

## COMAH Competent Authority Workstream 6

### **COMAH On-site Emergency Planning and Mitigation**

(Operational Delivery Guide)

the Competent Authority



### 1. Purpose

#### 1.1. To ensure:

- The consequences of a major accident at a COMAH site are minimised through the provision of effective COMAH on-site emergency planning and response arrangements and, where necessary, dovetailing between these and off-site emergency arrangements (both COMAH, and where necessary, Civil Contingencies Act plans).
- COMAH operators comply with relevant recommendations (1 and 3-8) in the Buncefield MIIB Emergency Preparedness, Response and Recovery (EPRR) report. (See **supporting information 1** and **supporting information 2** below.).

1.2 Emergency response is a Competent Authority Strategic Management Group (CASMG) priority topic for 2010-2011. The results from the intervention will be recorded on COIN and reported to CASMG at the end of the work year. The results will be used to inform future interventions.

### 2. Scope

- 2.1 On-site emergency planning, testing, review and response arrangements at top-tier and lower-tier COMAH sites.
- 2.2 For top-tier sites only - assessment of emergency response (ER) arrangements elements of the COMAH safety report and related actions. (Further general guidance on assessing COMAH safety reports can be found in delivery guide 1b Assessment of safety reports.)

#### 2.3 Buncefield MIIB EPRR report recommendations:

- 1 and 3-8 apply to all 'Buncefield-type sites' – See Annex 1. These comprise of mainly top-tier sites, but include a number of lower-tier sites, to which all of these recommendations, except 8, also apply.
- Recommendation 7 also applies to all COMAH top-tier and lower-tier sites generally.
- Recommendation 8 also applies to all COMAH top-tier sites generally. It addresses the operator's duty to put in place arrangements for providing information to the public (COMAH Regulation 14), and as such relates to off-site mitigation. However, as this duty falls to the operator, and would form part of their broader emergency planning arrangements, it has been included in this DG and cross-referenced in DG7b – Off-site emergency planning.

#### 2.4 Interventions

The programme of interventions has been designed to match the 3-year emergency plan testing cycle required by COMAH Regulation 11. The actions required during the intervention are set out below.

## 2.5 Top Tier Sites

The programme of interventions will extend over a three year period as follows (subject to the notes set out below):

- Year 1 (2010/11): Interventions at all Category A sites and 75% of Category B sites;
- Year 2 (2011/12): Interventions at the remaining Category B sites and all Category C sites; and,
- Year 3 (2012/13): Interventions at all Category D sites.

## 2.6 Notes

- The 75% of category B sites to be visited in year 1 can be selected locally based on factors such as other work already scheduled to be carried out at the site or local knowledge about the status of the on-site emergency plan.
- If the on-site emergency plan topic has been dealt with at a site during the previous two work years a gap analysis should be done against the success criteria set out below. Where gaps remain the site should be included in the intervention programme as set out above and the gaps closed.
- If the on-site emergency plan topic has been dealt with at a site during the previous two work years and the topic has been closed out a performance rating score should be entered.
- Interventions will require the involvement of both the HSE regulatory inspector and their Agency counterpart. The total CA resource requirement for the completion of the intervention is estimated at 4-5 days over the 3-year period described above, depending on the complexity of the plan.

## 2.7 Lower Tier Sites

The programme of interventions will extend over a three year period as follows:

- All category A and B sites should receive a visit during the 3-year period (April 2010 to March 2013). Category A sites should be visited during year 1.
- When Category C and D sites are visited for other reasons during this period the emergency arrangements should be included in the intervention.
- A strategy for dealing with Category C and D sites not visited for other reasons during the period will be developed in due course.

### 3. Justification

- 3.1 COMAH Schedule 4 Part 1 requires a demonstration in the safety report that an on-site emergency plan (OnSEP) has been drawn up and information has been supplied to enable the off-site emergency plan to be prepared.
- 3.2 The COMAH Regulations set out a number of legal duties in relation to on-site emergency arrangements under Regulations 9, 11, 12 and Schedule 5 Parts 1 and 2 with which operators need to comply.
- 3.3 The Buncefield MIIB EPRR report tasks operators with addressing a number of recommendations (1 and 3-8), as relevant to their sites, within acceptable timescales and in accordance with guidance now available on the COMAH Buncefield Response webpage. The COMAH CA is tasked with ensuring this is done. <http://www.hse.gov.uk/comah/buncefield/recommendations.htm>.
- 3.4 The requirement to address these recommendations is underpinned by COMAH Regulation 11(a). Operators have a duty to review, and where necessary revise, their emergency plans to take account of any changes in the site to which the plan relates, or within the emergency services concerned, new technical knowledge, or knowledge concerning the response to major incidents. Guidance in L111 para. 273(d) indicates this should include knowledge gained as a result of major incidents either on-site or elsewhere (e.g. Buncefield).

