Perrigo®

Benefits to Utilizing Wearable Technology in Heat Stress Prevention

April 15, 2025

Perrigo Overview

Perrigo is a 135-year-old Company and One of the Originators of the Over-The-Counter (OTC) Market

1887

Founded by Luther Perrigo to **package and distribute patented medicines** and household goods

Introduction of **'private label'**

1921

Company focus shifts to **healthcare** products

1940

Liquid **bright-stock** manufacturing begins

1980

U.S. Rx-to-OTC business begins with OTC ibuprofen approval

1984

Company embarks on **acquisitions,** which continues into the 2000s

1997

Generic Rx business established

2004

Omega acquisition accelerates international growth

2015

Perrigo returns to **OTC roots** via Rx divestiture & HRA acquisition

2021

HRA Pharma acquisition accelerates self-care strategy

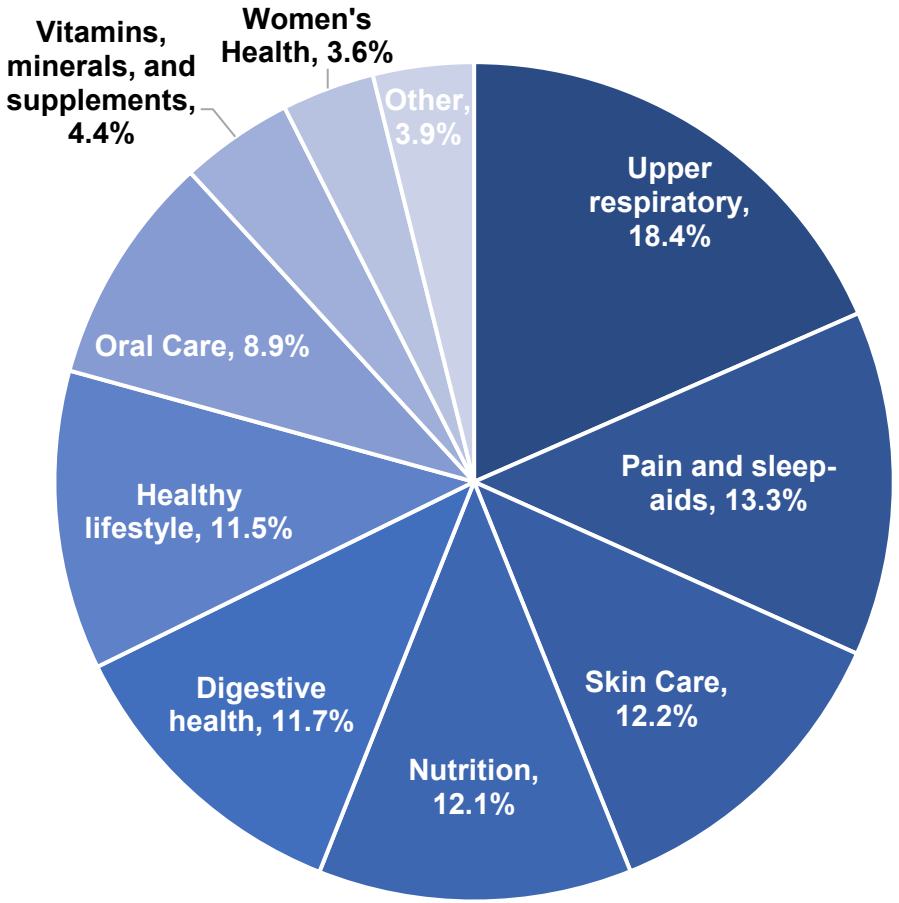
Gateway & Good Start® acquisition bolsters infant formula business

2022

Perrigo is a Leading Global Consumer Self-Care Company

Diversified Across Global OTC Categories

(FY2023 net sales)



With Leading Brands & Businesses Including[1,2]…

#1 Foot Blister
#2 Cold Sore

Compeed

DE/FR/SP/IT/UK
BE/NL/SW/NO

#1 Natural Cough/Cold/Allergy

PHYSIOMER

BE/GR/IT

#1 Head Lice

PARANIX

UK/FR/IT/SE/
NO/PT/CE/TK

#1 Store Brand Supplier of Infant Formula

USA

#1 Flosser & Floss Picks Brand[3]
#1 Kids' toothbrush brand[4]
#1 Toothbrush Protector brand in U.S.[5]

USA

#1 Store Brand Supplier of OTC Products

USA

#1 Insect Repellant

JUNGLE FORMULA

UK/SP/NL

#1 Skincare

ACO
Apotekens Companies
SINCE 1939

SW/NOR

#1 Weight Loss

XLS-MEDICAL

FR/IT/BE/UK/GR

1. Sources: CSCA: IRI & Perrigo omnichannel data. CSCI: consolidation of various sources (PBI and HRA Global DB), IQVIA, IRI, Nielsen, Openhealth, DLIMI, PEX, Newline, HMR, Farmastat, Laaketietokeskus.
2. Country Codes: DE: Denmark, FR: France, SP: Spain, IT: Italy, UK: United Kingdom, BE: Belgium, NL: Netherlands, SW: Sweden, NO: Nordics, GR: Greece, PT: Portugal, CE: Czech Republic; TK: Turkey.
3. Category refers to pre-threaded single use flossers and floss picks. Based on IRI unit sales L52W Ending 12.04.22
4. Kids manual toothbrush brand based on IRI dollar sales L52W ending 01.01.23
5. Based on dollar sales from IRI Multi-Outlet Total US, Dec 2021-Jan 2023

Perrigo

With a Diversified Portfolio of Store Brands and National Brands Distributed Across >80 Countries

Strong Store Brand Partnerships

Strong National Brands

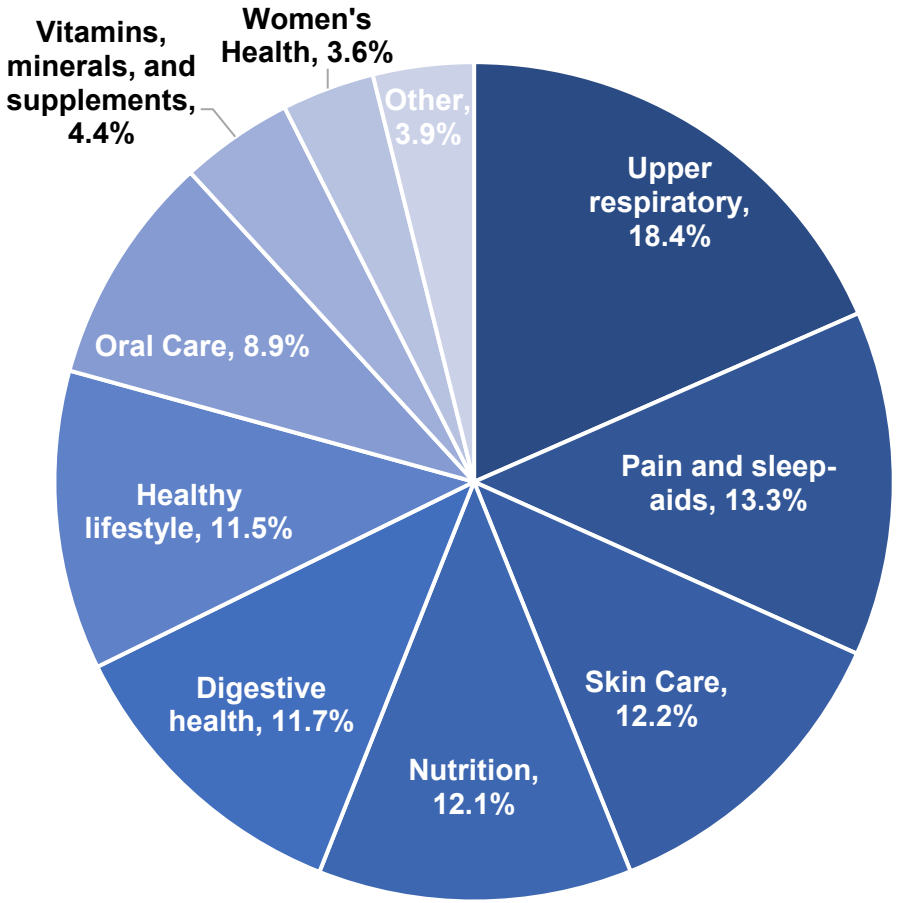
Distribution in ~80 Countries

1. Constant currency; excludes divestitures: Animal Health, Latin American businesses and Scaraway. RX includes divested UK Rx and Rx Pharmaceuticals businesses.
2. Estimated fiscal 2023 net sales based on constant currency to 2018.

Perrigo is a Leading Global Consumer Self-Care Company

Diversified Across Global OTC Categories

(FY2023 net sales)



With Leading Brands & Businesses Including[1,2]…

#1 Foot Blister
#2 Cold Sore

Compeed

DE/FR/SP/IT/UK
BE/NL/SW/NO

#1 Natural Cough/Cold/Allergy

PHYSIOMER

BE/GR/IT

#1 Head Lice

PARANIX

UK/FR/IT/SE/
NO/PT/CE/TK

#1 Store Brand Supplier of Infant Formula

USA

#1 Flosser & Floss Picks Brand[3]
#1 Kids' toothbrush brand[4]
#1 Toothbrush Protector brand in U.S.[5]

USA

#1 Store Brand Supplier of OTC Products

USA

#1 Insect Repellant

JUNGLE FORMULA

UK/SP/NL

#1 Skincare

ACO
Apotekens Companie
SINCE 1939

SW/NOR

#1 Weight Loss

XLS-MEDICAL

FR/IT/BE/UK/GR

1. Sources: CSCA: IRI & Perrigo omnichannel data. CSCI: consolidation of various sources (PBI and HRA Global DB), IQVIA, IRI, Nielsen, Openhealth, DLIMI, PEX, Newline, HMR, Farmastat, Laaketietokeskus.
2. Country Codes: DE: Denmark, FR: France, SP: Spain, IT: Italy, UK: United Kingdom, BE: Belgium, NL: Netherlands, SW: Sweden, NO: Nordics, GR: Greece, PT: Portugal, CE: Czech Republic; TK: Turkey.
3. Category refers to pre-threaded single use flossers and floss picks. Based on IRI unit sales L52W Ending 12.04.22
4. Kids manual toothbrush brand based on IRI dollar sales L52W ending 01.01.23
5. Based on dollar sales from IRI Multi-Outlet Total US, Dec 2021-Jan 2023

Perrigo

Our Vision, Purpose & Strategic Principles Designed to Win in Self-Care Are Clear

ONE Perrigo VISION

To provide the best self-care for everyone

ONE Perrigo PURPOSE

Make lives better through trusted health and wellness solutions, accessible to all

Heat Stress - The Evolution to Utilizing Technology

- Our Original Program
- Evolving Program
- Benefits to Utilizing Wearable Technology
- Opportunities

Perrigo

Nutritional Manufacturing Facilities 24/7 Operations

Eau Claire, Wisconsin

200 Employees
295,000 ft^2 Plant
38 Acres
Blending, Drying, and Packaging
Capacity
7-Day: 26.5 Million Lbs.

Georgia, Vermont

424 Employees
220,000 ft^2 Plant
28 Acres
Blending, Drying, and Packaging
Capacity
7-Day: 48 Million Lbs.

Covington, Ohio

104 Employees
100,000 ft^2 Plant
7 Acre Plant Site + 23 Acres Open
Drying and Bulk Packaging
Capacity
7-Day: 12 Millions Lbs.

