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Hazmat response: the significance of the first 20 minutes as a first responder

Ed Sullivan | Hazardous Materials Principal Consultant, NCEC
Jon Crawley | Ex-fire and rescue officer and COMAH expert
Dr Nigel Blumire| Training Product Manager, NCEC
Josh Allaway| Senior Emergency Responder, NCEC

the-ncec.com/hazmatacademy

Welcome to the first in the series of webinars on…….

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Introductions

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Ed Sullivan
Hazardous Materials Principal Consultant, NCEC

Dr Nigel Blumire
Training Product Manager, NCEC

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Ex-fire and rescue officer, hazmat and COMAH expert

Josh Allaway
Senior Emergency Responder, NCEC

Incident mobilisation

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Persons Reported Incident
Loss of containment of refrigerant gas

Ricardo Food Group
Caxton Way, Thetford, IP24 3RY
52.40904 0.729354

14:13:23
14/10/2020

Mobile incident

Brief

Hydrants

Risk information

What information do we have at this stage? – on route

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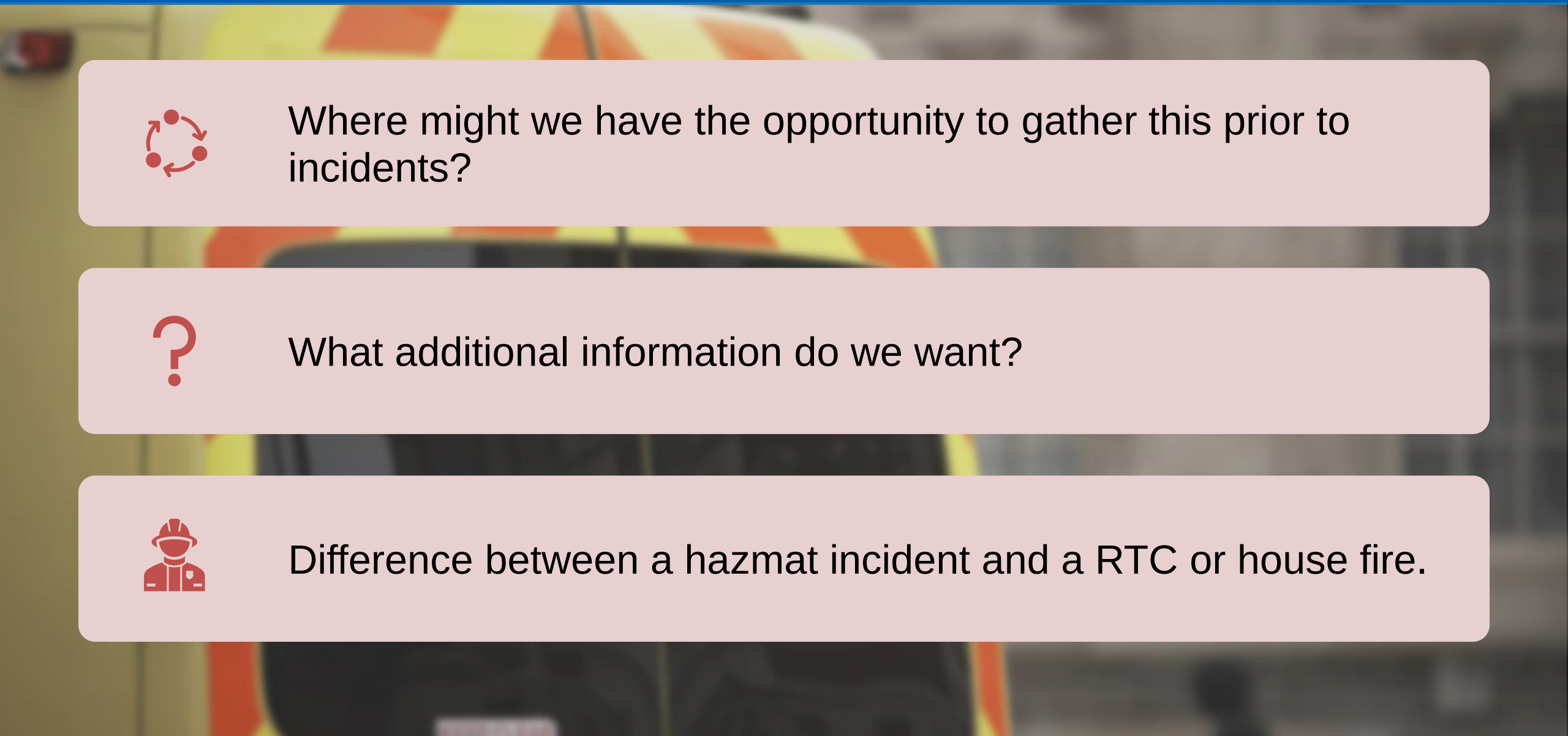

- Where might we have the opportunity to gather this prior to incidents?
- What additional information do we want?
- Difference between a hazmat incident and a RTC or house fire.

