

## **APPENDIX 10 – OFFSHORE OIL AND GAS ENVIRONMENTAL CONTROLS**

### **A10.a Introduction**

There are numerous pieces of legislation applicable to UK offshore oil and gas activities and a summary of the main environmental controls is given below. The legalisation and guidance can be sourced from <http://www.og.dti.gov.uk/regulation/index.htm> and the website of the Office of Public Sector Information <http://www.opsi.gov.uk>.

### **A10.b Licensing**

#### **Licensing**

The Petroleum Act, 1998 provides the basis for granting licences to explore for and produce oil and gas. Exploration Licences are non-exclusive & permit the holder to conduct non-intrusive surveys, such as seismic or gravity and magnetic data acquisition, over any part of the UKCS not held under a Production Licence.

Traditional Production licences grant exclusive rights to the holders to “search and bore for, and get, petroleum” in specific blocks. Under the terms of a Production Licence, licence holders require the authorisation of the Secretary of State before installing facilities, producing hydrocarbons and other activities. The prospective Operator must demonstrate before award that they have the necessary finances, operating, technical and environmental competency to carry out the agreed work programme. Conditions may be attached to the Licence.

The Promote Licence offered first in the 21st Licence Round provides a period of time during which licensees are able to work up potential prospects - primarily using existing data. Full checks as for the Traditional Production Licence are made before any consent for further work is given. In recent years, two other variations of the 'Traditional' Production Licence have also been offered. These are the Frontier Licence, framed to match the operating challenges in the deepwater areas to the west of Britain, and Licences specially drafted to cover the redevelopment of a decommissioned field.

### **A10.c Appropriate assessment**

#### **Appropriate assessment and licensing**

Before block award, the DTI undertakes screening or full Appropriate Assessment in relation to the potential for effects of licensing on European sites.

### **A10.d Environmental Management Systems**

All operators controlling the operation of offshore installations on the UKCS should have in place an independently verified Environmental Management System designed to achieve:

- The environmental goals of the prevention and elimination of pollution from offshore sources and of the protection and conservation of the maritime area against other adverse effects of offshore activities
- Continual improvement in environmental performance

and, more generally, to achieve the objectives of the OSPAR Offshore Strategy.

OSPAR currently recognises that the following international standards contain the necessary elements:

ISO 14001: 2004 (Operators should note that ISO 14001:1996 has been reviewed and updated by ISO 14001:2004) environmental management systems - specifications with guidance for use; and

Regulation (EC) No 761/2001 of the European Parliament and the Council allowing voluntary participation by organisations in a Community Eco-management and Audit Scheme (EMAS).

## **A10.e Geophysical survey**

### **Consent to conduct a geophysical survey**

Offshore seismic and other geophysical surveys must be carried out under the terms of an exploration or production licence. Surveys require a consent from Government (Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended 2007)) - applied for by submission of a Petroleum Operations Notice No 14A (PON14A). An assessment is appended to consent applications for areas important for marine mammals.

The PON14A application is reviewed by the DTI and its statutory advisers who may recommend consent conditions. Consideration is given to the requirement for an Appropriate Assessment in relation to the potential for effects on SACs. The PON14A is subject to a wider notification process involving fishermen and others who may have interests in the area. Application of JNCC guidelines for minimising acoustic disturbance to marine mammals from seismic surveys is mandatory. A report of the survey and marine mammal observations is submitted to the JNCC.

Shallow gas (rig site) surveys are subject to the consenting requirements for geophysical surveys and JNCC marine mammal guidelines – see above.

### **Appropriate assessment**

The Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001 (as amended 2007) implement European Directives for the protection of habitats & species in relation to offshore oil and gas activities. An Appropriate Assessment may be required prior to issue of consent dependent on the potential of the activity to have a significant effect on a Natura 2000 site.

## **A10.f Exploration and appraisal drilling**

### **Consent to locate a rig**

Consent to locate - The Coast protection Act (CPA) 1949 (as amended), provides that where obstruction or danger to navigation is caused or is likely to result, the prior written consent of the Secretary of State for the Department of Trade and Industry is required for the siting of the offshore installation - whether mobile or permanent. In practice, this means that consent must be obtained for each drilling operation and for all offshore production facilities. The application process includes risk assessment and consultation.

A Crown Estate lease may also be required in territorial waters.

## Environmental Impact Assessment

The Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999 require an environmental impact assessment and a public consultation document, an Environmental Statement (ES) to be submitted for certain projects. Some projects (including the drilling of wells, extended well tests) may not need an ES to be prepared if a preliminary assessment demonstrates to the satisfaction of the Secretary of State that the project is unlikely to cause a significant adverse environmental impact. In such circumstances a direction from the Secretary of State may be sought that an ES is not required using a PON15B. The PON15B must contain sufficient information about the proposed project, its expected location and an environmental assessment to provide a basis for a determination to be made. An Environmental Statement (ES) is required for exploration drilling in environmentally sensitive areas. In addition, the Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001 (as amended 2007) implement European Directives for the protection of habitats & species in relation to offshore oil & gas activities.