- Perrigo's nutritional manufacturing plants make infant formula
- Infant formula is made by blending dry and liquid(water, oils) materials together
- The liquified material is heat treated and pasteurized and then cooled
- Water is evaporated and material is spray dried in a multi-story spray dryer (4-5 stories) around 140°F and transported through a cyclone for particle sizing

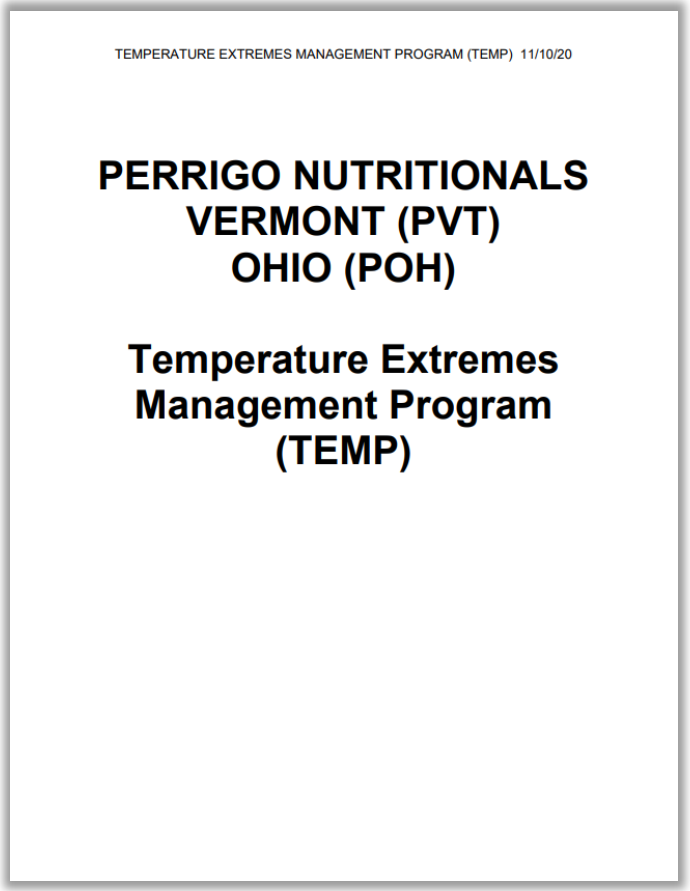
Perrigo

Our Original Heat Stress Prevention Program

- Identified risk associated with heat and a history of heat-related incidents
- Developed a written program approximately 10 years ago
- Key elements included:
  - Work/Rest periods based on Temp/Relative Humidity
  - Cool area for breaks
  - Fluid replacement

Challenges

- Difficult to track employee work/rest periods
- Lack of robust acclimatization process
- Temperature, Humidity and Heat index has limitations


TEMPERATURE EXTREMES MANAGEMENT PROGRAM (TEMP) 11/10/20

PERRIGO NUTRITIONALS
VERMONT (PVT)
OHIO (POH)

Temperature Extremes Management Program (TEMP)

Perrigo

Monitoring for Heat Stress Conditions

Where do you start?

Waterless WBGT Monitor

Water-Filled WBGT Monitor

Understand Your Risk

Perrigo

Permit to Work in Heat - Evolution

- Started with a simple program
- Industry benchmarking indicated we were doing the same things as everyone else was doing
- Looking for technology solutions
- Significant event occurred in 2021 transitioned and upgraded program
- Developed multi-step evaluation and Permit to Work Process

Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

Guidance: This permit is to be used when employees are working in adjusted wet bulb globe temperature (WBGT) over 90 F for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming ("Bio Trackers"). All employees working in heat shall follow the water intake recommendations found in the PVT/POH "Heat Stress Prevention Plan." **If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summon emergency services immediately if heat stroke is suspected (PVT: 35-6000, POH: 37-8019).**

Location(s):_____ Date/Time:_____ Task(s) Being Performed in heat: _____

Step 1: Determine the WBGT temperature in degrees Fahrenheit (F): **WBGT:** _____ F (from monitor)

Note: Do not use "air temperature". It is important use the wet bulb globe temperature (WBGT) from one of the WBGT monitors located in higher temperature areas. Contact EHS immediately for clarification.

Step 2: Determine the clothing adjustment factor (add to WBGT): **Clothing Adjusted WBGT:** _____ F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes / No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes / No	Cloth (woven material) coveralls	No adjustment
Yes / No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes / No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes / No	Polyolefin coveralls (i.e., Tyvek)	Add 1 C or 1.8 F
Yes / No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

Adapted from: ACGIH "2017 TLVs and BEIs" Table 1

Step 3: Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, "punching" MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

Adapted from: ACGIH "2017 TLVs and BEIs" Table 3

Perrigo

Permit to Work in Heat – Evolving

Work/Rest Ratio and Controls

- Developed based upon conditions and work to be performed

Step 4: Determine appropriate work/rest intervals and additional controls.

Adjusted WBGT Temperature (F)	Light Work (mins work/rest)	Mod. Work (mins work/rest)	Heavy Work (mins work/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required
109	30/30 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required
110+	DANGER! CONTACT EHS IMMEDIATELY (1)		

Adapted from: NIOSH "Occupational Exposure to Heat and Hot Environments" (2016)

(1) *Extremely High Temperatures – Work cannot be completed under these conditions. To perform work, additional controls must be utilized to reduce the ambient heat to acceptable levels. Contact EHS immediately for additional guidance.*

Perrigo

Permit to Work in Heat – Layers of Control

- What controls and tools are required to be used
- Have the conditions changed over time?

Step 5: Identify additional controls to reduce the potential for heat stress:

Additional Controls (in addition to work/rest intervals) – Check all that apply			
Bio Trackers	☐ Buddy System	☐ Cooling garments (i.e. ice vests)	Electrolyte replacements
☐ Portable air movers/conditioning units		☐ Radio communications/check-ins	
Other (list all):			

Step 6: Continue to monitor during the shift for adjustments in planning (recheck a minimum of 3 hours or if conditions change):

Shift time	Step 2: adjusted WBGT	Step 3: change?	Step 4: change?	Step 5: change?	Note change in plan
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	

Supervisor/Lead Signature: _____ Date/Time: _____

List of Employees Working in Heat:

Notes:

Working closely with frontline employees and management was critical to this process!

Perrigo

Acclimatization Process

How do we prepare people to work in a high heat environment:

- Started with training process and orientation
- How do you manage people that have experience working in a high heat environment, but have not recently been exposed

EMPLOYEE HEAT STRESS ACCLIMATIZATION FORM

Employee's Name: _____ Acclimatization Start Date:_____ End Date:_____

FOR NEW EMPLOYEES WITHOUT PREVIOUS EXPERIENCE WORKING IN HEAT

	% of Usual Shift Duration in Heat	Total Typical Heat Exposure Time (hr)[1]	Max Heat Exposure Per Shift (hr)[2]	Actual Heat Exposure Per Shift (hr)	Employee Signs of Heat Stress? (Y/N)	Supervisor Initials	Employee Initials	Comments
Day 1	20%		0					
Day 2	20%		0					
Day 3	40%		0					
Day 4	40%		0					
Day 5	60%		0					
Day 6	60%		0					
Day 7	80%		0					
Day 8	80%		0					
Day 9	100%		0					
Day 10	100%		0					

Notes

[1] Enter the usual/typical heat exposure time per shift based on the specific job.

[2] Maximum heat exposure time in minutes per day - **not to be exceeded!**

FOR NEW EMPLOYEES WITH PREVIOUS EXPERIENCE WORKING IN HEAT

	% of Usual Shift Duration in Heat	Total Typical Heat Exposure Time (hr)[1]	Max Heat Exposure Per Shift (hr)[2]	Actual Heat Exposure Per Shift (hr)	Employee Signs of Heat Stress? (Y/N)	Supervisor Initials	Employee Initials	Comments
Day 1	50%		0					
Day 2	60%		0					
Day 3	80%		0					
Day 4	100%		0					

Notes

[1] Enter the usual/typical heat exposure time per shift based on the specific job.

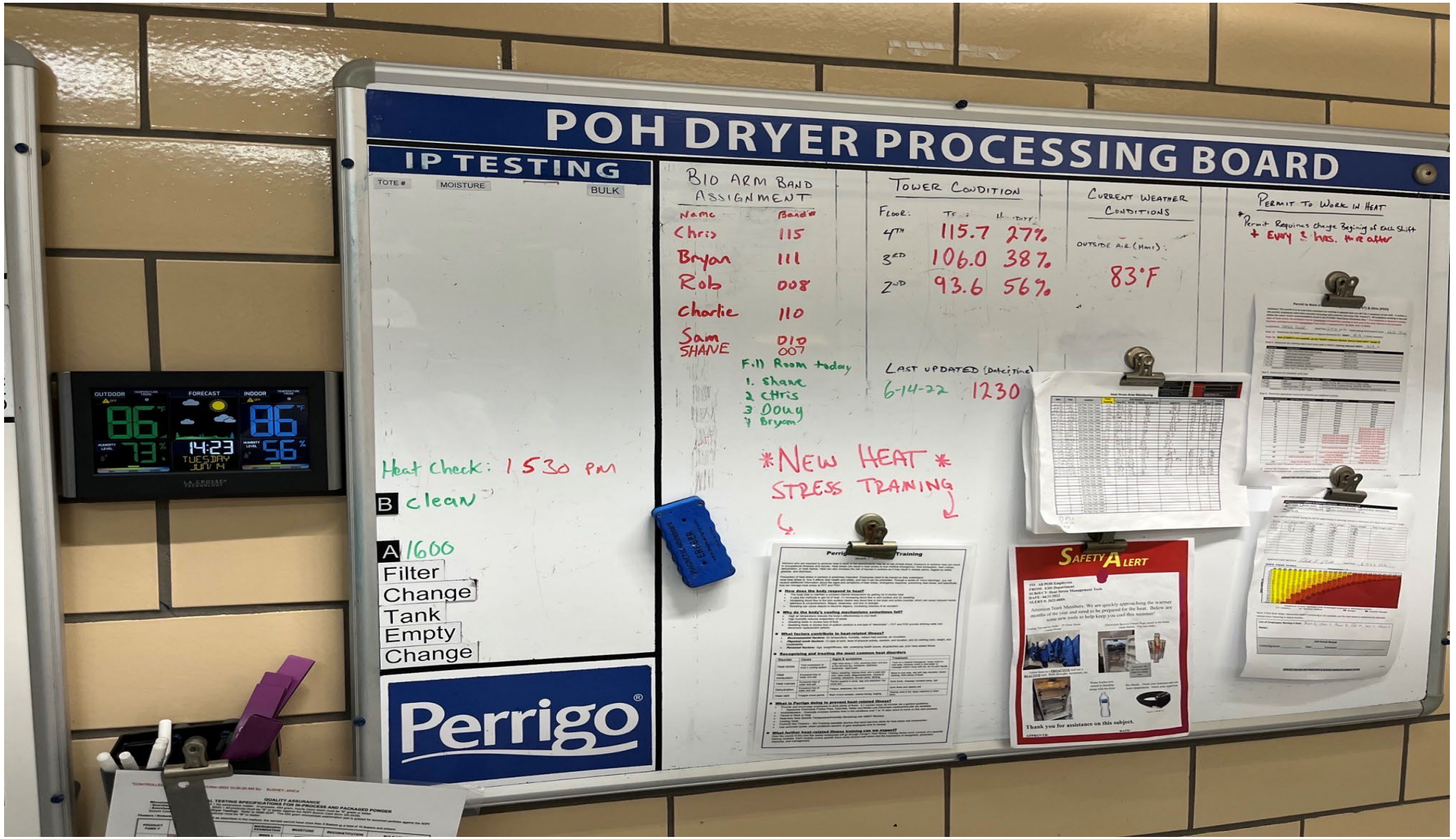
[2] Maximum heat exposure time in minutes per day - **not to be exceeded!**