### Main actions

- 4.1 Response to MIIB EPRR report recommendations (1 and 3-8):
  - Confirm that the operator fulfils the requirements of these recommendations, as relevant to their site, in accordance with the guidance now available clarifying these COMAH requirements.
  - Actions required by operators and the CA in response to the MIIB EPRR recommendations are set out in **DG 6 Annex 1**.

### 4.2 For all top-tier COMAH sites:

- Confirm that there is an on-site emergency plan (OnSEP) and suitable response arrangements in place when assessing the emergency response elements of the COMAH safety report. Refer to:
- SRAM Assessment Procedure 4.2(2);
- Framework letter 6 (SRAM Section 4, Appendix 4.6, FL6 – para.25f);
- Emergency Response Assessment Criteria (SRAM Section 14, pages 140-157 plus relevant section 13 criteria) and
- paras.5-11 of SPC/Perm/06 (Supporting information- 10).

*(Note: the safety report does not have to contain the actual OnSEP).*

- Confirm the operator has consulted and co-operated with off-site emergency service providers to ensure that the on-site plan and response arrangements effectively dovetail with those off-site, including instructions in the OnSEP on how, when and by whom the off-site emergency plan will be initiated. The key to effective dovetailing is communication between site personnel and good information flow.
- Verify during inspection that operators have in place an OnSEP and response arrangements meeting COMAH schedule 5, parts 1 and 2 (see Supporting information- 9) and core intervention issues in **DG 6 Annex 2** Core intervention issues for on-site emergency plans.
- Verify that the operator tests their planned emergency response arrangements, to establish how well they work in practice, at least once every three years. Performance indicators can be set to monitor this, either during testing, or in a real scenario. **DG 6 Annex 3**.
- Confirm that the operator periodically reviews, and where necessary revises, their OnSEP, ensuring they systematically identify and embed any lessons learned from testing into revisions of the plan.
- Confirm the operator has forwarded to the 'local authority' emergency planning unit (EPU) the information necessary to prepare the COMAH off-site emergency plan. This is a legal duty on the LA under COMAH Regulation 10(3)-(5). L111 paras.259-263 refer.

### 4.3 For all lower-tier COMAH sites:

- Ensure the operator has prepared a Major Accident Prevention Policy (MAPP) and put arrangements in place to comply with COMAH Regulation 5. The principles to be taken into account when preparing a MAPP include planning for emergencies and the adoption of procedures to:
  - identify foreseeable emergencies by systematic analysis;
  - prepare, test and review emergency plans to respond to such emergencies; and,
  - provide specific training for all persons working in the establishment.

(See **supporting information -11**). It should also be noted that:

- whilst lower-tier COMAH sites are not required to have an on-site emergency plan (OnSEP), as prescribed by COMAH Regulation 9, they are required to “take all measures necessary to prevent major accidents and limit their consequences to persons and the environment” (COMAH Regulation 4). This includes mitigatory measures to minimise the consequences of a major accident.
- the operator should have suitable arrangements in place to meet their duties under the Health and Safety at Work etc Act 1974 and Regulation 8 of the Management of Health and Safety At Work Regulations 1999.

## 5. Core Intervention Issues

- 5.1 Some core intervention issues for on-site emergency planning generally are described in **DG 6 Annex 2**.

