RADSAFE – Transport Emergency Arrangements for Radioactive Materials

Radsafe

RICARDO

www.radsafe.org.uk

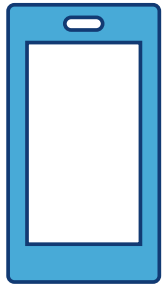
Housekeeping

Fire

Facilities

Breaks

Timings



Phones

Feedback

Training Materials

Introductions

1972

This incident, involving fuming sulphuric acid, led to the setting up of the NCEC in 1973

PURPOSE

To provide an overview of RADSAFE and fundamental requirements to facilitate your role as a Radsafe responder

By the end of the session, learners will be able to;

- **Describe the operation of Radsafe**
- **Identify expectations for working with emergency response organisations**
- **Demonstrate ability to understand hazardous situations and communicate effectively**
- **Contribute to bringing an incident to a safe and successful conclusion**
- **Complete relevant incident documentation**

AGENDA

What is RADSAFE

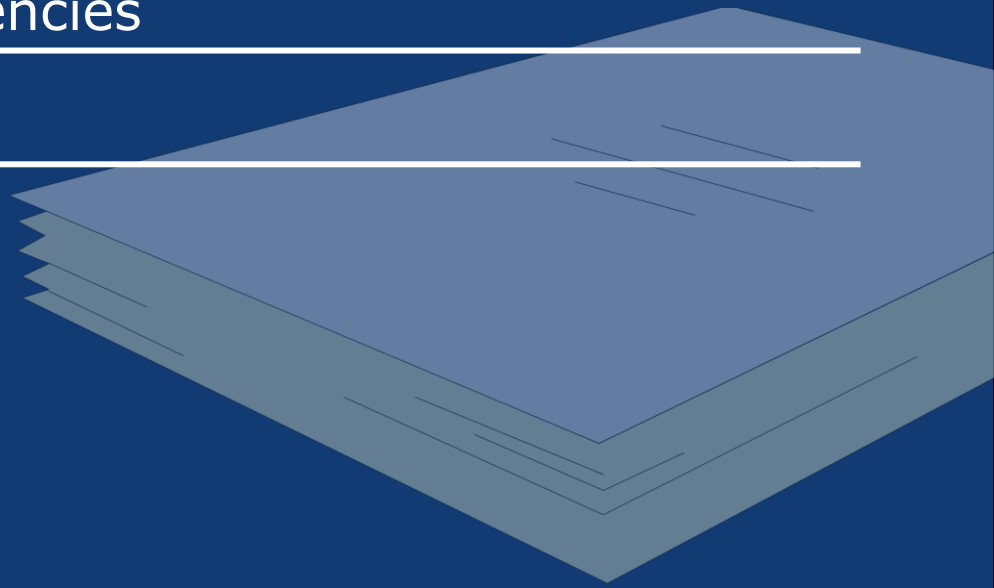
Operation of Radsafe

Roles and responsibilities of a Radsafe Responder

Liaising with other agencies

‘Level 3’ Recovery

Exercise



INTRODUCTION – WHAT IS RADSAFE?

What is Radsafe?

Statement of Intent

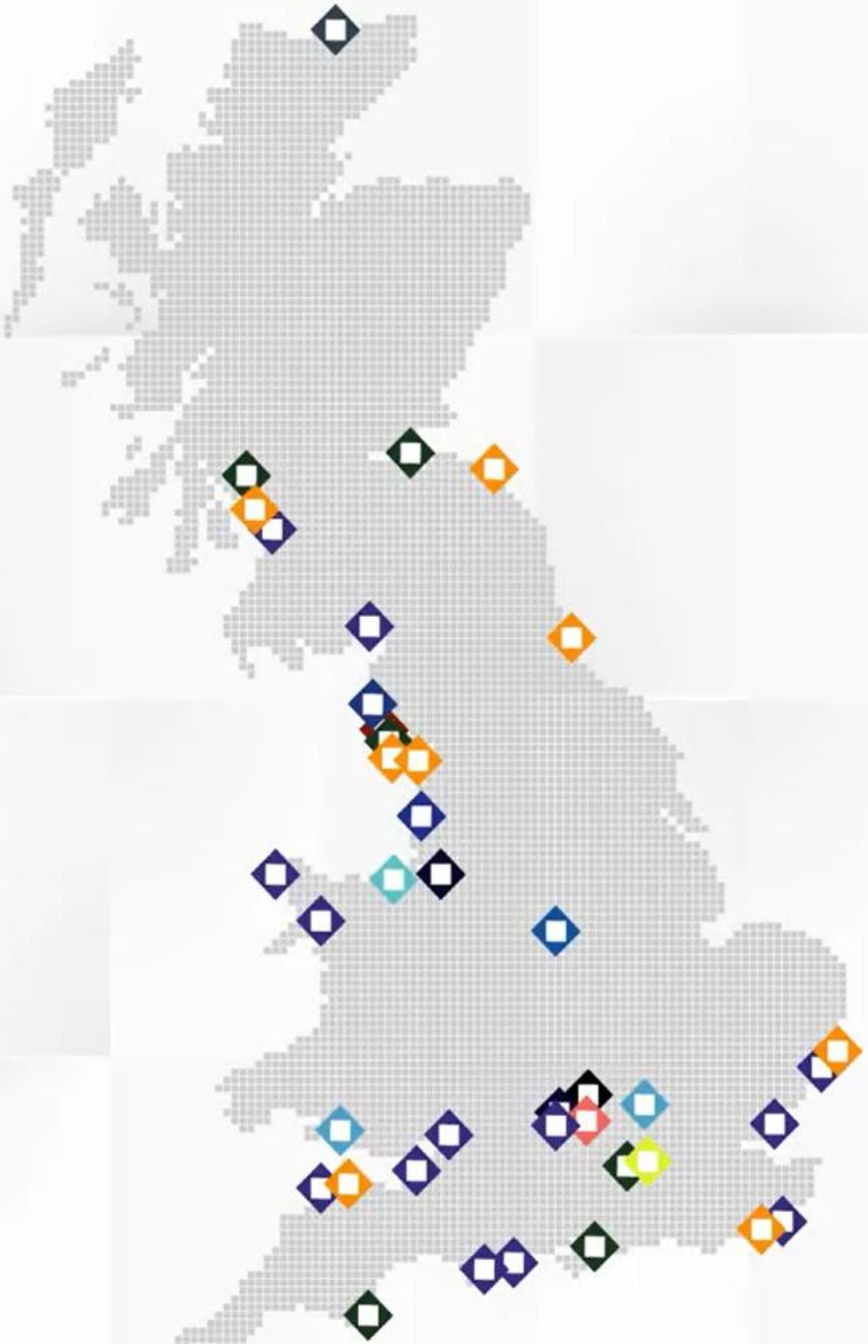
“To be a mutual-aid association whose members collaborate, sharing knowledge and experience, to define and manage initial emergency response procedures for incidents occurring in Great Britain during transportation of members' radiological materials.”

- Unincorporated Association Formed (August 1999)
- Prior to this;

NIRREP	•Nuclear Industries Road / Rail Plan
IFTFEP	•Irradiated Fuel Transport Flask Plan
SNIFTFEP	•Scottish Nuclear Irradiated Fuel Transport Flask Emergency Plan
NAIR	•National Arrangements for Incidents involving Radiation

- Rationalisation of Response driven by Emergency Services & Industry
- Police, Fire Service, Military, EA, SEPA, DfT, ONR, Nuclear Industry

RADSAFE Members



- Ministry of Defence
- EDF Energy
- Nuclear Restoration Services (NRS – Formerly Magnox)
- Sellafield Ltd.
- Rolls Royce
- Urenco
- Springfields
- Imperial College
- GE Healthcare
- STFC
- Eckert& Ziegler
- UKAEA
- LLWR
- DSRL
- TradeBe
- Unitech

Primary role of RADSAFE

Under the Civil Contingencies act (2004) – Category 2 Response Organisation (ONR)

As a Category 2 Response organisation, the role of Radsafe is to;

- Co-operate and share information with other response organisations
- To provide radiological protection advice, on scene, to response organisations
- Be integrated into emergency preparedness and planning in so far, they are included in Local Resilience Forums (LRFs)

- Responsibilities may include (discussed later);
  - Identifying the extent of risk areas (cordons and public safety distances)
  - Assessing and monitoring the hazards and risks
  - Sharing information for suitable handling and storage
  - Advising on Personal Protective Equipment/Decontamination measures

What Does RADSAFE Not Cover ?

MOD Convoys

Transports covered by individual Arrangements

NAIR (AWE)

- NAIR acts as a “long stop” for those incidents which are not covered by formal arrangements or for which formal arrangements have not responded appropriately. NAIR should NOT be quoted as a formal emergency plan by anyone.

What is a RADSAFE Incident?

An incident where it is suspected that there has been a loss of containment leading to the release of radioactivity or increase in radiation levels

- An accident (e.g. road traffic collision RTC)
- A deliberate attempt to interfere with a package
- Does NOT include mechanical breakdown of the vehicle
- Fire or explosion
- Immersion or flooding
- Loss of load or spillage

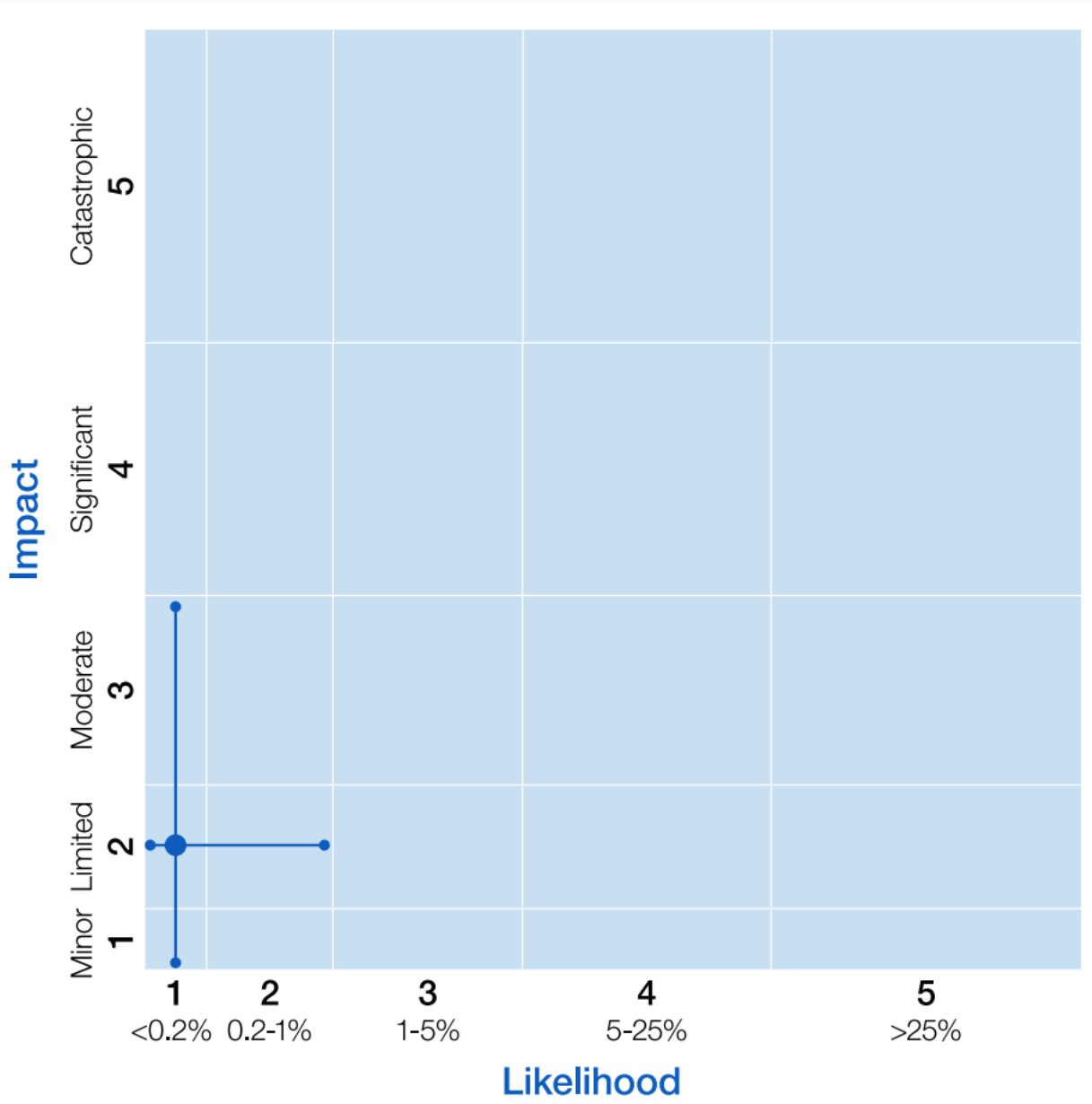
National Risk Register

- Low risk – when properly handled by trained individuals
- Current worst case scenario:

“The reasonable worst-case scenario covers radioactive goods that could be stolen, lost or transported by a legal owner without proper regard to radiation safety regulations. The sources would be mixed with non-contaminated waste in a scrapyard or subsequently melted in a foundry and used to produce reinforcing bars, table pedestal castings, cast valve bodies or electric motor parts.”

