Division of Antarctic Infrastructure and Logistics
Future Directions and Challenges

OPP Office Advisory Committee
November 8-9, 2007
Insuring McMurdo Fuel Supply

Phased construction of 4 additional 2 M gal fuel storage tanks
  – construction beginning in FY 08, completion in FY 11

Phased delivery of additional fuel
  – Fill the tanks with remaining capacity on the tanker.
  – Begin filling in FY 09, complete depending on available budget
Wind Energy on Ross Island

- **Purpose:**
  - Decrease Fossil Fuel Req’t for Ross Island via Renewable Wind energy

- **Intent**
  - AntNZ to capitalize Wind Energy production and provide electrical power to USAP-McMurdo Station as part of logistics resource sharing

- **Scope: Stage 1**
  - Establish a Proof-of-concept three turbine wind farm (1 MW) on Crater Hill, Ross Island

- **Benefits**
  - 10% Estimated reduction in fuel for power generation (122,300 gallons/yr)
  - NZ contribution to joint resource pool
  - Demonstrates Environmental commitment and stewardship
South Pole: Optimization of Operations

Workshop: April 2007 –Key Recommendations

1. Science: project out year req’ts; ID resources available; plan within constraints
2. IT & Comms: Increase services remotely; optimize services; re-evaluate system architecture and assess redundancy in systems
3. Operations: Extend summer operations; transfer equipment maintenance to McM, where possible; move job-specific training to McM or CHC
4. Logistics: Update on-site inventory needs; utilize JIT re-supply; insure that what goes to Pole must go; utilize traverse to accelerate retrograde
5. Environment, Safety, Health: reduce solid and haz waste before sending material to Pole; adopt consistent safety policies; enhance emergency response

Follow On Strategy

Establish a Strategic Management Plan for:

– Pro-active vs reactive management of station processes
– Controlling outcomes through risk management and contingency planning
– Detailed planning and utilization of constrained resources
South Pole:  
Mitigating Constraints for Science and Operations

**Power** – Fixed generating capacity
- Reduce demand - duty cycle equipment, improve energy efficiency factor, conservation, implement renewable energy strategies.
- Apply energy codes & standards to facilities, vehicles, science equipment and instrumentation. Establish energy budgets.

**Bandwidth** – Cost and infrastructure limitations
- Refresh earth station (SPTR2)
- Examine new satellite applications

**Population** – Fixed life support systems (water, fuel, facilities)
- Implement stand-alone concepts for surge capability
- Control and cycle projects to reduce concurrent demand levels
- Increase functions performed off station
Restore Deep Field LC-130 Operations

Motivation for convening the Workshop

- Completion of the new South Pole Station, and use of the South Pole Surface Traverse to assist in the re-supply, will provide the opportunity to re-allocate LC-130 capability to deep field science support
- Recognition of need to restore the expertise to operate LC-130’s safely and effectively in support of remote field sites

Results:

- Committee of Antarctic glaciologists with expertise in remote sensing of snow to advise 109th AW
- Timeline established to align grant awards with logistics planning
- More efficient allocation of resources
- Not every site is the same; combined science advice, remote sensing imagery, site history, and pilot expertise will provide information needed to better assess risk.
- Improved capabilities will increase access to Antarctica by LC-130s
- Ability to task LC-130s without long lead time. Possibly for immediate use in benign areas
- Joint funding with Antarctic Sciences to create a GIS database for Antarctic Field, landing, and science field reports
- Process began for 2007-08 season and is already starting for 2008-09 season
2007-2008 Heavy Traverse Activities

- October (early) – Deliver and assemble production traverse fleet
- November (early) – Depart McMurdo performing trail maintenance along established route to South Pole
- November (late) – Cache 12k lb and 2k gal of fuel at 84.3° South, and prepare Twin Otter landing site for POLENET project
- December (late) – Complete trail maintenance, arrive at South Pole and deliver modest load of fuel and/or cargo
- January (mid) – Pick-up and remove of POLENET cache remains
Antarctic Research and Supply Vessel (ARSV)

**ARSV Science Advisory Committee**: conducted a detailed review/revision of Technical Performance Specifications (Fall 2006)

**End of Current Contract**: January 16th, 2008

**Contract Extended**: 16 July, 2010

**Bidders Conference**: 6 Potential Bidders, many questions, revised timeline according to concerns of bidders if a new build was to be seriously considered (October 18, 2007).

**Current Timeline**:
- Draft RFP to NSF for review 11-12-07
- Release RFP to bidders 11-28-07
- Bidder's conference 2-12 to 2-13-08
- Final bids due 4-25-08
- RPSC recommendation to NSF 6-6-08
- Negotiate & award contract 8-29-08
Palmer Station—Replace Existing Pier

Why? 1960’s era - past its design life, and damaged from tidal forces, ice scouring, and erosion in the marine environment

Design new pier ~150’ long to accommodate larger ships that now service Palmer

Course of Action

• Have developed a design concept
• Currently verifying requirements
• Environmental Documentation

Planned Completion - 2009
Antarctic Support Contract

- Current Contract with Raytheon Polar Services expires on March 31, 2010

- Have identified task requirements

- Expected value - $1.3 – $1.5B

- Issues:
  - Contract type: fixed price; cost plus; some combination
  - Number of contracts: Omnibus contract; multiple contracts; Management contract

- Contract Award
  - 1 Oct 2009