

14 ENVIRONMENTAL MANAGEMENT

14.1 INTRODUCTION

The installation of the Beatrice Demonstrator WTGs, and their operation, would be managed within the context of Talisman's existing environmental policy and management system.

This section:

- *summarises the important elements of this policy and system*
- *outlines some of the measures that will be incorporated in the project-specific environmental management plan*
- *identifies some of the ongoing monitoring and survey programmes that will be conducted during the installation and operational periods.*

14.2 TALISMAN COMPANY POLICY

A copy of Talisman's Safety, Health and Environmental Policy is provided in Appendix 1, which underlines Talisman's commitment to protect the environment by working to minimise the impact of its activities. The company aims for continuous improvement in environmental performance through effective project planning and implementation, emission reduction, waste minimisation, waste management, and energy conservation.

The key aims of Talisman's Safety, Health and Environmental Policy are to:

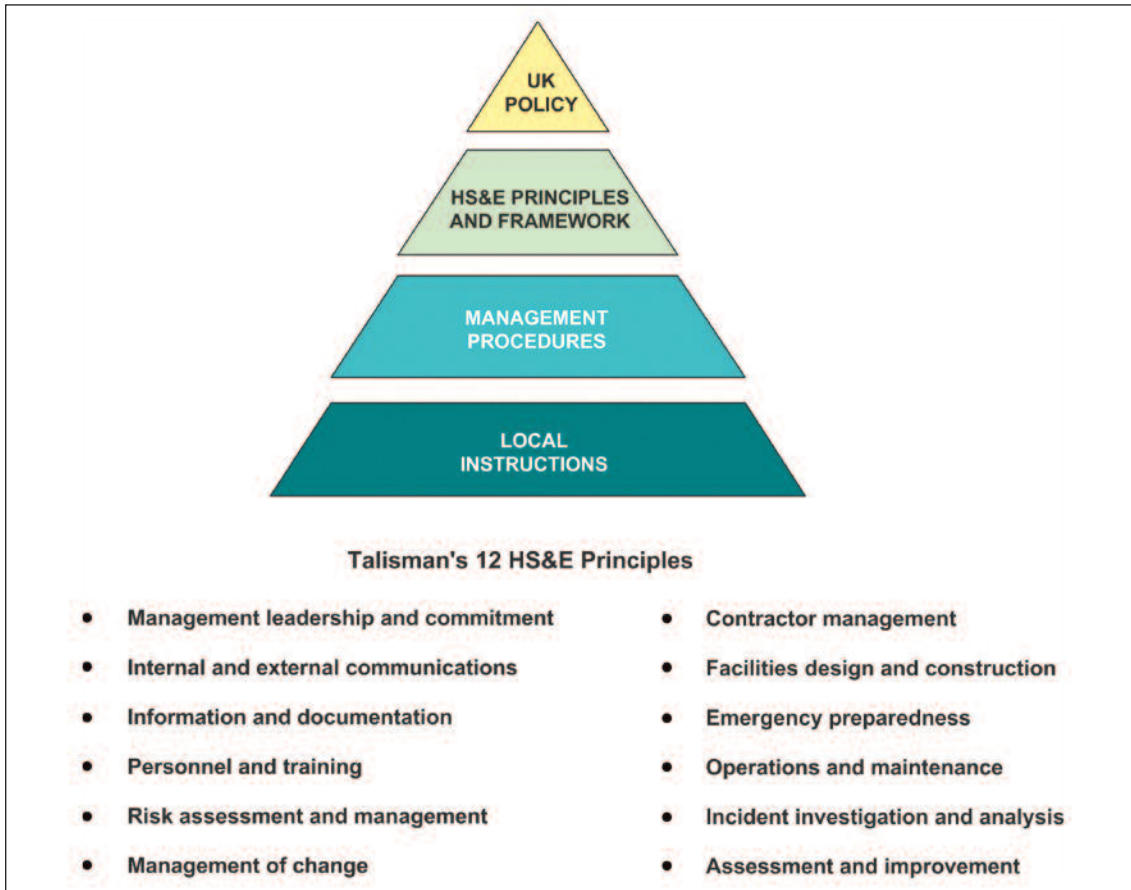
- *provide the necessary training*
- *follow the relevant standards*
- *conduct hazard and risk assessments to identify and manage any present or future risks in company operations*
- *develop systems of work which are safe and free from risks to the environment and comply with regulations*
- *ensure compliance through audits and inspections*
- *manage emissions and discharges, and eliminate unnecessary waste.*

14.3 POLICY IMPLEMENTATION AND ENVIRONMENTAL MANAGEMENT SYSTEMS

The Board of Talisman Energy Inc sets the overall Policy, which applies to all the company's activities worldwide and to the whole workforce. The Vice President of Talisman Energy (UK) Limited and the Executive Vice-President, International Operations, are responsible for ensuring that this Policy is properly implemented and resourced in the UK. Line management have the primary responsibility for complying with this Policy and to communicate it

to their workforce. The responsibilities of key staff are laid out in the Talisman Energy (UK) Policy on SH&E (Talisman, 2002). Talisman's environmental management system is an integral part of the Safety, Health and Environment Management System is based around 12 key elements (Figure 14.1).