Resource information – considerations on route

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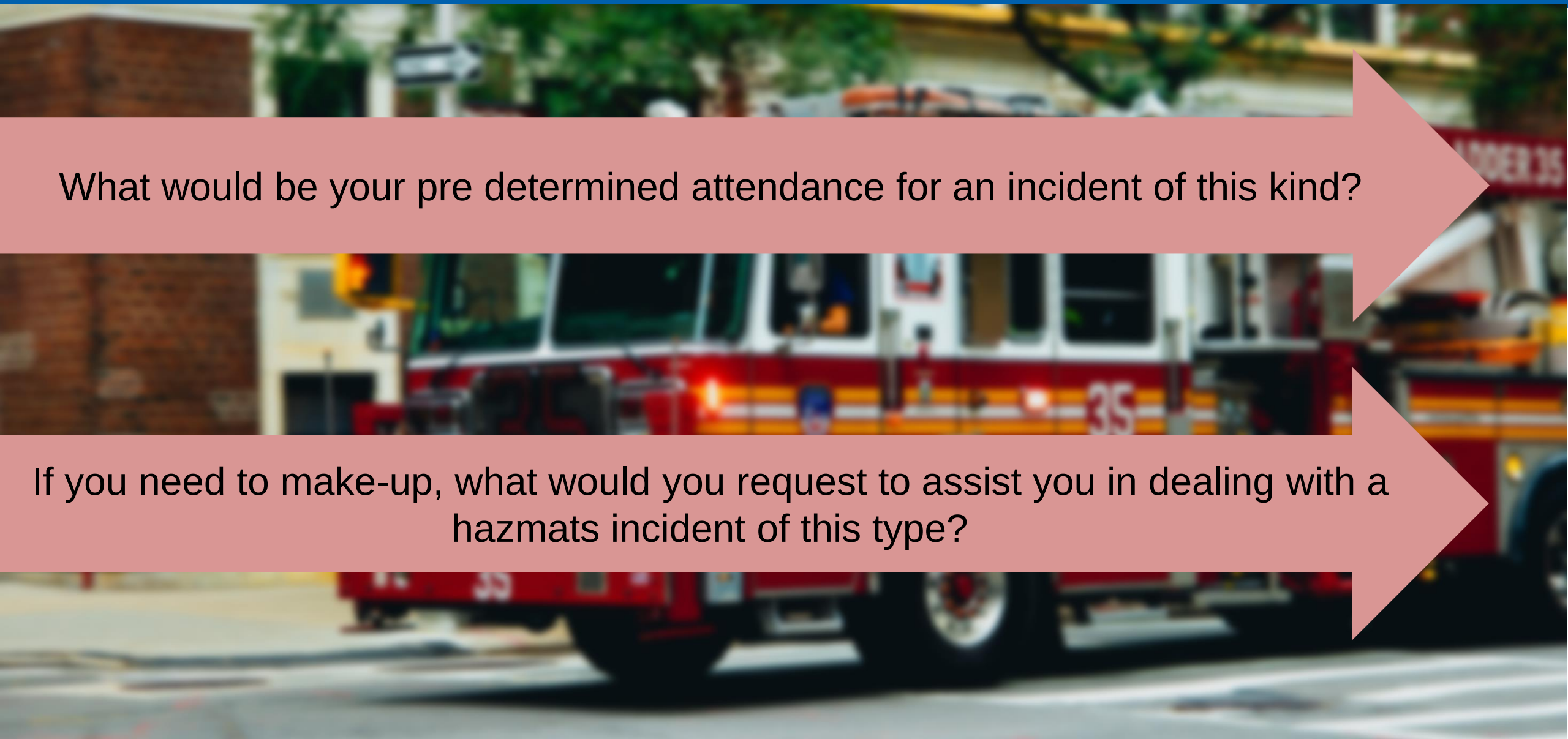

What would be your pre determined attendance for an incident of this kind?

If you need to make-up, what would you request to assist you in dealing with a hazmats incident of this type?

Risks – considerations on route

- What information do you have available to support your response to this incident at this phase?
  - MDT information.
  - 7.2. (d).
  - Site Specific Risk Inspections.(SSRI)
  - Chemdata.
  - SIPs & SOPs.
  - Other visits to site.

