



National
Operational
Guidance

Training specification

Hazardous materials Health hazards



NFCC

Fire Central
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Hazard - Exposure to materials with acute health effects

Knowledge and understanding

Hazard

Exposure to materials with acute health effects

Learning outcome

Understand all associated hazard knowledge



Control measure - Substance identification: Toxic materials

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Gather information and recognise symbols, labels and other marking to identify toxic materials

Learning outcome

Understand:

- Classification and labelling of toxic materials
- Signage identifying the presence of toxic materials
- Triangulation of information to confirm toxic material

Refer to – Substance identification – Hazardous materials training specification

Practical application



Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify toxic materials

Demonstrate the ability to:

- Use signs, labels and markings to identify the presence of toxic materials
- Identify and interpret toxic materials incident information and where appropriate use detection equipment
- Use specialist advice to identify toxic materials information

Refer to – Substance identification – Hazardous materials training specification



Control measure - Cordon controls: Toxic materials

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Recognise the involvement of toxic materials and implement appropriate cordons

Understand:

- The importance of initial cordon controls to reduce exposure and contamination
- Instances when evacuation or shelter-in-place are necessary
- Limits and levels of exposure guidance to assist with tactical decisions
- Monitoring and/or modelling to determine protective actions
- Health monitoring protocols for people affected by toxic materials

Refer to – [Cordon controls – operations training specification](#)



Practical application

Control measure element

Recognise the involvement of toxic materials and implement appropriate cordons

Learning outcome

Demonstrate the ability to:

- Establish safe control and effective management of resources and the public
- Assess and monitor the effect of weather on airborne toxic materials
- Apply health surveillance procedures to monitor exposed responders

Refer to – [Cordon controls - operations training specification](#)



Control measure - Containment: Toxic materials

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Contain toxic materials

Learning outcome

Understand:

- Key factors that determine how toxic substances are contained
- Alternative methods of managing toxic substances that cannot be contained
- Key properties that affect behaviour of toxic:
 - Solids
 - Liquids
 - Vapours

Refer to – [Containment – Environmental training specification](#)

Practical application



Control measure element

Learning outcome

Contain toxic materials

Demonstrate the ability to:

- Assess the impact of a toxic substance release
- Liaise with a specialist adviser to determine suitable methods of containment
- Apply effective techniques to contain toxic substances
- Reduce vapourisation by appropriate means
- Effectively manage the mixing of toxic materials, containment systems and water

Refer to – [Containment – Environmental training specification](#)



Control measure - Safe method of work: Asbestos

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Apply Health and Safety Executive (HSE) approved safe methods of work once it is established asbestos is involved in an incident

Understand:

- The common use of asbestos materials in buildings and structures
- The three-step asbestos hazard identification process
- The actions which should be taken in an asbestos work area
- The precautions to be taken as part of the work method for asbestos containing materials
- Fire and rescue service locally agreed safe method of work for asbestos incidents



Practical application

Control measure element

Apply Health and Safety Executive (HSE) approved safe methods of work once it is established asbestos is involved in an incident

Learning outcome

Demonstrate the ability to:

- Identify and assess the risk from asbestos materials:
 - Three-step hazard identification process
- Instigate asbestos procedures
 - HSE agreed method of working



Hazard - Release or spill of corrosive material

Knowledge and understanding

Hazard

Release or spill of corrosive material

Learning outcome

Understand all associated hazard knowledge



Control measure - Substance identification: Corrosive materials

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify corrosive materials

Understand:

- Classification and labelling of corrosive materials
- Signage identifying the presence of corrosive materials
- Procedures for Litmus and pH scale testing of corrosive materials
- Considerations when observing/monitoring for signs of corrosion

Refer to – Substance identification – Hazardous materials training specification

Practical application

Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify corrosive materials

Demonstrate the ability to:

- Use signs, labels and markings to identify the presence of corrosive materials
- Identify and interpret corrosive material incident information and where appropriate use detection equipment
- Use specialist advice to identify corrosive materials information
- Assess the risk of fire from corrosive materials

Refer to – Substance identification – Hazardous materials training specification



Control measure - Cordon controls: Corrosive materials

TRAINING SPECIFICATION



Knowledge and understanding

Control measure element

Learning outcome

Recognise the involvement of corrosive materials and implement appropriate cordons

Understand:

• Protection of personnel and public by effective and proportionate:

- Cordons
- Respiratory protection (RPE)
- Chemical protective clothing (CPC)

Refer to – [Cordon controls – operations training specification](#)