## Appropriate assessment

The Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001 (as amended 2007) implement European Directives for the protection of habitats & species in relation to offshore oil and gas activities. An Appropriate Assessment may be required prior to issue of consent dependent on the potential of the activity to have a significant effect on a Natura 2000 site.

## Consent to use and discharge chemicals during drilling

A permit is required in advance for the use of drilling and other chemicals offshore (Offshore Chemicals Regulations 2002). Permit application (the PON15B is the mechanism for this) includes mandatory risk assessment. All chemicals must have been tested and pre-screened and included on the approved CEFAS list. Any variation in use from the permit must have prior approval. Operators must report any permit breach to the regulator if prior approval has not been obtained. Chemical use and discharge must be reported at the end of the activity.

No organic phase drilling fluids may be used without prior authorisation (normally through the PON 15/Environmental Statement process), and discharge of cuttings to sea with a concentration >1% by weight of oil on dry cuttings is prohibited. (OSPAR Decision 2000/3 on the Use of Organic-Phase Drilling Fluids (OPF) and the Discharge of OPF-Contaminated Cuttings). Such OPF cuttings are reinjected to deep rock strata or shipped to shore for treatment/oil recovery and disposal at licensed sites.

## Consent to make discharges containing reservoir fluids

The Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations came into force during 2005 and have updated and largely superseded the Prevention of Oil Pollution Act, 1971 (POPA). A system of permits for oil discharges has been introduced to replace the POPA exemptions and more wide-ranging powers have been given to inspectors. Operators are required to regularly make reports of actual oil discharge. A Term Permit is required for any discharge of reservoir oil.

## Machinery space drainage

The Merchant Shipping (Prevention of Oil Pollution) Regulations, 1996 (as amended) give effect to Annex I of MARPOL 73/78 (prevention of oil pollution) in UK waters. They address oily drainage from machinery spaces on vessels and installations. Vessels and installations

are required to hold a valid UKOPP (UK Oil Pollution Prevention) or IOPP (International Oil Pollution Prevention) Certificate.

### **Oil spill contingency planning for mobile drilling units**

An Approved Oil Spill Contingency Plan is required to cover the drilling of a well. The plan must meet the requirements of the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations, 1998, and the Offshore Installations (Emergency Pollution Control) Regulations 2002. It must include an assessment of spill risk, response arrangements, and details of actions, interfaces training and exercises.

Vessels and drilling rigs are required to hold a current, approved Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with guidelines issued by the Marine Environment Protection Committee of the International Maritime Organisation.

### **Reporting of oil or chemical spills**

Operators are required to **report all oil and chemical spills**, regardless of size to the Coastguard, DTI and other relevant authorities using **PON1**.

### **Items lost overboard**

Every reasonable attempt should be made to recover other items lost overboard (PON2).

### **Regulation of waste disposal**

Wastes, except ground food waste, must be stored and taken to shore for disposal. (Merchant Shipping (Prevention of Pollution by Garbage) Regulations, 1998). Although the Environmental Protection Act 1990 does not extend to offshore installations, operators must ensure that offshore waste is handled and disposed onshore in accordance with the Duty of Care introduced by the Act and other onshore legislation such as Regulations applying to Special (Hazardous Waste in England and Wales) Waste and that relating to the management and licensing of waste sites. Food waste ground to particles 25mm or less may be discharged overboard but only if 12 nautical miles or more offshore.

## **A10.g Developments and production**

### **Installation of production facilities**

The Petroleum Act, 1998 provides the basis for granting licences to explore for and produce oil and gas. Under the terms of a Production Licence, licence holders require the authorisation of the Secretary of State before installing facilities for producing hydrocarbons and other activities.

### **Environmental impact assessment for developments**

Approval for **field development plans** and **consent for wells, extended well tests, incremental projects** and **production consents** are contingent on complying with the requirements of the Offshore Petroleum Production and Pipe-lines (Assessment of Environmental Effects) Regulations 1999.

Environmental Statement (ES) is mandatory for certain projects including new developments with expected production >500 tonnes of oil/day or 500,000 cubic metres of gas/day and new pipelines with expected production >40km in length and 800mm in diameter.

