

An industrial facility, possibly a refinery or chemical plant, is shown at night or in low light. A large, intense fire is burning in the center of the facility, illuminating the surrounding structures. In the foreground, a worker in a full protective suit and helmet stands with their back to the camera, looking towards the fire. Another worker is visible in the distance, also facing the fire. The scene is dramatic and emphasizes the hazardous nature of the work.

IPS

Industrial Performance Services

ITCS

Industrial Tubular Catalyst Services

HEAT STRESS MANAGEMENT PROCEDURE

V:2023.1

Heat Stress Management Procedure

January 2023

Purpose

To prevent personnel injury or illness by defining requirements for recognizing and controlling heat stress. This procedure will also define a communication system to ensure personnel are aware of environmental conditions that may cause heat stress and will include a Heat Index Table, Work Rest Schedule, Control Methods and Safe Guidelines. These guidelines will be transparent so that it triggers the awareness of IPS★ITCS employees, so they are aware of the hazards of dehydration and heat related illnesses.

Scope

This procedure applies to all IPS★ITCS employees who may be exposed to heat stress conditions while working. This procedure will set minimum requirements for those working in high heat stress conditions and help provide the tools, and guidance needed during the initial planning and scheduling of jobs, to allow the jobs to be planned and completed safely and efficiently.

Attachments to this procedure:

Attachment 1 - Heat Index Chart

Attachment 2 - Heat-Related Illnesses and First Aid

Attachment 3 - Am I Dehydrated?

Accountabilities and Responsibilities

Employees

Comply with guidelines of this Heat Stress Management Program between May and October each year.

Utilize the training information to become aware of lifestyle issues that can affect heat stress and an individuals' sensitivity to heat. This includes taking prescription and/or over the counter medication, alcohol and caffeine consumption, consuming large heavy meals during the hottest part of the day or not eating meals at all, along with sleeping and eating patterns.

Maintain the appropriate level of awareness and observe others for signs of heat stress.

Notify supervision immediately when work conditions or practices change that can result in increased heat stress exposure.

Take frequent breaks, drink plenty of fluids during months of elevated temperatures, and while working on jobs that pose a heat stress exposure potential.

Understand that at any time, anyone can stop a job if they feel the safety aspects or surrounding of a job/task are an overriding concern.

Shall comply with all requirements set forth in this Heat Stress Management Procedure.

Management / Supervisors

Ensure that all elements of this procedure are implemented in their area of responsibility between May and October each year.

Allow for acclimatization to heat during the onset of months with elevated temperatures for newly hired workers and for those workers returning from extended time away (i.e. short-term disability, vacation, etc.)

NOTE: It may take 5-days for an individual to become accustomed to working in an elevated temperature environment according to their general health and physical condition.

Ensure that all affected employees are trained annually on Heat Stress. Ensure that cool drinking water and/or commercial electrolyte replenishing drinks (Squincer, etc.) are available to all workers.

Ensure the use of fans, umbrellas, cooling stations, and/or shaded areas, to reduce heat exposure, during the heat stress months.

Ensure administrative controls, such as worker rotation or engineering controls, are utilized to reduce the risk of a worker suffering a heat related illness.

During months of elevated temperatures, periodically conduct safety meetings to remind workers of heat stress exposures.

Ensure that pre-planned activities include the requirements described in this Heat Stress Management Procedure.

Definitions

Acclimatization - Control method used to gradually expose employees to high heat levels. Generally, applies to employees returning from vacation or illness, medically impaired, or who are physically unfit.

Buddy System – an arrangement by which people are paired for mutual safety or assistance.

Heat Index – “How hot it feels”. A calculation based on ambient temperature and the relative humidity associated with that temperature. See Attachment.

Heat Cramps – Painful muscle spasms because of exposure to heat stress

Heat Exhaustion – A condition usually caused by loss of body water because of exposure to excess heat. Symptoms include headache, tiredness, nausea, and sometimes lightheadedness and fainting.

Heat Rash (prickly heat) – Itchy rash caused by sweating

Heat Related Disorder (HRD) – Heat related disorders are manifestations of overexposure to heat stress.

Heat Stress – Relative amount of thermal strain from the environment

Heat Stress Self-determination – The removal of one’s self from heat stress at the first symptom of a heat related disorder.

