

*Exceptional service in the national interest*



# Oliktok Point, Alaska

## New Mobile ARM Climate Research Facility

### Infrastructure Requirements

March 13-15, 2012



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

# Some of Requirements to Consider

- Code Requirements needed to meet building codes:
  - Flammability and fire resistance.
  - Types of occupancies.
  - Ceiling heights.
  - Building materials.
- Vans raised above terrain to reduce snow accumulation.
- Snow removal (Site Operator / Contacted).
- Highly insulated vans to conserve energy / power.
- Grid power or locally generated power.

# Locally Generated Power.

## Turbine Generator

- Ultra-low emission solution
- Quiet operation, no vibration
- Low maintenance – increased run time
- No oil, lubricants, or coolants
- On skids or diesel day tanks
- Runs on natural gas or diesel
- Variety of units available: 30KW, 65KW and 200KW
- Day Tank Mounted Typical for Diesel



## DIESEL GENERATOR

- EPA Tier 3 emissions
- Flexible packaging options for easy and cost
- Worldwide Product support
- CAT C4.4 Diesel Engine
- Field-proven in thousands of applications worldwide
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control
- Day Tank Mounted

**CATERPILLAR**<sup>®</sup>



200hrs run time between oil changes comes to ~44 oil changes per year

Typical Fuel Usage = 6 Gallons Per Hour for 65Kw

24 hours X 6gal =144gal

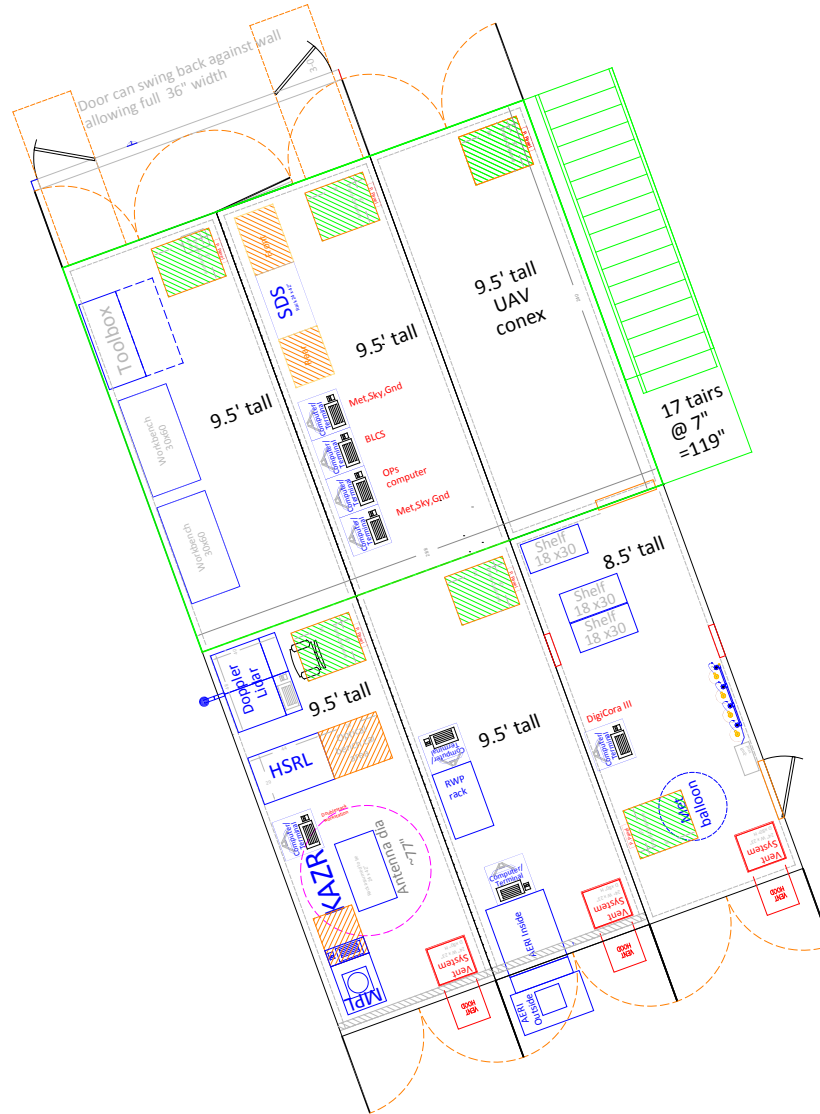
144Gal x 365 Days= ~53,000gal

Fuel Cost Per Year \$7.00gal X 53,000gal = **\$371,000**

# Proposed Oliktok Site Layout



# Proposed Oliktok Site Layout close-up



# DISCUSSION