A number of projects (including the drilling of development wells) may not need an ES to be prepared if a preliminary assessment demonstrates to the satisfaction of the Secretary of State that the project is unlikely to cause a significant adverse environmental impact. In such circumstances a direction from the Secretary of State may be sought that an ES is not required using the appropriate Petroleum Operations Notice (PON15). The PON15 must, as far as possible, be a stand alone document and contain sufficient information about the proposed project, its expected location and an environmental assessment to provide a basis for a determination to be made.

### **Appropriate assessment**

The Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001 (as amended 2007) implement European Directives for the protection of habitats & species in relation to offshore oil and gas activities. An Appropriate Assessment may be required prior to issue of consent dependent on the potential of the activity to have a significant effect on a Natura 2000 site.

### **Consent to locate facilities**

The Coast protection Act (CPA) 1949 (as amended), provides that where obstruction or danger to navigation is caused or is likely to result, the prior written consent of the Secretary of State for the Department of Trade and Industry is required for the siting of the offshore installation - whether mobile or permanent. In practice, this means that consent must be obtained for each drilling operation and for all offshore production facilities. The application process includes risk assessment and consultation.

A Crown Estate lease may also be required in territorial waters.

### **Safety zones**

When surface structures (fixed and floating installations) become operational, safety zones with a radius of 500m are automatically created under the Petroleum Act, 1998. In the case of subsea facilities, application must be made to the Secretary of State requesting that a safety zone be established.

### **Use and discharge of chemicals**

A permit is required in advance for the use of chemicals offshore including drilling, well workover, production and pipeline chemicals (Offshore Chemicals Regulations 2002). Permit application (PON15B,C,D or F is the mechanism for this) includes mandatory risk assessment. Any variation in use from permit must have prior approval. Chemical use and discharge must be reported at the end of the activity. Chemicals are ranked by hazard, based on a PEC:PNEC (Predicted Effect Concentration : Predicted No Effect Concentration) approach.

### **Authorisation to install and operate a pipeline**

Pipeline Works Authorisation is required from the DTI for the use of, or works for, the construction of a submarine pipeline. The authorisation may include conditions for the design, route, construction and subsequent operation of the pipeline and requires a full consultation process.

A licence is required under Food and Environment Protection Act for all deposits in the marine environment (on or under the seabed), unless specifically exempt from the requirement (Deposits in the Sea (Exemptions) Order 1985), or the deposits are controlled by other legislation. For example, licences are required for injection of produced water or drill cuttings away from the site of production, and the deposit of rock on the seabed following pipeline installation.

## **Produced water**

OSPAR Recommendation 2001/1 (as amended) for the Management of Produced Water from Offshore Installations provides for a reduction in the discharge of oil in produced water by 15% over a five year period and a lowering of the discharge concentration from each installation to 30mg/l over the same period. The recommendation also includes a presumption against the discharge to sea of oil in produced water from new developments.

The Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations came into force during 2005 and have updated and largely superseded the Prevention of Oil Pollution Act, 1971 (POPA).

A system of permits for oil discharges has been introduced to replace the POPA exemptions, as well as introducing a Dispersed Oil in Produced Water Trading Scheme and more wide-ranging powers have been given to inspectors. Operators are required to make regular reports of actual oil discharge.

The guidance to these regulations states that “...*the point of departure for consideration of a new tie-back or drilling centre (which has commenced production after the commencement of this Scheme) is that there shall be no discharges of dispersed oil in produced water from the host offshore installation attributable to the new tie-back or and drilling centre.*”

The regulations are a mechanism to continue implementation on the UKCS of OSPAR Recommendation 2001/1 (as amended) and made provision for the introduction of the dispersed oil in produced water trading scheme.

## **Machinery space drainage**

The Merchant Shipping (Prevention of Oil Pollution) Regulations, 1996 give effect to Annex I of MARPOL 73/78 (prevention of oil pollution) in UK waters and address oily drainage from machinery spaces on vessels and installations.

## **Consent to flare or vent any gas**

Gas may not be vented or flared unless under a flare or vent consent from the DTI. The presumption is against disposal of gas by flaring.

## **Emissions from power generation etc**

The Offshore Combustion Installations (Prevention and Control of Pollution) Regulations, 2001 introduced Integrated Pollution Prevention and Control (IPPC) to offshore oil and gas combustion installations (power generation, turbines, fired heaters etc) with a combined total rated thermal input exceeding 50 MW. IPPC Permit conditions include provisions based on best available techniques, emission limits, and monitoring requirements.

## Emissions trading

Under the Greenhouse Gas Emissions Trading Scheme Regulations 2003 and Greenhouse Gas Emissions Trading Scheme Regulations 2005, combustion installations > 20 MW(th) input require a permit to discharge CO<sub>2</sub>. National Allocation Plan sets out caps for all UK installations in the Scheme based on CO<sub>2</sub>. The first Phase I will end in December 2007 and includes emissions from turbines, diesels and fired heaters from offshore oil and gas. Phase II of the Scheme covers the Kyoto commitment period 2008 to 2012. For Phase II, the UK intends to extend the scheme to include flaring from offshore oil and gas as well.