National Risk Register

- **Key assumptions:-** accidental dissemination of radioactive contamination into other materials is highly unlikely due to detection systems during manufacturing of such articles.
- **Variations on scenario:-** radioactive article becoming breached in an urban environment. Admission of individuals to hospital exhibiting acute radiation poisoning.
- **Response Capability requirements:-** decontamination and scanners would be required immediately. Public communication campaigns. Monitoring (sampling and lab analysis) and waste management.



OPERATION OF RADSAFE

Operation of RADSAFE

Activation can come through the 0800 from a member of the public or from any of the category 1 response organizations

Emergency Services

Emergency services can activate through the 0800 number, or through NCEC's Chemsafe scheme

RICARDO

Level 1 - Ricardo's Chemical Risk Emergency Responders

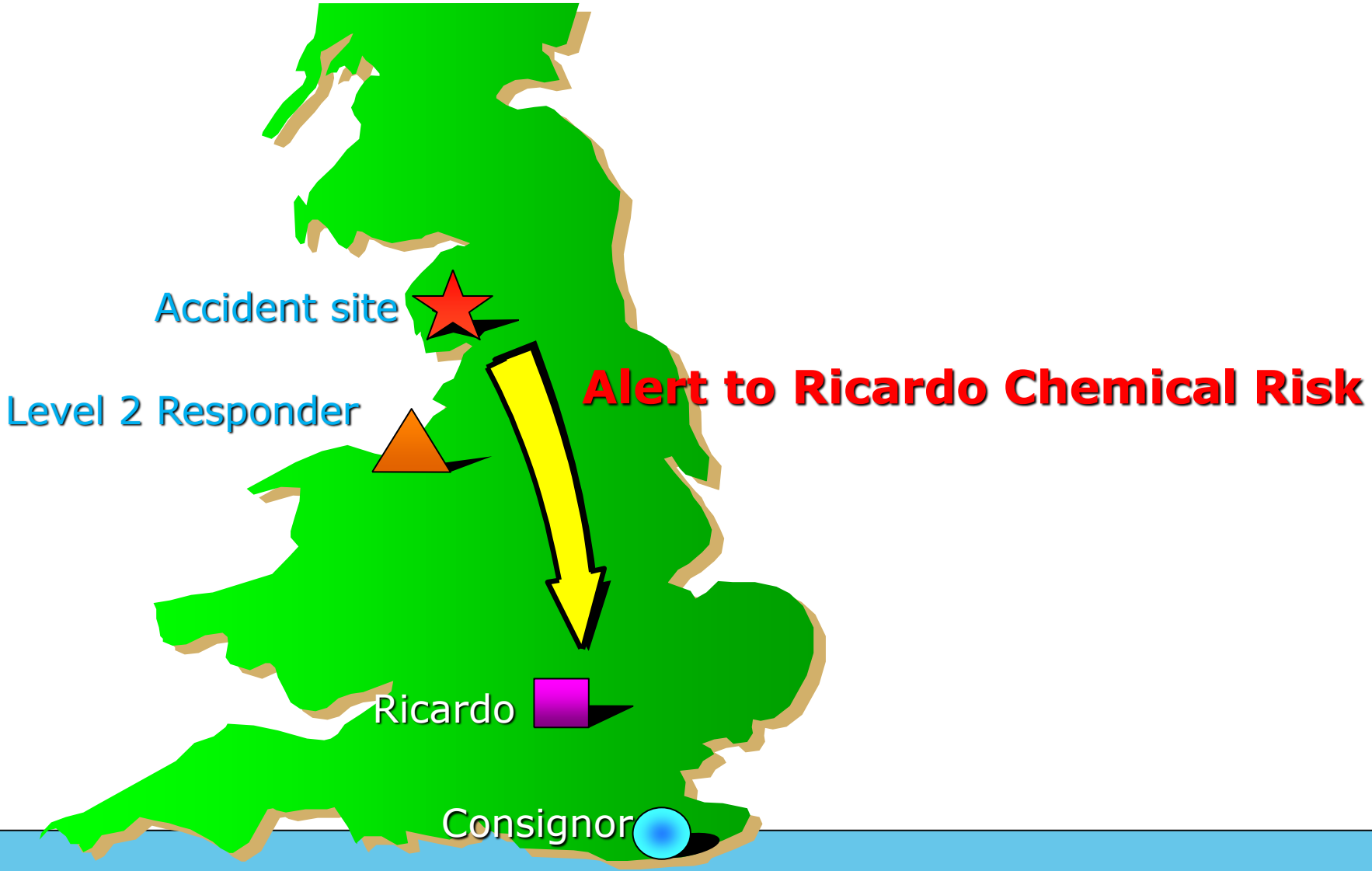
24/7 call handling service to take initial information and provide initial generic safety advice (level 1 response)

Level 2 – Radsafe Responder

A Radsafe member is mobilized to the incident scene to provide tactical advice to the emergency services

For a Rail Event ZPC is involved

Level 1 - Provision of Information



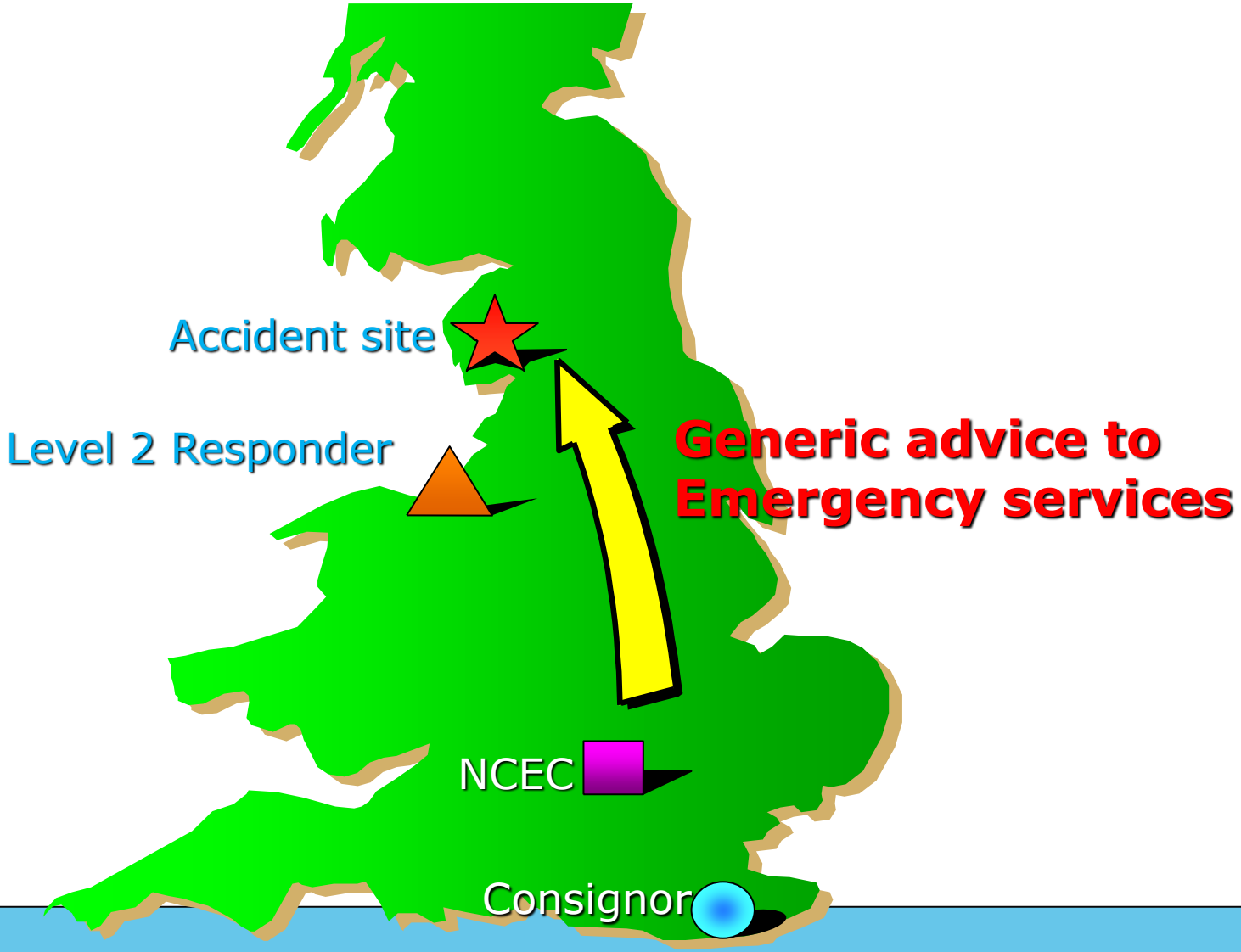
RADSAFE Emergency Notification Centre

Ricardo Chemical Risk – Emergency Responders (ERs)

- Based at Harwell in Oxfordshire
- Staffed 24 Hours a day all year round
- Identifies most appropriate site to respond

Radsafe

Level 1 - Provision of Information



Generic Advice

DO

Send casualties to hospital without delay if there are life threatening injuries.

Keep vehicles and people upwind.

Set cordon area at 45m.

Wear BA or CPS if on rescue or fire fighting duty.

Use dosemeters and survey meters.

Extinguish fires.

Seek advice on decontamination (In general, shower and contain "run off").

Bag up clothing and equipment used within the cordon.

Spray cool nuclear fuel flask for at least 30 minutes if the flask has been involved in a fire. Use ground monitors if possible.

Retrieve transport documentation from the vehicle, if it is safe to do so.

Issue Date: March 2016

DO NOT

Put hands to mouth.

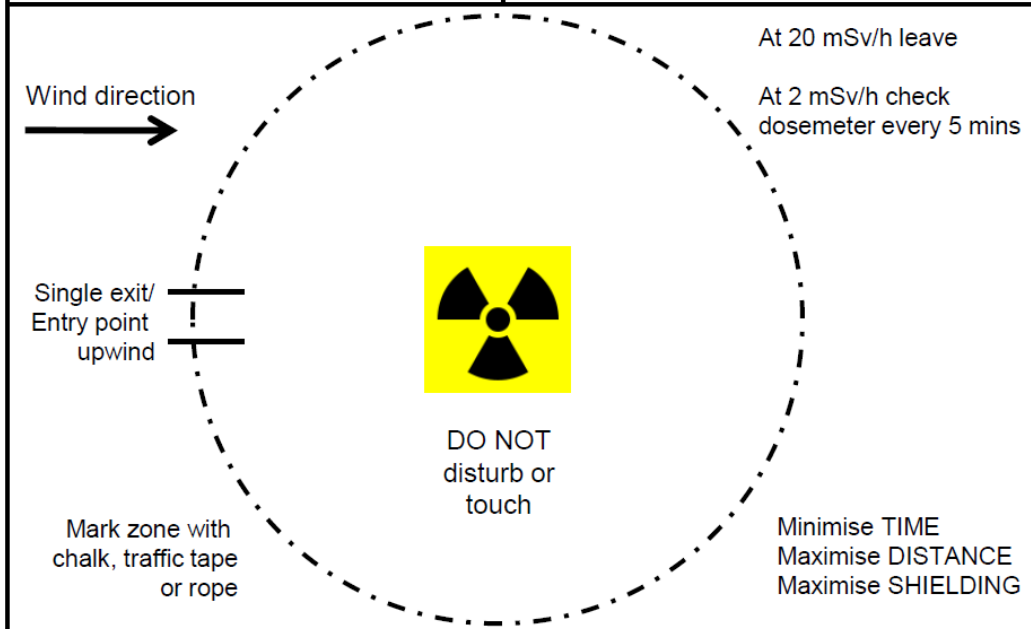
Eat, drink or smoke if radiation release has occurred or is suspected to have occurred.

Remember

Transport is strictly controlled.

Appropriate packages are used for transport risks.

Undamaged packages may have a measurable dose rate up to 2 mSv/hr (refer to documentation).



