

# POWER PROFILE

## EARLY DETECTION FINDS FAILING THERMOCOUPLE

### Cat® Dealer:

Finning Canada

### Location:

NW Territories of Canada

### Solution:

Cat® Connect Product Link™ Elite (PLE601 + PLR - Router) with data monitoring, visualization & analytics powered via Cat Remote Asset Monitoring (RAM)+



Early detection finds failing thermocouple.

### CUSTOMER BUSINESS ISSUE

A Cat® Connect Fleet Advisor received an electronic alert notification for an asset that logged several Level (1) event codes. By taking proactive action, the Advisor drastically reduced the probability of having a Level (2) or a Level (3) event code taking place.

### WHAT HAPPENED?

A Cat Connect Fleet Advisor receives an electronic alert notification for an asset that logged several E278-1, Level (1) event codes. The Cat Connect Fleet Advisor troubleshoots the high exhaust differential temperature event code and utilized Cat RAM+ to plot the RH & LH turbo inlet temperature readings which revealed erratic RH turbo inlet temperatures being reported from the asset. The Fleet Advisor determines the erratic readings are likely caused by a poor thermocouple wiring harness connection or a deteriorating wiring harness. The supporting data along with a recommendation to inspect the RH thermocouple at the next planned shutdown was sent to the Cat dealer technician that supports this customer through a Cat dealer CVA. The investigation revealed the thermocouple had begun to fail due to separation of the wiring at the heat shield.

### WHAT WAS THE UNDERLYING CAUSE?

The wiring had separated from the thermocouple heat shield causing the erratic readings.

### WHAT WAS THE VALUE TO THE CUSTOMER?

Taking proactive action to inspect and replace the failing thermocouple at the next planned shutdown due to the Level (1) event code drastically reduced the probability of an engine derate due to a Level (2) event code or a potential engine shut down unexpectedly due to a Level (3) event code.

The definition for the levels of severity for an event are defined below:

- **Level (1)** – requires no immediate action. The system may need attention soon. Check on the condition or service the system at the earliest possible time.
- **Level (2)** – requires a change in the operation of the engine or the performance of a maintenance procedure. Failure to correct the problem may result in damage to the engine components.
- **Level (3)** – requires an immediate safe shutdown of the engine to avoid damage to the engine or injury to personnel around the engine. The problem that caused the event must be corrected before engine operation can resume.

For more information, please visit [www.cat.com/catconnect](http://www.cat.com/catconnect)