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## 208 Heat Stress Safety Alert

**TO:** All Personnel assigned to Deepwater Horizon Response

**FROM:** Unified Area Command

**POSITION:** SOFR

**SUBJECT:** HEAT STRESS SAFETY – Emphasis and Behavior Modification

**DATE:** 08 JUN 2010

**Time:** 1300 hrs

### 1.0 PURPOSE AND SCOPE

Heat stress has been one of the primary incident causes during the last two weeks...we need your help to reduce/mitigate this risk; and a part of that journey is collectively raising our awareness and modifying our behaviors to manage Heat Stress.

The purpose of this safe work practice is to ensure that response personnel understand the hazards and know the requirements for minimizing incidents related to or attributed to heat stress. Response personnel include all Federal employees, BP employees, Contractors, Visitors, and other third parties. These requirements and recommendations are for response operations and are not intended to replace site or project-specific incident and emergency response procedures and policies. The ultimate purpose is to establish a clear set of practices for avoiding and reducing heat stress as a safety risk associated with response operations.

### 2.0 RESPONSIBILITIES

All personnel involved in the response who are personally involved in, or supervise operations should receive training, and understand the signs, symptoms and effects of heat stress as it pertains to all operations as communicated via each applicable 208 and to ensure it is available in the field, as designed based upon this standing order. The site safety officer, responsible manager, captain of the vessel, etc., for any task should communicate this message daily, and issue a reminder prior to each task. Specific messages related to HEAT STRESS are attached to 208 Specific Safety Plans and can be found under the operational IC 208. Examples include:

- Cargo Loading/Unloading
- Staging Operations
- Boating and Boom Deployment
- Shoreline Operations and Beach Cleaning
- Boat Decon Ops
- Others as identified.

### 3.0 REQUIREMENTS

#### **HEAT STRESS....NOT JUST A CHECK BOX ON THE 208**

All personnel should understand the factors related to heat stress but just as important we need to monitor and promote behavior modification to augment the Heat Stress Message.

**Factors Leading to Heat Stress** - Factors contributing to heat stress can include high temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, insufficient hydration and inadequate tolerance for hot workplaces.

**Behavior Modification** - Personal Behavior can greatly influence susceptibility to heat stress. Hydration is a continuous process for the body and should be emphasized during morning safety briefing and reminders should be made periodically during the work shift. How can you help?

**Are you aware of the major factors which can lead to Heat Stress?**

High temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, insufficient hydration and inadequate tolerance for hot workplaces.....are you aware of any others?

**What you can do to modify your personal behaviors in relation to heat stress?**

Hydration is a continuous process for the body and should be done consistently and continuously throughout the day

**ALCOHOL CAN DEHYDRATE YOU....MANAGE YOUR INTAKE!**

**Food does not equal water: fruits and other liquids are not a substitute for water. Sodas and juices may speed dehydration and are not a substitute for water. Drink WATER!!!**

Be aware of the visual signs/symptoms of heat-related illnesses, I.e. flushed skin, excessive sweating.

**Do not ... “Gut it out” if you exhibit symptoms .....use shade, drink lots of water, at least 1 cup every 15 minutes, maximize on rest periods when required**

Use the Buddy System...Choose a partner to be your monitor on a daily basis.....**Use simple questions to gauge heat stress such as ... “What is Your Mother’s Name?”; “How Old are You?”**... these can be used to measure potential confusion in co-workers.

#### **4.0 Forms**

### **Heat Stress**

#### **Protect Yourself from Heat Stress**

When the body is unable to cool itself by sweating, several heat-induced illnesses, including heat stress, heat exhaustion, and the most severe, heat stroke, can occur and result in death.

**A FLAGGING SYSTEM FOR WARNINGS AND INDICATIONS OF HEAT STRESS WILL BE IMPLEMENTED BY COAST GUARD PERSONNEL FOR USE AND CONSIDERATION FOR WORK IN ALL AREAS. PLEASE REFERENCE THE FOLLOWING PAGES FOR RECOMMENDED WORKLOAD/REST CYCLES.**

**Factors Leading to Heat Stress**

Factors contributing to heat stress can include high temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, and inadequate tolerance for hot workplaces.