Practical application

Control measure element

Learning outcome

Recognise the involvement of corrosive materials and implement appropriate cordons

Demonstrate the ability to:

• Establish safe control and effective management of resources and the public

• Implement cordons based on:

- Quantity
- Location
- Physical state

• Establish contingency arrangements for contamination assessment and decontamination

• Apply health surveillance procedures to monitor exposed responders

Refer to – [Cordon controls – operations training specification](#)



Control measure - Containment: Corrosive materials



TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Contain corrosive materials

Understand:

- The four principal ways of dealing with spills or release of corrosives
- The potential additional hazards from a reaction of corrosive materials and containment material

Refer to – [Containment – Environmental training specification](#)

Practical application

Control measure element

Learning outcome

Contain corrosive materials

Demonstrate the ability to:

- Assess the impact of a corrosive substance release
- Liaise with a specialist adviser to determine suitable methods of containment
- Apply effective techniques to contain corrosive substances
- Reduce vapourisation by appropriate means
- Effectively manage the mixing of corrosive materials, containment systems and water

Refer to – [Containment – Environmental training specification](#)



Control measure - Treatment: Corrosive materials

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Treat corrosive materials

Understand:

- Neutralisation of a spill
- The adverse effects and potential hazards of neutral 'Salt'
- Biodegradability of neutralised spills
- Liaison protocols with environmental agencies to consult on neutralisation tactics

Practical application

Control measure element

Learning outcome

Treat corrosive materials

Demonstrate the ability to:

- Access specialist advice to inform decision making
- Apply safe and effective methods of neutralisation



Control measure - Dilution: Corrosive materials

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Dilute corrosive materials

Understand:

- The process and potential hazards when diluting corrosive materials, as a last resort
- The criteria for consideration prior to dilution
- The general rule for dilution
- The potential environmental impact of diluting corrosive materials
- The limitations of diluting corrosive materials as a tactic

Refer to – [Dilution – Environmental training specification](#)



Practical application

Control measure element

Learning outcome

Dilute corrosive materials

Demonstrate the ability to:

- Confirm the suitability of corrosive materials for dilution
- Apply safe and effective methods of dilution

Refer to – [Dilution – Environmental training specification](#)



Hazard - Biological agents not involved in fire

Knowledge and understanding

Hazard

Learning outcome

Biological agents not involved in fire

Understand all associated hazard knowledge



Control measure - Substance identification: Biological agents

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify biological agents

Understand:

- Classification and labelling of biological agents
- Signage identifying the presence of biological agents
- Situations where biological agents may be encountered
- Biological agent transport categories
- Triple packaging systems

Practical application

Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify biological agents

Demonstrate the ability to:

- Use signs, labels and markings to identify the presence of biological agents
- Identify and interpret biological agent incident information and where appropriate use detection equipment
- Use specialist advice to identify biological agent information

Refer to – Substance identification – Hazardous materials training specification



Control measure - Hazard identification within a controlled site or uncontrolled location

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Identify hazards within a controlled site or uncontrolled location

- Understand:
- The process of gathering hazardous materials information, including additional hazards, within controlled sites or uncontrolled locations
 - Liaison protocols with hazardous materials advisers and on-site specialists

Practical application

Control measure element

Learning outcome

Identify hazards within a controlled site or uncontrolled location

- Demonstrate the ability to:
- Gather hazardous materials information, including additional hazards, within controlled sites or uncontrolled locations
 - Liaise with hazardous materials advisers and on-site specialists to obtain hazardous materials information
 - Carry out environmental impact assessment from hazardous materials



Control measure - Containment: Biological agents

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Contain biological agents

- Understand:
- Containment and control measures for premises using/storing biological agents
- Refer to – [Containment – Environmental training specification](#)



Practical application

Control measure element

Learning outcome

Contain biological agents

Demonstrate the ability to:

- Assess the impact of a biological agent release
- Liaise with a specialist adviser to determine suitable methods of containment
- Apply effective techniques to contain corrosive substances
- Safe methods of working at a biological

Refer to – [Containment – Environmental training specification](#)



Control measure - Personal protective equipment (PPE): Biological agents

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Use personal protective equipment for biological agents

Understand:

- The minimum requirements for PPE and RPE in the absence of specialist advice

Refer to – Personal protective equipment (PPE): Hazardous materials – Hazardous materials training specification

Practical application

Control measure element

Learning outcome

Use personal protective equipment for biological agents

Refer to – Personal protective equipment (PPE): Hazardous materials – Hazardous materials training specification