Contact EHS For Any Assistance & Return Completed Permits to EHS

Perrigo

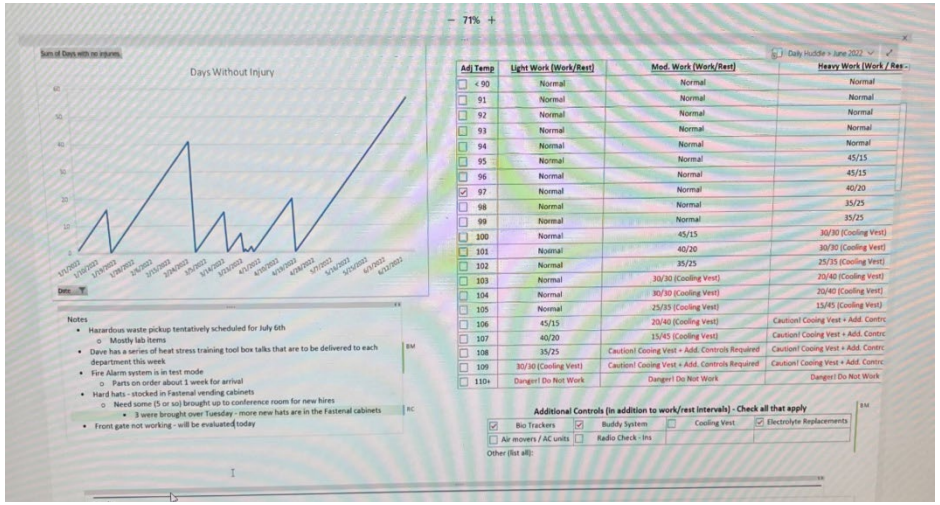
What does the Perrigo Heat Stress Prevention Program Look Like

Heat Stress – Communication Board



Heat Stress – Permit to Work

- Daily Shift Huddles and Morning/Afternoon Staff Shift Meetings
- Team includes the permit to work in heat plan



Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

Guidance: This permit is to be used when employees are working in adjusted heat over 90 F for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming ("Bio Trackers"). All employees working in heat shall follow the water intake recommendations found in the PVT/POH "Heat Stress Prevention Plan." If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summon emergency services immediately if heat stroke is suspected (PVT: 35-6000, POH: 37-8019).

Location(s): Dryer Date/Time: 6-15-22 06:30 Task(s) Being Performed in heat: ____

Step 1a: Determine the WBGT temperature in degrees Fahrenheit (F): **WBGT:** 96.9 F (from monitor)

Step 1b: ***Note: If WBGT is not available, use the "NOAA's National Weather Service Heat Index" (page 2)***

Step 2: Determine the clothing adjustment factor (add to WBGT): **Clothing Adjusted WBGT:** 96.9 F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes/ No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes / No	Cloth (woven material) coveralls	No adjustment
Yes / No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes / No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes / No	Polyolefin coveralls (i.e. Tyvek)	Add 1 C or 1.8 F
Yes / No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

Adapted from: ACGIH "2017 TLVs and BEIs" Table 1

Step 3: Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, "punching" MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

Adapted from: ACGIH "2017 TLVs and BEIs" Table 3

Step 4: Determine appropriate work/rest intervals and additional controls.

Adjusted Temperature (F)	Light Work (mins work/rest)	Mod. Work (mins work/rest)	Heavy Work (mins work/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required

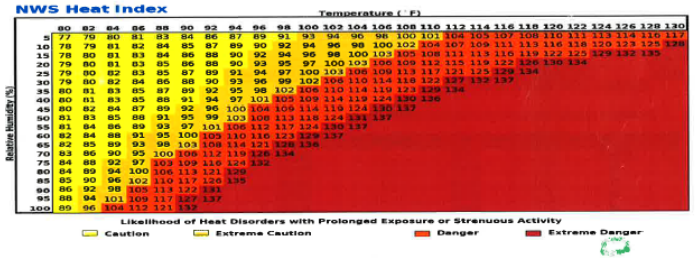
Step 5: Identify additional controls to reduce the potential for heat stress:

Additional Controls (in addition to work/rest intervals) – Check all that apply			
☑ Bio Trackers	☐ Buddy System	☐ Cooling garments (i.e. ice vests)	☑ Electrolyte replacements
☐ Portable air movers/conditioning units		☑ Radio communications/check-ins	
☐ Other (list all):			

Step 6: Continue to monitor during the shift for adjustments in planning (recheck a minimum of 3 hours or if conditions change):

Shift time	Step 2: adjusted WBGT	Step 3: change?	Step 4: change?	Step 5: change?	Note change in plan
0630	96.9	Yes/No	Yes/No	Yes/No	Normal
0930	97.5	Yes/No	Yes/No	Yes/No	Normal
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	
		Yes/No	Yes/No	Yes/No	

Supervisor/Lead Signature: SP Date/Time: 6-15-22



Note: If Wet Bulb Globe Temperature (WBGT) monitoring is not available, use the chart above to determine the adjusted temperature factoring in relative humidity.

List of Employees Working in Heat:

Notes: Ted

EHS Permit Review

Initials/Signature: _____ Date: _____ Comments: _____

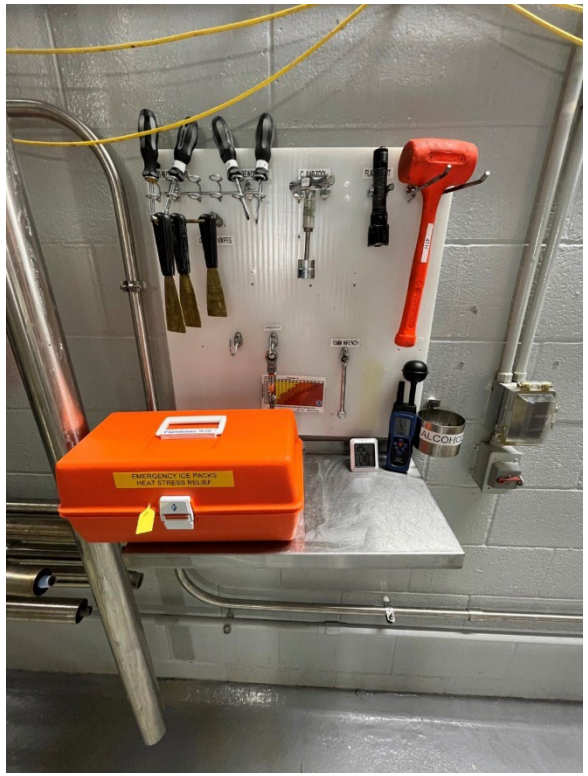
2 of 2

CONTACT EHS FOR ANY ASSISTANCE & RETURN COMPLETED PERMITS TO EHS

- It is now part of the routine discussions for all huddles

Perrigo

Heat Stress – Tools



Perrigo

Heat Stress – Cooling Vests

- Very difficult to find a food safe cooling vest that that Quality group would allow into a cGMP area
- Launderable and durable

Perrigo

Heat Stress Written Program Revision 2022

Perrigo

Perrigo Nutritionals, LLC

Vermont & Ohio

Heat Stress Prevention Plan

Plan last updated: 05/20/22

Policy: Perrigo Nutritionals is committed to protecting employees from the hazards of hot conditions and to preventing heat-related illnesses at the workplace. We will identify, evaluate, and control potential exposure of our employees to extreme temperature, humidity, and other heat-related factors.

Applicability: This Plan covers employees who are exposed to heat stress hazards on the job. Specifically, this program applies when the adjusted wet bulb glob temperature (WBGT) meets or exceeds 77 F (based on the recommended heat stress exposure limits (RELs) found in the 2016 NIOSH "Occupational Exposure to Heat and Hot Environments" Figure 8-2 (assuming workers are acclimated and working at a high metabolic rate (500 kcal/h)). It is important to note that unacclimated employees are not exposed the full heat associated with their respective job tasks until they become acclimated. This is explained in more detail later in the program and is documented on Form EHS-029. In addition to metabolic rate, personal protective equipment (PPE) adjustments are made to account for the increased heat loading based on specific type of PPE workers are utilizing.

Note: This plan does not apply to the following situations:

- Emergency response events where there is potential for loss of life,
- Frequently performed short-duration inspections/rounds/tours or transitioning from one location to another, where the time spent in heat is negligible.
- This Plan **cannot** be used in extremely high temperatures (see "Definitions" section for details). Work in extremely high temperatures can be accomplished only through a specific safety plan that includes additional controls and is approved by EHS prior to commencement of work.

1

- Prevention

Perrigo Heat Stress Training
Module 1 - Introduction

- Heat Stress Recognition

Perrigo Heat Stress Training
Module 2 – Recognition: Signs, Symptoms & First Aid

- Signs and Symptoms

Perrigo Heat Stress Training
Module 3 – Prevention

- Management and Emergency Response

Perrigo Heat Stress Training
Module 4 – Management and Response

- Training ("Micro Learnings")
- Delivered face-to-face by Supervisors & electronically
- "Bite-sized" bits of information spread out over a few weeks

Perrigo

Heat Stress Prevention – Engineering Controls

Building Cooling Projects - Completed

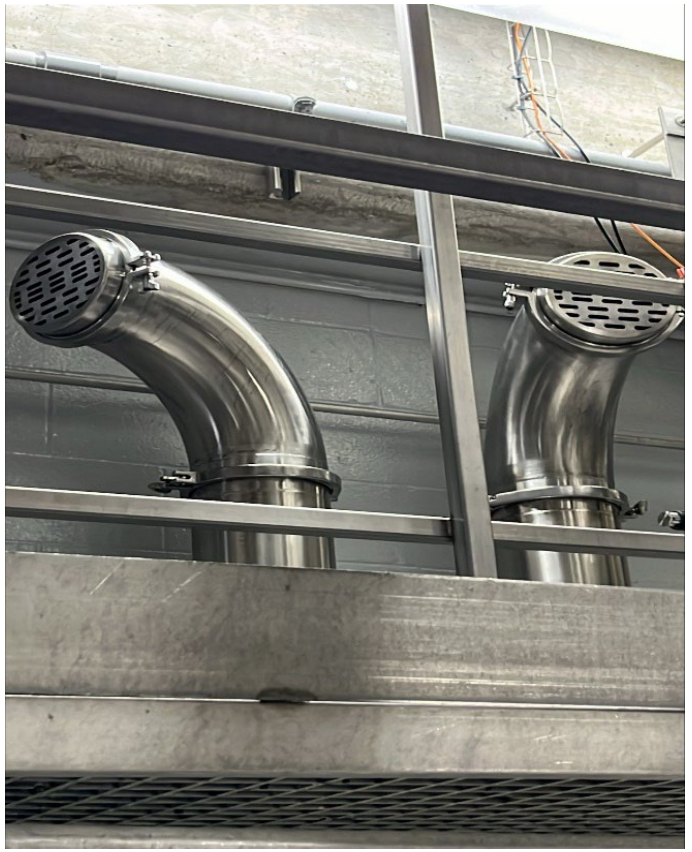
- **HVAC adjustments**
  - New/modified wall mounted exhaust fans at each elevation
- **Air movers**
  - Cooling/Heating/Dehumidification system capable of processing up to 32,000 cfm supplying the Dryer Tower
- **Significant Capital Investment to Reduce Risk**

