Northern Ireland
Fire & Rescue Service

STANDARD OPERATING PROCEDURE NO 7

Farms and Agricultural Land

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INDEX

Page

VERSION CONTROL

This document and subsequent amendments will be issued by the Emergency Response Department, Northern Ireland Fire & Rescue Service (NIFRS) Headquarters.

Amendments are detailed as below:

No	Issued	Amendment	Prepared by	Approved by
1	17/02/2003	Initial issue of Standard Operating Procedure (SOP)	Divisional Officer (DO) Kerr (Operations Policy)	DO Kerr
2	26/06/2006	Review of SOP	Group Commander (GC) Synnott (Operations Policy Unit)	GC Synnott
3	28/11/2012	Version Control inserted Full review of SOP	Emergency Response Dept/GRA Project Team	GC Synnott
4	16/05/2014	Review of SOP - consultation	Project Team	Assistant Chief Fire Officer (ACO) Ashford
5	19/11/2014	Issue of SOP following approval	Project Team	ACO Ashford
6	14/01/2022	**Section 1.2** (Pre-Determined Attendance (PDA)) – Additional Incident Type with PDA (Tractors, etc)	Resilience Department	GC (Resilience)

1 INTRODUCTION

1.1 Scope

This SOP has been developed to contribute to a safe system of work for incidents on farms and agricultural land. It shall assist all operational personnel in the decision making process by providing information on:

- significant hazards;
- control measures.

This shall aid Incident Commanders (ICs) in the identification of significant hazards that are present on the incident ground so that a full Dynamic Risk Assessment may be carried out, leading to the development of an effective Tactical Plan to ensure safe and effective resolution of the incident.

1.2 Pre-determined Attendance (PDA)

Incident Type	PDA
Hay shed	▪ 2 Pumps; ▪ Nearest Flexi Duty System (FDS) Officer.
Person(s) trapped in or crushed by machinery	▪ 1 Pump; ▪ 1 Rescue vehicle; ▪ Nearest FDS Officer.
Rescues from silos	▪ 2 Pumps; ▪ 1 Rescue vehicle; ▪ Nearest FDS Officer; ▪ Specialist Rescue Team (SRT) – Level 2; ▪ Hazmat Officer; ▪ Safety Officer; ▪ GC; ▪ Level 2 rope rescue capability.
Rescues from slurry tanks	▪ 2 Pumps; ▪ 1 Rescue vehicle; ▪ Animal Rescue Team (ART) and Farm Animal Handling Awareness (FAHA) Officer (if animals are involved) mobilised; ▪ Hazmat attributed appliance; ▪ Hazmat Officer; ▪ Nearest FDS Officer; ▪ SRT – Level 2.
Anaerobic Digester	▪ 2 Pumps; ▪ Hazmat attributed appliance; ▪ Hazmat Officer; ▪ Nearest FDS Officer.

Incident Type	PDA
All other hazmat incidents	▪ 2 Pumps; ▪ Hazmat attributed appliance; ▪ Hazmat Officer; ▪ Nearest FDS Officer.
Tractors Large farm machinery Diggers	▪ 2 Pumps; ▪ 1 FDS Officer.

2 SIGNIFICANT HAZARDS AND CONTROL MEASURES

Significant Hazards	Control Measures
▪ Building/structure on fire (house, out-house, hay shed, etc); ▪ Structural collapse - Contents of building unknown; - Collapse due to poor construction or lightweight materials.	▪ Use defensive firefighting tactics if no life risk is involved. ▪ A minimum number of personnel in the Hazardous Area (height of building x 1½ from the building which, for potential collapse, is $1^1/_2$ times the height of a building as estimated from the base of the wall). ▪ Strict control of the Inner Cordon. ▪ Determine the internal/external building structure and how they react in fires. ▪ Confirm contents of the building. ▪ Confirm if any hazmats are present. ▪ Confirm if asbestos is present. ▪ Assess the possibility of fire-spread. ▪ Briefing of crews on Tactical Plan. ▪ Safety Officer to be appointed to monitor for signs of collapse. ▪ Ensure robust evacuation procedures. ▪ Effective entry control of Breathing Apparatus (BA) deployment. ▪ Early mobilisation of a Hazmat Officer ▪ Provide adequate firefighting media for crews. ▪ Consider use of an Aerial appliance.

