PSR - notifications under regulation 22 - a discussion

Introduction

There has been some debate about this (and possibly some confusion about what should be notified) within HSE, the onshore industry and probably the offshore sector too.

It may be that additional guidance is necessary to elaborate on that which already exists in L82 “A Guide to the Pipeline Safety Regulations - Guidance on Regulations”. This note may form the basis of this additional guidance and is being offered to allow discussion about what is needed and what should be included.

HSE needs a regime where it is formally notified of changes:

- where there is a significant effect on the level of risk to those at work and others, and to be able to provide information about emergency planning distances and consultation distances for land use planning;

- where the integrity of the pipeline could be affected;

- which could have implications for safety cases for offshore installations and gas supply;

- where HSE may wish to act; and

- which are similar in nature and content of notifications for new pipelines.

Other changes should be dealt with via normal contacts between operators and inspectors, including inspection visits, revisions to safety cases, etc.

A balance has to be struck in two main areas:

- between not being notified of important changes/ being kept in the dark and being swamped with so many notifications that HSE is unable to handle them properly and their value diminishes; and

- between being given enough basic information to allow inspectors to make informed decisions about what further steps to take, including asking for further details, and being swamped with so much that effort is wasted just going through the detail to find potential problem areas.

Further guidance and comments

Note: the relevant schedule and existing guidance in L82 are repeated here with additional guidance and ***comments in green, bold italics.***

Application of regulation 22

Notifications apply to major accident hazard pipelines. For the purposes of notifications the meaning of "pipeline" should include:-

- ***a system of pipes connecting, among others: offshore installations; well sites; block valve sites; pig trap sites; compressor stations; pump stations; pressure or flow control sites; metering installations; manifolds; petrochemical, chemical or other industrial sites; etc.;***

- ***gas compressor stations (including main flow path pipework, bypasses, separators, filters, compressors, relief and vents, etc.) and other pump stations;***

- ***pressure or volume flow regulating installations (which may have pre-heaters, filters, separators, pressure control equipment, meters, relief and vents, bypasses, etc.);***

- ***block valve and pig trap sites;***

- ***the first valve (or first valve off a pig trap) within the premises of an industrial user;***

- ***all sub-sea installations which are "incorporated within" sub-sea pipeline systems; and***

- ***offshore installations that only have pipelines and interconnecting pipework associated with them.***

The following are excluded from the meaning of "pipeline" (this could be additional guidance under Schedule 1):

- ***storage sites, including gas holder stations, salt cavities, LNG sites, high pressure bullets, tanks, etc; and***

- ***gas reception [sub-]terminals and producer terminals.***

<u>Who notifies?</u>

Regulation 22(1) - clearly states "the operator".

Regulation 22(2) - does not specifically state that the operator is the person who has to notify HSE - could be another person acting on their behalf - but, we would normally expect the operator to do the notifying.

Regulation 22(3) - clearly states "the operator".

Change of operator

[Regulation 22(1) - change in operator or of his address.

There isn't much guidance on this notification in L82 (see paragraph 104) but it is assumed that it includes changes to the operator's name as a result of restructuring of a company or other re-organisation.]

Schedule 5

1. In relation to a change to the route or position of a pipeline, particulars in the form of maps or drawings of the new route or position.

2. In relation to a change to the safe operating limits of a pipeline, particulars of such change.

3. In relation to the start of major modification or major remedial work to the pipeline, particular of such work.

4. In relation to the conveyance of a new fluid, particulars of -
(a) such of its properties as are relevant to the health or safety of persons, and
(b) the intended or (if, in a case to which regulation 22(3) applies, conveyance has started) actual temperature, pressure and maximum rate of flow in the pipeline.

5. In relation to the start of decommissioning or dismantlement of the pipeline, particulars of steps to be taken in connection or (if, in a case to which regulation 22(3) applies, decommissioning or dismantlement has started) taken in connection with such decommissioning or dismantlement.

193 These notifications concern changes to a major accident hazard pipeline, its operation or environment which may have an effect on the pipeline integrity or level of risk from, or to that pipeline.

194 This would include prior notification of changes to the position of a pipeline, design intent (including change of use), safe operating regime, end of use or any change in the level of risk for any reason.

Content of notifications

The basic principle behind notifications under regulation 22 is that they provide information to act as a mechanism to trigger interest and/or some action by inspectors. Basic information should be supplied at the time of the notification but it should be complete enough to allow understanding of the nature of the change and its implications.

Another basic principle is that inspectors are only entitled to be notified about changes (or "in other cases") which the Law requires to be notified. However, more information can always be requested.

