

**Section J – Attachment 2**

**Performance Work Statement**

**for**

**United States Antarctic Support Contract (ASC),**

**(Solicitation DACS08P2215)**

**November 2011**

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## GLOSSARY OF ABBREVIATIONS AND ACRONYMS

<i>Acronym</i>	<i>Description</i>
AA	Airfield Availability
AACE	Association for the Advancement of Cost Engineering
AB	Authorized Budget
AC	Actual Cost
ACA	Antarctic Conservation Act Associate Contractor Agreements
ACWP	Actual Cost of Work Performed
AFRTS	Armed Forces Radio and Television
AFTN	Aeronautical Flight Telecommunications Network
AGE	Aircraft Ground support Equipment
AIL	Antarctic Infrastructure and Logistics
AMC	Air Mobility Command
AMRT	Average Medical Response Time
ANSI	American National Standards Institute
APCO	Association of Public-Safety Communications Officials
API	American Petroleum Institute
APO	Air Post Office
APP	Annual Program Plan
APPS	Act to Prevent Pollution from Ships
APU	Auxiliary Power Unit
AR	Approvals Required
ARFF	Aircraft Rescue and Fire Fighting
ART	Acceptable Response Time
ARTR	Acceptable Response Time Rate
AS	Actual Schedule
ASC	Antarctic Support Contract
ASR	Average Satisfaction Rate
AVOIC	Airfield Vehicle Operations Information Checklist
BASH	Bird Aircraft Strike Hazard
BC	Budgeted Cost
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BITF	Black Island Telecommunications Facility
BM	Business Management
C&A	Certification and Accreditation
CA	Cooperative
CAC	Commercial Air Cost
CACR	Commercial Air Cost Reduction
CAGE	Commercial and Government Entity
CBT	Computer Based Training
CC	Cost Control

<b>Acronym</b>	<b>Description</b>
CD	Carrier Detect
CEE	Comprehensive Environmental Evaluation
CERT	Computer Emergency Readiness Team
CFR	Code of Federal Regulations
CIC	Correct Inventory Count
CIO	Chief Information Officer
CISA	Certified Information Systems Auditor
CISM	Certified Information Security Manager
CISO	Chief Information Security Officer
CISSP	Certified Information Systems Security Professional
CLIN	Contract Line Item Number
CMM	Capability Maturity Model <sub>SM</sub>
CMMI	Capability Maturity Model <sub>SM</sub> Integration
CMMS	Computerized Maintenance Management System
CO	Contracting Officer
CobIT	Control Objectives for Information and Related Technology
CONUS	Continental United States
COOP	Continuity of Operations
COTR	Contracting Officer's Technical Representative
COTS	Commercial off the Shelf
CP	Contingency Plan
CPAF	Cost Plus Award Fee
CPI	Cost Performance Index
CPIC	Capital Planning and Investment Control
CPM	Critical Path Method
CR	Cost Reimbursable
CRE	Cost Report Errors
CSA	Critical System Availability
CSA	CSA System Availability
CSCM	Commercial Surface Cargo Movement
CSCW	Commercial Surface Cargo Weight
CSEC	Crary Science and Engineering Center
CSS	Customer Satisfaction Survey
CST	Commercial Shipment Tonnage
CTS	Cargo Tracking System
CWBS	Contract Work Breakdown Structure
DACO	Divisional Administrative Contracting Officer
DACS	Division of Acquisition and Cooperative Support
DAMES	Defense Automated Message Exchange Systems
DAS	Division of Administrative Services
DAWC	Days Away from Work Case
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DDS	Delinquent Data Submittals

<b>Acronym</b>	<b>Description</b>
DISA	Defense Information Services Agency
DMR	Days for Medical Response
DoD	Department of Defense
DOL	Department of Labor
DOT	Department of Transportation
DR	Disaster Recovery
DRP	Disaster Recovery Plans
DSS	Data Submittals
DVD	Digital Versatile Disk
EAC	Estimate at Complete
ECW	Extreme Cold Weather
EDC	Emergency Drills Conducted
EDP	Emergency Drills Planned
EDPR	Emergency Drill Performance Rate
ELF	Extremely Low Frequency
EM	Electromagnetic
Email	Electronic Mail
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
EPIRB	Emergency Personal Indicator Rescue Beacon
ESH	Environment, Safety and Health
EVMS	Earned Value Management System
F.O.B	Free on Board
FA	Fleet Availability
FAR	Federal Acquisition Regulations
FAST	Federal Automotive Statistical Tool
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FCR	FISMA Compliance Rate
FDCC	Federal Desktop Core Configuration
FEA	Federal Enterprise Architectures
FFP	Firm Fixed Price
FGC	Food Growth Chamber
FISMA	Federal Information Security Management Act
FM	Frequency Modulation
FOD	Foreign Object Debris
FRPP	Federal Real Property Profile
FTR	Federal Travel Regulations
G&A	General and Administrative
GAO	Government Accountability Office
GFA	Government Furnished Applications
GFE	Government Furnished Equipment

<b>Acronym</b>	<b>Description</b>
GFE/GFP/GFA	Government Furnished Equipment/Property/Applications
GFF	Government Furnished Facilities
GFP	Government Furnished Property
GFS	Government Furnished Software
GIAC	Global Information Assurance Certification
GIS	Geographic Information Support
GOTS	Government off the Shelf
GPS	Global Positioning System
GSA	General Services Administration
GSLC	GIAC Security Leadership Certificate
GSS	General Support Systems
HACCP	Hazard Analysis and Critical Control Point
HF	High Frequency
HIPPA	Health Insurance Portability and Accountability Act
HRM	Human Resource Management
HUBZone	Historically Underutilized Business Zone
IA	Information Assurance
IAC	International Antarctic Center
IAPM	Information Assurance Program Manager
IATA	International Air Transport Association
IAW	In Accordance With
IBC	International Building Code
ICAO	Int'l Civil Aviation Organization
IEE	Independent Environmental Evaluation
IEE	Initial Environmental Evaluation
IESS	INTELSAT Earth Station Standards
III	Innovation II Innovation
ILSP	Integrated Logistics Support Plan
IMDG	International Maritime Dangerous Goods
IMDGC	International Maritime Dangerous Goods Code
IMS	Integrated Master Schedule
IOPS	Infrastructure, Operations and Professional Services
IP	Internet Protocol
IRA	Inventory Record Accuracy
IRNM	Inventory Records Not Matched
IROT	Items Received on Time
IRR	Inventory Records Reviewed
ISA	Interconnection Security Agreement
IT	Information Technology
IT SSP	Information Technology Systems Security Plan
IT&C	Information Technology and Communications
ITAR	International Traffic in Arms Regulation

<b>Acronym</b>	<b>Description</b>
IT-I	IT Systems Inventoried
ITIL	Information Technology Infrastructure Library
ITV	In-Transit Visibility
KER	Key Employee Replaced
LAN	Local Area Network
LC	Logic Channel
LDB	Long Duration Balloon
LIC	Line Items Counted
LM	Lockheed Martin
LMCSS	LM Customer Satisfaction Survey
LMR	Land Mobile Radio
MA	Major Applications
MAPL	Minimum Acceptable Performance Levels
MCC	Movement Control Center
MCRD	Master Cross Reference Data
MD	Missed Deliverables
MDD	Missed Delivery Dates
MEDCAT	Medical Catalog
MILSTAMP	Military Standard Transportation and Movement Procedures
MILSTRAP	Military Standard Transaction Reporting and Accounting Procedures
MILSTRIP	Military Standard Requisitioning and Issuing Procedures
MM	Marine Mobile
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MRDL	Maximum Residual Disinfectant Level
MSA	Medical System Availability
MSD	Missed S&TPS Delivery
NAA	Number of Areas Audited
NACI	National Agency Check with Inquiries
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration
NC	Number of Non Compliance Issues
NCP	National Contingency Plan
NEL	Number of Employees Leaving Program
NF	Number of Flights
NFD	Number of Flight Delays
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
NLRB	National Labor Relations Board
NMAJD	Number of Major Audit Discrepancies
NMB	Number of Major Breaches
NMIND	Number of Minor Audit Discrepancies
NMR	Number of Medical Reviews



<b>Acronym</b>	<b>Description</b>
NOTAM	Notice To Airmen
NPOESS	National Polar Operational Environmental Satellite System
NPQ	Not Physically Qualified
NR	No Replaced
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation's
NSN	National Stock Numbers
NSR	Number of Survey Responses
NSSR	Number of Satisfactory Survey Responses
NTE	Not to Exceed
NTSC	National Television System Committee
NTT	Number of Trouble Tickets Received
NZ	New Zealand
NZDF	New Zealand Defense Forces
O&M	Operations and Maintenance
OCI	Organizational Conflict of Interest
OCONUS	Outside Contiguous United States
OMB	Office of Management and Budget
OPA	Oil Pollution Act
OPM	Office of Personnel Management
OPP	Office of Polar Programs
ORCA	On-Line Representations and Certifications Application
ORW	Operational Requirements Worksheets
OSHA	Occupational Safety and Health Administration
OTA	On Time Arrival
OTAR	On Time Approval Rate On Time Arrival Rate
OTD	On Time Departure
OTDR	On Time Departure Rate
OTRR	On Time Receipt Rate
PA	Power Availability
PAH	Power Available Hours
PAR	Port Availability Rate
PBX	Private Branch Exchange
PM	Preventive Maintenance
POH	Planned Outage
POH	Power-on Hours
POI	Purchase Orders Issued
POR	Purchase Orders Received
PPA	Pollution Prevention Act
PQ	Physically Qualified
PRS	Performance Requirements Summary
PS	Planned Schedule
PT	Professional Technical

<b>Acronym</b>	<b>Description</b>
PTE	Professional Technical Employee
PTL	Performance Target Levels
PWS	Performance Work Statement
QA	Quality Assurance
QA/QC	Quality Assurance Quality Control
QC	Quality Control
QPP	Quality Program Plan
R/V	Research Vessel
RA	Resource Actual
RC	Recordable Cases
RCR	Resource Commitment Rate
RCRA	Resource Conservation and Recovery Act
RDC	Record Data Count
RF	Radio Frequency
RFP	Request for Proposal
RFR	Radio Frequency Radiation
RI	Risks Identified
ROER	Record of Environmental Review
ROS	Required on Station
RP	Radio Ports
RSP	Research Support Plans
S&TPS	Science and Technical Project Services
SAAM	Special Assignment Airlift
SB	Small Business
SB	Science Budget
SBA	Small Business Administration
SBG	Small Business Goals
SC	Support Cost
SCALOP	Standing Committee on Antarctic Logistics and Operations
SCAP	Security Content Automation Protocol
SCM	Supply Chain Management
SCP	Successfully Completed Projects
SDB	Small Disadvantaged Business
SDVOB	Small Disadvantaged Veteran Owned Business
SECMM	Systems Engineering Capability Maturity Model
SEI	Software Engineering Institute
SH	Service Hours
SIP	Support Information Packet
SLA	Service Level Agreement
SOO	Statement of Objectives
SOP	Standard Operating Procedures
SP	Special Publication
SPA	Support Planning Accuracy
SPAI	Year-Over-Year Improvement in SPA

<b>Acronym</b>	<b>Description</b>
SPCC	Spill Prevention Control and Countermeasure
SPE	Science Promotion Events
SPI	Schedule Performance Index
SPR	Successful Project Rate
SPSR	Science Project Success Rate
SPTF	South Pole Telecommunications Facility
SR	Support
SRCR	Safety Regulation Compliance Rate
SSOG	Satellite System Operations Guide
SSP	System Security Plans
S-SR	Science to Support Ratio
S-SRI	Science to Support Ratio Improvement
SWOT	Strength, Weakness, Opportunity, Threats
T&L	Transportation and Logistics
TASC	Total Annual Support Costs
TAV	Total Asset Visibility
TBD	To Be Determined
TC	Total Contract
TCPI	To Complete Performance Index
TCT	Total Cargo Tonnage
TDRSS	Tracking & Data Relay Satellite System
TDS	Total Data Submittals
TH	Total Hours
THW	Total Hours Worked
TIR	Total Items Required
TM&A	Technical Management and Administration
TOC	Total Ownership Cost
TP	Total Pharmaceuticals in Inventory
TP	Technical Performance
TPS	Total Personnel Scheduled
TR	Total Responses
TRD	Total Required Deliverables
TRDD	Total Required Delivery Dates
TRIR	Total Recordable Incident Rate
TRSD	Total Required S&TPS Delivery Dates
TS	Trade Service
TSB	Telecommunications Standardization Board
TSE	Professional/Technical Employees
TTC	Trouble Ticket Close Time
TTO	Trouble Ticket Open Time
TTRT	Time to Resolve Trouble Ticket
TV	Tuvalu
TVA	Total Vehicles Available
TVI	Total Vehicles in Inventory

<b>Acronym</b>	<b>Description</b>
TVI	Total Vehicles
U.S	Unless Specifically
UAV	Unmanned Aerial Vehicles
UDS	Unacceptable Data Submittals
UNOLS	University National Oceanographic Laboratory System
UPS	Uninterrupted Power Supply
US	United States
USAF	United States Air Force
USAP	United States Antarctic Program
USCG	United States Coast Guard
UV	Ultraviolet
VA	Vessel Arrivals
VHF	Very High Frequency
VPN	Virtual Private Networks
VSLR	Valid Shelf Life Rate
WAN	Wide Area Network
WAN	Wide Area Networking
WBS	Work Breakdown Structure
WIP	Work in Process
WMO	World Meteorological Organization
WOB	Woman Owned Business

## **INTRO-1.0 GENERAL INFORMATION**

This Performance Work Statement (PWS) defines tasks required of the Lockheed Martin Antarctic Support Contract Team, hereafter known as the Contractor, in support of the National Science Foundation's (NSF) Antarctic Support Contract (ASC).

This PWS describes services to be delivered, service performance requirements and standards in terms of performance objectives and measurable outputs. Service performance requirements were decomposed from Request for Proposal (RFP) requirements inclusive of the NSF's Statement of Objectives (SOO), RFP Section C and L-14 WBS's 1.1 – 1.5.

This PWS is organized into the following sections: Section 1, General Information; Section 2, Contractor Requirements and Service Descriptions; Section 3, Government Furnished Equipment; Section 4, Contractor Furnished Equipment, Section 5, Applicable Procedures/Publications, and Section 6, Performance Requirements Summary (PRS).

## **INTRO-2.0 BACKGROUND**

### **INTRO-2.1 NSF BACKGROUND (SOO C.1)**

The National Science Foundation (NSF) is an independent executive branch Federal agency established by the National Science Foundation Act of 1950, as amended. Its mission is to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes.

NSF is authorized to initiate and support:

- Basic scientific research and research fundamental to the engineering process
- Programs to strengthen scientific and engineering research potential
- Science and engineering education programs at all levels and in all fields of science and engineering
- An information base on science and engineering appropriate for development of national and international policy
- Fostering the interchange of scientific and engineering information nationally and internationally
- Maintaining facilities in the Antarctic and promoting the U.S. presence through research conducted there
- Addressing issues of equal opportunity in science and engineering.

NSF has a long tradition of operating the USAP. Through its management and continued development of research infrastructure, it creates opportunities for research that drives the frontier of science forward. The infrastructure supporting this program has grown from its inception. However, the increasing sophistication and complexity of the research projects, coupled with tight federal budgets, has placed a substantial burden on the research infrastructure.