**Symptoms of Heat Exhaustion**

- Headaches, dizziness, lightheadedness, or fainting.
- Muscle cramps or pain
- Paleness, Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

**Symptoms of Heat Stroke**

- Flushed, dry, hot skin with no sweating.
- Mental confusion, dizziness or losing consciousness.
- Seizures or convulsions.

**Preventing Heat Stress**

- Know signs/symptoms of heat-related illnesses and monitor yourself and coworkers.
- Block or stay out of direct sunlight or other heat sources.
- Use cooling fans or air-conditioning and rest regularly.
- Drink lots of water, at least 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

**What to Do for Heat-Related Illness**

- **Call 911 (or local emergency number) at once.**
- Move the worker to a cool, shaded area.
- Loosen or remove heavy clothing.
- Provide cool drinking water.
- Fan and mist the person with water.

**ADHERE TO WORKLOAD/REST CYCLE REQUIREMENTS SEE ATTACHMENT PAGES**

**Heat Index Chart**

How to read the chart: Find the temperature on the left hand side, and then move to the right until you find the column for the approximate relative humidity. That number will be the temperature that it will "feel" like or Heat Index. Not to be confused with Wet Bulb Globe Temperature which is used to determine work/rest cycles.

Example: A temperature of 95 and relative humidity of 50% will "feel" like 107 degrees. Add up to 15 degrees if in the direct sun.

**WORKLOAD/REST CYCLE & WET BULB GLOBE TEMP (° F)**

Continuous work LIGHT <°86, MED <°80, HEAVY <°77
Work 50 minutes/rest 10 minutes LIGHT °87, MED °82, HEAVY °78
Work 30 minutes/rest 15 minutes LIGHT °89, MED °85, HEAVY °82
Work 30 minutes/rest 15 minutes LIGHT °90, MED °88, HEAVY °86°
<b>SUSPEND ALL ACTIVITIES</b> LIGHT >°90, MED >°90 HEAVY >°90

		R	E	A	L	A	T	I	V	E		H	U	M	I	D	I	T	Y			%
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
T	140	125																				
E	135	120	128																			
M	130	117	122	131																		
P	125	111	116	123	131	141																
E	120	107	111	116	123	130	139	148														
R	115	103	107	111	115	120	127	135	143	151												
A	110	99	102	105	108	112	117	123	130	137	143	150										
T	105	95	97	100	102	105	109	113	118	123	129	135	142	149								
U	100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144						
R	95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
E	90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
	85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
F	80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91
	75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
	70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	71	71	71	71	71	72

**WORKLOAD/REST CYCLE & WBGT (° F)**

**WBGT – Wet Bulb Globe Temperature**

Continuous work

LIGHT <°86, MED <°80, HEAVY <°77

Work 50 minutes/rest 10 minutes

LIGHT °87, MED °82, HEAVY °78

Work 30 minutes/rest 15 minutes

LIGHT °89, MED °85, HEAVY °82

Work 30 minutes/rest 15 minutes

LIGHT °90, MED °88, HEAVY °86°

**SUSPEND ALL ACTIVITIES**

LIGHT >°90, MED >°90 HEAVY >°90

**WATER and WORK RECOMMENDATIONS**

1 pint of water with meals, 1 pint every hour and 1 pint with every exertion. Extremely intense physical exertion may precipitate heat exhaustion/heat stroke. therefore, caution should be taken.

1 pint of water with meals, 1 pint every hour and 1 pint with every exertion. Discretion required in planning heavy exercise for unseasoned personnel. This is a marginal heat stress limit for all personnel.

1 pint of water with meals, 1 pint every hour and 1 pint with every exertion. Strenuous exercise and activity (e.g., close order drill) should be curtailed for new and unseasoned personnel during the first 3 weeks of heat exposure.

1 pint of water with meals, 1 pint every hour and 1 pint with every exertion. Strenuous exercise curtailed for all personnel with less than 12 weeks training in hot weather.

1 pint of water with meals, 1 pint every hour and 1 pint with every exertion. **Physical training and strenuous exercise suspended for all personnel (excludes operational commitment not for training purposes).**

*Personnel wearing PPE protective clothing should add 10 points to the measured WBGT. Limits and Times of Work should be adjusted accordingly.*

**PLEASE DISCUSS DAILY**

**POST IN CONSPICUOUS AREA**