Significant Hazards	Control Measures
▪ Asphyxiation/drowning in slurry storage - Drowning risk; - Fall from height; - Working in darkness. ▪ Gases **always** present - Hydrogen Sulphide – toxic gas; - Methane – flammable gas.	▪ Request a Hazmat Officer. ▪ Cordon off immediate area. ▪ Use of BA and gas monitor in hazard area. ▪ Ventilate area as soon as possible. ▪ Recovery system where entry for rescue is required. ▪ Do not break surface crust or agitate slurry where possible. ▪ Personnel should not enter for animal rescue. ▪ Appoint and fully brief a Safety Officer. ▪ Consider using work restraint (Working at Height (WAH) kit). ▪ Identify location of slurry drain outlet if available. ▪ Mobilise ART if relevant. ▪ Maintain command and control at all times to prevent unauthorised access. ▪ Utilise the SRT to assist in rescue operations and/or for Firefighter safety. ▪ Determine depth of the slurry pit and slurry from a responsible person. ▪ No ignition sources – intrinsically safe. ▪ Create Decontamination Zone; employ strict command and control of decontamination operations.
▪ Stored silage - Silage gas containing Nitric Oxide mixing with air to produce Nitrogen Dioxide (toxic); - Gas not detectable by NIFRS gas monitors.	▪ Hazmat response mobilised. ▪ Firefighters in the proximity must wear BA. ▪ Regional Control Centre (RCC) will mobilise an ambulance if there are “persons reported”. ▪ Personnel to be alert for bleach-like odours and/or yellowish/brown fumes. ▪ Area to be well ventilated by BA wearers. ▪ Consider mobilising SRT. ▪ Cordons. ▪ Safety Officer.

Significant Hazards	Control Measures
▪ Animals/livestock - Kicks, head butt, bite, crushing and impaling; - Bio-hazards.	▪ Request the owner to move livestock into a controlled area. ▪ Minimum number of personnel in the Hazardous Area. ▪ Mobilise FAHA/ART. ▪ For animal rescue, Animal Welfare Officers from local Councils and Department of Agricultural and Rural Development may be mobilised through RCC. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area.
▪ Injury or death due to electrocution - Overhead lines; - Wind turbines; - Electric transformers; - Electrical management of site.	▪ Isolate shut-off switches. ▪ Inform Power NI (via RCC). ▪ Safety brief. ▪ No ladder working or working within 5 m of electricity supplies until confirmation of isolation by Power NI. ▪ Request attendance of Power NI to confirm isolation of power supply and earthing of equipment. ▪ Do not site appliances near overhead cables.
▪ Fuel stored or used on the farm involved in fire - Diesel tanks; - Laundered fuel – lack of/no information from on-site personnel.	▪ Use defensive firefighting tactics if no life risk is involved. ▪ Minimum number of personnel in the Hazardous Area. ▪ Use of BA and foam jets on fuel fires. ▪ Request a Hazmat Officer. ▪ If there is no bund, identify any possible fire-spread from the direction of the running fuel fire – remove hazards. ▪ Ensure appropriate siting of appliances and equipment. Appliances should not be sited in the path of a running fuel fire.

Significant Hazards	Control Measures
▪ Risk of collapse of stacked materials - Unstable due to weight of load or poor construction materials; - Risk of collapse.	▪ Minimum number of personnel in risk area. ▪ Use defensive firefighting tactics. ▪ Request the farmer to use a tractor or excavator to remove, if safe to do so. ▪ Establish cordons and brief relevant personnel of the risk. ▪ Personnel should not climb on or work beneath stacked materials. ▪ Be wary of the effect of adding water to unstable stacked materials. ▪ Evacuation signal to be communicated in briefings and full accountability of all personnel.
▪ Machinery - Entrapment; - Compressed gases; - Fire.	▪ Isolate power supply. ▪ Identify any entrapment hazards. ▪ Cordon off hazardous area. ▪ Brief crews. ▪ If fire is involved, use BA and jets.
▪ Explosive risks; ▪ Oxidising agents, rapid fire-spread. - Fertilisers; - Cylinders; - Ammunition; - Liquefied petroleum gas.	▪ Use defensive firefighting tactics. ▪ Consult with a Hazmat Officer for other tactical options. ▪ Establish an Inner Cordon based upon the Hazmat Officer's risk assessment. ▪ Use hard protection where possible. ▪ Appoint and fully brief a Safety Officer. ▪ Personnel **must not** be exposed to smoke from fertiliser. BA **must** be worn. ▪ Consider the use of ground monitors. ▪ Confirm with the owner the Nitrogen-Phosphorus-Potassium (N-P-K) content. If Nitrogen (N) value is over 20%, treat fertiliser as an explosive – **withdraw immediately**. ▪ Where fertiliser Nitrogen content cannot be verified, treat as an explosive until otherwise informed. ▪ Consider removal of hazmats, only when it is safe to do so, under the advice of a Hazmat Officer.