### **INTRO-2.2 NSF VISION**

NSF's vision is to advance discovery, innovation and education beyond the frontiers of current knowledge and empower future generations in science and engineering. NSF's goals – discovery, learning, research infrastructure and stewardship – provide an integrated strategy to advance frontiers of knowledge, cultivate a world-class broadly

inclusive science and engineering workforce, build the nation's research capability through investments in advanced instrumentation and facilities, and support excellence in science and engineering research and education.

### **INTRO-2.3 U.S. ANTARCTIC PROGRAM (USAP) BACKGROUND AND OBJECTIVE (SOO C.2)**

The United States Antarctic Program (USAP) is the activity through which the U.S. Government expresses the national interest in Antarctica. Managed and funded by the National Science Foundation, Office of Polar Programs (NSF/OPP), the USAP fulfills the direction of the President to maintain an "active and influential presence in Antarctica designed to support the range of U.S. Antarctic interests." The USAP includes scientific research conducted by universities and research institutions, as well as by other Federal agencies, and interacts with other international Antarctic programs in support of science. The USAP operates within the framework of the Antarctic Treaty System and U.S. implementing laws.

The principal objective of the USAP is support of scientific research. The broad goals of the scientific research are to:

- Expand fundamental knowledge of the region
- Foster research on global and regional problems of current scientific importance
- Use the region as a platform from which to support research that can only be done or is best done in Antarctica.

In accordance with national policy NSF is required to operate on behalf of the entire U.S. Government, year-round research stations at South Pole and two coastal locations in Antarctica. Currently, these stations are:

- McMurdo Station (77° 50.88' S; 166° 40.10' E), located on Ross Island in the southwestern corner of the Ross Sea
- Amundsen-Scott South Pole Station (90° S), located 841 statute miles inland from McMurdo, at the geographic South Pole
- Palmer Station (64° 46.50' S; 64° 03.07' W), located on Anvers Island in the Antarctic Peninsula region.

These stations are important assets in accomplishing the USAP objective, and should be configured to best achieve it. Safety and environmental stewardship are also critical factors in implementing the program, as well as compliance with Presidential Memorandum Regarding Antarctica #6646, which tasks the NSF "to manage the program in a manner that maximizes the cost effectiveness and return on investment."

### **INTRO-3.0 CONTRACT OBJECTIVE (SOO C.3)**

The objective for the Antarctic Support Contract is to secure the services of a superior performing contractor that can provide NSF with decision support, design, planning, implementation, and operations/maintenance of research infrastructure to achieve the USAP objective stated above.

#### **INTRO-4.0 NSF/CONTRACTOR RELATIONSHIP (SOO C.4)**

This PWS intends to create a cooperative relationship between the NSF and the contractor. This relationship reflects the attributes of an open, collaborative, customer oriented, and professional association. The NSF intends to structure the contract in a manner that ensures contractor goals and objectives are in alignment with those of the NSF, thus making contractor performance integral to accomplishment of the USAP objective.

#### **INTRO-5.0 PLACE OF PERFORMANCE (SOO C.5)**

Work will be performed: within the United States; at forward staging facilities in Christchurch, New Zealand, and Punta Arenas, Chile; at other international ports that serve as “gateways” to Antarctica; on the Southern Ocean; and throughout Antarctica.

#### **INTRO-6.0 DESCRIPTION OF CONTRACTOR SERVICES/TASKS (SOO C.6)**

This section of the Performance Work Statement (PWS) describes the services and tasks (i.e., requirements) that the contractor is obligated to perform under the terms of the contract. These requirements were derived from the SOO and the RFP documentation.

Contractor requirements are aligned with the Government's SOO and are presented in the following sections:

- Section 1.1 – Technical Management and Administration (TM&A) (SOO C.6.1; C.6.1.1; C.6.1.2)
- Section 1.2 – Science and Technical Project Services (S&TPS) (SOO C.6.2; SOO C.6.2.1)
- Section 1.3 – Information Technology and Communications (IT&C) (SOO C.6.3; SOO C.6.3.1; SOO C.6.3.2)
- Section 1.4 – Infrastructure, Operations and Professional Services (IOPS) (SOO C.6.4; SOO C.6.4.1; SOO C.6.4.2)
- Section 1.5 – Transportation and Logistics (T&L) (SOO C.6.5; SOO C.6.5.1; SOO C.6.5.2)

The requirements in these sections are derived from the contract objectives defined in the SOO. Each requirement is followed by one or more references to the SOO objective from which it was derived. These requirements support NSF in reaching the objectives for the US Antarctic Program (USAP).

#### **INTRO-6.1 OVERARCHING REQUIREMENTS**

The Contractor shall furnish all personnel, supervision, equipment, tools, material and other items including non-personal services necessary to support the USAP scientific research projects and operational support of research in accordance with this PWS. (SOO C.6)

The actual services to be provided shall be determined yearly in accordance with the Annual Program Plan (APP). (SOO C.6)

## **INTRO-6.2 SERVICE SUMMARY REQUIREMENTS**

This PWS defined definitive contractor tasks to respond to the Statement of Objectives performance objectives. To these we have also addressed the need to clearly associate these tasks to the Government's stated areas of performance evaluation Factors; Technical, Business Management, and Cost Control. The Performance Requirements Summary (PRS) is the consolidation of requirements for the Performance Work Statement (PWS) line items, showing their alignment with the Factors and Subfactors of the Award Fee Plan. The PRS, Section 6 to this PWS, includes:

- PWS No.
- Metrics
- Performance Targets
- Data Requirements
- Formula

## **INTRO-6.3 PERFORMANCE OBJECTIVES (TARGET LEVELS AND THRESHOLDS)**

Performance Target Levels (PTL), shown in the PRS, are levels that score within the Award Fee Plan Scoring band of "Excellent" (Range of 90% to 95%). Performance thresholds are the Minimum Acceptable Performance Levels (MAPL) at the lower end of the "Average" (Range 70% to 79%). The objective is to always attain performance levels of "Outstanding" (Range 96% to 100%) with ratings below "Excellent" being immediate action initiators to determine and correct causes for lower ratings.

The performance objectives are designed to:

- A. Align contractor performance with objectives, with the PTLs being drivers to "Excellent" or better performance ratings)
- B. Focus on meeting Key Performance Objectives
- C. Reflect performance goals
- D. Promote continual improvement

## **INTRO-6.4 SURVEILLANCE METHODS**

Surveillance includes both objective and subjective methods. Objective evaluation is based on measurement of factual data; subjective evaluation is based on experienced judgment against a standard of reasonable performance.

The Award Fee and Surveillance Plans define the standards for evaluation, surveillance methods appropriate to the evaluations, and reporting.



## **1.1 TECHNICAL MANAGEMENT AND ADMINISTRATION (TM&A) REQUIREMENTS (SOO C.6.1; C.6.1.1; C.6.1.2)**

### **1.1.1. PROGRAM AND PROJECT MANAGEMENT**

The following service task requirements are derived from SOO paragraphs C.6.1.1a through constraining requirement paragraph C.6.1.2.aa. Additional requirements have been added demonstrating what must be done to meet or exceed NSF expectations in the performance of the ASC.

**1.1.1-1.** The Contractor shall ensure uninterrupted operations during the contract transition. (SOO C.6.1.1a)

**1.1.1-2.** The Contractor shall provide performance excellence management and business process engineering support to enable more effective and efficient service support and optimize service value. (SOO C.6.1.1b)

**1.1.1-3.** The Contractor shall provide innovation recommendations and transform services to become more effective and efficient. (SOO C.6.1.1c)

#### **1.1.1.1. Program Governance**

##### **1.1.1.1.01. Info SEC Management – Oversight**

**1.1.1.1.01-1.** The Contractor shall develop and implement a USAP Information Security Plan that will be utilized by NSF as the Government's guidance and management plan for all USAP organizations and program participants to ensure full information assurance and privacy in management, policy, procedures, operations, and maintenance of the USAP information and Information Technology and Communication (IT&C) systems. (SOO C.6.1.1m)

**1.1.1.1.01-2.** IA Program. The Contractor shall provide an Information Assurance (IA), security, privacy, and risk management program that communicates, implements, monitors, reports on, and improves security and privacy for all forms of USAP information. (SOO C.6.1.1m)

**1.1.1.1.01-3.** The Contractor shall protect information to assure confidentiality, integrity, availability, authorization, authentication, and non-repudiation. (SOO C.6.1.1m)

**1.1.1.1.01-4.** The Contractor shall monitor, respond to, investigate, and report on potential and actual security and privacy violations of USAP information to NSF in accordance with US Computer Emergency Readiness Team (US-CERT) and NSF guidance. (SOO C.6.1.1m)

**1.1.1.1.01-5.** The Contractor shall perform IT security service functions to include, but not limited to, IT information assurance governance, Certification and Accreditation (C&A), security infrastructure protection, incident reporting, and security awareness training. (SOO C.6.1.1m)

**1.1.1.1.01-6.** The Contractor shall further manage risks by utilizing standard security services, including USAP network account management, risk assessments, penetration testing, investigations, and contingency trials. (SOO C.6.1.1m)

**1.1.1.1.01-7.** The Contractor shall assign a Chief Information Security Officer (CISO) or equivalent Information Assurance Program Manager (IAPM) to coordinate all Information IA activities. (SOO C.6.1.2t)

**1.1.1.1.01-8.** The Contractor's IA personnel shall include the following qualifications: Certified Information Systems Security Professional (CISSP), Certified Information Systems Auditor (CISA), Certified Information Security Manager (CISM), Global Information Assurance Certification (GIAC), or GIAC Security Leadership Certificate (GSLC). (SOO C.6.1.2t)

**1.1.1.1.01-9.** The Contractors' CISO shall:

- Direct IT&C security endeavors and ensure that commitments made to customers and staffs are well-planned and delivered
- Develop and maintain a compliant security architecture and security policies
- Oversee USAP compliance with the full scope of Government information security law and policy
- Effectively communicate all IT security issues and stress the strategic importance and benefits of security to both internal and external NSF customers
- Consider and reflect USAP business and mission priorities in the Information Assurance plan to the widest extent possible.

(SOO C.6.1.2t)

**1.1.1.1.01-10.** Information Security Compliance. The Contractor shall comply with all information security and privacy laws and all Government standards, directives, mandates, recommendations, and policies, as amended and extended, including:

- A. Federal Information Security Management Act (FISMA)
- B. Privacy Act of 1974
- C. Office of Management and Budget (OMB) directives (e.g. Circular A-130)
- D. Department of Homeland Security directives (e.g. US-CERT and HSPD-12)
- E. National Institute of Standards and Technology (NIST) SP-800 series standards (e.g. SP 800-18, SP 800-37, SP 800-53a, SP 800-60)
- F. NSF Security Policies (e.g., 5000.XX series directives)

(SOO C.6.1.1m; C.6.1.2u)

#### **1.1.1.2. Project Management**

The Contractor shall direct and manage the total work effort associated with the services required herein to meet the performance objectives and performance standards within an integrated systems approach. The contractor shall apply management techniques to manage Antarctic stations and research vessels including business operations, site management, human resources, mission assurance, communications, information assurance, and medical. (SOO C.6.1.1e)

#### **1.1.1.2.01. Project Manager**

**1.1.1.2.01-1.** The Contractor responsibilities shall include: Improve scientific mission support performance; Maintain safety; Reduce program costs; Support Risk Management; and Minimize Footprint while maintaining uninterrupted support for all TM&A functions from contract award through contract completion. (SOO C.6.1.1a; C.6.1.1b)

**1.1.1.2.01-2.** The Contractor shall provide personnel who are familiar with academic research environment to meet all contract performance objectives. (SOO C.6.1.1e; C.6.1.1f; C.6.2.1f)

**1.1.1.2.01-3.** The Contractor shall establish a program headquarters location and operate a central program office in the contiguous United States. (SOO C.6.1.1i; C.6.1.2a)

**1.1.1.2.01-4.** The Contractor shall ensure all common functional area tasks are completed with commonality and integration, and are coordinated and communicated across all functional areas utilizing standardized reporting methods. Performance standards and measures of effectiveness and efficiency shall be utilized. (SOO C.6.1.1b)

**1.1.1.2.01-5.** The Contractor shall review and update and deliver each functional area's Standard Operating Procedures (SOPs) for currency, accuracy, and consistency using standardized formats. (SOO C.6.1.1e)

Deliverable F006 – Management Manuals, Standard Operating Procedures, and Preventive Maintenance Manuals

**1.1.1.2.01-6.** The Contractor shall implement work control procedures to monitor accomplishment of all work requirements as well as to permit tracking and reporting of work in progress. (SOO C.6.1.1e; C.6.1.1f)

**1.1.1.2.01-7.** The Contractor shall plan and schedule work to assure material, labor, and equipment are available to complete work requirements within the specified time limits and in conformance with the quality standards established herein. (SOO C.6.1.1e; C.6.1.1f)

**1.1.1.2.01-8.** The Contractor shall provide services that accommodate programmatic shifts and changes within the traditional NSF research proposal cycle (approximately three years), and for changes that occur within an annual budget cycle and field season. (SOO C.6.1.1f)

**1.1.1.2.01-9.** The Contractor shall implement security requirements in accordance with the requirements defined in Section H.29 of the Contract. (SOO C.6.1.1e)

**1.1.1.2.01-10.** The Contractor shall develop and implement a Program Performance Management Plan, a Financial Management plan, a Project Management Plan, and a Property Management Plan. These plans shall demonstrate the ability to satisfy the contract objectives and Work Breakdown Structure description. The plans shall cite or reference industry and Federal best practices. (SOO C.6.1.1i)

**1.1.1.2.01-11.** The Contractor shall plan, design, execute, and manage projects using tools consistent with industry best practices. (SOO C.6.1.1i; C.6.1.2p; C.6.4.1v)

**1.1.1.2.01-12.** The Contractor shall implement processes to report any detected instances of waste, fraud, or abuse to the NSF. (SOO C.6.1.1k)

**1.1.1.2.01-13.** The Contractor shall provide and deliver ethics training to all employees and contractors. (SOO C.6.1.1k)

**1.1.1.2.01-14.** The Contractor shall establish and implement with other USAP Contractors, Federal agencies, and business and operations partners to define operational relationships and interfaces to meet USAP objectives. (SOO C.6.1.1o)

**1.1.1.2.01-15.** The Contractor shall establish a business operations that enables close collaboration with the NSF to facilitate awareness of NSF's priorities, issues, and opportunities. The Contractor shall demonstrate flexibility in changing program focus in response to changes driven by new or fluctuating priorities. (SOO C.6.1.1p)

**1.1.1.2.01-16.** The Contractor shall work collaboratively with the NSF to implement enhancements that address NSF's priorities, issues, and opportunities, including those that increase research productivity and that result in reduced overall operational support costs for the Antarctic Support Contract. (SOO C.6.1.1b; C.6.1.1p)

**1.1.1.2.01-17.** The Contractor shall coordinate with other international Antarctic programs and foreign governments when authorized by the NSF. (SOO C.6.1.2e)

