NIHR | King's Clinical Research Facility

Responding to the King's Clinical Research Facility Security Alarms

Document Detail	
Document type	Standard Operating Procedure
Document name	CRF-HS-SOP-3: Responding to the King's CRF Security Alarms
Document location	Q-Pulse \ CRF Documents
Version	4.0
Effective from	26 JUL 2022
Review date	26 Jul 2024
Author	Elka Giemza, CRF Manager
Approved by	Ian Taylor, KCH Security Manager
Authorised by	Professor Peter Goadsby, CRF Director
Related documents	CRF-HS-SOP-1: MRI Access Control and Safety Procedures in the King's CRF KCH Fire Safety Policy KCH Security Policy
Keywords	Security team, liquid nitrogen, Pinpoint, low oxygen alarm, quench
Supporting references	See Section 6.0

Change History		
Date	Change details, since approval	Approved by
March 2018	1. Section 5.2.4: Addition of 'beard snood' where indicated 2. Section 5.2.9: Addition of the requirement to call the fire service if the reading does not rise above 18%	I. Taylor
April 2020	1. Section 1.2 and 2.2.4 additional areas specified 2. Section 3.1 leak alarm added 3. Section 4.2 Facility manager position removed 4. Section 5.1 clarification on using the pinpoint system added 5. Section 5.2 to 5.2.10 Additional instructions for responders added 6. Section 6 Appendix 1 reformatted 7. Section 6 New Appendix added	I. Taylor
Jul 2022	1. Appendix updated with new names and contact phone numbers	I. Taylor

Review History		
Date	Review details	Approved by
March 2018	Review of v1.0 conducted by Elka Giemza, CRF Manager, and Peter Bishai, CRF Facilities Manager, as per the review date. Changes made as per 'Change History' and re-issued as v2.0	I. Taylor
April 2020	Review of v2.0 conducted by Elka Giemza, CRF Manager and Penny Bligh as per the review date. Changes made as per 'Change History' and re-issued as v3.0	I.Taylor
July 2022	Review of v3.0 conducted by Elka Giemza, CRF Manager and Penny Bligh as per the review date. Changes made as per 'Change History' and re-issued as v4.0	I.Taylor

1.0 Background

1.1 The King's Clinical Research Facility (CRF) supports the conduct of a broad range of clinical research studies involving patients and healthy volunteers. CRF staff include a team of registered nurses and other allied health care professionals, and the CRF operates within the King's College Hospital NHS Foundation Trust (KCH). The CRF encompasses the Clinical Trials Facility (CTF), the Experimental Medicine Facility (EMF), the Cell Therapy Unit (CTU) and a 3rd floor plant room; all of them are embedded within KCH and are served by the Security Team and the hospital emergency resuscitation team and are located within a short distance of the Surgical Critical Care Unit (SCCU).

1.2 Within the CTU there are storage areas located on the ground floor (G24 Cryo room) and 2nd floor (S28 cold pack room) that contain liquid nitrogen to freeze and store samples. There is an MRI scanner located on the ground floor in the EMF which utilises liquid helium. Whilst every effort has been made to ensure that no leaks occur and that audible alarms indicate a dangerously low oxygen environment, instructions on how to respond to these alarms have been disseminated to the security teams.

2.0 Purpose

2.1 The purpose of this Standard Operating Procedure (SOP) is to ensure that all security alarms in the CRF are responded to in an appropriate and timely manner.

2.2 The purpose of this SOP is also to ensure that the security team are advised on the correct procedure when entering the following specialist areas within the CRF:

- 2.2.1 2nd floor CTU
- 2.2.2 Ground floor, MRI suite
- 2.2.3 2nd and Ground floor Liquid Nitrogen rooms
- 2.2.4 3rd floor plant room

3.0 Scope

3.1 This SOP provides a framework for the security team managing CRF Pinpoint alarms, low oxygen alarms, intruder alarms, leak alarm, and fire alarms.

3.2 This SOP applies to all KCH security team members.

3.3 This SOP also applies to all core CRF staff and users of the CRF.

4.0 Responsibilities

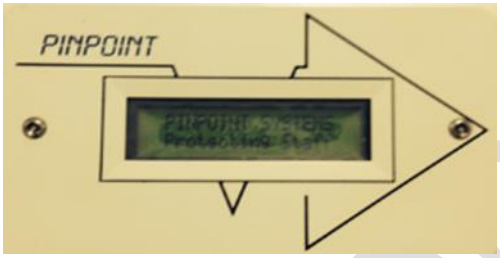
4.1 The CRF Manager is responsible for ensuring that appropriate procedures are in place to protect the safety and welfare of study subjects, staff and visitors in the CRF.

