

AT A GLANCE

CUSTOMER

N C Power Systems, Co.

LOCATION

Anchorage, Alaska

CHALLENGE

The prevention of overcooling conditions on N C Power System's fleet of rental generators that leads to poor performance, shut downs and engine damage.

SOLUTION

Horton Variable-Speed Fan Drive Upgrade Kit

RESULTS

Optimum operating temperature was maintained, resulting in reliable performance and no aftertreatment component failures.

PRIMARY CHOICE FACTORS

Positive previous experience working collaboratively with Horton to solve challenging technical problems

Horton Variable-Speed Fan Drive Solves Overcooling Problem On Generator Sets

Background

N C Machinery is a venerated, Anchorage-based company. Its Power Systems Division supplies and services rental generator sets, primarily to Washington



and Alaska. It maintains 18 support facilities in the two states. The capacity of the rental generators it offers ranges from 20 kW to 2,000 kW. N C Machinery has been in business for over 100 years and is one of the earliest trading and mercantile companies in Alaska. In 1926, it became an official dealer for Caterpillar® (CAT®).

Challenge

The climate in the northwest United States can be robust, particularly in winter — and especially in Alaska, given its proximity to arctic weather fronts. Harsh conditions can be hard on both vehicles and machines and generator sets are not impervious to the cold. Yet, they are “expected” to function each and every time. Customers often hold generator sets to the same reliability standard as their local power grid.

“Our customers expect their generators to work reliably, just like when they flip a light switch in their homes. Horton helped us solve the challenge of cold-weather operation so our equipment could meet the same high expectations.”

*— Erick Pomrenke
NC Power*

Several of N C's customers were

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Case Study – Power Generation/Rental



The challenge for N C Power Systems was to find a way to alleviate overcooling with a minimum of cost and labor.

Solution

N C Power contacted Neal Shawaluk, Lead Sales Engineer for Off-Highway at Horton, to acquaint him with the problem and to see if Horton had a solution. Following some

discussing generator set performance issues associated with “overcooling.” Overcooling can prevent engines from reaching their optimal operating temperatures. The result is improperly burned fuel and inefficient operation.

Overcooling can also lead to damage of sensitive Tier4-related after treatment components. Despite the units being insulated, the latter, as well as frozen crankcase breathers and intakes, can lead to shutdowns.

Of more concern, overcooling can lead to engine damage because oil does not flow as readily through the engine block.

discussion and research, Horton provided N C Power with a complete Variable-Speed Fan Drive Upgrade Kit, specifically tailored to one of the generators in N C Power’s fleet. If successful, Horton would expand the concept (and the kits) to accommodate the various-sized generator sets in N C Power’s fleet.

Results

N C Power tested the upgrade kit. The the generator unit was able to achieve and maintain optimal operating temperature. The result was increased reliability and performance, despite

inclement conditions. The solution had the added benefits of helping to prevent control panels from freezing and reducing the effect of snow infiltration. Given the cooling fan was no longer turning at the same speed as the engine, there was less load on the engine, increasing fuel efficiency. Moreover, the unit was quieter.

N C Power is now retrofitting the rest of its generator fleet with the Variable-Speed Fan Drive Upgrade Kits from



Horton and plans to equip future sets similarly.