Radsafe

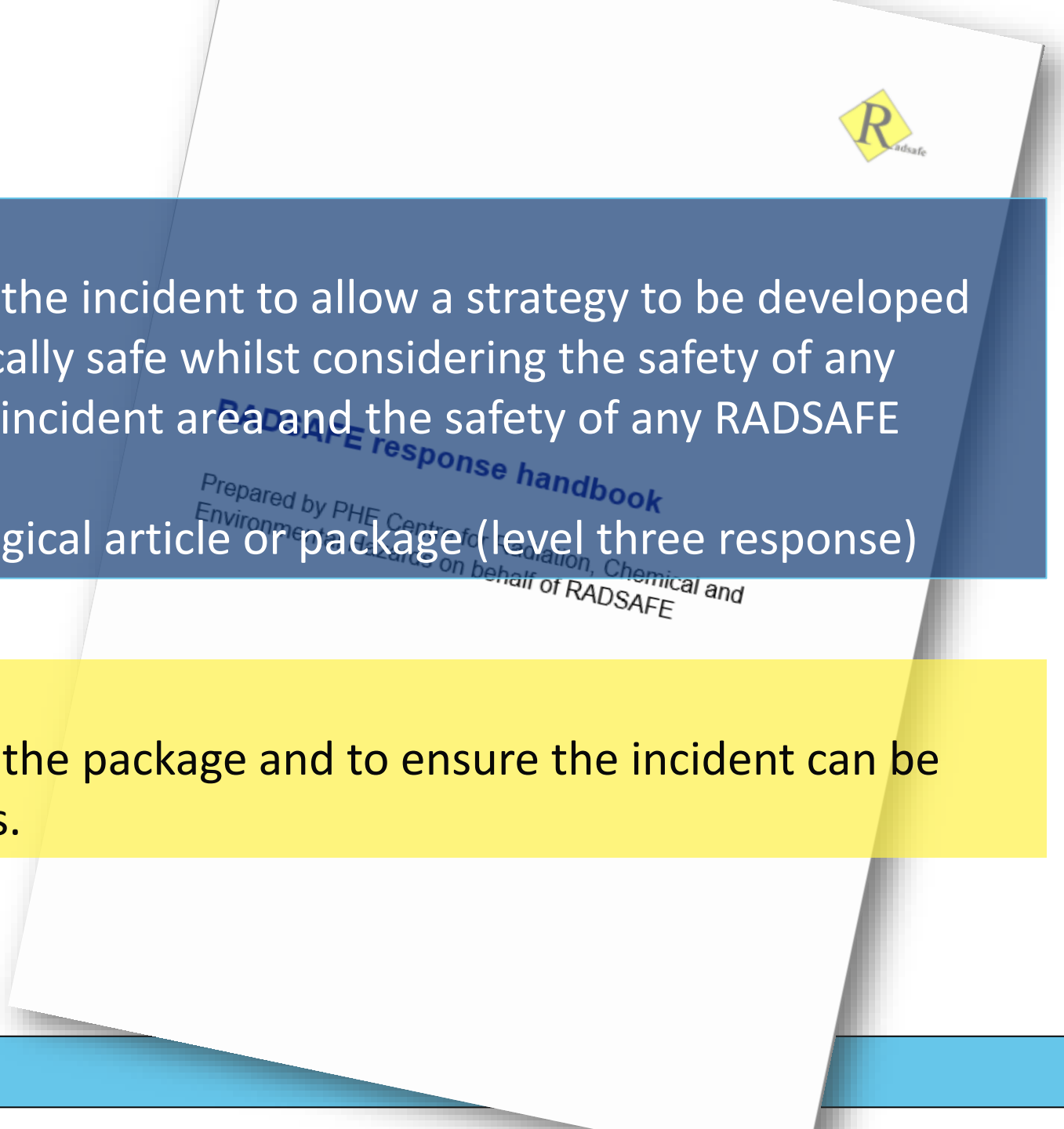
Level 1 – Provision of information

Level 2 - Responder at scene to give advice

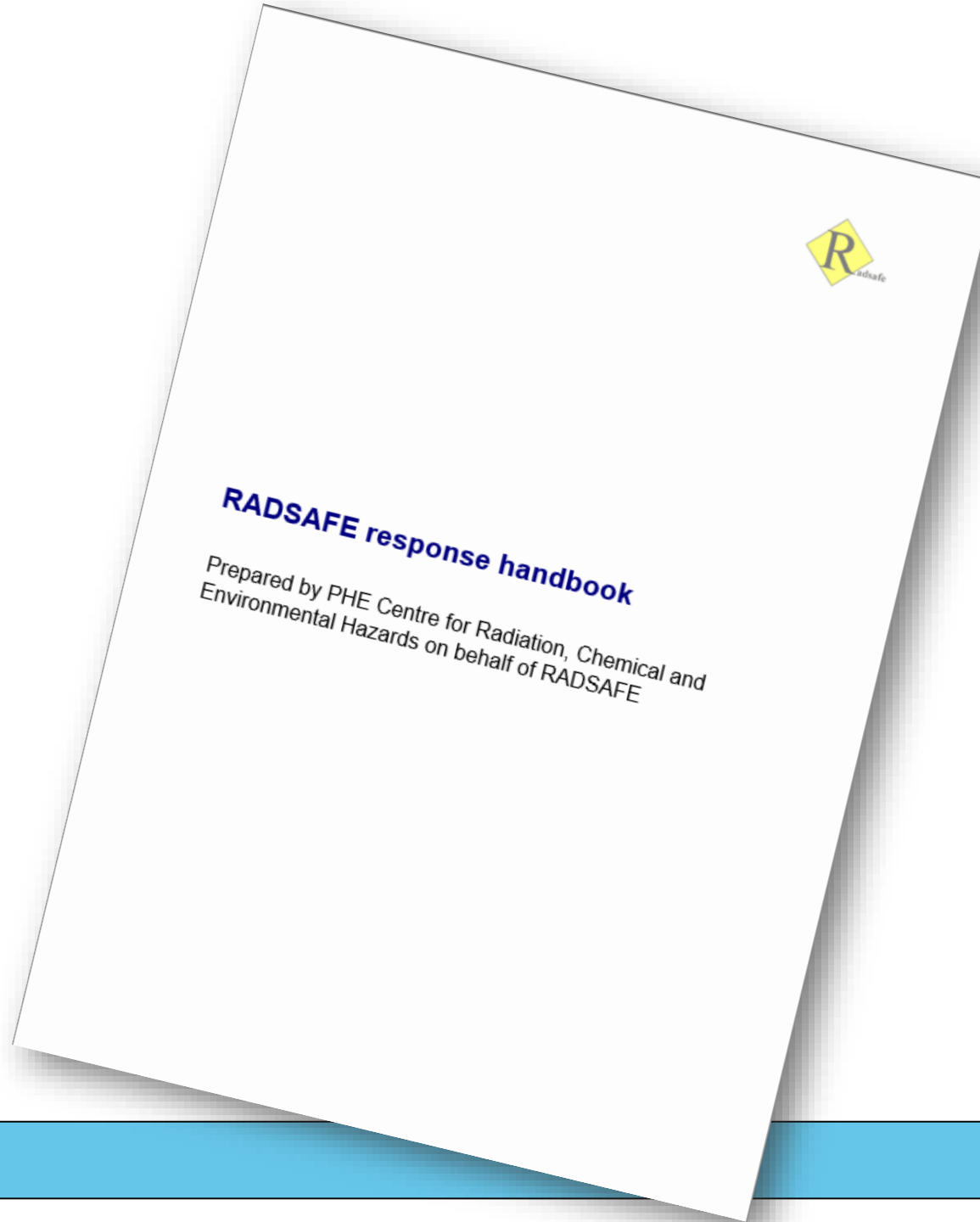
What is your role?

Radsafe Responder;
Gather radiological information about the incident to allow a strategy to be developed for making the incident area radiologically safe whilst considering the safety of any emergency services responders in the incident area and the safety of any RADSAFE responder(s).
Your role is NOT to recover any radiological article or package (level three response)

Consignor;
The role of the consignor is to recover the package and to ensure the incident can be returned to normality for public access.



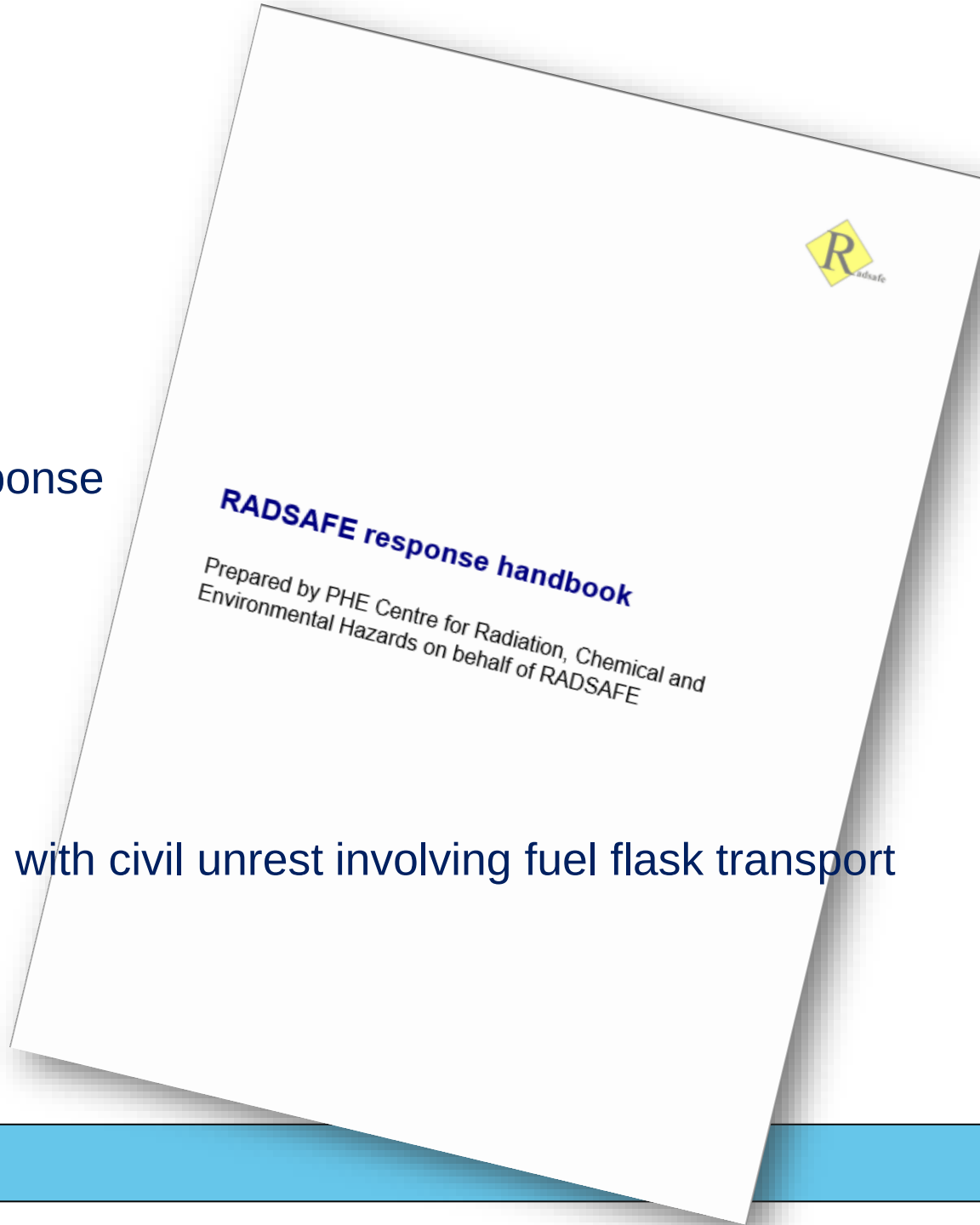
Responder Handbook



Radsafe

Responder Handbook

Annex A – RADSAFE Notification Form
Annex B – RADSAFE generic advice
Annex C – Response diagram
Annex D – RADSAFE responder equipment list
Annex E – Generic risk assessment for RADSAFE response
Annex F – RADSAFE log sheet
Annex G – Layout of inner/outer cordon
Annex H – RADSAFE personal monitoring form
Annex I – RADSAFE survey form
Annex J – RADSAFE hand-over form
Annex K – Incident management structure
Annex L - Advice for police officers to use when dealing with civil unrest involving fuel flask transport
Annex M – Suggested report structure
Annex N - RADSAFE consignor Q&A



Organisational Response

What is your process when responding to an incident?

- Receipt of call.
- Internal notification procedure.
- Notification of Office for Nuclear Regulation.
- Details of duty staff.
- Availability of transport.
- Availability of equipment (Annex D).
- Maps of incident area.
- Availability of protective clothing.
- Facilities established on site.
- Briefing/Despatch of responder.
- Risk assessment (Annex E).
- Method and contact points for communicating with other agencies.
- Instrument check.
- Reminder to take identification.
- Communication with own organisation.

