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To:

All HID

THE HID FRAMEWORK FOR MAJOR HAZARD REGULATION

PURPOSE

To inform staff of the HID framework for major hazard regulation.

BACKGROUND

1. This SPC describes a framework for HID's major hazard activity, showing how permissioning is applied to the industries regulated by HID. It uses the COMAH and offshore regimes as examples, but the description applies across HID as a whole. It allows for the differences in legal requirements and for sector-specific activities.
2. A key aim for HID is the assurance of a dutyholder's effective management of major accident hazards. This means being satisfied with the approach to the identification and evaluation of major hazards, with the control measures provided and with the dutyholder's ability to maintain and improve them. This SPC describes how HID seeks this assurance.

THE NEED FOR A FRAMEWORK

3. In 2003 the Health and Safety Commission published a policy statement on permissioning, setting out their approach to dealing with major hazards. It describes ten principles, covering matters such as where permissioning would be introduced, what it would try to achieve, and how it would seek to achieve it. HID needs to apply these principles to its permissioning work. Account also needs to be taken of the Major Hazards strategic programme, which may affect how the principles are implemented.

4. HID has other requirements which a major hazard framework will help to satisfy. It needs to treat major hazards in a consistent way across the varied industries within its remit, using similar processes where appropriate. It needs to have a clear view on what is important in controlling major hazards, to give guidance to HID staff and dutyholders on priorities. Also important is to provide a consistent, transparent focus for HID's major hazard work, so that everyone is aware of what we are trying to achieve and the methods we use.

DESCRIPTION OF THE FRAMEWORK

5. Permissioning requires action by both dutyholder and regulator. The dutyholder describes what they do to identify and analyse potential major accidents and to put risk control measures in place, and why they believe this is sufficient to minimise the risks. This is the **written demonstration**. The dutyholder then implements what is described in this demonstration in the day-to-day **management** of the risks.
6. The regulator uses **assessment** to consider whether the description and the justification in the demonstration are adequate. The regulator then verifies, by **inspection**, that the measures described in the demonstration are achieved in practice, and if anything more needs to be done. Annex A describes the framework in graphical form and Annex B shows it as a table.

THE DUTYHOLDER'S ACTIONS

The written demonstration

7. The demonstration consists of three main components:
 - a. a description of the installation and its environment,
 - b. a description of how the dutyholder's safety management system (SMS) deals with major hazards, and
 - c. a demonstration of how the SMS has been applied to reduce the risks from major accident hazards to ALARP.
8. The installation description indicates where the installation is, what it does and what surrounds it. It identifies the hazardous materials the installation uses and/or produces, how these get to and from the installation and what processes are undertaken in or on it.
9. The SMS description should show that the dutyholder has a systematic process to:
 - a. identify all major accident hazards,
 - b. assess the risk presented by these hazards, in terms of consequence and frequency,

- c. identify suitable risk control measures (including the possibility of removing the hazard altogether), and
 - d. consider if the measures are, or will be, adequate to reduce the risks to ALARP, either directly or by compliance with relevant statutory provisions.
- 10. The SMS should also describe the resources to implement this process, in terms of appropriate people, systems and procedures. It should include the means to maintain the measures and to update them to take account of changing circumstances, knowledge and standards during the installation's lifecycle, so that the risks remain ALARP.
- 11. The demonstration, para.7(c), should describe the results of applying the process to the installation. It should list each major hazard identified and describe the outcome of the risk assessment applied to it. It should show how each hazard is prevented, controlled or mitigated by the measures provided. In some cases this might require measures beyond current good practice in the industry. The process helps the dutyholder to ensure that their precautions are adequate. It also helps the regulator to target assessment and inspection activity on sites and processes with the greatest risks.
- 12. Annex C gives more detail on the elements of a demonstration. Annex D is a list of typical control systems, which are currently under review. Many control measures will require the dutyholder to set, validate and achieve appropriate performance standards. Examples can be given in the demonstration, but a full list is not required.

