STEM CELL LABORATORY (STCL)

DOCUMENT NUMBER: STCL-EQUIP-013

DOCUMENT TITLE:

Alarm System and Instructions in the Event of Equipment Malfunction, Failure, or Repair

DOCUMENT NOTES:

10D.550

Document Information

Revision: 05	**Vault:** STCL-Equipment-rel
Status: Release	**Document Type:** STCL

Date Information

Creation Date: 10 Nov 2020	**Release Date:** 06 Jan 2021
Effective Date: 06 Jan 2021	**Expiration Date:**

Control Information

Author: WATER002	**Owner:** WATER002
Previous Number: STCL-EQUIP-013 Rev 04	**Change Number:** STCL-CCR-495

STCL-EQUIP-013
ALARM SYSTEM AND INSTRUCTIONS IN THE EVENT OF EQUIPMENT MALFUNCTION, FAILURE, OR REPAIR

1 PURPOSE

1.1 To provide written instructions for staff in the event of an equipment malfunctions or failures to ensure that cellular products and/or reagents can be relocated, if necessary, as quickly as possible to ensure that cellular integrity and reagent stability is maintained at all times. To provide written instructions for staff when equipment repairs are needed to ensure that all instrumentation is functioning properly at all times.

2 INTRODUCTION

2.1 Cellular products, reagents, and samples are stored at various temperatures. In the event of an equipment malfunction or failure, measures must be taken to ensure that cellular products, reagents, and samples, if necessary, are relocated in a timely manner. Refrigerators (1-8°C), freezers (-20°C, -70°C, and <–150°C), and incubators (37°C) located in the Stem Cell Laboratory (STCL) are connected to a central alarm system which is monitored 24 hrs/day, 7 days/week.

2.2 The Building Automation System (B.A.S.) facility, located in the basement of Duke North Hospital, monitors all of the alarms activated by STCL equipment. B.A.S. personnel contact and notify the appropriate personnel (laboratory staff and/or maintenance or refrigeration staff) to ensure that alarms are resolved as quickly as possible.

2.3 In addition to the B.A.S. monitoring system that is in currently in place, Stem Cell Laboratory equipment is also monitored by the REES Temperature Monitoring System which is used to monitor the temperature of refrigerators, freezers, incubators, and the environment as well as the humidity at each location. Oxygen depletion alarms are also monitored at those locations where LN2 freezers are housed.

2.4 The REES Temperature Monitoring System is accessible from the internet by designated laboratory staff; it provides visual temperature displays, CO_2 displays, and humidity displays, as applicable, and can be used to print reports, as needed, to effectively monitor laboratory equipment and the rooms in which these pieces of equipment are housed.

3 SCOPE AND RESPONSIBILITIES

3.1 It is the responsibility of the Laboratory Manager and senior laboratory staff to ensure that all alarms are investigated and problems resolved as quickly as possible to ensure that cellular products and/or reagents are promptly relocated, if necessary, to another storage device.

4 DEFINITIONS/ACRONYMS

4.1	STCL	Stem Cell Laboratory
4.2	BAS	Building Automation System

4.3	CO_2	Carbon Dioxide
4.4	°C	degrees Celsius
4.5	REES	Temperature Monitoring System
4.6	LN2	Liquid Nitrogen

5 MATERIALS

5.1 N/A

6 EQUIPMENT

6.1 Rees Environmental Monitoring System accessible by computer

7 SAFETY

7.1 N/A

8 PROCEDURE

8.1 If a refrigerator, incubator, or freezer alarm status is activated, a B.A.S. employee will refer to (JA1) Refrigeration Call List that is on file for the STCL in their department. The REES Temperature Monitoring System has a call list programmed into the software which is activated if/when an alarm is initiated.

8.2 During 1st and 2nd shifts, B.A.S. employees have been instructed to call 668-1169, 668-1170, or 668-1178 when STCL staff must be notified that an alarm has been activated. The REES Temperature Monitoring System call list is activated whenever an alarm is initiated.

8.3 If the alarm is activated after hours, or the B.A.S. employee (and REES Temperature Monitoring System) is unable to contact a STCL employee at the phone numbers listed, they have been instructed to contact the Laboratory Manager via pager #s (919) 970-2751 or (800) 608-5364 to report the alarm status.