Perrigo

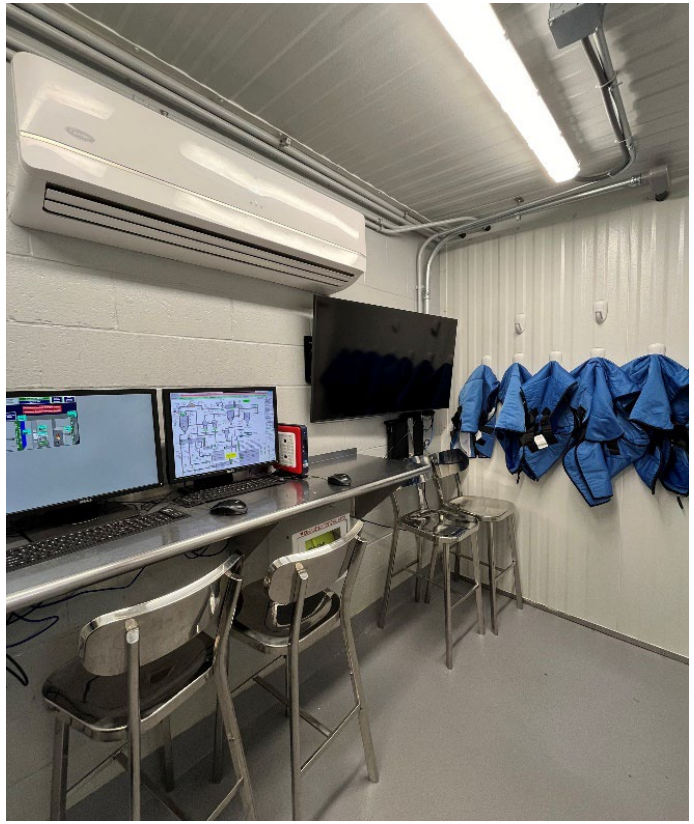
Heat Stress Prevention – Engineering Controls

2nd Floor:

Cold Air Intake



Directional Cold Air Intakes



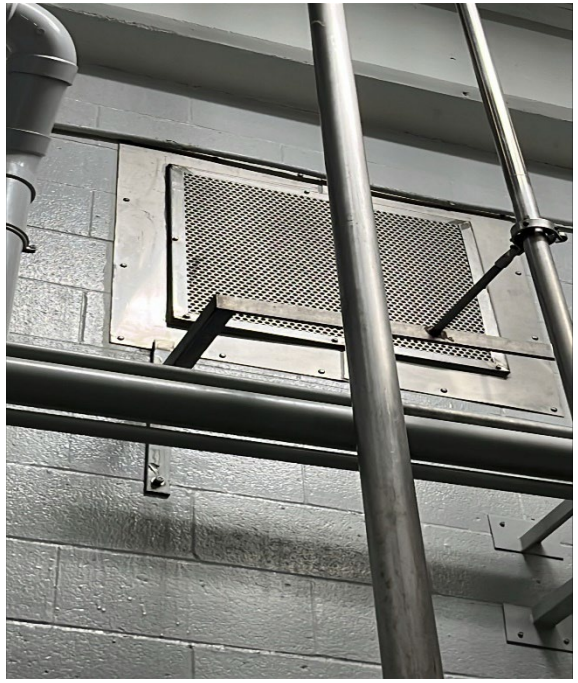
Cooling Room

Perrigo

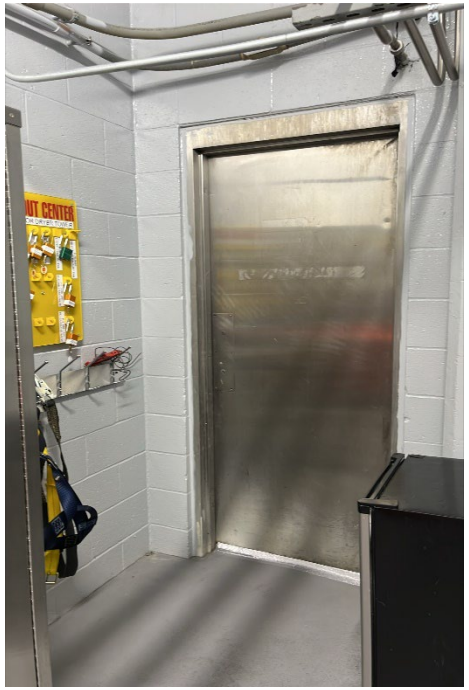
Heat Stress Prevention – Engineering Controls

3rd Floor:

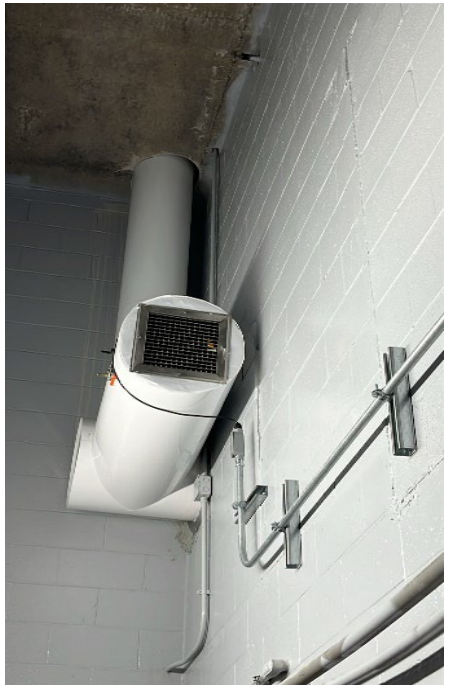
Lower Cold Air Intake



Upper Floor Exhaust



Cool Room



Cool Room with Intake

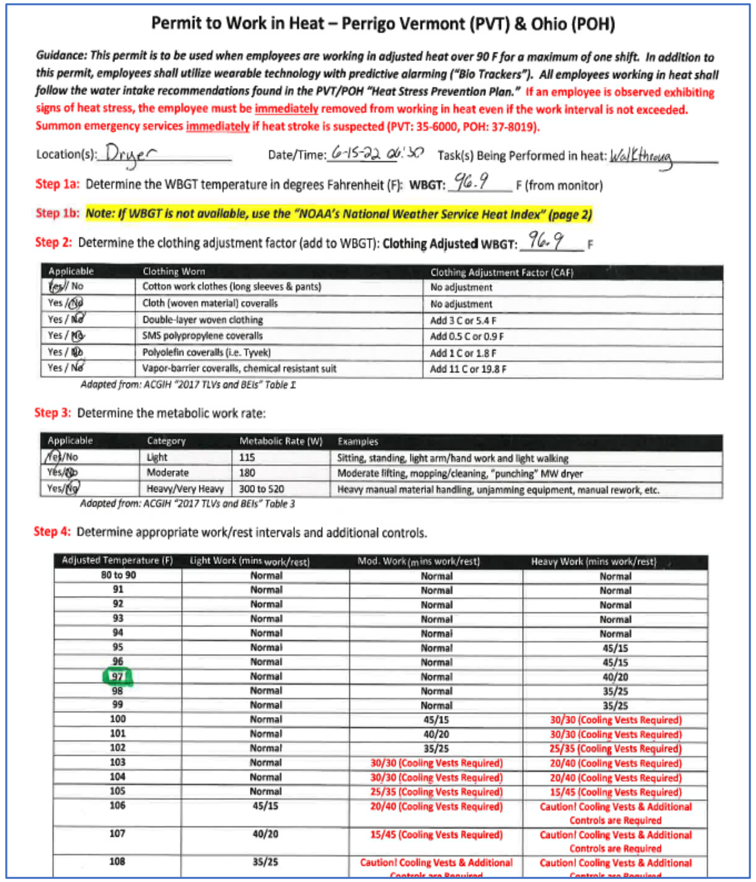
Perrigo

Heat Stress Prevention – Administrative Controls

- Written Program revised to reflect new controls
- WBGT monitors installed
- Established "Permit to Work in Heat"
- Signage/Communication in place
- Trainings conducted

WBGT Monitors

Permit to Work



Permit to Work in Heat – Perrigo Vermont (PVT) & Ohio (POH)

Guidance: This permit is to be used when employees are working in adjusted heat over 90 F for a maximum of one shift. In addition to this permit, employees shall utilize wearable technology with predictive alarming ("Bio Trackers"). All employees working in heat shall follow the water intake recommendations found in the PVT/POH "Heat Stress Prevention Plan." If an employee is observed exhibiting signs of heat stress, the employee must be immediately removed from working in heat even if the work interval is not exceeded. Summon emergency services immediately if heat stroke is suspected (PVT: 35-6000, POH: 37-8019).

Location(s): Dryer Date/Time: 6-15-22 06:30 Task(s) Being Performed in heat: Walkthroug

Step 1a: Determine the WBGT temperature in degrees Fahrenheit (F): **WBGT:** 96.9 F (from monitor)

Step 1b: ***Note: If WBGT is not available, use the "NOAA's National Weather Service Heat Index" (page 2)***

Step 2: Determine the clothing adjustment factor (add to WBGT): **Clothing Adjusted WBGT:** 96.9 F

Applicable	Clothing Worn	Clothing Adjustment Factor (CAF)
Yes / No	Cotton work clothes (long sleeves & pants)	No adjustment
Yes / No	Cloth (woven material) coveralls	No adjustment
Yes / No	Double-layer woven clothing	Add 3 C or 5.4 F
Yes / No	SMS polypropylene coveralls	Add 0.5 C or 0.9 F
Yes / No	Polyolefin coveralls (i.e. Tyvek)	Add 1 C or 1.8 F
Yes / No	Vapor-barrier coveralls, chemical resistant suit	Add 11 C or 19.8 F

Adapted from: ACGIH "2017 TLVs and BEIs" Table 1

Step 3: Determine the metabolic work rate:

Applicable	Category	Metabolic Rate (W)	Examples
Yes/No	Light	115	Sitting, standing, light arm/hand work and light walking
Yes/No	Moderate	180	Moderate lifting, mopping/cleaning, "punching" MW dryer
Yes/No	Heavy/Very Heavy	300 to 520	Heavy manual material handling, unjamming equipment, manual rework, etc.