Significant Hazards	Control Measures
▪ Injuries to non-Fire Service personnel involved in incident	▪ Establish an Inner Cordon. ▪ Escort non-essential persons out of the Inner Cordon. ▪ Any personnel working under NIFRS instruction within the Inner Cordon must report in/out of the Control Point to receive a full and comprehensive brief. ▪ Any non-NIFRS personnel working within the Inner Cordon must be escorted by a Firefighter at all times. ▪ If in attendance, inform Police Service of Northern Ireland (PSNI) to maintain Outer Cordon.
▪ Injuries to Fire Service personnel caused by inexperienced machine operators	▪ Consider if it is an option for the operator to use machinery for the agreed task. ▪ Consider if the option is safe and effective. ▪ Agree joint plan – clear and comprehensive briefing. ▪ The operator is to be escorted by a Firefighter at all times. ▪ Operators and personnel in the vicinity to wear high visibility jackets and appropriate personal protective equipment. ▪ Maintain command and control at all times. ▪ Ensure that the operator complies fully with remit. ▪ Appoint and fully brief a Safety Officer to oversee actions of the operator.

Significant Hazards	Control Measures
▪ Grain silo - Entrapment; - Inhalation risk; - Dust explosion; - Irrespirable atmosphere; - Unstable surface; - Bridging of grain in tank; - Fall from height.	▪ Request a Hazmat Officer. ▪ Request SRT. ▪ Ventilate if possible prior to entry. ▪ Remove all possible ignition sources. ▪ Adequate level of respiratory protection (dust masks/mask and filter/BA). ▪ Use gas monitor to monitor oxygen levels. ▪ Do not enter silo without appropriate rescue equipment, BA and secured egress. ▪ Minimum number of personnel in the Hazardous Area. ▪ Stabilise casualty if possible. ▪ Consider using Work Restraint (WAH kit). ▪ Use of sprays if fire is involved. ▪ Use of Aerial appliances.
▪ Water related hazards - Sheep dips; - Concealed or covered lagoons; - Waste/contaminated water pit; - Wells.	▪ Request a Hazmat Officer. ▪ Inform all personnel of hazard location. ▪ Cordon off and avoid area. ▪ Provide adequate lighting. ▪ Do not introduce people into the risk area if possible. ▪ Wear lifejacket if working within 3 m of water hazard. ▪ No working alone. ▪ Establish an adequate level of decontamination.
▪ Pesticides, herbicides, rodenticides and other chemicals such as - Veterinary medicines; - Vaccines; - Organo-phosphate sheep dips.	▪ Use defensive firefighting tactics if no life risk is involved. ▪ Consider use of Gas Tight Suits on advice from a Hazmat Officer. ▪ For spillages, contain and ventilate. ▪ For fires, BA and suitable firefighting media – consider allowing to burn out. ▪ Avoid smoke/vapour clouds. ▪ No eating, drinking or smoking inside the Inner Cordon. ▪ Liaise with the site owner/occupier for information on type, location, quantity and state (liquid, etc) of hazmat involved. ▪ Liaise with a Hazmat Officer for risk assessment. ▪ **Snatch rescues only** - BA Team with charged jet and with BA; Emergency Team with charged covering jet must be in place.

Significant Hazards	Control Measures
▪ Biological hazards - Animal waste; - Acute or chronic infections (zoonoses); - Stings or bites.	▪ Request a Hazmat Officer. ▪ No eating, drinking or smoking inside the Inner Cordon. ▪ Minimum number of personnel in the Hazardous Area. ▪ Strict control of the Inner Cordon. ▪ Use of surgical gloves. ▪ Use hand wash on appliances. ▪ Establish an adequate level of decontamination. ▪ Seek medical attention if necessary. ▪ Do not expose female Firefighters to animals with a diagnosed zoonosis disease or to ewes during lambing season.
▪ Anaerobic Digester (AD) - Biogas storage tanks; - Methane - flammable gas; - Hydrogen Sulphide - toxic gas; - Electricity risk - cables from generator to electric grid; - Drowning risk from waste lagoon; - Entrapment.	▪ Request a Hazmat Officer. ▪ Establish an Inner Cordon. ▪ Use defensive tactics where fire but no life risk is involved – ground monitor. ▪ Use BA in the Hazardous Area until gas monitor confirms area is safe – constant monitoring. ▪ Instruct site owner to operate safety flare to burn off any gas within the AD. ▪ Isolate power supply to generator. ▪ Contain any run-off from fire. ▪ Use WAH kit where required.

3 OPERATIONAL CONSIDERATIONS

3.1 EN ROUTE

Immediate Considerations

- Consider hazards likely to be present at the site from the mobilising information.
- Consult Operational Aide-Mémoire.
- Brief the crew and allocate initial roles.
- Confirm if an Operational Risk Card is available on the Mobile Data Terminal (MDT), or carried on the appliance.
- Careful approach.
- Safe appliance positioning.

Think through the phases of Managing Incidents

- Decision Making Model

  - Incident information.
  - Resources information.
  - Hazards and safety information.
  - Think.
  - Prioritise objectives.
  - Plan.
  - Communicate and control.
  - Re-evaluate.

