UKOPA

United Kingdom Onshore Pipeline Operators' Association

Good Practice Guide

Major Accident Hazard Pipeline, Emergency Response Plan, Guidance on Testing

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The guidance in this document represents what is considered by UKOPA to represent current UK pipeline industry good practice within the defined scope of the document. All requirements should be considered guidance and should not be considered obligatory against the judgement of the Pipeline Owner/Operator. Where new and better techniques are developed and proved, they should be adopted without waiting for modifications to the guidance in this document

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1	September 2016	9	Revised to UKOPA/GPG/010 Ed 1 (Updated to Good Practice Guide format with minor editorial changes – no material changes)
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CONTENTS

1 INTRODUCTION

The Pipelines Safety Regulations (PSR) 1996 currently place a duty on pipeline operators to have emergency procedures in place (Regulation 24) and Local Authorities to prepare emergency plans for Major Accident Hazard Pipelines (MAHP) (Regulation 25). This document has been produced by UKOPA to provide guidance to parties involved in the testing of emergency plans for MAHPs.

As in the regulation guidance when preparing the any emergency plan, the authors should have consulted the operators of the pipelines subject to the Regulations, the Health and Safety Executive, the emergency services, and other appropriate agencies.

References to technical terms, terminology and associated detail have been produced in the plans following consultation with individual pipeline operators and from reference to.

- Statutory Instrument 1996 No. 825: Health and Safety, The Pipelines Safety Regulations 1996
- Health and Safety Executive 'A guide to the Pipelines Safety Regulations' 1996 (HSE L82)
- Emergency planning and preparedness: exercises and training, HM Cabinet Office (Access here)
- Civil Contingencies Act (2004), Emergency Preparedness Guidance (2012) and accompanying guidance (Access here)
- Joint Emergency Services Interoperability Programme (JESIP)

This document should be used in conjunction with the UKOPA good practice guides.

- Major Accident Hazard Pipeline Emergency Response Plans: Emergency Plan Template (UKOPA/GPG/011)
- Major Accident Hazard Pipeline Emergency Response Plans: Testing and Exercising Pro-forma ((UKOPA/GPG/012)

There is now a comprehensive range of documents produced by HM Cabinet office which covers a range of guidance, which have been developed from the CCA as well as lessons learnt and should always be considered for review when developing plans and exercises.

2 SCOPE AND APPLICATION

2.1 Scope

The guidance in this document is applicable to all pipelines operated by UKOPA members that are classified under the PSR as MAHP. The guidance is also generally applicable to other non-MAHP pipelines operated by the UKOPA member companies although it should be noted that there is not currently a legal requirement to exercise or test arrangements for these pipelines (Regulation 12). It should be noted however that products harmful to the environment must have environmental response plans in place and could follow the good practice demonstrated within the documents.

This document does not look at the mechanics of a response nor repair techniques but the holistic methodology and process that should be prepared and tested prior to plan activation.

2.2 Application

Under the PSR there is currently no explicit requirement for periodic testing and exercising pipeline emergency plans, but Regulation 24 does direct the operator in that:

> *"The operator shall ensure that the organisation, arrangements and procedures referred to in paragraph (1) are tested, by practice or otherwise, as often as may be appropriate."*

Regulation 25 has similar direction for Local Authorities in that:

> *"In discharging their duties, …….. involve checking and testing the various components of each plan during its development."*

However it is recognised that the testing and exercising of such plans are beneficial and allow appropriate evaluation and scheduling of such exercises or testing to take place within individual companies.

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Operators must be aware that The Civil Contingencies Act Regulations require Category 1 (e.g. fire and rescue) responders to include provision for the carrying out of exercises and for the training of staff in emergency plans. Therefore such organisations may request assistance and cooperation in their legal obligations.

3 PIPELINE EMERGENCY PLANS

The Regulations require a pipeline operator to establish emergency procedures for pipelines which have the potential to cause a major accident. The Regulations also require a Local Authority to prepare emergency plans for such pipelines.

Emergency plans are required to provide an additional safeguard so that, in the unlikely event of an emergency involving a MAHP, protection could be provided to members of the public whose health and safety might be affected.

The HSE have defined the aim of an emergency plan as.

> "To detail action to be taken to minimise the consequences to the health and safety of people in the event of an emergency involving a major accident hazard pipeline."