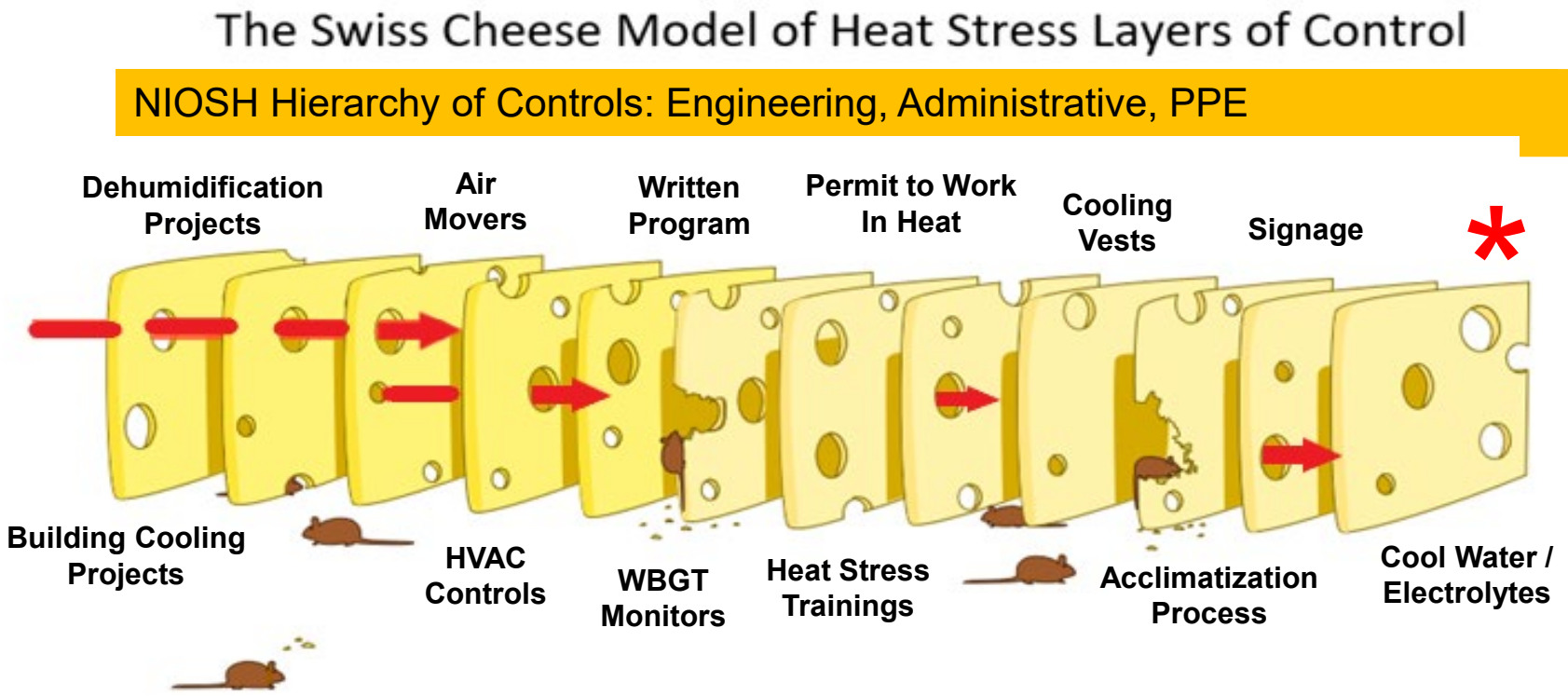
Adapted from: ACGIH "2017 TLVs and BEIs" Table 3

Step 4: Determine appropriate work/rest intervals and additional controls.

Adjusted Temperature (F)	Light Work (mins work/rest)	Mod. Work (mins work/rest)	Heavy Work (mins work/rest)
80 to 90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30 (Cooling Vests Required)
101	Normal	40/20	30/30 (Cooling Vests Required)
102	Normal	35/25	25/35 (Cooling Vests Required)
103	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
104	Normal	30/30 (Cooling Vests Required)	20/40 (Cooling Vests Required)
105	Normal	25/35 (Cooling Vests Required)	15/45 (Cooling Vests Required)
106	45/15	20/40 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
107	40/20	15/45 (Cooling Vests Required)	Caution! Cooling Vests & Additional Controls are Required
108	35/25	Caution! Cooling Vests & Additional Controls are Required	Caution! Cooling Vests & Additional Controls are Required

Perrigo®

Heat Stress Prevention – What was missing?



New Technology

Each control (slice) has imperfections (holes) which change in size, number and position depending on how the control is rolled out. Multiple layers improve success.

* Missing: Customization of heat stress prevention down to the individual

Perrigo

The Benefits of Technology in Preventing Heat Stress

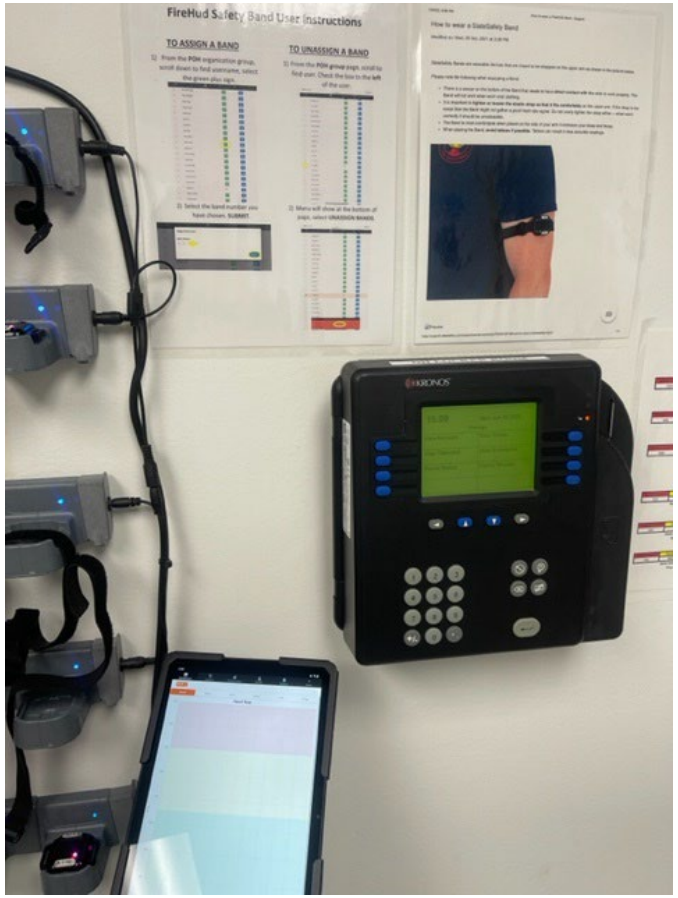
Perrigo

Slate Safety Wearable Pilot

Initial Pilot 2022

- A total of 85 Slate Safety devices were purchased initially

- Primary users of the system is Production, QA, Sanitation and Maintenance, but can be used by any employee entering high heat work areas



- Expectation is employees wear devices when working on the dryer floors, processing or any other areas where higher temp/humidity environment exist

** Devices are numbered. After putting on the device, you register the device

Locker Room Location

Perrigo

Establishing Alarm Setpoints

Alarm Setpoints:

Alarm Alert	*Threshold*
Exertion Rate	Exertion greater than 80 % for 3 minutes
Core Body Temperature	Core Temp greater than 102 °F for 3 minutes
Heart Rate (BPM)	Heart Rate greater than170 - age BPM for 5 minute
HRLV – Heart Rate Limit Value	HRLV greater than 120 % for 5 minutes

What is exertion?

Exertion is a metric, measured as a percentage, that combines each user's heart rate and core body temperature with individual characteristics such as height, weight, age, resting heart rate, and resting core body temperature.

Below 70%: low or moderate exertion.

Between 70% and 90%: high exertion, the user may need attention if this exertion rate is sustained for a long period of time.

Above 90%: very high exertion, the user is in danger of overexertion.

Perrigo

Establishing Alarm Expectations

Alert Expectations:

- Stop performing the task and leave the elevated temperature work area IMMEDIATELY!
- Proceed to a cool area (i.e. control room, break room, cafeteria, etc.) and take a break
- Cool water and electrolyte replacements available to all staff
- Immediately notify a Supervisor if identifying that self/co-worker could be suffering from heat stress

Biometric Alert Thresholds

A Biometric Alert notification can be used to notify the wearer and alert contacts that they should **slow down or stop work**. A notification will be triggered after the wearer meets **any** of the thresholds set in the table below.

Note: SlateSafety cannot guarantee the effectiveness of Biometric Alert or Return-To-Work thresholds. It is the responsibility of the organization to implement thresholds that follow their safety guidelines. Read more here.

New Alert Threshold +

	Condition				Severity
−	Heart Rate	Greater Than	120 BPM	For 1 minutes	High
−	Core Temp	Greater Than	100.8 °F	For 1 minutes	High

Return-To-Work Thresholds

A Return-To-Work notification can be used to notify the wearer and alert contacts that they are **okay to return to work**. A notification will be triggered after the wearer triggers at least one Biometric Alert and then meets **all** Return-To-Work thresholds set in the table below.

New Return-To-Work Threshold +

	Condition			
−	Heart Rate	Less Than	100 BPM	For 5 minutes
−	Core Temp	Less Than	99.5 °F	For 5 minutes

Tap Alert 7/8/2022, 3:24:59 PM ×

Roberto Andaya has sent a request for help via double tapping their device.

