A Simple Cycle Gas Turbine is a type of gas turbine most frequently used in the power generation, aviation, and oil and gas industry (electricity generation and mechanical drives). The simple cycle gas turbine differs from a combined cycle operation in that it has only one power cycle (ie. no provision for waste heat recovery).
Site of Importance for Nature Conservation	SINC	A Site of Importance for Nature Conservation
SHE Officer	-	The site safety, health and environment officer
Secretary of State for Energy and Climate Change	SoS	Her Majesty's Principal Secretary of State for Energy and Climate Change is a British government cabinet position.
Works Plan		Plan showing the numbered works referred to in the Draft DCO (Document Number: [2.3]);

1 INTRODUCTION

1.1 Overview

1.1.1 Hirwaun Power Limited (HPL) is making an application for a Development Consent Order (DCO) to the Secretary of State for Energy and Climate Change (SoS). The DCO will authorise HPL to construct and operate a new 299 megawatt electrical (MWe) simple cycle gas turbine (SCGT) Power Generation Plant together with integral Gas and Electrical Connections (hereafter referred to as the Project). The Power Generation Plant will be located on the Hirwaun Industrial Estate between Rhigos and Hirwaun in South Wales.

1.2 Purpose of this document

1.2.1 This document provides an outline from which a final Construction Environmental Management Plan (CEMP) will be produced for each Work in the DCO, to govern all parts of the construction works (including site preparation/demolition) associated with the Project for all contractors. This document will be hereafter referred to as the 'outline CEMP'. This outline CEMP is informed by the ES and associated DCO documents.

1.2.2 Schedule 2 Requirement 12 of the DCO includes a requirement to approve CEMP(s) in a staged manner by the local planning authority, namely Rhondda Cynon Taf County Borough Council (RCTCBC) prior to the commencement of any works. Such CEMP(s)) will be developed after any grant of a DCO, in conjunction with, or by, the main contractor/s appointed for such works once the timescales for the detailed implementation are defined.

1.2.3 The final CEMP(s) shall consider the following:

- Complaints procedures;
- Nuisance management including measures to avoid or minimise the impacts of construction works (covering dust, noise, vibration and lighting);
- Lighting;
- Waste management;
- Surface and ground water mitigation measures;
- Procedure in the event significant archaeological remains are encountered;

- Landscape and visual impact mitigation (such as retention of existing trees and minimising visual intrusion of construction works); and
- Security measures.

1.2.4 Traffic and Transport mitigation measures are to be in a Construction Traffic Management Plan (CTMP)) prepared by the main contractors and submitted under Requirement 13 of Schedule 2 of the DCO, and complementary to the CEMP. Similarly ecological mitigation measures are to be contained in anEcMP to be submitted under Requirement 10 of Schedule 2 of the DCO, and complementary to the CEMP. Appropriate references to these documents are made in this Outline CEMP and should be made in the final CEMP(s).

1.2.5 In considering these environmental matters the final CEMP will provide information on:

- A register of environmental aspects [the effects of the Scheme];
- Roles and responsibilities;
- Communication and co-ordination;
- Training and awareness;
- Operational control;
- Checking and corrective action; and
- Environmental control measures.

1.2.6 The final CEMP will fall within the scope of the main contractor's externally certified international environmental management systems, and as such will be subject to independent audits by the relevant certification bodies.

1.2.7 This outline CEMP provides sufficient information, based on best practice guidance and mitigation measures in the ES to act as a framework for the final CEMP and to provide assurance to the decision maker and stakeholders that all appropriate measures will be taken forward to the construction phase.

1.2.8 Measures set out in the final CEMP will also have reference to the Welsh Government document 'Construction and Demolition Sector Plan' which seeks to move towards zero waste by detailing outcomes, policies and delivery actions for organisations, companies and individuals involved with the construction and demolition sector in Wales. It forms part of the suite of documents that comprise the waste management plan/strategy for Wales, in accordance with the plan making requirements enshrined in Wales and EU legislation.

1.3 Project Description

1.3.1 The Power Generation Plant will operate as a Simple Cycle Gas Turbine (SCGT) peaking plant and has been designed to provide an electrical output of up to 299 Megawatts electrical (MWe). The plant will be fuelled by natural gas.

1.3.2 The three main elements of the Hirwaun Power Project comprise:

- A new Power Generation Plant, a SCGT gas fired 'peaking' power generating plant capable of providing up to 299 MWe;
- A new underground electrical cable connection (the Electrical Connection) to export electricity from the Power Generation Plant into the National Grid at Rhigos Substation; and
- A new underground gas pipeline connection (the Gas Connection) to bring natural gas to the Power Generation Plant from the existing high pressure gas network National Transmission System in the vicinity of the proposed Project Site. This element of the Project also includes the above ground installation (AGI) for the gas pipeline at the point of connection to the National Transmission System (NTS), as well as a new permanent access to the AGI.

1.3.3 The Power Generation Plant, Gas Connection and Electrical Connection together are referred to as the Project and are all integral to the generation of electricity and the subsequent export of that electricity to the National Grid.

1.3.4 The Project constitutes a Nationally Significant Infrastructure Project (NSIP) by virtue of section 14 (1)(a) and section 15 of the Planning Act 2008 (PA 2008) which includes within the definition of an NSIP any onshore generating station in England or Wales of 50 MWe capacity or more. Under section 31 PA 2008 a development consent order (DCO) is required to develop a NSIP. Under section 37 PA 2008 this can only be granted if an application is made for it to the Secretary of State (SoS) (the DCO Application).

1.3.5 This outline CEMP is part of a suite of documents which accompany the DCO Application and should be read in conjunction to gain a fuller understanding of the Project.

2 OUTLINE CEMP – GENERAL INFORMATION

2.1 Register of Environmental Impacts

2.1.1 A register of Environmental Impacts is required to be produced as part of the CEMP. This Register would be used to inform the environmental procedures and provide a tool for construction teams when preparing construction method statements or field briefings. This register would also comprise the various risks identified in the Environmental Statement (ES) and would be regularly updated to reflect any additional risks resulting from the main contractor/s selected methods of working, changing site conditions etc. Risks would be identified under the following general headings:

- Noise & Vibration;
- Air Quality & Emissions;
- Geology & Soils;
- Water Quality, Drainage & Hydrology;
- Landscape and Visual Impacts;
- Ecology;
- Traffic and Transport;
- Waste and Health;
- Archaeology and Cultural Heritage; and
- Combined Impacts.

2.2 Risk Assessments

2.2.1 All activities undertaken on-site would be subject to an environmental risk assessment. Environmental risk assessments would be undertaken by trained staff following an approved procedure which will:

- Identify potential environmental impacts that can be anticipated;
- Assess the risks from these impacts;
- Identify the control measures to be taken and re-calculate the risk; and
- Report where an unacceptable level of residual risk is identified so that action can be taken through design changes, re-scheduling of work or alternative methods of working in order to reduce the risk to an acceptable level.

2.2.2 The results of risk assessments, and their residual risks are only considered acceptable if:

- The severity of outcome is reduced to the lowest practical level;
- The number of risk exposures are minimised; and
- All reasonably practical mitigating measures have been taken and the residual risk rating is reduced to a minimum.

2.2.3 The findings of the risk assessment and in particular the necessary controls would be explained to all contractors before the commencement of the relevant works using an agreed instruction format (e.g. Toolbox Talks).

2.3 Method Statements

2.3.1 Method statements would be completed by the main contractor or sub contractor by trained engineers or other appropriately experienced personnel, in consultation with on-site staff and, where necessary, environmental specialists. Their production would include a review of the environmental risks and commitments, so that appropriate control measures are developed and included within the construction process.

2.3.2 Method statements would be reviewed by the main contractor or sub contractor's appointed environmental manager and, where necessary, by an appropriate environmental specialist. Where required, method statements would also be submitted to the enforcement agencies (Natural Resources Wales, Environmental Health Officer from RCTCBC etc.). Method statements would most likely contain the following:

- Location of the activity and access/egress arrangements;
- Work to be undertaken and methods of construction;
- Plant and materials to be used;
- Labour and supervision requirements;
- Health, safety and environmental considerations; and
- Any permit or consent requirements beyond those already obtained (including the DCO).

2.4 Site Environmental Standards

2.4.1 Site Environmental Standards would be agreed with the main contractor and would detail the minimum measures that shall be achieved for general operations falling outside the risk assessment/method statement procedure. The site environmental standards would be designed to cover the majority of construction activities in accordance with the ES submitted with the application and requirements associated with the DCO.

2.4.2 These will cover issues such as storage of materials, management of waste, noise and vibration, and water pollution control. The standards will be printed on A3 posters, placed on site notice boards and used as a briefing tool on site. These standards will also form the basis of Toolbox talks which will inform all contractors working on site of the potential environmental risks arising from construction activities.

2.4.3 Best practice construction site management techniques will be implemented to avoid/minimise the generation of excessive waste, dust, noise, lighting, noise and vibration, in accordance with the ES and relevant requirements associated with the DCO. These are discussed in more detail in Section 3 of this document.

2.5 Environmental Management System

2.5.1 Following construction, an Environmental Management System for commercial operation will be developed and contained within the overall Business Management System prepared by the operator and designed to comply with ISO 14001 or an equivalent recognised standard.

2.5.2 Implementation of ISO 14001 is a Key Strategy for HPL and the use of an Environmental Management Plan for commissioning based on ISO 14001 (or similar) will be used to support implementation and compliance with the DCO and the Environmental Permit that will be required for operation of the Project under the Environmental Permitting (England and Wales) Regulations 2011. All operational staff for the Project will be given comprehensive environmental awareness training as part of this process.

2.5.3 During the commissioning phase of the Project, HPL will require its environmental and compliance procedures to be implemented and used by the main contractor and the operator.

2.6 Public Relations

2.6.1 The following steps will be taken to make the public aware of the activities on site and the available lines of communication with HPL:

- Neighbouring occupiers will be notified of the start of site works and the likely duration of the overall demolition and construction phases;
- A telephone number for environmental complaints will be published local to the site. The site safety, health and environment (SHE) officer will be responsible for dealing with any complaints and will have the appropriate authority to resolve any issues that may

occur. Should they be required both the SHE officer and the site managers 'out of hours' telephone numbers will be available;

- The SHE officer will maintain a close liaison with the council's Environmental Health Officer (EHO) at all times;
- Should any complaints regarding dust be received by the SHE officer the details will be passed to the EHO for verification purposes; and
- Should any unforeseen event occur within the construction site that has the potential to cause off-site pollution then the SHE officer will immediately notify the EHO by phone and e-mail. As far as possible notice will be issued to the EHO for dealing with an unforeseen activity which may give rise to a particular dust problem.

2.7 Monitoring and Measurement

2.7.1 Weekly site inspections will be carried out which will assess the potential for environmental emergency situations to arise on the site. Additionally the main contractor will assess the potential for environmental incidents on a daily basis across the site. Particular notice will be taken during and following extreme weather events, when working in areas of known contamination, and when particularly hazardous activities are being carried out. Method Statements will be required where the risk assessment has identified a significant risk to the environment.

2.7.2 In the event of any environmental incident the most senior representative of the main contractor will take the role of the responsible person and will take charge of the situation. Where possible, the responsible person will take immediate steps to eliminate the impact on the environment and mitigate/minimise any environmental damage.

2.8 Roles and Responsibilities

2.8.1 Suggested specific roles and responsibilities for the implementation of the final CEMP are described below:

HPL Project Director

2.8.2 The HPL Project Director would have overall responsibility for environmental performance throughout the construction period and will ensure that appropriate resources are made available and environmental control and any agreed or appropriate protection measures are implemented.

Environmental, Health & Safety Management

2.8.3 The Site Manager would be appointed the responsibility for co-ordinating and managing all the environmental activities during the construction phase. The role would involve will carrying out the following duties:

- Develop and review the CEMP and specialist procedures;
- Lead the appointment of construction environmental specialists;
- Ensure delivery of environmental training to personnel within the project team;
- Monitor construction activities and performance to ensure compliance with the CEMP and that identified and appropriate control measures are being effective;
- Act as a main point of contact between the regulatory authorities and the project on environmental issues;
- Monitor construction activities and performance to ensure control measures are effective;
- Maintain full records of the progress of the Environmental Works;
- Implement an auditable environment record system;
- Maintain regular contact and liaison with the Environmental Specialists;
- Carry out audits as required by the CEMP;
- Ensure compliance with Duty of Care at all times; and
- Implement and monitor measures to ensure correct waste minimisation, segregation and disposal.

3 OUTLINE CEMP – SPECIFIC MEASURES

3.1 Introduction

3.1.1 This section outlines some of the specific design and mitigation measures which will be used in the CEMP for the Project in order to limit impacts on noise and vibration, air quality, contaminated land and groundwater, ecology, archaeology and cultural heritage and landscape and visual amenity. It will additionally outline the measures to prevent impacts arising from artificial lighting.

3.2 Noise and Vibration

3.2.1 This section outlines the potential sources of nuisance noise created by construction works and the methods of mitigation proposed to limit these impacts which shall be adopted in a CEMP.

3.2.2 All construction activities will be undertaken in accordance with requirements attached to the DCO, and the recommendations of BS 5228 'Noise and Vibration Control on Construction and Open Sites'. It details the legislative background to noise control, along with the recommended procedures for effective liaison between developers, site operators and local authorities. Methods of how to minimise the impact of site noise on workers and local residents are also provided.

3.2.3 The main mitigation measure to limit impacts of nuisance noise on human receptors is to ensure noise levels do not exceed the noise thresholds set out in the ES (65 dBA daytime) and to undertake noise monitoring during construction to make sure these agreed thresholds are not breached.