Figure 14.1 Talisman's SH&E management system and principles.



Principle 12, which covers Environmental Management, highlights:

- *who is involved in environmental management*
- *key controls, such as auditing, environmental reviews and action tracking*
- *key processes, such as environmental impact assessments and monitoring*
- *relevant documents, such as Talisman's SH&E Policy, audit reports and Environmental Statements*
- *typical performance measures, such as the number of audits carried out, the number of new measures introduced to minimise environmental impact and the number of actions to support local community organisations.*

For each of the key elements, there is a series of given SH&E practices supported by platform- or rig-specific practices and procedures as appropriate.

Responsibility for implementation of Talisman's environmental policy in the North Sea lies principally with the Environmental Officer. Each offshore operation reports chemical usage, oil-in-water returns, flaring, cuttings and other drilling discharges to the appropriate staff, who in turn submit relevant reports to the DTI and Scopec. It is the Environmental Officer's responsibility to ensure that this is carried out collectively and in a timely manner.

14.4 PROJECT-SPECIFIC ENVIRONMENTAL MANAGEMENT

The ES will be used as a management tool throughout the project implementation stage of the Beatrice Demonstrator Project to ensure good environmental performance. Careful tracking of any issues raised will be carried out through the use of an action-tracking database.

Project-specific procedures will be in place for a number of operations during the installation phase. This project environmental management plan is currently being developed, and as indicated in several sections of this ES it will include the following safeguards:

- *liaison with fishing organisations and fishermen, to ensure that they are aware of pending offshore operations*
- *publication of proposed WTG positions and pending operations, in "Notices to mariners"*
- *written, agreed protocols for reducing the possible exposure of marine mammals to loud noise from piling operations*
- *the provision of marine mammal observers throughout piling operations*
- *the use of passive acoustic monitoring (PAM) prior to piling operations, to help confirm the absence of marine mammals in immediate area before operations begin*
- *a code of conduct for the use of small craft during installation and subsequent maintenance and monitoring excursions, to minimise potential harm to marine mammals in the area, and those that might visit the WTGs once in place*
- *an amendment to the existing Beatrice oil spill contingency plan, to cover the installation operations for the WTGs*
- *providing or ensuring that all offshore personnel involved in the offshore installation operations have an appropriate level of environmental awareness training*
- *ensuring that vessels chartered for offshore operations meet Talisman's required environmental standards, and in particular have the necessary on-board equipment for identifying, segregating, storing and handling refuse and waste, and for dealing with small spills of hydrocarbons.*

14.5 INTERFACE WITH CONTRACTORS

For the purposes of managing the potential environmental effects of the offshore operations to install and commission the WTGs and umbilicals, Talisman will put in place "bridging documents" with each of the prime contractors. These essentially ensure that the environmental performance of the contractors meets the level and standard required by Talisman; they help to align the contractors' environmental management systems with Talisman's. The bridging documents will lay out the management structure and division of responsibilities, the methodology for execution of the work programme, and the emergency response procedures. The contractors' management systems are the primary management control on-board the vessels and other contractors' safety management systems will be consistent with that control.

14.6 SUMMARY OF ONGOING MONITORING PROGRAMME

14.6.1 INTRODUCTION

Talisman is committed to the continuing monitoring and investigation of the Moray Firth and the Beatrice area. Discussions have been ongoing with the University of Aberdeen Lighthouse Research Station to design a research programme for 2006. The studies currently under consideration are summarised below.

14.6.2 BIRD RADAR

The auto-tracking system in the present system installed on Beatrice Alpha is limiting data collection, and has had some problems tracking birds as they are too small for the standard shipping software tracking system to register them. Although this has resulted in some limitations to the useful data produced from the present system, there are options for improvement: The favoured option is a software package that will help reduce the amount of “clutter” within the readings and enable tracking of very small targets. It is hoped to trial this software over the installation period.

14.6.3 PLATFORM-BASED ORNITHOLOGICAL SURVEYS

Talisman is committed to continuing the ornithological surveys from the existing Beatrice AP platform. Plans are being developed to enhance the information obtained from the surveys, including undertaking transect surveys by boat through the site after the WTGs have been installed. This would provide data on bird density, behaviour and flight height in relation to the operating WTGs.

14.6.4 BOAT-BASED ORNITHOLOGICAL AND MARINE BIOLOGICAL SURVEYS

Boat-based surveys are being planned for 2006, and are likely to take place in the period April to June. Discussions are continuing to finalise the structure of these offshore programmes in order to make the most of the time spent at sea. At present, it is suggested that the programme includes:

- *gathering data on bird use of the site (as described above) by running transects through the Demonstrator site and a control site. This should help overcome the patchiness of the data in terms of area and time*
- *visiting the locations of the TPODS, to check their status and also undertake corresponding visual confirmations of the species in the area to aid distinguishing the vocal trains recorded by the TPODS*
- *deploying CTD to examine the oceanographic environment on a smaller scale*
- *undertaking underwater video sampling, to obtain data on the presence and density of fish.*

These plans would be able to produce both point sampling and transect data for cetaceans, birds, underwater noise and oceanographic data.