- Previous incidents

Safe approach

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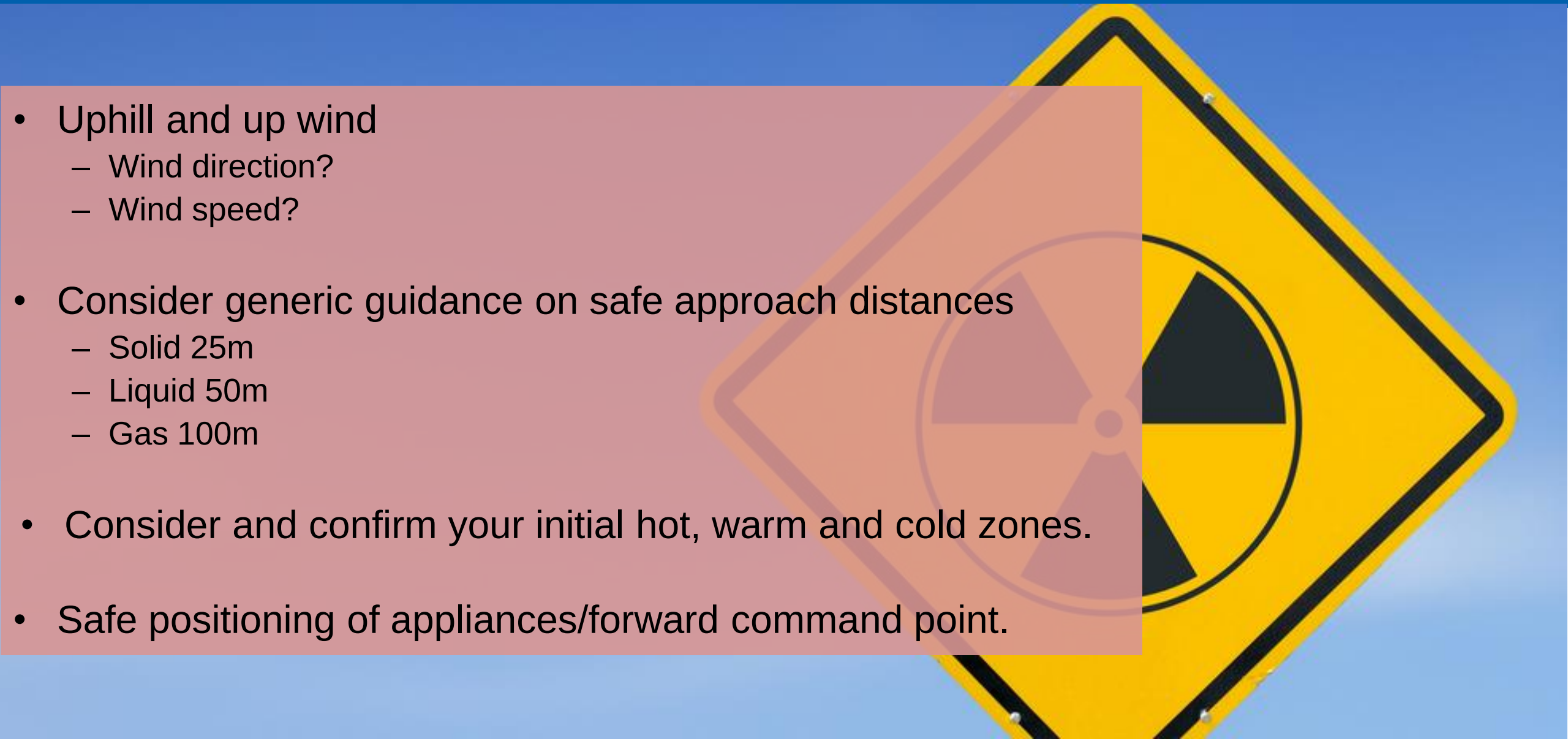

- Uphill and up wind
  - Wind direction?
  - Wind speed?
- Consider generic guidance on safe approach distances
  - Solid 25m
  - Liquid 50m
  - Gas 100m
- Consider and confirm your initial hot, warm and cold zones.
- Safe positioning of appliances/forward command point.

Wind speed

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Speed (m/s)	description		Distance per minute
< 1	Calm	Calm; smoke rises vertically.	<60m
1 - 2	Light air	Direction of wind shown by smoke drift but not by wind vanes.	120m
2 - 3	Light breeze	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	180m
3 - 5	Gentle breeze	Leaves and small twigs in constant motion; wind extends light flag.	300m
5 - 8	Moderate breeze	Raises dust and loose paper; small branches are moved.	480m
8 - 11	Fresh breeze	Small trees in leaf begin to sway; crested wavelets form on inland water.	660m
11 - 14	Strong breeze	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty	840m
14 - 17	Near Gale	Whole trees in motion; inconvenience felt walking against wind.	1020m
17 - 21	Gale	Breaks twigs off trees; generally impedes progress.	1260m

View from outside of the building

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Aerial view

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Screen the scene

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- 360? avoidance routes.
- Solid, liquid or gas?
- What equipment could we utilise to assist with this phase?
- Liaise with responsible person to gather information
  - 1 tonne bullet

CCTV from within the building

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Assess risk to life

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- Risk versus benefit analysis
- Is it a saveable life?
- Is it a body recovery?
- If you were committing crews in to carry out a priority rescue, what would be your brief?
- PPE selection?
- If you're committing teams, what would be the decon strategy you would implement and when would you implement it?

