

OPERATIONAL POWER FOR RESEARCH STATION

POWER SOLUTIONS
CASE STUDY of the
**MARS DESERT
RESEARCH STATION**

UNITS

20 kW Custom
LP Gas Gensets

LOCATION

Hanksville, Utah



GENERAC SUPPORTS THE MISSION TO MARS

The manned mission to Mars will be one of the great accomplishments of the 21st Century, and one of the primary goals of the National Aeronautics & Space Administration (NASA). It will be the culmination of an unprecedented effort involving decades of planning, billions of dollars of expense, the efforts of many thousands of individuals, and the hardy perseverance of those few who will make the actual journey. The success of the mission will rely upon the support and contribution of countless individuals and businesses before this grand vision becomes a reality.

The Mars Society is one of NASA's supporters in this ambitious effort. Founded in 1998, the Mars Society brings together a broad coalition of scientists, academicians, engineers, and a host of Mars enthusiasts from every walk of life. Collectively, they are devoted to advancing the prospects of exploration and settlement of the Red Planet. To do this, the Society engages in broad public outreach to instill the vision of exploring Mars, supports more aggressive international funding, and promotes Mars research on a private basis.

The Mars Society's own efforts include a number of initiatives

around the world, including both arctic and desert habitat experiments. In North America, the Mars Desert Research Station (MDRS) near Hanksville, Utah is a continuing effort to simulate the rigors of life in a Martian desert environment. Using an 1100 square foot dome-shaped building as a base, a small team of pioneering scientists is gaining firsthand experience in exploring the inhospitable Martian-style landscape. During lengthy desert stays, they conduct experiments and endure the kinds of hardships that will be commonplace for the first explorers of Mars.

To operate in this harsh environment, the MDRS relies upon electricity provided by a 20 kilowatt generator set from Generac Power Systems. This customized unit is fueled by liquid propane gas and mounted on a small flatbed trailer, with quick disconnect features so it can be easily moved from place to place. Compared to the prior power available at the site, the Generac 20 kW is a definite step up. "Before this," says Mars Society president Robert Zubrin, "the MDRS had been forced to rely upon 7 kilowatt

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gasoline generators. They were short-lived, unreliable, insufficient in capacity, and required crew members to break simulation three times a day to refuel. The new Generac system is famous for its reliability and will be able to run for nearly a week between refuelings. Moreover, it will finally give us the amount of power we need to run all the systems of the MDRS as they should be run.”

The prime mover within this genset is its small but powerful four cylinder Generac engine, a 1.5 Liter Mitsubishi long block modified with Generac designed fuel delivery and cooling systems. This highly regarded engine has been a mainstay in the Generac line since 1998, and over 20,000 similarly-powered gensets are currently on standby duty around the world. Even though it is not rated or recommended for prime power usage, one of these genset engines has been running around the clock in Alaska since September of 1999, and has logged over 18,000 hours.

The particular requirements of this remote application demanded some flexibility in selecting and customizing the equipment. “The Mars Society people knew they wanted a generator, but weren’t sure what type would be best suited for their needs,” says Mike Carr, Generac Marketing

Communications Manager. “We put them in touch with Dan Gunn of Gunn’s Generator Services in Grand Junction, Colorado, the nearest Generac service dealer. Dan conferred with them, visited the site, and recommended the best unit for what they wanted to do. He suggested the trailer-mounted arrangement with quick disconnects, then put the whole package together for them, and installed it. It’s a great example of how adaptable our products are and how they can be customized for unusual applications.”

The Mars Society is more than happy with their new source of power. “We are extremely grateful to Generac Power Systems for this donation,” says Robert Zubrin. “One thing we’ve learned from our mission simulations is that the last thing you want a Mars mission crew to be is power-poor. A Mars station needs to have plenty of reliable power. The way to assure that on Mars is with a small space nuclear reactor. The best way to do that in a remote location on Earth is with a Generac genset.”

GENERAC®

Generac Power Systems, Inc.
S45 W29290 Hwy. 59
Waukesha, WI 53189
1-888-GENERAC (1-888-436-3722)

generac.com