Control measure - Firefighter decontamination: Biological agents

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Decontaminate firefighters who have been contaminated by biological agents

Learning outcome

Understand:

- Decontamination procedures for all levels of biological agent
- The capabilities and limitations of decontamination procedures
- The term 'contact time'
- The considerations of using disposable personal protective equipment (PPE)

Practical application

Control measure element

Decontaminate firefighters who have been contaminated by biological agents

Learning outcome

Demonstrate the ability to:

- Adopt and prepare decontamination procedures prior to entering the hazard area
- Refer to – Contaminated responders – hazardous materials training specification



Hazard - Biological agents involved in fire

Knowledge and understanding



Hazard

Learning outcome

Biological agents involved in fire

Understand all associated hazard knowledge



Control measure - Life saving actions: Biological agents

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Life saving actions: Biological agents

Understand:

- The process of assessing life risk at biological incidents
- The actions necessary to save life (including animals) where there is risk of biological agents

Practical application

Control measure element

Learning outcome

Life saving actions: Biological agents

Demonstrate the ability to:

- Asses the existence of life risk at biological incidents
- Implement procedures to perform life saving actions (including animals) in the hazardous material environment
- Establish safe areas to minimise contamination



Control measure - Appropriate intervention: Biological agents involved in fire



TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Appropriate intervention: Biological agents involved in fire

Learning outcome

Understand:

- Containment of biological agents – See control measure – Containment: Biological agents
- How biological agents may react in a fire situation
- Appropriate intervention techniques without increasing risk of firespread
- The importance of identifying risk information where biohazard symbols are displayed

Practical application

Control measure element

Appropriate intervention: Biological agents involved in fire

Learning outcome

Demonstrate the ability to:

- Communicate with on-site specialist to inform operational decision making
- Assess incident information to determine appropriate intervention tactics
- Implement appropriate intervention actions relative to the situation



Control measure - Controlled burning: Biological agents

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Controlled burning of biological agents

Understand:

- The importance of specialist advice when performing a controlled burn of biological hazards
- The limitations of control systems to prevent escape of biological hazards
- Pollution control procedures to prevent spread of contamination

Practical application

Control measure element

Learning outcome

Controlled burning of biological agents

Demonstrate the ability to:

- Perform a controlled burn in a safe, efficient and effective manner
- Implement pollution control procedures and communicate to relevant agencies

Refer to – Controlled burning – Fires and firefighting training specification



Hazard - Radioactive contamination

Knowledge and understanding

Hazard

Learning outcome

Radioactive contamination

Understand all associated hazard knowledge



Control measure - Substance identification: Radioactive materials



TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Gather information and recognise symbols, labels and other marking to identify radioactive materials

Learning outcome

Understand:

- Classification and labelling of radioactive materials
- Signage identifying the presence of radioactive materials

Practical application

Control measure element

Gather information and recognise symbols, labels and other marking to identify radioactive materials

Learning outcome

Demonstrate the ability to:

- Use signs, labels and markings to identify the presence of radioactive materials
- Identify and interpret radioactive material incident information and where appropriate use detection equipment
- Use specialist advice to identify radioactive materials information

Refer to – Substance identification – Hazardous materials training specification



Control measure - Cordon controls: Radioactive materials

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Recognise the involvement of radioactive materials and implement appropriate cordons

Understand:

- Initial assessment of contaminated areas to identify appropriate hazard zones
- Procedures to manage, monitor and maintain personnel and public safety

Practical application

Control measure element

Learning outcome

Recognise the involvement of radioactive materials and implement appropriate cordons

Demonstrate the ability to:

- Establish safe control and effective management of resources and the public
- Implement cordons appropriate to the potential source of radiation
- Apply monitoring and decontamination procedures

Refer to – [Cordon controls - operations training specification](#)



Control measure - Warn, inform and advise people

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Warning, informing and
advising people

Understand:

- The relevant legislation regarding emergency services obligations to warn, inform and advise the public
- The groups of people who may require warning, information, instruction and updates
- How appropriate warning, information, instruction and updates affect behaviours of people in emergency situations
- How lack of appropriate warning, information, instruction and updates affect behaviours of people in emergency situations
- The characteristics of appropriate warnings
- Methods for providing warnings, information, instruction and updates to people in emergency situations
- How to identify, control and manage the public's access in the vicinity of the incident