Ammonia (NH3)

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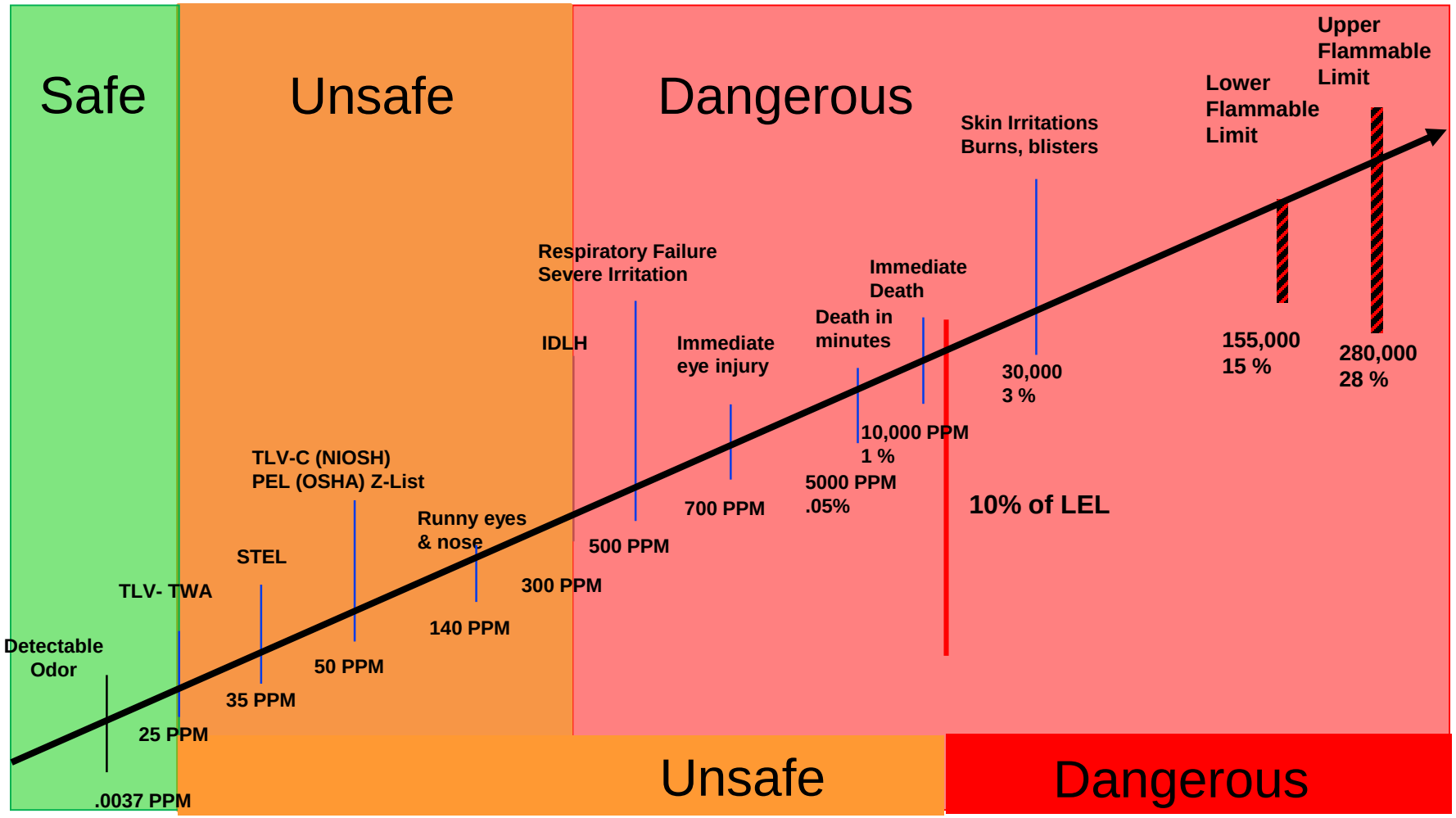