- Consider Tactics

  - Initial actions.
  - Brief crews.
  - Life risk/no life risk.
  - Continually re-evaluate.
  - Complete rescues.
  - Extinguish fire.
  - Handover.
  - De-brief.

- Officer-in-Charge Considerations

  - Focus on safety throughout.
  - Direct operations by standing back.
  - Liaise with other agencies.

3.2 IN ATTENDANCE

Initial Actions

- Make contact with the caller or gain information from persons on site.
- Obtain Risk Critical Information, hazards, etc, from the Mobile Data System (MODAS).
- Confirm the nature of the incident - fire in a building, person trapped, slurry incident, animal rescue, etc.
- Identify the hazards present.
- Consider the additional resources required.
- Develop a Tactical Plan.
- Extinguish fire or carry out rescues.
- Use maps on the MDT to assist in finding hydrants and open water sources.
- If Hazmats are involved or may become involved, confirm amount, type and exact location.
- Consider environmental impacts.
- Decontaminate personnel, appliances and equipment.

Informative Message

- Send an early informative message, stating nature of the incident, Tactical Mode and make up as appropriate.

Brief Crews

- Brief crews on the priorities and plan, hazards and control measures.

Rescues

- Carry out time-critical rescues and firefighting priorities.

Continually Re-evaluate

- Incident information.
- Resources information.
- Hazards and safety information.
- Think.
- Prioritise objectives.
- Plan.
- Communicate and control.

Informative Messages

- Send a Tactical Mode update and informative message every 20 minutes.

Complete Rescues

- Treat casualties.

Environmental Considerations

- The IC must identify any nearby open water sources that may be affected.
- Consider mobilising Level 2 and/or 3 pollution resources.
- Inform NI Environment Agency if necessary.
- Use of Environmental Response kit.
- Consider use of farm plant to divert run-off into a temporary lagoon.

Handover

- To occupier, PSNI or other agency.
- Should include safety brief of any residual hazards presents.
- If not present, make every effort to secure the premises.
- If it is not possible to secure the premises, request the RCC to inform the PSNI and make contemporaneous notes to that effect.

3.3 POST-INCIDENT

Critical Incident De-brief

- An officer will carry this out where appropriate.

De-brief

- Carry out a Hot De-brief.
- Identify training needs.

Equipment Issues

- Replenish items used.
- Submit defects.
- Source replacement equipment via District.

Accident or Near Misses

- Accidents to be fully investigated and reported as per normal procedures.
- Near misses to be reported as per normal procedures.

Medical Attention

- Medical attention to be sought as appropriate.

Decontamination of Personnel and Fire Kit

- Standard procedures to be followed.
- Disinfection must occur at all farming incidents.
- The IC must ensure that all personnel, equipment and appliances are disinfected prior to leaving the incident ground.
- Use sprayer at 145 parts of water to 1 part disinfectant.
- Pay particular attention to boots, wheels, wheel arches and any equipment used.

Liaise

- Liaise with other agencies/emergency services where necessary.

4 PRE-INCIDENT PREPARATION

4.1 Relevant Literature

This SOP is supported by the following SOPs and Training Notes, which are available from the Global Folder at G:\Document Management System:

- SOP 4 - Water Rescues;
- SOP 6 - Generic Hazmat Incidents;
- SOP 6A - Decontamination/Washdown;
- SOP 6B - Pollution Emergencies;
- SOP 8 - Firefighter Emergencies;
- SOP 17 - Collapsed Structures;
- SOP 22 - Large Animal Rescues;
- SOP 27 - Working at Height;
- Hazmat 03 - Hazardous Materials;
- Operational 04 - Special Service Calls;
- Operational 05 - Specialist Rescue Calls;
- Operational 15 - Animal Rescue Level 1;
- Operational 17 - Animal Rescue Level 2;
- RTC 10 - Hydraulic Rescue Equipment;
- General 11 - Manual Handling;
- Occupational Health, Safety & Welfare Bulletin 12/14 – Storage of Silage.

4.2 Training

Depending upon the Station Risk Profile, training should be carried out in accordance with the Area Training Planner, to prepare in advance for incidents on farms and agricultural land. Training scenarios should be based upon the significant hazards as detailed within this SOP.

4.3 Pre-planning

To assist in providing safe systems of work, personnel should carry out pre-planning activities as follows:

- Gain knowledge of the station ground, water supplies, access points, hazards present.
- Gain knowledge of the additional resources that can be called on to assist.
- Consider utilising the SOP 12 (Operational Intelligence) process for farms with significant hazards to assess the overall risk posed by the site.
- Assess the need for exercises on farm premises.
- Carry out familiarisation visits to farm premises.
- Use British Agricultural Standards Inspection Scheme (BASIS) registers to identify current premises with identified risk.