4.2 The CRF Manager and/or delegate, Cell Therapy Unit Quality Director and CRF Quality Manager are responsible for ensuring that the security department have understood this SOP and have the required knowledge to ensure the correct and **immediate** response to the Facility.

5.0 Procedure

5.1 PINPOINT ALARM: the Security Team receives an audible 'pinpoint' alarm indicating where in the CRF the alarm was triggered. The security team must attend the CRF on hearing this alarm. Entry to the CRF is via the most appropriate external door (ground, 1st, 2nd floor). Security must follow the pinpoint indicator lights in the ceiling to the site of the call out and deactivate the intruder alarm if necessary.

5.1.1 When a CTU Lone worker transmitter has been activated by a CTU individual either from the 2nd floor clean area or 3rd floor plant area, the route indicator arrow screens located at the entrance to the second floor and behind reception on the first floor must be followed as the ceilings lights are not activated.



5.1.2 Responders to a CTU Lone worker transmitter alarm occurring on the 2nd floor clean area must put on shoe covers, hairnets and beard snood if required before entering the CTU. CTU entry cards are also needed.

5.1.3 These can be obtained from the grab bag located in the CTU lobby, which contains CTU access cards, shoe covers, hairnets and a map of the facility.

5.1.4 Responders attending the ground floor MRI Suite, the security team must follow instructions given by the Authorised Person(s) present and not enter the MR Environment (MRI scanner room).

5.1.5 Responders should be aware that in the unlikely event of a quench the Authorised Person may be attempting to clear not only the MRI suite but possibly the whole ground floor. At that point, re-entry into the MR

Controlled Access Area will be restricted to a representative of the supplier (or other suitably qualified person authorised by the MR Responsible Person), in order to inspect the MR system.

5.1.6 A quench is the rapid boiling off of liquid helium into its natural gaseous state, resulting in a gradual loss of the magnetic field from the superconducting magnet. This may occur unexpectedly and will present a hazard if the helium is not directed safely to the atmosphere via the quench pipe.

5.1.7 It is especially important to ensure that all fire response personnel are restricted from entering the MR Environment with their equipment until it can be confirmed that the magnetic field has been successfully dissipated. There may still be considerable static magnetic field present despite a quench or partial quench of the magnet.

5.2 LOW OXYGEN ALARM: the security team receives an audible low oxygen alarm when the CRF has a low oxygen area as a result of a liquid nitrogen gas leak in the CTU ground floor (G24 Cryo room) or 2nd floor (S28 cold pack room). The security team must attend the CRF on hearing these alarms.

There is no notification to the security team after a low oxygen alarm is activated as a result of a liquid helium release in the MRI suite.

5.2.1 **A low oxygen alarm requires two responders to attend, as part of a buddy system of safe working.**

5.2.2 There are two areas in the CRF that house liquid nitrogen; the ground floor, adjacent to the lift lobby room G24 and the 2nd floor within the CTU, room S28, directly opposite the entrance.

5.2.3 Entry to the CRF is via the most appropriate external door (ground, or 2nd floor). Security must deactivate the intruder alarm out of hours.

5.2.4 On responding to a low oxygen alarm in the Cell Therapy Unit (CTU) 2nd floor, obtain access CTU entry cards from the grab bag located in the CTU lobby.

5.2.5 **All liquid nitrogen low oxygen alarmed areas require 2 security members to swipe in for the doors to open.**

5.2.6 Before entering the CTU clean area, from the grab bag provided put on the shoe covers and hairnets and beard snood if required (hairnets and shoe covers are not required to enter the ground floor liquid nitrogen room).

5.2.7 Check the oxygen reading on the oxygen monitoring panel.

5.2.8 These are located outside S28 2nd floor (CTU Cold pack room). If attending the ground floor liquid nitrogen room, check the oxygen reading on the oxygen monitoring panel outside G24 (ground floor liquid nitrogen room).

5.2.9 This oxygen monitoring panel pictured below is showing a typical room's oxygen concentration level.

5.2.10 **IF THE READING IS BELOW 18%: there is critically low oxygen levels in the room that will not support life.**

DO NOT ENTER THE ROOM

Entering the room may also make you the casualty

5.2.11 Visually check via the windows for signs of persons in the room.

5.2.12 Contact Switchboard to call Fire Brigade and to alert Cardiac Arrest Team if a collapsed person is seen in the room.

5.2.13 Clear immediate area of all people and restrict access to the adjacent areas. For room G24 cryostore it will be the CRF ground floor area, and for the CTU lobby the “Cold pack” room on the 2nd floor of the CTU it will be all S30 lobby area.