Heat Stroke – A serious disorder resulting from exposure to excess heat. It results from sweat suppression and increased storage of body heat. Symptoms include hot dry skin, high core body temperature, mental confusion, convulsions, and coma. Heat stroke is life threatening if not treated promptly & properly.

Heat Stress Advisory – Communication system used to notify employees of potential heat stress conditions and appropriate work rest schedule implemented.

Workload - May be classified as light, moderate, or heavy work. Most tasks conducted at the site can be classified as moderate work. However, a task that requires additional PPE (such as a chemical splash suit, bunker gear, respiratory protection, etc.) may exert more stress on an employee. In such a case, a task with these requirements could be classified as heavy. Likewise, tasks with reduced work and/or workloads (such as a hole watch, riding lawnmower work, equipment operator, etc.) that have mitigations in place that reduce the employee potential for heat stress, may alter the work / rest guideline in this procedure. However, the task, mitigations and alternate work / rest regimen should be documented and discussed in a JSEA.

Light work - Generally consists of work requiring moderate arm/trunk movement. Examples include inspections, equipment calibrations, light machine work, turning small valves, sampling, etc.

Moderate work - Generally consists of work requiring heavy arm and leg movement or moderate lifting and/or pushing. Examples may include valve and motor repairs, valve alignments, light material handling, walking about with moderate lifting and/or pushing, etc.

Heavy work - Generally consists of intermittent heavy lifting, pushing, or pulling. Examples may include extensive ladder and stair climbing, pick and shovel work, turning large valves, insulation work, work requiring additional PPE, etc.

Environmental conditions - Natural or controlled conditions of air and radiation prevailing around a person, an object, a substance, etc. For the purpose of this procedure, environmental conditions may include temperature, humidity, whether tasks are being conducted in direct sunlight, etc.

Radiant heat sources - Sources which emit heat in a given area. Most commonly includes equipment located in a work area that emits heat. Radiant heat sources can be shielded to reduce heat levels that may affect employees working in an area with such sources.

Personal protective equipment (PPE)(For the Purpose of this Procedure)

Standard PPE – refers to the minimum required unit PPE, i.e. FRC, safety glasses, task appropriate gloves, hardhat, safety toed shoes.

Special PPE – refers to protective clothing such as, but not limited to, chemical splash suits, disposable coveralls, bunker gear, respiratory protection, etc. which can increase an employee's susceptibility to heat stress hazards.

Wet Bulb Globe Temperature (WBGT) Index – An index of environmental factors that accurately depicts heat stress potential. The WBGT is a combined temperature derived from humidity (wet bulb temperature), Ambient temperature (dry bulb), and radiant heat and air movement (globe temperature). Contact the SHE department to have WBGT checked.

Rest (For the Purpose of this Procedure) – is defined as removing one's self from the immediate work area to another area that is shaded, where fluids can be consumed and where any Special PPE can be removed to allow the body's core temperature to lower.

Procedure

GENERAL INFORMATION

During the period from May 1st until October 31st, and other times when high temperature conditions are present, an excessive heat weather alert may be issued. Depending on the conditions (i.e. level 1, 2, 3 or 4) of the alert, the appropriate heat stress dangers and controls discussed in section 5.4 must be reviewed and implemented and the corresponding work rest schedule followed. Once a year, before the set start date of this procedure (May 1st), each department with people working in potential heat stress areas will conduct a specific safety meeting, with each shift, on heat stress to prepare for the upcoming heat stress months.

The emphasis of the safety meeting will be to inform people of the potential for heat stress, provide advice on its prevention, stress job planning and refresh

everyone on what the signs and symptoms for heat stress are. See Attachment for signs and symptoms.

Observe others for potential signs of heat stress.

MEDICAL CONSIDERATIONS

When individuals are exposed to excessive heat, the body's temperature control center responds by dilating blood vessels close to the skin, to release heat to the environment. Sweating is also increased to aid with cooling the body during its evaporation.

If the body temperature continues to rise, heat stress results. Mental performance becomes impaired and physical response is slowed. If the situation continues, the individual could be rendered unconscious with potential brain damage or death to follow.

Physical condition can affect an individual's response to heat. Conditioning reduces susceptibility to heat-related disorders, lowers the heart rate, and creates a more efficient sweating mechanism. Beware of conditions such as illnesses, drug medication, and alcohol consumption, as these may adversely affect heat tolerance.