**Program Management Plans, Reporting and Reviews**

**1.1.1.2.01-18.** The Contractor shall develop and deliver the Annual Program Plan (APP). The requirement for the first instance of the APP is contained in Section 2.6 Transition-In Tasks, since this document is developed during the Transition Phase. For Periods 2-14, the APP shall be delivered in "Draft" form by 07/31 each year, and in "Final" form by 09/15 of each year. (SOO C.6.1.1d; C.6.1.1e)

Deliverable F003 – Annual Program Plan (APP) – For APP Periods 2-14

**1.1.1.2.01-19.** The Contractor shall conduct Program Management Reviews with the Government on a monthly basis. (SOO C.6.1.1e)

**1.1.1.2.01-20.** (b) (4)

[REDACTED] (SOO C.6.1.1e)

**1.1.1.2.01-21.** The Contractor shall provide an annual report that documents the year over year savings based upon the implementation of approved program enhancements. (SOO C.6.1.1b; C.6.1.1p)

**1.1.1.2.01-22.** The Contractor shall prepare and deliver a Monthly Operations Report by the 10th of each month. (SOO C.6.1.1e)

Deliverable F013 – Monthly Operations Report



**1.1.1.2.01-23.** The Contractor shall prepare and deliver a Quarterly Technical Report. Quarterly is defined as the 10th of January, April, July, and October. (SOO C.6.1.1e)

**Deliverable F015 – Quarterly Technical Report**

**1.1.1.2.01-24.** The Contractor shall prepare and submit a Weekly Station Report every Friday starting 04/30/2012. (SOO C.6.1.1e)

**Deliverable F018 – Weekly Station Report**

**1.1.1.2.01-25.** The Contractor shall provide a list of all personnel positions subject to security screening 30 days after contract award. (SOO C.6.1.1e)

**Deliverable F026 – List of All Personnel Positions Subject to Security Screening**

**1.1.1.2.02 Performance Assurance**

**1.1.1.2.02-1.** The Contractor shall develop, implement, and maintain a QA/QC Program that is compliant to ISO 9001-2001, ensures that service delivery meets or exceeds performance requirements in this PWS and supports agency compliance with GPRA and other performance assess requirements. The program provides insight into the following performance processes: control of documentation; control of records; internal audits including procedures and oversight; identification of corrective measures for and prevention of nonconforming services. All performance assurance elements shall be (SOO C.6.1.1e)

**1.1.1.2.02-2.** (b) (4)

(SOO C.6.1.1b; C.6.1.1c; C.6.1.1e)

**1.1.1.2.02-3.** (b) (4)

**1.1.1.2.02-4.** The Contractor shall provide oversight and insight to operations, procedures, and processes to ensure compliance with all aspects of the ASC program requirements. (SOO C.6.1.1e)

**1.1.1.2.02-5.** The Contractor shall collect and facilitate assessment of quality records and metrics to evaluate program performance to ensure that service delivery meets or exceeds performance requirements in this PWS. (SOO C.6.1.1e)

**1.1.1.2.02-6.** (b) (4)

(SOO C.6.1.1e)

**1.1.1.2.02-7.** (b) (4)

(SOO C.6.1.1e; C6.1.1u)

1.1.1.2.02-8. (b) (4)

OO C.6.1.1e; C.6.1.1u)

1.1.1.2.02-9. (b) (4)

(SOO C.6.1.1e; C.6.1.1u)

**1.1.1.2.02-10.** The Contractor shall maintain and update the Surveillance Plan and Award Fee Plan. (SOO C.6.1.1e)

**1.1.1.2.02-11.** The Contractor shall review and analyze metrics and other performance data, produce quality reports, and analyze the data to categorize types and cause of nonconformance, evaluate for trends, and coordinate corrective action and preventive actions as necessary. (SOO C.6.1.1e)

**1.1.1.2.02-12.** The Contractor shall maintain a process library of ASC business policies, processes, and procedures that govern the way the contractor does business. (SOO C.6.1.1i)

### **1.1.1.3. Project Management/Controls**

#### **1.1.1.3.01. Program Management Office - HQ**

**1.1.1.3.01-1.** The Contractor shall analyze schedule impacts, resource conflicts, and cost/schedule variances. The Contractor shall provide business services for cost estimating, cost management and cost engineering to include project planning, subcontracting, procurement and report activities.

**1.1.1.3.01-2.** The Contractor shall establish systems to prepare and deliver technical, cost, and schedule status reports to the Government to track contractor labor and direct and indirect costs to a level of detail that allows visibility into the major system, function, product and service level. (SOO C.6.1.1j)

**1.1.1.3.01-3.** The Contractor shall maintain a database of engineering project planning data. The data shall indicate the various stages of the systems engineering life cycle, to include proposal, feasibility, pre-definition, definition, capital planning, implementation, and test and acceptance. The Contractor shall provide the engineering project planning data to NSF as required. (SOO C.6.4.1n)

#### **Deliverable F011 – Project Planning Records**

**1.1.1.3.01-4.** The Contractor shall comply with the International Building Code (IBC) and family of codes for design application, unless specifically waived by NSF. (SOO C.6.4.2a)

**1.1.1.3.01-5.** The Contractor shall comply with the Association for the Advancement of Cost Engineering (AACE) International cost estimation classifications (18R-97) for all Cost estimates. (SOO C.6.1.2z)



**1.1.1.3.01-6.** The Contractor shall provide comprehensive, integrated cost estimating services based on industry best practices for total cost management and cost engineering. Estimates shall align with Government decision making cycles. (SOO C.6.1.1h; C.6.1.2p)

**1.1.1.3.02. Planning & Controls - HQ**

**1.1.1.3.02-1.** The Contractor shall develop cost and resource loaded schedules for all ASC activities in Antarctica in accordance with the Annual Program Plan (APP). (SOO C.6.1.1i, C.6.1.1j)

**1.1.1.3.02-2.** The Contractor shall provide strategic planning services, including planning concepts and mission analysis. (SOO C.6.1.1d)

**1.1.1.3.02-3.** (b) (4)

OO C.6.1.1g)

**1.1.1.3.02-4.** The Contractor shall develop, maintain, and publish a monthly Integrated Master Schedule (IMS) that reflects the Antarctic requirements of the Annual Program Plan (APP) to include integrated cost and resource loaded schedules. (SOO C.6.1.1bb)

**1.1.1.3.02-5.** The Contractor shall provide planning and scheduling support to Major Construction and Special projects. (SOO C.6.4.1p; C.6.4.1r)

**1.1.1.3.02-6.** The Contractor's Project Management and Controls software shall be equivalent to and capable of seamless linkage with Primavera®, Expedition®, and Timberline®. (SOO C.6.1.2p)

**1.1.1.3.02-7.** The Contractor shall employ the Critical Path Method (CPM) and perform critical path analysis on a monthly basis using the IMS. (SOO C.6.1.2q)

**1.1.1.3.02-8.** The Contractor shall utilize a resource loaded Integrated Master Schedule (IMS) and conduct critical path risk assessments and "what if" analysis to allocate resources to plans and optimize project completion productivity (SOO C.6.4.1v)

**1.1.1.4. Public Relations**

**1.1.1.4.01. Communications**

**1.1.1.4.01-1.** The Contractor shall coordinate with NSF stakeholders to develop an annual USAP communications plan, including print, framing of posters, Internet, and multimedia production projects to promote clear and accurate understanding of the USAP mission, activities, and its history. Coordination with other international Antarctic programs and foreign governments is conducted only by the NSF, except when specifically authorized. (SOO C.6.1.1cc)

**1.1.1.4.01-2.** The Contractor shall operate and maintain the www.usap.gov web portal and its current content. (SOO C.6.1.1cc)

**1.1.1.4.01-3.** The Contractor shall develop and sustain educational and public outreach activities, including an archive of current and historical video for distribution to the general public, conduct of teleconferences and video-conferences, and production and release of training videos. (SOO C.6.1.1cc)

**1.1.1.4.01-4.** The Contractor shall deliver the following handbooks in accordance with the requirements of Deliverable F009: the USAP Participant Guide, Field Manual, Annual Science Support Summary, and the USAP brochures. (SOO C.6.1.1cc)

#### Deliverable F009 – Publications

**1.1.1.4.01-5.** The Contractor shall provide internal media services, including publication of an on-line USAP newspaper (“The Antarctic Sun”), informational videos, brochures, and guidebooks and press releases as required by the Internal Media Plan (Deliverable F010). (SOO C.6.1.1cc)

#### Deliverable F010 – Internal Media Plan

**1.1.1.4.01-6.** The Contractor shall provide internal and external media services, including, brochures, USAP Station Guides Participant Guides, USAP publications, guidebooks and press releases as required (SOO C.6.1.1cc)

**1.1.1.4.01-7.** The Contractor shall comply with the NSF concept of operations for the www.usap.gov web portal (as amended and extended), applicable NSF web management and standards manual requirements, and U.S. Government standards for Government websites. (SOO C.6.1.2r)

**1.1.1.4.01-8.** The Contractor shall coordinate with Office of Legislative & Public Affairs and clear all press releases and media activity for the USAP through the NSF. (SOO C.6.1.2s)

**1.1.1.4.01-9.** The Contractor shall implement a repository of USAP past, present, and future knowledge and activities including a USAP Digital Photo Library, to promote consistency and to serve as a guide for planning. (SOO C.6.1.1dd)

### **1.1.2. HEALTH & SAFETY**

#### **1.1.2.1. Management**

##### **1.1.2.1.01. EH&S Management**

**1.1.2.1.01-1.** The Contractor shall develop, establish, and manage an ESH program that complies with Federal occupational safety and health standards and ensures USAP participants are trained and prepared for assignments and react appropriately when emergency situations arise. (SOO C.6.1.1q)

**1.1.2.1.01-2.** The Contractor shall manage and coordinate all activities, Environmental Remediation, Personal Protective Equipment, Containment Remediation, Water quality sampling, and Environmental Education for participants.

**1.1.2.1.01-3.** The Contractor shall develop and implement a comprehensive safety and health program to protect and promote employee safety and health that is consistent



with the policies in the USAP Safety and Health Policy Manual. (SOO C.6.1.1n; C.6.1.1u)

**1.1.2.1.01-4.** The Contractor shall comply with the local occupational safety and health standards of other countries when they are more stringent than U.S. standards. (SOO C.6.1.2h)

**1.1.2.1.01-5.** The Contractor shall provide all required support services to sustain the Program within the context of a comprehensive safety and health program. (SOO C.6.1.2h)

**1.1.2.1.01-6.** The Contractor shall ensure compliance with Antarctic Treaty & Master Permit and Department of Defense (DoD), USAF Air Mobility Command (AMC) Aircraft Rescue and Fire Fighting (ARFF) regulations. (SOO C.6.1.2k)

**1.1.2.1.01-7.** The Contractor shall provide annual ESH compliance training to all employees and subcontractors, including site specific safety and health topics. (SOO C.6.1.1n; C.6.1.1u)

**1.1.2.1.01-8.** The Contractor shall coordinate and conduct crash safety drills at least once each season at all McMurdo airfields and helicopter landing sites. (SOO C.6.1.2k)

**1.1.2.1.01-9.** The Contractor shall comply with 49 USC 5101-5127, 49 CFR, and all other applicable standards and regulations for handling, shipment, and disposal of radioactive materials. (SOO C.6.1.2i)

**1.1.2.1.01-10.** The Contractor shall train participants in marking areas where radiation hazards exist, requirements for handling or transport, personal exposures, releases, loss control measures, and dosimetry. (SOO C.6.1.1t; C.6.1.2i)

### **Emergency Response**

**1.1.2.1.01-11.** The Contractor shall develop emergency response plans maintaining a capability to properly mitigate and respond to emergencies affecting USAP participants and facilities, and train all personnel accordingly. (SOO C.6.1.1s)

**1.1.2.1.01-12.** The Contractor shall use applicable safety and emergency response-related consensus standards in circumstances where their use would be appropriate in the U.S., unless specifically waived by NSF. (SOO C.6.1.2j)

**1.1.2.1.01-13.** The Contractor shall utilize alternate risk management measures with NSF approval where compliance is not feasible. (SOO C.6.1.2j)

**1.1.2.1.01-14.** The Contractor activities conducted within the territorial United States shall be consistent with pertinent Federal, State, and Local regulations, while similar activities in other countries (New Zealand, Chile, etc.) shall be consistent with host country and/or USAP policies, whichever are more stringent. (SOO C.6.1.2j)

### **1.1.2.1.02 Health Management**

**1.1.2.1.02-1.** The Contractor shall provide all required services of a comprehensive safety and health and medical program for all USAP participants. (SOO C.6.1.1n)

**1.1.2.1.02-2.** USAP Medical Services. The Contractor manage and operate health care facilities for non-emergent care to eligible personnel at McMurdo, South Pole and Palmer Station and staff facilities with appropriately qualified and licensed medical professionals. The contractor shall have oversight and management of medical care rendered by emergency responders (Emergency Medical Technicians, etc.) employed by the contractor and assigned to remote camps, field parties or ships. (SOO C.6.1.1w)

**1.1.2.1.02-3.** The Contractor shall manage health care facilities that operate at a level comparable to urgent care centers in the United States. (SOO C.6.1.1w)

**1.1.2.1.02-4.** The Contractor shall maintain appropriate medical, first aid and dental supply inventories at all site clinics, ensure the correct operation and calibration of all medical equipment, and provide recommendations for equipment upgrade/replacement as technology improves. (SOO C.6.1.1w)

**1.1.2.1.02-5.** The Contractor shall provide a yearly report on the status and provision of medical services and health care in the USAP. (SOO C.6.1.1w)

Deliverable F017 – Annual Report of the Status of Health Care in Antarctica

**1.1.2.1.02-6.** The Contractor shall review the pharmaceutical inventory to determine requirements for replacement drugs. (SOO C.6.1.1w)

**1.1.2.1.02-7.** The Contractor shall comply with all laws related to bringing pharmaceuticals through New Zealand. (SOO C.6.1.1w)

**1.1.2.1.02-8.** The Contractor shall develop and maintain procedures for medical evacuations from field locations, including South Pole Station to McMurdo and from McMurdo to New Zealand, and from Palmer Station and Research Vessels to Punta Arenas, Chile. (SOO C.6.1.1z)

### **Medical Records**

**1.1.2.1.02-9.** The Contractor shall maintain accurate and complete medical records of individuals, including screening records and any treatments administered in Antarctica. These records remain the property of NSF, and shall be maintained separate from any records management system the Contractor may develop for its own organizational needs (SOO C.6.1.1y)

**1.1.2.1.02-10.** The Contractor shall use, maintain, and protect medical records in accordance with applicable provisions of the Privacy Act (5 USC 552a) and the NSF System of Records notification and in accordance with the provisions of the Health Insurance Portability and Accountability Act (HIPPA). (SOO C.6.1.1y; C.6.1.2n)

**1.1.2.1.02-11.** The Contractor shall define and implement a process for disposition of hard copy medical records and implement the process after receiving approval from Government. (SOO C.6.1.1y; C.6.1.2n)

### **1.1.2.1.03 Health & Safety Reporting**

**1.1.2.1.03-1.** The Contractor shall comply with Federal occupational safety and health standards and reporting. These include requirements for safety incident investigations, emergency response, life safety inspections and reporting. The Contractor shall provide management of safety and health records, collection and reporting of safety and health incident metrics including complaint surveys. (SOO C.6.1.2h)

**1.1.2.1.03-2.** The Contractor shall oversee and assess all aspects of safety risk management in Antarctica and refer enforcement issues to the NSF. (SOO C.6.1.1u)

**1.1.2.1.03-3.** The Contractor shall support the safety and health of all USAP participants to include providing field safety experts to scientific field parties for short periods, when approved in the Research Support Plan (RSP), for Antarctic field deployments. (SOO C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-4.** The Contractor shall interface with and complement the safety programs of other participating organizations and institutions. (SOO C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-5.** The Contractor operations in Antarctica shall be conducted according to the policies detailed in the USAP Safety and Health Policy Manual. (SOO C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-6.** The Contractor shall provide public health/sanitation oversight for food storage and preparation activities, barber shop and other community service activities, and periodic monitoring of potable water supplies. (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-7.** The Contractor shall develop and/or modify safety training programs to meet the needs defined in the Annual Program Plan (APP). (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-8.** The Contractor shall provide safety training on local conditions, including aviation safety, environmental protection and emergency response, to include first aid and fire safety. (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x)

**1.1.2.1.03-9.** The Contractor shall train staff on safety incident reporting requirements. (SOO C.6.1.1u)

**1.1.2.1.03-10.** The Contractor shall stock and provide personal protective equipment, and shall provide training in proper usage of that equipment. (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x)

### **1.1.2.2 Health & Medical**

#### **1.1.2.2.01 Medical Processing**

**1.1.2.2.01-1.** The Contractor shall administer medical, dental, and psychological (winter only) screening programs for all employees, contractors, and USAP participants that

reasonably assure fitness to deploy to Antarctica in accordance with “USAP Medical Screening Guidelines”. (SOO C.6.1.2m)

**1.1.2.2.01-2.** The Contractor shall implement a system that can provide determination of Physically Qualified or Not Physically Qualified (PQ/NPQ status) no more than seven weeks after receiving the results of a participant’s medical/dental examinations. (SOO C.6.1.2m)

**1.1.2.2.01-3.** The Contractor shall provide a psychological assessment of each individual according to NSF guidelines for candidates spending an austral winter in Antarctica. (SOO C.6.1.2m)

**1.1.2.2.01-4.** The Contractor shall provide medical information, blood samples, ensure medical records are available to all stations and ships, and Medical Lab Services.