Management of the risks

- 13. The second action on the dutyholder is to implement the systems and measures described in the safety case/report, so that it becomes a 'living document'. This means the dutyholder ensuring that what happens in practice matches what is described in the document. In particular, the control measures described should be fully implemented in the day-to-day operation of the installation. The safety case/report should be capable of being used by the dutyholder's staff (at all levels) and by the regulator, as an accurate description of the installation, its major hazards, and of how they are managed.
- 14. A mismatch between the description and the reality can be caused by changes to the installation, its environment or its management, or by technical advances or new knowledge. The dutyholder's change control system should identify such changes as they occur, and update the safety case/report as necessary. Specific requirements may be required for particular stages, such as for design/pre-construction and dismantling. A more formal periodic review is also required, typically every five years, to ensure the document is still an accurate description of the installation and its management, and a valid demonstration of compliance with legal requirements.

HID'S ACTIONS

Assessment

15. Assessment is an evaluation of the dutyholder's demonstration, by reviewing it against a set of criteria and associated standards. The aim is to ensure that:
 - a. there is an adequate description of the installation and of its major hazards, with all the required factual information provided,
 - b. there is a sufficient demonstration of a major hazard process in the safety management system, and
 - c. there are no serious deficiencies with the measures taken or with the ability to comply with relevant legislation.
16. Where the assessment reveals deficiencies, their significance regarding the overall adequacy of the safety case/report needs to be considered and action taken to resolve them, either during the assessment process or afterwards. If formal acceptance is required, unresolved deficiencies may result in non-acceptance.
17. Assessment is primarily office-based, with the content of the document taken at face value, although assessors may already be familiar with the installation. A visit may be necessary to verify a particular matter, for example if a COMAH prohibition notice is being considered. Assessment also informs intervention plans, by identifying matters to be followed-up during inspection. Examples are the main major accident scenarios, the risk controls and matters relating to current key programmes.
18. Reviews and revisions of a safety case/report are notified by the dutyholder, either by sending a revised document or a summary of the update work. The action taken by HID will vary with the circumstances, from a fairly brief review of the process and its outcome to a formal re-assessment, an inspection or an updated intervention plan.

Inspection

19. Inspection verifies that the SMS operates as described in the written demonstration, and that the controls are effective in minimising risk. It is usually separate from assessment, but can be carried out in parallel with the assessment phase.
20. Inspection includes ensuring that:
 - a. the descriptions of the installation, its major hazards and its environment are accurate and complete,
 - b. the measures described in the demonstration are (or will be) in place, are operated properly and are effective, and

- c. compliance is achieved with the relevant statutory provisions.
21. This involves examining how well the technical, organisational and managerial controls operate. It includes interviewing personnel, examining documents and observing site conditions, and is as detailed as necessary to obtain assurance of safe working. Information may be collected for later review. The aim is to seek assurance that the risks are ALARP and are sufficiently well managed that they are likely to remain so until the next inspection. It includes examining the residual risk and querying if additional measures are reasonably practicable.
 22. Inspection can also examine whether the operator's management of change procedures include adequate review and revision criteria for their safety case/report, and if these are being applied properly.
 23. Investigation of incidents and complaints is also important. A key objective is to find out why the relevant controls are inadequate or are not properly implemented. Enforcement plays an important part in both inspection and investigation, to ensure that adequate controls are implemented and maintained.

Operational policy

24. Operational policy work is carried out either centrally or within HID's sectors. It supports regulatory activity by preparing policies and procedures for the operational staff. This involves developing clear, open, enforceable benchmarks for the dutyholder's demonstration and risk control measures, and methods for proportionate, targetted assessment and inspection. Interpreting and influencing HSC/HSE policy is an important aspect, to ensure HID is consistent with the corporate view of permissioning and is contributing to its development. In the field, sector groups (such as RIG) help to coordinate and prioritise intervention work within their sectors.

THE ROLE OF INDUSTRY AND LOCAL AUTHORITY REPRESENTATIVES

25. Trade associations and trade unions influence the development and interpretation of permissioning policy for the industry sectors within HID, including legal aspects. They also have a role in developing guidance, mainly technical but also procedural. Local authorities, as representatives of the public, also have a strong interest in major hazards, particularly regarding the level of risk to the public, emergency response planning and land use planning.