Notifications should always include the date the change is due to take place. The nature and content of a notification may depend on the circumstances of the work or project.

For example, a major upgrade or uprating project could involve a pipeline many kilometres long having along its length new or modified compressor or pump stations, pressure regulating installations, block valve sites and pig trap sites. A single notification could be made to include the whole pipeline system. This simple trigger may lead to regular contact with the operator and/or the project team during the project to discuss the detail and to allow the inspector to decide on what further technical and planning information will be required, what assessments and inspections will be needed, etc. It should not be necessary to include every detail affecting every piece of equipment along the pipeline route at the time of notification - but the detail given should be sufficient to allow the inspector to make a reasonable judgement about the implications of the notified change.

For a rolling programme of work (eg uprating a large part of the National Transmission System to 85 barg) it may be appropriate to have notifications at each stage of the larger programme, but it would be reasonable to expect that the inspector should be told the extent of the larger programme and how parts of the programme related to each other. On the other hand, it may not be necessary to expect to be notified separately of every change to each section of pipeline, block valve site, compressor station, pressure regulating installation, etc.

195 There is a clear distinction between pipeline works which involve risks to those actually carrying out the work and changes to the pipeline which could affect the level of pipeline risk. These notifications are not intended to include notification of pipeline works ***(- such as those needed under the CDM Regulations.)***

196 The level of pipeline risk can be affected or altered due to a number changes, some of which are similar to those principal items used at the notification of construction activities:-

- route or position
- service conditions
- pipeline materials and equipment

Changes in position or route

197 The proximity of a major hazard pipeline relative to occupied buildings or with respect to its position on an offshore installation is a safety critical item and has a significant impact on risk levels. For example, notifications would be required for changes to:-

- the route or position of a pipeline including pipeline diversions because of new developments or encroachments and for tie-ins to new installations, other pipelines, etc.;

- the route or position of pipeline risers on offshore installations including diversions to separate riser platforms.

Further guidance/examples

If a pipeline diversion is proposed then the new route of the pipeline should be shown on suitably scaled drawings. If there are special features, such as new sections of thick-walled pipe, extended sleeves, etc., these should be indicated but detailed drawings should be supplied on request. The notification drawings should indicate the reason for the diversion - eg show the position and size of the new development, route of the new road, etc.

If the pipeline position is to change at an offshore installation then drawings should be supplied showing the pipe runs, position of any relocated ESDV, etc. The relationship of the new route with critical areas on the installation (eg accommodation modules) should be shown.

Other examples:

- ***diversions due to new occupied building development such as housing, shops and schools. Also, diversions due to new roads, tramways or railways.***

[Question - should diversions be notified if the risk contours along the new pipeline route include or affect no more people than before? It is known that some in the onshore pipeline industry feel that they do not need to notify changes in position less than 100 metres from the original pipeline run - in their opinion this is no more than the thickness of a line on a 1:50000 scale map so is an unnecessary notification. [1:50000 scale was suggested by Major Hazards Assessment Unit a long time ago and parts of industry seem to be happy to stick to that limited scale.] However, moving a pipeline 100 metres closer to a school is significant if the original route was, say, 150 metres from the school. The issue is one of risk - a 100 metres lateral diversion on a deserted moor may have no effect on risk but it could have major implications near the borderline between a rural and suburban area - so, if the risk changes then notify.]

- ***diversions for encroachments - ie because of new dwellings near the pipeline (eg a new housing estate) or change in level of occupation of existing buildings (eg conversion of a nearby barn to housing)***

- ***diversion of a main trunk line involving new pipe runs to tie-in a new compressor station or new pressure regulating installation, which may be built some distance from the original pipeline route***

- ***enlargement of an existing (fenced) installation which may incorporate new equipment - eg a new pressure regulating installation***

- ***re-routing of pipelines in close proximity to offshore installations which could have an affect on the safety of the installation***

- ***re-routing of pipeline risers on offshore installation which may then pass closer to living quarters or other vulnerable areas***

- ***the repositioning of ESDVs on pipeline risers.***

Changes in fluid composition or type

198 If the range of properties of the conveyed fluid is expected to change from those specified or anticipated at the original design stage, then those changes are notifiable. Pipelines may be initially designed to transport one type of substance or fluid but there may come a time when there is a requirement to use the pipeline for other purposes - e.g. to change from oil production to water injection (to increase field life), from oil to gas, etc. The composition of a fluid may change significantly during the life of a field development - e.g. from sweet to sour gas or oil - this may or may not have been taken into account at the initial design stage.