## 6. Supporting information

### 6.1 COMAH On-site Emergency Planning

- L111 –‘A Guide to the Control of major accident hazards Regulations 1999 Regulations (as amended)’.
- HS(G)191 “Emergency planning for major accidents – Control of major accident hazards Regulations 1999” Pages 13 –18 and Para. 78.
- **COMAH Regs schedule 5 - Emergency plans**
- **HID CI/SI Inspection manual - Assessing risk control systems emergency response (RCS8)** . Now also available on the internet  
<http://www.hse.gov.uk/foi/internalops/hid/manuals/pmenf05.pdf>
- **Chemical Sheet 3 Major accident prevention policies for lower-tier COMAH establishments [PDF 50KB]**
- **Human Factors - Inspectors toolkit emergency response has a useful question pro-forma.**
- **UK Resilience website**
- **SPC/Perm/06 COMAH safety reports: Information about the extent and severity of the consequences of identified major hazards (paras.5-11).**
- Principles for MAPP – COMAH Schedule 2 (4e) – Planning for emergencies guide to COMAH Regulations paras 445 - 449. publication L111.

### 6.2 Buncefield MIIB EPRR report and Response

- **Buncefield investigation pages on HSE internet including access to MIIB final report**
- Buncefield MIIB Emergency Preparedness, Response and Recovery from Incidents Report **<http://www.buncefieldinvestigation.gov.uk/reports/preparedness.pdf>**
- PSLG guidance on emergency planning on the Buncefield Response page on HSE COMAH website **<http://www.hse.gov.uk/comah/buncefield/recommendations.htm>**
- Links and references to further related guidance can be found within the Initial PSLG guidance document.
- Route Map to Emergency Planning Guidance - **<http://www.hse.gov.uk/comah/buncefield/routemap.pdf>**

### 7. Success criteria

- 7.1 Set out below are criteria to help judge the level of compliance achieved by operators and to help determine when an intervention can be closed out.
- 7.2 For top-tier COMAH sites:
- The operator has put in place and keeps up to date an OnSEP and response arrangements which meet the requirements of COMAH Schedule 5 (Parts 1 and 2) and are fit for purpose.
  - The OnSEP covers, for all reasonably foreseeable emergency scenarios arising out of a representative set of credible major hazard incidents and is designed so as to minimise the consequences of a major accident to people and the environment.
  - The OnSEP clearly allocates roles and responsibilities, providing clear instructions for each of these and any actions which may be necessary.
  - The OnSEP has clearly defined arrangements for warning and alert, and communications between all those with responsibilities in the OnSEP, any off-site emergency services and authorities who may have roles to fulfill and, where necessary, the neighbouring public.
  - All those with roles and responsibilities within the OnSEP are trained and competent to fulfill their roles.
  - The operator systematically tests, and where necessary, reviews and revises the OnSEP at suitable intervals not exceeding three years, ensuring that any lessons learned are captured and embedded in those revisions.
  - The OnSEP has clear instructions on when, how and by whom the off-site emergency plan should be initiated in the event an escalating incident is likely to have off-site consequences.
  - The operator has in place arrangements for informing the public around the site about the site, any safety measures it has in place and the actions required of the public in the event a major accident occurs at the site. This information should be reviewed and revised at least once every three years and resupplied at least once every five years, or following a revision.
  - The operator has passed to the EPU the information necessary to enable it to prepare the off-site emergency plan for the site.
  - Emergency response equipment is included on an appropriate inspection and maintenance schedule and seen to be in a good state of repair.

### For lower-tier COMAH sites:

- The operator has a MAPP document and arrangements in place which include emergency planning and response arrangements which meet the requirements of COMAH Schedule 2, Paragraph 4 (e) and are fit for purpose.
- The nature and extent of emergency arrangements are proportionate to any MAHs presented by the site, and also comply with duties under the HSWA and MHSWR.
- Emergency response equipment is included on an appropriate inspection and maintenance schedule and seen to be in a good state of repair.

### For MIIB EPRR report recommendations (1 and 3-8)

All COMAH operators address the Buncefield emergency preparedness recommendations 1 & 3-8 relevant to their sites in accordance with the instructions in Annex 1 and guidance now available on the HSE Buncefield Response webpage for these recommendations.

## 8. Judging success & moving on

- 8.1 The purpose of the tables below is to assist in deciding when an intervention can be closed out. However the **Enforcement Management Model** (EMM) and local factors will ultimately determine the close-out of an inspection and whether there should be any enforcement action. Table 1 gives guidance on the initial enforcement expectation (subject to the comment above concerning the primacy of the EMM) and is the starting point for CA agreement on the action to be taken. The regulations referred to in the table are only relevant to top tier sites. Where the types of failings listed are also relevant to lower tier sites the initial enforcement expectation is the same, subject to the usual consideration of proportionality and the use of the appropriate Regulation (e.g. Regulation 4) to establish whether or not there is a breach. Table 2 gives guidance on the performance rating.