Acclimatization is a very important key to avoid heat stress. Acclimatization requires only 2 to 3 hours of exposure per day. The major changes occur within the first week. Acclimatized people are cooler because of their increase in sweat and blood volume. The below chart indicates a general re-acclimation guideline following days without heat exposures.

	Routine Absence		Exposure Sequence			
	Day 1	Day 2	Day 3	Day 4	Day 5	
<4	100%					
4-5		80%	100%			
6-12		50%	80%	100%		
12-20		50%	70%	90%	100%	
>20		50%	60%	70%	90%	100%

ENVIRONMENTAL CONSIDERATIONS

The ability of the body to regulate temperature is not only a function of air temperature; it is also a function of wind speed and humidity. These factors affect body heat release and the sweat evaporation rate.

Factors other than weather could generate a potential heat stress condition. Cooling towers, fin fans, boilers (furnaces), PPE (acid suit, bunker gear, respiratory protection), etc. could create concerning conditions regarding heat stress. Therefore, employees need to continuously be aware of signs, symptoms, and precautionary measures year-round.

Environmental factors such as the slippery palms from sweat or fogging of safety glasses or goggles may be other hazards that must be anticipated.

HEAT STRESS CONTROL

Individuals need to be aware of the potential for heat stress. Tolerance for heat stress situations is a function of acclimatization. It is for that reason the following guidelines are set up for prevention. If additional controls or rest is required due to an individual's personal condition, this should be discussed and addressed. Individuals need to pace and monitor their activities with the following guidelines in mind. Be sensitive to jobs or areas with high heat stress potential. Once a job is identified as having a high heat stress potential, steps should be taken to control or eliminate the condition. Examples include, but are not limited to, using an air mover, shading from sunlight, working hot jobs during nights or mornings, following the work/rest guideline for the given task, etc. Do not hesitate to contact the HSEQT Manager for guidance.

When conditions are present, adequate rest in a cool environment (shade, air-conditioning, etc.) is required. Follow this rest/work guideline if conditions warrant it.

Work/Rest Guideline for Heat Index Based on **Standard PPE** / Hour

Heat Index	Moderate Work	Heavy Work	Fluids
LEVEL 1	Work 50 min / Rest 10 min	Work 45 min / Rest 15 min	12-24 oz
LEVEL 2	Work 40 min / Rest 20 min	Work 30 min / Rest 30 min	24-36 oz
LEVEL 3	Work 30 min / Rest 30 min	Work 20 min / Rest 40 min	36-48 oz
LEVEL 4	Work 20 min / Rest 40 min	Management Approval	36-48 oz

Work/Rest Guideline for Heat Index Based on **Special PPE** / Hour

Heat Index	Moderate Work	Heavy Work	Fluids
LEVEL 1	Work 45 min / Rest 15 min	W 20 / R 20 / W 20	12-24 oz
LEVEL 2	Work 30 min / Rest 30 min	W 15 / R 30 / W 15	24-36 oz
LEVEL 3	Work 20 min / Rest 40 min	W 10 / R 40 / W 10	36-48 oz

Replacement of fluid loss is vital for sustaining an internal temperature balance. Employees should consume fluids before, during, and after work. **DO NOT WAIT UNTIL YOU ARE THIRSTY TO BEGIN DRINKING!** During high heat, it is recommended that one cup of water be consumed every 20 minutes. Do not drink coffee, cokes, energy drinks or tea for fluid replenishment during your work/rest regiment. These products have caffeine and are diuretics, which will extract additional water from the body. The ratio of water consumption vs. electrolyte drink should be three parts water to one-part electrolyte drink. Electrolytes (Mg, K, Na, Ca) flow through muscle cells to keep them functioning. During heat stress conditions, these minerals are lost through perspiration. Drinking water rehydrates the body, but doesn't replace electrolytes needed to keep body functioning properly. Therefore, it is crucial to consume an electrolyte drink in addition to water.

A JSEA should be conducted prior to work where a potential heat stress condition has been identified. Employees should review signs and symptoms of heat stress induced illnesses and the importance of ongoing hydration and discuss control methods to reduce the heat stress potential.

When tasks require the use of protective equipment that may increase an employee's susceptibility to heat stress, additional control methods may be required. This will need to be discussed in the before mentioned JSEA.

Shielding

Providing physical barriers or shielding around areas that emit high levels of heat may reduce heat stress potential. Insulation of piping, vessels, etc is a good example of shielding.

