

SAFETY AND HEALTH STANDARDS

Thermal Stress

Effective Date: 02/2008	Standard: 10.8	Document Number: KUCSH00009	Rev: 02
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10.8.1 **INTRODUCTION**

10.8.1.1 This Standard addresses potential thermal stress in the workplace and includes both heat stress and cold stress. It covers high temperature conditions generated by industrial processes and / or the mining environment, and temperatures exacerbated by hot or extreme cold weather, that pose a health and safety risk to employees and contractors.

10.8.2 **REQUIREMENTS**

10.8.2.1 Risk Assessments must be conducted to identify all tasks, jobs or areas where there is potential for thermal stress. Clear work procedures must be documented and made available to all employees and contractors involved with the potential thermal stress hazard.

10.8.2.2 Where there is risk of thermal stress, an appropriately qualified person (i.e. Industrial Hygiene), in consultation with the affected employees and / or contractors, must conduct periodic thermal monitoring at the appropriate sites.

10.8.2.3 Where the risk assessment indicates the need, a documented Thermal Stress Management Program must be in place such that:

- It complies with all relevant requirements as outlined in the KUCC Safety and Health Standards.
- Workplace thermal stress levels (temperature, air movement, humidity, etc.) are adequately identified and described.
- Activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to aggravate thermal stress effects are identified and described.
- Hot areas or activities where employees can experience excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress are identified and described.
- Cold areas or activities where employees can experience pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress are identified and described.

10.8.2.4 When employees and / or contractors are engaged in work activities that put them in potential risk of thermal stress, their medical examination, as per KUC Safety and Health Standard 13.6, must include information about the employee's physiological and biomedical

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aspects, and an interpretation of job fitness for the potential thermal conditions and related job activities.

- 10.8.2.5 Detailed heat stress assessments of identified tasks, jobs or areas must include:
- The use of a simple heat stress index as a screening tool.
 - The use of a rational heat stress indices to determine the 'best' control methods for alleviating potential heat stress, if necessary.
 - Physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.
- 10.8.2.6 Detailed cold stress assessment of identified tasks must be conducted according to current appropriate guidelines, incorporating a cold stress index, to determine the "best" control methods for alleviating potential cold stress.
- 10.8.2.7 Thermal exposure controls must include:
- An acclimatization period for new workers and those returning from extended leave.
 - Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures.
 - Protective observation (buddy system or supervision).
- 10.8.2.8 The following exposure controls must be considered:
- Where relevant, elimination or substitution of task or job.
 - Work / rest regimes based on the interpretation of measurements conducted, and job rotation.
 - Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures.
 - Selection of appropriate clothing or other PPE for extreme temperature conditions.
 - The use of engineering controls.
- 10.8.2.9 Where thermal stress is assessed to be a risk a suitable emergency response plan must be developed.

10.8.3 **RESPONSIBILITIES**

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- 10.8.3.1 **Employees and / or contractors** are responsible for following all work procedures involved with potential thermal stress hazards, and participating in thermal monitoring and medical evaluations at the appropriate sites.

- 10.8.3.2 **Supervisors or their designees** are responsible for ensuring all applicable exposure controls and work procedures are understood and practiced when appropriate to avoid employee thermal stress incidents.

- 10.8.3.3 **Superintendents** are responsible for assuring that risk assessments and the appropriate employee monitoring takes place as outlined. Based on the risk assessments and monitoring, they are to develop clear work procedures and exposure controls designed to avoid employee thermal stress incidents.

- 10.8.3.4 **Managers** are accountable for the consistent application of this standard in all areas and for the development of a Thermal Stress Management Program for their area(s). They are to establish requirements for risk assessments and ensure that emergency response plan address thermal stress victims are maintained in a current state.

- 10.8.3.5 **Industrial Hygiene** will assist line management in the development and implementation of all aspects of this standard. They will conduct and/or coordinate the required employee monitoring and recommend the appropriate measurement techniques.

REFERENCE

KUC Safety and Health Standard 5.4 Risk Management
 KUC Safety and Health Standard 13.6 Occupational Medical Surveillance

REVISION HISTORY:

MOC#	Description of Change	Prepared By	Date
7961	General review and revision of standard. Updated format and Document number added.	KUCC Safety and Health Standards Committee	02/2008