
NDMRB – University of Oxford **NDMRB-SOP-031 Issue 001 – March 2017 (AKK)**

NDMRB Liquid Nitrogen and -80 Freezer Emergency Procedures and Failure Protocol

1. Introduction

This SOP does not cover normal working procedures, manual decanting of liquid nitrogen (LN2) or freezer operation. In order to gain access to the liquid nitrogen room you will be required to attend a brief induction and a separate induction is available and required for manual decant of liquid nitrogen. For details of working with LN2 in normal circumstances please refer to:

- * [TDI-SOP-005](#) Handling, storage and use of liquid nitrogen
- * [TDI-RA-005](#) Handling, storage and use of liquid nitrogen
- * [UPS S4/03](#) Liquid Nitrogen

This SOP covers emergency procedures in the event of supply failure, power failure, freezer failure or room failure.

2. Freezer Failure

2.1 In the event that a cryo store becomes defective due to a power failure then the procedure is as follows:

- * The “Comark” system will call the facilities team
- * The member of facilities that picks up the call will log on to Comark and identify the cryo store in alarm
- * The facilities team will then call members of the group concerned to inform them of the problem
- * Manual decant of LN2 can be carried out by facilities in order to maintain temperature of the freezer if required- this allows time to install the backup 24K store which is available
- * In the meantime engineers will be contacted to try and repair the tank.
- * If the store is going to take a long time to repair group members will then be asked to transfer samples into the back up tanks. In the case of the 40K tanks samples may need to be spread across the spaces available in other freezers

2.1.2 In the event that a -80 freezer becomes defective due to a power failure then the procedure is as follows:

- * The “Comark” system will call the gateway contacts allocated to trigger 1
- * The gateway contact that picks up the call will log on to Comark and identify the -80 freezer in alarm
- * The gateway contact will then call members of the group concerned to inform them of the problem

- * If the freezer has completely failed then the back up -80 freezer can be relocated to goods inwards (this must be done by the facilities team because of manual handling issues) and the contents of the broken freezer can be transferred
- * In the meantime engineers will be contacted to try and repair the -80.
- * If the freezer cannot be repaired then the back up -80 can be used for the duration until a new freezer is installed.

2.2 Liquid nitrogen supply failure

In the event that a cryo store becomes defective due to a LN2 supply failure then the procedure is as follows:

- * The Comark system will call the facilities team
- * The member of facilities that picks up the call will log on to Comark and identify the cryo store in alarm
- * The facilities team will then call members of the group concerned to inform them of the problem
- * Manual decant of LN2 can be carried out by facilities in order to maintain temperature of the freezer – this allows time to install the backup 24K store
- * In the meantime engineers will be contacted to try and repair the tank.
- * BOC will also be called to order a LN2 dewar to maintain automatic fill
- * The dewar will stay in place until the system is repaired

2.3 Power failure

2.3.1 In the event that a cryo room as a whole becomes compromised due to a power failure then the procedure is as follows:

- * Facilities will monitor the temperature of the cryo stores using the Comark system during a power failure
- * A dewar of LN2 will be ordered from BOC if required. Manual decant of LN2 can be carried out by facilities in order to maintain temperature of the freezer. LN2 can be obtained from other buildings in an emergency
- * In the event of catastrophic failure generators will be brought to site, tanks will need to be relocated on the ground floor and plugged into generator supported sockets (grey sockets under bench in the primary lab space)

2.3.2 In the event that the -80 freezer room as a whole becomes compromised due to a power failure then the procedure is as follows:

- * Facilities will monitor the temperature of the -80 freezers using the Comark system during a power failure
- * In the event of catastrophic failure generators will be brought to site, the -80 freezer room is supported by generated supplied sockets therefore there is no requirement to relocate the -80 freezers

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3.0 Further information

- * The volume of LN2 in the 24K tank at any one time is 50L-55L
- * The volume of LN2 in the 40K tank at any one time is 73L

4.0 In case of an emergency please contact:

1. Facilities 07788443286 (on call)
2. Darren Blase 07791212866
3. Andrea Keepence-Keyte 07960086093

5.0 Review

This document will be reviewed every three years by the laboratory manager or relevant personnel