5.2.14 Await for the emergency responders to attend.

5.2.15 Brief the fire brigade on arrival.

5.2.16 Do not permit the cardiac response unit to enter the room until advised that it is safe by the fire brigade.

5.2.17 Follow the instructions of the fire brigade officers.

5.2.18 **IF READING IS ABOVE 18.0**

5.2.19 Visually check for signs of people in the room.

5.2.20 Open both doors and ventilate the room if the reading is below 18%; wait until the reading rises above 18% making it safe to enter. If the reading does not rise, then wait for the fire service to arrive; see 5.2.13

5.2.21 Clear the immediate area of all non-essential persons.

5.2.22 Remove any unconscious person to a well ventilated area and commence basic life support as necessary.

5.2.23 Contact the switchboard to call the fire brigade.

5.2.24 Telephone 32222 to alert the resuscitation team. Report the following information:

5.2.25 That there is a collapsed adult/child.

5.2.26 Indicate your location - Clinical Research Facility and which floor (2nd or ground).

5.2.27 **Out-of-Hours Only**: if attending the 2nd floor, collect the crash trolley from the 1st floor of the CRF (located by the Nurses Station). If attending the ground floor, collect the crash trolley from the ground floor (located next to the ITU room).

5.2.28 Restrict access to the immediate area outside the room.

5.2.29 Brief the fire brigade on arrival.

5.2.30 Do not permit the cardiac response unit to enter the room until advised that it is safe by the fire brigade.

5.2.31 Follow the instructions of the fire brigade officers.

5.3 INTRUDER ALARM

5.3.1 The security team must follow the standard policy for responding to an intruder alarm and incorporate the 'low oxygen alarm' procedure above.

5.4 PLANT ROOM LEAK ALARM

The 3rd floor plant room has a leak alarm system divided into 3 distinct zones within the plant room. When a leak occurs in the one of the three zones an audible alarm and a visual flashing orange beacon is activated in the 2nd floor lobby of the CTU.

.

The system will also alert via text and telephone message the CTU administrator phone held by the CTU staff, Capital Estates Facility on-call shift engineers' phone and the phone on the 1st floor reception of the CRF.

5.4.1 When this alarm is activated it is the responsibility of the on-call shift engineer to investigate the alarm.

5.4.2 If security discover the alarm during scheduled out of hours walk rounds: they must report the leak alarm to the shift engineer via the hospital bleep system (Dial 736-973 followed by the extension number of the phone they are calling from).

5.5 FIRE ALARM

5.5.1 The security team must follow the standard policy for responding to a fire alarm and incorporate the 'low oxygen alarm' procedure above.

6.0 Related documents & References

6.1 CRF-HS-SOP-1: MRI Access Control and Safety Procedures in the King's CRF

6.2 KCH Fire Safety Policy and Security Policy

http://kingsdocs/Pages/Home.aspx

7.0 List of Appendices

7.1 Appendix 1 - Instructions for responding to liquid nitrogen alarms in the CRF

7.2 Appendix 2 – Out of hours contacts sign for the CTU

8.0 Approval and sign off

Author:

Name: Elka Giemza

Position: CRF Manager

Signature: Date:

Approved by:

Name: Ian Taylor

Position: KCH Security Manager

Signature: Date:

Authorised by:

Name: Professor Peter Goadsby

Position: CRF Director Signature: Date

Appendix 1

Instructions for responding to liquid nitrogen alarms in the CRF:

Please note that all liquid nitrogen areas require 2 security members to swipe in for the doors to open!

IF THE READING IS BELOW 18.0 DO NOT ENTER THE ROOM.

IF READING IS ABOVE 18.0

1.1 Visually check for signs of persons in the room.
1.2 Clear immediate area of all non-essential persons.
1.3 Open both doors and ventilate the room.
1.4 Remove any unconscious person to a well ventilated area and commence Basic Life Support as necessary. Intruder alarm can be ignored.

IF READING BELOW 18.0

1.5 Visually check for signs of persons in the room,

DO NOT ENTER THE ROOM

1.6 Contact Switch board to call Fire Brigade.
1.7 Contact Switch board to alert Cardiac Response Unit.
1.8 Clear immediate area of all non-essential persons
1.9 Restrict access to the adjacent areas (CRF ground floor for the CRF/CTU cryostore and CTU lobby S30 for the "Cold pack" room on the 2nd floor of the CTU).
1.10 Brief Fire Brigade on arrival.
1.11 Do not permit Cardiac Response Unit to enter room until advised safe by Fire Brigade.
1.12 Follow instructions of Fire Brigade Officers

Appendix 2

Out of hours contact sign for CTU

In the event of **any audible alarm** in this department out of hours, please contact the following:

- CTU Admin phone: 07890 254 525
- Penny Bligh 07421 472 587 (CTU Quality Director)
- Elka Giemza 07960 649 079 (CRF Manager)