3.2.4 In addition, construction works shall not take place outside the hours of 07:00-18.30 Monday to Friday and 07.00-13.00 on Saturday, unless otherwise agreed with RCTCBC. Controls on working hours are specifically set out in DCO Schedule 2 Requirements 14 and 15.

3.2.5 If works are required outside of these core construction hours then method statements and risk assessments will be required to be submitted to the local planning authority for approval.

3.2.6 To minimise the risk of noise complaints, the main contractor will advise potentially affected residents of the works to be undertaken outside of working hours. The residents will also be provided with a point of contact for any queries or complaints.

3.2.7 The main contractor and all sub-contractors working on-site have a general duty to take all reasonably practicable measures to minimise

nuisance from noise and vibration that has the potential to impact on the local community or environment. To achieve this and avoid the potential for construction works to give rise to consequences that would otherwise be statutory nuisances (but for the provision of the DCO), Best Practicable Means (BPM) as defined in section 79(9)(a) of the Environmental Protection Act 1990 must be employed and the following requirements will be complied with:

- Appropriate selection of plant, construction methods and programming. Only plant conforming with relevant national or international standards, directives or recommendations on noise or vibrations emissions will be used;
- Construction plant will be operated and maintained appropriately, having regard to the manufacturer's written recommendations or using other appropriate operation and maintenance programmes which reduce noise and vibration emissions;
- All vehicles and plant will be switched off when not in use;
- Approved routes and programming for the transport of construction materials, spoil and personnel to reduce the risk of increased noise and vibration impacts due to the construction of the project;
- Vehicle and mechanical plant used for the purpose of the works shall be fitted with effective exhaust silencers, to be maintained in good working order and operated in such a manner as to be maintained in good working order and operated in such a manner as to minimise noise emissions. The contractor shall use plant items that comply with the relevant EU/UK noise limits applicable to all equipment;
- All ancillary plant such as generators, compressors and pumps would be positioned so as to cause minimum noise disturbance (e.g. as far away as practicable from residential receptors). If necessary, temporary acoustic barriers or enclosures would be provided;
- The positioning of construction plant and activities to minimise noise at sensitive locations;
- Equipment that breaks concrete by munching or similar, rather than by percussion, shall be used as far as is practicable;
- The use of mufflers on pneumatic tools;
- Where practicable, rotary drills actuated by hydraulic or electrical power shall be used for excavating hard materials;
- The use of non-reciprocating construction plant where ever practicable;

- The use, where necessary, of effective sound reducing enclosures;
- The targeting, where possible, of noisy work at times which minimise disturbance; and
- To prevent damage to adjacent structures, demolition and construction activities will be carried out in accordance with Part 2 of BS 7385:1993 (Evaluation and Measurement for Vibration in Buildings).

3.3 Air Quality

3.3.1 Relevant air quality mitigation measures are outlined in Section 6 of the ES and in the Statutory Nuisance Statement. However, the following provides an outline of the processes which could be employed in the final CEMP in order to reduce dust and exhaust emissions during construction.

3.3.2 This section outlines the potential sources of air pollution created by construction works and the methods of mitigation proposed to limit these impacts which shall be adopted in the final CEMP. The following provides an outline of the processes which shall be employed in the final CEMP in order to reduce dust and exhaust emissions during construction.

3.3.3 A site-specific dust management plan (DuMP) will be prepared for use during the demolition phase (Work no. 1) and the construction of the Power Generation Plant (Work no. 2), Gas Connection (Work nos. 3 & 4) and Electrical Connection (Work no. 5). This will form part of the full CEMP for the work(s) submitted and approved in writing by RCT prior to works commencing.

3.3.4 A Construction Traffic Management Plan will be prepared to manage construction traffic, as well as minimise effects of the works on congestion and hence elevated vehicle emissions on the highway. This is a requirement under Schedule 2 Requirement 13 of the DCO so would be submitted separately to the CEMP but will be suitably cross-referred and linked.

3.3.5 Construction/demolition activities associated with the greatest potential for dust generation are:

- Earthworks including excavation of topsoil, handling on site and deposition;
- Handling and storage of materials (including loading and unloading);

- Wind blow across disturbed/exposed site surfaces and materials; and
- Mechanical operations such as crushing, drilling, concrete mixing and cutting.

3.3.6 Best Practicable Methods (BPM) will be used to minimise the risk of adverse effects from construction dust and causing nuisance or damage to flora and fauna specific control measures for limiting nuisance dust and exhaust emissions during construction are as follows:

- Site Management
  - i Records of dust and air quality complaints to be kept, including likely causes and mitigation measures to reduce impacts if appropriate;
  - ii On-site and off-site visual inspections to be undertaken and recorded;
  - iii Inspections shall be increased in frequency during periods of high activity or prolonged dry, windy weather; and
  - iv Keep site perimeter, fences etc clean.
- Site Planning
  - v Consideration of weather conditions, dust generating potential of material to be excavated prior to commencement of works;
  - vi Plan site layout to maximise distance from plant/stockpiles etc. to sensitive receptors;
  - vii If work within 20m of sensitive receptors cannot be avoided, erect solid screens at least as high as stockpiles; and
  - viii Dusty materials shall be removed from site as soon as possible.
- Demolition (where reasonably practicable):
  - ix Use of water as a dust suppressant;
  - x Cutting equipment shall use water as a dust suppressant or incorporate suitable extraction/ventilation; and
  - xi Use of enclosed chutes and skips where applicable;
- Earthworks/Construction (where reasonably practicable):
  - xii Dampening down of all potentially dusty activities;
  - xiii Temporary covering of earthworks;
  - xiv Removal of covers by area and not all at once;

xv Minimisation of drop heights;

xvi Re-vegetation of exposed surfaces;

xvii Stockpiles will be formed and utilised for the shortest possible time;

xviii Stockpiles will be formed such that there are no steep sides or angular in form/shape;

xix Stockpiles to be located away from the site boundary and sensitive receptors wherever possible;

xx Stockpiles to be covered or enclosed wherever possible;

xxi Exposed soils to be re-vegetated as soon as practicable. Near sensitive ecosystems or other sensitive receptors, hessian/mulches or similar techniques to be considered where it is not possible to re-vegetate or cover with topsoil;

xxii Minimise dust generating activities, particularly near sensitive ecosystems or other sensitive receptors during prolonged dry, dusty weather unless damping / other suppressants are used;

xxiii Ensure an adequate water supply to site and use water as dust suppressant where applicable;

xxiv Ensure any site machinery is well maintained and in full working order;

xxv Ensure equipment available for cleaning spills of dusty material available at all times; and

xxvi Sand and aggregates shall be stored away from sensitive receptors and screened/shielded. Similarly concrete batching shall take place away from receptors.

- Trackout (where reasonably practicable):

xxvii If required due to site conditions vehicles to be washed and cleaned effectively prior to leaving the site;

xxviii Effective vehicle cleaning and specific wheel-washing facilities will be implemented at all site exits, including: hose pipes with adequate water supply and pressure and mechanical wheel spinners or brushes;

xxix An area of paving/hard standing will be implemented between the washing facilities and the site exit;

xxx Hard surface haul routes to be used on-site wherever possible, as well as preferred routes for vehicles.

xxxi Loads entering and leaving the site with dust generating potential will use load covers;

xxxii Vehicles to comply with site speed limits (15mph on hard surfaces, 10mph on unconsolidated surfaces);

xxxiii Water assisted sweeping of local roads to be undertaken if material is tracked out of site;

xxxiv Install hard surfacing as soon as practicable on site and ensure that they are maintained in good condition; and

xxxv Haulage routes would be planned in order to avoid adversely affecting air quality within the Aberdare Air Quality Management Area.

3.3.7 To ensure that dust generated by construction works does not exceed levels which could constitute a nuisance dust monitoring is proposed to be undertaken at the northern end of the Power Generation Site, in particular, in the vicinity of the Hirwaun Industrial Estate SINC. A real time monitor for total suspended particulate is proposed, used as an 'indicative instrument; only. The monitoring station would be mobile and would be moved around the site as principal activities move. Should dust arisings at this location be found to exceed trigger levels then additional dust control measures from the above list will be applied. Trigger levels for the instrument, which would suggest increasing risk emissions, will be agreed with RCT and NRW prior to the commencement of construction.

3.3.8 It is proposed that solid hoarding be erected along the northern edge of the Power Generation Plant site during demolition activities. The prolonged storage of debris on-site, in temporary stockpiles will be avoided. Vehicles removing demolition or site clearance materials must have their loads effectively sheeted on all sides. Crushing of material for reuse, transportation or disposal shall be undertaken as far away as possible from sensitive receptors.

3.3.9 On-site burning of waste material will be forbidden.

3.3.10 The number of handling operations shall be minimised, ensuring that dusty material is not moved or handled unnecessarily. Fine material shall be delivered to site in bags. Drop heights must be kept to a minimum.

3.3.11 Hard-standing areas for vehicles entering, parking and leaving the Project Site shall be provided, with wheel washing facilities at access points where there is a risk of tracking mud onto local roads. Plant and wheel washing will be carried out in a designated area of hardstanding at least 10 m from a watercourse or surface water drain. Where this is not possible alternative mitigation will be implemented.

3.3.12 The performance of the wheel washing system will be maintained by the regular removal of settled sediment from within the sump. Run-off from this area will be collected in a dedicated sump and water will be recycled/re-used wherever possible. Where recovery is not possible, water from the sump system will be emptied to a dedicated storage tank prior to its removal from site for authorised disposal by a suitably licensed contractor.

3.3.13 Site roads shall be cleaned regularly, and damped down if necessary to prevent nuisance dust. Site vehicle movements shall be kept to a minimum and, where possible, restricted to paved haulage routes. Vehicle speeds will be limited to 10 mph on unconsolidated track and 15 mph on hard surfaces. The idling of vehicles will be kept to a minimum.

3.3.14 The main contractor will have responsibility on a day to day basis for determining if either the nature of the activities on site or weather conditions would be likely to result in the unacceptable transfer of dust off site. In cases where this is anticipated, remedial action will be taken to minimise emissions, including the application of appropriate control measures, or if necessary, the temporary suspension of works.

3.3.15 Good site management practices during the construction works will help to prevent the generation of airborne dust. It will be the responsibility of the nominated main contractor and site manager to ensure through the final CEMP that sufficient precautionary measures to limit dust generation are in fact taken.

3.4 Contaminated Land and Groundwater

3.4.1 The CEMP will include a Demolition Method Statement which will apply as necessary to each Work Package of the Project.

3.4.2 During construction, if piling were to be required to the depth of the secondary aquifer A, mitigation measures set out in *"Piling and penetrative ground improvement methods on land affected by contamination guidance on pollution prevention – NGWCLC Report NC/99/73"* would be prepared and agreed with NRW as part of the CEMP in order to manage potential pollutant pathways.

3.4.3 Site investigations undertaken at an adjacent site to the Power Generation Plant have not revealed levels of contamination which are likely to pose a risk to human health or cause a statutory nuisance. Further ground investigations will be undertaken at the Power Generation Plant site prior to construction which will further define the exact nature of ground conditions at the Power Generation Plant Site. However, based on evidence to date, there are not anticipated to be

any significant issues with contamination at the Power Generation Plant site or Electrical Connection.

3.4.4 Foundation design will be informed from further assessment of ground conditions completed during environmental and geotechnical site investigation.

3.4.5 Land under which the Gas Connection will be developed has remained as undeveloped greenfield land and therefore there is low likelihood of contamination.

3.4.6 Professional standards and guidance relating to contamination will be consulted to provide advice on best practice mitigation measures which will be employed during the construction/demolition phase of the Project.

3.4.7 This multi-stage process is only to cover unexpected contamination.

3.4.8 Sensitive receptors are as follows:-

- Construction workers (during excavation and works);
- Site users;
- Groundwater; and
- Surface water bodies.

3.4.9 There is a small risk of construction workers coming into contact with contaminated soils and groundwater during construction.

3.4.10 There will be no access to construction areas by the general public. The site will be secured to avoid unauthorised access and contact with contaminated soil or groundwater.

3.4.11 In the case that unidentified contaminant “hotspots” showing visual of olfactory evidence of contamination are discovered during construction works, the following procedure will be applied:

- Stop work immediately;
- Report the discovery to the construction manager;
- Seal off the area to contain the spread of contaminants;
- Clear the area to ensure there is nothing that could cause fire or explosion;
- Contact the regulator or local authority once it is confirmed that contamination is found;

- Arrange for testing to be carried out and agree changes to the existing contamination strategy; and
- Record details of the incident, including photos and relevant information on the Environmental Incident Report Form.

3.4.12 Any material which is excavated and free from visual and olfactory evidence of contamination will be stockpiled and tested for metal (and other determinants) for reuse on site. Any soils which are considered to be contaminated hotspots (either identified through testing or through visual or olfactory evidence of contamination on site) will be removed and disposed of by a suitably licensed contractor or treated on-site.

3.4.13 All water from dewatering activities shall either be transported off site by a suitably licensed contractor or treated on site. Any proposed discharges to existing land drains (or other surface water bodies) will be undertaken in accordance with the requirements of the Environment Agency (EA) Regulatory Position Statement on temporary water discharges from excavations, which is applied by NRW.

3.4.14 Where soils are imported onto the site then they shall be subject to testing to ensure contaminated soils are not being brought onto the site.

