

COMAH

Control of Major Accident Hazards

COMAH Competent Authorities

Major Hazard Leadership Intervention Tool



Environment
Agency



Cyfoeth Naturiol Cymru
Natural Resources Wales



Office for
Nuclear Regulation

Major Hazard Leadership Intervention Tool

This tool is based on established guidance, incorporating key aspects of several industry-led documents and lessons from recent major hazard incidents, including:

1. The eight principles of major hazard leadership developed by the [Process Safety Leadership Group](#) (PSLG), a joint industry and regulators group formed in 2007 following the Buncefield incident;
2. [OECD Corporate Governance for Process Safety](#) - Guidance for Senior Leaders in High Hazard Industries;
3. [Managing for health and safety HSG65](#)
4. Lessons from [BP Texas City](#), [Deepwater Horizon](#), and other major incidents including those from other industries, such as the [RAF Nimrod](#) crash in 2006 and the [Southern Health NHS Foundation Trust](#) prosecution in 2018;
5. Lessons from previous leadership interventions.

The Tool uses the phrase “major hazard leadership” in preference to “process safety leadership” as this fits better with the diverse nature of the sectors within industry. It includes:

- Eight Principles of Major Hazard Leadership (“what is required”);
- Organisation and resources (“how this is delivered”);
- Sample questions (‘areas for consideration’), and
- Example demonstrations (“what good looks like”).

Some of the measures may be more focused on safety, whilst others reflect environmental aspects, but all contribute to the control of major hazards, and apply equally to the management of contractors.

The questions and demonstrations are to be used as a guide to explore areas of leadership and inform discussion – they are not to be used as a checklist.

The inspection team should select the most relevant questions/areas to concentrate on, though it is expected that each topic area will be covered to some extent in order to obtain a balanced view of the leadership performance. Not all the questions and demonstrations will be relevant for all dutyholders.

As soon as a judgement on each principle has been made, the inspection team should move on to the next area.

Major Hazard Leadership Principle 1:

Safety leadership is at the core of managing a major hazard business

Organisation & Resources - how this is delivered

Major hazard safety accountabilities should be defined and championed at board/senior leadership level. Board members, senior executives and managers should be held accountable for major hazard leadership and performance.

Sample questions – areas for consideration

- How can senior leaders demonstrate leadership from the top of the organisation?
- Is there a policy on leadership?
- Does the policy on leadership describe the management expectations, required commitment, and senior leaders' activities in relation to major hazards?
- How is major hazard safety included in the processes or management arrangements for running the business?
- Does the senior leader in this country have the authority to make significant changes?
- Are major hazard responsibilities reflected in job descriptions?
- Are major hazard risks on the agenda at senior leadership team meetings?
- How do senior leaders demonstrate commitment to controlling major hazard risks?
- What are the significant risks and how do senior leaders know they are being controlled?
- How do senior leaders ensure that the business structure delivers the desired level of major hazard performance?
- How are the major hazard implications of business decisions recognised and addressed?
- What are the due diligence arrangements in place within the organisation for mergers and acquisitions, and how do these assess major hazard requirements?
- Where does accountability lie within the board/senior leadership team for the completion of actions identified in audits, inspections, investigations, and management of change assessments? How do senior leaders ensure that sufficient resources are available to complete actions on time?
- What are senior leaders' major hazard related performance objectives? How are these incorporated into performance agreements and plans? What does the agreement process for these objectives entail? How does the senior leadership team ensure that incentive schemes don't undermine major hazard control?
- How are the senior leadership team held accountable for major hazard performance within the organisation?

Example demonstrations - what good looks like

- Senior leaders take every opportunity to be role models, promoting and discussing major hazards.
- There is a corporate statement on major hazard leadership. Board and senior leadership team minutes include major hazard aspects.
- Expected leadership behaviours are documented and communicated, for example in a safety and environmental policy.
- Major hazard responsibilities for senior leaders are set out in job descriptions, annual performance agreements, contracts etc.
- Senior leaders assure themselves that practices are consistent with corporate major hazard management policies.
- Major hazard leadership behaviours are monitored and regularly assessed, such as in annual appraisals.
- Board members and the senior leadership team maintain a sense of vulnerability and mindfulness, rather than complacency. They proactively look for areas of concern, rather than rely on reports to come to them.
- Major hazard safety is promoted as the overriding priority; leaders insist on careful consideration of major hazards in all decisions and actions.
- The senior leadership team balances major accident risks alongside the other business threats.
- There are arrangements/systems in place for ensuring potential major hazard risks are fully considered when making commercial decisions.
- When allocating, or reducing, budgets, senior leaders consider the requirements of different plants/sites based on their age, condition, environment, nature of hazard, past performance, incidents etc.
- Senior leaders incorporate major hazard considerations into significant capital investments, long range planning and integration of mergers or acquisitions.
- Senior leaders delegate appropriate major hazard duties to competent personnel whilst maintaining overall responsibility and accountability.
- The board/senior leadership team have a 'risk map' for the company (or country), rather than focusing solely on individual sites or facilities.
- Senior leaders ensure that where higher standards of safety are implemented in other parts of the world, they have a programme for achieving those same standards in the UK.
- There are corporate targets for continuous improvement in managing major hazards.