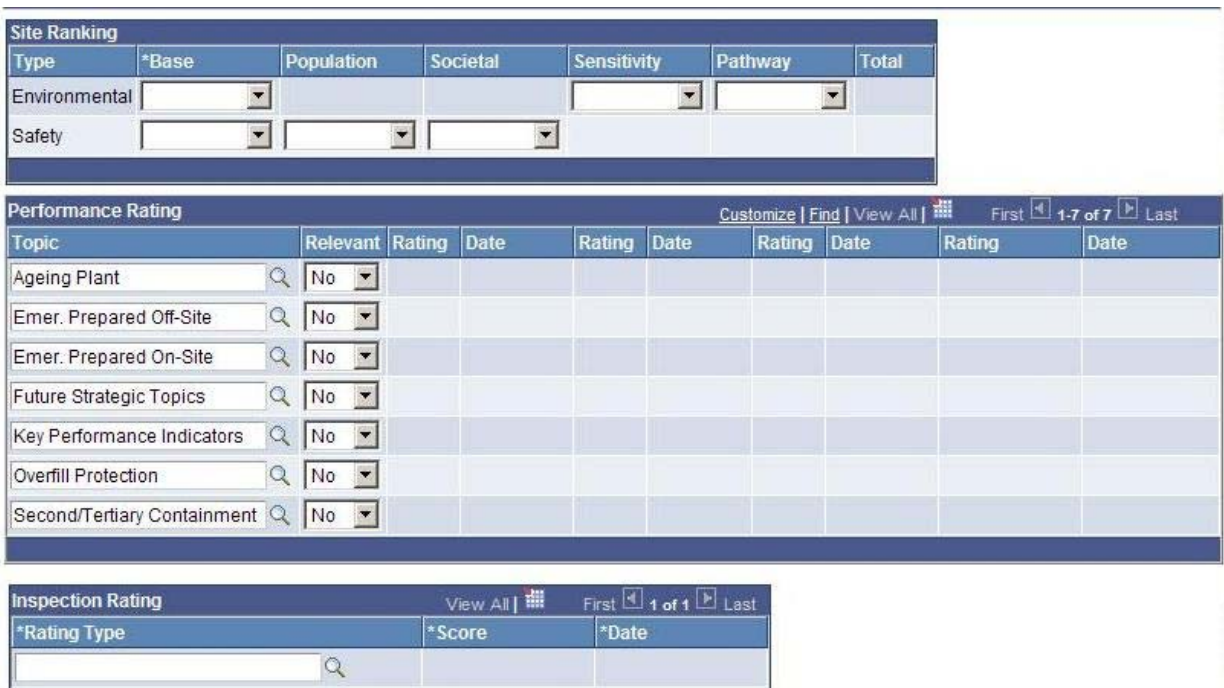
**Table 1**

**Initial enforcement expectations for on-site emergency planning**

Reg.	Requirement	Potential breaches	Initial Enforcement Expectation
9(1)	Operator to prepare an adequate on-site emergency plan (OnSEP) within the timescales specified in reg. 9(2)	Plan not prepared  Plan not adequate (see COMAH Schedule 5 and "success criteria" above)	IN  Letter / IN
9(3)-(4)	Operator to consult during the preparation of the OnSEP	Statutory consultees not consulted as required	Advice / Letter
10(3)-(5)	Operator to supply the LA with information to enable preparation of the off-site emergency plan	Information not supplied	Advice / Letter
11(1)(a)	Operator to review and where necessary revise the OnSEP (min. 3-yearly)	Plan not reviewed / revised in the last 3 years	IN
11(1)(b)	Operator to test the OnSEP at suitable intervals not exceeding 3 years	Plan not tested in the last 3 years	IN
12	Operator to put the OnSEP into effect without delay in the event of a major accident or an uncontrolled development that could lead to a major accident	Plan not put into effect as required	Letter (+ consider PR)

### COIN IRF Scoring

8.2 The COIN Inspection Rating Form (IRF) tab on the COMAH Intervention Plan Service Order should be used to record the Operator's performance in the "Emergency Prepared On-site" line