Perrigo

Program Enhancements 2023

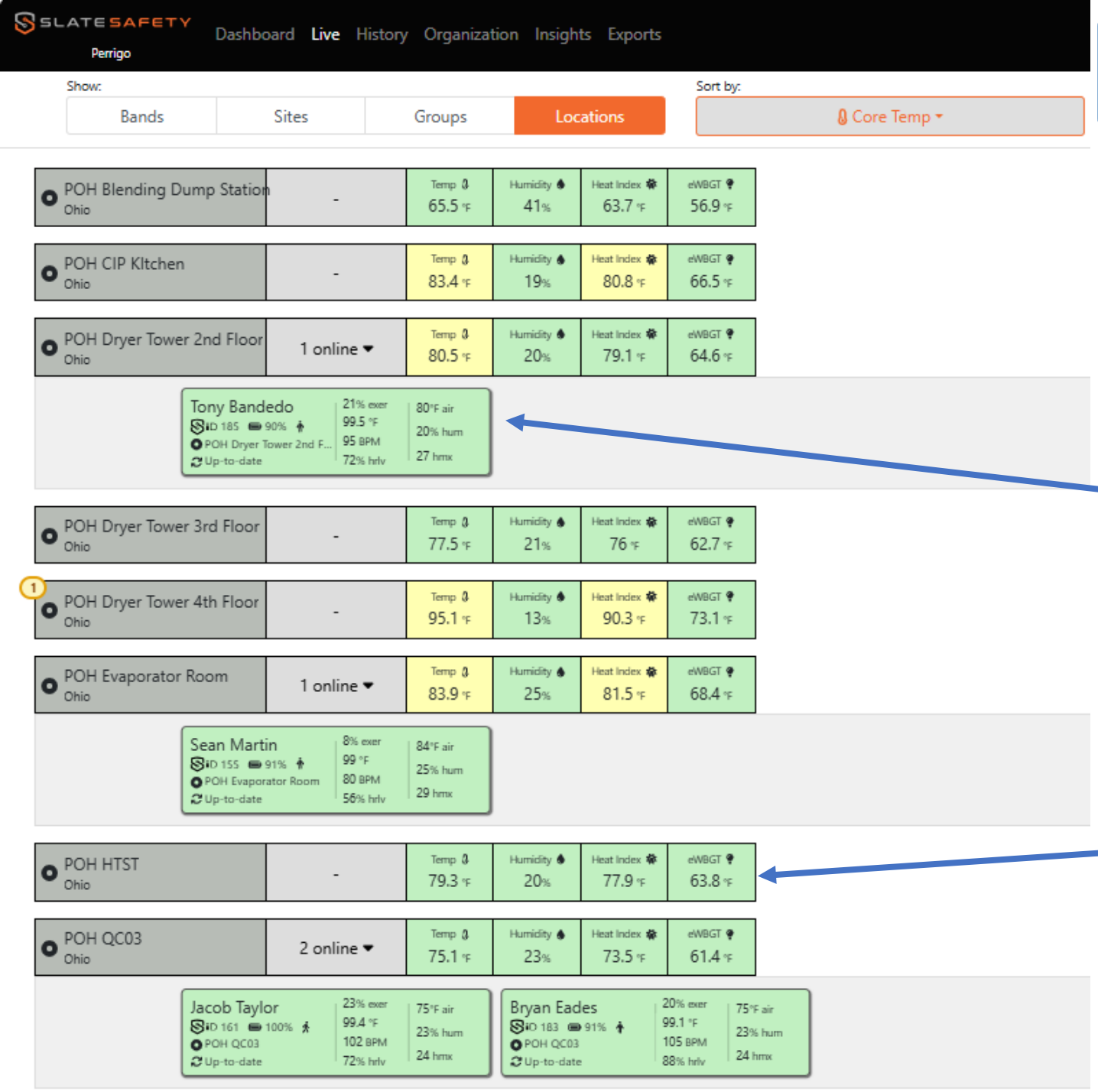
The vision of the Korey Stringer Institute (KSI) is to be a world-renowned leader in developing and disseminating practical strategies to prevent sudden death in sport, military, and laborers, promote health and safety best practices in the physically active, and optimize performance.

Continuous Improvement

- Started Working with Korey Stringer Institute(KSI) to evaluate implementation of our heat stress program
- Evaluated data collection and validity of alerts and warnings
- Audited controls and systems to see if they were working
- Program improvements and development of additional tools and guidance
- Training

KSI 77
Korey Stringer Institute
University of Connecticut

Perrigo



2024-2025 Upgrades

SLATESAFETY

BAND V2

Physiological monitoring for heat-stress prevention

BEACON V2

Environmental monitoring for heat stress

The Problem

- ✗ Workers miss the warning signs of heat stress
- ✗ Supervisors are unsure who needs rest
- ✗ Organizations pay for injuries and have no actionable data

The Solution

- ✓ Workers manage their own work/rest cycles
- ✓ Supervisors can monitor and prevent overexertion
- ✓ Organizations keep their workforce safe and save money

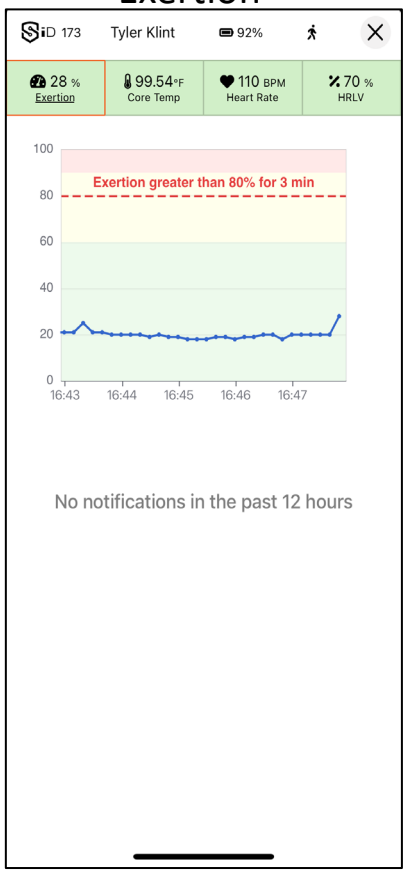
Perrigo

Heat Stress Prevention – Mobile App

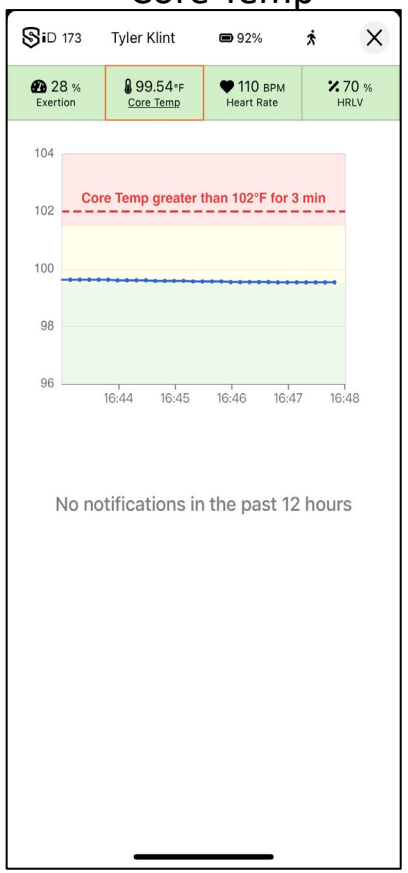
Real Time Monitoring

- Mobile App
- Text Alerts
- Email Alerts
- Desktop Dashboard
- Desktop Analytics

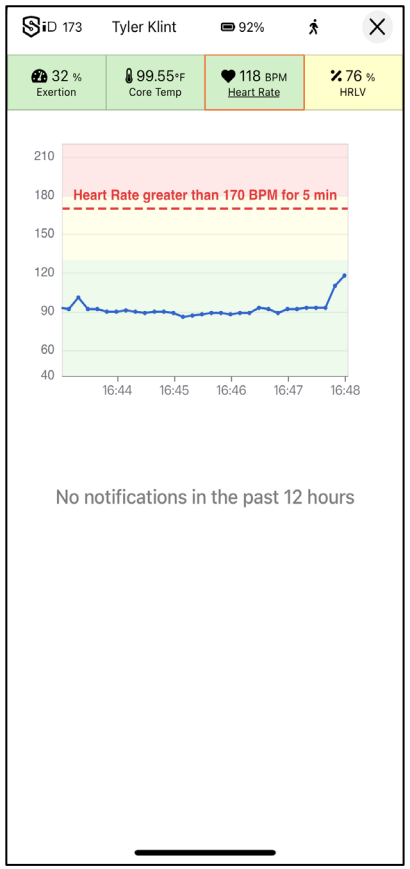
Exertion



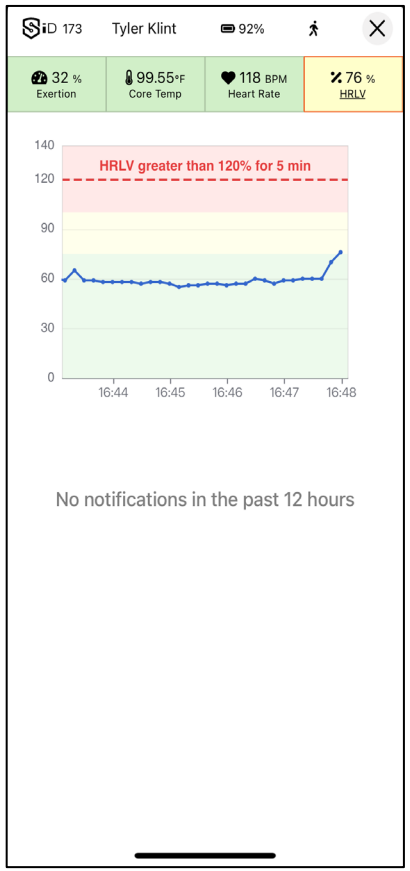
Core Temp



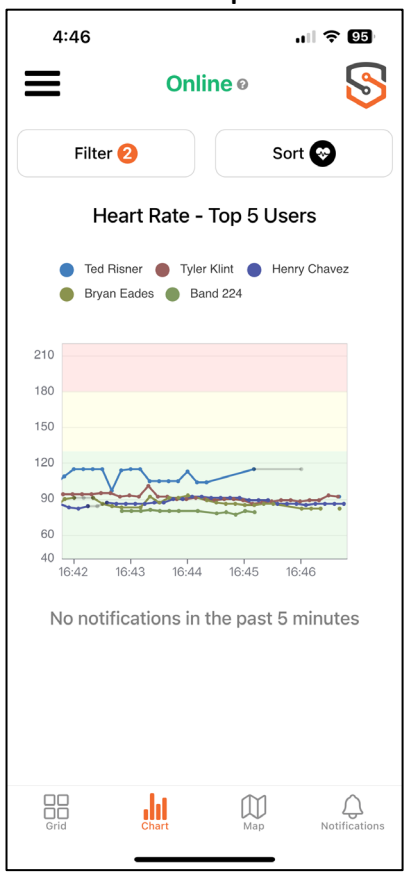
Heart Rate



Heart Rate Limit Value



Groups

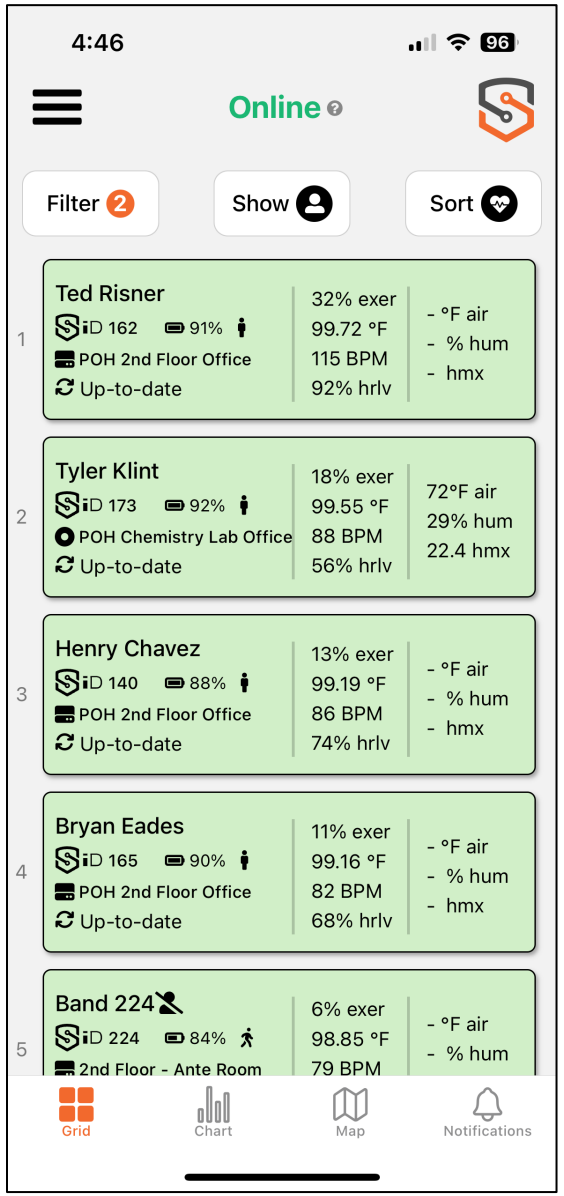


Perrigo Monitoring People & Environment

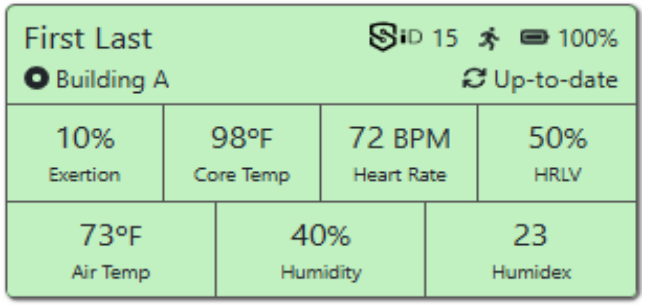
Chart Intensity Levels

- Charts and diagrams across the application have color coded sections to indicate the intensity level of the user or beacon's activity.
- User or beacon is considered within an intensity level if their current measurements are above the established floor.
- Change the floors used for each intensity levels