Major Hazard Leadership Principle 2:

Major hazard leadership requires board level involvement and competence

Organisation & Resources - how this is delivered

At least one board member/senior leader should be fully conversant in major hazards in order to advise the board/senior leadership team of the status of major hazard risk management within the organisation and of the major hazard implications of their decisions.

Staff with major hazard management responsibilities should have, or develop an appropriate level of competence.

Sample questions – areas for consideration

- How are senior leaders' responsibilities for major hazards organised?
- How do senior leaders ensure they are competent to meet their major hazard responsibilities? What arrangements are there for maintaining competence?
- Is there a member with designated responsibility for major hazards? If so, what are his/her responsibilities in relation to major hazard risks?
- What training have senior leaders received in major hazard leadership?
- What is the mix of abilities of the senior leadership team, including technical disciplines, in respect of managing major hazards?
- How do senior leaders plan for long-term major hazard assurance? How is this balanced against shorter-term objectives, including budget restrictions and profitability within the organisation?
- Are senior leaders aware of the major hazard risk profile of the organisation?
- What understanding do senior leaders have of the means of prevention, control and mitigation of major hazards in the organisation?
- What arrangements do senior leaders have to ensure that major hazard risks are under control? How do they know key risk control and mitigation systems are working effectively? How do they seek out areas of weakness?
- How does the senior leadership team manage major change in the organisation? How is the impact on the control of major hazard risks assessed and evaluated? Who is responsible for doing this and on what criteria does the senior leadership team make its decisions? What governance arrangements does the senior leadership team use to authorise major change?
- What arrangements are there for succession planning for key staff, including senior managers and senior leadership team members?
- What arrangements do senior leaders have for identifying competency gaps in the control of major hazards?
- How do senior leaders ensure the competency of contractors?

Example demonstrations - what good looks like

- There is a member of the senior leadership team with specific responsibility for major hazard risks.
- Senior leaders and non-executive directors have appropriate major hazard skills, qualifications or experience.
- The major hazard competencies required by senior leaders have been identified and documented.
- Specific major hazard training has been provided to senior leadership team/board members, including non-executive directors.
- Leaders ensure that those with major hazard responsibilities are competent and have appropriate resources.
- Senior leaders understand the major hazard risks in their business and know what the main vulnerabilities are. For example, they will be able to talk through key documents such as safety cases/reports, outline the major hazard scenarios, and discuss major hazard assessments such as bowtie diagrams. They will be able to explain layers of protection between hazards and accidents.
- Senior leaders understand the importance of process safety throughout the life cycle – whether it is the design, operation, and maintenance phases of their manufacturing facilities, or storage, logistics and decommissioning at those locations.
- Senior leaders understand the critical and different layers of protection that are in place between a hazard and an accident and seek to strengthen those layers continually.
- Senior leaders understand the long-term impacts of their boardroom decisions, including organisational changes, perhaps several years into the future.
- Senior leaders may be seconded to operational roles should they need to develop their technical skills and experience.
- Senior leaders spend sufficient time in a position to become competent in major hazard safety
- Appropriate briefings and updates on major hazard risks are provided to the senior leaders.
- Senior leaders ensure there are competent management, engineering, and operational personnel at all levels.
- Senior leaders are capable of openly communicating critical aspects of major hazards with internal and external audiences.
- Senior leaders take responsibility for emergency planning for the range of consequences from a major accident, including the credible worst case scenario.
- Senior leaders challenge values and assumptions that could lead to complacency; detecting organisational weaknesses that could affect major hazard control.
- Senior leaders personally involve themselves in risk assessing proposed budget reductions for major hazard impacts and provide incentive schemes which don't encourage production at the expense of risk.
- Senior leaders ensure continual development of major hazard expertise and learning from new regulation and guidance.
- Senior leaders do not rely on contractors' own systems and procedures, but have sufficient oversight and verification (e.g. relating to contractor competence) and consider the imported risk from contractors and suppliers.