#### **1.1.2.2.02 McMurdo Medical**

**1.1.2.2.02-1.** The Contractor shall manage health care facilities that operate at a level comparable to urgent care centers in the United States. (SOO C.6.1.1w)

**1.1.2.2.02-2.** The Contractor shall staff and operate McMurdo Station to provide a full range of care equivalent to an emergency/ambulatory care facility in the United States (e.g., Level III trauma center), including appropriate medical and dental care for situations pertinent to conditions in Antarctica (e.g., hyperbaric medicine, cold injuries). The contractor will utilize McMurdo as back up to S. Pole, field camps, vessels and Scott Base. (SOO C.6.1.1w)

**1.1.2.2.02-3.** The Contractor shall maintain appropriate medical and dental supply inventories at all site clinics, ensure the correct operation and calibration of all medical equipment, and provide recommendations for equipment upgrade/replacement as technology improves. (SOO C.6.1.1w)

**1.1.2.2.02-4.** The Contractor’s clinical staff shall interact with and, as approved by NSF, support other medical professionals (e.g., Air National Guard Flight Surgeons, medical researchers participating in the annual science program, etc.) as necessary. (SOO C.6.1.1w)

**1.1.2.2.02-5.** The Contractor shall provide essential medical care to all USAP participants in Antarctica including, if required, humanitarian care for non-USAP personnel. (SOO C.6.1.1w)

**1.1.2.2.02-6.** In addition to direct medical and public health services, The Contractor shall offer counseling/assistance services and wellness programs to help manage “quality of life” problems that may affect USAP participant performance or productivity in Antarctica. (SOO C.6.1.1w)

#### **1.1.2.2.03 South Pole Medical**

**1.1.2.2.03-1.** The Contractor shall staff and operate a clinic at the South Pole Station to provide care to smaller populations, comparable to the care provided at McMurdo Station. (SOO C.6.1.1w)

**1.1.2.2.03-2.** The Contractor shall manage health care facilities that operate at a level comparable to urgent care centers in the United States.

**1.1.2.2.03-3.** The Contractor shall maintain appropriate medical and dental supply inventories at all site clinics, ensure the correct operation and calibration of all medical equipment, and provide recommendations for equipment upgrade/replacement as technology improves. (SOO C.6.1.1w)

**1.1.2.2.03-4.** The Contractor's clinical staff shall interact with and, as approved by NSF, support other medical professionals (e.g., Air National Guard Flight Surgeons, medical researchers participating in the annual science program, etc.) as necessary. (SOO C.6.1.1w)

**1.1.2.2.03-5.** The Contractor shall provide essential medical care to all USAP participants in Antarctica including, if required, humanitarian care for non-USAP personnel. (SOO C.6.1.1w)

**1.1.2.2.03-6.** In addition to direct medical and public health services, the Contractor shall offer counseling/assistance services and wellness programs to help manage "quality of life" problems that may affect USAP participant performance or productivity in Antarctica. (SOO C.6.1.1w)

#### **1.1.2.2.04 Palmer Medical**

**1.1.2.2.04-1.** The Contractor shall manage health care facilities that operate at a level comparable to urgent care centers in the United States. (SOO C.6.1.1w)

**1.1.2.2.04-2.** The Contractor shall staff and operate a clinic at the Palmer Station to provide care to smaller populations including vessels within the area, search and rescue teams, volunteer trauma team comparable to the care provided at McMurdo Station. (SOO C.6.1.1w)

**1.1.2.2.04-3.** The Contractor shall maintain appropriate medical and dental supply inventories at all site clinics, ensure the correct operation and calibration of all medical equipment, and provide recommendations for equipment upgrade/replacement as technology improves. (SOO C.6.1.1w)

**1.1.2.2.04-4.** The Contractor's clinical staff shall interact with and, as approved by NSF, support other medical professionals (e.g., Air National Guard Flight Surgeons, medical researchers participating in the annual science program, etc.) as necessary. (SOO C.6.1.1w)

**1.1.2.2.04-5.** The Contractor shall provide essential medical care to all USAP participants in Antarctica including, if required, humanitarian care for non-USAP personnel. (SOO C.6.1.1w)

**1.1.2.2.04-6.** In addition to direct medical and public health services, the Contractor shall offer counseling/assistance services and wellness programs to help manage "quality of life" problems that may affect USAP participant performance or productivity in Antarctica. (SOO C.6.1.1w)

#### **1.1.2.2.05 USAP Telemedicine**

**1.1.2.2.05-1.** The Contractor shall utilize telemedicine where necessary for treatment at Antarctic sites including vessels and field camps. (SOO C.6.1.1w)

**1.1.2.2.05-2.** The Contractor shall utilize telemedicine to offer counseling/assistance services and wellness programs to help manage “quality of life” problems that may affect USAP participant performance or productivity in Antarctica. (SOO C.6.1.1w)

#### **1.1.2.2.06 RV Palmer & RV Gould Medical**

**1.1.2.2.06-1.** The Contractor’s clinical staff shall interact with and provide, as approved by NSF, supply support, medications and other medical assistance as necessary to two USAP vessels.

**1.1.2.2.06-2.** The Contractor shall provide essential medical care to all USAP participants in Antarctica including, if required, humanitarian care for non-USAP personnel. (SOO C.6.1.1w)

**1.1.2.2.06-3.** In addition to direct medical and public health services, The Contractor shall offer counseling/assistance services and wellness programs to help manage “quality of life” problems that may affect USAP participant performance or productivity in Antarctica. (SOO C.6.1.1w)

### **1.1.3. ENVIRONMENTAL MANAGEMENT**

#### **1.1.3.1. Environmental Management**

##### **1.1.3.1.01. Environmental Management**

**1.1.3.1.01-1.** The Contractor shall demonstrate leadership in the stewardship of the Antarctic environment. (SOO C.6.1.1n)

**1.1.3.1.01-2.** The Contractor shall conduct all activities in Antarctica in accordance with environmental protocols outlined in the Antarctic Treaty System as implemented by the Antarctic Conservation Act of 1978 and as amended by the Antarctic Science, Tourism and Conservation Act of 1996. (SOO C.6.1.1n; C.6.1.2l)

**1.1.3.1.01-3.** The Contractor shall provide all USAP participants with information enabling them to participate in an environmental culture designed to limit intrusion and sustain conservation efforts for the preservation of the diverse Antarctic biomes and their related flora, fauna, and marine habitat. (SOO C.6.1.1n; C.6.1.2l)

**1.1.3.1.01-4.** The Contractor shall prepare and deliver the following:

- A. Draft sections for the Antarctic Treaty Information Report. (SOO C.6.1.2l) Deliverable F004 – Antarctic Treaty Information Report
- B. The Application for the USAP Master Permit 90 days prior to the expiration date of the Permit. (SOO C.6.1.2l) - Deliverable F007 – Application for Master Permit
- C. The Annual Report for the USAP Master Permit on an annual basis, in accordance with the requirements of 45 CFR Part 671. (SOO C.6.1.2w) – Deliverable F016 – Annual Report for the USAP Master Permit

- D. The Contractor shall define a reporting and incident notification protocol for review and approval by NSF. (SOO C.6.1.1s; C.6.1.2l) - Deliverable F008 – Incident Reporting
- E. The Contractor shall provide inputs on environmental or safety related incidents for inclusion in the Weekly Station Report. (SOO C.6.1.1s; C.6.1.2l) – (Deliverable F018)
- F. The Contractor shall establish Record of Environmental Review (ROER) Reports for any new project. (SOO C.6.1.2l)

**1.1.3.1.01-5.** The Contractor shall implement an environmental education program for all employees and other USAP participants to familiarize them with the working and living environments, and the uniqueness and sensitivity of the Antarctic environment. (SOO C.6.1.1q)

**1.1.3.1.01-6.** The Contractor shall provide environmental education in pre-departure briefings, arrival briefings, and additional briefings required for permit and site specific environmental requirements. Briefings shall include: environmental requirements for each site or laboratory; regulatory compliance requirements; specialized requirements defined in the Master Permit; and any additional topics related to special permits, waste management, field operations and limitations, diving operations, and emergency notification and spill response. (SOO C.6.1.1q)

**1.1.3.1.01-7.** The Contractor's environmental education program shall provide USAP participants with an awareness of and capacity to recognize the uniqueness and sensitivity of the Antarctica environment and the programs they will be supporting. (SOO C.6.1.1q)

**1.1.3.1.01-8.** The Contractor shall develop Spill Prevention Control and Countermeasure (SPCC) Plans, following the format and criteria of 40 CFR Part 112 as guidance. The Contractor's SPCC Plans shall include a description of the facility's physical layout with a facility diagram included that marks the location and contents of each container including tanks, all transfer stations, pumps, connecting pipes and any other ancillary equipment related to the system. (SOO C.6.1.1r)

Deliverable F019 – Spill Prevention Control and Countermeasure (SPCC) Plans

**1.1.3.1.01-9.** The Contractor shall develop Oil Spill Response Contingency Plans for oil storage and transfer facilities located at the Antarctic stations, airfields, ports, and marine vessel mooring locations that accurately address conditions at and around these locations. The Plans shall address the specific response requirements and control measures to be taken for significant oil spills or releases of hazardous substances (SOO C.6.1.1r)

**1.1.3.1.01-10.** The Contractor's Oil Spill Response Contingency Plans shall utilize the criteria of 40 CFR Part 300, National Oil and Hazardous Substances Pollution Contingency Plan, National Contingency Plan (NCP) standards, and the criteria of the Standing Committee on Antarctic Logistics and Operations (SCALOP) as guidance. (SOO C.6.1.1r)

**1.1.3.1.01-11.** The Contractor shall identify and train personnel to support implementation of the Oil Spill Response Contingency Plan, ensure incident reporting

occurs, and ensure investigation of root causes and implementation of corrective actions. (SOO C.6.1.1r)

**1.1.3.1.01-12.** The Contractor shall ensure that all waste management operations comply with NSF Waste Regulations (45 CFR 671), Resource Conservation and Recovery Act (RCRA) as well as applicable Federal regulations and those of ports of entry and all requirements identified in the Master Permit and other site permits. (SOO C.6.1.2x; .6.1.2y)

**1.1.3.1.01-13.** The Contractor shall ensure storage and permit requirements for hazardous wastes are followed and in accordance with the master Permit, 45 CFR 671, and 40 CFR, 260-265. (SOO C.6.1.2y)

#### **1.1.4. HEADQUARTERS**

##### **1.1.4.1. Other HQ & MISC**

###### **1.1.4.1.01. Finance**

###### **Financial Management**

**1.1.4.1.01-1.** The Contractor shall be responsible for the financial management, accountability, and execution of the budgets for all contract activities. (SOO C.6.1.1i; C.6.1.1j)

**1.1.4.1.01-2.** The Contractor shall employ an accredited Earned Value Management System (EVMS) and associated processes to monitor and control cost and schedule performance. (SOO C.6.1.1aa)

**1.1.4.1.01-3.** The Contractor shall develop and implement finance, budget management, and cost control performance measures to provide total accountability to the Government for financial management of this contract in compliance with law and Government regulation. (SOO C.6.1.1i; C.6.1.1j)

**1.1.4.1.01-4.** The Contractor shall submit a Monthly Financial Report by the 10th of every month. (SOO C.6.1.1aa)

Deliverable F014 – Monthly Financial Report

**1.1.4.1.01-5.** The Contractor shall deliver Quarterly Expense Reports. Quarterly is defined as the 10th of January, April, July, and October. (SOO C.6.1.1aa)

Deliverable F028 – Quarterly Expense Report

**1.1.4.1.01-6.** The Contractor shall work cooperatively with NSF to pursue innovative financing arrangements to fund the implementation of approved program enhancements. (SOO C.6.1.1h; C.6.1.1i)

**1.1.4.1.01-7.** The Contractor shall monitor developments in Federal accounting changes and adapt deliverables and deadlines as Government guidance is revised. (SOO C.6.1.1i)



**1.1.4.1.01-8.** The Contractor shall develop all financial reports in accordance with all Federal regulations and NSF policies. (SOO C.6.1.2c)

### **Contract Management**

**1.1.4.1.01-9.** The Contractor shall ensure compliance with all contract requirements and deliverables, maintenance of contract files and records including the conformed contract, monitoring contract funding versus expenditures, and processing of contractor billing and payments. (SOO C.6.1.1e)

**1.1.4.1.01-10.** The Contractor shall provide audit and oversight to the organization including subcontractors to ensure contract requirements are met and performance is in accordance with applicable federal, state, local, international and in-country laws and regulations. (SOO C.6.1.1e; C.6.1.1f)

**1.1.4.1.01-11.** The Contractor shall provide the necessary contracts personnel with the authority to negotiate contract actions and process contract modifications on behalf of the contractor. (SOO C.6.1.1e)

**1.1.4.1.01-12.** The Contractor shall obtain all required permits, licenses, and authorizations to perform work under this contract. (SOO C.6.1.1e; C.6.1.1f)

**1.1.4.1.01-13.** The contractor shall employ best industry and Federal practices in financial, project, property, and program management. The contractor shall monitor all developments in Federal accounting and be prepared to adapt deliverables or deadlines as Government guidance is revised. (SOO C.6.1.1f)