8.4 Whenever possible, the technologist should attempt to evaluate and resolve the alarm status immediately. If the technologist cannot resolve the problem, they have been instructed to call the Maintenance Department (684-3232) to report the problem and ask for assistance. The technologist should ask the Maintenance Department to contact the Refrigeration Department person "on-call" in an effort to resolve the problem as quickly as possible without compromising the contents of the storage device. The Refrigeration Department person on-call can be contacted via pager #s: 970-9848, 970-9849, or 970-9850.

8.5 The Laboratory Manager should be notified of any problems resulting in the need to relocate cellular products or reagents to ensure that reinforcements (additional staff) are contacted if help is needed in the relocation process.

8.6 For products stored in incubators (37°C), there is an alternate incubator available as a backup.

8.7 For products stored in the refrigerator (1-8°C), there are alternate, monitored refrigerators available within the STCL as backups.

8.8 For products stored in mechanical freezers (-70°C), there are alternate freezers available on-site that can serve as a backup or Barlow Scientific can be contacted to identify a loaner that can be used in the STCL..

8.9 For products stored in a liquid nitrogen freezer (<-150°C), contact the Refrigeration Department or Barlow Scientific IMMEDIATELY if a "loaner freezer" will be needed to relocate the contents of a faulty freezer. Typically, unless it is determined by the Refrigeration Department that the contents must be relocated into another freezer, the cells will be stable while housed in LN2.

8.10 Equipment that does not require alarm systems are serviced by the following companies. If problems are noted, the appropriate contact person should be notified so measures can be implemented to make the appropriate repairs, etc., in a timely manner as not to disrupt the day-to-day operation of the laboratory.

Balances	Clinical Engineering (681-2525)*
BacT-Alert 3D	Biomerieux (800-634-7656)
Centrifuges	Clinical Engineering (681-2525)*
COBE Spectra	Clinical Engineering (681-2525)*
Computers	DHTS *formerly Cancer Center* (684-2243)
Cryomed Freezers	Barlow Scientific (919-245-1129)
Electrical Outlets	Clinical Engineering (681-2525)*
FACSort / FACSCalibur	Becton Dickinson (800) 448-2347
Sysmex XS-1000i Hematology	Sysmex Hotline (800) 379-7639 (*Technical Support*)*
Biological Safety Cabinets	Precision Air Technologies (859-6600)*
Microscopes	Clinical Engineering (681-2525)*
Pipettors	Precision Weighing (919-678-0077)
Slide Stainer	Wescor (800) 453-2725*
Water Filtration System	Pure Flow (800) 242-9430
LN2 cylinders	National Welders (919-544-9699)
CO_2 cylinders	National Welders (919-544-9699)
Dry Ice	Airgas Dry Ice (919-544-8250)

**** Clinical Engineering may assist in contracting the service with outside companies.***

9 RELATED DOCUMENTS/FORMS

9.1 STCL-EQUIP-013 JA1 Refrigeration Call List

10 REFERENCES

10.1 N/A

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
06	B. Waters-Pick	• Section 2 was broken up into Sections 2.1 – 2.4 (*to decompress the information; content not changed*) • Added to °C to section 4 and changed "degrees Celsius" to °C throughout the document • Table in Section 8 contact information for computers and cryomed freezers updated • Added document to Section 9

Signature Manifest

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Effective Date: 06 Jan 2021

All dates and times are in Eastern Time.

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Name/Signature	Title	Date	Meaning/Reason
Barbara Waters-Pick (WATER002)		17 Dec 2020, 02:59:08 PM	Approved

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Name/Signature	Title	Date	Meaning/Reason
Barbara Waters-Pick (WATER002)		17 Dec 2020, 02:59:21 PM	Approved

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Joanne Kurtzberg (KURTZ001)		17 Dec 2020, 07:28:37 PM	Approved

Quality

Name/Signature	Title	Date	Meaning/Reason
Isabel Storch (IMS19)		19 Dec 2020, 08:39:30 AM	Approved

Document Release

Name/Signature	Title	Date	Meaning/Reason
Sandy Mulligan (MULLI026)		31 Dec 2020, 11:56:40 AM	Approved