3.4.15 Speed restrictions will be imposed onsite to minimise disturbance of bare surfaces. Measures shall also be put into place to ensure that the length of time bare surfaces are left exposed are minimised.

3.4.16 Precautions will be undertaken in accordance with NRW's Pollution Prevention Guidance to ensure that silt laden runoff, arisings or chemicals are not allowed to enter watercourses. Measures will include, testing of arisings to see whether they are suitable for reuse on site, siting stockpiles well away from watercourses, covering stockpiles in inclement weather, use of impermeable liners and use of fixing agents.

3.4.17 The final CEMP will identify any potential human health risks to construction workers or future site users so that appropriate mitigation/remediation can be put in place.

3.4.18 Although the main contractor undertaking the works will be required to produce a risk assessment and method statement detailing how they will minimise the risk of coming into contact with potentially contaminated materials, the following can be considered as a guide for the final CEMP:

3.4.19 Compliance with the mitigation measures set out in the following documents:

- Protection of Workers and the general public during the development of contaminated land (HSE 1991); and
- If applicable, a guide to safe working on contaminated sites R132 (CIRIA 1996).

3.4.20 Work will be carried out in accordance with best practices and safe working practices will be maintained.

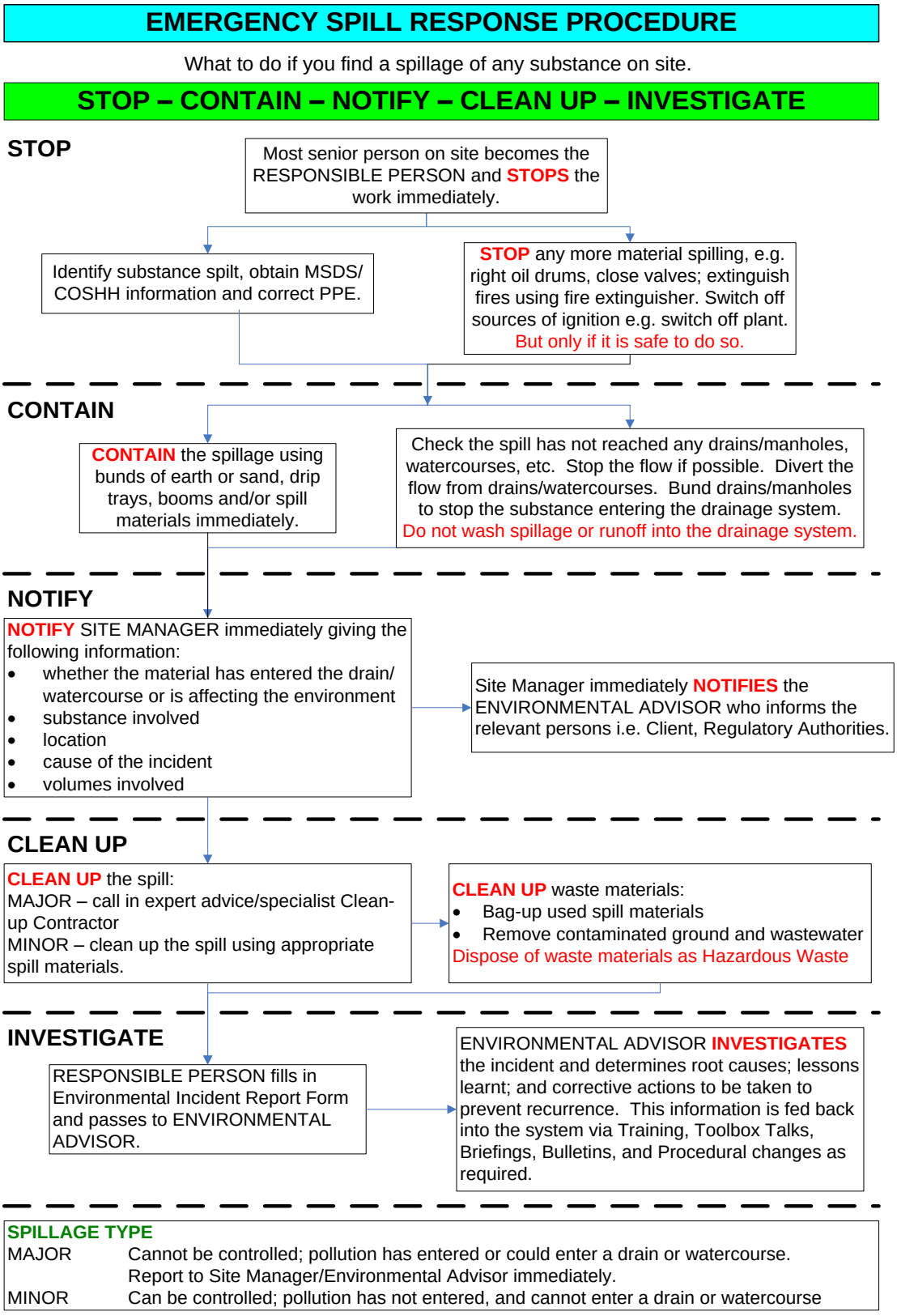
3.4.21 Construction workers will wear appropriate personal protective equipment (PPE) for the nature of works being undertaken. This will involve standard site PPE, plus overall, gloves and eye protection.

3.4.22 Additional measures that will likely be taken are:

- Eating, drinking and smoking will be limited to a designated 'clean' area of the site;
- Site welfare facilities will be made available;
- All workers will be required to wash their hands and remove overalls/boots when moving from 'dirty' to 'clean' areas of the site;
- Any soils excavated which are considered to be potentially contaminated (e.g. visual or olfactory evidence) will be reported to site management and left alone until their appropriate treatment. Suitable training will be provided to site personnel to ensure the correct identification of potentially contaminated soils by olfactory means; and
- Water inflows to excavated areas will be minimised by the use of lining materials, good housekeeping techniques and by the control of drainage and construction materials in order to prevent the contamination of ground water. Site personnel will be made aware of the potential impact on ground and surface water associated with certain aspects of the construction works to further reduce the incidence of accidental impacts.

3.4.23 Measures shall be taken to avoid/minimise the potential for fuel and chemical spills. A spill response procedure will also apply on-site; and indicative procedure is shown in Insert 3.1.

Insert 3.1: Emergency Spill Response Procedure



3.4.24 A Site Waste Management Plan (SWMP) will form part of the CEMP, for use during the demolition and construction stages. This will ensure waste management provisions complement the construction activities on site and that wastes emanating from the project are dealt with in an appropriate manner and their management follows the waste hierarchy. The SWMP will identify the waste types arising from the project, estimate quantities of each waste type and identify treatment.

3.5 Surface Water

3.5.1 The Power Generation Plant site is in the hydraulic catchment of the River Camnant. The upstream reaches of this watercourse are the Nant yr Ochain which is culverted under the site. Furthermore the Gas Connection runs through an area of marshy agricultural land parts of which form the Hirwaun Common Site of Importance Nature Conservation (SINC).

3.5.2 In order to ensure that there will be no discharges to any watercourses as a result of construction activities at the Project Site, the following matters shall be included in the detailed CEMP:

- Site infrastructure will be designed in accordance with EA pollution Prevention Guidelines and industry best practise.
- Oil storage will be undertaken in accordance with the Control of Pollution (Oil Storage) Regulations 2001. Storage tanks will be located on an impervious base provided with bund walls to give a containment capacity of the greater of 110 per cent of the largest tank volume within the bund or 25 per cent of the total storage capacity of all tanks within the bund. All valves and couplings will be contained within the bunded area;
- Any surface water which has the potential to be contaminated by hydrocarbons (e.g. from car parks), which are used during the construction phase, to be passed through oil interceptor(s) prior to discharge;
- Measures will be taken to ensure that no leachate, or any surface water that has the potential to be contaminated, will be allowed to enter directly or indirectly into any water course, underground strata or adjoining land;
- Provisions will be made so that all existing drainage systems continue to operate;
- Water inflows to excavated areas will be minimised by the use of lining materials, good housekeeping techniques and by the control of drainage and construction materials in order to prevent the contamination of ground water. Site personnel will be made aware

of the potential impact on ground and surface water associated with certain aspects of the construction works to further reduce the incidence of accidental impacts;

- Refuelling of construction vehicles and equipment will be restricted to a designated area with properly designed fuel tanks and bunds and suitable operating procedures;
- All static plant and any hazardous materials stored at the Power Generation Plant Site will be located within specifically designed areas with an impermeable base and with secondary containment designed to contain 110% of the maximum stored material. The drainage of these areas will incorporate oil separators designed and manufactured in accordance with BS EN 858-1 to ensure no contaminated runoff enters the surface water sewer or drains to a watercourse. A detailed emergency response plan will be prepared which will be enacted in the event of a spill of hazardous material to minimise the risk of environmental impacts;
- Construction access roads will be designed to ensure no increased flood risk or silt production;
- Temporary wheel washing facilities will be installed to prevent transfer of soil sediment onto nearby public roads. Runoff from wheel wash facilities will be collected and removed or treated prior to discharge;
- If deemed necessary, measures such as temporary drainage routes silt fences and silt bunds will be constructed to prevent heavily silted discharge to surface waters and to attenuate high flows;
- At the gas pipeline, pre- and post-construction agricultural under-drainage schemes will be designed and installed to an agreed specification to ensure similar surface water flows pre- and post-construction and to ensure no increase in sediment, silt or nutrient runoff;
- A Soil Handling Strategy will be formulated, including a programme of soils de-compaction, loosening and aftercare aligned to the drainage schemes. This will facilitate soil structure recovery and natural drainage pathways to return soil water retention / storage to pre-construction status;
- During construction of the pipeline, care will be taken to ensure that silt laden water does not enter watercourses. This will be done by plugging existing drains, intercepting surface water above the working width and where appropriate by leaving filter strips of unstrapped topsoil along main watercourses / ditches. Topsoil will

be replaced over post-construction drains as soon as possible to prevent site water from getting into drains;

- For construction of the pipeline, any de-watering pumping will be undertaken using an appropriately sized pump at such a rate to avoid disturbance or erosion of stream banks.;
- The Main Contractor will be required to regularly inspect all pumps, pipes and connections;
- For construction of the pipeline, temporary lagoons, siltation tanks or filter membranes may be considered at sensitive outfall locations or where deeper excavations are proposed;
- Any stockpiled material will be located away from watercourses to avoid pollution runoff and best practice working guidelines will be followed to avoid spillages near watercourses;
- The final CEMP will be developed including a site environmental and health and safety management policy to mitigate construction risks. General rules apply to site works to ensure that no significant impact to identified receptors will occur during construction. Best practice recommendations for the prevention of contamination will be outlined in the final CEMP, both which will be developed and discussed with the Local Authority prior to commencement of construction;
- The draft Method Statement for protection of the nearby SINCs presented at Appendix 8.10 of the ES (Document Reference 6.1.0) will be revised and included within the final CEMP. This Method Statement will include measures to prevent line rush establishing through inappropriate soil handling. This Method Statement is to be followed; and
- The British Standard Code of Practice for Earthworks BS 6031:1981 and British Standard Code of Practice for Foundations BS 8004:1086 contains detailed methods that will be adopted during construction.

3.6 Ecology

3.6.1 Relevant works to protect/mitigate impacts on ecology and biodiversity are described in more detail in the ES. Appropriate regard for the protection of local habitats and protected species during the construction works will be included within the CEMP and will incorporate the following measures:

- As far as is practicable, work compounds and access tracks etc. will not be located in, or adjacent to, areas that maintain habitat value or are within areas supporting protected species;

- The Construction footprint will be demarcated with robust fencing, to ensure a buffer of at least five metres between the construction footprint and any water bodies is preserved during construction. Furthermore it will prevent access to areas outside working areas, particularly in areas adjacent to features of interest/value;
- Briefings and instruction will be given to contractors regarding the biodiversity issues associated with the site and protocols and contingency plans will be established to deal with incidents should they arise including in relation to storage of potentially dangerous materials;
- The demolition of all buildings will be undertaken under statement European Protected species licence, to be obtained from Natural Resources Wales, and the supervision of a licensed bat worker;
- Where possible, all vegetation clearance prior to construction shall take place between September and February (depending on climatic conditions in a given year), to prevent damage to any nests of breeding birds;
- Where vegetation cannot be removed outside of the nesting season, pre-clearance checks must be undertaken by an experienced ecologist to identify if any birds are nesting within or close to the vegetation due to be removed. To ensure legal compliance if a bird nest is found, no works will be undertaken in that area (approximately 10 m in all directions for most bird species) until the young birds are no longer dependent on the nest site;
- Works will be undertaken during daylight hours (i.e. 7:00-18:30) during the bat active season and artificial lighting overnight will be minimised. Where this is not possible, low sodium lighting will be used as this is known to have a minimal impact on bats relative to the majority of other types of construction lighting;
- Contaminants will not to be stored near areas of hydrological sensitivity;
- The draft Method Statement for protection of the nearby Sites of Important Nature Conservation (SINCs) presented at Appendix 8.10 of the ES (Document Reference 6.1.0) will be revised and included within the final CEMP in respect of Work nos 1, 3 and 4 (i.e. those works which are proximate to the Hirwaun Industrial Estate SINC and Hirwaun Common SINC) to be submitted under Requirement 12, once the detailed construction arrangements are confirmed. This Method Statement is to be followed. Furthermore, if developed, Method Statements for marsh fritillary butterfly must be incorporated into the final EcMP and cross referred in the CEMP;

