


<p>  Franciscan Health System </p> <p> St. Anthony Hospital Gig Harbor, WA St. Clare Hospital Lakewood, WA St. Elizabeth Hospital Enumclaw, WA St. Francis Hospital Federal Way, WA St. Joseph Medical Center Tacoma, WA </p>	<h1 style="color: blue;">WORK INSTRUCTION</h1>	<p> DOCUMENT NUMBER R-W-TS0902-04 </p> <hr/> <p> Copy ID A C E F J </p> <hr/> <p style="color: red; font-size: small;"> Unauthorized use or copying of this document is prohibited by FHS. </p>
<h2 style="margin: 0;">PLASMA FREEZER FAILURE INSTRUCTIONS</h2>		

PURPOSE

To provide instructions for managing plasma product inventory when the freezer has failed so that required storage temperatures are maintained.

BACKGROUND

AABB Standards require that frozen plasma be stored under controlled conditions and not exceed a temperature of -18C. The alarms in the plasma freezers at SAH, SCH, SEH, and SFH are set to sound when the temperature rises to -20C. At SJMC, the ultra-low temperature freezer is set to alarm at -45C.

RELATED DOCUMENTS

R-F-TS1011	Temperature Failure Log
R-F-TS1044	Temperature Log – Frozen Components

INITIAL STEPS


1. Silence the alarm by pressing the mute button.
2. Record current freezer temperature data from the internal thermometer(s), the chart recorder, and the digital display on the Temperature Failure Log (see related documents).
3. Act immediately to protect the frozen plasma components if the temperature has risen to -20C or higher. See the section “Protect Frozen Plasma Components” below for instructions. *This action must be performed prior to any investigation as to the cause of the temperature failure.*

PROTECT FROZEN PLASMA COMPONENTS

When temperatures rise to -20C, all plasma components must be protected immediately to prevent them from thawing. This may be accomplished by one or more of the following methods:

1. Transfer the components to another monitored freezer in the laboratory (or pharmacy for SEH) which consistently maintains temperatures lower than -20C.

Note: If the new freezer is not constantly monitored by a temperature chart recorder or remote monitoring system such as Mogul, then it will be necessary to record

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temperatures at a minimum of every 4 hours or more frequently on the “Temperature Log – Frozen Components” form.

2. Place the frozen components in a cooler with dry ice and monitor temperatures every hour. *See “Sources for Dry Ice”* at end of document.
3. Notify Cascade Regional Blood Services (CRBS) at 253-383-2553 about the situation and ask if they can come immediately with dry ice in coolers which will remain on-site at the hospital for storage of plasma components. When selecting this option, it is best to keep a minimum inventory in a cooler and return the rest of the plasma to CRBS for storage until the plasma freezer issue is resolved.

ALARM INVESTIGATION AND CORRECTIVE ACTION STEPS

1. Investigate the reason for the alarm
 - See the table on the next page for a list of possible problems and resolutions.
 - Refer to both the operation and service manuals of the freezer for additional suggestions.
 - Record the results of the investigation on the Temperature Failure Log
 - Document the cause of the failure on the temperature chart wheel next to the temperature spike along with date, time, and Tech ID
 - If Mogul is in use, record a note electronically as to the reason for the failure.
2. Take appropriate corrective action to resolve the issue
 - Document corrective action on the Temperature Failure Log & in Mogul (if available).
 - If components are removed from the freezer and taken to another location, document this information on the log, including BioMed or cooler numbers/descriptors of the new location along with date and time of removal.
3. If necessary, contact:
 - Clinical Engineering to assist with temperature control calibration issues
 - Facilities to assist with fan motor problems, compressor issues, or other reasons for failure.
 - Document these calls on the log.
4. Record the date and time at which the temperatures returned to normal range.
5. Record the date and time at which any components which have been removed from the original freezer are returned to it.
6. If it is necessary to take the freezer out-of-service for repair, document the date and time on the Temperature Failure Log.
7. Send all documentation of the temperature failure to the Transfusion Service Manager or Transfusion Service Med Tech Coordinator for review.