3.1 Purpose of Local Authority Emergency Plans

The purpose of a Local Authority emergency plan is to ensure that the response of all key stakeholders to an accident protects the public and is co-ordinated with the aim of working together, saving lives, reducing harm. It is critical that pipeline operator emergency arrangements and procedures and Local Authority emergency plans dovetail to provide a comprehensive and effective response to emergencies.

It is important that the interpretation and approach between local authorities, pipeline operators, emergency services and other key stakeholders is clear and allocation of responsibilities in the event of an accident is transparent, so that the requirements for involvement in response are clearly understood.

3.2 Considerations

There is no provision for charging by the Local Authorities to pipeline operators for testing of emergency plans. Before any test of a pipeline emergency plan is conducted, the Local Authority should reach agreement with the operator on the scale and scope of the test. Consideration should be given to involving all relevant parties (including the Strategic level stakeholders).

3.3 Pipelines

As major accident hazard assets, pipelines have particular characteristics which are likely to affect the planning and resourcing of emergency plan and procedure tests and should be taken into account. The scope and scheduling of any planned testing covering specific aspects may need to accommodate specific local requirements. Tests should be planned and co-ordinated to be efficient and effective and to maximise the value obtained. An auditable process for documentation of programmes, decisions and actions raised in testing of pipeline emergency plans which demonstrates compliance with the Regulations is therefore recommended.

Regulation 3 defines the meaning of 'pipeline'. An emergency plan has to apply to all parts of a MAHP, not just the buried pipe sections. For example, natural gas pipelines will include block valve sites, offtakes, pressure reduction stations and compressor stations etc. However, sites used for storage and gas terminals are not part of the pipeline.

3.4 Testing of Emergency Plans – Aims and Objectives

The duties and guidance for the preparation of emergency plans for MAHPs are defined in PSR 1996. This document covers guidance relating to the testing of emergency plans and procedures. The document stresses the importance of dovetailing operators' arrangements with those of the Local Authority, and the importance of active co-operation and co-ordination during an emergency.

Exercises have three main purposes:

- To validate plans (validation)
- To develop staff competencies and give them practice in carrying out their roles in the plans (training)
- To test well-established procedures (testing)

Testing of plans and procedures should ensure that communication information is correct, communication links are active, responsibilities are clear and complete, and all aspects of response to the emergency are covered.

Testing offers local authorities, emergency services and pipeline operators a valuable opportunity to build up levels of understanding that can be reflected in the review and subsequent revision of both the pipeline emergency plan, and other emergency response plans. Experiences gained and lessons learned also have a transfer value, and thought should be given as to how they might be shared on a wider basis.

On behalf of UKOPA, the Emergency Resilience Planning Work Group (ERPWG) will, where possible, review exercise reports, conduct post-exercise appraisals and extract the learning obtained to share with Operators.

3.5 Characteristics Particular to Pipelines

As major accident hazard assets, pipelines have particular characteristics which require consideration when planning and co-ordinating emergency plan tests. These characteristics are summarised as follows:

- Pipelines are long, linear distributed assets which are laid across 3rd party land and can cross boundaries of several Local Authorities and/or countries.
- Pipelines are generally remotely located in rural areas, are generally unmanned.
- Most pipelines are buried, so the general public may not be aware of pipeline presence/ location.
- The PSR do not require information about a MAHP to be supplied to the public by the Local Authority or pipeline operator.
- Emergency Contact Centres, control rooms and emergency control rooms/incident management rooms may be remote and considerable distances from the scene.
- In the event of an incident, the Emergency Services are likely to be the first to be notified and could be the first to arrive at the scene of the incident.

- Rendezvous points may not be known in advance.

The above characteristics are likely to affect the scope, scale and scheduling of reasonable emergency plan tests and such issues should be clearly documented and reflected in any schedule of testing.

Due to the pipeline running over a substantial distance its route may be in remote or rural areas; suburban or commercial areas; or heavily industrialised areas and, therefore, planning must be as flexible as possible. The emergency response plan should include a process in which the pipeline details, route and infrastructure are reviewed to identify:

- New additions and major modifications to the pipeline (including change of operator).
- New developments in the vicinity of the pipeline.
- Any changes in organisation of any party involved in emergency response.
- Advances in technical knowledge, particularly those which may lead to a better understanding of hazard and risk consequences.
- Knowledge gained as a result of previous major incidents and/or exercises.