## Reporting of oil and chemical spills

Operators are required to **report all oil and chemical spills**, regardless of size to the Coastguard, DTI and other relevant authorities using PON1.

## Items lost overboard

Every reasonable attempt should be made to recover other items lost overboard (PON2).

## Oil spill contingency planning for developments

An **Approved Oil Spill Contingency Plan** is required to cover all offshore installations and oil handling facilities (e.g. pipelines). The plan must be submitted for approval at least two months in advance of operations. It must include an assessment of spill risk, response arrangements, and details of actions, interfaces, training and exercises as required by the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations, 1998, and the Offshore Installations (Emergency Pollution Control) Regulations 2002.

## Radioactive Substances Act

Onshore and offshore storage and disposal of **naturally occurring radioactive materials** (NORM) is regulated under the Radioactive Substances Act 1993 and operators are required to hold, for each relevant installation, **an authorisation** to store and dispose of radioactive waste such as low specific activity (LSA) material deposited in vessels and pipework or discharged in produced water. The Authorisation specifies the route and method of disposal. Records of disposals are required. The use, storage and disposal of **radioactive sources** are regulated under the same legislation.

A **registration certificate** is required to keep and use sources and records must be kept.

The regulators are in Scotland, the Scottish Environment Protection Agency; in England and Wales, the Environment Agency and in Northern Ireland, the Industrial Pollution & Radiochemical Inspectorate (DoENI).

## Waste disposal

**Wastes**, except ground food waste, must be stored and taken to shore for disposal (Merchant Shipping (Prevention of Pollution by Garbage) Regulations, 1998). Food ground to particles 25mm or less may be discharged overboard but only if 12 nautical miles or more offshore. Installations and vessels are required to have a Garbage Management Plan or equivalent.

Although the Environmental Protection Act 1990 does not extend to offshore installations, operators must ensure that offshore waste is handled and disposed onshore in accordance

with the **Duty of Care** introduced by the Act and other onshore legislation such as Regulations applying to Special Waste (Hazardous Waste in England and Wales).

Wastes for onshore disposal must be identified, described and labelled accurately, kept securely and safely during storage and transferred only to authorised persons with records of transfers (waste transfer notes) which are kept for at least two years (longer for Special/Hazardous Wastes). Carriers and waste handling sites require licensing.

## **A10.h Decommissioning programmes**

### **Decommissioning programmes**

Under the Petroleum Act 1998, operators proposing to decommission an installation must submit a **Decommissioning Programme** including an Environmental Impact Statement to the DTI for approval prior to any works being commenced. Consultation and monitoring is also required. DTI guidance indicates a presumption that offshore installations will be re-used, recycled or disposed of on land and that any exceptions to that general rule will be assessed individually in accordance with the provisions of OSPAR Decision 98/3.

## **A10.i Environmental regulators**

### **DTI Environmental Management Team and Environmental Inspectorate**

The DTI's Offshore Environment Unit is split into two teams, the Environmental Management Team and the Offshore Environmental Inspection Team.

The Environmental Management Team (EMT) is responsible for the environmental assessment of offshore oil and gas activities, and for the administration of environmental legislation such as the Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999; the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001; the Offshore Combustion Installations (Prevention and Control of Pollution) Regulations 2001; the Offshore Chemicals Regulations 2002; and the European Union Emissions Trading Scheme Regulations 2003.

The EMT coordinates the review of applications or submissions required under various legislation, for example environmental statements, applications for directions confirming that an environmental statement is not required, applications for chemical permits, and applications to undertake seismic surveys and application for combustion installation permits.

The EMT is also responsible for providing environmental advice and increasing the environmental awareness of operators, and for encouraging operators to use best environmental practice (BEP) throughout their activities.

The Offshore Environmental Inspectorate is responsible for ensuring that operators comply with environmental legislative requirements and ensuring that new licence applicants have satisfactory procedures in place to operate in a manner which reflects best environmental practice. In support of this, all offshore installations are inspected and operators are encouraged to use Best Environmental Practice (BEP) in all activities.

The Offshore Inspectorate Unit also carries out investigations into breaches of legislation.



In consenting decisions the DTI takes advice from a range of agencies and departments for example the JNCC, CEFAS, FRS, DoENI, MoD etc

Any development within nearshore waters will be subject to controls additional to those described above, for example, discharges to controlled waters would also come under the remit of the Scottish Environment Protection Agency, Environment Agency or DoENI. Onshore waste disposal and the Radioactive Substances Act are also the remit of these agencies.