Practical application



Control measure element

Learning outcome

Warn, inform and advise
people

- Demonstrate the ability to:
- Use appropriate means to warn, inform, instruct and update public
 - Provide information that is
 - Specific
 - Comprehensible
 - Timely
 - Credible
 - Provides cues that are identifiable for action
 - Instigate appropriate procedures for warning public according to the environment and nature of warning and consider the use of:
 - Media
 - Social media
 - On foot/in person
 - PA announcements
 - Establish and maintain an appropriate contact in line with service procedure



Control measure - Evacuation and shelter

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Evacuation of people

Understand:

- The hazards and risks associated with emergency evacuation
- The potential behaviour of people in emergency situations
- The emergency evacuation procedures for differing situations
- The considerations for incorporating evacuation procedures into incident plans
- The impact of disruption to transport networks whilst dealing with large numbers of people at transport related incidents
- The wider impact of dealing with significant numbers of evacuated people

Practical application

Control measure element

Learning outcome

Use appropriate systems to maintain the safety of people

Demonstrate the ability to:

- Liaise with the responsible person to obtain advice relating to evacuation arrangements
- Identify where 'evacuation' or 'stay put' is appropriate and record rationale for decision
- Perform an evacuation according to agreed service protocols
- Recognise where the involvement of other agencies is required to assist evacuation
- Identify the availability of emergency plans that support an evacuation
- Develop an evacuation strategy using available information
- Identify safe egress routes and refuge points
- Identify where the behaviour of people may affect an evacuation
- Put in place control measures to limit hazards to public and staff during evacuation
- Establish welfare arrangements for people evacuated from transport incidents



Control measure - Containment: Radioactive materials

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Contain radioactive materials

Understand:

- The hierarchy of pollution control to contain unsealed sources of radiation
- Procedures to manage and maintain control of radioactive materials

Practical application

Control measure element

Learning outcome

Contain radioactive materials

Demonstrate the ability to:

- Apply the hierarchy of pollution control to contain unsealed sources of radiation
- Establish procedures to manage and maintain control of radioactive materials
- Liaise with a specialist advisers/agencies to manage risk from radioactive materials



Control measure - Firefighter decontamination: Radioactive materials

TRAINING SPECIFICATION



Knowledge and understanding

Control measure element

Learning outcome

Firefighter decontamination: Radioactive materials

Understand:

- Firefighter decontamination procedures for radioactive materials
- The need for medical intervention when personnel have been exposed to radioactive materials

Practical application

Control measure element

Learning outcome

Firefighter decontamination: Radioactive materials

Demonstrate:

- Firefighter decontamination procedures for radioactive materials
- The need for medical intervention when personnel have been exposed to radioactive materials



Control measure - Decontamination: Radioactive materials

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Decontamination: Radioactive materials

Understand:

- Public decontamination procedures for radioactive materials

Refer to control measure – [Firefighter decontamination: Radioactive materials](#)

Practical application

Control measure element

Learning outcome

Decontamination: Radioactive materials

Demonstrate the ability to:

- Establish public decontamination procedures for radioactive materials

Refer to control measure – [Firefighter decontamination: Radioactive materials](#)



Hazard - Exposure to radiation

Knowledge and understanding

Hazard

Learning outcome

Exposure to radiation

Understand all associated hazard knowledge



Control measure - Substance identification: Radioactive materials

TRAINING SPECIFICATION



Knowledge and understanding

Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify radioactive materials

Understand:

- Classification and labelling of radioactive materials
- Signage identifying the presence of radioactive materials

Practical application

Control measure element

Learning outcome

Gather information and recognise symbols, labels and other marking to identify radioactive materials

Demonstrate the ability to:

- Use signs, labels and markings to identify the presence of radioactive materials
- Identify and interpret radioactive material incident information and where appropriate use detection equipment
- Use specialist advice to identify radioactive materials information

Refer to – Substance identification – Hazardous materials training specification



Control measure - Manage the radiation dose received by firefighters

TRAINING SPECIFICATION

Knowledge and understanding



Control measure element

Learning outcome

Manage the radiation dose received by firefighters to as low as reasonably practicable (ALARP)

Understand:

- The factors for managing exposure to radiation:
 - Time
 - Distance
 - Shielding
- The use of personal dosimeters
- The use of dose rate survey meters
- The considerations prior to an exposure event

Practical application

Control measure element

Learning outcome

Manage the radiation dose received by firefighters to as low as reasonably practicable (ALARP)

Demonstrate the ability to:

- Assess the need for fire service exposure to radiation source(s)
- Employ the principles for managing exposure to radiation:
 - Time
 - Distance
 - Shielding
- Use personal dosimeters
- Use dose rate survey meters
- Monitor and record radiation exposure information