Major Hazard Leadership Principle 3:

Good major hazard management does not happen by chance and requires constant active engagement

Organisation & Resources - how this is delivered

Appropriate resources should be made available to ensure a high standard of major hazard safety management throughout the organisation.

Sample questions – areas for consideration

- How do senior leaders ensure sufficient resources are available to deliver high standards of major hazard control?
- How are major hazard safety measures incorporated into design to enhance intrinsic and inherent safety? How are plant, equipment and systems selected to deliver high standards of risk control? How are decisions on reducing risk as low as reasonably practicable made?
- What arrangements are there for identifying gaps in the control of major hazards? How does the senior leadership team assess the adequacy of systems, including following a merger/acquisition?
- What arrangements are there for developing a major hazard risk mitigation/improvement plan for the organisation? How is this plan prioritised and resourced at site and corporate level? How is progress against the plan reviewed?
- When allocating budgets, how do senior leaders consider the requirements of the different plants/sites based on their age, condition, environment, nature of hazard, past performance, and incidents?
- Have there been changes or cuts in plant inspection and maintenance, or staffing levels? If so, how were these changes assessed and managed by the senior leadership team?
- How does the senior leadership team access competent advice?
- What arrangements are there to maintain an intelligent customer role and clear management responsibilities on major hazard issues when activities are contracted out to third parties?
- How are potential major hazard risks evaluated and controlled when using contractors and purchasing plant?

Example demonstrations - what good looks like

- Senior leaders with responsibilities for managing major hazard risks have been identified.
- Senior leaders are actively engaged in promoting the effective management of major hazard risks.
- Senior leaders ensure that sufficient resources are available for maintaining barriers against major accidents, implementing actions from reviews and audits, and mitigating the consequences of a major accident.
- Senior leaders ensure appropriate management systems for analysing, prioritising and managing the risk, including strong management of change processes for people, processes, technology and facilities.
- Senior leaders understand the implications of organisational changes on the control of major accident hazards and are involved in determining the risks of significant changes.
- Senior leaders incorporate major hazard safety into capital investments or mergers/acquisitions.
- Senior leaders ensure that safety measures are incorporated at the earliest conceptual and engineering design stages to enhance intrinsic or inherent safety.
- Senior leaders ask senior site personnel to talk through key reports, analyses, KPIs etc in person, in order to expand, explain and justify.
- Senior leaders provide resource and time for hazard and risk analyses, effective training and comprehensive scenario planning for potential accidents.
- Senior leaders ensure that business partners and contractors are actively involved in the management of major hazards.
- Senior leaders ensure major hazard risk mitigation plans and emergency response plans are developed and maintained for all sites within their business and at an organisation-wide level, with appropriate levels of competent resources available to execute the plans. Leaders review progress against the plans at site and corporate level.
- Senior leaders monitor whether corrective actions are identified and closed out promptly following audits and after investigations of all incidents or potentially high consequence near misses.

Major Hazard Leadership Principle 4:

Board-level visibility and promotion of major hazard leadership is essential to set a positive safety culture throughout the organisation

Organisation & Resources - how this is delivered

Organisations should develop a programme for the promotion of major hazard safety by active senior management engagement with the workforce, both direct and contract staff, to underline the importance of major hazard safety leadership and to support the maintenance of a positive major hazard safety culture within the organisation.

Sample questions – areas for consideration

- Is there visible leadership from the top of the organisation?
- How often do senior leaders undertake plant/site visits and conduct major hazard safety tours, audits or inspections? How do senior leaders plan and prepare for these visits? What do the visits cover and what is the outcome?
- How do senior leaders communicate information relating to major hazards within and beyond the organisation?
- How do senior leaders ensure that activities and practices are consistent with corporate major hazard policies and procedures?
- How do senior leaders actively work to remove barriers to the reporting of 'bad news' up the management chain and promote an open culture for communicating major hazard issues?