**1.1.4.1.01-14.** The Contractor shall identify and make known to all employees and subcontractors those NSF individuals who are authorized to coordinate with international Antarctic programs and foreign governments. (SOO C.6.1.2e)

**1.1.4.1.01-15.** The Contractor shall establish and implement operating procedures, nondisclosure signing procedures, and security measures designed to protect proprietary data from disclosure or release to unauthorized third parties. (SOO C.6.1.1e)

**1.1.4.1.01-16.** The Contractor shall obtain sufficient rights in technical data, both software and hardware, such that the Government retains rights in accordance with the requirements of Section H.28 of the Contract. (SOO C.6.1.1e)

**1.1.4.1.01-17.** The Contractor shall ensure compliance with the contract rights in data clauses, including obtaining the necessary rights in data from subcontractors to fulfill contract requirements. (SOO C.6.1.1e)

**1.1.4.1.01-18.** The Contractor shall submit annually a report that documents all information received as confidential or proprietary information, and that identifies the entity that provided the information. (SOO C.6.1.1e; C.6.1.1k)

Deliverable F021 – Agreements Granting Access to Confidential or Proprietary Information

**1.1.4.1.01-19.** The Contractor shall not transfer any export controlled item, data, or services, to include transfer to foreign persons, without the authority of an export license, agreement, or applicable exemption or exception. (SOO C.6.1.1e; C.6.1.1k)

**1.1.4.1.01-20.** The Contractor shall comply with all applicable U.S. export control laws and regulations, including the requirement for obtaining any necessary export license or agreement. (SOO C.6.1.1e; SOO C.6.1.1k)

### **Subcontractor Management**

**1.1.4.1.01-21.** The Contractor shall establish and implement a subcontract management plan. The plan shall include, at a minimum, the process and procedures the Contractor shall follow to initiate, negotiate, manage and monitor subcontractors working under Contractor's direction. (SOO C.6.1.1e; C.6.1.1f)

**1.1.4.1.01-22.** The Contractor shall monitor the activities of all subcontractors to ensure compliance with all Terms and Conditions, policies, and procedures contained in the subcontract. (SOO C.6.1.1e, C.6.1.1f)

**1.1.4.1.01-23.** The Contractor shall provide the Government with Subcontractor Reports that demonstrate the percentage of work performed by Large Businesses, Small Businesses, Small Disadvantaged Businesses, Women-Owned Businesses, HUBZone Businesses, and Service Disabled Veteran-Owned Businesses. (SOO C.6.1.1e; SOO C.6.1.1f)

### **Property Management**

**1.1.4.1.01-24.** The Contractor shall control, preserve and manage Government Furnished Property (GFP), Equipment (GFE), and Applications (GFA) until replaced. (SOO C.6.1.2b)

**1.1.4.1.01-25.** The Contractor shall execute Receipt of Property documents for all GFE. (SOO C.6.1.2b)

**1.1.4.1.01-26.** The contractor shall use best industry and federal practices in financial project, property management and adapt changes to deliverables and deadlines as developments in Government guidance is revised. (SOO C.6.1.1i)

**1.1.4.1.01-27.** The Contractor shall establish and implement a Property Management Plan and submit for approval to the NSF within six months after contract start. (SOO C.6.1.2b)

**1.1.4.1.01-28.** The Contractor shall provide quarterly Property Reports for all Equipment, Real Property, Construction in Progress, Work in Progress, and Leasehold Improvements. (SOO C.6.1.2c)

Deliverable F027 – Property Report

**1.1.4.1.01-29.** The Contractor shall report on property in the following manner per Section F of the contract:

- A. For Equipment, the Property Report shall be in accordance with the detailed requirements of Section F.6 (b) of the contract. (SOO C.6.1.2c)
- B. For Real Property, the Property Report shall be IAW the detailed requirements of Section F.6 (c) of the contract. (SOO C.6.1.2c)
- C. For Construction in Progress, the Property Report shall be IAW the detailed requirements of Section F.6 (d) of the contract. (SOO C.6.1.2c)
- D. For Work in Progress, the Property Report shall be IAW the detailed requirements of Section F.6 (e) of the contract. (SOO C.6.1.2c)
- E. For Leasehold Improvement, the Property Report shall be IAW the detailed requirements of Section F.6 (f) of the contract. (SOO C.6.1.2c)

**1.1.4.1.01-30.** The Contractor shall utilize the Federal Real Property Profile (FRPP) electronic data system to submit annual FRPP reports. (SOO C.6.1.2c)

Deliverable F030 – Federal Real Property Profile

**1.1.4.1.01-31.** The Contractor shall use the Federal Automotive Statistical Tool (FAST) to submit annual reports of motor vehicle usage. (SOO C.6.1.2c)

Deliverable F031 – Federal Automotive Statistical Tool (FAST)

**1.1.4.1.01-32.** The Contractor shall manage and report on GFE/GFP/GFA in accordance with all Federal regulations and NSF policies. (SOO C.6.1.2c)

#### **1.1.4.1.02. Quality Assurance**

**1.1.4.1.02-1.** The Contractor shall develop, implement, and maintain a QA/QC Program that ensures that service delivery meets or exceeds performance requirements in this PWS. (SOO C.6.1.1e)

**1.1.4.1.02-2.** The Contractor shall implement a Quality program in accordance with a Quality Program Plan (QPP) that provides insight into the following quality processes: inspection process for projects and O&M on ice, , control of documentation; control of records; internal audits including procedures and oversight; identification of corrective measures for and prevention of nonconforming services. The Contractor shall also provide review of building codes, construction and specification. (SOO C.6.1.1e)

#### **1.1.4.1.03. Employee Relations**

**1.1.4.1.03-1.** The Contractor shall establish and maintain a qualified, experienced, and organized workforce of sufficient size and with the assigned duties, responsibilities, and authority to achieve all program objectives. (SOO C.6.1.2v)

**1.1.4.1.03-2.** The Contractor shall handle all confidential and sensitive employee matters, fringe benefits, training employee development, maintain PeopleSoft HRIS system, and deploy HR staff to McMurdo and South Pole to handle employee matters on station

#### **1.1.4.1.04 Recruiting**

**1.1.4.1.04-1.** The Contractor shall use an integrated staffing approach to ensure that the skill requirements are fulfilled in a timely manner. Contractor shall provide for hiring, job fairs and community outreach, advertising screening, employee orientation and development training of hiring managers (SOO C.6.1.2v)

**1.1.4.1.04-2.** The Contractor shall staff all program functions in accordance with the approved Annual Program Plan. (SOO C.6.1.2v)

**1.1.4.1.04-3.** The Contractor shall implement personnel in and out processing procedures that ensure compliance with all contractual requirements. (SOO C.6.1.2v)

**1.1.4.1.04-4.** The Contractor shall ensure all personnel, including subcontractor employees, have a current National Agency Check with Inquiries (NACI) background investigation or the equivalent for foreign nationals. (SOO C.6.1.2g)

#### **1.1.4.1.05. Training**

**1.1.4.1.05-1.** The Contractor shall define all required training of the new workforce and schedule and conduct accordingly. (SOO C.6.1.2v)

**1.1.4.1.05-2.** The Contractor shall maintain a database of workforce qualifications and certifications and monitor and inspect position-related licenses and certifications for validity and currency. (SOO C.6.1.2v)

**1.1.4.1.05-3.** The Contractor shall comply with Federal, State, and County licensing, certification, qualification and warranting requirements. (SOO C.6.1.2v)

**1.1.4.1.05-4.** The Contractor shall provide drug and alcohol abuse awareness training and communicate to all employees and subcontractors the USAP zero-tolerance policy regarding drug and alcohol abuse. (SOO C.6.1.2f)

#### **1.1.4.1.06. HQ Facilities Direct Costs**

**1.1.4.1.06-1.** The Contractor shall maintain a program office. Maintain facility in good working order and safe environment. Building maintenance, emergency issues, employee requests, office renovation, upgrades, employee placement, key control, security, recycling, company van and off-site storage.

#### **1.1.4.1.07. HQ Facilities Management Company**

### **1.2. SCIENCE AND TECHNICAL PROJECT SERVICES (S&TPS) REQUIREMENTS (SOO C.6.2; SOO C.6.2.1)**

Science and Technical Project Services (S&TPS) provides full life-cycle (concept to close-out) planning, implementation, and outreach support activities for NSF-approved events conducted in Antarctica and the Southern Ocean. "Events" can include research projects, technical events, activities funded by other nations' Antarctic programs, artist and writer events, military logistical support partner events, other federal agency events, or other field activities approved by the National Science Foundation. The S&TPS function coordinates capabilities across the Antarctic Support Contract to support the

USAP mission. S&TPS also provides tools and information to help NSF shape long-range goals for the United States Antarctic Program.

The following services and task requirements are derived from SOO paragraphs C.6.2 through C.6.2.1.

**1.2-1.** The Contractor shall ensure uninterrupted operations during the contract transition. (SOO C.6.2.1.b)

**1.2-2.** The Contractor shall provide performance excellence management and business process engineering support to optimize service value. (SOO C.6.2.1.a)

### **1.2.1 TECHNICAL MANAGEMENT**

#### **1.2.1.1. Director**

##### **1.2.1.1.01. Management & Planning**

**1.2.1.1.01-1.** The Contractor shall provide S&TPS services for USAP science and technical events, and other directed activities, in accordance with the specific project/event requirements defined in the Annual Program Plan (APP) and the Research Support Plans (RSPs). (SOO C.6.2a; C.6.2c; C.6.2.1a)

**1.2.1.1.01-2.** The Contractor shall provide full-life-cycle (concept-closeout) planning and implementation support efforts for scientific research projects and other NSF-approved events conducted in Antarctica and the Southern Ocean. Locations include but are not limited to USAP stations, remote field sites, and the USAP research vessels. (SOO C.6.2a; C.6.2b; C.6.2.1a)

**1.2.1.1.01-3.** The Contractor shall identify and provide a primary point of contact who coordinates support activities for project participants throughout the duration of their events. (SOO C.6.2d; C.6.2.1a)

**1.2.1.1.01-4.** Contractor personnel directly supporting scientific participants shall be familiar with academic research environments and shall have the ability to support the type and scope of scientific research performed in the USAP. Tasking levels and skill sets are defined in the RSPs and the APP. (SOO C.6.2.1f)

#### **Project Support Coordination**

**1.2.1.1.01-5.** The Contractor shall provide S&TPS support for up to 150 NSF-approved science and technical events per year, represented by field deployments for up to 800 participants (SOO C.6.2c; C.6.2.1a).

**1.2.1.1.01-6.** The Contractor shall utilize a service model to integrate internal support units that develop, deliver, and sustain services for the support of NSF-approved project requirements. Note that this requirement includes both project-specific needs and the sustainment of operational support. (SOO C.6.2.1j)

**1.2.1.1.01-7.** The Contractor shall provide Project Management services to the USAP for science and technical projects. PM services include project planning, project baseline management, internal and external team communications, project cost and schedule development and tracking and administrative support. (SOO C.6.2.1j)

**1.2.1.1.01-8.** The Contractor shall support NSF and grantee education and public outreach objectives. (SOO C.6.2.1d)

**1.2.1.1.01-9.** The Contractor shall provide planning and implementation services for activities that are primarily supported by aircraft or other airborne platforms, such as balloons, aerostats, or unmanned aerial vehicles (UAVs). (SOO C.6.2.1d)

**1.2.1.1.01-10.** The Contractor shall maintain NSF-owned equipment installed on USAP aircraft as outlined in the APP. (SOO C.6.2.1m)

**1.2.1.1.01-11.** The Contractor shall provide, or coordinate with other agencies to provide, support for specialty services, e.g., Global Positioning System (GPS), geographic information support (GIS), analytical services, ice core drilling. (SOO C.6.2b; C.6.2.1d)

**1.2.1.1.01-12.** The Contractor shall conduct an arrival meeting and an outbrief meeting for science events in accordance with the USAP Field Manual. (SOO C.6.2.1c; C.6.2.1f)

**1.2.1.1.01-13.** The Contractor shall coordinate support from other program functional areas (e.g., transportation and logistics, IT&C, etc.) and from associated agencies to ensure that integrated support activities meet event needs as defined in the APP and RSPs. (SOO C.6.2d; C.6.2.1d)

#### **1.2.1.1.02. Planning Process**

**1.2.1.1.02-1** The Contractor shall provide and retain a qualified, educated, and experienced workforce to ensure continuity of the knowledge base and skills necessary to assist in the assessment of field requirements of project proposals. (SOO C.6.2.1e)

**1.2.1.1.02-2.** The Contractor shall develop and coordinate project plans and project requirements (e.g., operational, construction, technical, logistical) with project leaders. (SOO C.6.2.1c)

**1.2.1.1.02-3.** The Contractor shall perform an initial assessment of logistical supportability for research proposals that NSF identifies as under consideration for funding. (SOO C.6.2.1g)

**1.2.1.1.02-4.** For each event the NSF is considering for award, The Contractor shall prepare and submit an Operations Review Memo describing the project/event. (SOO C.6.2.1g)

**1.2.1.1.02-5.** For projects that have received funding from the NSF, the Contractor shall facilitate field season planning milestones, e.g., Support Information Packets, Research Support Plans, in accordance with procedure SC-D-001, "Science Planning Process." (SOO C.6.1.2h)

**1.2.1.1.02-6.** The Contractor shall ensure that participants obtain approval from the NSF/OPP to use radioisotopes in the Antarctic before radioactive material is shipped to Antarctica. (2010-2012 Participant Guide, p. 41) (SOO C.6.1.1t; C.6.2.1c)

**1.2.1.1.02-7.** The Contractor shall maintain (review at least annually and update as necessary) procedure SC-D-001, "Science Planning Process." (SOO C.6.2.1h)

**1.2.1.1.02-8.** The Contractor shall provide twice, yearly S&TPS project resource utilization reports. The reports shall include, at a minimum, a six-month look ahead of service/tasks needs per project, contractor resource allocations per project and a five-year outlook of major resource commitments. (SOO C.6.2.1g; C.6.2.1i; C.6.2.1k)

**1.2.1.1.02-9.** The Contractor shall provide snapshots of the availability of resources to support events. (SOO C.6.2.1i)

**1.2.1.1.02-10.** The Contractor shall develop, execute, and monitor a comprehensive, integrated annual plan of approved projects that is within available USAP resource capabilities, budget, and schedules, and is consistent with the APP. (SOO C.6.2.1j)

**1.2.1.1.02-11.** The Contractor shall be capable of supporting a variety of activities that might include both project and sustaining needs. (SOO C.6.2d)

**1.2.1.1.02-12.** The Contractor shall update and post online a comprehensive support summary of the upcoming season's approved research projects, the "20xx-20xx USAP Science Planning Summary." (SOO C.6.2d; C.6.2.1i)

#### Deliverable F009 – Publications

**1.2.1.1.02-13.** The Contractor shall annually develop and post to the [www.usap.gov](http://www.usap.gov) website, a five-year outlook of major resource commitments. (SOO C.6.2.1i; C.6.2.1k)