The screenshot displays three main sections of the COIN IRF Scoring interface:

- Site Ranking:** A table with columns for Type, \*Base, Population, Societal, Sensitivity, Pathway, and Total. It includes dropdown menus for Environmental and Safety types.
- Performance Rating:** A table with columns for Topic, Relevant, Rating, and Date. It lists various topics such as Ageing Plant, Emer. Prepared Off-Site, Emer. Prepared On-Site, Future Strategic Topics, Key Performance Indicators, Overfill Protection, and Second/Tertiary Containment, each with a search icon and a 'No' dropdown.
- Inspection Rating:** A table with columns for \*Rating Type, \*Score, and \*Date, featuring a search icon.

8.3 Progress should be recorded following each intervention on the following basis:

**Table 2**

#### Guidance on Performance Rating

Performance Rating	Description	Score
Exemplary	Good practice or above in all respects. All success criteria fully met.	10
Good	Good practice in most respects. Most success criteria met.	20
Broadly Compliant	Some success criteria not fully met. May not preclude close out depending on scope of improvements required and operator attitude.	30
Poor	Many success criteria not met or not fully met	40
Very Poor	Majority of success criteria not met or not fully met	50
Unacceptable	None of success criteria met	60

**9. COIN time report**

- 9.1 In order to be able to report the CA's activities with respect to on-site emergency planning to CASMG it is important that relevant work is correctly recorded on COIN so that accurate information on how the work is progressing can be extracted. In order to achieve this, the keyword OnSEP (containing no spaces), should be included in the Notes "Summary" field relating to the intervention. A paragraph of supporting information should also be included in the Notes "Details" field.
- 9.2 In order that the Competent Authority can demonstrate adequate deployment of resources to Strategic Topics, there has been a slight alteration to the way we record time spent on these inspections on COIN:
  - for Strategic Topics there should be an entry made in the 'Category' box of the Time Line via a drop down menu;
  - the category selection will be restricted to the Strategic Topics and the relevant one should be selected when completing the timeline;
  - all other time line instructions are as before.

Business unit (BU)	Work Desc	Activity	Category	Work context	Type
COMAH	Company	INSP_COMAH	<b>StratTop emer onsite</b> StratTop emer off-site StratTop PSPI KPI StratTop Ageing Plant StratTop Buncefield PSLG StratTop Containment	ELSE/ OFFCO/ OFFNC/ OSITE	Case/ Service Order

**10. Dependencies and Associations**

- 10.1 This work is cross-referenced to **Workstreams and Delivery Guides for 1b (Safety report Assessment)** and **7b (Off-site emergency planning)**
- 10.2 Instructions for MII B EPRR report recommendation 8 have been included in this DG and its Annex 1 (i) because arrangements for providing information to the public is a duty on COMAH top-tier operators, and (ii) to keep all the information for recommendations 1 and 3-8 co-located and avoid duplication. Recommendation 8 is cross-referenced in [DG7b Off-site Emergency Planning](#).
- 10.3 Safety reports should contain the predictive information necessary for informing the nature, detail and extent of an OnSEP. The OnSEP needs to dovetail with off-site emergency plans to ensure continuity across emergency arrangements in place.
- 10.4 Inspection of emergency response arrangements for sub-COMAH sites (through MHSWR and DSEAR) is covered by the sub-COMAH workstream and should be recorded as described in **Delivery guide 2d**.
- 10.5 This Delivery guide was revised by CI4A in March 2010. Queries should be referred to CI4A (VPN 523 4885 or 510 6226).

### Workstream 6 COMAH On-site mitigation

#### Annex 1: Buncefield recommendations 1 & 3-8 for on-site emergency preparedness.

Guidance has been prepared in response to the Buncefield recommendations (1 and 3-8) relating to on-site emergency preparedness. Some of the recommendations apply only to “Buncefield type sites<sup>1</sup>” and two of them apply to **all COMAH sites**. The following documents are relevant:

**Annex 1 of the BSTG Initial Report** – recommendations requiring immediate action

**SPC/Permissioning/30 “Follow up to the COMAH competent authority policy on containment of bulk storage of hazardous liquids and the Buncefield standards task group recommendations”**

#### Action by COMAH operators

For sites coming within scope of **all** the recommendations (i.e. ‘Buncefield-type sites’), Operators should have completed the implementation of all those recommendations by the end of 2009.

