



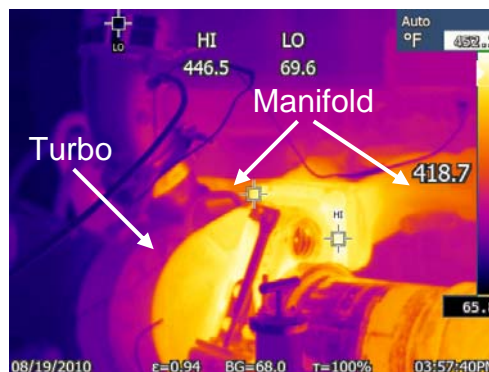
## HAZARD ALERT!!! Fueling Drill Rigs



On June 8, 2010, a fire occurred on a drill rig at a surface coal mine during fueling. The fuel truck operator was fatally injured in the fire.



Drill rig after fueling fire



Thermal image of manifold/turbo

Not shutting down the engine AND not allowing it to cool before fueling can have deadly consequences. Many machine manufacturers' fueling procedures instruct the operator to shut down the engine and allow it to cool. Note that this Alert concerns drill rigs. Other types of diesel equipment may or may not present the same fire risk depending on the proximity of the fuel tank to hot engine surfaces. Also, diesel equipment used in underground coal mines must comply with regulations in Part 75 which prohibit the fueling of machines with the engine running, require a dispensing hose with a self-closing valve and no latch-open device, and that require the fuel tank, filler, and vent be located so that leaks or spillage during fueling will not contact hot surfaces.

Tests on a representative diesel engine found, that at idle, areas of the exhaust manifold and turbocharger maintained a temperature of approximately 530 °F. Significantly higher temperatures can be reached when engines are operating under load. These temperatures are well above the typical 450 °F minimum autoignition temperature of diesel fuel. The above thermal picture shows the temperatures of the exhaust manifold and turbocharger on the representative engine after the engine had been shutdown for approximately 5 minutes. Only after the 5 minute cool-down period had the temperatures of these components dropped below 450 °F.

Best practices to prevent fires during fueling operations:

- Shutdown the engine at least 5 minutes before fueling.
- Inspect the fueling area for hazards and eliminate any hazards prior to fueling.
- Exercise care during fueling to avoid leaks and spills.
- Follow the engine manufacturer's fueling instructions.
- Use a fast fill fueling system (or relocate the fill port if a fast fill system is not practicable) to allow fueling from ground level. Consult the machine manufacturer before modifying the machine.
- Do not permit smoking or open flames within 25 feet of fueling operations.
- Identify an escape route in case of emergency.