Pre-incident Checklist

Item	Check	Complete (✓)
Incident details	Ensure home-site personnel are fully aware of the incident (nature, location etc.) and details of team(s) being deployed Gather all available information from the scene; speak to control or tactical advisor where necessary	
Communications	Check that you have communications equipment (e.g. mobile phones, radios, chargers etc.) and perform pre-departure communication check if relevant. Ensure you have all contact details for your home site, the incident location etc. Have you let your family know that you are being deployed for what may be a protracted period so they can make any necessary arrangements? Have you got any medication that you may need?	
Welfare	Consider welfare arrangements (availability of food and drink, toilet facilities)	
Location and Access	Check that you have details of the site location and access arrangements as far as known at the time of departure. Who is the incident site contact	
Finance	Ensure you have the means to pay for fuel, food, accommodation etc. (e.g., Company credit card) depending on your company policy.	
Response Vehicle	Perform prescribed vehicle safety checks, check fuel and oil levels etc	
Dosimetry	Check all responders have personal dosimetry equipment	
PPE/RPE	Ensure that you have adequate supplies of PPE and RPE including that for radiological protection (e.g. overalls, gloves, overshoes, respirators) and adverse weather conditions (coats, waterproofs, gloves, protective footwear)	
HP Instrumentation	Confirm range of HP instruments available (dose rate, contamination) and perform instrument function checks	
Other Equipment	Check other equipment available and working (e.g. Torches, iPads, Binoculars	
Consumables	Check stocks of consumables such as waste bags, 'radioactive' labels, adhesive tape, hand cleaner, spare batteries	
Documentation	Check that you have the RADSAFE documentation (RADSAFE File, Package handbook, supplies of RADSAFE Forms) Data books, copy of IRR17	
Prior to departure	Go to the toilet	

Radsafe responder equipment list

- What equipment do you have to take with you to an incident?
  - Radsafe Responder Handbook Appendix D

	Item No.	Equipment	Specification	Suggested Effective Range / Function	Minimum Required
Doserate	1	Gamma	MultiRange /Auto Scaling	0 microSv/hr to several hundred milliSv/hr with useful energy ranges from ~ 100 kev to 2.5 Mev	2
	2	Beta / Gamma	Multi Range /Auto Scaling	0 microSv/hr to several hundred milliSv/hr with useful energy ranges from ~ 10 kev to 2.5 Mev	2
Contamination	3	Alpha	Scintillation Probe and Suitable Ratemeter Combination		2
	4	Beta	Scintillation Detector or Pancake Geiger with Suitable Ratemeter		2
	5	Low Energy Beta	Large area Scintillation, Pancake Geiger, Gas Proportional etc. and Suitable Ratemeter		2
	6	Low energy gamma / X-Ray	Sensitive gamma / X Ray scintillation detector.	Capable of responding to ~ 5 kev photons and above.	2

	Item No.	Equipment	Specification	Suggested Effective Range / Function	Minimum Required
Dosimetry	7	Personal Dosimetry	Alarming Electronic Personal Dosimeters with capability to read instantaneous Dose/Rate		1 each responder
	8	Approved Dosimetry	As per company / ADS issue		1 each responder
Sampling	9	Smear / Swab Samples	Industry Standard 55 mm diameter papers	Determining Surface Contamination	1 Box
	10	Large Area Swab	Paper towel or tissue	Determining Surface Contamination	1 Roll / 1 Box
	11	Containers for Samples	Appropriate containers for the preservation of Smears / Swabs / Air Samples	Preserve sample and avoid cross contamination.	100
	12	RADSAFE Forms	Survey Form	Identification of monitoring results	Pack
	13	RADSAFE Forms	Personal Monitoring Form	Identification of monitoring results	Pack
	14	RADSAFE Forms	Hand Over Form	Provision of information and actions undertaken by Responders	Pack
	15	Tweezers /Forceps	Disposable / DE contaminable	for remote sampling or manipulating	2
	16	CEE VEE Reachers	1 metre or longer	for remote sampling or manipulating	2
	17	Instrument check sources	Suitable for monitoring equipment carried		

Radsafe responder equipment list

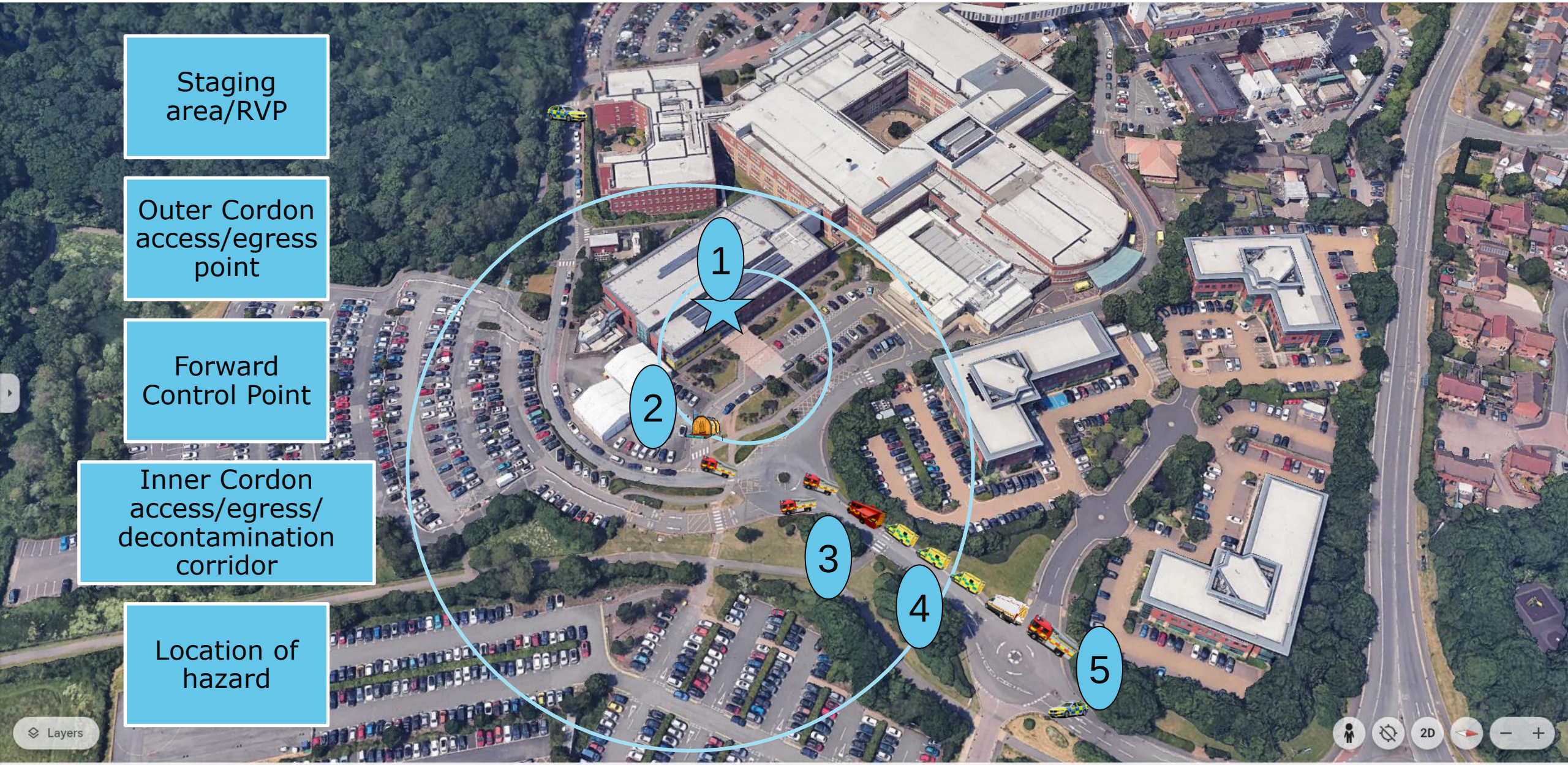
	Item No.	Equipment	Specification	Suggested Effective Range / Function	Minimum Required
Ancillary Equipment	18	Batteries	Appropriate types for instruments carried		Sufficient for each inst type
	19	Torch		Recommend Hands Free LED type	2
	20	Calculator	Battery Operated		1
	21	Pens	Gel Type	Ability to write on multiple surfaces	2
	22	Chinagraph and Plastic Pad		Ability to write in wet conditions	1
	23	Road Atlas/Maps/Satellite Navigation or equivalent	Detailed for UK Roads	Route Finding / Fall out Predictions	1
	24	Spray chalk or equivalent	Waterproof	Controlled/Supervised Area	1
	25	Warning Signs	Radiation / No Entry etc.	Controlled / Supervised Area	2
	26	PPE	Safety Footwear, Gloves, High Vis Clothing etc.	As appropriate for each organisation and expected hazards at scene, to include disposable coveralls and rubber/nitrile/latex gloves.	Sufficient per person + spares
	27	RADSAFE Identification	RADSAFE Tabard	Identification between Emergency Services and Responders.	1 each responder
	28	Communications	Mobile Phone and Charger	Useful to have email and camera function	1
	29	Camera	Digital or Disposable (ideally with capability to e-mail photos)	See Above	
	30	Clear plastic bags or equivalent	Large and waterproof	For protection of equipment and forms from weather	Sufficient

	Item No.	Equipment	Specification	Suggested Effective Range / Function	Minimum Required
Ancillary Equipment	31	Waterproof clipboard	Minimum A3 size	For protection of equipment and forms from weather	1
	32	Decon Materials	Bags		Sufficient
	33	Decon Materials	Decon Gel / Alcohol Wipes		Sufficient
	34	Decon Materials	Tape		Sufficient
	35	Decon Materials	Labels		Sufficient
	36	Decon Materials	Knife or Scissors	Safety type	1
	37	Sample Bottles	Plastic Sample	Collection of Liquids for analysis	5
	38	Absorbent Wipes	Baby Wipes / Drying towels	Hygiene and instruments	Pack
	39	Measuring instrument	Tape Rule	Minimum 5 Meter	1
	40	Identification	Photographic	Personal and Company	1 each responder
	41	Method of Purchase	Credit Card or Cash	For Consumables, Welfare and telephones	Sufficient
	42	Package Booklet	RADSAFE / Company information on Containers	Identification of permitted contents / hazards	1
	43	Responders Booklet	RADSAFE / Company information for responders	Aide Memoire for Responders	1
	44	Reference Materials	Radiation Data Material (books or PC)	Identification of unfamiliar nuclides	1

Radsafe responder objectives and initial actions

1. Gain entry through the outer cordon (declaration statement)
2. Register attendance at the Forward Control Point
3. Establish on scene contact with Incident commander (Fire)
    a) Liaise with other personnel; Hazardous Materials Advisor, Detection Identification and Monitoring (DIM) Advisor.
4. Inform Incident Commander of your role.
5. Confirm that the 45m (inner) cordon is adequate and that emergency responders are upwind, uphill and upstream of incident where available.

Incident Scene Management



Tabards

Fire
The Fire & Rescue Service 'Incident Commander' on scene

Front / Rear

Police
The Police Commander on scene should be wearing this tabard

Front / Rear

Tabards

Ambulance

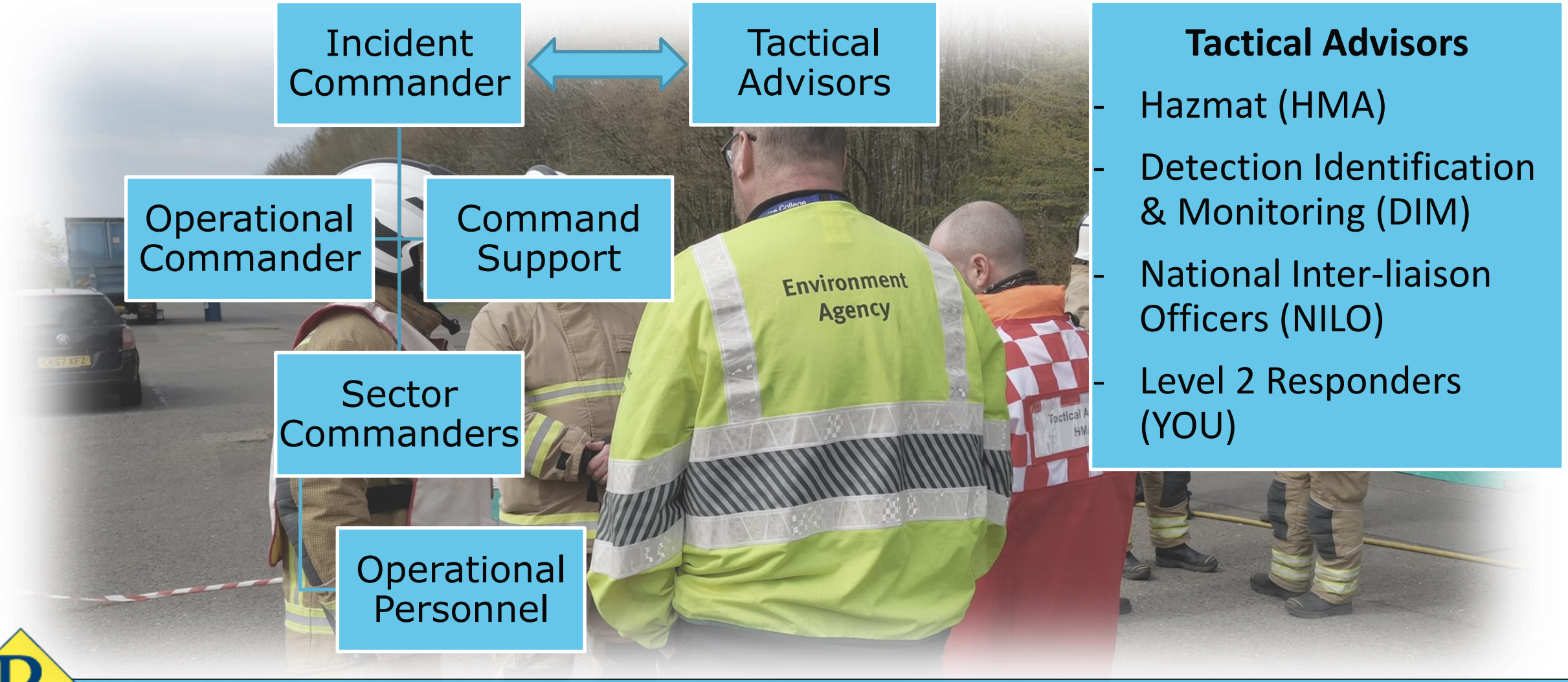
The Ambulance Operational Commander should be wearing this tabard.