Recommendation 7 applies to all COMAH sites. The guidance for this is fairly straight forward to implement and sites not coming in scope as Buncefield-types should have complied with this recommendation by the end of June 2009.

Recommendation 8 applies to all COMAH TT sites, as it is only these that have a legal duty under COMAH Regulation 14 to supply information to the public. Operators should also have complied with this recommendation by the end of June 2009.

#### Action by CA inspectors

The intervention expectation is that visits will be paid to COMAH sites based on the priorities set out in recently revised intervention plans. Inspectors should ensure that operators have complied with relevant recommendations. Interventions should be jointly planned on a CA basis involving the relevant HSE and Agency inspectors.

**<sup>1</sup> Buncefield Type Sites - Petrol stored at COMAH top and lower tier sites in vertical, cylindrical, non-refrigerated, above ground storage tanks with side walls greater than 5 metres in height and where the filling rate is greater than 100 cubic metres/hour. See Annex 1 of the Buncefield MIIB Initial Report ([www.hse.gov.uk/comah/buncefield/bstg1.htm](http://www.hse.gov.uk/comah/buncefield/bstg1.htm)) for the latest definition of Buncefield Type Sites**

These criteria are based upon the best knowledge currently available, however this knowledge may be improved and so lead to future changes in the application scope. The criteria are believed to be precautionary, so providing worthwhile additional public protection. Further work continues to identify the characteristics of other substances that may have potential to act in a similar manner.

<b>MIIB Buncefield Recommendations - Operators should:</b>		<b>Site</b>
1	Review their emergency arrangements to ensure they provide for all <b>reasonably foreseeable emergency scenarios</b> arising out of credible major hazard incidents.	Buncefield type
3	<b>Review their OnSEPs</b> to reflect revised COMAH CA guidance on preparing OnSEPs.	Buncefield type
4	Review and where necessary revise their on-site emergency arrangements to ensure relevant <b>staff trained and competent</b> to execute plan and ensure there are enough trained staff available at all times to perform all the actions required.	Buncefield type
5	Evaluate <b>siting and/or suitable protection of emergency response facilities</b> (such as emergency control centre, fire-fighting pumps, lagoons or manual switches), updating safety reports as appropriate and taking necessary remedial actions.	Buncefield type
6	Identify <b>vulnerable critical emergency response</b> resources and put in place contingency arrangements on or off site in event of failure at any time of year and make appropriate amendments to OnSEP.	Buncefield type
7	Where they rely on an off-site <b>Fire and Rescue Service</b> to respond, have a plan which clearly demonstrates there are adequate arrangements in place between them and the service provider.	All COMAH sites
8	Review their arrangements to communicate with residents, local businesses and wider community, in particular to ensure frequency of <b>communications</b> meets local needs and to cover arrangements to provide for dealing with local community complaints. They should agree frequency and form of communications with LAs and responders, making provision where appropriate for joint communications with those bodies.	All COMAH TT sites

1. New guidance  
**<http://www.hse.gov.uk/comah/buncefield/recommendations.htm>**
2. Annex 1 of the BSTG Initial report- recommendations requiring immediate action.  
**<http://www.hse.gov.uk/comah/buncefield/bstg1.htm>**
3. SPC/Permissioning/30" Follow up to the COMAH Competent Authority Policy on Containment of bulk storage of hazardous liquids and the Buncefield standards task group recommendations  
**[http://intranet/operational/hid\\_circs/permissioning/spc\\_perm\\_30/index.htm](http://intranet/operational/hid_circs/permissioning/spc_perm_30/index.htm)**

**Annex 2: Core intervention issues for on-site emergency plans**

Expectation and issues	Key questions
<p><b>Representative scenarios</b></p> <p>The emergency plan should be based on all <i>reasonably foreseeable emergency scenarios arising out of credible major hazard incidents</i>.</p> <ul style="list-style-type: none"> <li>■ <b>Top-tier sites:</b> these should be identified in the safety report.</li> <li>■ <b>Lower-tier sites :</b> the Major accident prevention policy requires a risk assessment to identify likely major accidents.</li> </ul>	
<p>Operator has considered the representative set of major accidents and identified the equipment, plant, resources and procedures required for mitigation. Procedures are able to deal with escalation of incident and are clear as to when to call the emergency services or initiate the off-site plan.</p>	<p>What analysis has been done?            What standards and guidance have been used by the operator (for example, trade association and manufacturers guidance) to decide on the mitigation measures needed?            What key measures have been taken e.g. for fire fighting, PPE, toxic refuges etc.?            Do staff have clear criteria and proper authority to make this decision? (note - this is a key area and problems often occur.)</p>

