

Hydraulic Safety Authority of Canada Inc.

High Risk Maintenance Level E-Learning and Instructor Led

HSAC HIGH RISK MAINTENANCE LEVEL COURSE OUTLINE:

Maintenance personnel are engaged in procedures that expose them to higher risk of injury and death. This Maintenance level course consists of the 13 topics. Each topic takes an in-depth comprehensive look at; leading causes, understanding and identifying hydraulic hazards encountered beyond the engineered safeguarding. An emphasis is put on the implementation of structured procedures and energy mitigation. This program incorporates video recreations of incidents, video and documents of actual in place procedures. Each participant will gain substantial knowledge on the hazards encountered with hydraulic energy and the loads this energy manipulates. This level of training provides important information on how safety and reliability of hydraulic systems directly affect safety of personnel and environment.

This program brings awareness to individuals who are exposed to hydraulic systems, and may not know it. Many hydraulic incidents and fatalities are a result of people working with hydraulic systems without understanding related hazards.

HSAC HIGH RISK MAINTENANCE LEVEL COURSE TOPICS:

SECTION A – Health and Exposure

- What are Hydraulic Fluids?
- Exposure to Hydraulic Fluid
- Potential Hazards
- Personal Protective Equipment

SECTION B – Ethics and Standards

- Safety Standards and Qualifications
- Recognized Standards
- Your Role in Your Facility

SECTION C – Hydraulic Hoses

- Types of Hoses and Construction
- Hydraulic Hose Applications
- Hydraulic Hose Assembly Fabrications
- Specifications and Standards
- Potential Hazards
- Life Cycle

SECTION D – HEC Stored Energy

- How Accumulators Work and Their Applications
- Procedures for Testing and Discharge of Accumulators
- Describes the Forms of Hazardous Energy

SECTION E – Threads and Porting

- Commonly Used Thread Connections in Hydraulic Systems
- Pressure Ratings

SECTION F – Seals

- Types of Seals and Applications
- Maintenance and Planning
- Importance of Seals

SECTION G – Safety Devices

- Guarding
- Valves
- System Considerations
- Devices
- Safety Through Engineered Controls

SECTION H – HEC Bleed Down

- Pressurized Grease
- Effects of Air in Hydraulics
- Bleed Down Tools

SECTION I – Mechanics and Geometry

- Fluid Power Calculations
- Gravity
- Overhanging and Runaway Hazards

SECTION J – Welding and Modifications

- Effects of Modifications to Hydraulic Components
- Hazards of Welding Hydraulic Components
- Cutting and Burning Hazards

SECTION K – Hazard Assessment

- Purpose of Hazard Assessment
- General Responsibilities
- Before Work Begins
- Potential Hazards
- Inspections

SECTION L – HEC Beyond Lockout

- What is Lockout?
- Zero Energy State
- The Importance of Sequence

SECTION M – Environment

- Hydraulic Fluids and The Environment
- Spill Preparedness
- Acceptable Disposal Practices
- Biodegradable Hydraulic Fluids
- Absorbents

ETHICAL CONCLUSION

- Ethical Choices
- Hydraulic Incidents and Fatalities

HSAC HIGH RISK MAINTENANCE LEVEL COURSE DURATION: 420 minutes E-Learning / 2 Day Instructor Led

HSAC HIGH RISK MAINTENANCE LEVEL ASSESSMENT:

The High Risk Maintenance Level Test is conducted after each chapter. Testing is designed primarily as a knowledge summarization of the program chapter and must be completed by each participant. HSAC testing has no pass/fail stipulation to receive a certificate of completion.

HSAC HIGH RISK MAINTENANCE LEVEL CERTIFICATE OF COMPLETION:

Participants will receive their certificates, hard hat sticker and wallet cards by mail within 21 business days off HSAC receiving user completion notification. Mailed certificates will be sent to the address provided in the user application.

HSAC CERTIFICATE VALIDATION DATE:

Continuing education courses will be necessary to remain current with the latest safety bulletins, compliance changes in the industry and the latest technology and resources available. Evolution brings constant change in both hazards and hazard mitigation. Certificates and wallet cards are valid for 3 years and are indicated on each. Refresher courses will be available for user renewal.

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