Benchmarking of Heat Stress Medical Criteria and Physiological Monitoring

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BACKGROUND

BENCHMARK HEAT STRESS HAZARD CONTROLS

“Benchmark heat stress hazard control approach across sites with respect to medical physiologic monitoring and medical pre-clearance approaches for heat stress work in regards to recent DOE acceptance of guidelines from the ACGIH 2015 TLV booklet that is tied to the 2005 10 CFR Part 851 Rule, i.e., “…a sustained heart rate of 180 minus the worker’s age””
BENCHMARK

- Developed a set of questions on medical and physiological monitoring in regards to heat stress

- Questions were distributed through the Occupational Medicine Task Group and the Industrial Hygiene & Safety Task Group

- Responses received from 16 organizations

- Variety of level of development and complexity of a program
QUESTION: MEDICAL PRE-CLEARANCE

Is a Medical Pre-Clearance Required to Work in a Heat Stress Environment

- % Yes: 31
- % No: 69
QUESTION: ACGIH RECOMMENDED CRITERIA

Is the ACGIH Recommend Heart Rate (180 - age) Used as a Physiological Monitoring Criteria

- % Yes: 69
- % No: 6
- % N/A: 15

25% Yes, 6% No, 69% N/A
QUESTION: WHAT CRITERIA IS USED

What Criteria is Used if Not ACGIH?

- % ACGIH: 69%
- % NONE: 6%
- % COMPANY DERIVED LEVEL: 25%
QUESTION: IS PHYSIOLOGICAL MONITORING CONDUCTED

Does Your Organization Conduct Physiological Monitoring for Heat Stress?

- % YES: 31
- % NO: 69

% YES  % NO
QUESTION: TYPE OF PHYSIOLOGICAL MONITORING

What Method of Physiological Monitoring is Used?

- % Discretion of Work Group: 7%
- % None: 33%
- % Weight Loss: 20%
- % Temperature: 47%
- % Heart Rate: 63%
Does Your Organization Maintain Records of the Physiological Monitoring?

- **Yes**: 5
- **No**: 2
SOME RESPONSES FOR MEDICAL PRE-CLEARANCE

• “For some cases. For any work demands in apparent temperatures greater than 103F or for Work demands of moderate to very heavy in apparent temperatures greater than 80F.”
• “Our climate at is pretty tempered. We don’t have a heat stress program… We don’t perform any medical surveillance or monitoring for heat stress.”
• “It is possible that IH, in consultation with medical, would require a medical clearance exam. However, this would be situation dependent.”
• “We do not require a medical evaluation based only on heat stress conditions…”
• “We decided not to because all our employees subject to potential heat stress are on mandatory exam protocols for other reasons (e.g.; OSHA HAZWOPR, Respirator, Vertical Ladder medical clearance, Firefighter, etc.)”
Question on what type of physiological monitoring is used.

• “At the discretion of the individual division/work group”

• “I’ve had mixed results with taking pulse oximeter readings in a radiological zone. By the time the person stops, takes off their outer pair of gloves, and you obtain the reading can be several minutes. By this time the heart rate often drops significantly.”
SUMMARY

• Medical pre-clearance is required by most, in some form or another, but there is no consistent method. Typically, a normal exam and determination by medical.

• Majority of organizations use the ACGIH recommended criteria for heart rate.

• Majority of organizations conduct some type of physiological monitoring a lot use multiple types (heart rate, weight, temperature).

• Varying thought as to whether or not the physiological monitoring is a record and should be recorded.