

LEGISLATIVE INTERPRETATIONS

Topic: Underground Mine-Use of Diesel Fuel	Issued by: V.P., WorkSafe Services
Statute: Mining Regulation-96-105	Date Issued: August 15, 2006
Section: 89	Date Revised:

Question

We are an operator of an underground mine requiring the use of diesel fuel to operate the numerous equipment required to mine and process our products as well as transport our personnel. We were recently advised by our suppliers that diesel fuel meeting the requirements of Section 89 (flash point greater than 52 degrees Celsius) is in short supply due to changes in their production and may no longer be available in the future. Instead, we are advised that future supply of diesel will be available with a guaranteed flash point of at least 40 degrees Celsius.

With the shortage of high-flash point diesel, can we operate our equipment underground with the lower flash point fuel and still maintain a safe working environment for our employees?

Response

One of the benefits of using high-flash point diesel fuel is to minimize the risk of fire and explosions underground. However, some jurisdictions have provisions that restrict the use of diesel fuel that meet Standards with a minimum flash point of 40°C provided that the ambient temperature in an underground mine does not exceed 30°C. The rationale for this provision is to ensure that at no time should the temperature difference between the flash point of diesel fuel and the ambient temperature be less than 10°C.

While it is recognized that the ambient temperature in an underground mine can vary depending on the type of work being carried out (i.e. equipment used) and the level of ventilation in the work areas and while diesel fuel suppliers are able to set a minimum flash point for the fuel (in this case 40 degrees C) the flash point of the fuel supplied can (and most often exceeds the 40 degree minimum) the use of such fuel is allowed in an underground mine as a substitute to the 52 Degree C flash point requirement provided that:

- (1) The fuel used in a diesel engine shall conform to CAN/CGSB-3 16-99 "Mining Diesel Fuel", Special-LS or CAN/CGSB-3.517 - 2000 "Automotive Low Sulphur Diesel Fuel" Type AL-S.
- (2) Flash point of the diesel fuel is to be at least 10°C higher than the ambient temperature

where used or stored underground.

- (3) A program will be established to monitor and record
- The flashpoint of diesel
 - Ambient Temperatures for all areas where diesel fuel is transported, used or stored

- (4) All areas where diesel fuel is transported, used or stored shall:
- be designed using good engineering standards
 - be protected against all unsafe ignition sources (flames, static, hot surfaces etc.)
 - be designed, maintained and ventilated to prevent accumulation and ignition of diesel vapors.

Referenced legislation

89 An employer shall ensure that the fuel oil used in a diesel engine underground has a closed cup flashpoint of not less than 52° Celsius and sulphur content of not greater than 0.5% by mass and that fuel with a heavy asphalt base is not used.