



# Hybrid Power System

Amarillo, Texas  
Repeater Site

Remote Industrial  
Case Studies

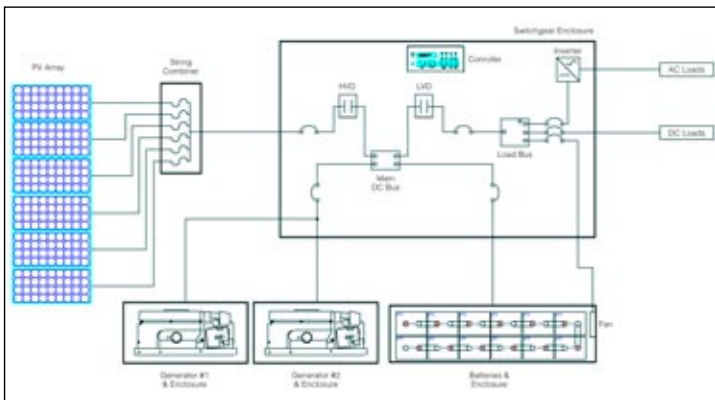
This is the site of a cellular repeater along a remote stretch of highway near Amarillo in the panhandle of Texas.



Alpha Energy HPS24-1050/1500-2GEN in Amarillo, Texas.

Although the grid may one day be installed at this site, it was not when the customer needed power here. Consequently, Alpha Energy was called. Once again, Alpha provided a solution — a hybrid power system or HPS with dual generators. The large energy requirement of this site — about 24kWh

per day — and a fixed budget meant that the system would be highly dependent on generator power for its reliability. So Alpha decided to use alternating dual generators to reduce maintenance visits to about one per month and significantly reduce fuel consumption compared to continuous operation of a large genset.



The HPS24-1050/1500-2GEN is extremely reliable due to its alternating generator topology. The system is sized and operated such that each generator will run every

other day for about 6 hours and accumulate about 90 run hours each month. The combined liquid propane consumption per month is about 160 gallons. The 1050W PV array contributes about 17% of the total load energy required. The 1500Ah battery bank provides 1.5 days of load autonomy. Operation of the system is completely automatic.

## HPS24-1050/1500 2GEN Specifications:

System Voltage:  
24VDC

Maximum Customer Load: 1200W  
(DC) continuous

PV Array:  
(6) Sharp NT-175U1 modules  
(1050W, 24VDC)

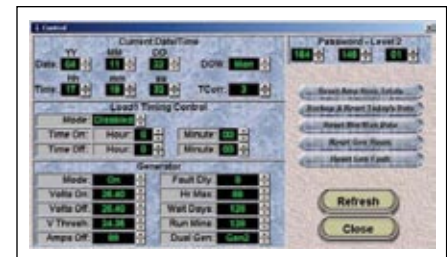
Generator:  
(2) Kohler COM-6 (6kW, 24VDC,  
variable speed  
1800 to 3600rpm, propane)

Battery Bank:  
(12) AIP OPzS-1500  
(Flooded, 1500Ah, 24VDC)

Weight:  
6000lbs

Temperature Range:  
-4 to 104°F

System Maintenance:  
Once Every Month  
(generator and batteries)



The MPR-9400 system controller is extremely versatile and user friendly. In this HPS, it alternates starts between the two generators. It also detects faults in the generators and will defer to an alternate generator. The user friendly status and programming screens can be conveniently viewed on any laptop computer.



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