- Ecological Management Plan(s) will be produced for each Work under Requirement 10 and must be given due regard as part of the final CEMP;
- A detailed soil handling and reinstatement strategy will be developed as part of the final CEMP;
- Solid hoarding shall be erected along the northern edge of the Power Generation Plant site during demolition;
- Any broad-leaved semi-natural woodland habitat lost from outside the permanent easement of the Gas Connection will be reinstated following construction using native species;
- Works will be programmed to occur outside periods of high flow i.e. will not be carried out after periods of heavy rainfall;
- Prior to each watercourse diversion commencing, in channel vegetation (if present) will be removed and placed on the banks of the watercourse downstream of the crossing point;
- The establishment of watercourse diversions will follow a careful procedure including the construction of a dam up stream, followed by the over-pumping of the watercourse downstream, trench excavation and laying of pipeline, trench reinstatement and reinstatement of watercourse;
- A pre-construction Otter Monitoring Survey will be undertaken under Requirement 10 but would inform preparation of the detailed CEMP;
- A simple Otter Method Statement will be included in the EcMP (to capture measures to ensure that otters can cross the working width / working corridor. As otters are most active around dawn and dusk (and therefore temporary obstructions during daylight construction are unlikely to require specific mitigation), fencing will be used outside working hours to create suitable commuting routes if necessary; Any trenches / pits which are excavated adjacent to suitable habitat are to be covered over outside working hours, or include an appropriate ramp to allow an otter to escape;
- All works in the vicinity of watercourse crossings will be undertaken under the guidance of a suitably qualified Ecologist; During construction, instead of creating new gaps in linear features, existing gaps will be utilised wherever possible;
- Light spillage onto linear features will be avoided by the use of directional lighting. The project will have regard to The Institute of Lighting Engineers/Bats Conservation Trust Best Practice Guidance in relation to lighting and bats;

- Tree and shrub clearance will take place outside of the breeding bird season;
- The demolition of the two buildings within the Power Generation Plant compound which are used by barns swallows will be mitigated for by installing suitable ledges or readymade nests within the proposed bat mitigation structure;
- Measures to avoid the incidental mortality or injury of reptiles and amphibians will be incorporated into vegetation and site clearance methodologies;
- A pre-construction ecological constraints survey will be undertaken to confirm the ecological status of the site prior to demolition and construction works commencing;
- In relation to temporary effects on marshy grassland habitats, a detailed soil handling and reinstatement strategy will be developed as part of the CEMP. This will be informed by pre-construction soil and vegetation surveys. This will ensure impacts on marshy grassland soils within the Gas Connection route are minimised during site clearance, construction and restoration, maximising the success of the habitat restoration;
- A pre-construction survey of the site for marsh fritillary larval food-plants (i.e. any of the scabious species) will be undertaken in the summer preceding construction of the Gas Connection. Should any food-plants be found the survey will be extended to include a search for larval webs in late summer;
- In the unlikely event marsh fritillary are detected then a specific method statement will be developed to ensure construction-related impacts on individual butterflies/larvae are avoided, for example by translocation of larval food webs to outside the construction footprint. Any such Method Statement, if required would be developed in consultation with NRW and the RCTCBC Ecologist;
- Any broad-leaved semi-natural woodland habitat lost from outside the permanent easement of the Gas Connection will be reinstated following construction using native species. Native species only will be used, sourced from stock of local provenance if possible;
- During construction, the working width will also be minimised as far as possible;
- Demolition of buildings known to be used by breeding birds will either take place outside the breeding bird season, or will be preceded by blocking potential nesting locations in the winter prior to demolition;

- Additional tree planting will also be provided immediately west of the A4061 at the southern end of the Gas Connection;
- The Landscape Strategy will also include reinstating any species-poor hedgerows removed with species-rich hedgerow planting, and providing an increased diversity of tree/scrub species in replacement woodland/scrub planting mixes. All re-instatement planting will be native species;
- In addition bird boxes will be erected on retained vegetation within HPL's ownership;
- Monitoring of breeding bird populations will take place 1 and 3 years post-construction;
- Reptiles and amphibians In order to ensure the incidental mortality of reptiles/amphibians is avoided, suitable terrestrial habitat for these species will be cut carefully to a height of under 15 cm prior to construction and site clearance commencing. This will encourage those species to leave the Project Site;
- Otters The works programme will be staged so as to minimise the length of time works are carried out along any watercourse affected by construction of the Gas Connection;
- Watercourse crossings would be worked on for the minimum duration necessary (with the intent being for the duration of in-channel works to last no more than one day per watercourse);
- Trenches and holes shall be covered when not being worked on to prevent entry by mammals and where this is not possible exist and escape routes such as ramps or mammal ladders will be provided; and
- Open entrances to pipes and pipelines shall be covered when not being worked on to prevent access by mammals.

3.7 Landscape and Visual Impacts

3.7.1 The following mitigation measures, as outlined in the ES will be implemented during the construction phase in order to specifically limit impacts on landscape and visual amenity of the surrounding area:

- The retention and management of existing vegetation wherever possible;
- Planting, hard landscaping and other mitigation substantially in accordance with ES Figure 11.5;
- Implementation of the Lighting Strategy;

- Temporary storage of topsoil and any other material considered of value for retention. Where practical stores would be sited to screen the construction works;
- Agreed site access points;
- Maintenance of tidy and contained site compound;
- Where feasible, perimeter screen planting will be undertaken in advance of the works to be effective on completion of the construction works;
- Where practicable storage of topsoil will take place, with siting, to screen and/or provide a physical buffer between the construction works and more sensitive receptors;
- Temporary protection (in accordance with Best Practice) of any boundary vegetation to be retained;
- The design and layout of site construction areas will reduce adverse impacts arising from temporary security fencing and lighting;
- The removal of all temporary structures and stockpiles when no longer required;
- Spreading of topsoil, reseeding and planting within the Project Site and adjoining areas that are to be reinstated as soon as possible after sections of work are complete;
- Management of all reinstates area in accordance with a 5 year aftercare plan to help ensure full and successful establishment of the planting to the approval of the planning authority; and
- The prompt reinstatement of temporary construction areas when no longer required.

3.8 Archaeology / Cultural Heritage

3.8.1 An assessment of the potential archaeological and cultural heritage resource at the site has been undertaken as part of the ES. Although the potential impacts on archaeology are low, they cannot be ruled out completely.

3.8.2 A Written Scheme of Investigation (WSI) will be prepared in advance of demolition / construction commencing. This will set out investigative measures such as evaluation trenching prior to construction, and monitoring of ground disturbance during construction and topsoil stripping activities.

3.9 Artificial Lighting

3.9.1 The Project Site will require artificial lighting during construction to provide a safe working site during hours of darkness. An outline lighting strategy has been prepared to support the DCO Application (document reference [6.2.0] Appendix 11.2) and compliance with this is secured by Requirement 16 of Schedule 2 of the DCO. It shall also inform the CEMP in terms of general design objectives that will be used to ensure that adverse effects of lighting associated with demolition and construction of the Project are minimised are listed below:

- Use appropriately designed luminaires for the task at hand;
- Use louvres and shields to prevent undesirable light break-out;
- Demolition and construction lighting shall be directed away from all sensitive receptors;
- Preference shall be given to several, lower lighting units rather than tall, wide beam lighting units to illuminate large areas as it will limit light trespass, glare and sky glow from the plant;
- Vehicle lights shall be properly directed (conforming to MOT requirements) and lenses must be intact to prevent un-necessary glare and light intrusion;
- Lighting shall be reduced or switched off when not required for safety purposes. Security lighting shall be kept at the minimum level needed for visual and security protection; and
- If appropriate, the use of infra-red floodlighting and CCTV systems shall be considered for security to reduce the need for visible lighting outside working hours.

3.9.2 Specific ecological design objectives that will be implemented to ensure that adverse effects of lighting associated with demolition and construction of the Project are minimised are listed below:

- There shall be no light intrusion beyond the boundary of the proposed Project Site and particularly within the SINC to the north of the Project Site which is a habitat that supports breeding birds and bats;
- There shall be no night-time working within the SINC while construction of the Gas Connection and above ground facility takes place;
- No task lighting shall be used between the Power Generation Plant to the north and the proposed laydown area (in the existing car park) to the south to avoid fragmentation of habitats at night-time;

- No temporary lighting shall be installed along the Gas Connection corridor between the main site and the working area of the pipeline to avoid fragmentation of habitats used by bats at night-time; and
- Dark corridors shall be maintained on hedgerows and watercourses and any other linear features by avoiding light trespass on these areas. This will avoid the fragmentation of habitat used by species such as bats and also otters that use these features to move at night-time.

4 CONCLUSIONS

4.1.1 This outline CEMP provides a framework on which the construction contractor will be required to base a more detailed CEMP.

4.1.2 Although no significant impacts are predicted as a result of the construction phase of the Project, the mitigation measures outlined herein will ensure that the lowest level of risk possible is placed on the environment.

4.1.3 Mitigation measures have been outlined to limit impacts of noise levels, air quality, contaminated land and groundwater, ecology, archaeology and cultural heritage, landscape and visual amenity and artificial lighting. These mitigation measures shall be taken forward for further consideration when preparing the detailed CEMP.

4.1.4 It has also outlined a series of general best practice principles which shall be adhered to, including; a register of environmental impacts, the production of risk assessments and Method Statements, the adherence to Site Environmental Standards, the production of an operations Environmental Management System, dealing with Public Relations, the monitoring and measurement of construction activities and the roles and responsibilities of key site staff.

The Hirwaun Power (Gas Fired Power Station) Order

6.2.0 Environmental Statement Appendices Volume [A] [part] [4.1 – updated Outline Construction Environmental Management Plan]

Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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PARSONS BRINCKERHOFF

March 2014

HIRWAUN POWER PROJECT

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN [CEMP]

Hirwaun Power Limited

Final

CONTENTS

GLOSSARY

Above Ground Installation	AGI	Situated within the **Gas Connection site** (Work No 4A) and containing the MOC and PTF. *The other 'above ground installation' comprising the natural gas receiving station and compound is part of the **Power Generation Plant** site (Work No 2B).
Best Practicable Means	BPM	Best Practicable Means is a term applied with regulations on limiting pollutant discharges with regard to the abatement strategy.
Closed-Circuit Television	CCTV	Closed-Circuit Television
Outline Construction Environmental Management Plan (CEMP):	CEMP	Refers to this document and provides an outline of the main environmental considerations which should be considered during construction of the Project and considered further in the final CEMP.
Required CEMP	-	Refers to the CEMP required by the DCO as defined by RCTCBC
Final CEMP	-	Refers to the CEMP produced by the main contractor and agreed by RCTCBC
Construction Traffic Management Plan	CTMP	Construction Traffic Management Plan involves the management of pedestrians, vehicles and equipment, which are located on-site.
DCO Application	-	The application for a DCO made to the Secretary of State under section 37 PA 2008 in respect of the Project, required pursuant to section 31 PA 2008 because the Project constitutes a Nationally Significant Infrastructure Project under section 14 (1)(a) and section 15 PA 2008 by virtue of being an onshore generating station in England or Wales of 50 MWe capacity or more
Development Consent Order	DCO	Consent by a UK Government Minister for a Nationally Significant Infrastructure Project. A DCO can incorporate or override the need for a variety of consents which would otherwise be required for a development, including planning permission. A DCO can also include rights of compulsory acquisition. A DCO is made in the form of a Statutory Instrument.
The Developer	-	Means Hirwaun Power Limited (HPL)
Draft DCO	-	The draft DCO which accompanies the DCO Application (Document Number: [3.1])
Environment Agency (the equivalent body in Wales being Natural Resources	EA	Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs.

Wales)		
Ecological Management Plan	EcMP	Ecological Management Plan is a synthesis of all proposed mitigative and monitoring actions, set to a timeline with specific responsibility assigned and follow-up actions defined. It is normally incorporated as part of the Environmental Management Plan (EMP), one of the most important outputs of the environmental assessment process.
Electrical Connection	-	A new underground electrical cable connection to export electricity from the Power Generation Plant into the national electricity transmission system at the Rhigos Substation (Work No. 5 in the Draft DCO)
Electrical Connection Route Corridor	-	The route of the Electrical Connection (Work No. 5 in the Works Plan)
Environmental Health Officer	EHO	Environmental health officers make sure that people's living and working surroundings are safe, healthy and hygienic.
Environmental Statement	ES	The final document which provides a comprehensive discussion on the Environmental Impact Assessment.
Gas Connection	-	A new underground gas pipeline connection to bring natural gas to the Power Generation Plant from the existing high pressure gas network NTS in the vicinity of the proposed Project Site including the above ground infrastructure (AGI) for the gas pipeline at the point of connection to the NTS, as well as a new permanent access to the AGI (Works No. 3 & 4 in the Draft DCO);
Gas Connection Route Corridor	-	The route of the Gas Connection, including the site of the AGI and the new access to the AGI (Works No. 3 & 4 in the Works Plan).
Hirwaun Power Limited	HPL	Hirwaun Power Limited is a subsidiary established by Watt Power Limited (WPL). WPL has been established to develop flexible gas fired generation assets to support the UK Government drive to a low carbon economy. WPL is resourced through Stag Energy, a company founded in 2002;
Kilometres per Hour	Km/h	Measurement of distance travelled over an hour.
Mega Watt Electrical	MWe	Measurement of electrical power.
MIfA	MIfA	A Member of the Institute for Archaeologists
Ministry of Transport requirements	MOT	A compulsory annual test for safety and exhaust emissions of motor vehicles of more than a specified age.
Nationally Significant Infrastructure Project	NSIP	The Project constitutes a Nationally Significant Infrastructure Project (NSIP) by virtue of s.14(1)(a) and s.15 of the Planning Act 2008 (PA 2008) which include within the definition of a NSIP any onshore generating station in England or Wales of 50 MWe capacity or more.
National Transmission System	NTS	A network of gas pipelines throughout the United Kingdom that supply gas to power stations from natural gas terminals situated on the coast, and also gas distribution companies which lead indirectly to homes.