**1.2.1.1.02-14.** The Contractor shall maintain an Internet accessible planning database for interactive planning with project leaders and science investigators and shall ensure continuity with legacy data. The database is a repository for science proposals, operational requirements worksheets (ORWs), support information packets (SIPs), research support plans (RSPs) and associated documentation. (SOO C.6.2.1i; C.6.2.1l)

**1.2.1.1.02-15.** The Contractor shall ensure continuity with legacy science planning data. (SOO C.6.2.1l)

### **1.2.2. LABORATORY AND SUPPORT SERVICES**

#### **1.2.2.1. Lab Support**

**1.2.2.1-1.** The Contractor shall provide staff, assign laboratory space, and operate, maintain, and replace, as required, common-use laboratory equipment. (SOO C.6.2.1m)

**1.2.2.1-2.** The Contractor shall store, handle, issue, recover, dispose, and oversee the use of radionuclides in the USAP. (SOO C.6.1.1t; C.6.2.1f)

##### **1.2.2.1.01. McMurdo Lab Services**

**1.2.2.1.01-1.** The Contractor shall provide laboratory, observatory, and aquarium support consistent with the scientific disciplines represented at McMurdo Station and immediate surroundings. (SOO C.6.2.1d; C.6.2.1f)

##### **1.2.2.1.02. Palmer Lab Services**

**1.2.2.1.02-1.** The Contractor shall provide laboratory, observatory, and aquarium support consistent with the scientific disciplines represented at Palmer Station and immediate surroundings. (SOO C.6.2.1d; C.6.2.1f)

**1.2.2.1.03. South Pole Lab Services**

**1.2.2.1.03-1.** The Contractor shall provide laboratory, observatory, and aquarium support consistent with the scientific disciplines represented at Amundsen-Scott South Pole Station and immediate surroundings. (SOO C.6.2.1d; C.6.2.1f)

**1.2.2.1.04. McMurdo Analytic Services**

**1.2.2.1.04-1.** The Contractor shall maintain equipment and order spare parts, supplies, and materials in support of analytic services at McMurdo Station. (SOO C.6.2b)

**1.2.2.2. Research Associates**

**1.2.2.2.01. McMurdo Research Associates**

**1.2.2.2.01-1.** The Contractor shall provide personnel to conduct research on behalf of funded science events at McMurdo Station. Tasking and required skill sets are defined in the APP and the Research Support Plans (RSPs). (SOO C.6.2.1d; C.6.2.1f)

**1.2.2.2.02. Palmer Research Associates**

**1.2.2.2.02-1.** The Contractor shall provide personnel to conduct research on behalf of funded science events at Palmer Station. Tasking and required skill sets are defined in the APP and the Research Support Plans (RSPs). (SOO C.6.2.1d; C.6.2.1f)

**1.2.2.2.03. South Pole Research Associates**

**1.2.2.2.03-1.** The Contractor shall provide personnel to conduct research on behalf of funded science events at South Pole Station. Tasking and required skill sets are defined in the APP and the Research Support Plans (RSPs). (SOO C.6.2.1d; C.6.2.1f)

**1.2.2.3. Cryogenics**

**1.2.2.3.01. Cryogenics**

**1.2.2.3.01-1.** The Contractor shall maintain cryogenics equipment and repairs beyond the capability of USAP staff and shall provide supplies, materials, and services. (SOO C.6.2c)

**1.2.2.4. Lab & Field Support**

**1.2.2.4-1.** The Contractor shall update the USAP Field Guide, as necessary. (SOO C.6.2c; C.6.1.1dd)



#### **1.2.2.4.01. Director Marine Science Operations RV**

**1.2.2.4.01-1.** The Contractor shall provide personnel and material resources for events supported by research vessels, icebreakers, and other ships in accordance with the APP and RSPs. (SOO C.6.2.1d)

**1.2.2.4.01-2.** The Contractor shall coordinate and direct shipboard activities in conjunction with the Ship's Master as outlined in the ship charter or Memorandum of Understanding (MOU). (SOO C.6.2.1d)

**1.2.2.4.01-3.** The Contractor shall assist with the planning and development of the annual cruise schedules, science support requirements and logistical support of grantees in accordance with the requirements of the Annual Program Plan (APP). (SOO C.6.5.1e; C.6.2.1h)

#### **1.2.2.4.02. Palmer Field Support**

**1.2.2.4.02-1.** The Contractor shall provide field safety and marine safety training to support science operations in Antarctica. (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x; C.6.2c)

**1.2.2.4.02-2.** The Contractor shall provide small boat operation and maintenance, including operation, maintenance, and repair of inflatable boats and marine engines. (SOO C.6.2c; C.6.4.1g; C.6.4.1h)

**1.2.2.4.02-3.** The Contractor shall provide personnel and material resources for field events in accordance with the APP and RSPs. (SOO C.6.2.1d; C.6.2.1e)

**1.2.2.4.02-4.** The Contractor shall coordinate transportation for all field events in accordance with the needs defined in the APP and RSPs. (SOO C.6.2.1d)

#### **1.2.2.4.03. Palmer Lab & Field Grantee Support**

**1.2.2.4.03-1.** The Contractor shall provide Grantee support and services specific to funded projects. (SOO C.6.2.1c)

#### **1.2.2.4.04. McMurdo Lab & Field Grantee Support**

**1.2.2.4.04-1.** The Contractor shall provide Grantee support and services specific to funded projects. (SOO C.6.2.1c)

#### **1.2.2.4.05. South Pole Grantee Support**

**1.2.2.4.05-1.** The Contractor shall provide Grantee support and services specific to funded projects. (SOO C.6.2.1c)

#### **1.2.2.4.06. Dive Services**

**1.2.2.4.06-1.** The Contractor shall comply with NSF Standards for the Conduct of Scientific Diving and Federal regulations as applicable to the diving activity (specifically 1910 Subpart T, Commercial Diving Operations, and as applicable, 1910 Subpart T Appendix B, Guidelines for Scientific Diving). (SOO C.6.1.2aa; C.6.2c; C.6.2.1f)

**1.2.2.4.06-2.** The Contractor shall provide diving and dive tending support services. (SOO C.6.2c; C.6.4.1g; C.6.4.1h)

**1.2.2.4.06-3.** The Contractor shall be responsible for the USAP Diving Program, including research diving, near the Antarctic stations, at remote sites, and from research vessels. (SOO C.6.2.1d; C.6.4.1b; SOO C.6.4.1c)

**1.2.2.4.06-4.** The Contractor shall determine the USAP diving requirements defined in the APP, assess and mitigate potential risks, and hire additional support divers as required. (SOO C.6.2.1h; C.6.4.1b; C.6.4.1c)

**1.2.2.4.06-5.** The Contractor shall operate and maintain the McMurdo Dive Locker and Recompression Chamber and the Dive Locker at Palmer Station. (SOO C.6.2.1m; C.6.4.1b; C.6.4.1c)

**1.2.2.4.06-6.** The Contractor shall ensure Grade D air is supplied for diving activities. (SOO C.6.2.1m; C.6.4.1b; C.6.4.1c)

#### **1.2.2.4.07. Berg Field Center**

**1.2.2.4.07-1.** The Contractor shall manage field party outfitting and processing. (SOO C.6.2.1m; C.6.4.1b; C.6.4.1c)

**1.2.2.4.07-2.** The Contractor shall provide field maintenance information and training for equipment, and vehicles issued in support of field site operations. (SOO C.6.2.1m; C.6.4.1g; C.6.4.1h)

**1.2.2.4.07-3.** The Contractor shall manage the inventory for field party outfitting and processing function at McMurdo. (SOO C.6.2.1m; C.6.5.1b; C.6.5.1c)

**1.2.2.4.07-4.** The Contractor shall maintain a complete inventory of field equipment/provisions for science groups; including Food, Sleeping bags, Toilets, Tents, Cooking equipment, camp stove, Tools & spare parts, Human waste removal, Heaters, First aid kits, Hand washing machines, Sleds, Furniture, GPS, Backpacks, PP&E (personal protection equipment), Backpacks, and Fuel.. (SOO C.6.2.1m; C.6.5.1b; C.6.5.1c)

**1.2.2.4.07-5.** The Contractor shall clean and repair field equipment when it is returned. (SOO C.6.2.1m; C.6.5.1b; C.6.5.1c)

#### **1.2.2.4.08. Search & Rescue**

**1.2.2.4.08-1.** The Contractor shall plan and manage search and rescue capabilities for the USAP on a 24x7 basis, utilizing emergency response, field safety and other personnel if required. (SOO C.6.2d; C.6.4.1r)

**1.2.2.4.08-2.** The Contractor shall develop a search and rescue plan that coordinates program aviation and medical assistance, and defines operational controls in emergencies. (SOO C.6.2d; C.6.4.1r)

### **1.2.2.5. Mechanical Equipment Center (MEC)**

#### **1.2.2.5.01. Mechanical Equipment Center**

**1.2.2.5.01-1.** The Contractor shall provide a comprehensive range of field support services for USAP grantees, to include: vehicle, Generators, Hole melters, Renewable energy systems, Snowmobiles, Vans & light track vehicles, ATV (4 wheelers) Supplies spare parts & materials. The Contractor shall perform equipment maintenance repair, technical support and training. (SOO C.6.2.1m; C.6.4.1b; SOO C.6.4.1c)

### **1.2.3. MARINE VESSEL OPERATIONS**

#### **1.2.3.1. Research Vessels**

##### **1.2.3.1.01. RV Palmer - NBP Operations – excluding charter costs**

**1.2.3.1.01-1.** The Contractor shall provide fuel, lubricants, daily subsistence, port call services, and station store merchandise. (SOO C.6.2b)

##### **1.2.3.1.02. RV Gould – LMG Operations or replacement – excluding charter costs**

**1.2.3.1.02-1.** The Contractor shall provide fuel, lubricants, daily subsistence, port call services, and station store merchandise. (SOO C.6.2b)

#### **1.2.3.2. Marine Technical Services and Support**

##### **1.2.3.2.01. Marine Technical Services (aboard vessels)**

**1.2.3.2.01-1.** The Contractor shall provide maintenance and operations of on-deck equipment aboard the USAP research vessels. (SOO C.6.2.1d, C.6.2.1f)

##### **1.2.3.2.02. Marine Electronics Tech Service (direct science support aboard vessels)**

**1.2.3.2.02-1.** The Contractor shall install, test, operate, maintain and/or calibrate electronic equipment to support science missions (varies by mission). Equipment includes; Servers, Timeserver network synchronization, Ultrasonic Anemometers, CCTV systems, VHF radios.

##### **1.2.3.2.03. Marine Science Support (aboard vessel RV Palmer)**

**1.2.3.2.03-1.** Contractor shall provide laboratory and aquarium support consistent with the scientific disciplines supported by the USAP research vessels and icebreakers. (SOO C.6.2.1d; C.6.2.1f)

**1.2.3.2.03-2.** The Contractor shall install, test, operate, maintain and/or calibrate equipment to support science missions (varies by mission). (SOO C.6.2.1f)

**1.2.3.2.03-3.** The Contractor shall staff and manage the shipboard laboratories in compliance with the particular vessel's Laboratory Users Guide. (SOO C.6.2.1d; C.6.2.1f)

#### **1.2.3.2.04. Marine Grantee Support (aboard vessels)**

**1.2.3.2.04-1.** The Contractor shall provide Marine Grantee support and services specific to funded projects. (SOO C.6.2.1c)

#### **1.2.4. SCIENCE & TECHNICAL PROJECTS**

##### **1.2.4.1. Construction Projects**

###### **1.2.4.1.01. McMurdo Science Construction**

**1.2.4.1.01-1.** The Contractor shall plan and construct seasonal field camps that support populations from 10 to more than 100 people. (SOO C.6.2c; C.6.2d)

**1.2.4.1.01-2.** The Contractor shall plan and build science construction projects as defined in the Annual Program Plan and event Research Support Plans. (SOO C.6.2c; C.6.2d)

###### **1.2.4.1.02. Palmer Science Construction**

**1.2.4.1.02-1.** The Contractor shall plan and build science construction projects as defined in the Annual Program Plan and event Research Support Plans. (SOO C.6.2c; C.6.2d)

###### **1.2.4.1.03. South Pole Science Construction**

**1.2.4.1.03-1.** The Contractor shall plan and build science construction projects as defined in the Annual Program Plan and event Research Support Plans. (SOO C.6.2c; C.6.2d)

##### **1.2.4.2. Science Projects**

###### **1.2.4.2.01. Project Specific costs by Project Number**

**1.2.4.2.01-1.** The Contractor shall be capable of supporting additional “special” events within the S&TPS sustaining tasking. Examples of previous special events include Long Duration Balloon (LDB), Siple Dome, Mt. Erebus, and Dry Valley Camps. (SOO C.6.2d)

**1.2.4.2.01-2.** The Contractor shall provide services, materials, and supplies as defined for specific projects by Project Number. (SOO C.6.2d)

#### **1.3. INFORMATION TECHNOLOGY AND COMMUNICATIONS (IT&C) REQUIREMENTS (SOO C.6.3; SOO C.6.3.1; SOO C.6.3.2)**

Information Technology and Communications (IT&C) are integral and critical to all functions of the USAP systems. IT&C spans the spectrum from providing for the movement of research level data into and out of Antarctica to providing communications support for research facilities and field parties to contributing to the quality of life for all USAP participants.

##### **1.3.1. INFRASTRUCTURE MANAGEMENT**

###### **1.3.1.1. Director Management Support**

###### **1.3.1.1.01. Project Management Leadership and Support for IT Division**

The following service task requirements define what the Contractor must do to provide modern and robust infrastructure, products, and services for IT&C in support of the USAP mission. These requirements are derived from SOO paragraphs C.6.3 through C.6.3.2. Additional requirements have been added to demonstrate understanding of what must be done to meet or exceed NSF expectations in the performance of the ASC.

**1.3.1.1.01-1.** The Contractor shall provide performance excellence management and business process engineering support to enable more effective and efficient service support and optimize service value. (SOO C.6.3.1.b)

**1.3.1.1.01-2.** The Contractor shall provide innovation recommendations and transform services to become more effective and efficient. (SOO C.6.3.1.c)

**1.3.1.1.01-3.** The Contractor shall implement an Information Technology and Communications program that evolves IT&C into an innovation tool that provides modern, network-centric, and consolidated enterprise support for science. These services shall be performed with uninterrupted support for all IT&C functions from contract award through contract completion. (SOO C.6.3.1a; C.6.3.1b, C.6.3.1c)

**1.3.1.1.01-4.** The Contractor shall provide a Chief Information Officer (CIO) as referenced in Contract Section H.1 – Key Personnel Designation to manage and direct IT&C resources in support of the mission objectives of the USAP stakeholders and supporting organizations. (RFP H.1)

**1.3.1.1.01-5.** The Contractor shall establish an information assurance organization reporting through the Program Director and working in conjunction with the CIO, to promote independent verification and validation functions. (SOO C.6.3.1c; C.6.3.1m)

**1.3.1.1.01-6.** The Contractor shall develop and submit updates to its IT&C Acquisition Plan. (SOO C.6.3.1b; C.6.3.1g)

Deliverable F034 (a) – IT&C Acquisition Plan

**1.3.1.1.01-7.** The Contractor shall implement IT&C service management and governance processes, inclusive of validation/verification of credentials or organization used for maturity assessments, using best-of-breed IT&C management framework. The results shall be published in an IT Service Management Maturity Evaluation and provided to NSF. (SOO C.6.3.1d)

Deliverable F032 (b) – IT Service Management Maturity Evaluation

**1.3.1.1.01-8.** The Contractor shall publish and deliver its IT&C Services Management procedures in an IT&C Service Management Process. (SOO C.6.3.1d)

Deliverable F032 (c) – IT Service Management Process

**1.3.1.1.01-9.** The contractor shall provide comprehensive planning and management services to meet Government requirements for availability, integrity, quality, capacity, reliability, maintainability, and security of IT&C services and information. (SOO C.6.3.1i)

### **1.3.1.2. Quality Assurance**

#### **1.3.1.2.01. QA Operations**

This section details the range of testing, configuration management, and software compliance processes that assure all products produced and services provided by IT&C provide maximum efficiency and cost effectiveness. The IT&C Product Assurance processes must work in tandem with the Mission Assurance capabilities described in Section 2.1.5.

