



**Improving back room  
equipment protection**  
for 9-1-1 call centers in  
Yellowstone National Park.

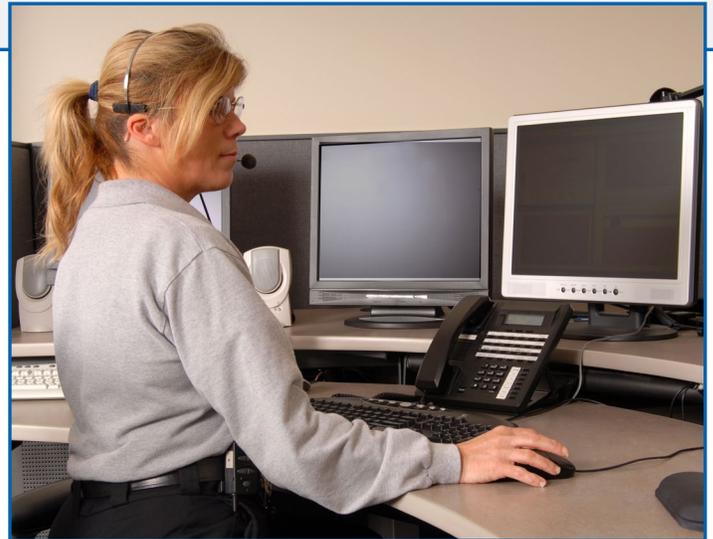
Established under the Yellowstone Act that was signed into law by President Ulysses S. Grant in 1872, Yellowstone National Park was the very first National Park. Today it is still one of the most prominent public spaces in the country, with more than 4 million visitors stopping by in 2016 alone. Although it is routinely one of the 10 most visited National Parks every year, not until recently did Yellowstone have a dedicated center for routing 9-1-1 emergency calls made within the park.

## The challenge of establishing a reliable 9-1-1 system in Yellowstone

The absence of this critical public safety infrastructure was due in part to the overwhelming number of lightning strikes which hit across the park's 2.2 million acres, especially during the summer thunderstorm season. Even a strike 5 or 10 miles away from a call center could eventually reach one of its buildings jeopardizing the uptime and reliability which a 9-1-1 call center must have to efficiently receive and respond to emergency calls within the park.

### Call Center Assessment

- A Powervar power protection and grounding expert conducted a site evaluation to assess what further measures (if any) could be taken to protect the call center from further damage and at the same time increase the system's uptime and reliability.
- Standard solid state five-pin protection modules were deployed on incoming trunks to help prevent a lightning transient from entering the gateway supporting the 9-1-1 equipment. If the gateway failed emergency calls could not be processed.
- The system grounds were checked to ensure that a path of least resistance was installed for the trunk protection to work. Although all ground readings were within acceptable limits, modifications to the grounding scheme were recommended and implemented after the evaluation.
- Although the many lightning-related outages were rarely prolonged, the costs of service calls were prohibitive, due to the park's remote location.



## Protecting mission critical 9-1-1 equipment from harm, now and in the future

The goal was to create a "total protection bubble" around the 9-1-1 back room equipment to prevent further system damage and down time. Line protection from Powervar which protects sensitive electronics was the pivotal component providing this level of protection. The five-pin protection that was initially installed was replaced with Powervar's next generation 5 pin protection modules. This product is specifically designed to protect sensitive electronics at the chip component operating level. Since the original assessment was completed and Powervar's premium protection was added, no further equipment failures or troubles have been reported.

Yellowstone has expressed high satisfaction with their 9-1-1 vendor (WestTel International) and with its Powervar products and services. The reliability of the Powervar solution within the parks 9-1-1 call centers will help ensure a safer environment at Yellowstone National Park for years to come.