WORK INSTRUCTION


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ALARM ACTIVATION CAUSE	INDICATION	CORRECTIVE ACTION
<p>1. Power Failure -- All blood refrigerators and freezers are connected to the Emergency Power system, which is activated when regular power is interrupted for any reason. A failure of the Emergency System will activate the alarm.</p>	<p>1. All freezers: • Audible alarm will sound continuously • Temperature chart will not immediately be affected. 2. Helmer iSeries & HPF models—"AC Power Failure" message displays on home screen 3. Helmer HLF series – PoFF shows on display screen 4. Jewett freezers • "Power On" light will go off. • "Power Failure" light will flash.</p>	<p>1. Contact Plant Operations or the hospital operator to determine the extent and duration of the failure. 2. Check the regular power outlets for function. 3. Monitor the temperature closely, recording on "Temperature Failure Log" every 15 minutes. 4. If the temperature rises above –20C remove all FFP and Cryo and store in another location. Document move on Temperature Failure Log and monitor temperatures on the "Temperature Log – Frozen Components" for the new location if continuous monitoring is not available.</p>
<p>2. Alarm or Scribe malfunction When the interior temperatures are within range, but the scribe indicates a rise or drop in temperature such that the alarm sounds</p>	<p>The alarm sounds but the actual interior temperatures are within range.</p>	<p>1. Call Clinical Engineering and have them contact a specialist. 2. Plasma can continue to be stored in the freezer, but the temperature must be recorded manually at least every 4 hours on the "Temperature Log – Frozen Components"</p>
<p>3. Door is ajar</p>	<p>The alarm sounds and the interior temperature and the temperature chart wheel both reflect that the temperature range has been exceeded.</p>	<p>1. Check to see if the door was left ajar: 2. If the door has been open for awhile, (i.e. during inventory,) silence the alarm and monitor closely, recording temperature every 15 min on Temperature Failure Log to ensure that the temperature returns to normal. 3. If the temperature does not return to range, call Clinical Engineering immediately. 4. If temperature rises to -20C, remove the FFP and Cryo and monitor the backup freezer or cooler temperatures.</p>
<p>4. Interior fan is blocked or has failed so that air cannot circulate leading to warm and cold spots in the freezer</p>		<p>1. If blocked, move items away from the fan by several inches and at least 1-2" away from the backs and sides of the freezer. 2. If fan is not working, call Facilities.</p>
<p>5. Compressor has failed The sound of the compressor is heard, but the temperatures continue to rise. Conversely, the compressor may not run.</p>		<p>1. Remove components to another location. 2. Contact Facilities for assistance</p>
<p>3. Probe bottles are empty</p>	<p>Periodic alarms whenever the freezer door is opened.</p>	<p>Replace the solution</p>
<p>4. Probes are not immersed in solution</p>		<p>Push the probe down into the solution.</p>

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SOURCES FOR DRY ICE

1. SJMC
 - In the blue chest in the back of the lab in the Outpatient Processing and Registration area.
 - In the storeroom on the ground floor of the South Pavilion near the elevators. A key is available for after-hours use in the Med Tech Coordinator area. Go through the double doors past the mail room to the main open area and turn left to immediately find a blue ice chest along the wall to your left.

2. SAH, SCH, SEH, SFH
 - None of these facilities have a ready source of dry ice available on-site.
 - Contact SJMC to see if dry ice can be couriered over.

3. Outside supplier for all sites when dry ice is not available on-site or quantity has been depleted at SJMC:
 - Dry Ice is supplied by Rosellini Distributions, Inc in Kent, WA.
 - Phone is 1-253-867-5648.
 - They will deliver directly to the ordering hospital. Specify the location to which it needs to be delivered, ie, "lab".
 - Rosellini Distributions, Inc does not normally deliver on weekends or nights, but if there is an emergency will do so. They are staffed 24/7, so call the regular number.

4. Cascade Regional Blood Services (CRBS)
 - Phone is 253-383-2553

REFERENCES

AABB Standards for Blood Banks and Transfusion Services

AABB Technical Manual

Freezer Operation and Service Manuals