APPLICATION OF THE FRAMEWORK

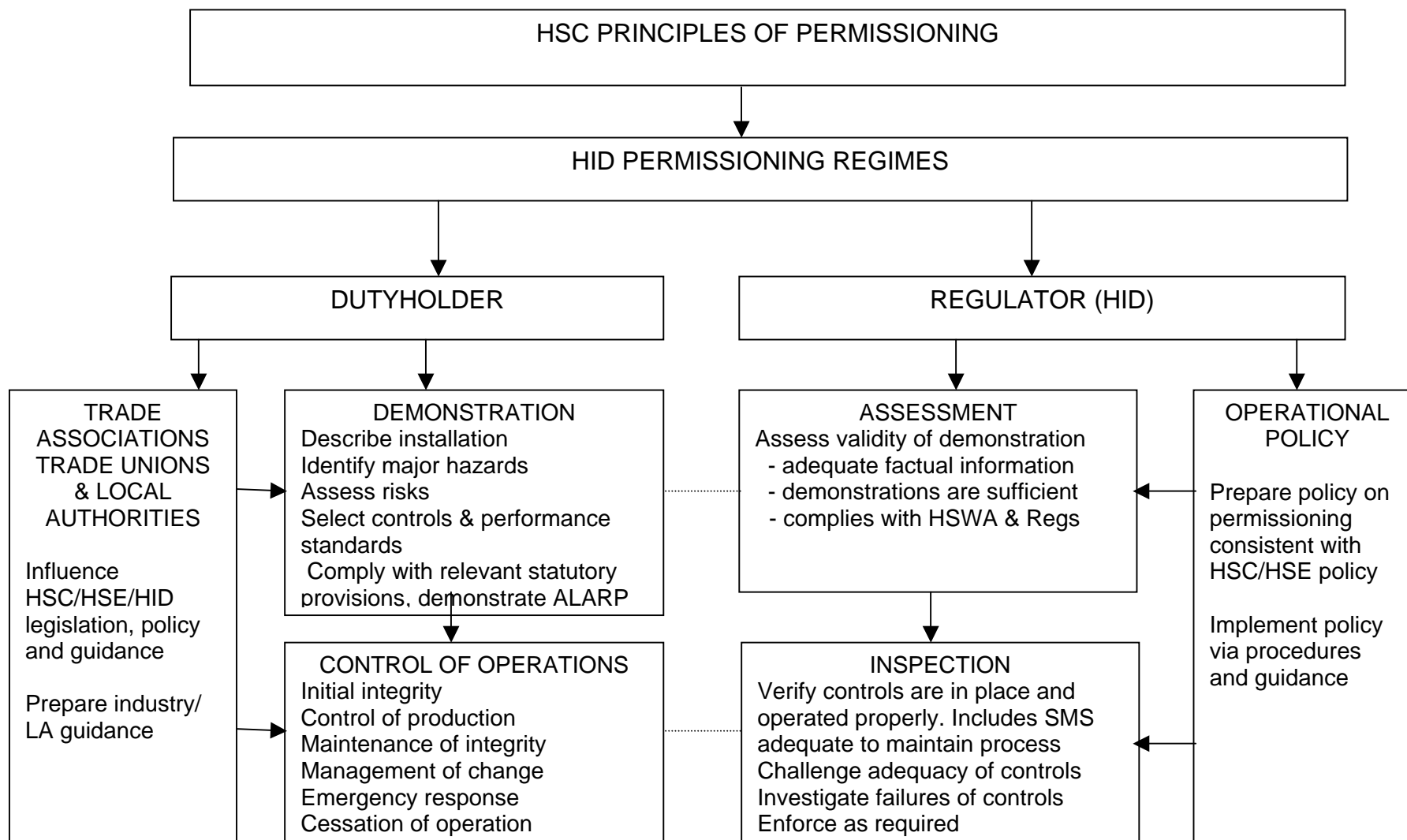
26. To be effective the framework needs to be applied, where appropriate, to all of HID's permissioning regimes. It does not prescribe Divisional procedures - these should still be written to suit sector requirements. However Divisional management should ensure that such procedures are consistent with the

framework, and consider if new or revised instructions are needed to improve alignment with the framework. Further advice on this aspect is being considered by HID HQ Unit.

FURTHER INFORMATION

Contact HID HQ1C, VPN 523 4885.