#### **1.3.1.2.02. QA – Configuration Management (CM)**

**1.3.1.2.02-1.** The Contractor shall develop, apply and monitor change control and configuration management standards. (SOO C.6.3.1g; C.6.3.2a)

**1.3.1.2.02-2.** The Contractor shall develop and deliver an IT&C Configuration Management Plan for major IT&C systems, including those representing the Federal Information Security Management Act (FISMA) inventory, components within a Certification and Accreditation boundary, or high-impact mission support systems. (SOO C.6.3.1g; C.6.3.2a)

Deliverable F034 (c) – IT&C Configuration Management Plan

**1.3.1.2.02-3.** The Contractor shall maintain a library of accurate and up-to-date configuration management and technical data, to include such items as documentation updates, as-built drawings, and drawing updates with field and design changes. (SOO C.6.3.1g; C.6.3.2a)

**1.3.1.2.02-4.** The Contractor shall make all configuration management data readily accessible to NSF program management staff via the USAP intranet site. (SOO C.6.3.1g; C.6.3.2a)

#### **1.3.1.2.03. QA – IT Quality Assurance**

**1.3.1.2.03-1.** The Contractor shall ensure that systems engineering efforts result in maximum interoperability of IT&C systems, continuous and innovative process improvement, and insertion of emerging technologies. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1f)

**1.3.1.2.03-2.** The Contractor shall ensure changes to the IT&C baseline are adequately tested, with the appropriate level of rigor applied to ensure maximum efficiency and reliability. (SOO C.6.3.1g; C.6.3.1m; C.6.3.2a)

#### **1.3.1.2.04. QA – Testing**

**1.3.1.2.04-1.** The Contractor shall provide updates as necessary to the CONUS IT&C Test and Evaluation Process. (SOO C.6.3.1g; C.6.3.1m)

Deliverable F033 (d) – CONUS IT&C Test and Evaluation Process

**1.3.1.2.04-2.** The Contractor shall publish a Test Equipment Plan that defines the plans and procedures for test equipment calibration. (SOO C.6.3.1g; C.6.3.1m)

Deliverable F034 (j) – Test Equipment Plan

**1.3.1.2.04-3.** The Contractor shall perform pre-deployment verification and validation for changes deployed to installed systems and subsystems in Antarctica to ensure that hardware and software are appropriately verified as functionally ready to perform under the austere and potentially harsh conditions of the Antarctic. (SOO C.6.3.1m)

#### **1.3.1.2.05. QA – Support Services**

**1.3.1.2.05-1.** The Contractor shall maintain a library of accurate and up-to-date configuration management and technical data, to include such items as documentation updates, as-built drawings, and drawing updates with field and design changes. (SOO C.6.3.1g; C.6.3.2a)

#### **1.3.1.2.06. USAP Test Equipment**

**1.3.1.2.06-1.** The Contractor shall support procurement of testing equipment and supplies. (SOO C.6.3.1g; C.6.3.1m)

#### **1.3.1.3. IT Project Management**

##### **1.3.1.3.01. Project Management Office**

##### **IT&C Operations**

**1.3.1.3.01-1.** The Contractor shall provide support for the USAP IT&C hardware and software infrastructure life cycle, from original requirements definition through implementation, sustaining operations and maintenance, evolution and refreshment, and phase-out and disposal. (SOO C.6.3.1b, g)

**1.3.1.3.01-2.** The Contractor shall maintain systems performance requirements for suitability, availability, dependability, reliability, maintainability, supportability, quality, and affordability that meet NSF performance levels. (SOO C.6.3.1j)

#### **1.3.1.4. Design & Planning & Systems Engineering**

##### **1.3.1.4.01. ESD Management**

**1.3.1.4.01-1.** The Contractor shall manage the complete life cycle of IT&C products, services, and applications in support of the USAP mission, to include:

- A. Service delivery
- B. Sustaining engineering
- C. Systems engineering and integration
- D. Infrastructure development
- E. Needs assessment
- F. Product and service specification
- G. Evolution in response to changes and new requirements
- H. Technology insertion and refreshment
- I. Prototyping Capability

**1.3.1.4.01-2.** The Contractor shall include a Systems Engineering group to sustain existing systems and develop new systems as the USAP IT&C architecture evolves. (SOO C.6.3.1c)

##### **1.3.1.4.02. ESD Enterprise Infrastructure Engineering Management & Planning**

**1.3.1.4.02-1.** The Contractor shall ensure that systems engineering management processes are benchmarked with a certified and independent capability-maturity assessment process. (SOO C.6.3.1h)

Deliverable F032 (a) – IT&C Systems Engineering Maturity Evaluation

**1.3.1.4.02-2.** The Contractor shall use, wherever possible, Commercial off the Shelf (COTS) and Government off the Shelf (GOTS) products and systems to support the USAP mission. h. The Contractor shall implement sound evaluations and justify the need and benefits for items developed specifically for the USAP. (SOO C.6.3.1c; C.6.3.1g; C.6.3.1k)

**1.3.1.4.02-3.** The Contractor shall ensure that Systems Engineering activities incorporate information security requirements as defined in Section 2.1.7 Information Assurance. (SOO C.6.3.1i)

**1.3.1.4.02-4.** The Contractor shall develop and deliver a Legacy Systems Phase-out Plan that describes plans and recommendations for the phase-out and replacement of legacy enterprise business applications and systems. (SOO C.6.3.1g)

Deliverable F034 (i) – Legacy Systems Phase-out Plan

##### **1.3.1.4.03. ESD Enterprise Infrastructure Engineering and Sustaining**

**1.3.1.4.03-1.** The Contractor shall propose IT&C innovation to enable enhanced communications and networking capabilities in Antarctic area. (SOO C.6.3.1.b)



#### **1.3.1.4.04. ESD Operations Support Systems Delivery and Maintenance**

**1.3.1.4.04-1.** The Contractor shall gather and analyze requirements, provide engineering estimates, design, procure, install, and test upgrades to these communications systems, as approved by the NSF. (SOO C.6.3.1g)

**1.3.1.4.04-2.** The Contractor shall engineer, furnish, install, test, maintain, and decommission systems and services as required to meet USAP mission needs. (SOO C.6.3.1e; C.6.3.1g; C.6.3.1i; C.6.3.1j; C.6.3.1m)

**1.3.1.4.04-3.** The Contractor shall ensure that systems engineering efforts result in maximum interoperability of IT&C systems, continuous and innovative process improvement, and insertion of emerging technologies. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1f)

#### **1.3.1.4.05. Systems Management and Analysis**

**1.3.1.4.05-1.** The Contractor shall ensure that IT&C systems engineering efforts map to and align with the USAP mission; that these efforts start with user requirements and end with measurable improvement; and that IT&C efforts are justified with an approved business case. (SOO C.6.3.1j)

**1.3.1.4.05-2.** For large systems design and development activities, or in cases where the implementation cost or risk is substantial, the Contractor shall thoroughly analyze requirements and describe the recommended approach for the procurement of the subject system, including an engineering and implementation cost estimate. (SOO C.6.3.1g; SOO C.6.3.1j)

#### **1.3.1.5. Technical Operations Services**

##### **1.3.1.5.01. Tech Ops Training (HQ)**

**1.3.1.5.01-1.** The Contractor shall provide skilled and trained staff with industry recognized training, certification, or relevant experience in satellite communications, telecommunications, radio operation, and antennae rigging. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e)

**1.3.1.5.01-2.** The Contractor shall train field party and field camp operations personnel with deployable or portable radio and satellite communications equipment. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.1.5.01-3.** The Contractor shall ensure all Radio Communications personnel receive the appropriate training and certifications required to maintain and operate radio communications systems. Additionally, operators performing in the capacity of Antarctic station radio, emergency response center managers, and similar functions shall use the following professional standards or equivalents (SOO C.6.3.2d):

- National Fire Protection Association (NFPA) Job Performance Standard 1061, Standard for Professional Qualifications for Public Safety Telecommunicator;
- Association of Public-Safety Communications Officials (APCO) National Public Safety Telecommunicator Safety Training Standard;

- Federal Communication Commission (FCC) Restricted Radiotelephone Operator Permit (radiotelephone operator's restricted certificate) (47CFR13) as appropriate.

**1.3.1.5.01-4.** The Contractor shall provide training curricula, material, qualified instructors, and training courses for Contractor staff and USAP program participants, as required, to ensure effective and proficient use of supplied IT&C computer hardware and software. (SOO C.6.3.1g; C.6.3.2a)

**1.3.1.5.01-5.** The Contractor shall provide a variety of cost effective training solutions such as Computer Based Training (CBT) collaborative and integrated CD and DVD training for remote locations. (SOO C.6.3.1g; C.6.3.2a)

**1.3.1.5.01-6.** The Contractor shall develop and deliver a Customer Training Plan that defines curricula and materials, addresses User Services Training (e.g., field party communications equipment, field party computing/network, etc. (SOO C.6.3.1g)

Deliverable F034 (g) – Customer Training Plan

#### **1.3.1.5.02. Tech Ops Management**

**1.3.1.5.02-1.** The Contractor shall maintain Government furnished legacy systems and mission applications until they are replaced or retired. (SOO C.6.3.2a)

**1.3.1.5.02-2.** The Contractor shall establish Service Level Agreements (SLAs) with mission critical or key IT&C infrastructure providers subcontracted by the Contractor or directly provided by the Contractor. The specific levels for performance shall be contained in a Service Level Agreement document approved by the NSF. The Contractor shall make these available for NSF inspection upon demand. SLAs shall be congruent with USAP IT&C information assurance requirements. The Contractor shall evaluate the system performance levels in the SLA with the USAP annually. During this evaluation, future system performance levels shall be adjusted as required subject to NSF approval. (SOO C.6.3.1o)

**1.3.1.5.02-3.** The Contractor shall develop, publish, and maintain an IT&C Service Catalog that defines specific IT&C technical and professional services provided to the USAP participant community. The IT&C Service Catalog shall describe the customer service interface (process, principles, guidelines, commitments, and related) for the delivery and management of Service Catalog technical services and Service Level Agreements used to manage USAP customers. (SOO C.6.3.1l)

Deliverable F032 (d) – IT&C Service Catalog

**1.3.1.5.02-4.** The Contractor shall develop and deliver a master plan for maintenance management of all USAP IT&C systems, to include the concept for maintenance, sustaining engineering processes, and protocols. (SOO C.6.3.1d)

Deliverable F034 (f) – IT&C Maintenance Management Plan

**1.3.1.5.02-5.** Contractor shall develop Operational Performance Metrics and publish summary reports presenting operational performance data, derived from the Contractor's

Service Support and Service Delivery processes, for select IT&C infrastructure and services; scope and format to be negotiated with the Government.” (SOO C.6.3.1d)

**Deliverable F033 (b) – Operational Performance Metrics**

**1.3.1.5.02-6.** The Contractor shall maintain IT&C Standard Operating Procedures documentation and store it in an electronic format accessible by the USAP. (SOO C.6.3.1d)

**Deliverable F034 (b) – IT&C Standard Operating Procedures**

**1.3.1.5.02-7.** The Contractor shall comply with the terms/conditions of Memorandum of Agreements (MOA) as amended and extended, that define IT&C service and supplier relationships. (SOO C.6.3.2c)

**1.3.1.5.02-8.** (b) (4)

(SOO C.6.3.1b; C.6.3.1c; C.6.3.1d)

**1.3.1.5.02-9.** The Contractor shall ensure IT&C Continuity of Operations (COOP) plans are developed; maintained; tested and verified annually, for facilities with significant IT&C functionality, to include the CONUS headquarters, Christchurch New Zealand logistics center, McMurdo Station, South Pole Station, and Palmer Station. (SOO C.6.3.1a; C.6.3.1b; C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.2a)

**1.3.1.5.03. Tech Ops – Maintenance Hardware**

**1.3.1.5.03-1.** The Contractor shall manage procurement of all maintenance hardware and services, including third party maintenance service contracts, for hardware at all USAP operating locations.

**1.3.1.5.04. Tech Ops – Communications Services**

**1.3.1.5.04-1.** The Contractor shall support all tasks involved in the operation and maintenance of the NSF’s communication systems at all USAP facilities, to include CONUS and OCONUS logistics centers, ocean operating areas, and Antarctic operating areas. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.1.5.04-2.** The Contractor shall treat USAP communications systems as mission critical and prepare emergency incident response procedures for communications interruption scenarios to ensure timely and expeditious repair. (SOO C.6.3.1c; C.6.3.1e)

**1.3.1.5.04-3.** The Contractor shall provide skilled and trained staff with industry recognized training, certification, or relevant experience in satellite communications, telecommunications, radio operation, and antennae rigging. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e)

**1.3.1.5.04-4.** The Contractor shall provide support to tenant organization’s communications systems as designated by the USAP. Support shall include network,

telecommunications, and radio communications and services to support the USAP. (SOO C.6.3.1c; C.6.3.1e)

**1.3.1.5.04-5.** The Contractor shall provide, equip, set-up, outfit, and train field party and field camp operations personnel with deployable or portable radio and satellite communications equipment. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.1.5.04-6.** The Contractor shall update the Antarctic Treaty Station Communications Information on an annual basis.

Deliverable F005 – Antarctic Treaty Station Communications Information

**1.3.1.5.04-7.** The Contractor shall develop and deliver a Service Management Plan that defines the procedures and protocols for field activity communications equipment outfitting/provisioning. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

Deliverable F036 (d) – Service Management Plan

**1.3.1.6. Network Management**

**1.3.1.6-1.** The Contractor shall operate and maintain local area network (LAN) and wide area networking (WAN) systems at all USAP operating locations and facilities and provide service continuity and disaster recovery for the global WAN links. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.6-2.** The Contractor shall operate and maintain all networks and systems in accordance with security laws, mandates, guidelines, and requirements outlined in Section 2.1.7 Information Assurance. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.6-3.** The Contractor shall provide all necessary engineering and operations support, to include IP network engineering, firewall engineering, electronic mail systems engineering and integration, and network management. Network infrastructure changes shall be coordinated through a Configuration Control Board. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.6-4.** The Contractor shall create a roadmap to upgrade identified networks to the IPv6 internet standard in accordance with OMB direction and provide updates to the IPv6 Transition Plan that outlines the program's IPv6 compliance strategy and implementation plan. These updates shall be provided at least annually, and more frequently if required by the NSF. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g).

