

Incident / Corrective Action Plan Form Temperature Outages

Incident/Corrective Action Number: 2024-08

Date of Discovery: July 8-16, 2024

Incident Date(s): July 8-16, 2024

Section: Laboratory-Wide

Reported By: Dickson Temperature Monitoring Automated System, Laboratory Director

Classification: Incident

Incident Type: Equipment

Description of Non-Conformity: All laboratory personnel were absent from the laboratory July 8 - 12, 2024, due to Hurricane Beryl. Hurricane Beryl made landfall sometime in the early hours on Monday, July 8, 2024. All county offices were closed for the week due to power outages and unsafe driving conditions. Offices reopened Monday, July 15, 2024. Although the Brazoria County Sheriff's Office has back-up generators, it is unknown how long it took for them to turn on.

The laboratory has a total of 14 refrigerators and freezers. One freezer, Specimen Freezer #1, is out of commission. The Laboratory Director regularly records the weekly temperature checks on the remaining 13 using the Fisher thermometers. He also resets the memory for each thermometer when he records the temperature to have accurate minimum and maximum readings for the week. In addition to the Fisher temperature monitors that have to be read manually, five of the 13 refrigerators and freezers also have automated Dickson temperature monitors that record the temperature every hour with notifications being sent to laboratory staff if the temperature falls outside of the designated range.

Four refrigerators fell out of their designated temperature range of 0-8°C, BioFridge #3, BioFridge #7, the Overflow Fridge, and the Standards Fridge. Of these four, BioFridge #3 and the Standard Fridge are not equipped with a Dickson temperature monitor. The table below show when the refrigerators went out of range. The Dickson temperature readings for both BioFridge #7 and the Overflow Fridge correspond to the maximum temperature recorded off of the Fisher thermometer. This can be viewed in the July temperature logs and July Dickson data.

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Refrigerator Name	Date	Time	Temperature	Thermometer
BioFridge #3	07/08	Unknown	13°C	Fisher
	07/15	Unknown	10°C	Fisher
BioFridge #7	07/08	4:00 PM	8.4°C	Dickson
		5:00 PM	10.2°C	Dickson
Overflow Fridge	07/08	8:00 AM	8.9°C	Dickson
		9:00 AM	11.7°C	Dickson
Standards Fridge	07/08	Unknown	11°C	Fisher
	07/15	Unknown	10°C	Fisher

LOG-15-08 Instrument Performance and Maintenance

9.0 Refrigeration Equipment

9.1 The temperature of refrigeration shall be monitored weekly.

Refrigerators for biological specimens shall have a constant temperature approximately 0-8°C. Freezers shall have an approximate temperature of less than or equal to 0°C.

9.2 Loss of refrigeration requires immediate action to arrange repair and to preserve refrigerator contents.

Root Cause Analysis: All refrigerators and freezers were functioning properly before Hurricane Beryl occurred, even with the brief power interruptions the Crime Laboratory has been experiencing over the summer. While Hurricane Beryl knocked out power to the area for the greater part of a week, the Crime Laboratory is connected to the Sheriff's Office's backup generator. It is unknown how long the Crime Laboratory was without power until the backup generator kicked on and whether or not it remained consistently on the entire week the office was closed. While this could explain the rise in temperatures visible on July 8th, it does not give reason to the increase seen on July 15th. There could have been a power surge or the refrigerators struggling to get back to their set temperature. The age of the refrigerators is also unknown. Therefore, it is a difficult and unknown determination.

Level of Non-Conformity: Incident

Level of Non-Conformity Determination and its Impact on Casework: N/A

Preventive Action(s):

1. Devise a disaster plan for the future.
2. Acquire enough automated Dickson temperature monitors for all refrigerators and freezers.

Proposed Corrective Action(s): N/A

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Timeframe for Corrective Action(s): N/A

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9/23/2024
Date

Melina Henry Toxicology
Applicable Analyst / Discipline

9/23/2024
Date

Alicia Walker
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27 Sept. 2024
Date

Dorinda [Signature]
Laboratory Director

27 Sept 2024
Date