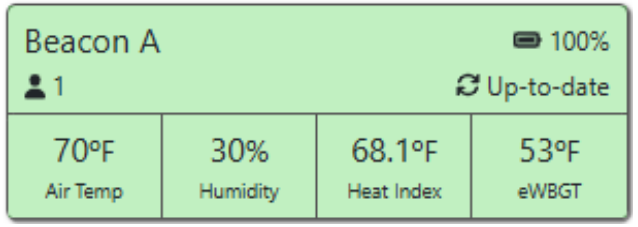
Biometric Type	Moderate Intensity	High Intensity
Core Temp	99.5 °F	101.5 °F
Exertion	60%	90%
Heart Rate	130 BPM	180 BPM
HRLV	75%	100%
HRV	60ms	30ms
VO2	30 mL/kg/min	45 mL/kg/min



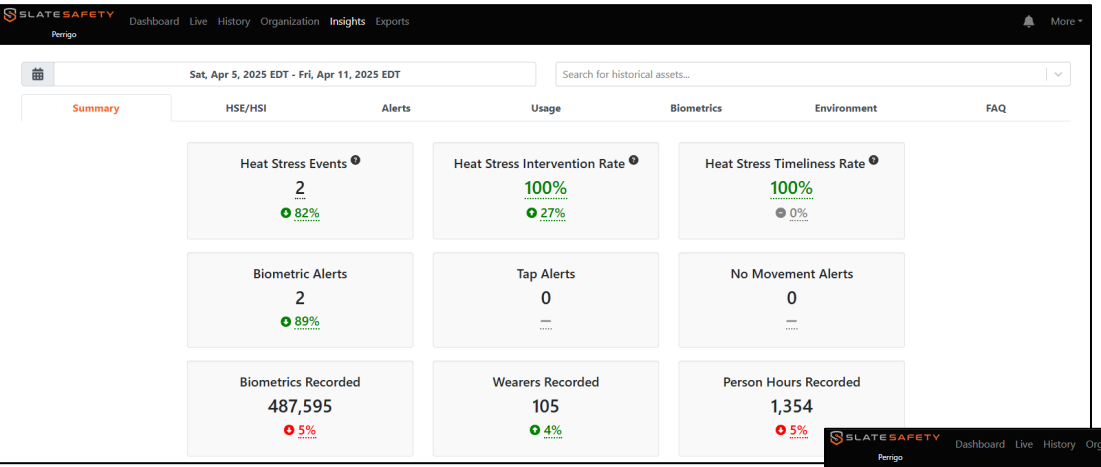
Live Page Band Cards

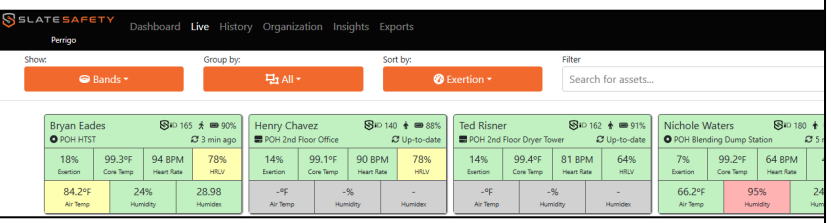


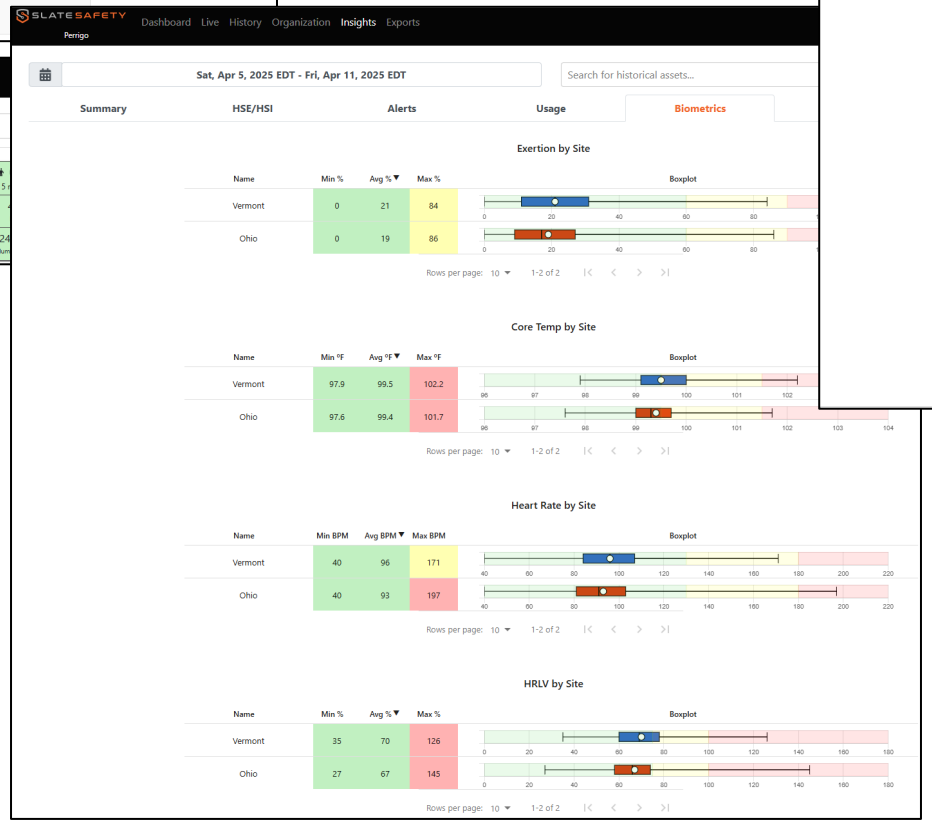
Live Page Beacon Cards

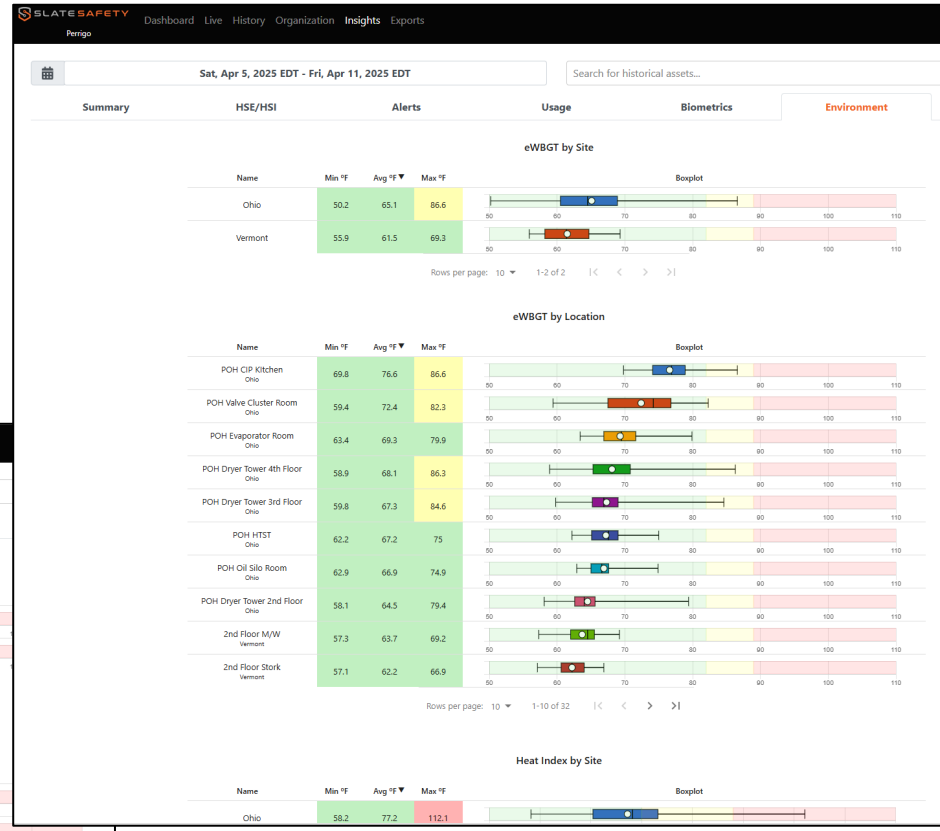


Heat Stress Prevention – Data





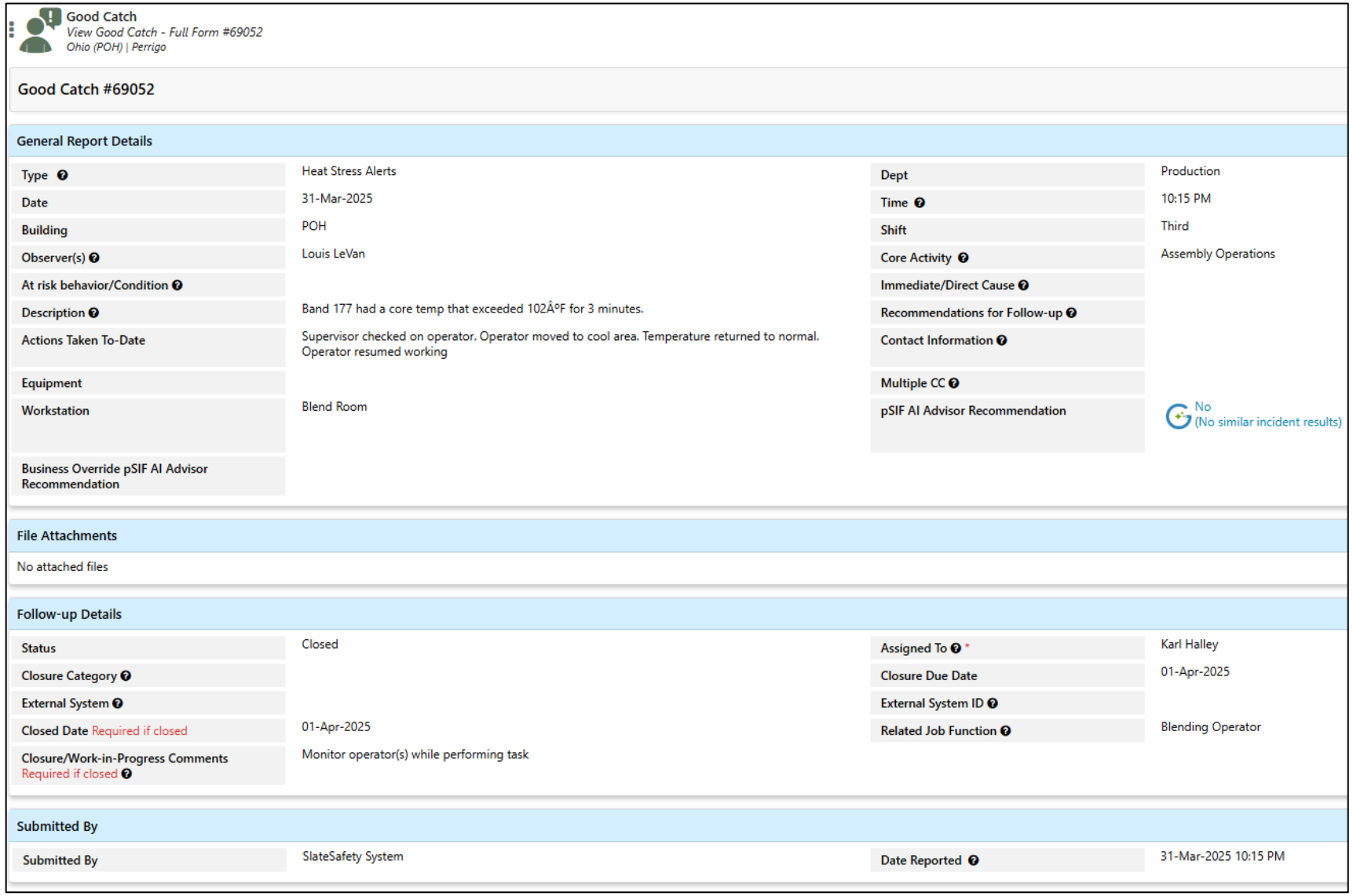




Heat Stress Prevention – System Integration

Data Tracking and Integration

- Email Notifications
- Tracking Corrective Actions
- Closed Loop System
- Verification of Controls
- Data Available in Data Warehouse
- Power BI Reporting and Dashboards



Good Catch
View Good Catch - Full Form #69052
Ohio (POH) | Perrigo

Good Catch #69052

General Report Details

Type	Heat Stress Alerts	Dept	Production
Date	31-Mar-2025	Time	10:15 PM
Building	POH	Shift	Third
Observer(s)	Louis LeVan	Core Activity	Assembly Operations
At risk behavior/Condition		Immediate/Direct Cause	
Description	Band 177 had a core temp that exceeded 102Â°F for 3 minutes.	Recommendations for Follow-up	
Actions Taken To-Date	Supervisor checked on operator. Operator moved to cool area. Temperature returned to normal. Operator resumed working	Contact Information	
Equipment		Multiple CC	
Workstation	Blend Room	pSIF AI Advisor Recommendation	No (No similar incident results)
Business Override pSIF AI Advisor Recommendation			

File Attachments

No attached files

Follow-up Details

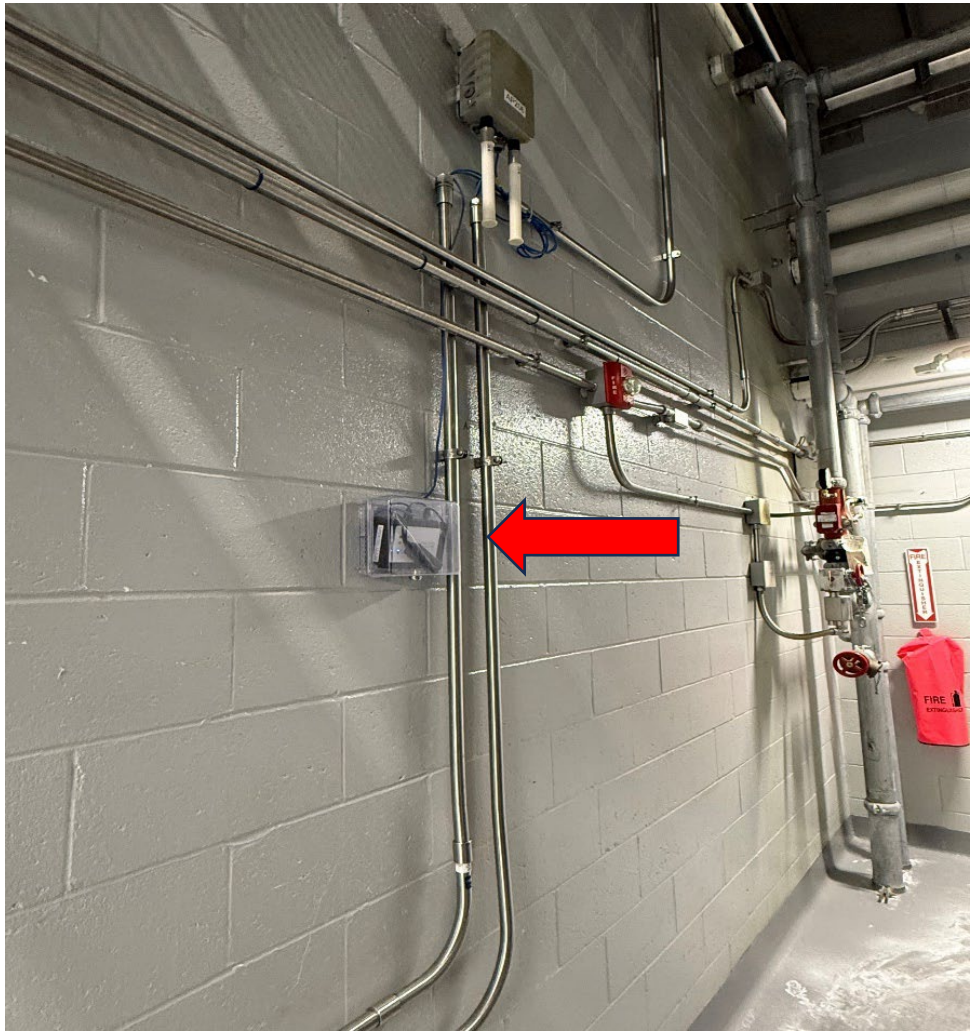
Status	Closed	Assigned To *	Karl Halley