For tasks conducted in direct sunlight for an extended period, tarps, overhead scaffolds or some other method of covering the work area must be utilized. This should be discussed in pre-job planning and the JSEA.

Work Scheduling / Planning

Tasks that may be subject to heat stress conditions should be scheduled during a cool part of the day if possible (i.e. early morning, night shift).

Additional employees may need to be assigned to a task to help lessen the workload of each employee and allow for the appropriate breaks.

In the event that work is being conducted in an enclosed or confined space, the number of employees should be limited in an effort to keep the space as free from heat emitting sources as possible (additional employees in an enclosed work area may add to the heat exposure condition).

Check out tools in advance and have them readily available at the maintenance shop ready to use out in the unit at the job site location.

When working at higher elevations during the hot summer months, planning should include installing scaffolding with an additional deck to be used as a shade cover (**Shielding**) to help reduce the localized work area temperature.

Ventilation

General ventilation may include air movers, fans, portable or local exhaust systems, air conditioning units, etc.

When ventilation options such as fans and air movers are used, consideration should be given to the temperature of the air being used to "cool" a given area. This control method is not effective if the air being introduced to a hot environment is hot itself.

Portable and local exhaust fans can be efficient general ventilation options since they can remove heat and humidity from a hot environment.

Cool Vests

Cool vests or other type of cooling media worn by employees may be used to help reduce the potential for heat stress.

Heat Stress Control Methods by Danger Level

Heat Index	Danger Levels (1-4)	Control Methods
80° to 91°F	(1) Caution	Basic health and safety planning
91°F to 103°F	(2) Moderate	Heighten awareness and implement additional control methods
104°F to 115°F	(3) High	Additional control methods to protect workers
Greater than 115°F	(4) Extreme	Implement the most aggressive control methods up and including stopping and rescheduling work

Summary of Danger Levels and Associated Protective Measures

The most critical actions employees should take to help prevent heat-related illness at each danger level:

Heat Index	Danger Levels (1-4)	Control Methods
80° to 91°F	(1) Caution	<ul style="list-style-type: none"> ▪ Ensure that adequate medical services are available ▪ Plan ahead for times when heat index is higher, including worker heat safety training ▪ Encourage workers to wear sunscreen ▪ Provide drinking water <p>If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are required to protect workers from heat-related illness.</p>
91°F to 103°F	(2) Moderate	<p>In addition to the steps listed above:</p> <ul style="list-style-type: none"> ▪ Remind workers to drink water often (about 4 cups/hour)** ▪ Review heat-related illness topics with workers: how to recognize heat-related illness, how to prevent it, and what to do if someone gets sick ▪ Schedule frequent breaks in cool, shaded area ▪ Acclimatize workers ▪ Set up buddy system/instruct supervisors to watch workers for signs of heat-related illness ▪ Schedule activities at a time when the heat index is lower ▪ Develop work/rest schedules ▪ Monitor workers closely <p>If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are required to protect workers from heat-related illness.</p>
104°F to 115°F	(3) High	<p>In addition to the steps listed above:</p> <ul style="list-style-type: none"> ▪ Alert workers of high risk conditions ▪ Actively encourage workers to drink plenty of water (about 4 cups/hour)** ▪ Limit physical exertion (e.g. use mechanical lifts) ▪ Have a knowledgeable person at the worksite who is well-informed about heat-related illness and able to determine appropriate work/rest schedules ▪ Establish and enforce work/rest schedules ▪ Adjust work activities (e.g., reschedule work, pace/rotate jobs) ▪ Use cooling techniques ▪ Watch/communicate with workers at all times <p>When possible, reschedule activities to a time when the heat index is lower.</p>
Greater than	(4) Extreme	Reschedule non-essential activity for days with a reduced heat index

115°F

or to a time when the heat index is lower.

Move essential work tasks to the coolest part of the work shift; consider earlier start times, split shifts, or evening and night shifts. Strenuous work tasks and those requiring the use of heavy or non-breathable clothing or impermeable chemical protective clothing should not be conducted when the heat index is at or above 115°F.

If essential work must be done, in addition to the steps listed above:

- Alert workers of extreme heat hazards
- Establish water drinking schedule (about 4 cups/hour)**
- Develop and enforce protective work/rest schedules
- Conduct physiological monitoring (e.g., pulse, temperature, etc)
- Stop work if essential control methods are inadequate or unavailable

HEAT STRESS ADVISORY

The advisory will be used to alert employees of environmental conditions that may present heat stress hazards. Any extreme Heat Waves that are identified will be communicated as well for pre-planning of work. During the effected months, discussions should be had in the daily maintenance meeting for planning/discussing the next day's work.

