**BBSE 5.0-Miscellaneous Preventive Maintenance for Blood Bank Storage Equipment**

1. Principle

Blood Bank storage equipment must be well maintained in order to ensure the correct temperature for the products stored inside.

# General Policies

1. Cleaning of storage equipment is performed bi-annually.
2. Plant operations is responsible for preventive maintenance of all blood bank storage equipment.

# Specimen Collection and Preparation

N/A

# Equipment

1. Jewett blood bank refrigerators
2. Jewett blood bank freezers
3. Forma UltraLow freezer
4. Helmer platelet incubator

# Supplies

1. Soft cloth
2. Disinfecting solution
3. Window cleaner

# Reagents

1. 10% Glycerol solution
   1. Preparation: Prepare a 1:10 dilution of glycerol in a large container. (110 ml glycerin/990 ml distilled water). Mix thoroughly. See attached for OSHA label.
   2. Storage: 1-6C
   3. Expiration: N/A

NOTE: Discard in sink with copious amounts of water.

1. 60% Ethylene Glycol solution
   1. Preparation: Measure 300 ml ethylene glycol into a large container. Add 200 ml distilled water. Mix thoroughly. See attached for OSHA label.
   2. Storage: -20C or below
   3. Expiration: N/A

NOTE: Contact plant operations for disposal.

## Quality Control

N/A

## Safety

Refer to Chemical Hygiene and Blood Borne Pathogen Plan for Memorial Hospital Laboratory.

Refer to MSDS for Glycerol and Ethylene Glycol solutions.

## Procedure

**Cleaning**

Blood Bank Refrigerators

1. Remove equipment from main laboratory alarm board.
2. Document cleaning on equipment temperature recording chart.
3. Thoroughly wipe all interior surfaces with a disinfecting solution.
   1. Blood products may need to be relocated to alternate storage if cleaning time may create an out of temperature event.
4. Replace equipment on main laboratory alarm board.
5. Thoroughly wipe all exterior surfaces with a disinfecting solution.

Blood Bank -30C Freezers

1. Thoroughly wipe all exterior surfaces with a disinfecting solution.

Platelet Incubator

1. Remove equipment from main laboratory alarm board.
2. Document cleaning on equipment temperature recording chart.
3. Thoroughly wipe all interior surfaces with a disinfecting solution.
   1. Blood products may need to be relocated to alternate storage if cleaning time may create an out of temperature event.
4. Clean acrylic cover with a soft cloth and window cleaner.
5. Replace equipment on main laboratory alarm board.
6. Thoroughly wipe all exterior surfaces with a disinfecting solution.

**Temperature Monitoring Solutions**

Blood Bank Refrigerators

1. 10% glycerol solution used for temperature probes will be changed quarterly.
2. Fill a clean container with approximately 250 ml of 10% glycerol.
3. Properly label container per OSHA requirements.
4. Replace existing containers with newly prepared containers, ensuring that all probes are fully immersed in solution.
   1. Flush discarded glycerol down sink with large amounts of water.

Blood Bank -30 Freezers

1. Ethylene glycol solution used for temperature probes will be changed annually.
2. Fill a clean container with approximately 250 ml of cold 60% ethylene glycol.
3. Properly label container per OSHA requirements.
4. Replace existing containers with new prepared containers, ensuring that all probes are fully immersed in solution.
5. Contact Plant Operations for disposal of old solution.

Forma UltraLow Freezer

1. Verification of the CO2 back-up system for the Forma UltraLow freezer is performed weekly by the third shift staff.
2. Push “Press to Test” button.
3. Acceptable results include:
   1. An audible swoosh of CO2 gas maintained within the door seal
   2. Solenoid engaged indicator light lit.
4. Unacceptable results include:
   1. No audible swoosh of CO2 gas
   2. Solenoid engaged indicator light not illuminated.
5. If CO2 tank needs replacing, contact plant operations.
   1. If unacceptable results still obtained, contact supervisor for further instructions.

**Temperature Chart Recorders**

Recorder Probe Calibration

1. Adjust chart recorder if there is a greater than 2C difference between digital temp and chart recorder.
   1. BBR1, BBR2, BBR4, BBF1, BBF3, BBULF1, BBPL1: Press and hold the 1 or 2 button to move probe the desired direction.
2. Document adjustment on the temperature chart recorder.

Replacing Recording Pen

1. Replace pen when recording become difficult to read.
2. Press the change chart button to move the pen off the chart.
3. Unsnap the hinge near the front of the pen. Remove and discard old pen.
4. Position new pen tip at the front of the pen arm.
5. Bend the snap hinge around the front of the pen arm, ensuring that it snaps securely.
6. Remove tip cap and press change chart button to return pen to recording position.

## References

1. Jewett Refrigerator Operator Manual
2. Jewett Freezer Operator Manual
3. Forma UltraLow Freezer Operator Manual
4. Helmer Platelet Incubator Operator Manual.

**PROCEDURE AND FORM CHANGE CONTROL**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Title: Miscellaneous Preventive Maintenance for Blood Bank Storage Equipment | | | | | | | | | | |
| Written | | **Validated** | | **Path Review** | | **Review** | | **Effective** | | **Reason for Revision** |
| Date | **By** | **Date** | **By** | **Date** | **By** | **Date** | **By** | **Date** | **By** |
| **2/28/12** | **PAB** | **3/1/12** | **GJM** | **3/2/12** | **ESB** |  |  | **3/2/12** | **PAB** | **Combined SOPs** |
| **Revised** |  |  |  |  |  |  |  |  |  |  |
| **9/10/12** | **PAB** |  |  | **9/11/12** | **ESB** |  |  | **9/13/12** | **PAB** | **Added instructions for glycerol and ethylene glycol preparation** |
| **9/5/13** | **PAB** |  |  |  |  |  |  |  |  | **Removed Ace Electric as PM provider.** |
| **10/27/14** | **JLH** |  |  |  |  |  |  |  |  | **Removed BBR3 from SOP and forms. Assigned number and version to SOP** |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

Location of any copy(s) of the procedure:

**Out of use:**

**Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Reason:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**