Closure Category		Closure Due Date	01-Apr-2025
External System		External System ID	
Closed Date Required if closed	01-Apr-2025	Related Job Function	Blending Operator
Closure/Work-in-Progress Comments Required if closed	Monitor operator(s) while performing task		

Submitted By

Submitted By	SlateSafety System	Date Reported	31-Mar-2025 10:15 PM

Program Enhancements 2024-2025

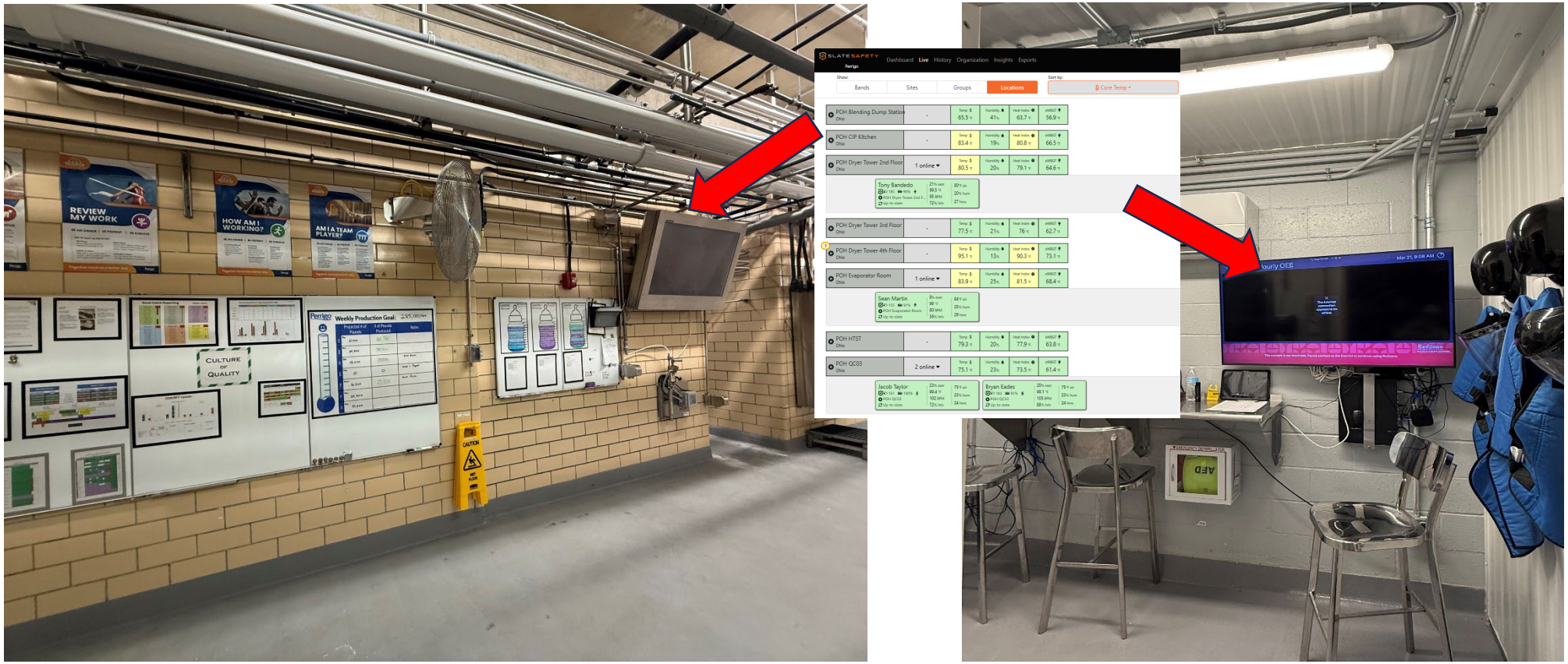
- Gateways named with building location to communicate with Bands and Beacons



- NEW – Installed a Slate Safety V1 Beacon to every potential high heat area of the site

Program Enhancements 2024-2025

- NEW – Plan in 2025 is to broadcast the Slate Safety Heat Stress Prevention data live on the new TV's installed to help our team plan



Program Enhancements 2024-2025

- NEW - Added Cool Room's on 3rd Floor and 4th Floor of our Dryer Tower

- Current - 2nd Floor Cool Room and our Cool Vests

Perrigo

Opportunities

Opportunities - Implemented

Lone Worker

- Alerts if employee is not moving
- Alerts if employee sustains an impact (i.e. fall or vehicular incident)
- Alerts if an employee is experiencing a potential personal medical condition.

Automated Event Triggers

- Integration with Perrigo EHS Management System Software to automatically generate Good Catch reports

Temperature

- Monitoring temperature and integration of WBGT correlation into Bluetooth devices into software platform for real time temperature monitoring

Currently Under Investigation:

Acclimatation

- Determine acclimatation based upon monitoring data and not time based

Perrigo

Questions?

TM

Learn more at www.perrigo.com