

**Location:**

Delta Junction to Alaska-Canada
border

NSTI's Role:

- System Engineering and Design
- Permitting and Licensing Support
- Fabrication
- Deployment
- Operations and Maintenance
- User Training
- System upgrade for winter operations
- Consulting on expanding system to support route survey work from Deadhorse to Canadian border

Gas Pipeline Survey Communications Support

In mid-March of 2008, NSTI was tasked with the urgent development of a portable and temporary wide area radio system to provide logistics and life safety communications support along a 200 mile survey corridor. The radio communications system needed to be operational by the end of May. In the ensuing 10 weeks:

- NSTI conducted a topography map survey and determined that over 95% of the route could be covered with UHF repeaters located at just four mountain-top sites
- Designed a unique helicopter sling-transportable, self contained solar powered 10 watt UHF repeater package
- Researched available radio channels and initiated FCC licensing activities for all frequencies by the client
- Provided location information and all operational data necessary to complete the land use permitting process by the client
- Procured the equipment and sub-assemblies needed to build five systems (four operational plus one spare).
- Designed and procured the equipment to build a man or vehicle portable "suitcase extender" to provide fill-in coverage in a few coverage holes
- Installed all four mountain-top sites in the field on schedule and provided operational maintenance through the summer. A base station, tower, and antenna systems were provided at the Tok Office to provide a link into the system for the security staff and operations supervisors.

Towards the end of summer, NSTI was asked if it would be possible to modify the systems to support activities planned from November through March. NSTI modified the repeater sites to allow operation through the winter on large modular rechargeable battery packs that provide up to 16 weeks of operation between battery pack change-out. Antenna systems were also modified to be able to withstand the severe weather in the region. In addition to the network of mountaintop repeaters, NSTI provided telephone and network connectivity to the Tok Office with a 4.5 meter C-Band satellite communications link and its associated communications shelter.

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