Natural Resources Wales	NRW	A regulatory authority and principal adviser to the Welsh Government on the environment, enabling the sustainable development of Wales' natural resources for the benefit of people, the economy and wildlife. Made up of the former Environment Agency Wales, Countryside Commission Wales and Forestry Commission Wales.
Personal Protective Equipment	PPE	Personal protective equipment refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury.
Planning Act 2008	PA 2008	UK legislation which passes responsibility for dealing with development consent applications for NSIPs to the Planning Inspectorate , who will examine applications and make recommendations for a decision by the relevant Secretary of State (the Secretary of State for Energy and Climate Change in the case of energy NSIP applications).
Power Generation Plant	-	A SCGT gas fired 'peaking' power generating plant capable of providing up to 299 MWe (Work No. 2 in the Draft DCO);
Power Generation Plant Site	-	The site of the Power Generation Plant (Work No. 2 in the Works Plan);
Project	-	The Power Generation Plant, the Electrical Connection and the Gas Connection together;
Project Site	-	The site of the Project corresponding to the Order Limits of the Draft DCO;
Rhondda Cynon Taf County Borough Council	RCTCBC	The administrative body and local planning authority and highways authority for the County Borough of Rhondda Cynon Taf.
Simple Cycle Gas Turbine	SCGT	A Simple Cycle Gas Turbine is a type of gas turbine most frequently used in the power generation, aviation, and oil and gas industry (electricity generation and mechanical drives). The simple cycle gas turbine differs from a combined cycle operation in that it has only one power cycle (ie. no provision for waste heat recovery).
Site of Importance for Nature Conservation	SINC	A Site of Importance for Nature Conservation
SHE Officer	-	The site safety, health and environment officer
Secretary of State for Energy and Climate Change	SoS	Her Majesty's Principal Secretary of State for Energy and Climate Change is a British government cabinet position.
Works Plan		Plan showing the numbered works referred to in the Draft DCO (Document Number: [2.3]);

1 INTRODUCTION

1.1 Overview

1.1.1 Hirwaun Power Limited (HPL) is making an application for a Development Consent Order (DCO) to the Secretary of State for Energy and Climate Change (SoS). The DCO will authorise HPL to construct and operate a new 299 megawatt electrical (MWe) simple cycle gas turbine (SCGT) Power Generation Plant together with integral Gas and Electrical Connections (hereafter referred to as the Project). The Power Generation Plant will be located on the Hirwaun Industrial Estate between Rhigos and Hirwaun in South Wales.

1.2 Purpose of this document

1.2.1 This document provides an outline from which a final Construction Environmental Management Plan (CEMP) will be produced for each Work in the DCO, ~~which will~~to govern all parts of the construction works (including site preparation/demolition) associated with the Project for all contractors. This document will be hereafter referred to as the 'outline CEMP'. This outline CEMP is informed by the ES and associated DCO documents.

1.2.2 Schedule 2 Requirement 12 of the DCO includes a requirement to approve CEMP(s) in a staged manner by the local planning authority, namely Rhondda Cynon Taf County Borough Council (RCTCBC) prior to the commencement of any works. Such CEMP(s)) will be developed after any grant of a DCO, in conjunction with, or by, the main contractor/s appointed for such works once the timescales for the detailed implementation are defined.

1.2.3 The final CEMP(s) ~~should~~shall consider the following:

- Complaints procedures;
- Nuisance management including measures to avoid or minimise the impacts of construction works (covering dust, noise, vibration and lighting);
- Lighting;
- Waste management;
- Surface and ground water mitigation measures;
- Procedure in the event significant archaeological remains are encountered;

- Landscape and visual impact mitigation (such as retention of existing trees and minimising visual intrusion of construction works); and
- Security measures.~~;~~

1.2.4 Traffic and Transport mitigation measures ~~(such as a~~are to be in a Construction Traffic Management Plan (CTMP)) prepared by the main contractors and submitted under Requirement 13 of Schedule 2 of the DCO, and complementary to the CEMP~~)~~. Similarly ~~; and~~E~~e~~cological mitigation measures are to be contained in an~~(such as an~~ EcMP to be submitted under Requirement 10 of Schedule 2 of the DCO, and complementary to the CEMP.~~)~~ Appropriate references to these documents are made in this Outline CEMP and should be made in the final CEMP(s).

1.2.5 In considering these environmental matters the final CEMP will provide information on:

- A register of environmental aspects [the effects of the Scheme];
- Roles and responsibilities;
- Communication and co-ordination;
- Training and awareness;
- Operational control;
- Checking and corrective action; and
- Environmental control measures.

1.2.6 The final CEMP will fall within the scope of the main contractor's externally certified international environmental management systems, and as such will be subject to independent audits by the relevant certification bodies.

1.2.7 This outline CEMP provides sufficient information, based on best practice guidance and mitigation measures in the ES to act as a framework for the final CEMP and to provide assurance to the decision maker and stakeholders that all appropriate measures will be taken forward to the construction phase.

1.2.8 Measures set out in the final CEMP will also have reference to the Welsh Government document 'Construction and Demolition Sector Plan' which seeks to move towards zero waste by detailing outcomes, policies and delivery actions for organisations, companies and individuals involved with the construction and demolition sector in Wales. It forms part of the suite of documents that comprise the waste

management plan/strategy for Wales, in accordance with the plan making requirements enshrined in Wales and EU legislation.

1.3 Project Description

1.3.1 The Power Generation Plant will operate as a Simple Cycle Gas Turbine (SCGT) peaking plant and has been designed to provide an electrical output of up to 299 Megawatts electrical (MWe). The plant will be fuelled by natural gas.

1.3.2 The three main elements of the Hirwaun Power Project comprise:

- A new Power Generation Plant, a SCGT gas fired 'peaking' power generating plant capable of providing up to 299 MWe;
- A new underground electrical cable connection (the Electrical Connection) to export electricity from the Power Generation Plant into the National Grid at Rhigos Substation; and
- A new underground gas pipeline connection (the Gas Connection) to bring natural gas to the Power Generation Plant from the existing high pressure gas network National Transmission System in the vicinity of the proposed Project Site. This element of the Project also includes the above ground installation (AGI) for the gas pipeline at the point of connection to the National Transmission System (NTS), as well as a new permanent access to the AGI.

1.3.3 The Power Generation Plant, Gas Connection and Electrical Connection together are referred to as the Project and are all integral to the generation of electricity and the subsequent export of that electricity to the National Grid.

1.3.4 The Project constitutes a Nationally Significant Infrastructure Project (NSIP) by virtue of section 14 (1)(a) and section 15 of the Planning Act 2008 (PA 2008) which includes within the definition of an NSIP any onshore generating station in England or Wales of 50 MWe capacity or more. Under section 31 PA 2008 a development consent order (DCO) is required to develop a NSIP. Under section 37 PA 2008 this can only be granted if an application is made for it to the Secretary of State (SoS) (the DCO Application).

1.3.5 This outline CEMP is part of a suite of documents which accompany the DCO Application and should be read in conjunction to gain a fuller understanding of the Project.

2 OUTLINE CEMP – GENERAL INFORMATION

2.1 Register of Environmental Impacts

2.1.1 A register of Environmental Impacts is required to be produced as part of the CEMP. This Register would be used to inform the environmental procedures and provide a tool for construction teams when preparing construction method statements or field briefings. This register would also comprise the various risks identified in the Environmental Statement (ES) and would be regularly updated to reflect any additional risks resulting from the main contractor/s selected methods of working, changing site conditions etc. Risks would be identified under the following general headings:

- Noise & Vibration;
- Air Quality & Emissions;
- Geology & Soils;
- Water Quality, Drainage & Hydrology;
- Landscape and Visual Impacts;
- Ecology;
- Traffic and Transport;
- Waste and Health;
- Archaeology and Cultural Heritage; and
- Combined Impacts.

2.2 Risk Assessments

2.2.1 All activities undertaken on-site would be subject to an environmental risk assessment. Environmental risk assessments would be undertaken by trained staff following an approved procedure which will:

- Identify potential environmental impacts that can be anticipated;
- Assess the risks from these impacts;
- Identify the control measures to be taken and re-calculate the risk; and
- Report where an unacceptable level of residual risk is identified so that action can be taken through design changes, re-scheduling of work or alternative methods of working in order to reduce the risk to an acceptable level.

2.2.2 The results of risk assessments, and their residual risks are only considered acceptable if:

- The severity of outcome is reduced to the lowest practical level;
- The number of risk exposures are minimised; and
- All reasonably practical mitigating measures have been taken and the residual risk rating is reduced to a minimum.

2.2.3 The findings of the risk assessment and in particular the necessary controls would be explained to all contractors before the commencement of the relevant works using an agreed instruction format (e.g. Toolbox Talks).

2.3 Method Statements

2.3.1 Method statements would be completed by the main contractor or sub contractor by trained engineers or other appropriately experienced personnel, in consultation with on-site staff and, where necessary, environmental specialists. Their production would include a review of the environmental risks and commitments, so that appropriate control measures are developed and included within the construction process.

2.3.2 Method statements would be reviewed by the main contractor or sub contractor's appointed environmental manager and, where necessary, by an appropriate environmental specialist. Where required, method statements would also be submitted to the enforcement agencies (Natural Resources Wales, Environmental Health Officer from RCTCBC etc.). Method statements would most likely contain the following:

- Location of the activity and access/egress arrangements;
- Work to be undertaken and methods of construction;
- Plant and materials to be used;
- Labour and supervision requirements;
- Health, safety and environmental considerations; and
- Any permit or consent requirements beyond those already obtained (including the DCO).

2.4 Site Environmental Standards

2.4.1 Site Environmental Standards would be agreed with the main contractor and would detail the minimum measures that ~~should~~shall be achieved for general operations falling outside the risk assessment/method statement procedure. The site environmental standards would be designed to cover the majority of construction activities in accordance with the ES submitted with the application and requirements associated with the DCO.

2.4.2 These will cover issues such as storage of materials, management of waste, noise and vibration, and water pollution control. The standards will be printed on A3 posters, placed on site notice boards and used as a briefing tool on site. These standards will also form the basis of Toolbox talks which will inform all contractors working on site of the potential environmental risks arising from construction activities.

2.4.3 Best practice construction site management techniques will be implemented to avoid/minimise the generation of excessive waste, dust, noise, lighting, noise and vibration, in accordance with the ES and relevant requirements associated with the DCO. These are discussed in more detail in Section 3 of this document.

2.5 Environmental Management System

2.5.1 Following construction, an Environmental Management System for commercial operation will be developed and contained within the overall Business Management System prepared by the operator and designed to comply with ISO 14001 or an equivalent recognised standard.

2.5.2 Implementation of ISO 14001 is a Key Strategy for HPL and the use of an Environmental Management Plan for commissioning based on ISO 14001 (or similar) will be used to support implementation and compliance with the DCO and the Environmental Permit that will be required for operation of the Project under the Environmental Permitting (England and Wales) Regulations 2011. All operational staff for the Project will be given comprehensive environmental awareness training as part of this process.

2.5.3 During the commissioning phase of the Project, HPL will require its environmental and compliance procedures to be implemented and used by the main contractor and the operator.

2.6 Public Relations

2.6.1 The following steps will be taken to make the public aware of the activities on site and the available lines of communication with HPL:

- Neighbouring occupiers will be notified of the start of site works and the likely duration of the overall demolition and construction phases;
- A telephone number for environmental complaints will be published local to the site. The site safety, health and environment (SHE) officer will be responsible for dealing with any complaints and will have the appropriate authority to resolve any issues that may

occur. Should they be required both the SHE officer and the site managers 'out of hours' telephone numbers will be available;

- The SHE officer will maintain a close liaison with the council's Environmental Health Officer (EHO) at all times;
- Should any complaints regarding dust be received by the SHE officer the details will be passed to the EHO for verification purposes; and
- Should any unforeseen event occur within the construction site that has the potential to cause off-site pollution then the SHE officer will immediately notify the EHO by phone and e-mail. As far as possible notice will be issued to the EHO for dealing with an unforeseen activity which may give rise to a particular dust problem.

2.7 Monitoring and Measurement

2.7.1 Weekly site inspections will be carried out which will assess the potential for environmental emergency situations to arise on the site. Additionally the main contractor will assess the potential for environmental incidents on a daily basis across the site. Particular notice will be taken during and following extreme weather events, when working in areas of known contamination, and when particularly hazardous activities are being carried out. Method Statements will be required where the risk assessment has identified a significant risk to the environment.

2.7.2 In the event of any environmental incident the most senior representative of the main contractor will take the role of the responsible person and will take charge of the situation. Where possible, the responsible person will take immediate steps to eliminate the impact on the environment and mitigate/minimise any environmental damage.

2.8 Roles and Responsibilities

2.8.1 Suggested specific roles and responsibilities for the implementation of the final CEMP are described below:

HPL Project Director

2.8.2 The HPL Project Director would have overall responsibility for environmental performance throughout the construction period and will ensure that appropriate resources are made available and environmental control and any agreed or appropriate protection measures are implemented.