The advisory is arranged in levels according to potential hazards associated with the heat index, with level 1 being the least hazardous and level 4 posing greatest hazard potential. See Attachment.

The shift Superintendent will ensure that announcement is made concerning the heat advisory level. Employees should follow recommendations provided in section 5.4 Heat Stress Control. Depending on the heat stress condition, there are specific dangers and heat stress controls mentioned above, that should be implemented to minimize or eliminate the heat stress adverse health effects. These dangers and controls should be discussed and documented on the JSEA conducted for the specific task.

HEAT INDEX CHART

		AIR TEMPERATURE (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
RELATIVE HUMIDITY (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	131	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	126	130					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
	90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127											
100	87	95	103	112	121	132											

Likelihood of Heat Related Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Moderate
 High
 Extreme

Using the Heat Index Table:

The heat index can be used to help determine the dangers of heat-related illness for outdoor workers, what actions are helpful to protect workers, and when those actions may be triggered. Depending on the heat index value, the dangers for heat-related illness can range from “Caution” to “Extreme” Danger. As the heat index value goes up, more preventive measures are needed to protect workers. Heat index values are divided into four bands associated with four danger levels. The danger level should also take into consideration a worker’s age, health, physical condition and their acclimatization to the heat.

Training

Affected personnel should receive initial and annual training and required Safety Meetings on heat stress injury prevention. The training program should include:

- Factors causing heat stress
- Hazards associated with heat stress
- Control methods
- Recognition of predisposing factors including employee physical health and conditioning, danger signs, and symptoms
- Awareness of first aid procedures for heat related injuries/illnesses
- Management and employee responsibilities in avoiding heat stress
- Hydration Logs
- PPE and under garments
- Facemask coverings due to COVID-19
- Contents of this guideline

Attachment 1 HEAT INDEX CHART

		AIR TEMPERATURE (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
RELATIVE HUMIDITY (%)	40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
	45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
	50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
	55	81	84	86	89	93	97	101	106	112	117	124	131	137			
	60	82	84	88	91	95	100	105	110	116	123	129	137				
	65	82	85	89	93	98	103	108	114	121	126	130					
	70	83	86	90	95	100	105	112	119	126	134						
	75	84	88	92	97	103	109	116	124	132							
	80	84	89	94	100	106	113	121	129								
	85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131										
95	86	93	100	108	117	127											
100	87	95	103	112	121	132											

Likelihood of Heat Related Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Moderate
 High
 Extreme

Work/Rest Guideline for Heat Index Based on **Standard PPE** / Hour

Heat Index	Moderate Work	Heavy Work	Fluids
LEVEL 1	Work 50 min / Rest 10 min	Work 45 min / Rest 15 min	12-24 oz
LEVEL 2	Work 40 min / Rest 20 min	Work 30 min / Rest 30 min	24-36 oz
LEVEL 3	Work 30 min / Rest 30 min	Work 20 min / Rest 40 min	36-48 oz
LEVEL 4	Work 20 min / Rest 40 min	Management Approval	36-48 oz

Work/Rest Guideline for Heat Index Based on **Special PPE** / Hour

Heat Index	Moderate Work	Heavy Work	Fluids
LEVEL 1	Work 45 min / Rest 15 min	W 20 / R 20 / W 20	12-24 oz
LEVEL 2	Work 30 min / Rest 30 min	W 15 / R 30 / W 15	24-36 oz
LEVEL 3	Work 20 min / Rest 40 min	W 10 / R 40 / W 10	36-48 oz
LEVEL 4	Management Approvals	Not Permitted	TBD

Heat Stress Control Methods by Danger Level

Heat Index	Danger Levels (1-4)	Control Methods
80°F to 91°F	(1) Caution	Basic health and safety planning
91°F to 103°F	(2) Moderate	Heighten awareness and implement additional control methods
104°F to 115°F	(3) High	Additional control methods to protect workers
Greater than 115°F	(4) Extreme	Implement the most aggressive control methods up to and including stopping and rescheduling work

Summary of Danger Levels and Associated Protective Measures

The most critical actions employees should take to help prevent heat-related illness at each danger level:

Heat Index	Danger Levels (1-4)	Control Methods
80° to 91°F	(1) Caution	<ul style="list-style-type: none"> ▪ Ensure that adequate medical services are available ▪ Plan ahead for times when heat index is higher, including worker heat safety training ▪ Encourage workers to wear sunscreen ▪ Provide drinking water <p>If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are required to protect workers from heat-related illness.</p>
91°F to 103°F	(2) Moderate	<p>In addition to the steps listed above:</p> <ul style="list-style-type: none"> ▪ Remind workers to drink water often (about 4 cups/hour)** ▪ Review heat-related illness topics with workers: how to recognize heat-related illness, how to prevent it, and what to do if someone gets sick ▪ Schedule frequent breaks in cool, shaded area ▪ Acclimatize workers ▪ Set up buddy system/instruct supervisors to watch workers for signs of heat-related illness ▪ Schedule activities at a time when the heat index is lower ▪ Develop work/rest schedules ▪ Monitor workers closely <p>If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are required to protect workers from heat-related illness.</p>
104°F to 115°F	(3) High	<p>In addition to the steps listed above:</p> <ul style="list-style-type: none"> ▪ Alert workers of high risk conditions ▪ Actively encourage workers to drink plenty of water (about 4 cups/hour)** ▪ Limit physical exertion (e.g. use mechanical lifts) ▪ Have a knowledgeable person at the worksite who is well-informed about heat-related illness and able to determine appropriate work/rest schedules ▪ Establish and enforce work/rest schedules ▪ Adjust work activities (e.g., reschedule work, pace/rotate jobs) ▪ Use cooling techniques ▪ Watch/communicate with workers at all times <p>When possible, reschedule activities to a time when the heat index is</p>

<p>Greater than 115°F</p>	<p>(4) Extreme</p>	<p>lower.</p> <p>Reschedule non-essential activity for days with a reduced heat index or to a time when the heat index is lower. Move essential work tasks to the coolest part of the work shift; consider earlier start times, split shifts, or evening and night shifts. Strenuous work tasks and those requiring the use of heavy or non-breathable clothing or impermeable chemical protective clothing should not be conducted when the heat index is at or above 115°F.</p> <p>If essential work must be done, in addition to the steps listed above:</p> <ul style="list-style-type: none"> ▪ Alert workers of extreme heat hazards ▪ Establish water drinking schedule (about 4 cups/hour)** ▪ Develop and enforce protective work/rest schedules ▪ Conduct physiological monitoring (e.g., pulse, temperature, etc) ▪ Stop work if control methods are inadequate or unavailable
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Attachment 2

Heat-related Illnesses and First Aid



Heat stroke, the most serious form of heat-related illness, happens when the body becomes unable to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Signs include confusion, loss of consciousness, and seizures. **"Heat stroke is a medical emergency that may result in death!"** Call 911 or Plant Emergency Number or Press the "Orange" emergency button on a plant radio immediately.

Heat exhaustion is the body's response to loss of water and salt from heavy sweating. Signs include headache, nausea, dizziness, weakness, irritability, thirst, and heavy sweating.



Heat cramps are caused by the loss of body salts and fluid during sweating. Low salt levels in muscles cause painful cramps.

Tired muscles—those used for performing the work—are usually the ones most affected by cramps. Cramps may occur during or after working hours.

Heat rash, also known as prickly heat, is skin irritation caused by sweat that does not evaporate from the skin. Heat rash is the most common problem in hot work environments.

The chart below shows **symptoms** and **first aid measures** to take if a worker shows signs of a heat-related illness.