Gather relevant information

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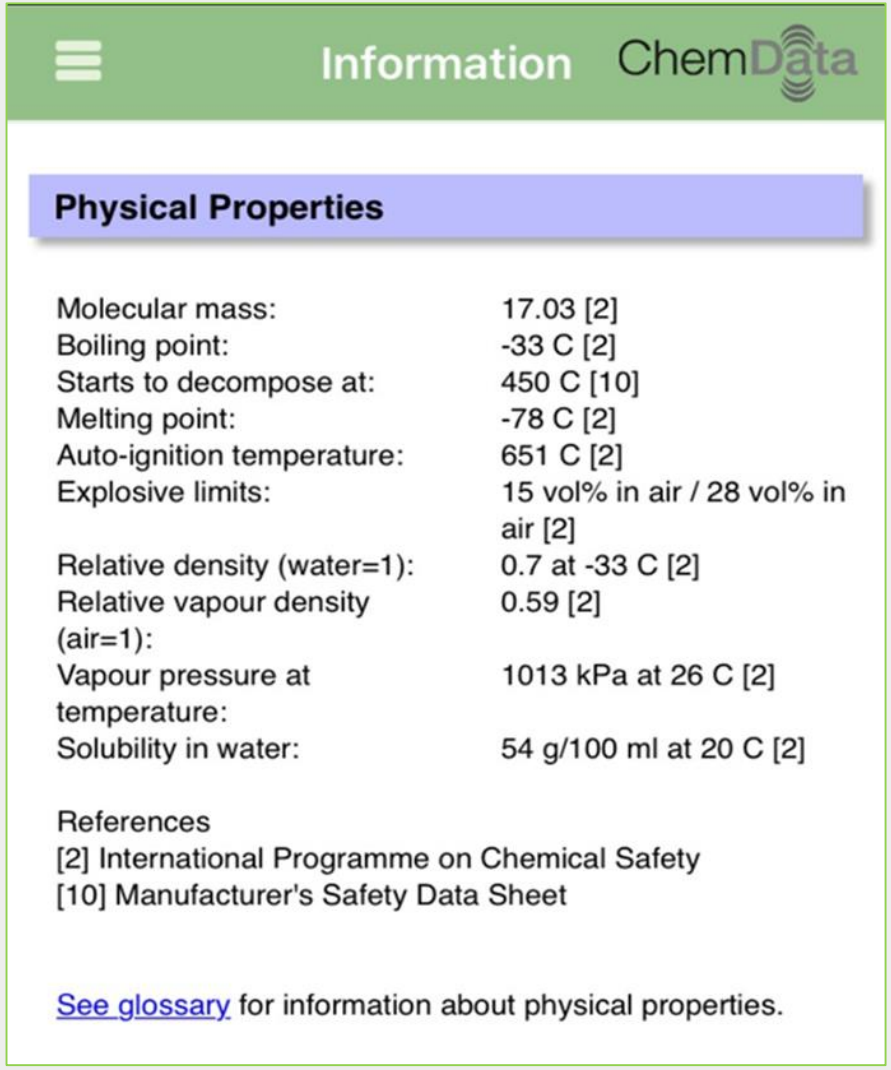
Risk versus benefit analysis – rescues have been completed.

Simultaneous activities – interrogation of information sources & environmental first aid.

Further information sources.

- On-site specialists – it's their site – they will usually know about the product.
- UN number, SDS, Chemdata, ERG, Chemsafe.



Information ChemData

Physical Properties

Molecular mass:	17.03 [2]
Boiling point:	-33 C [2]
Starts to decompose at:	450 C [10]
Melting point:	-78 C [2]
Auto-ignition temperature:	651 C [2]
Explosive limits:	15 vol% in air / 28 vol% in air [2]
Relative density (water=1):	0.7 at -33 C [2]
Relative vapour density (air=1):	0.59 [2]
Vapour pressure at temperature:	1013 kPa at 26 C [2]
Solubility in water:	54 g/100 ml at 20 C [2]

References
[2] International Programme on Chemical Safety
[10] Manufacturer's Safety Data Sheet

See glossary for information about physical properties.

Ammonium Hydroxide

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Information ChemData

Physical Properties

Molecular mass:	35.1 [2]
Boiling point:	38 C [2]
Melting point:	-58 C [2]
Relative density (water=1):	0.9 [2]
Vapour pressure at temperature:	48 kPa at 20 C [2]
Solubility in water:	miscible [2]

References

[2] International Programme on Chemical Safety

See glossary for information about physical properties.