Also, pipelines may be designed to operate with dry gas but changes to the status of offshore installations (ie to not normally attended) may only be achieved if the gas can be transported in a wet state - this may have a significant effect on the integrity of those pipelines and downstream facilities.

Changes in safe operating limits

199 Changes in the maximum (allowable) operating pressure of a pipeline (MAOP or MOP), whether temporary or permanent, are notifiable. Where a pipeline MAOP or MOP may have to be temporarily or permanently lowered following damage to the pipeline or because of developments in close proximity to the pipeline, this information should be notified to HSE.

200 A pipeline MAOP/MOP may need to be raised above the original design pressure in some cases. If this is proposed, it will probably have significant implications on the pipeline integrity and risk levels which must be fully evaluated.

The notification may be a simple statement giving particulars of the change from one pressure to another. This is a good example of where an inspector is likely to ask for more information and to become involved with the operator/project team. The inspector may wish to ask for details of any engineering assessments for the pipeline or risk assessments for the new operating conditions.

Also, information is going to be needed within HSE to inform emergency planning authorities of new hazard zones and to inform Methodology and Standards Development Unit/Land Division teams for setting consultation distances and other land use planning purposes. This is applicable to cases where pressures may be lowered. Also, some pipelines may no longer be subject to the additional duties under PSR and will not require land use planning controls or emergency plans.

End of Use of a Pipeline

201 Notification would be required of plans to decommission on a long term basis, "moth-ball" or finally decommission a pipeline.

This notification is not designed to include taking pipelines out of service to allow work to be carried out safely - eg purging a line before cutting and welding operations.

This notification should set out the steps to be taken to decommission, dismantle or "abandon" a pipeline. It is envisaged that a notification will comprise a time-tabled plan indicating when the line was to be taken out of service, how long the line was to remain decommissioned, a description of how the line was to be made permanently safe (eg by removal or by filling with inert material), etc.

For pipelines left in situ there may be a continuing duty to monitor the condition of the pipeline and a requirement for maintenance or remedial action - eg to ensure that the pipeline route remains safe and without danger as a result of decommissioning - some indication of what the operator was planning should be included in the notification.

Changes in Pipeline Materials and Equipment

202 Notifications should be made where changes are made to critical dimensions (wall thickness, diameter) of a pipeline such as installation of thicker-walled pipe sections for protection or proximity infringements,

This may comprise no more than a map showing where the changes are to take place and a brief description of the material and/or dimensional changes.

203 Replacement of pipelines or sections of pipelines (e.g. due to severe damage or corrosion) should be notified where the new material is different from the existing material. Steels of a different standard or strength may have been selected or materials may be changed from 'hard' pipe to flexible or composite pipeline sections (or vise-versa).

What is not Notifiable

204 Notification to HSE need not be made for:-

- any changes to pipeline not defined as a major accident hazard pipeline, unless that change results in that pipeline falling under the additional duties e.g. change of use

from conveying a low hazard fluid, such as stabilised crude oil, to an extremely flammable liquid or flammable gas ***[the guidance is not correct here - extremely flammable liquids are not dangerous fluids - but this may change soon for gasoline and similar fluids];***

- repairs to a pipeline following a reportable dangerous occurrence under the Reporting of Injuries Diseases and Dangerous Occurrences Regulations RIDDOR;

- replacement, on a like-for-like basis of components or sections of a pipeline, including flexible riser and pipeline replacement on a planned basis;

- minor adjustments to the pipeline operating system (control systems, leak detection, etc.);

- running repairs (slight surface damage repairs, coating and wrapping repairs, rectification of spans, replacement of cathodic protection systems, repairs to protective slabbing or concrete mattresses, etc.);

- routine inspection and maintenance work and the results of any surveys and changes to the inspection and maintenance scheme;

- pigging operations both routine and special operations, e.g. on-line inspection using intelligent pigs;

- re-testing of pipelines for leak tightness.

- ***replacement of equipment on sites (such as pressure relating installations or compressor stations) - for example, replacing filter banks or regulator streams. Normally, this type of equipment is within a fenced area and located away from the fence line. If the site, or part of it, is just being rebuilt to modernise it then is there a need for HSE to be notified? However, if the site equipment is being uprated or upgraded for higher operating pressures this could have an effect on the risk contours outside the boundary and becomes a significant change. All that may be needed for the notification is a statement about the changes in operating conditions and that equipment and plant is to be upgraded - the details about what equipment may need to be modified or replaced is a matter of detail and for the inspector to ask for if necessary.***

A.Thayne
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