Expectation and issues	Key questions
Para . 100 of HSG 191 Questions 102 – 109 of RCS8 <b>“Emergency response”</b>	
<b>Command and control</b> Maintaining control in an emergency is complex and the clear allocation of responsibilities to key people with appropriate authority is critical to a plan’s successful deployment.	
<p>There is a clear chain of command to deal with emergency situations.</p> <p>Roles and responsibilities are clear for those with a part to play in the plan. The plan will normally identify a site main controller and incident controller.</p> <p>Deputising arrangements and call out rotas are clearly identified, as are provisions for handling situations that may arise out of hours.</p> <p>There are arrangements for accounting for all personnel and their safe evacuation, if appropriate.</p>	<p>Where sites are unmanned (e.g. out of hours) how does the emergency plan deal with this? Inspectors should give particular attention to how the plan deals with situations where the emergency services arrive first.</p> <p>Do responsible personnel have the authority to close down plants and processes?</p>
Questions 6 – 27 of RCS8 <b>“Emergency response”</b>	
<b>Training and testing</b> Training, testing and learning from experience are essential components in achieving a competent emergency response.	
<p>Those involved in the plan have the necessary skills and technical knowledge. Members of the emergency response team know what foreseeable scenarios they are likely to encounter and what actions are necessary to bring them under control.</p> <p>Clear and well-rehearsed procedures are demonstrated at all levels (plant, site and off-site) covering all expected scenarios using a range of exercises.</p> <p>Realistic training and practice drills are scheduled to ensure everyone receives them.</p>	<p>Is there an on-going training programme?            Does the training programme cover all key issues?            Is there evidence in training records or by discussions with staff that realistic training has been received?            Is there routine testing of all key elements of the emergency plan?            Following any test of the plan:</p> <ul style="list-style-type: none"> <li>■ Is there a review/debriefing for how effectively it was implemented and to identify any “lessons learnt”?</li> <li>■ Are any improvements identified integrated into a revised plan?</li> </ul>

Expectation and issues	Key questions
<b>“Emergency response”</b>	
<p><b>Communication and information handling</b>            Communication during an emergency is vital. “Lessons learnt” studies have shown that communication between the operator and the emergency services is the most critical factor in determining success or not of an emergency response. Speed is a key factor.</p>	
<p>There are specific emergency procedures for each process setting out the key information for major accident scenarios i.e. potential consequences in different weather conditions; names, properties and quantities of dangerous substances; location of likely major accidents on plant; emergency actions etc. There are planned interfaces between operators and emergency responders on-site (including alert / call out and liaison during a response). There are efficient means of information handling between all parties and the emergency control centre on site. There are means of raising the alarm for different scenarios e.g. toxic gas release or a fire.</p>	<p>Has the operator consulted with the emergency services about the on-site emergency plans and the information needed during an emergency?</p> <p>How do those with key roles to play during an emergency response (e.g. site main and incident controllers at top-tier sites) share a common picture of the developing emergency? (e.g. Use of aids such as white boards can help).            Are all communication links tested routinely to ensure that they will work in an emergency?(e.g. radios etc during a realistic test?)</p>
<b>Questions 59-69 of RCS8 “Emergency response”</b>	

**Annex 3: Examples of performance indicators to monitor the effectiveness of the on-site emergency response**

**Desired safety outcome**

The impact of a major incident is minimised.

**Monitoring the planned Emergency Response**

When measuring on-site emergency planning it is only useful to use leading indicators. Any lagging indicator would have to be around the amount of damage/injuries that could occur following a real incident.

**The following leading indicators can be used both in a ‘testing’ scenario or for real.**

**Possible leading indicators**

Percentage of:

- shutdown/isolation systems which functioned to the desired performance standard when tested.
- staff/contractors who take the correct action in the event of an emergency.