Example demonstrations - what good looks like

- Senior leaders are visibly present in their businesses and at their sites, asking appropriate questions and constantly challenging the organisation to find areas of weakness and opportunities for continual improvement.
- Senior leaders actively visit, inspect, and audit the work place in relation to major hazard risks. When touring facilities, they ask about major hazard control.
- Senior leaders have written guidance to assist in asking appropriate questions or giving key messages when undertaking visits.
- There are clear expectations and behaviours required for leadership site visits, they are not just 'VIP trips' but grounded on real issues. Expectations may include carrying out a safety observation/conversation, reviewing recent incident investigations, engaging with the workforce, auditing a permit to work, reviewing operational risk assessments (ORAs), verifying the status of safety critical maintenance, reviewing the status of leaks, reviewing overrides, checking action backlogs etc.
- Senior leaders attend staff meetings, toolbox talks, shift handovers, permit meetings etc., and discuss major hazard risks on site and at key events.
- Senior leaders attend site health and safety committees and raise major hazard issues with safety representatives.
- Senior leaders establish a high degree of trust to encourage individuals at all levels to seek assistance and share and learn from mistakes.
- Leaders create an atmosphere of open communication, encouraging individuals to identify and report

weaknesses.

- There are direct communication routes from the front line to senior leaders or from the national senior leadership team to overseas HQ to facilitate the sharing of key information relating to the control of major hazards.
- There are examples of senior leaders taking a specific interest in major hazard controls.
- Senior leaders promote a safety culture that is known and accepted throughout the enterprise.
- Senior leaders challenge information received in reports and the decisions made by management in relation to major hazard implications. For example, they may question the number of operational risk assessments (ORAs) or non-operational safety barriers and the reasons why they are in place; or may challenge maintenance backlogs, or specific audit/investigation findings.
- Senior leaders randomly sample actions to verify closure; and question whether actions chosen were appropriate and effective.

Major Hazard Leadership Principle 5:

Engagement of the workforce is needed in the promotion and achievement of good major hazard control leadership

Organisation & Resources - how this is delivered

Systems and arrangements should be in place to ensure the active involvement of the workforce in the design of major hazard safety controls and in the review of major hazard safety performance.

Sample questions – areas for consideration

- How do senior leaders ensure appropriate information on health, safety and the environment is communicated effectively within the organisation to ensure the major hazard risks and impacts are understood?
- How do senior leaders gain the involvement of the workforce in controlling major hazard risks?
- How do senior leaders involve contractors to ensure they deliver high standards of major hazard risk control?

Example demonstrations - what good looks like

- Senior leaders attend meetings with the workforce and discuss major hazards at every opportunity.
- Senior leaders involve the workforce in conducting risk assessments, HAZOPs and workplace safety inspections, and in identifying control measures.
- Senior leaders involve the workforce (both operational and maintenance personnel) in new design or purchase of plant and equipment, and in new build projects.
- Senior leaders involve the workforce in accident, incident and near-miss investigations and in identifying root causes, and proposing improvements to control measures.
- Senior leaders involve the workforce in carrying out safety audits of other areas of the site, or other sites in the country.
- Senior leaders engage with the workforce through informal personal contacts, as well as more formal contacts such as focus groups, or directors' breakfast meetings with staff.
- The workforce are actively encouraged to raise major hazard issues. For example, STOP cards and other 'behavioural' approaches do not just focus on personal safety issues.
- There is evidence that workforce involvement has brought about change.
- There is an anonymous process for raising serious safety concerns to a senior level.
- Front line staff can outline how their work contributes to corporate goals on major hazard control.
- Senior leaders encourage people to raise major hazard concerns, or bad news to be addressed.

Major Hazard Leadership Principle 6:

Monitoring major hazard performance is central to ensuring business risks are being effectively managed

Organisation & Resources - how this is delivered

Business risks relating to major hazard safety should be assessed and reviewed regularly using an appropriate business risk analysis methodology.

Leading and lagging major hazard safety indicators should be set for the organisation and periodically reviewed to ensure they remain appropriate for the needs of the business.

Information on major hazard safety performance should be routinely reviewed at senior leadership team level.

Sample questions – areas for consideration

- Is there evidence that the senior leadership team is responsive to the major hazard information that is reported?
- How does the senior leadership team formally review major hazard performance? For example, is it on the agenda at senior leadership team meetings?
- How do senior leaders seek out and provide information relating to major hazards on site? How should this information reach senior leaders, and how often does the senior leadership team analyse it?
- How do senior leaders audit major hazard safety within the organisation? How do these audits ensure that procedures deliver an effective control of risk, rather than compliance only?
- How were the suite of key performance indicators derived? Are they appropriate to the level of risk in the organisation? How does the senior leadership team use this information?
- Do the safety performance indicators provide the senior leadership team with assurances of how well the organisation is performing?
- What are the senior leadership team arrangements to review key audit, inspection and assessment findings, and take action when appropriate?