Environmental, Health & Safety Management

2.8.3 The Site Manager would be appointed the responsibility for co-ordinating and managing all the environmental activities during the construction phase. The role would involve will carrying out the following duties:

- Develop and review the CEMP and specialist procedures;
- Lead the appointment of construction environmental specialists;
- Ensure delivery of environmental training to personnel within the project team;
- Monitor construction activities and performance to ensure compliance with the CEMP and that identified and appropriate control measures are being effective;
- Act as a main point of contact between the regulatory authorities and the project on environmental issues;
- Monitor construction activities and performance to ensure control measures are effective;
- Maintain full records of the progress of the Environmental Works;
- Implement an auditable environment record system;
- Maintain regular contact and liaison with the Environmental Specialists;
- Carry out audits as required by the CEMP;
- Ensure compliance with Duty of Care at all times; and
- Implement and monitor measures to ensure correct waste minimisation, segregation and disposal.

3 OUTLINE CEMP – SPECIFIC MEASURES

3.1 Introduction

3.1.1 This section outlines some of the specific design and mitigation measures which will be used in the CEMP for the Project in order to limit impacts on noise and vibration, air quality, contaminated land and groundwater, ecology, archaeology and cultural heritage and landscape and visual amenity. It will additionally outline the measures to prevent impacts ~~arsing~~arising from artificial lighting.

3.2 Noise and Vibration

3.2.1 This section outlines the potential sources of nuisance noise created by construction works and the methods of mitigation proposed to limit these impacts which ~~should~~shall be adopted in a CEMP.

3.2.2 All construction activities will be undertaken in accordance with requirements attached to the DCO, and the recommendations of BS 5228 'Noise and Vibration Control on Construction and Open Sites'. It details the legislative background to noise control, along with the recommended procedures for effective liaison between developers, site operators and local authorities. Methods of how to minimise the impact of site noise on workers and local residents are also provided.

3.2.3 The main mitigation measure to limit impacts of nuisance noise on human receptors is to ensure noise levels do not exceed the noise thresholds set out in the ES (65 dBA daytime) and to undertake noise monitoring during construction to make sure these agreed thresholds are not breached.

3.2.4 In addition, construction works shall not take place outside the hours of 07:00-~~19:00~~18.30 Monday to Friday and 07.00-13.00 on Saturday, unless otherwise agreed with RCTCBC. Controls on working hours are specifically set out in DCO Schedule 2 Requirements 14 and 15.

3.2.5 If works are required outside of these core construction hours then method statements and risk assessments will be required to be submitted to the local planning authority for approval.

3.2.6 To minimise the risk of noise complaints, the main contractor will advise potentially affected residents of the works to be undertaken outside of working hours. The residents will also be provided with a point of contact for any queries or complaints.

3.2.7 The main contractor and all sub-contractors working on-site have a general duty to take all reasonably practicable measures to minimise

nuisance from noise and vibration that has the potential to impact on the local community or environment. To achieve this and avoid the potential for construction works to give rise to consequences that would otherwise be statutory nuisances (but for the provision of the DCO), Best Practicable Means (BPM) as defined in section 79(9)(a) of the Environmental Protection Act 1990 must be employed and the following requirements will be complied with:

- Appropriate selection of plant, construction methods and programming. Only plant conforming with relevant national or international standards, directives or recommendations on noise or vibrations emissions will be used;
- Construction plant will be operated and maintained appropriately, having regard to the manufacturer's written recommendations or using other appropriate operation and maintenance programmes which reduce noise and vibration emissions;
- All vehicles and plant will be switched off when not in use;
- Approved routes and programming for the transport of construction materials, spoil and personnel to reduce the risk of increased noise and vibration impacts due to the construction of the project;
- Vehicle and mechanical plant used for the purpose of the works ~~should~~shall be fitted with effective exhaust silencers, to be maintained in good working order and operated in such a manner as to be maintained in good working order and operated in such a manner as to minimise noise emissions. The contractor ~~should~~shall use plant items that comply with the relevant EU/UK noise limits applicable to all equipment;
- All ancillary plant such as generators, compressors and pumps would be positioned so as to cause minimum noise disturbance (e.g. as far away as practicable from residential receptors). If necessary, temporary acoustic barriers or enclosures would be provided;
- The positioning of construction plant and activities to minimise noise at sensitive locations;
- Equipment that breaks concrete by munching or similar, rather than by percussion, ~~should~~shall be used as far as is practicable;
- The use of mufflers on pneumatic tools;
- Where practicable, rotary drills actuated by hydraulic or electrical power ~~should~~shall be used for excavating hard materials;
- The use of non-reciprocating construction plant where ever practicable;

- The use, where necessary, of effective sound reducing enclosures;
- The targeting, where possible, of noisy work at times which minimise disturbance; and
- To prevent damage to adjacent structures, demolition and construction activities will be carried out in accordance with Part 2 of BS 7385:1993 (Evaluation and Measurement for Vibration in Buildings).

3.3 Air Quality

3.3.1 Relevant air quality mitigation measures are outlined in Section 6 of the ES and in the Statutory Nuisance Statement. However, the following provides an outline of the processes which could be employed in the final CEMP in order to reduce dust and exhaust emissions during construction.

3.3.2 This section outlines the potential sources of air pollution created by construction works and the methods of mitigation proposed to limit these impacts which ~~should~~shall be adopted in the final CEMP. The following provides an outline of the processes which ~~should~~shall be employed in the final CEMP in order to reduce dust and exhaust emissions during construction.

3.3.3 A site-specific dust management plan (DuMP) will be prepared for use ~~D~~during the demolition phase (Work no. 1) and the construction of the Power Generation Plant (Work no. 2), Gas Connection (Work nos. 3 & 4) and Electrical Connection (Work no. 5)~~, it is intended that a site specific dust management plan (DuMP)~~. This will form part of the full CEMP ~~for the site~~for the work(s) ~~and will require to be~~ submitted and approved in writing by RCT prior to works commencing.

~~3.3.2~~ ~~Furthermore,A a~~ Construction Traffic Management Plan will be prepared to manage construction traffic, as well as minimise effects of the works on congestion and hence elevated vehicle emissions on the highway. This is a requirement under Schedule 2 Requirement 13 of the DCO so would be submitted separately to the C~~e~~EMP but will be suitably cross-referred and linked.

3.3.4

~~3.3.3~~3.3.5 Construction/demolition activities associated with the greatest potential for dust generation are:

- Earthworks including excavation of topsoil, handling on site and deposition;

- Handling and storage of materials (including loading and unloading);
- Wind blow across disturbed/exposed site surfaces and materials; and
- Mechanical operations such as crushing, drilling, concrete mixing and cutting.

~~3.3.4~~3.3.6 ~~In order to ensure the employment of~~ Best Practicable Methods (BPM) will be used to minimise the risk of adverse effects from construction dust and causing nuisance or damage to flora and fauna specific control measures for limiting nuisance dust and exhaust emissions during construction are as follows:

- Site Management
  - i Records of dust and air quality complaints to be kept, including likely causes and mitigation measures to reduce impacts if appropriate;
  - ii On-site and off-site visual inspections to be undertaken and recorded;
  - iii Inspections shall be increased in frequency during periods of high activity or prolonged dry, windy weather; and
  - iv Keep site perimeter, fences etc clean.
- Site Planning
  - v Consideration of weather conditions, dust generating potential of material to be excavated prior to commencement of works;
  - vi Plan site layout to maximise distance from plant/stockpiles etc. to sensitive receptors;
  - vii If work within 20m of sensitive receptors cannot be avoided, erect solid screens at least as high as stockpiles; and
  - viii Dusty materials shall be removed from site as soon as possible.
- Demolition (where reasonably practicable):
  - ~~i~~ix Use of water as a dust suppressant;
  - ~~ii~~x Cutting equipment shall use water as a dust suppressant or incorporate suitable extraction/ventilation; and
  - ~~iii~~xi Use of enclosed chutes and skips where applicable;
- Earthworks/Construction (where reasonably practicable):
  - ~~iv~~xii Dampening down of all potentially dusty activities;
  - ~~v~~xiii Temporary covering of earthworks;

~~vi~~xiv Removal of covers by area and not all at once;

~~vii~~xv Minimisation of drop heights;

~~viii~~xvi Re-vegetation of exposed surfaces;

~~ix~~xvii Stockpiles will be formed and utilised for the shortest possible time;

~~x~~xviii Stockpiles will be formed such that there are no steep sides or angular in form/shape;

~~xi~~xix Stockpiles to be located away from the site boundary and sensitive receptors wherever possible; ~~and~~

xx Stockpiles to be covered or enclosed wherever possible~~.~~;

xxi Exposed soils ~~would~~to be re-vegetated as soon as practicable. Near sensitive ecosystems or other sensitive receptors, hessian/mulches or similar techniques ~~would~~to be considered where it is not possible to re-vegetate or cover with topsoil;

xxii Minimise dust generating activities, particularly near sensitive ecosystems or other sensitive receptors during prolonged dry, dusty weather unless damping / other suppressants are used;

xxiii Ensure an adequate water supply to site and use water as dust suppressant where applicable;

xxiv Ensure any site machinery is well maintained and in full working order;

xxv Ensure equipment available for cleaning spills of dusty material available at all times; and

- Sand and aggregates shall be stored away from sensitive receptors and screened/shielded. Similarly concrete batching shall take place away from receptors.

xxvi

- Trackout (where reasonably practicable):

~~xii~~xxvii If required due to site conditions vehicles to be washed and cleaned effectively prior to leaving the site;

~~xiii~~xxviii Effective vehicle cleaning and specific wheel-washing facilities will be implemented at all site exits, including: hose pipes with adequate water supply and pressure and mechanical wheel spinners or brushes;

~~xiv~~xxix An area of paving/hard standing will be implemented between the washing facilities and the site exit; ~~and~~

xxx Hard surface haul routes to be used on-site wherever possible, as well as preferred routes for vehicles.

xxxi Loads entering and leaving the site with dust generating potential will use load covers;

xxxii Vehicles to comply with site speed limits (15mph on hard surfaces, 10mph on unconsolidated surfaces);

xxxiii Water assisted sweeping of local roads to be undertaken if material is tracked out of site;

xxxiv Install hard surfacing as soon as practicable on site and ensure that they are maintained in good condition; and

xxxv Haulage routes would be planned in order to avoid adversely affecting air quality within the Aberdare Air Quality Management Area.

~~xv~~

3.3.7 To ensure that dust generated by construction works does not exceed levels which could constitute a nuisance ~~-~~dust monitoring is proposed to be undertaken at the northern end of the Power Generation Site, in particular, in the vicinity of the Hirwaun Industrial Estate SINC. A real time monitor for total suspended particulate is proposed, used as an 'indicative instrument; only. The monitoring station would be mobile and w~~sh~~ould be moved around the site as principal activities move. Should dust arisings at this location be found to exceed trigger levels then additional dust control measures from the above list will be applied. Trigger levels for the instrument, which would suggest increasing risk emissions, will be agreed with ~~NRW~~ RCT and NRW prior to the commencement of construction.

~~3.3.5~~3.3.8 It is proposed that solid hoarding be erected along the northern edge of the Power Generation Plant site during demolition activities. The prolonged storage of debris on-site, in temporary stockpiles will be avoided. Vehicles removing demolition or site clearance materials must have their loads effectively sheeted on all sides. Crushing of material for reuse, transportation or disposal ~~should~~shall be undertaken as far away as possible from sensitive receptors.

~~3.3.6~~3.3.9 On-site burning of waste material will be forbidden.

~~3.3.7~~3.3.10 The number of handling operations ~~should~~shall be minimised, ensuring that dusty material is not moved or handled unnecessarily. Fine material ~~should~~shall be delivered to site in bags. Drop heights must be kept to a minimum.

~~3.3.8~~3.3.11 Hard-standing areas for vehicles entering, parking and leaving the Project Site ~~should~~shall be provided, with wheel washing facilities at

access points where there is a risk of tracking mud onto local roads. Plant and wheel washing will be carried out in a designated area of hardstanding at least 10 m from a watercourse or surface water drain. Where this is not possible alternative mitigation will be implemented.

~~3.3.9~~3.3.12 The performance of the wheel washing system will be maintained by the regular removal of settled sediment from within the sump. Run-off from this area will be collected in a dedicated sump and water will be recycled/re-used wherever possible. Where recovery is not possible, water from the sump system will be emptied to a dedicated storage tank prior to its removal from site for authorised disposal by a suitably licensed contractor.

~~3.3.10~~3.3.13 Site roads ~~should~~shall be cleaned regularly, and damped down if necessary to prevent nuisance dust. Site vehicle movements ~~should~~shall be kept to a minimum and, where possible, restricted to paved haulage routes. Vehicle speeds will be limited to 10 mph on unconsolidated track and ~~20~~15 mph on hard ~~standing~~surfaces~~10 km/h~~. The idling of vehicles will be kept to a minimum.

~~3.3.11~~3.3.14 The main contractor will have responsibility on a day to day basis for determining if either the nature of the activities on site or weather conditions would be likely to result in the unacceptable transfer of dust off site. In cases where this is anticipated, remedial action will be taken to minimise emissions, including the application of appropriate control measures, or if necessary, the temporary suspension of works.

~~3.3.12~~3.3.15 Good site management practices during the construction works will help to prevent the generation of airborne dust. It will be the responsibility of the nominated main contractor and site manager to ensure through the final CEMP that sufficient precautionary measures to limit dust generation are in fact taken.

3.4 Contaminated Land and Groundwater

3.4.1 ~~During demolition / construction t~~The CEMP will include a Demolition Method Statement which will apply as necessary to each ~~stage~~Work Package of the Project.