THE HID MAJOR ACCIDENT HAZARD FRAMEWORK



ANNEX B

HID MAJOR ACCIDENT HAZARD FRAMEWORK				
ACTIVITY	OWNER	PURPOSE	OUTPUT	EXAMPLES OF GUIDANCE
Demonstration	Dutyholder	Describe installation, identify & assess MAHs, specify all necessary measures & comply with relevant statutory provisions, inc. ALARP	Safety case or report submitted to HID	APOSC, , SRAM HSG190, L111
Assessment	HID	Evaluate the process of demonstration and its results	Decision on adequacy of demonstration	SRAM, SRAGs, L3 guidance, APOSC, GASCET
Control of operations	Dutyholder	Show ability to control MAHs throughout lifecycle	Effective up-to-date controls always in place	Industry & HSE guidance & standards, HS(G)65
Inspection	HID	Seek assurance that controls exist & are effective Challenge ALARP position Investigate failure of controls Enforce as required	Assurance of dutyholder's ability to control MAHs throughout lifecycle	SRAM, SRAGs, L3 guidance, L111, inspection manuals, APOSC, GASCET Industry guidance & standards, HS(G)65
Operational policy	HID	Prepare operational policy & procedures Influence HSE policy sections	Regime fit for purpose & continuously improved	Inspection manuals, internal & published SPCs & other guidance.
Employer & employee consultation	Trade associations & trade unions	Influence development of legislation, operational policy & guidance	Regime fit for purpose & continuously improved	
Public consultation	Local authorities	Influence development of guidance on emergency planning & planning consent	Regime fit for purpose & continuously improved	

ELEMENTS OF A DUTYHOLDER'S DEMONSTRATION

1. Identify the hazards

- a systematic identification of all hazards which can precipitate a major accident as defined, either directly or via escalation

2. Evaluate the risk

- identification of all reasonably foreseeable initiating events which can trigger a major hazard, with an analysis of the likelihood of such events and of the range of possible consequences, including the worst-case and the most likely

3. Identify risk control measures and describe how performance standards are used

- identification of the measures aimed at preventing each identified major accident or minimising its consequences, against the principles of:
 - inherent safety,
 - prevention,
 - control,
 - mitigation and
 - emergency response
- description of the procedures used to identify where performance standards are needed and how they are developed, applied and updated. Examples can be included, but a list is not required.

4. Apply the ALARP test

- compare the risk controls against the standards and guidance used to describe current good practice, and
- consider if additional measures are reasonably practicable

5. Consider the management system

- show how the management system achieves compliance with the law and effective control of the installation, at all stages of its lifecycle. This would typically include elements such as policy setting, organisation, planning and setting standards, performance measurement and audit and review.

CONTROL OF OPERATIONS

Plant life cycle stage	Relevant risk control systems
<p>1 Initial integrity Assurance that the installation is fit for purpose at the start. This includes concept selection, design standards, verifying that the installation is built as designed, and commissioning.</p>	Design philosophy & design envelope Structural integrity Design & construction of plant Commissioning of plant Testing of plant Control of contractors Management of change Hazard identification and risk assessment Permit-to-work systems & isolations
<p>2 Control of production Use of procedures which keep the installation operating within its design envelope, during normal running and start-up and shutdown. It includes control of process upsets.</p>	Operating procedures Isolations Alarm systems Human Factors Site-specific systems
<p>3 Maintenance of integrity Keeping the installation, its plant and equipment fit for purpose. This includes planned maintenance, inspection, testing, breakdown repair and like-for-like replacement work, also risk reviews.</p>	Planned preventive maintenance Plant inspection and testing. Condition assessment & monitoring Hazard identification and risk assessment Control of contractors Control of transport systems Permit-to-work systems & isolations Incident investigation procedures
<p>4 Management of change Plant and process change procedures, including management of intended excursions, and of organisational change. The effect of external change should also be considered.</p>	Change management procedures Hazard identification and risk assessment, including re-assessment of continuing fitness and of new or improved control methods Control of contractors Permit-to-work systems & isolations Plant design & construction Commissioning of plant Testing of plant Changes in off-site populations
<p>5 Cessation of operation Decommissioning of all or part of an installation, dismantling and removal of redundant plant, final demolition or abandonment of an installation.</p>	Change management procedures Hazard identification and risk assessment Control of contractors Permit-to-work systems & isolations
<p>6 Emergency response Responding to an incident to minimise its extent and its effects on people, plant and the environment, bringing the operation back under control.</p>	Design, maintenance and testing of emergency systems and procedures