**Annex 1**

**HSE - Hazardous Installations Directorate - Land Division**
**National Field Delivery Unit**

# Operational Strategy for Pipeline Safety 2002/2005

## Summary

This paper describes the HID Land Division National Field Delivery Unit three-year operational strategy for pipeline safety for the period 2002-2005. It is applicable to all onshore and offshore pipelines subject to the Pipelines Safety Regulations 1996.

The overriding theme is to maintain or improve the safety of pipelines through better design, construction, operation and maintenance. Priority is given to the prevention of failure but attention is also given to the way the industry and others respond in the event of pipeline incidents and accidents. The aim is to ensure the safety of those who work with pipelines and those who could be affected by them including members of the public and workers who also live offshore.

Intervention by pipeline inspectors in the Unit is a combination of assessment, inspection, accident investigation, intelligence gathering, giving advice and support and through other contacts with those who are involved with pipelines, including individual operators, industry groups, government departments and authorities, research organisations and professional institutions. Enforcement action will be taken in line with the Health and Safety Commission's policy where there are breaches in the law.

**HSE - Hazardous Installations Directorate - Land Division**
**National Field Delivery Unit**

# Operational Strategy for Pipeline Safety 2002/2005

## Introduction

1 This is the operational strategy for pipeline safety prepared by the National Field Delivery Unit (NFDU), part of the Hazardous Installations Directorate (HID) Land Division which has the operational lead within HSE for pipeline safety. HSE is responsible for ensuring that pipeline risks are properly controlled by those who manage them and to improve, or at least maintain, the good safety record for transportation by pipeline in this country.

2 This three-year rolling strategy has been developed following consultation within HSE, with industry groups, professional bodies and other interested stakeholders. It is reviewed annually with the aim of producing an updated and clear statement of the major issues and NFDU's approach to playing its part in securing pipeline safety.

3 NFDU has a companion strategy - "Operational Strategy for the Natural Gas Supply Industry 2002/2005" - which may be relevant to pipelines conveying natural gas.

## Scope

4 The strategy applies to all pipelines subject to the Pipelines Safety Regulations 1996 (PSR) - ie major accident hazard pipelines (MAHPs) both onshore and offshore, the medium and low pressure natural gas distribution system and other non-MAHPs.

## Overview of strategy and the role of NFDU

5 Nearly all pipelines on land pass through areas accessible to the general public and require an effective regulatory regime for the protection of the public.

6 Pipelines are a potential source of danger to offshore installations and vessels and an equally effective regime is required to protect those who live and work in this environment.

7 Pipelines can present serious hazards to individual workers involved with construction or when working on, or near, operating pipeline systems (for example, subsea divers and those involved in excavation works) - these risks also need to be properly controlled.

8 The majority of pipeline systems, including major accident hazard pipelines, have a very good safety record in this country and one of the priorities of the strategy is to ensure this level of safety is maintained or even improved upon.

9 The highest priority is given to the prevention of pipeline failure. A precautionary approach is adopted to ensure that pipelines are properly designed, built and operated so that the risks of failure are reduced to as low as reasonably practicable.

10 Even well designed, constructed and operated pipelines can fail and proper provision for emergency arrangements and plans should exist to control and mitigate the effects of incidents and accidents.

11 Pipelines are themselves vulnerable to damage from a variety of causes, particularly from third party interference and measures should be in place to control or mitigate these hazards. There should be increased awareness of the existence of pipelines and the implications of damaging them by those who may carry out ground works.

12 Enforcement action by HSE will be taken in line with the Health and Safety Commission's policy where there are breaches of health and safety law - especially where the safety of the public and those at work has been jeopardised.

13 Support will be given to pipeline safety research and development especially where Joint Industry Projects (JIPs) are proposed.

14 Contacts will continue with other government bodies and the industry for the development of pipeline legislation, guidance and standards. Links will be maintained with professional institutions, trade associations and standards making bodies. Pipeline safety issues will be publicised appropriately.

## Strategic themes

### Pipeline legislation and operational policy

#### *European Union Pipelines Safety Instrument*

15 It is probable that the European Union (EU) will start moves to introduce a Pipelines Safety Instrument within the period of this paper and technical and other support will be provided to HSE's Safety Policy Directorate (SPD) during discussions with industry and other government departments and during negotiations with the relevant EU Commission.

#### *Pipelines Safety Regulations 1996 (PSR)*

16 NFDU will continue to work closely with SPD, providing support on a range of issues concerning PSR including changes as a result of the agreed mains replacement programme for iron gas pipes, gasoline pipelines, testing emergency plans by local authorities and additional duties on pipeline designers and constructors.

17 There is active support for the development of a code of practice for testing pipeline emergency plans, in conjunction with the United Kingdom Onshore Pipeline Operators Association (UKOPA) and the Emergency Planning Authorities.

**Pipeline risk management**

18 Further development to aid the understanding of pipeline risks and the assessment of risk and reliability based systems used by the industry is proposed.

19 Algorithms are to be developed to help manage inspector resources more effectively and to ensure that assessment, verification and inspection effort is targeted while ensuring that the public and those at work are properly protected.

20 Continued support is to be given to UKOPA for its leakage and incidents databases and to the United Kingdom Offshore Operators Association (UKOOA)/Institute of Petroleum for the development of the Pipeline and Riser Loss of Containment Study (PARLOC).

21 The HSE will continue to review pipeline accident data from the Reporting Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) and other sources.

22 A project proposal “Public Perception of Risks from MAHPs” has been put forward under the Competition of Ideas programme.