3.4.2 During construction, if piling ~~is~~were to be required to the depth~~s~~ of the secondary aquifer A, mitigation measures set out in *"Piling and penetrative ground improvement methods on land affected by contamination guidance on pollution prevention – NGWCLC Report NC/99/73"* would be prepared and agreed with NRW as part of the CEMP ~~adopted eliminating any~~in order to manage potential pollutant pathways.

~~3.4.1~~3.4.3 Site investigations undertaken at an adjacent site to the Power Generation Plant have not revealed levels of contamination which are likely to pose a risk to human health or cause a statutory nuisance. Further ground investigations will be undertaken at the Power Generation Plant site prior to construction which will further define the exact nature of ground conditions at the Power Generation Plant Site. However, based on evidence to date, there are not anticipated to be any significant issues with contamination at the Power Generation Plant site or Electrical Connection.

3.4.4 Foundation design will be informed from further assessment of ground conditions completed during environmental and geotechnical site investigation.

~~3.4.2~~3.4.5 Land under which the Gas Connection will be developed has remained as undeveloped greenfield land and therefore there is low likelihood of contamination.

~~3.4.3~~3.4.6 Professional standards and guidance relating to contamination will be consulted to provide advice on best practice mitigation measures which will be employed during the construction/demolition phase of the Project.

~~3.4.4~~3.4.7 This multi-stage process is only to cover unexpected contamination.

~~3.4.5~~3.4.8 Sensitive receptors are as follows:-

- Construction workers (during excavation and works);
- Site users;
- Groundwater; and
- Surface water bodies.

~~3.4.6~~3.4.9 There is a small risk of construction workers coming into contact with contaminated soils and groundwater during construction.

~~3.4.7~~3.4.10 There will be no access to construction areas by the general public. The site will be secured to avoid unauthorised access and contact with contaminated soil or groundwater.

~~3.4.8~~3.4.11 In the case that unidentified contaminant “hotspots” showing visual of olfactory evidence of contamination are discovered during construction works, the following procedure will be applied:

- Stop work immediately;
- Report the discovery to the construction manager;

- Seal off the area to contain the spread of contaminants;
- Clear the area to ensure there is nothing that could cause fire or explosion;
- Contact the regulator or local authority once it is confirmed that contamination is found;
- Arrange for testing to be carried out and agree changes to the existing contamination strategy; and
- Record details of the incident, including photos and relevant information on the Environmental Incident Report Form.

~~3.4.9~~3.4.12 Any material which is excavated and free from visual and olfactory evidence of contamination will be stockpiled and tested for metal (and other determinants) for reuse on site. Any soils which are considered to be contaminated hotspots (either identified through testing or through visual or olfactory evidence of contamination on site) will be removed and disposed of by a suitably licensed contractor or treated on-site.

~~3.4.10~~3.4.13 All water from dewatering activities shall either be transported off site by a suitably licensed contractor or treated on site. Any proposed discharges to existing land drains (or other surface water bodies) will be undertaken in accordance with the requirements of the Environment Agency (EA) Regulatory Position Statement on temporary water discharges from excavations, which is applied by NRW.

~~3.4.11~~3.4.14 Where soils are imported onto the site then they shall be subject to testing to ensure contaminated soils are not being brought onto the site.

~~3.4.12~~3.4.15 Speed restrictions will be imposed onsite to minimise disturbance of bare surfaces. Measures shall also be put into place to ensure that the length of time bare surfaces are left exposed are minimised.

~~3.4.13~~3.4.16 Precautions will be undertaken in accordance with ~~Natural Resources Wales (~~NRW's~~)~~ Pollution Prevention Guidance to ensure that silt laden runoff, arisings or chemicals are not allowed to enter watercourses. Measures will include, testing of arisings to see whether they are suitable for reuse on site, siting stockpiles well away from watercourses, covering stockpiles in inclement weather, use of impermeable liners and use of fixing agents.

3.4.17 The final CEMP will identify any potential human health risks to construction workers or future site users so that appropriate mitigation/remediation can be put in place.

~~3.4.14~~3.4.18 Although the main contractor undertaking the works will be required to produce a risk assessment and method statement detailing how they will minimise the risk of coming into contact with potentially contaminated materials, the following can be considered as a guide for the final CEMP:

~~3.4.15~~3.4.19 Compliance with the mitigation measures set out in the following documents:

- Protection of Workers and the general public during the development of contaminated land (HSE 1991); and
- If applicable, a guide to safe working on contaminated sites R132 (CIRIA 1996).

~~3.4.16~~3.4.20 Work will be carried out in accordance with best practices and safe working practices will be maintained.

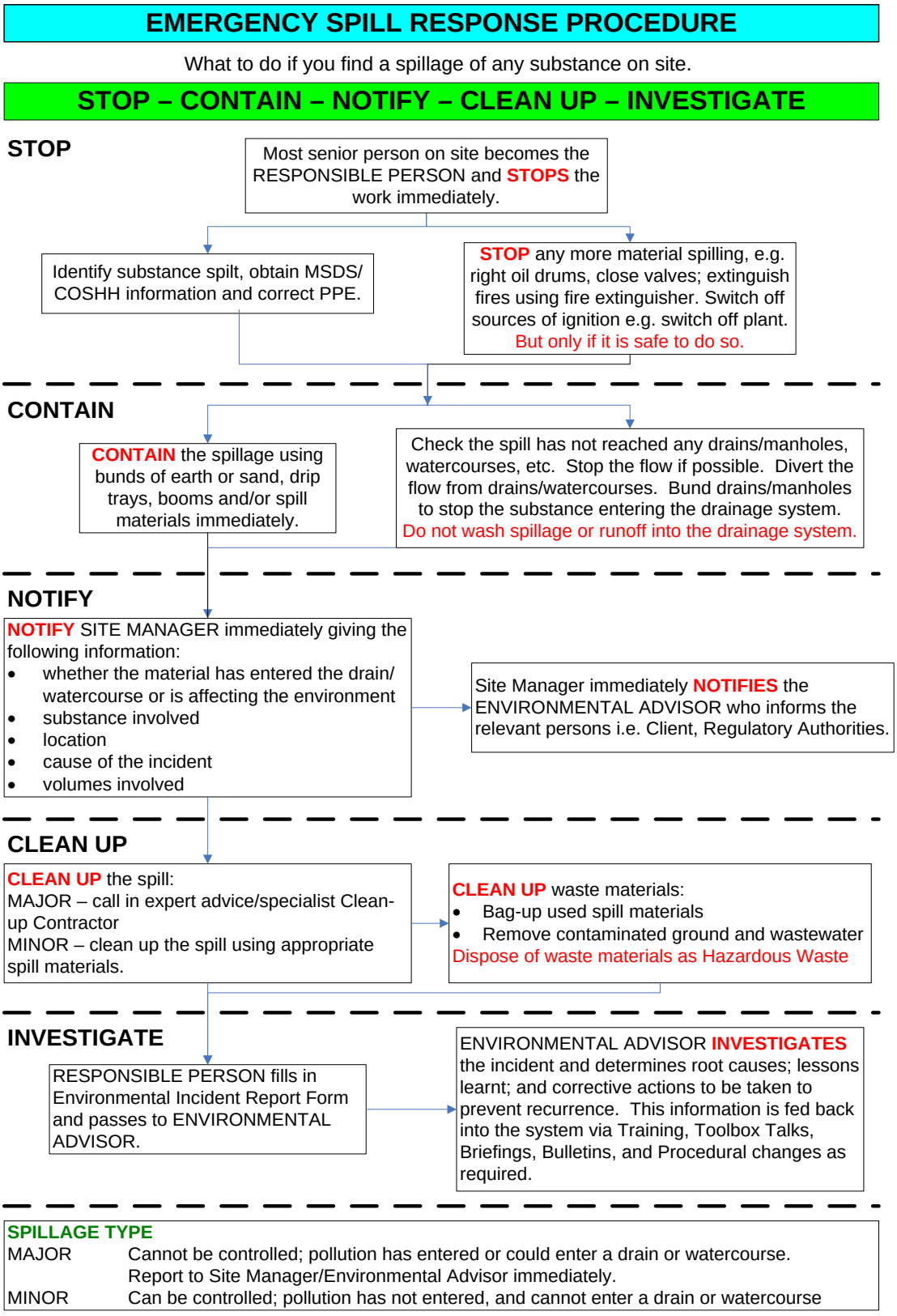
~~3.4.17~~3.4.21 Construction workers will wear appropriate personal protective equipment (PPE) for the nature of works being undertaken. This will involve standard site PPE, plus overall, gloves and eye protection.

~~3.4.18~~3.4.22 Additional measures that will likely be taken are:

- Eating, drinking and smoking will be limited to a designated 'clean' area of the site;
- Site welfare facilities will be made available;
- All workers will be required to wash their hands and remove overalls/boots when moving from 'dirty' to 'clean' areas of the site;
- Any soils excavated which are considered to be potentially contaminated (e.g. visual or olfactory evidence) will be reported to site management and left alone until their appropriate treatment. Suitable training will be provided to site personnel to ensure the correct identification of potentially contaminated soils by olfactory means; and
- Water inflows to excavated areas will be minimised by the use of lining materials, good housekeeping techniques and by the control of drainage and construction materials in order to prevent the contamination of ground water. Site personnel will be made aware of the potential impact on ground and surface water associated with certain aspects of the construction works to further reduce the incidence of accidental impacts.

~~3.4.19~~3.4.23 Measures ~~should~~shall be taken to avoid/minimise the potential for fuel and chemical spills. A spill response procedure will also apply on-site; and indicative procedure is shown in Insert 3.1.

Insert 3.1: Emergency Spill Response Procedure



3.4.24 A Site Waste Management Plan (SWMP) will form part of the CEMP, for use during the demolition and construction stages. This will ensure waste management provisions complement the construction activities on site and that wastes emanating from the project are dealt with in an appropriate manner and their management follows the waste hierarchy. The SWMP will identify the waste types arising from the project, estimate quantities of each waste type and identify treatment.

3.5 Surface Water

~~3.5.1~~ The Power Generation Plant site is in the hydraulic catchment of the River Camnant. The upstream reaches of this watercourse are the Nant yr Ochain which is culverted under the site.

3.5.1 Furthermore the Gas Connection runs through an area of marshy agricultural land parts of which form the Hirwaun Common Site of Importance Nature Conservation (SINC).

3.5.2 In order to ensure that there will be no discharges to any watercourses as a result of construction activities at the Project Site, the following matters ~~should~~ shall be included in the detailed CEMP:

- Site infrastructure will be designed in accordance with EA pollution Prevention Guidelines and industry best practise.
- Oil storage will be undertaken in accordance with the Control of Pollution (Oil Storage) Regulations 2001. Storage tanks will be located on an impervious base provided with bund walls to give a containment capacity of the greater of 110 per cent of the largest tank volume within the bund or 25 per cent of the total storage capacity of all tanks within the bund. All valves and couplings will be contained within the bunded area;
- Any surface water which has the potential to be contaminated by hydrocarbons (e.g. from car parks), which are used during the construction phase, to be passed through oil interceptor(s) prior to discharge;
- Measures will be taken to ensure that no leachate, or any surface water that has the potential to be contaminated, will be allowed to enter directly or indirectly into any water course, underground strata or adjoining land;
- Provisions will be made so that all existing drainage systems continue to operate;
- Water inflows to excavated areas will be minimised by the use of lining materials, good housekeeping techniques and by the control of drainage and construction materials in order to prevent the

contamination of ground water. Site personnel will be made aware of the potential impact on ground and surface water associated with certain aspects of the construction works to further reduce the incidence of accidental impacts;

- Refuelling of construction vehicles and equipment will be restricted to a designated area with properly designed fuel tanks and bunds and suitable operating procedures;
- All static plant and any hazardous materials stored at the Power Generation Plant Site will be located within specifically designed areas with an impermeable base and with secondary containment designed to contain 110% of the maximum stored material. The drainage of these areas will incorporate oil separators designed and manufactured in accordance with BS EN 858-1 to ensure no contaminated runoff enters the surface water sewer or drains to a watercourse. A detailed emergency response plan will be prepared which will be enacted in the event of a spill of hazardous material to minimise the risk of environmental impacts;
- Construction access roads will be designed to ensure no increased flood risk or silt production;
- Temporary wheel washing facilities will be installed to prevent transfer of soil sediment onto nearby public roads. Runoff from wheel wash facilities will be collected and removed or treated prior to discharge;
- If deemed necessary, measures such as temporary drainage routes silt fences and silt bunds will be constructed to prevent heavily silted discharge to surface waters and to attenuate high flows;
- At the gas pipeline, pre- and post-construction agricultural under-drainage schemes will be designed and installed to an agreed specification to ensure similar surface water flows pre- and post-construction and to ensure no increase in sediment, silt or nutrient runoff;
- A Soil Handling Strategy will be formulated, including a programme of soils de-compaction, loosening and aftercare aligned to the drainage schemes. This will facilitate soil structure recovery and natural drainage pathways to return soil water retention / storage to pre-construction status;
- During construction of the pipeline, care will be taken to ensure that silt laden water does not enter watercourses. This will be done by plugging existing drains, intercepting surface water above the working width and where appropriate by leaving filter strips of unstrapped topsoil along main watercourses / ditches. Topsoil will

be replaced over post-construction drains as soon as possible to prevent site water from getting into drains;

- For construction of the pipeline, any de-watering pumping will be undertaken using an appropriately sized pump at such a rate to avoid disturbance or erosion of stream banks.;
- The Main Contractor will be required to regularly inspect all pumps, pipes and connections;
- For construction of the pipeline, temporary lagoons, siltation tanks or filter membranes may be considered at sensitive outfall locations or where deeper excavations are proposed;
- Any stockpiled material will be located away from watercourses to avoid pollution runoff and best practice working guidelines will be followed to avoid spillages near watercourses;
- The final CEMP will be developed including a site environmental and health and safety management policy to mitigate construction risks. General rules apply to site works to ensure that no significant impact to identified receptors will occur during construction. Best practice recommendations for the prevention of contamination will be outlined in the final CEMP, both which will be developed and discussed with the Local Authority prior to commencement of construction;
- The draft Method Statement for protection of the nearby SINCs presented at Appendix 8.10 of the ES (Document Reference 6.1.0) will be revised and included within the final CEMP. This Method Statement will include measures to prevent line rush establishing through inappropriate soil handling. This Method Statement is to be followed; and
- The British Standard Code of Practice for Earthworks BS 6031:1981 and British Standard Code of Practice for Foundations BS 8004:1086 contains detailed methods that will be adopted during construction.