Front / Rear

The Ambulance Tactical Commander should be wearing this tabard (referred to as the Ambulance Incident Commander).

Front / Rear

The Incident Command Structure (Fire Service)



Tactical Advisors

- Hazmat (HMA)
- Detection Identification & Monitoring (DIM)
- National Inter-liaison Officers (NILO)
- Level 2 Responders (YOU)


POLICE
FIRE

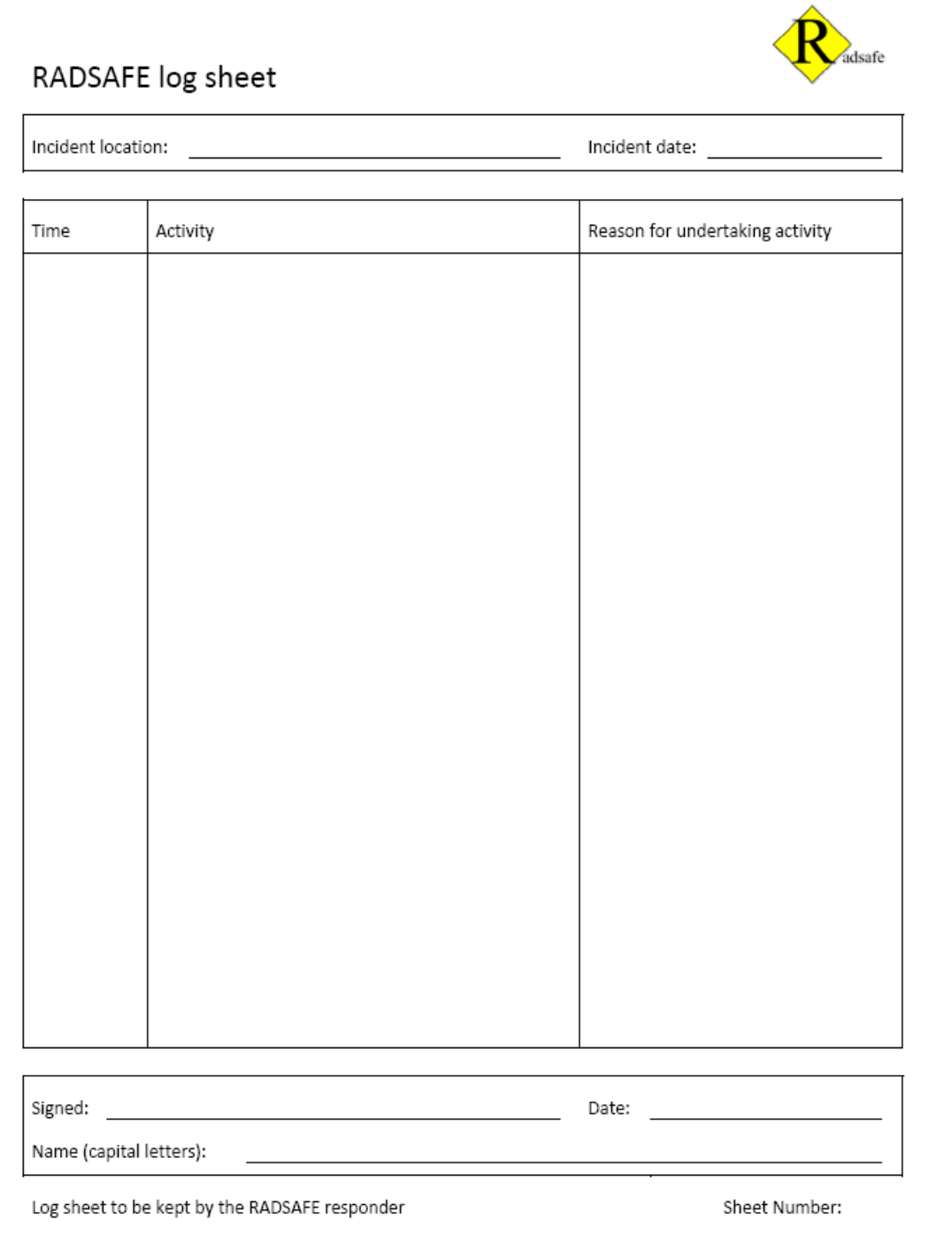
Radsafe responder objectives and initial actions

- Receive an incident brief
  - Once the situation is understood, advise on strategic/tactical options to co-ordinate an effective response to make the area radiologically safe following JESIP protocols
- Declare intention to put in place a radiological monitoring program.
  - Communicate how long monitoring will take and liaise with the Incident Commander in implementation.
  - Prioritise reassurance monitoring **(PERSONAL & CONTAMINATION MONITORING FORMS)**
- Assess the need for support from additional RADSAFE responder(s) from own or other RADSAFE organisations.
- Keep an accurate log of events etc. (see Annex F in the responder handbook for a suggested template). If possible take photographs to support log entries and production of final incident report.

Incident log

Key aspects of your incident log

- Liaise with incident commander/command support
- Timestamps (critical)
- Only crucial information
  - Requests for change
  - Incident changes
  - Change in personnel
  - Incident meetings (agenda/items discussed)
  - Task completion
  - Decisions
- Clear and concise
- Avoid acronyms – unless can be widely understood



RADSAFE log sheet

Incident location: _____ Incident date: _____

Time	Activity	Reason for undertaking activity

Signed: _____ Date: _____

Name (capital letters): _____

Log sheet to be kept by the RADSAFE responder Sheet Number:

RADSAFE Contamination & Survey Forms

- Deploy staff to take radiation, contamination and, where appropriate, air samples for radiological assessment
- Must liaise with incident commander
- PPE?
- What advice do you expect to give?

RADSAFE personal monitoring form

Incident location: _____	Incident date: _____

Name of person being monitored: _____

Organisation: _____

Personnel number (if appropriate): _____

Instruments used

Instrument Type	Serial number	Calibration date	Pre –use function check? (Y/N)

Person undertaking monitoring: _____

Organisation: _____

Front Back

Indicate radiation/contamination levels on above schematic diagram

Additional information:

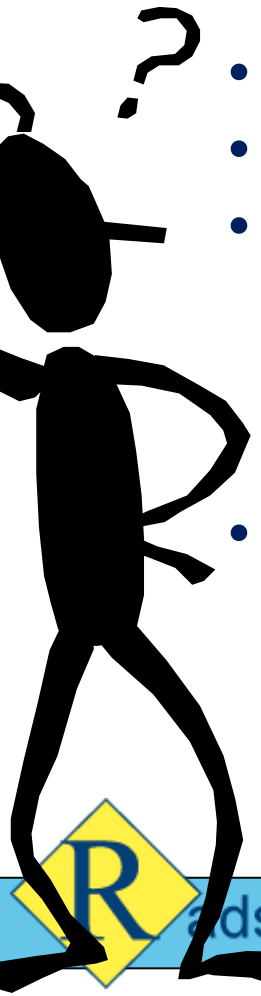
Signed: _____ Date: _____

Name (capital letters): _____

Copies: Monitored individual, RADSAFE responder, Consignor, Emergency Services

RADSAFE Responder Actions – Fundamental objectives

The responder is there to ensure that the area is safe from a radiological viewpoint. They will undertake their normal activities of contamination and radiation monitoring.



- "Safe-hold" – scene stabilisation and prevention of further escalation
- Contact and liaise with emergency services (Police)
- Assess radiological hazards
  - Measure radiation dose rates
  - Limit the spread of contamination
  - Arrange for controlled access and egress
- Liaise with Health Physics Support Teams

Fire and Rescue Service DIM

DETECTION IDENTIFICATION AND MONITORING

Detection Identification and Monitoring

Capability

Personal Dosimetry (TruDose EPD)

- Gamma/High energy Beta
- HP10 – Photon 17keV to 6MeV, 0° to 60°
- HP 7 (0.07) – Beta 200keV to 1.5MeV, 0° to 45

Gamma/Neutron combined EPRD Kromek D3M

Gamma Spectrometer (Ortec RadEaglet)

- NaI: 15 keV to 3 MeV.
- 59 detectible radioisotopes

Contamination (activity) measurement (alpha/beta) RADOS RDS200

- Capable of Gamma/x-rays 50 keV… 3 MeV (GM)
- 'Beta' (probe) - gamma > 5 keV, betamax > 100 keV, and alpha > 2 MeV. halogen quenched GM

EPD TruDose™ Electronic Dosimeter

Dose Range 1.0 µSv to ≥ 10 Sv

Dose Rate range 0.05 µSv/h to 10 Sv/h

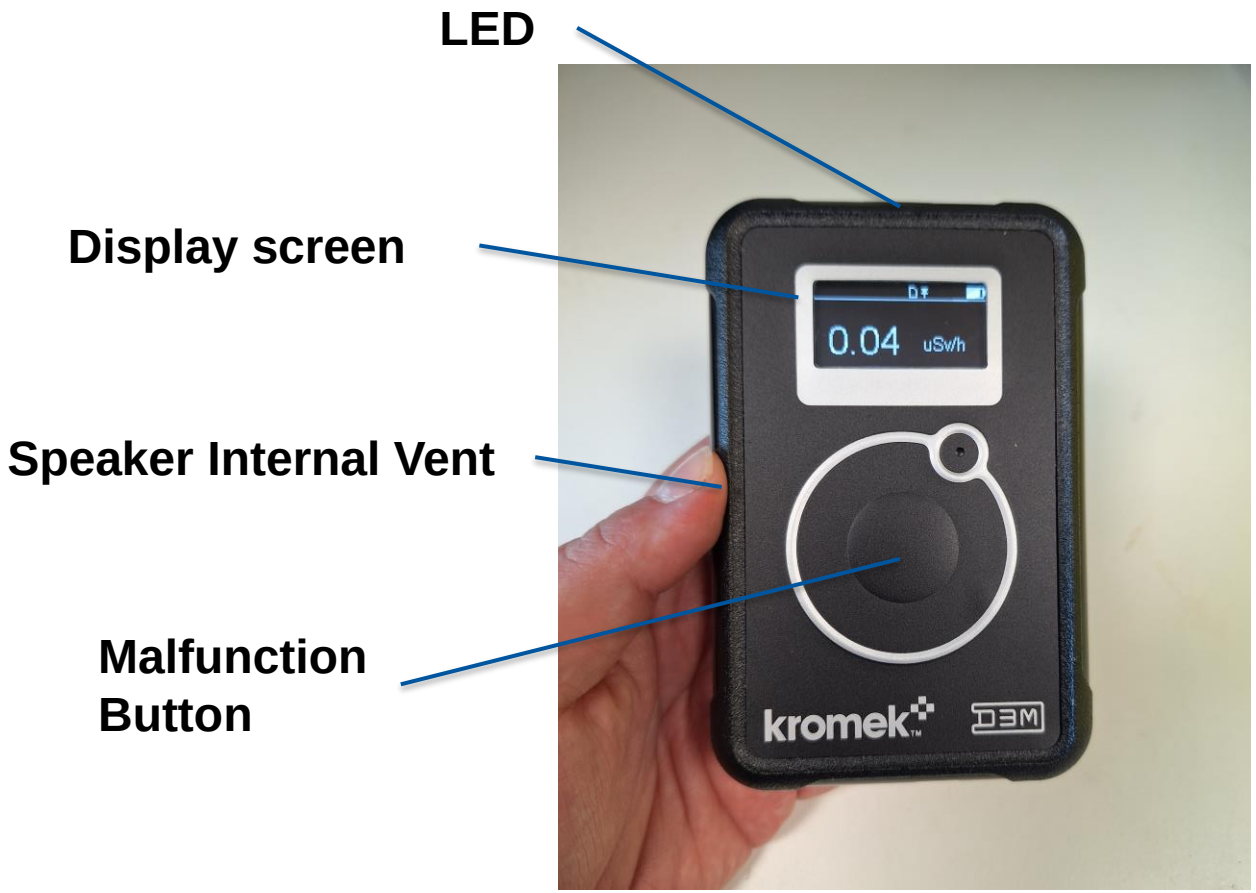
Kromek D3M

Detects and Monitors:

- Gamma radiation
- Neutron Radiation

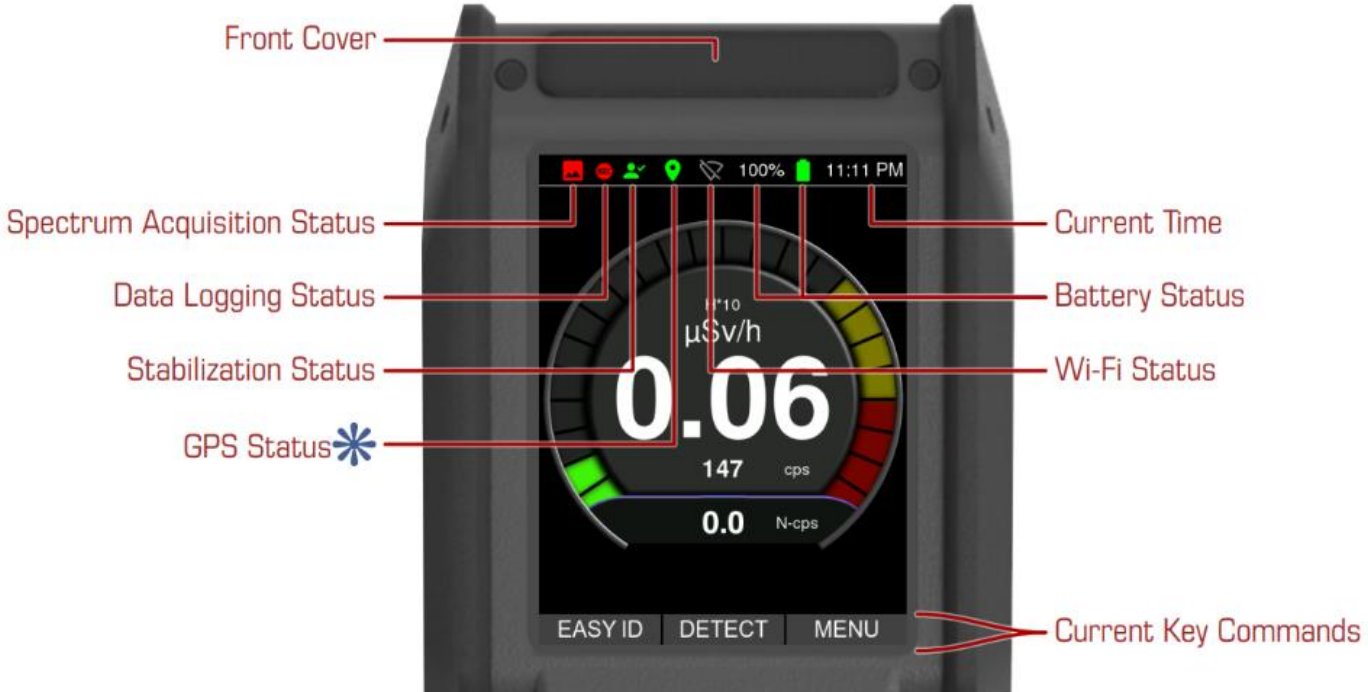
Provides a combined received dose in (μSv) / (mSv)

Alerts the user when it detects a gamma and/or neutron radioactive source.



Ortec RadEaglet

- Radio-isotope identification device comprising of:
  - Scintillation detector (Sodium iodide detector)
  - Geiger-Muller detector
- Embedded 111 Bq Cs-137 source
- Multi-channel analyser (MCA) for spectral data readout

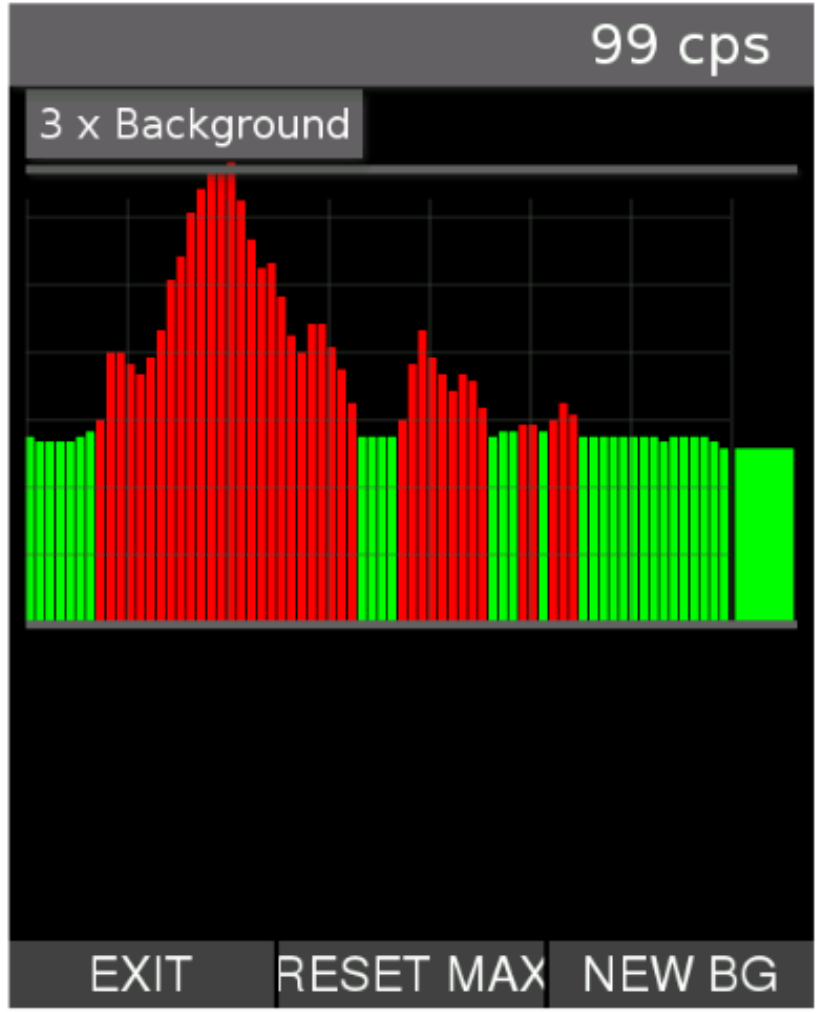


Detect Mode

Sets a background radiation level against which survey readings can be compared – takes 30s

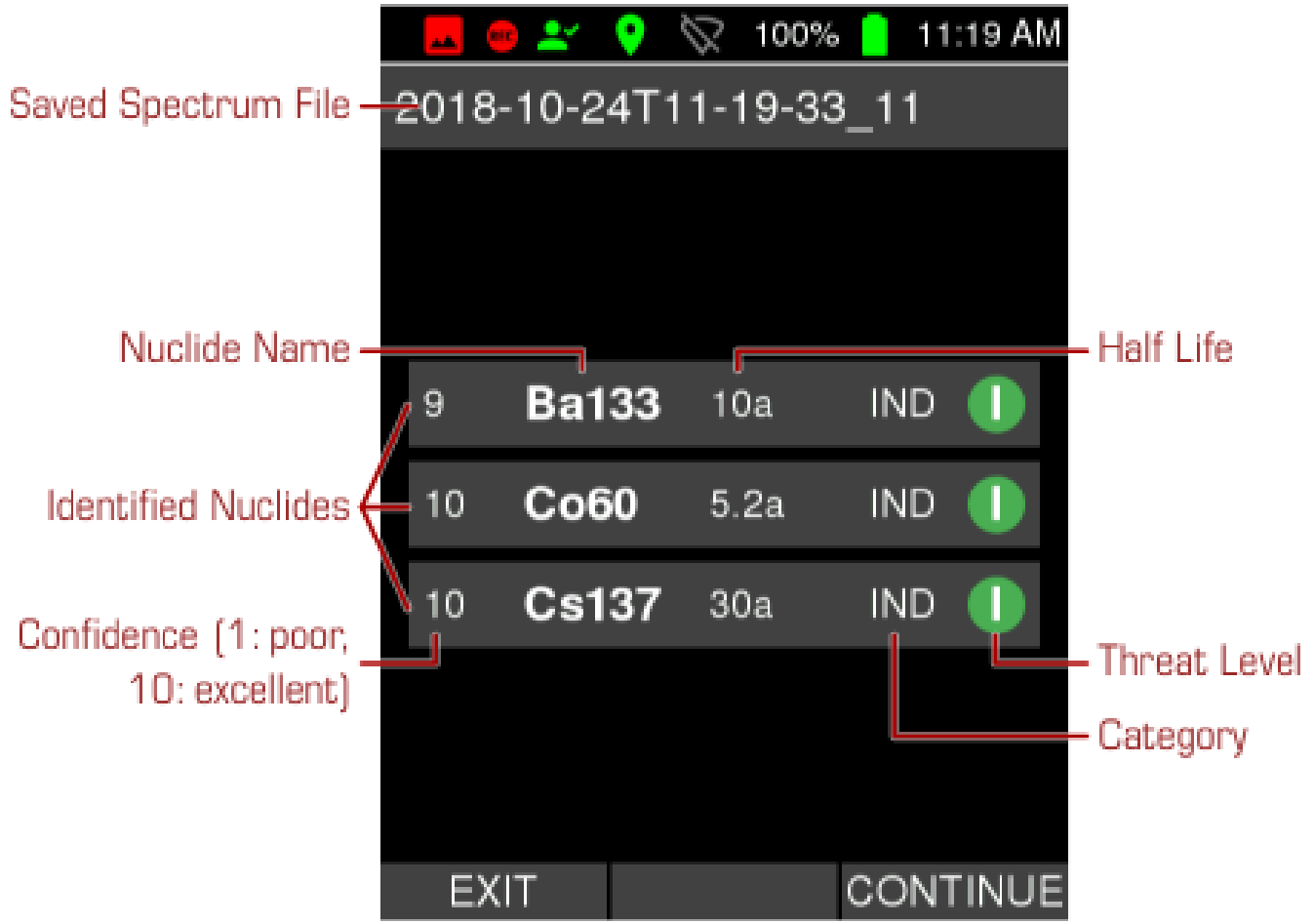
User is alerted to elevations by audible alarm, unit vibration and visual display

'New BG': Allows a new background to be collected where an increase in ambient levels is recorded – take to note the absolute levels as well



Easy ID Mode Results

- Confidence score
- Nuclide identified
- Half life
  - Day (d)
  - Month (m)
  - Year (a)
- Category
- Threat level