3.6 Testing of Characteristics Particular to Pipelines

Based on the characteristics described above, the following aspects are of particular importance in testing of pipeline emergency plans:

- The diagnostic period – including initial reporting and mobilisation.
- Communication cells between all agencies.
- Interface with the media (including social media) and provision of information to the public.

3.7 Testing

Where a pipeline carries across several Local Authority areas and is controlled by the same operator, the scope for joint testing arrangements should always be considered by the respective local authorities in an effort to avoid any unnecessary duplication of resource and effort, by all likely to be involved. Likewise, where multiple pipelines run through a Local Authority boundary then combined testing can also be considered. Where joint testing is not appropriate, it is important that local authorities agree phased test arrangements with the operator.

In planning the extent of test arrangements, the Local Authority should set out to reach agreement with the pipeline operator, the emergency services, and adjacent local authorities on the arrangements to be put in place. An exercise planning meeting(s) should be arranged which fully documents, as an auditable stage in the local authority's management of the programme of testing, the aim, objectives, scope, and scale of the test. The elements of the plan to be assessed should be clearly defined, together with the programme of testing of other aspects of the plan to demonstrate that all relevant aspects are tested. The meeting(s) should confirm and record agreement between the Local Authority(s) and pipeline operator(s) regarding all aspects of the operator's involvement in the test.

3.8 Objectives

The key objectives of any test are:

- To validate the pipeline emergency plan.
- Test characteristics particular to pipelines.
- Provide learning opportunities.
- Ensure the response of pipeline operators, emergency services and other key partners dovetails under the Local Authority plan.
- Ensure that programmes, decisions, and actions raised in testing pipeline emergency plans are auditable.

3.9 Scope

The scope of the test should cover the characteristics particular to pipelines and should be sufficient to validate the plan and ensure it is adequate.

The scope of a pipeline emergency plan test would normally include:

- Define what, how and when to test.
- Incident identification.
- Process for establishing and maintaining communications.
- Strategy for mobilisation of resources.
- Emergency response by all agencies.

While excising a plan would not normally occur over prolong period of time, the deployment of welfare facilities (staff and public), stand down, recovery and restoration, should be considered and were deemed necessary tested in their own right.

4 METHODS

Various methods can be applied to the testing of pipeline emergency plans:

4.1 Communication Exercises

Communication exercises test the essential direct links, contact numbers and contact details which are required in the event of an emergency.

Communication exercises in which the direct communications links (methods) and contacts between key stakeholders are tested to confirm accuracy and reliability are an essential requirement.

4.2 Control post exercising

Control post exercising is the recommended method for testing communications, which is an essential component of the emergency plan and should be included in every test programme.

A control post communication exercise examines the adequacy of communications between all key players in an emergency. Testing in this way involves resources based at the posts and locations that they would assume in the event of an accident. This means that without deploying any resources, personnel work through the communications involved in the roles, decisions and actions that arise in response to an accident. The exercise may include simulating some of the potential problems that can be experienced during real incidents e.g. mobile black spots, or system overloads.

This type of exercise should identify the use of generic phone numbers, or discarded numbers. During plan activation being held in switchboards or “gatehouse” numbers slows and frustrates the efforts of responders and should be eliminated during such tests.

4.3 Tabletop Exercises

Tabletop exercises are based on simulation, not necessarily literally around a table top. Tabletop exercises bring together the appropriate personnel and resources in one place to work through their roles in the event of an emergency in a realistic way. Tabletop exercises are flexible and can test the response to more than one of the identified hazards involving realistic scenarios and a time line, which may be real time or may speed time up, they can be conducted.

By using this method, time outs can be easily incorporated to the day, which can offer essential time to stop, reflect and move on, or to simply move the scenario along in sensible manner. The round table approach brings together all the required personnel to one place, which aids the development of the relationships between all participants.

Utilising this approach, multiple local authorities and pipeline operators can participate in generic scenarios which give an opportunity for as many stakeholders as possible to understand the differences (and similarities) when dealing with differing authorities, operators, and product pipelines.

This type of exercise is particularly useful for validation purposes, particularly for exploring weaknesses in procedures. Table-top exercises are relatively cheap to run, except in the use of staff time. They demand careful preparation.

4.4 Seminar, Workshop or Discussion Based Events

These test exercises are aimed at informing participants about the organisation and procedures which would be invoked in response to an incident. This approach can be used to provide information on current developments, and generally focus on particular aspects of response to an accident. Whilst this may not be classed as an exercise this would encompass the requirements to develop depth of understanding so that plans can be relied upon to work effectively in an emergency.