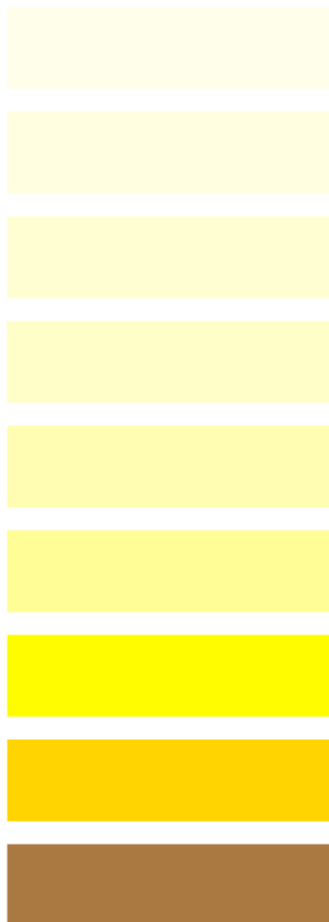
Illness	Symptoms	First Aid*
Heat stroke	<ul style="list-style-type: none"> ▪ Confusion ▪ Fainting ▪ Seizures ▪ Excessive sweating or red, hot, dry skin ▪ Very high body temperature 	<ul style="list-style-type: none"> ▪ Call 911 or Plant Emergency Number or press the “Orange” emergency button While waiting for help: ▪ Place worker in shady, cool area ▪ Loosen clothing, remove outer clothing ▪ Fan air on worker; cold packs in armpits ▪ Wet worker with cool water; apply ice packs, cool compresses, or ice if available ▪ Provide fluids (preferably water) as soon as possible ▪ Stay with worker until help arrives
Heat exhaustion	<ul style="list-style-type: none"> ▪ Cool, moist skin ▪ Heavy sweating ▪ Headache ▪ Nausea or vomiting ▪ Dizziness ▪ Light headedness ▪ Weakness ▪ Thirst ▪ Irritability ▪ Fast heart beat 	<ul style="list-style-type: none"> ▪ Have worker sit or lie down in a cool, shady area ▪ Give worker plenty of water or other cool beverages to drink ▪ Cool worker with cold compresses/ice packs ▪ Take to clinic or emergency room for medical evaluation or treatment if signs or symptoms worsen or do not improve within 60 minutes. ▪ Do not return to work that day
Heat cramps	<ul style="list-style-type: none"> ▪ Muscle spasms ▪ Pain ▪ Usually in abdomen, arms, or legs 	<ul style="list-style-type: none"> ▪ Have worker rest in shady, cool area ▪ Worker should drink water or other cool beverages ▪ Wait a few hours before allowing worker to return to strenuous work ▪ Have worker seek medical attention if cramps don't go away

Heat rash	<ul style="list-style-type: none"> ▪ Clusters of red bumps on skin ▪ Often appears on neck, upper chest, folds of skin 	<ul style="list-style-type: none"> ▪ Try to work in a cooler, less humid environment when possible ▪ Keep the affected area dry
<p>* Remember, if you are not a medical professional, use this information as a guide only to help workers in need.</p>		

Attachment 3

Am I De-hydrated? *Check with this urine color chart*

This urine color chart is a simple tool your can use to assess if you are drinking enough fluids throughout day to stay hydrated.



If your urine matches these colors **you are hydrated.**

If your urine matches these colors **you are de-hydrated** and you should drink more!

If your urine matches these colors **you are seriously de-hydrated or could have blood in your urine.** You should contact a doctor!

More info: www.mayoclinic.com/health/urine-color/AN00868

Revision History

Rev	Rev Date	Rev By	Approved By	Description
1.0	1/3/2022	Shayne Torrans	Shayne Torrans	Initial Procedure
1.1	11/23/2022	Shayne Torrans	Shayne Torrans	Format Revision

Approvals:

Procedure Owner

Print Name

Date

Signature

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By Employee: _____ Date: _____
 Trainer: _____ Date: _____

Assessor: _____

Date: _____

Regional Manager: _____

Date: _____

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Sample only.
To be filled in

Activity	Aspect	Impact

Risk Assessment



Risk Assessment // insert name here

<p>Step No: Logical sequence</p>	<p>Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps.</p> <p>Each step should be logical and accomplish a major task.</p>	<p>Potential Safety & Environmental Hazards/Impacts at the site of the Job</p> <p>Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.</p>	<p>Risk Rating</p> <p>Refer to the risk matrix or HSEQT.PRO. Risk Mgt</p>	<p>Recommended Corrective Action or Procedure</p> <p><i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be rediced or controlled to ALARP before work commences.</i></p> <p>Document who is responsible for implementing the controls to manage each hazard identified.</p>	<p>Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt</p>
1.					
2.					
3.					
4.					
5.					

Audit



Process: insert// Procedure: Insert //		Date:	Audited by:	
		Location of Audit:	Area Mgr/Supervisor:	
Item	Question	Evidence Sited	Comments	Conformance Score 0,3,5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
AUDITOR'S SIGNATURE:		CONFORMANCE SCORE: / 25	0 – Non-Conformance	
SAFETY REP'S SIGNATURE:		CONFORMANCE %:	3 – Continuous Improvement Opportunity	
			5 – Total Conformance	