Stabilise the scene

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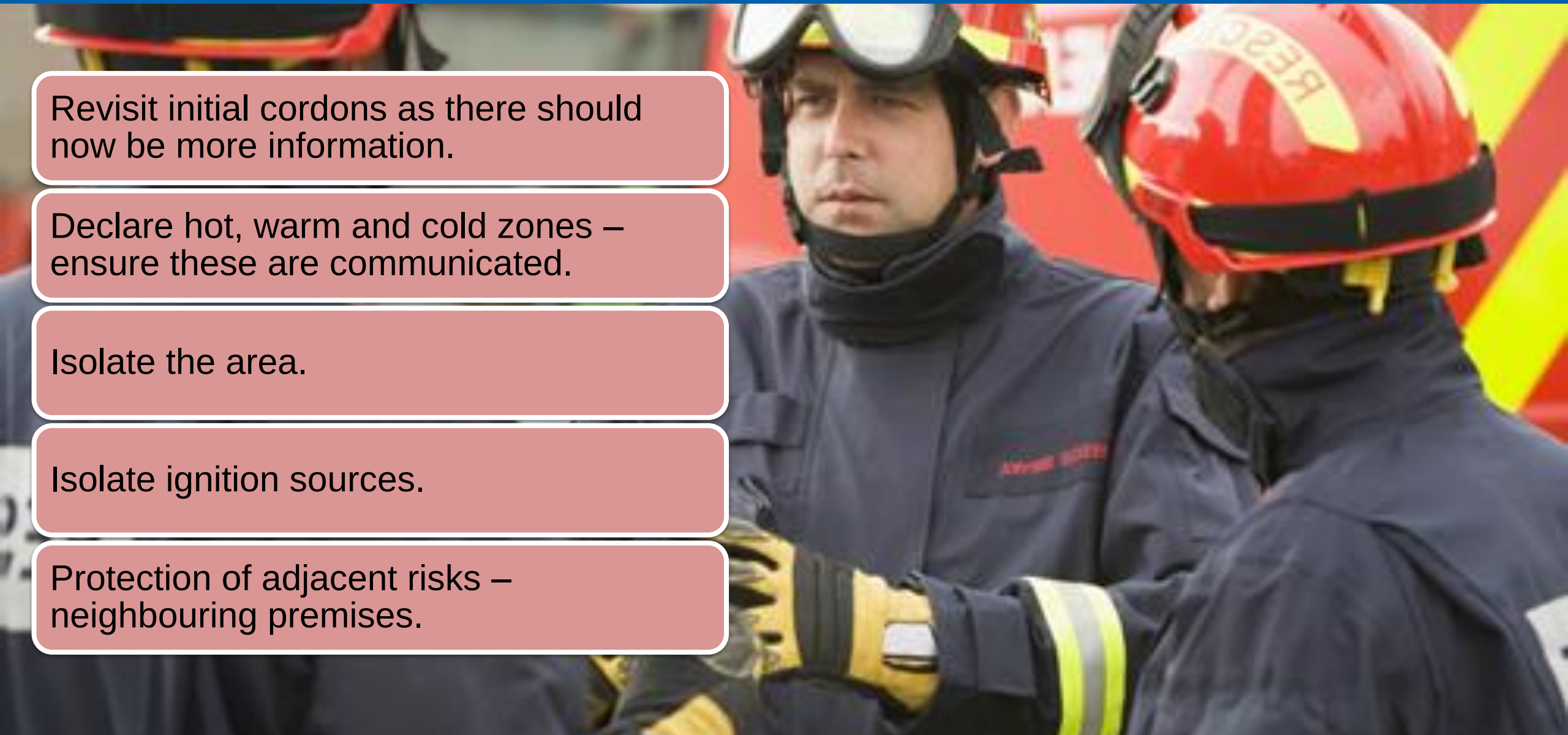

- Revisit initial cordons as there should now be more information.
- Declare hot, warm and cold zones – ensure these are communicated.
- Isolate the area.
- Isolate ignition sources.
- Protection of adjacent risks – neighbouring premises.

Control the release

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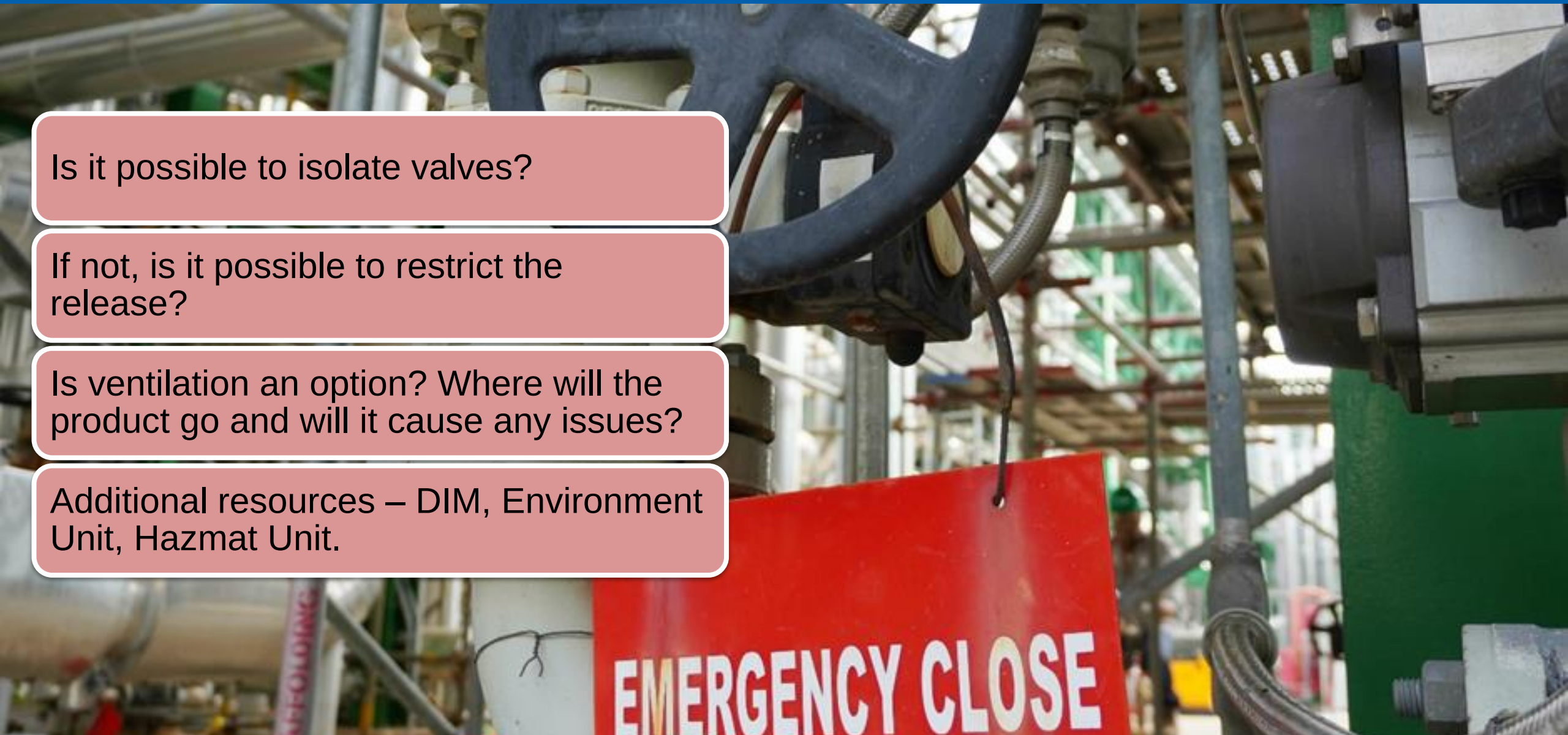