Operation

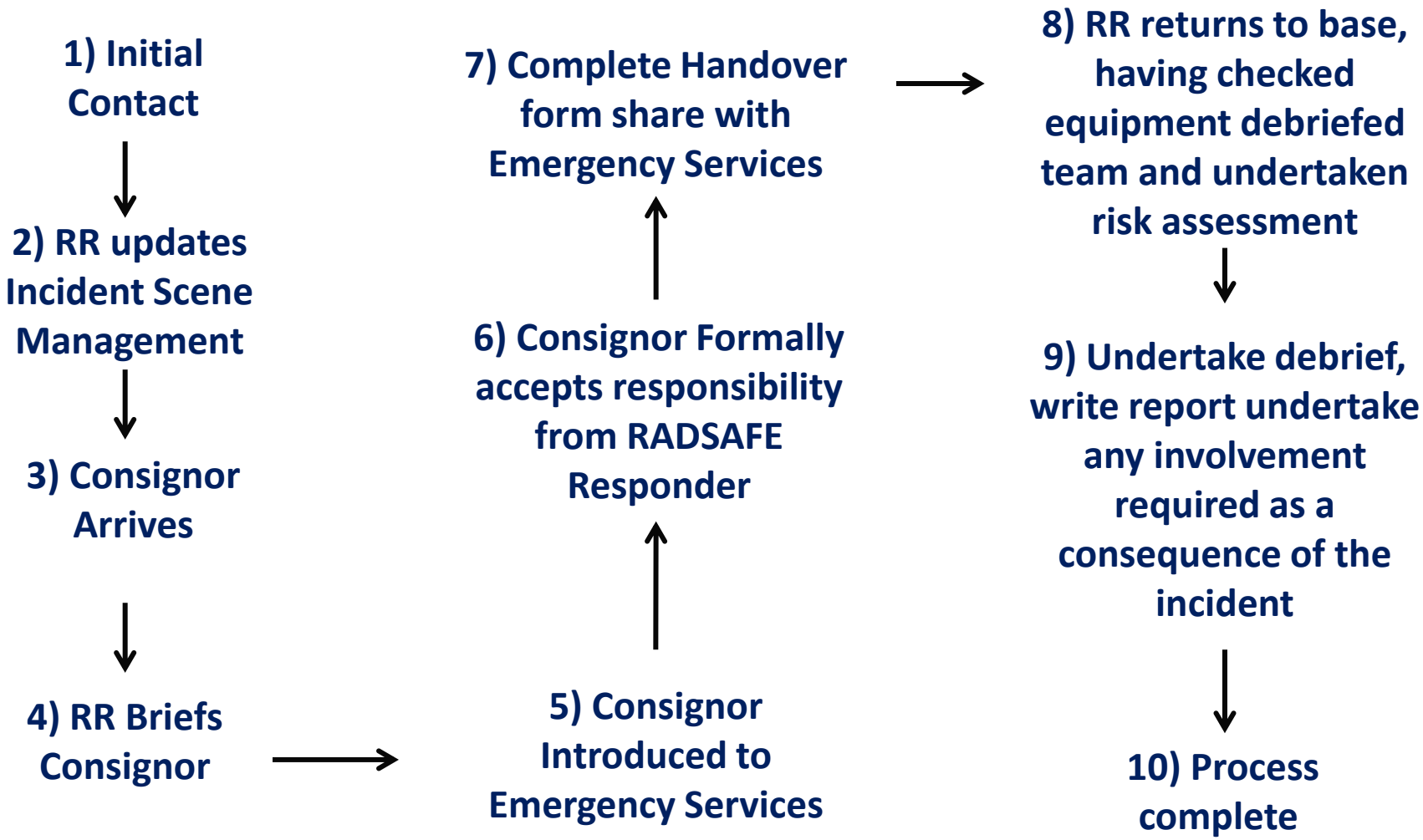
- Survey mode (no probe attached)
  - Detects gamma (and X-ray) radiation only
  - Measures in μSv/h or mSv/h
  - No longer in use for HDIM!

Radsafe *Reading for alpha, gamma and X-ray tend to be inaccurate with probe

LEVEL 3 - RECOVERY

Level 3 - Provision of Clean Up by Consigning Organisation

Handover Process



RADSAFE Handover Form

Not protectively marked

RADSAFE hand-over form

Incident location: _____	Incident date: _____ Time of hand-over: _____
Current situation (including advice and recommendations):	
Location of cordons:	
Monitoring undertaken (attach copies of all forms):	
Further monitoring to be undertaken:	
Signed (RADSAFE responder): _____ Date: _____ Name (capital letters): _____ Responder's base location _____	
Signed (Consignor): _____ Date: _____ Name (capital letters): _____ Consignor's base location _____	

Copies: RADSAFE responder, consignor, emergency services incident controller

Radsafe

Actions to be carried out by Consignor - expectations

5.1.2 Consignor activities at outer cordon

- Report to cordon control officer.
- Confirm identity with appropriate tabard and organisational ID badge.
- Make cordon officer aware of the role of the consignor and the intention to take over radiation protection advice to the emergency services from the RADSAFE responder(s).
- Establish a route to the command vehicles.
- Gain permission from the cordon officer to proceed to the command vehicles.
- Proceed to the command vehicles.
- Establish contact with the RADSAFE responder(s).
- Undertake hand over with the RADSAFE responder(s) (see Annex J for example of the RADSAFE hand-over form).
- Carry out radiation/contamination surveys as necessary and effect clean-up actions, liaising with own organisation and the EA or SEPA.

Put some things into practice

WORKSHOPS

Incident 1

A call has been put through to Radsafe from the Police. A Radsafe vehicle has been involved in an RTC (road traffic collision). The vehicle (a panel van) has been shunted from behind when approaching congested traffic. All persons are fit and well, no injuries. There is minor damage to the rear of the vehicle, Police are in attendance and require some advice.

- Ricardo Chemical Risk has confirmed;
  - 45metre cordon is in place
  - All non-essential personnel are being removed from the risk area
  - All personnel are to remain at a maximum safe distance, with minimal time spent around the hazard area and to maximise shielding measures (such as other vehicles, curvature of the road (verge with trees) etc.

Incident 2

The fire service is requesting advice for a vehicle fire (Radsafe placard present). Information from the driver has confirmed they were transporting radiopharmaceuticals. To complicate the situation, the fire service has confirmed that the vehicle is an electric vehicle. The driver stated that they stopped due to the vehicle developing a fault, they made a call to a recovery firm as the vehicle wouldn't move, soon after, smoke billowed from the underside of the vehicle and it caught fire. The vehicle is 'well-alight' and is now fully involved in fire. The Hazardous Materials Advisor (from the fire service) have specifically requested a talk through to the Radsafe responder for further advice over the phone.

- Ricardo Chemical Risk has confirmed;
  - 45metre cordon is in place
  - All non-essential personnel are being removed from the risk area
  - All personnel are to remain at a maximum safe distance, with minimal time spent around the hazard area and to maximise shielding measures (such as other vehicles, curvature of the road (verge with foliage/trees) etc.

Radsafe

Exercise

Purpose

- The aim of the session is to develop a Radsafe responder's ability to identify possible causes of harm and to provide assistance to incidents involving radiological hazards/threats.
  - This will be achieved by close facilitation of Ricardo instructor(s) in relation to a simulated incident

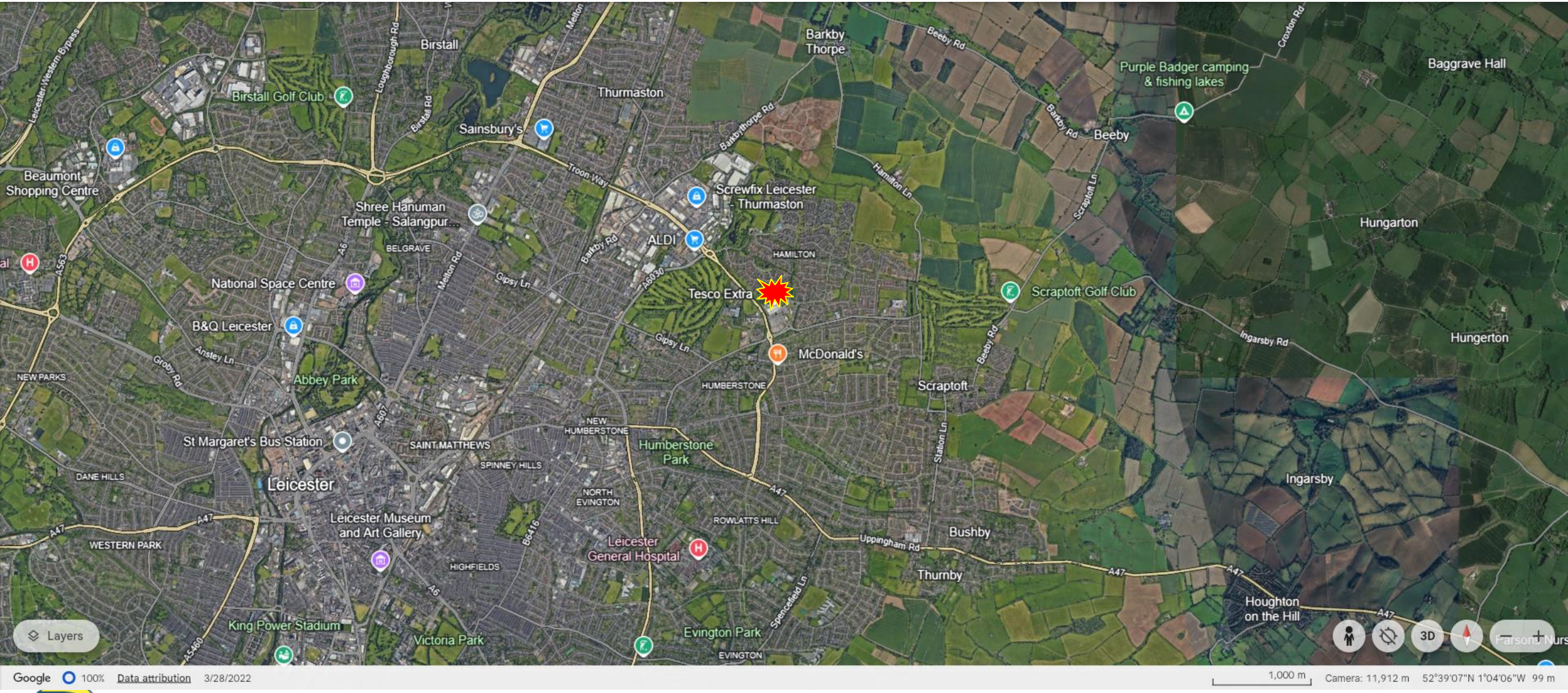
- Completion Objectives:
  - Gather information and liaise with emergency services
  - Carry out scene safety assessment (Personal/survey monitoring forms)
  - Advise emergency services accordingly
  - Maintain incident log
  - Complete a handover form

Exercise

- Radsafe has been called by East Midlands Ambulance Service following a call of someone in severe pain and suffering from significant burns to their back at a Tesco Extra. After some questioning by the paramedics, the person declared that they work in construction and their symptoms developed approximately 15 minutes after leaving a nearby construction site. After they had stopped at Tesco, their symptoms developed further where they then put a call through to 999 - Ambulance. The Ambulance service is the only service in attendance, they are keen to get the patient to hospital, but upon seeing the Radsafe placard on the patient's vehicle (and not knowing what it was), they called to try to find out further information. The vehicle is currently in the store's car park.

- Location: Tesco Extra, 2 Maidenwell Ave, Hamilton, Leicester LE5 1BJ
- Whatthreewords///shark.flood.rash
- Time: As is
- Weather: As is

Location



Radsafe

Location

Radsafe

Gathering Information

Task - Spend 10 minutes gathering your thoughts

- Context of the incident?
- Why are you being called?
- Location of the incident?
- Do you attend the incident?

Paramedics are requesting you to call them back

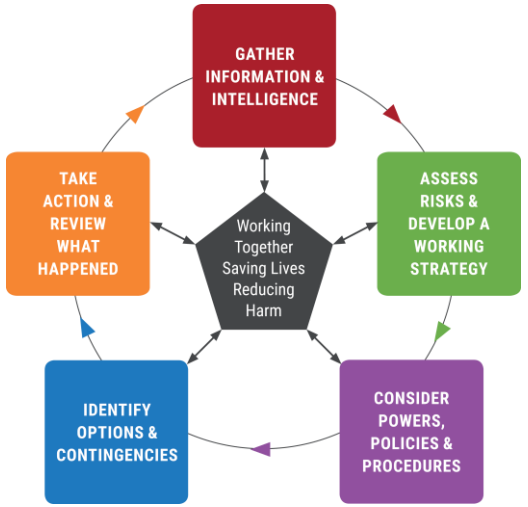
- Contact through ambulance control incident no. 654

PARAMEDICS

Pre-departure

- Task – complete the pre-departure checklist
- Ensure:
  - Contact details (on scene and for home organisation)
  - Location of the incident
  - Welfare
  - Equipment
  - Go for a wee