23 Guidelines are being developed to help industry and HSE ensure that all risks are adequately addressed when increasing the operating pressures of pipelines above that for which they were originally designed and/or above the normal limits recognised by established standards.

24 Reliability based inspection and maintenance programmes for pipeline systems are being used increasingly. Guidelines for such examinations and their evaluation are to be developed.

25 Additional models and guidance are to be developed to ensure that risk assessments associated with offshore pipelines (including risers) can be properly evaluated against HSE’s own criteria – for example, for consideration of subsea isolation systems.

**Enforcement**

***Pipelines Safety Regulations 1996***

26 A range of assessment and inspection activities are planned over the period. A proactive approach is adopted from the concept design stage, including routing, through to construction, commissioning, the operational phase and on to decommissioning for most MAHPs. There will be more emphasis on systems where operating pipelines may not be a core business activity.

27 Enforcement activities by NFDU will include:

- responding to statutory notifications under regulations 20, 21 and 22;
- inspecting new and modified pipeline designs, including routing;
- acting as focal point within HSE for communication with the Department of Trade and Industry for Petroleum Act 1998 and Pipelines Act 1962 pipelines;
- inspecting pipeline fabrication and construction activities;
- inspecting pipeline operations and safety systems;
- inspecting pipeline schemes of inspection and maintenance;
- inspecting and auditing major accident prevention documents (MAPDs);
- inspecting arrangements by pipeline operators and local authorities for responding to incidents, emergencies and major accidents; and
- investigating pipeline incidents and accidents (in conjunction with others in HSE where appropriate).

28 Non-MAHPs may generate significant hazards and risks. An intervention strategy is to be developed by NFDU to ensure that these pipelines are properly regulated under the Pipelines Safety Regulations.

29 MP and LP gas distribution and service pipe networks which comprise the largest proportion of the pipeline infrastructure in this country are a special category of non-MAHPs and NFDU will monitor progress with iron pipe replacement programmes.

30 NFDU intends to expand the inspection process to include design houses as well as paying more attention to pipeline constructors and fabricators.

***Safety case assessment, verification and inspection***

31 Assessment, verification and inspection will continue for pipeline aspects of safety cases required under the Offshore Installations (Safety Case) Regulations 1992.

32 Assessment, verification and inspection will continue of pipeline related aspects of Network Emergency Co-ordinator (NEC) and Gas Transporter safety cases under the Gas Safety (Management) Regulations 1996.

***Treaties and Memoranda of Understanding***

33 The implementation of a number of treaty arrangements for pipelines between the UK and other countries, including Norway, Republic of Ireland and the Netherlands is the responsibility of NFDU. Pipeline Inspectors also act of behalf of the Isle of Man for pipeline activities in Manx waters and on the island.

***Third party interference***

34 NFDU is involved with a number of activities, including supporting SPD during its participation in the Pipelines Industry Guild One-call Initiative. The Unit is working with Transco to provide high profile responses by HSE to third party damage reports involving MP natural gas mains, with the objective of raising awareness of the presence of buried pipelines and associated plant and to take enforcement action where appropriate.

***Other initiatives***

35 NFDU will develop new strategies for dealing with operators of an ageing pipeline population and with pipelines reaching the end of their original design lives. This will include methods of assessing proposals for revalidation, rehabilitation as well as decommissioning and abandonment of pipelines.

### *Occupational health issues*

36 NFDU will help identify health and safety risks specific to those involved with pipelines and ensure that these areas are addressed in future inspections.

37 Similarly, Pipeline Inspectors will continue to make contact with pipeline worker representatives during routine inspections to identify areas of concern with health and safety.

## Other pipeline developments

### *Standards*

38 NFDU will continue to support the development of a number of pipeline related standards in association with Methodology and Standards Development Unit (MSDU) in HID.

### *Revitalising Health & Safety*

39 NFDU will aim to discover and publicise best practice - an important element identified in “Revitalising Health and Safety”.

### *Local initiatives, projects and R&D*

40 Local initiatives and projects may be carried out by NFDU on its own or in conjunction with other HSE Directorates or other government departments. For example, assessing offshore pipeline emergency shut down valve performance, corrosion management of offshore pipelines and risers and the extension of high pressure/high temperature operations.

41 NFDU will continue to support MSDU in identifying, developing and managing pipeline related research and development where there are clear benefits in terms of safety. For example:

- the development of a ready-reckoner for costs of pipeline incidents and accidents;
- establishing the suitability of polyethylene pipe for gas distribution at pressures up to 16 bar; and
- standards and guidance for integrity verification of offshore riser caissons.

## Liaison and publicity

42 Contact is to be maintained with the following organisations:

- government departments and regulatory bodies (eg DTI and DTLR), local authorities and other agencies;

- international bodies such as Norwegian Petroleum Directorate, Eire Department of Energy, Manx Government, Northern Ireland Department of Economic Development, European Pipeline Regulatory Authorities, USA Office of Pipeline Safety, Canadian National Energy Board, etc.;
- professional bodies (eg Institution of Gas Engineers and Managers, Institution of Mechanical Engineers, etc.) and trade associations (eg UKOOA Pipelines Sub-committee, UKOPA, Pipelines Industries Guild, etc.); and
- consultants, pipeline design houses, pipeline contractors, manufacturers of pipe and other equipment, etc.

**Development and training**

43 A number of guidance and training packages are to be developed for HSE's own inspectors:

- the development of an enforcement model suitable for the quasi-permissioning regime for pipelines;
- the development of guidance for handling and assessment of PSR notifications; and
- the development of training packages for investigations of pipeline incidents and accidents.

44 NFDU will continue with its links with training organisations such as GWINTO (Gas and Water Industries National Training Organisation).