- Is it possible to isolate valves?
- If not, is it possible to restrict the release?
- Is ventilation an option? Where will the product go and will it cause any issues?
- Additional resources – DIM, Environment Unit, Hazmat Unit.

Protect the environment

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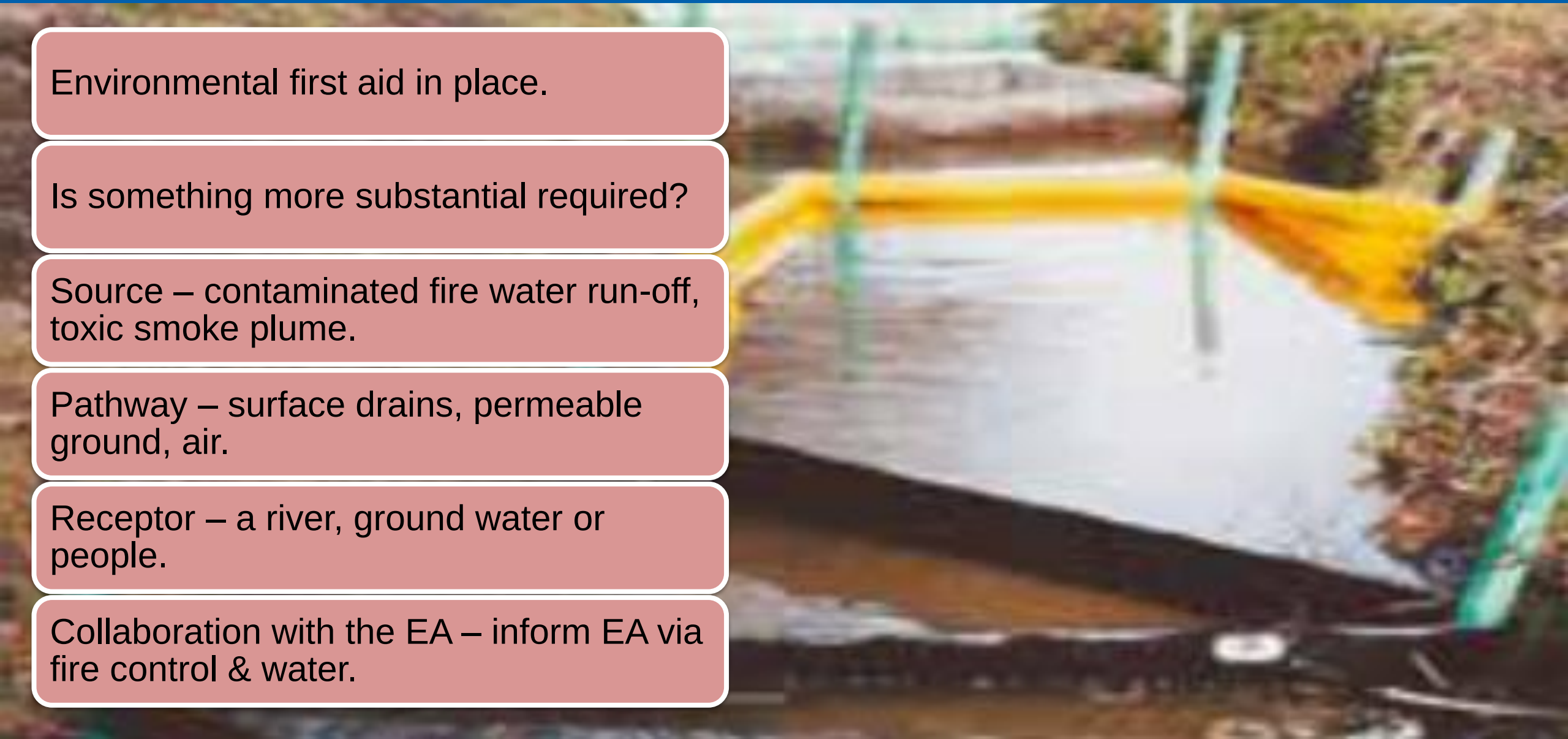

- Environmental first aid in place.
- Is something more substantial required?
- Source – contaminated fire water run-off, toxic smoke plume.
- Pathway – surface drains, permeable ground, air.
- Receptor – a river, ground water or people.
- Collaboration with the EA – inform EA via fire control & water.