Example demonstrations - what good looks like

- Senior leaders receive major hazard key performance indicators (KPIs), or other measures of performance such as audits, inspections, incidents, near-misses, staff surveys, regulator enforcement action and barrier performance.
- Senior leaders receive information on the adequacy of systems and whether they are implemented effectively, not simply their existence.
- Senior leaders amplify weak signals (or 'tune into' information that may be key), actively seek out areas of weakness and recognise when management of major hazards may become out of control.
- Major hazard monitoring activities cover plant, processes, procedures and people.
- Senior leaders have metrics which help to monitor the health of the major hazard safety culture and management systems; as well as metrics for the health of plant and equipment.
- Information covers the depth and breadth of all major accident hazards.
- Senior leaders monitor and review the competency of contractors and third parties in relation to major hazards.
- Policies and management systems are updated as necessary after audit and review.
- Senior leaders can provide evidence that they have taken appropriate actions to resolve under performance in the control of major hazards.
- Senior leaders assure themselves that information provides a true and accurate picture of major hazard performance.
- There is a review process to ensure that the right things are being measured in the right way.
- Senior leaders question why identified weaknesses (e.g. following an incident investigation) were not corrected prior to the incident.
- Major hazard information is used to make decisions, and to improve performance; including identifying trends and developing improvement strategies.
- Senior leaders monitor site and corporate level lagging (output) and leading (activity) major hazard performance indicators and near misses.
- Senior leaders monitor performance and seek continuous improvement.

Major Hazard Leadership Principle 7:

Publication of major hazard performance information provides important assurance about the management of risks by an organisation

Organisation & Resources - how this is delivered

Performance in the management of major hazard safety risk should be published.

Sample questions – areas for consideration

- How do senior leaders communicate major hazard performance both within and outside the organisation (e.g. annual reports)?

Example demonstrations - what good looks like

- Senior leaders provide feedback on major hazard performance to the workforce; for example, via presentations, newsletters, intranet communications, tool box talks, annual conferences.
- Major hazard performance is put into the public domain; for example, in the annual company report. This includes discussion of leading indicators, not just reporting on incidents and events. It may include discussion of inspections, audit findings, enforcement etc

Major Hazard Leadership Principle 8:

Sharing best practice across industry sectors, and learning & implementing lessons from relevant incidents in other organisations, are important to maintain the currency of corporate knowledge and competence

Organisation & Resources - how this is delivered

Systems and arrangements should be in place to ensure the retention of corporate knowledge relating to major hazard safety management. Such arrangements should include information on the basis of safety design concept of the plant and processes, plant and process changes, and any past incidents that impacted on major hazard safety integrity and the improvements adopted to prevent a recurrence.

Companies should actively engage with others within their sector and elsewhere to share good practice and information on major hazard safety incidents that may benefit others. Companies should have mechanisms and arrangements in place to incorporate learning from others within their major hazard safety management programmes.

Sample questions – areas for consideration

- What sector level initiatives does the organisation participate in relating to major hazard safety? How has such participation improved standards in the organisation?
- How does the senior leadership team learn lessons from incidents, either within the organisation or externally? How were the root causes identified and lessons learned integrated to improve control of risk in the organisation?

Example demonstrations - what good looks like

- Senior leaders encourage the sharing of information within their own group of companies, and with wider industry (e.g. through trade associations, or other informal links).
- This includes sharing incidents, major hazard indicators, and best practice. They are willing and proactive about meeting other duty holders to compare notes on what works and what doesn't.
- Experiences are shared with the workforce in order to maintain a sense of vulnerability and reduce complacency – reminding everyone that “it could happen here”.
- Senior leaders recognise and learn from success as well as learning from what went wrong.
- Senior leaders overcome any organisational or legal barriers which may deter information sharing.
- Learnings from elsewhere lead to identified changes in major hazard control.
- Safety information is held in an accessible form and can easily be retrieved.
- Senior leaders attend and support events such as stakeholder groups, technical seminars and conferences; and provide the resources for those with responsibilities for managing major hazards to attend also.
- There is evidence that benchmarking has taken place with other organisations and the wider industry.