3.6 Ecology

3.6.1 Relevant works to protect/mitigate impacts on ecology and biodiversity are described in more detail in the ES. Appropriate regard for the protection of local habitats and protected species during the construction works will be included within the CEMP and will incorporate the following measures:

- As far as is practicable, work compounds and access tracks etc. will not be located in, or adjacent to, areas that maintain habitat value or are within areas supporting protected species;

- The Construction footprint will be demarcated with robust fencing, to ensure a buffer of at least five metres between the construction footprint and any water bodies is preserved during construction. Furthermore it will~~Site fencing will be erected to~~ prevent access to areas outside working areas, particularly in areas adjacent to features of interest/value;
- Briefings and instruction will be given to contractors regarding the biodiversity issues associated with the site and protocols and contingency plans will be established to deal with incidents should they arise including in relation to storage of potentially dangerous materials;
- The demolition of all buildings will be undertaken under statement European Protected species licence, to be obtained from Natural Resources Wales, and the supervision of a licensed bat worker;
- ~~The demolition of all buildings will be undertaken under a detailed precautionary method statement and the supervision of a licensed bat worker;~~
- Where possible, all vegetation clearance prior to construction ~~should~~shall take place between September and February (depending on climatic conditions in a given year), to prevent damage to any nests of breeding birds;
- Where vegetation cannot be removed outside of the nesting season, pre-clearance checks must be undertaken by an experienced ecologist to identify if any birds are nesting within or close to the vegetation due to be removed. To ensure legal compliance if a bird nest is found, no works will be undertaken in that area (approximately 10 m in all directions for most bird species) until the young birds are ~~not longer~~no longer dependent on the nest site;
- Works will be undertaken during daylight hours (i.e. 7:00-18:30) during the bat active season and artificial lighting overnight will be minimised. Where this is not possible, low sodium lighting will be used as this is known to have a minimal impact on bats relative to the majority of other types of construction lighting;
- ~~18:30~~Contaminants ~~should~~ will not to be stored near areas of hydrological sensitivity;
- The draft Method~~s~~ S~~s~~tatement~~s~~ for protection of the nearby Sites of Important Nature Conservation (SINCs) presented at Appendix 8.10 of the ES (Document Reference 6.1.0) will be revised ~~alongside~~and included within the ~~agreement of the~~ final CEMP in respect of Work nos 1, 3 and 4 (i.e. those works which are proximate to the Hirwaun Industrial Estate SINC and Hirwaun

Common SINC) to be submitted under Requirement 12, once the detailed construction arrangements are confirmed. This Method Statement is to ~~must~~ be followed. Furthermore, if developed, Method Statements for marsh fritillary butterfly must be incorporated into the final ~~CEMP~~EcMP and cross referred in the CEMP;

- ~~An~~ Ecological Management Plan(s) will be produced for each Work under Requirement 10 and must be given due regard as part of the final CEMP;
- A detailed soil handling and reinstatement strategy will be developed as part of the final CEMP;
- Solid hoarding shall be erected along the northern edge of the Power Generation Plant site during demolition;
- Any broad-leaved semi-natural woodland habitat lost from outside the permanent easement of the Gas Connection will be reinstated following construction using native species;
- Works will be programmed to occur outside periods of high flow i.e. will not be carried out after periods of heavy rainfall;
- Prior to each watercourse diversion commencing, in channel vegetation (if present) will be removed and placed on the banks of the watercourse downstream of the crossing point;
- The establishment of watercourse diversions will follow a careful procedure including the construction of a dam up stream, followed by the over-pumping of the watercourse downstream, trench excavation and laying of pipeline, trench reinstatement and reinstatement of watercourse;
- A pre-construction Otter Monitoring Survey will be undertaken under Requirement 10 but would ~~to~~ inform preparation of the detailed CEMP;~~.~~
- A simple Otter Method Statement will be ~~prepared for inclusion~~included in the ~~CEMP~~EcMP (to capture measures to ensure that otters can cross the working width / working corridor. As otters are most active around dawn and dusk (and therefore temporary obstructions during daylight construction are unlikely to require specific mitigation), fencing will be used outside working hours to create suitable commuting routes if necessary; Any trenches / pits which are excavated adjacent to suitable habitat are to be covered over outside working hours, or include an appropriate ramp to allow an otter to escape; ~~and~~
- All works in the vicinity of watercourse crossings will be undertaken under the guidance of a suitably qualified Ecologist;~~.~~

- During construction, instead of creating new gaps in linear features, existing gaps will be utilised wherever possible;
- Light spillage onto linear features will be avoided by the use of directional lighting. The project will have regard to The Institute of Lighting Engineers/Bats Conservation Trust Best Practice Guidance in relation to lighting and bats;
- Tree and shrub clearance will take place outside of the breeding bird season;
- The demolition of the two buildings within the Power Generation Plant compound which are used by barns swallows will be mitigated for by installing suitable ledges or readymade nests within the proposed bat mitigation structure;
- Measures to avoid the incidental mortality or injury of reptiles and amphibians will be incorporated into vegetation and site clearance methodologies;
- A pre-construction ecological constraints survey will be undertaken to confirm the ecological status of the site prior to demolition and construction works commencing;
- In relation to temporary effects on marshy grassland habitats, a detailed soil handling and reinstatement strategy will be developed as part of the CEMP. This will be informed by pre-construction soil and vegetation surveys. This will ensure impacts on marshy grassland soils within the Gas Connection route are minimised during site clearance, construction and restoration, maximising the success of the habitat restoration;
- A pre-construction survey of the site for marsh fritillary larval food-plants (i.e. any of the scabious species) will be undertaken in the summer preceding construction of the Gas Connection. Should any food-plants be found the survey will be extended to include a search for larval webs in late summer;
- In the unlikely event marsh fritillary are detected then a specific method statement will be developed to ensure construction-related impacts on individual butterflies/larvae are avoided, for example by translocation of larval food webs to outside the construction footprint. Any such Method Statement, if required would be developed in consultation with NRW and the RCTCBC Ecologist;
- Any broad-leaved semi-natural woodland habitat lost from outside the permanent easement of the Gas Connection will be reinstated following construction using native species. Native species only will be used, sourced from stock of local provenance if possible;

- During construction, the working width will also be minimised as far as possible;
- Demolition of buildings known to be used by breeding birds will either take place outside the breeding bird season, or will be preceded by blocking potential nesting locations in the winter prior to demolition;
- Additional tree planting will also be provided immediately west of the A4061 at the southern end of the Gas Connection;
- The Landscape Strategy will also include reinstating any species-poor hedgerows removed with species-rich hedgerow planting, and providing an increased diversity of tree/scrub species in replacement woodland/scrub planting mixes. All re-instatement planting will be native species;
- In addition bird boxes will be erected on retained vegetation within HPL's ownership;
- Monitoring of breeding bird populations will take place 1 and 3 years post-construction;
- Reptiles and amphibians In order to ensure the incidental mortality of reptiles/amphibians is avoided, suitable terrestrial habitat for these species will be cut carefully to a height of under 15 cm prior to construction and site clearance commencing. This will encourage those species to leave the Project Site;
- Otters The works programme will be staged so as to minimise the length of time works are carried out along any watercourse affected by construction of the Gas Connection;
- Watercourse crossings would be worked on for the minimum duration necessary (with the intent being for the duration of in-channel works to last no more than one day per watercourse);
- Trenches and holes ~~should~~shall be covered when not being worked on to prevent entry by mammals and where this is not possible exist and escape routes such as ramps or mammal ladders will be provided; and
- Open entrances to pipes and pipelines ~~should~~shall be covered when not being worked on to prevent access by mammals.

3.7 Landscape and Visual Impacts

3.7.1 The following mitigation measures, as outlined in the ES will be implemented during the construction phase in order to specifically limit impacts on landscape and visual amenity of the surrounding area:

- The retention and management of existing vegetation wherever possible;
- Planting, hard landscaping and other mitigation substantially in accordance with ES Figure 11.5;
- Implementation of the Lighting Strategy;
- Temporary storage of topsoil and any other material considered of value for retention. Where practical stores would be sited to screen the construction works;
- Agreed site access points;
- Maintenance of tidy and contained site compound;
- Where feasible, perimeter screen planting will be undertaken in advance of the works to be effective on completion of the construction works;
- Where practicable storage of topsoil will take place, with siting, to screen and/or provide a physical buffer between the construction works and more sensitive receptors;
- Temporary protection (in accordance with Best Practice) of any boundary vegetation to be retained;
- The design and layout of site construction areas will reduce adverse impacts arising from temporary security fencing and lighting;
- The removal of all temporary structures and stockpiles when no longer required;
- Spreading of topsoil, reseeding and planting within the Project Site and adjoining areas that are to be reinstated as soon as possible after sections of work are complete;
- Management of all reinstates area in accordance with a 5 year aftercare plan to help ensure full and successful establishment of the planting to the approval of the planning authority; and
- The prompt reinstatement of temporary construction areas when no longer required.

3.8 Archaeology / Cultural Heritage

3.8.1 An assessment of the potential archaeological and cultural heritage resource at the site has been undertaken as part of the ES. Although the potential impacts on archaeology are low, they cannot be ruled out completely.

3.8.2 A Written Scheme of Investigation (WSI) will be prepared in advance of demolition / construction commencing. This will set out investigative measures such as evaluation trenching prior to construction, and monitoring of ground disturbance during construction and topsoil stripping activities.

3.9 Artificial Lighting

3.9.1 The Project Site will require artificial lighting during construction to provide a safe working site during hours of darkness. An outline lighting strategy has been prepared to support the DCO Application (document reference [6.2.0] Appendix 11.2) and compliance with this is secured by Requirement 16 of Schedule 2 of the DCO. ~~The~~ It ~~should~~shall also inform the CEMP in terms of general design objectives that will be used to ensure that adverse effects of lighting associated with demolition and construction of the Project are minimised are listed below:

- Use appropriately designed luminaires for the task at hand;
- Use louvres and shields to prevent undesirable light break-out;
- Demolition and construction lighting ~~should~~shall be directed away from all sensitive receptors;
- Preference ~~should~~shall be given to several, lower lighting units rather than tall, wide beam lighting units to illuminate large areas as it will limit light trespass, glare and sky glow from the plant;
- Vehicle lights ~~should~~shall be properly directed (conforming to MOT requirements) and lenses must be intact to prevent un-necessary glare and light intrusion;
- Lighting ~~should~~shall be reduced or switched off when not required for safety purposes. Security lighting ~~should~~shall be kept at the minimum level needed for visual and security protection; and
- If appropriate, the use of infra-red floodlighting and CCTV systems ~~should~~shall be considered for security to reduce the need for visible lighting outside working hours.

3.9.2 Specific ecological design objectives that will be implemented to ensure that adverse effects of lighting associated with demolition and construction of the Project are minimised are listed below:

- There ~~should~~shall be no light intrusion beyond the boundary of the proposed Project Site and particularly within the SINC to the north of the Project Site which is a habitat that supports breeding birds and bats;

- There ~~should~~shall be no night-time working within the SINC while construction of the Gas Connection and above ground facility takes place;
- No task lighting ~~should~~shall be used between the Power Generation Plant to the north and the proposed laydown area (in the existing car park) to the south to avoid fragmentation of habitats at night-time;
- No temporary lighting ~~should~~shall be installed along the Gas Connection corridor between the main site and the working area of the pipeline to avoid fragmentation of habitats used by bats at night-time; and
- Dark corridors ~~should~~shall be maintained on hedgerows and watercourses and any other linear features by avoiding light trespass on these areas. This will avoid the fragmentation of habitat used by species such as bats and also otters that use these features to move at night-time.

4 CONCLUSIONS

4.1.1 This outline CEMP provides a framework on which the construction contractor ~~should~~ will be required to base a more detailed CEMP.

4.1.2 Although no significant impacts are predicted as a result of the construction phase of the Project, the mitigation measures outlined herein will ensure that the lowest level of risk possible is placed on the environment.

4.1.3 Mitigation measures have been outlined to limit impacts of noise levels, air quality, contaminated land and groundwater, ecology, archaeology and cultural heritage, landscape and visual amenity and artificial lighting. These mitigation measures ~~should~~shall be taken forward for further consideration when preparing the detailed CEMP.

4.1.4 It has also outlined a series of general best practice principles which ~~should~~shall be adhered to, including; a register of environmental impacts, the production of risk assessments and Method Statements, the adherence to Site Environmental Standards, the production of an operations Environmental Management System, dealing with Public Relations, the monitoring and measurement of construction activities and the roles and responsibilities of key site staff.