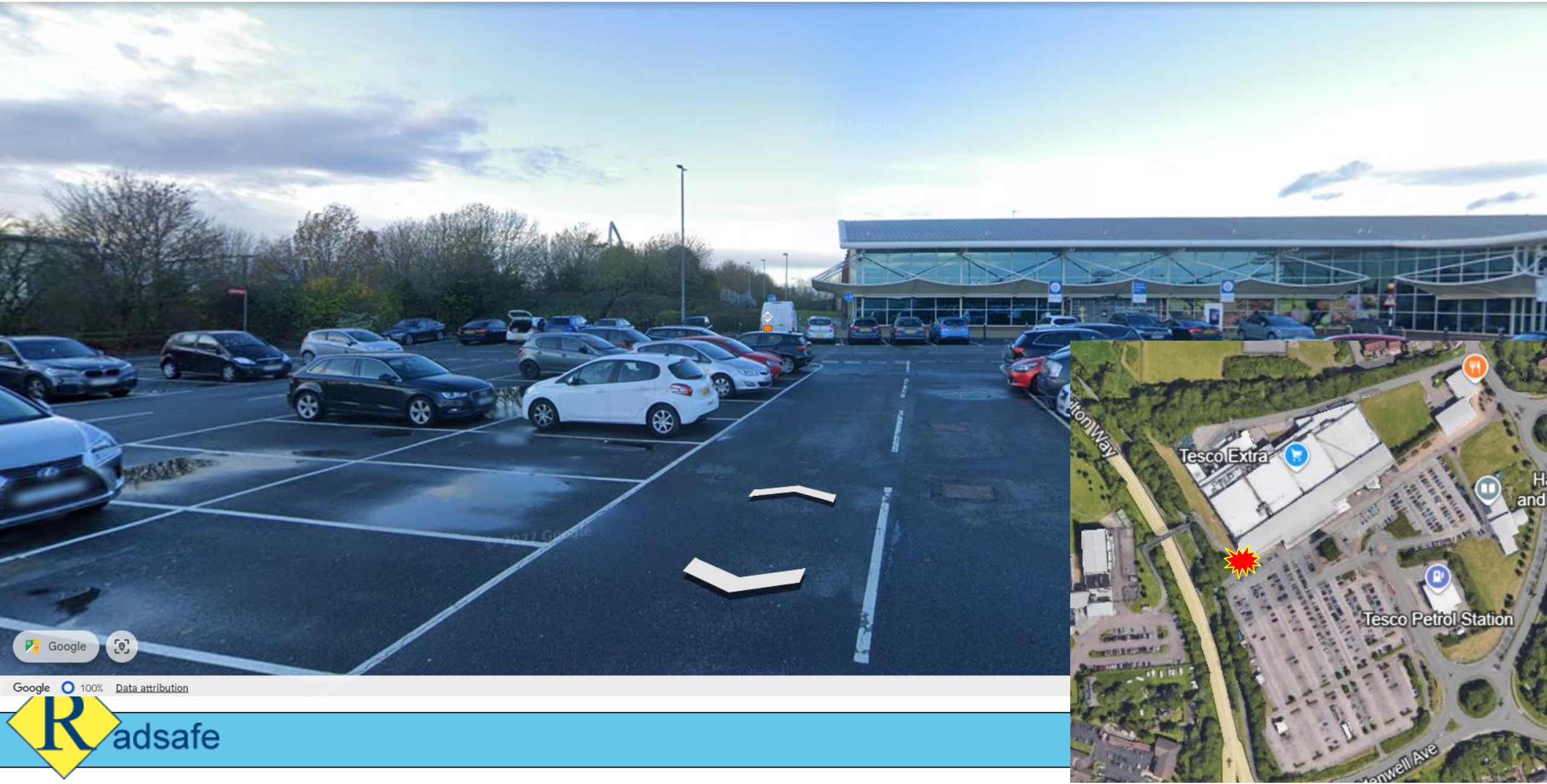
Incident Scene – JESIP 1



Tasks:

- Answer concerns and provide assurance during first JESIP meeting as much as possible
- Request further assistance from other agencies as required
- Develop Tactical plan

Incident Scene



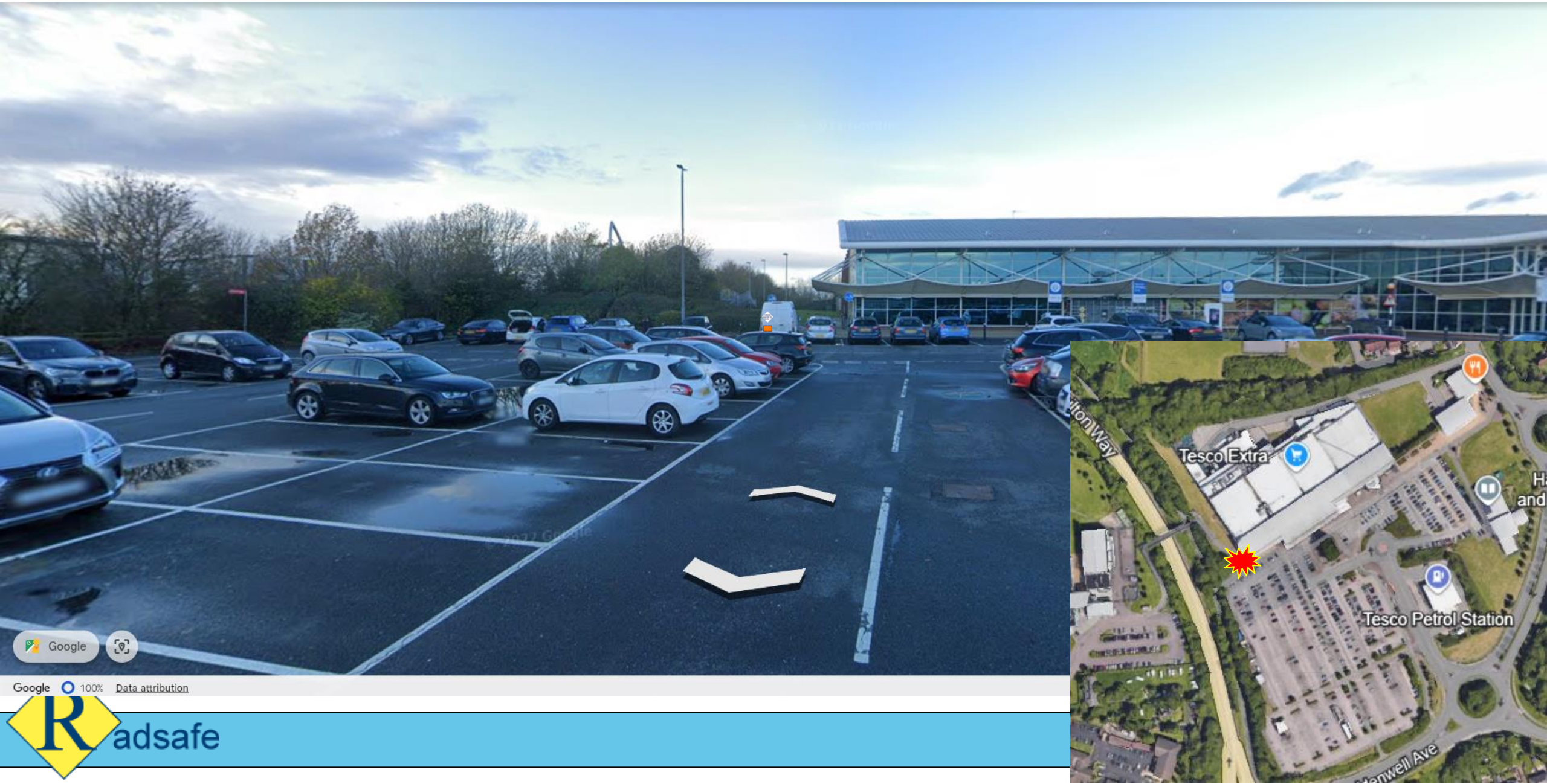
adsafe

Tactical Planning

- Task – 15 minutes to develop a tactical plan
  - Plan how you are going to conduct the scene assessment
  - Equipment
  - Methodology
  - PPE
  - Documentation required? (Risk assessment, survey form, personal monitoring form etc.)
  - **Develop and send an informative message to notify home organisation**

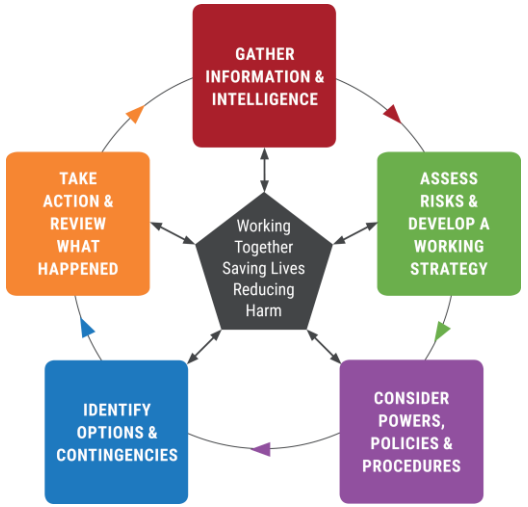
- At the end of the 15 minutes one from each group is going to leave the room and gather further information about the scene including possible measurements and readings.
- Remember minimum answers required before next JESIP (if not already answered)
  - PPE/decontamination measures, cordons/safety zones, hazard assessment, scene stabilisation methods, recovery.

Instigate tactical plan - Scene assessment



Radsafe

Incident Scene – JESIP 2



Tasks:

- Answer concerns and provide assurance during first JESIP meeting as much as possible
- Request further assistance from other agencies as required
- Develop Tactical plan

Level 3 – Handover and Recovery

Task

- Develop handover to recovery (level 3) organisation
- Complete handover form
- Develop and send another informative message back to home organisation

Debriefing

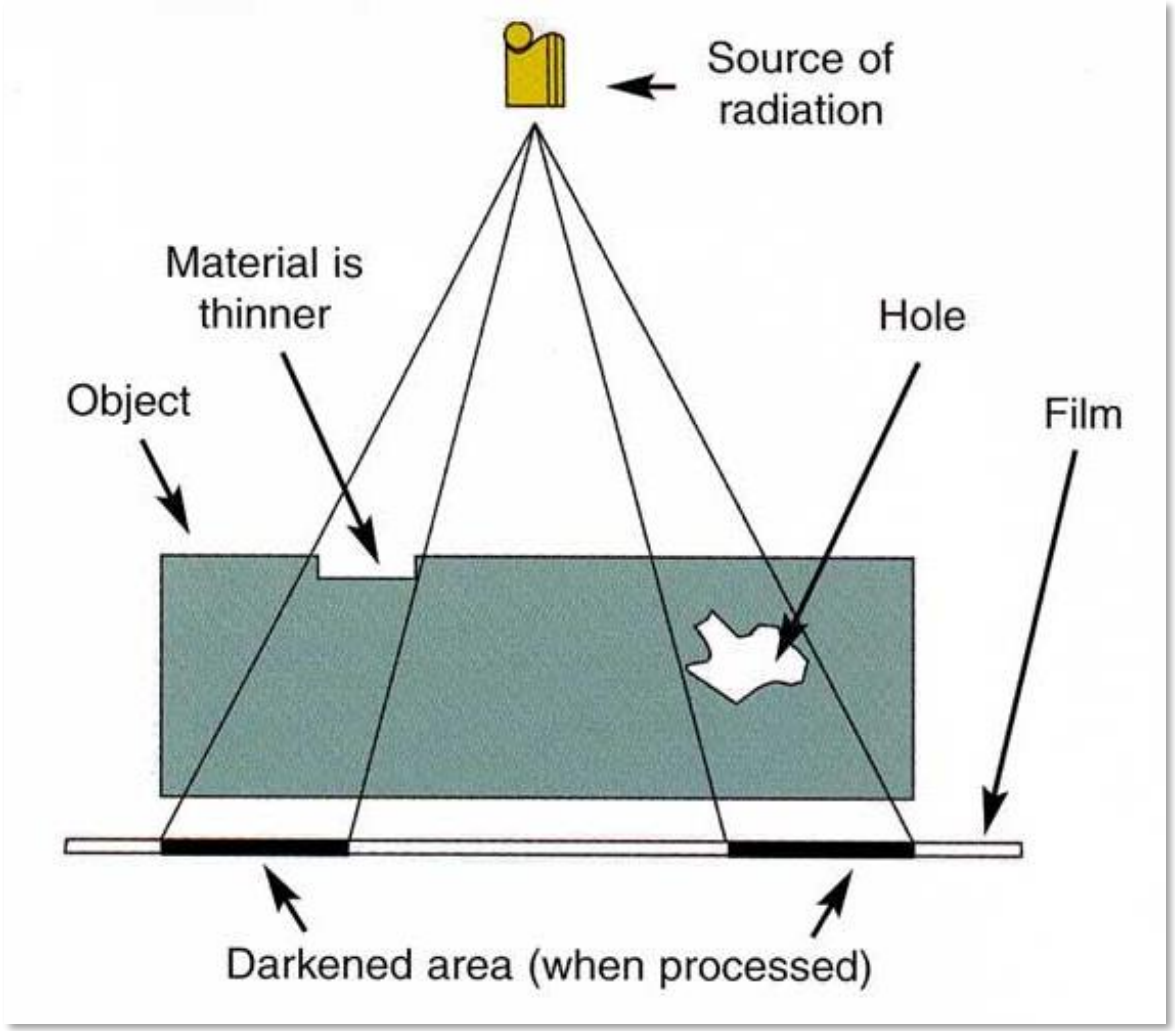
Identify Lessons

- What went well?
- What didn’t go well?
- What could be improved on in the future?

Develop actions to learn from the lessons?

- Individual
- Training
- Equipment
- Procedural/process (documentation, training etc,)
- Policy

Defect detectors



Radiation Exposure

- Driver
- Driving unaware that collimated course camera ‘shutter’ was open
  - *Source was behind the driver’s seat*
- 12 minutes of exposure
- 20 Ci = 740 GBq

Actions and follow-up from today

JESIP App and website

Radsafe Handbook

Response kit box

Train/exercise

PURPOSE

To provide an overview of RADSAFE and fundamental requirements to facilitate your role as a Radsafe responder

By the end of the session, learners will be able to;

- **Describe the operation of Radsafe**
- **Identify expectations for working with emergency response organisations**
- **Demonstrate ability to understand hazardous situations and communicate effectively**
- **Contribute to bringing an incident to a safe and successful conclusion**
- **Complete relevant incident documentation**

ANY QUESTIONS?

THANK YOU