After the first 20 minutes – Hazardous Material Advisor

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Tactical, PPE and decontamination strategy

Contamination and exposure

Handover and closure of incident

Key takeaways

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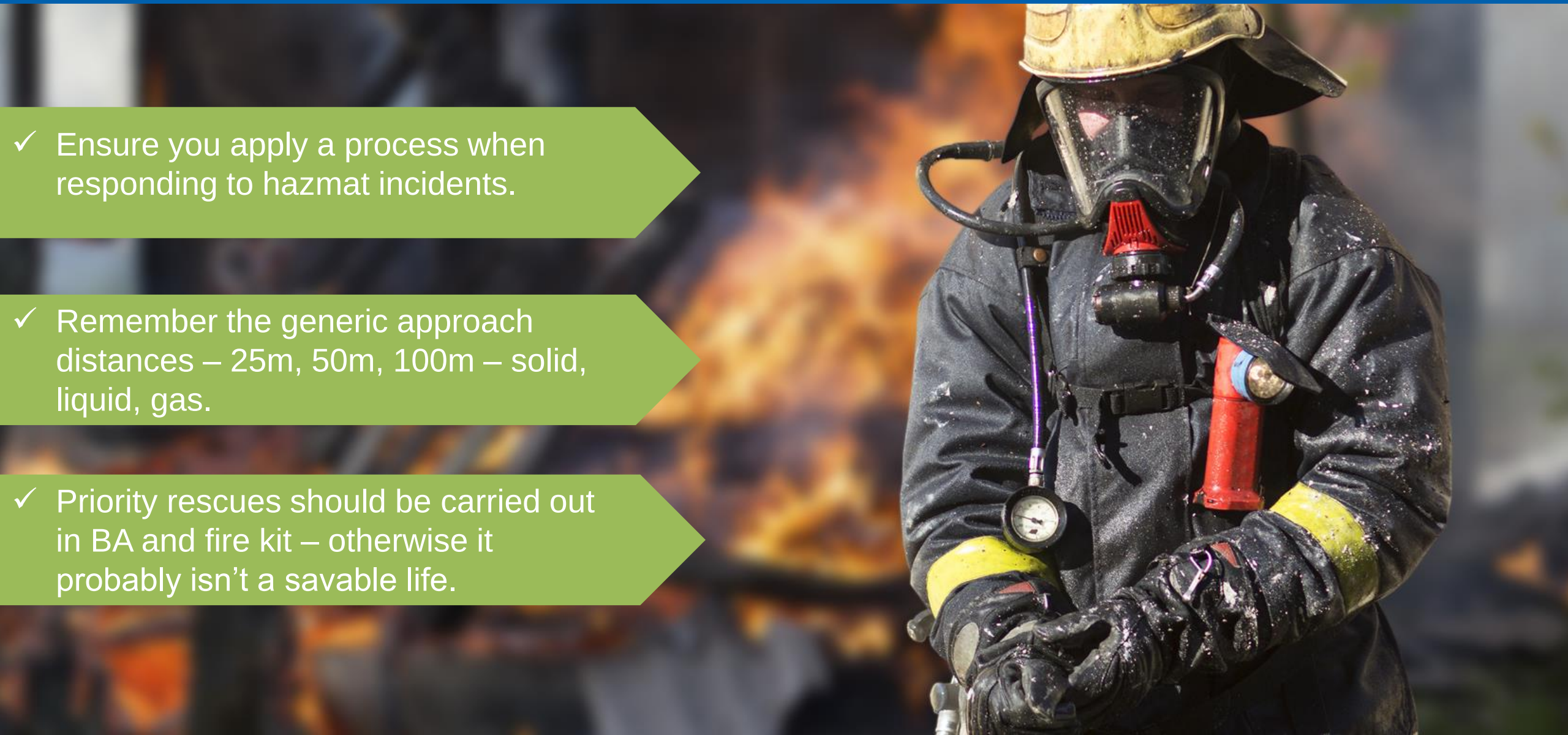

- ✓ Ensure you apply a process when responding to hazmat incidents.
- ✓ Remember the generic approach distances – 25m, 50m, 100m – solid, liquid, gas.
- ✓ Priority rescues should be carried out in BA and fire kit – otherwise it probably isn't a savable life.

Contact us

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ncec@ricardo.com
+44 (0)1235 753654
the-ncec.com/hazmatacademy