When working in this environment employing a "red team[1]" to challenge each action in may be beneficial in developing understanding of actions of all decisions made from the plan.

4.5 Live Exercises

Live exercises involve the deployment of appropriate resources in a simulation of their actual response to an accident scenario selected from the identified hazards. Live exercises are expensive to set up on the day and demand the most extensive preparation..

Live exercises are a live rehearsal for implementing a plan. Such exercises are particularly useful for testing logistics, communications and physical capabilities.

Pipelines are often buried and invisible, developing credible scenarios for live play response will require sufficient space to understand the impacts of pipeline failure modes, therefore working on a pipeline is not necessarily the right place to play the scenario (why introduce risk to a MAHP?). There will also be a significant response to such a scenario therefore welfare and coordination of participants should be carefully considered.

4.6 Other methods of exercising

As technology advances additional options have emerged for evaluating the effective of pans and can also be considered as viable options , such as.

- Internet-based Communications Software.
- Information Technology.
- Virtual Reality Systems.

These systems allow realistic simulations of accidents and the response to them. Such systems have the potential to enable effective and practical testing, and to enhance the scope of the exercise by adding realistic visualisations.

[1] Red teaming is the practice of rigorously challenging plans, policies, systems and assumptions by adopting an adversarial approach. A red team may be an external or internal group that uses strategies to encourage an outsider perspective.

5 PLANNING AND CO-ORDINATING

The test scenario and the scope and scale of a test of the pipeline emergency plan should be agreed between local authorities, pipeline operators and emergency services at an exercise planning meeting, held before the test is conducted, and developed at any subsequent planning meetings required.

The exercise planning meeting should be fully documented, as an auditable stage in the management of the testing. The aims and objectives, scope, and scale of the test with respect to the elements of the plan which are being evaluated, including how the value of the test is maximised and how learning will be shared, should be clearly documented. The benefit of the test to all partners involved should be considered, to ensure that the value of the test is maximised at the earliest opportunity and learning is shared.

Pipelines cover large distances and are likely to cross the boundaries of several Local Authorities and emergency service organisations, so any tests should be planned to cover a practical geographic area which enables the interfaces between key partners to be examined.

Emergency plan tests should be supplemented by operational checks, for example; accessibility to critical locations on the pipeline route by the emergency services.

In selecting the geographic area for, and therefore participants in, the test, consideration of the use of Police Authority Areas is recommended, but other locally determined areas or groups may be determined. However, the selected geographic area should take account of local requirements and enable maximum benefit to be gained.

Where possible the test should involve more than one pipeline operator in order to ensure maximum benefit and learning. As pipelines are remotely located and their operation is unmanned, the diagnostic period may involve interfaces between the emergency services and all pipeline operators present.

Test programmes should be co-ordinated with adjacent areas to ensure reasonable involvement of the operational resources. In many cases, pipeline operators have responsibilities for pipelines which cross the boundaries of several Local Authorities and emergency service organisations. Test programmes should therefore be co-ordinated to minimise the disruption to operational resources caused by involvement in a number of different tests, and programmed with them to ensure plans are adequately assessed without placing unrealistic burdens on any of the participating agencies.

6 EVALUATION

The key stages test should be identified and reviewed in accordance with HS(G)65 principles, and each stage should be evaluated in a structured way to identify shortcomings, successes, learning points and actions. Once actions have been identified, a programme, responsibilities, and timescales to address these should be established.

Debriefings following an emergency plan test should be conducted in an open and blame free atmosphere. This should allow any problems in implementing the emergency plan to be identified, the reasons for the problems to be discussed and appropriate solutions to be considered.

Debriefings should be organised to ensure involvement by all relevant parties, and scheduled appropriately, i.e.

a) On the day multi-agency debriefing, involving all key stakeholders involved in the test.

b) Follow up meeting to obtain direct single agency feedback if required.

c) Test report – including a summary of learning points and actions with responsibilities and timescales for completion.

d) Communication of lessons learned to all stakeholders.

e) Ensure that lessons learned are fully captured and embedded into the next update / iteration of the MAHP Emergency Response Plan.

All lessons identified from exercises, which affect a multi-agency response, should be uploaded onto Joint Organisational Learning (JOL) Online. Locally, organisations should then implement change, to reduce the risk of the lessons identified at exercises reoccurring during the response to an incident.