Deliverable F034 (e) – IPv6 Transition Plan

**1.3.1.6.01. Tech Ops – Networks 24 x 7 NOC**

Refer to PWS 1.3.1.6.

**1.3.1.6.02. Tech Ops – Network Management**

Refer to PWS 1.3.1.6.

### **1.3.1.7. Network Engineering**

Refer to PWS 1.3.1.6.

#### **1.3.1.7.01. Tech Ops – Networks Denver Network**

Refer to PWS 1.3.1.6.

#### **1.3.1.7.02. Tech Ops - McMurdo**

Refer to PWS 1.3.1.6.

#### **1.3.1.7.03. Tech Ops – South Pole**

Refer to PWS 1.3.1.6.

#### **1.3.1.7.04. Palmer Tech Ops Data Systems**

Refer to PWS 1.3.1.6.

### **1.3.1.8. Data Systems**

#### **1.3.1.8.01. Management - Tech Ops Data Systems**

**1.3.1.8.01-1.** The Contractor shall provide general technical support for computing and communications systems that are used for administrative and operational functions within the USAP, to include: on-call support, winter storage, configuration management, installation, technical control and operation, maintenance and repair, and de-commissioning. (SOO C.6.3.1c; C.6.3.1e; 6.3.1g; )

**1.3.1.8.01-2.** The Contractor shall ensure that all operations and administration personnel are properly trained on the equipment, software and USAP-specific configurations. (SOO C.6.3.1c; 6.3.1b).

**1.3.1.8.01-3.** The Contractor shall document all processes as Standard Operating Procedures. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.3.1.8.01-4.** The Contractor shall be responsible for maintaining, and providing where required, the physical facility infrastructure required to support IT&C applications and operations. (SOO C.6.3.1c; C.6.3.1e)

#### **Database Administration**

**1.3.1.8.01-5.** The Contractor shall maintain database information systems to support USAP mission activities at all station locations, research vessels and non-Antarctic logistics locations, to include administration, performance measures, workload data, mission operations, general management, inventory management, and logistics management. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-6.** The Contractor shall provide administration and management of the database systems, software and related hardware/server systems to include maintenance, modernization, database and table creation, modifications, archiving and system troubleshooting as required. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-7.** The Contractor shall ensure data assurance by profiling data, reporting inconsistencies and other anomalies in the data, and performing data cleansing activities to improve information quality. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

### **System Administration**

**1.3.1.8.01-8.** The Contractor shall provide for systems administration and configuration management, to include software/firmware maintenance and revision-level control for all computing platforms, remote access devices, data communications/transmission equipment, and network routing and switching equipment. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-9.** The Contractor shall monitor and baseline the systems, generating system reports and statistics in order to correlate growth and changes over time, allowing the efficient planning for upgrades, enhancements or replacements in a timely manner to ensure optimum performance and uptime. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-10.** The Contractor shall develop and maintain a preventative maintenance plan for all primary, backup and support systems, along with scheduling and performing regular preventative maintenance on these systems to help maximum uptime and minimize outages that could affect the USAP mission. (SOO C.6.3.1c; C.6.3.1e)

**1.3.1.8.01-11.** The Contractor shall provide support and technical expertise to operate and maintain the computing systems and platforms with the requisite training and certification. The Contractor shall ensure that all personnel are properly trained on the equipment, software and USAP-specific configurations. (SOO C.6.3.1c; C.6.3.1e)

### **Email Administration**

**1.3.1.8.01-12.** The Contractor shall provide, operate and maintain the USAP enterprise-wide electronic mail (Email) system to include the interconnection and synchronization of the electronic mail systems for all locations, research vessels and non-Antarctic logistics locations. The Contractor shall be responsible for:

- A. Email account registration and administration
- B. LAN user account registration and administration
- C. Public file storage system administration and fault recovery
- D. Systems administration of mission operations software applications such as inventory management and computerized maintenance management databases
- E. LAN directory management.

(SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-13.** The Contractor shall be responsible for the administration and daily maintenance of the system, including user mailbox and account creation and deletion, maintenance of the USAP-wide directory/address book, message archiving and system troubleshooting as required. (SOO C.6.3.1c; C.6.3.1e)



**1.3.1.8.01-14.** The Contractor shall provide support and technical expertise to operate and maintain the electronic mail system with the requisite training and certification on related equipment, software and USAP-specific configurations. (SOO C.6.3.1c; C.6.3.1e)

**1.3.1.8.01-15.** The Contractor shall develop and publish a USAP On-Line Telephone Directory. The directory shall be password protected as required and accessible via www.usap.gov. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

Deliverable F034 (h) – USAP On-Line Telephone Directory

### **Data Center**

**1.3.1.8.01-16.** The Contractor shall provide, operate, and maintain the data center capabilities at the CONUS enterprise program headquarters, research vessels, and Antarctic stations. Capabilities shall include physical infrastructure consisting of servers, computers and software applications required to perform the mission of the USAP. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.1.8.01-17.** (b) (4)

(SOO C.6.3.1b; C.6.3.1j)

**1.3.1.8.01-18.** The Contractor shall maintain the data backup and archiving plan for the data and information on all systems deployed throughout the USAP and utilized to perform the USAP mission. (SOO C.6.3.1c; C.6.3.1e)

### **1.3.1.8.02. Tech Ops Data Systems – HQ**

Refer to PWS 1.3.1.8.01.

### **1.3.1.8.03. Tech Ops Data Systems – McMurdo**

Refer to PWS 1.3.1.8.01.

### **1.3.1.8.04. Tech Ops Data Systems – South Pole**

Refer to PWS 1.3.1.8.01.

### **1.3.1.8.05. Tech Ops Data Systems – Palmer**

Refer to PWS 1.3.1.8.01.

### **1.3.1.8.06. Tech Ops Data Systems – Port Hueneme**

Refer to PWS 1.3.1.8.01.

## **1.3.2. IT&C GOVERNANCE**

### **1.3.2.1. General IT&C Governance**

#### **1.3.2.1.01. Security Compliance**

**1.3.2.1.01-1.** The Contractor shall obtain the written agreement of each employee permitted access to or furnished with NSF confidential or proprietary business, technical,

or financial information or data, whereby the employee agrees that such information or data which the contractor is obligated to treat in confidence shall not be discussed, divulged or disclosed except to those persons within the contractor's organization directly concerned with the performance of this contract or to Government representatives. (SOO C.6.1.1m)

**1.3.2.1.01-2.** The Contractor shall develop and deliver the following documentation:

- A. Deliverable F035 (a) – Information Security/Information Assurance (IS/IA) Procedures that will be utilized to maintain and comply with IS/IA requirements
- B. Deliverable F035 (b) – Enterprise IT&C IS/IA Plan that conforms to FISMA and NIST requirements
- C. Deliverable F035 (c) – Information Security/Information Assurance Annual Work Plan that defines the planned tasking and projects to be completed, developed in consultation with the NSF Information Security Manager
- D. Deliverable F035 (d) – Information Security Management Documentation, to include Certification and Accreditation Packages, System Security Plans (SSPs), Contingency Plans (CPs), and Disaster Recovery Plans (DRPs). Deliverable F035 (d) shall be developed for Government-owned and Contractor-owned Information Systems identified as Major Applications (MA) or General Support Systems (GSS) that are not connected to an NSF network, but for which the contractor has operational responsibility on behalf of NSF
- E. Deliverable F035 (e) – Information Security/Information Assurance Security Posture Reports on-demand, weekly, monthly, quarterly and annually as noted and directed by the Government
- F. Deliverable F035 (f) – List of all contractor personnel requiring IT systems access screening per NSF logical access criteria. This list shall be provided no later than 30 days after contract award with follow-on submissions on an as-required basis as new personnel are added to the contract
- G. Deliverable F035 (g) – USAP Information Security Annual Awareness Training Plan.

(SOO C.6.1.1m)

**1.3.2.1.01-3.** The Contractor shall ensure that all USAP participants receive initial IT Security Awareness Training before being granted access to NSF systems and networks, in accordance with OMB Circular A-130. (SOO C.6.1.1m; C.6.1.2u)

**1.3.2.1.01-4.** The Contractor shall ensure all USAP participants receive refresher IT Security Awareness Training annually, in accordance with the FISMA. (SOO C.6.1.1m; C.6.1.2u)

**1.3.2.1.01-5.** IT Security Awareness Training shall include employee awareness of their obligations to use NSF access and data only to perform the services specified in this contract. (SOO C.6.1.1m; C.6.1.2u)

**1.3.2.1.01-6.** The Contractor shall provide an Annual Security Awareness Training Report for the USAP that defines out-processing procedures that ensure accomplishment of the required Information Awareness training. (SOO C.6.1.1m)

Deliverable F025 – Annual Security Awareness Training Report for the USAP



**1.3.2.1.01-7.** The Contractor shall provide education and technical assistance to the USAP scientific community to ensure conformance with USAP information security policies and operating procedures. (SOO C.6.1.1m)

### **1.3.2.1.02. Security Engineering**

**1.3.2.1.02-1.** The Contractor shall establish an Information Security program in compliance with FISMA. The Contractor shall assure continuous USAP wide testing, implementation, monitoring, updates, and compliance reporting with Government required National Institute of Standards and Technology (NIST) information security controls. (SOO C.6.1.1m; C.6.1.2u)

**1.3.2.1.02-2.** The Contractor shall conduct or update risk assessments, conduct Security Tests and Evaluations, update security plans, develop Certification/Accreditation documentation for management approval, and identify and implement mitigation strategies to address residual risk in support of NSF's C&A process in accordance with NSF and NIST standards and requirements. (SOO C.6.1.1m)

**1.3.2.1.02-3.** The Contractor shall embed Information Assurance Certification and Accreditation criteria in all System Development Life Cycle activities. Contractor's Security Engineers will be involved in all engineering projects to ensure that all new systems comply with USAP security criteria and requirements. (SOO C.6.1.1m)

**1.3.2.1.02-4.** The Contractor shall monitor the security of all USAP networks using the existing and any future Intrusion Detection System(s) deployed throughout the enterprise. (SOO C.6.1.1m)

**1.3.2.1.02-5.** The Contractor shall respond to, investigate and report on any violations or compromises in accordance with NSF reporting guidelines. (SOO C.6.1.1m)

**1.3.2.1.02-6.** The Contractor shall work with and coordinate response, investigation and remediation activities with NSF, CIRT, or any law enforcement organizations that may be involved in the incident response. (SOO C.6.1.1m)

**1.3.2.1.02-7.** The Contractor shall provide independent information assurance assessments, testing and evaluations, and validations of USAP information assurance processes, implementations, and Certification and Accreditation activities. (SOO C.6.1.1m)

**1.3.2.1.02-8.** The Contractor shall provide the staff and tools to respond to vulnerability notices and detected incidents including system log inspection and patch updates. (SOO C.6.1.1m)

### **1.3.2.2. Application Management**

#### **1.3.2.2.01. Enterprise Architecture & Strategy**

##### **Architecture and Strategy Development**

**1.3.2.2.01-1.** The Contractor shall serve as the source of technical expertise and information for USAP IT&C systems performance, configuration, operation, and engineering issues. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-2.** The Contractor shall provide strategic and long range planning services, to include planning concepts (b) (4) [REDACTED] (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-3.** The Contractor shall assist NSF with the formulation, development, and modification of strategies for IT, in alignment with OMB FEA enterprise driven approach, to meet USAP mission goals. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-4.** Assist with the development of written planning documents by providing substantive content and authorship, subject to NSF review and approval. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-5.** Prepare the IT&C Enterprise Architecture assessment using the FEA framework. This assessment, which reflects the actual architecture produced and sustained, shall be documented in the IT&C Enterprise Architecture Documentation delivered annually in October. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

Deliverable F032 (e) – IT&C Enterprise Architecture Documentation

**1.3.2.2.01-6.** The Contractor shall ensure that IT&C strategic and long range plan objectives, annual operational needs, annual customer support requirements, NSF program management requirements and results of program planning meetings are input to the Annual Program Plan. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-7.** The Contractor shall document the processes used to develop and sustain the Enterprise Architecture in the Enterprise Architecture Management Plan. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

Deliverable F032 (f) – Enterprise Architecture Management Plan

**1.3.2.2.01-8.** The Contractor shall document the technical and architectural standards that are used in the governance of the IT&C program in an Enterprise Architecture Technical Standards. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

Deliverable F032 (g) – Enterprise Architecture Technical Standards

**1.3.2.2.01-9.** The Contractor shall provide system life cycle management services, which shall involve: programmed periodic systems life cycle reviews; systems operations and support cost assessments; phase-out evaluations; and systems sunset reviews. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-10.** The Contractor shall develop a Lifecycle Management Plan for all systems supporting mission essential/critical activities, which incorporates scope for Enterprise IT&C Technology Refresh Plan. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

Deliverable F033 (a) – Lifecycle Management Plan

**1.3.2.2.01-11.** The Contractor shall develop an IT&C Enterprise Strategic Plan that describes the strategic planning process, long range roadmap development process using strategic plan, architecture management process, and IT&C capital planning process. (SOO C.6.3.1c; 6.3.1d; C.6.3.1g)

Deliverable F034 (d) – IT&C Enterprise Strategic Plan

**1.3.2.2.01-12.** The Contractor shall provide inputs to USAP IT&C Strategic Plan to support business intelligence and enhance business/mission operations. (SOO C.6.3.1e)

**1.3.2.2.01-13.** The Contractor shall provide capital planning services to the USAP in the form of systematic review, evaluation, and selection of IT&C projects and major activities. Capital planning data shall be modeled according to the Capital Planning and Investment Control (CPIC) guidelines as mandated by the Clinger-Cohen Act and the OMB. (SOO C.6.3.1b; C.6.3.1c; C.6.3.1d; S C.6.3.1j)

**1.3.2.2.01-14.** Provide business process re-engineering services in support of strategic, long range, and tactical planning, in the form of stakeholder reviews of USAP business processes and the mapping of IT&C services and products to USAP mission operations, management, and customer support functions. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e; C.6.3.1g)

**1.3.2.2.01-15.** Conduct assessments based on NSF provided criteria and provide recommendations to NSF for project selection. This process shall include business case justification and economic cost/benefit analysis. The results of and recommendations from these efforts shall be incorporated as a component of the IT&C Enterprise Strategic Plan (Deliverable F034 (d) (SOO C.6.3.1b; C.6.3.1c; C.6.3.1d; C.6.3.1j)

### **Technology Evaluation**

**1.3.2.2.01-16.** The Contractor shall evaluate market-place developments in key technologies that are used in significant USAP IT&C systems or have potential for significant impact and develop recommended courses of action for IT&C strategic and tactical planning. The results of this evaluation shall be documented in a Technology Trends Assessment and the IT&C Enterprise Strategic Plan. (SOO C.6.3.1b; C.6.3.1c; C.6.3.1d; C.6.3.1j)

Deliverable F033 (c) – Technology Trends Assessment

Deliverable F034 (d) – IT&C Enterprise Strategic Plan

**1.3.2.2.01-17.** Implementation of IT&C Enterprise Strategic Plan components shall be managed under the Annual Program Plan. (SOO C.6.3.1b; C.6.3.1c; C.6.3.1d; C.6.3.1j)

**1.3.2.2.01-18.** The Contractor shall develop and implement appropriate test and evaluation procedures for promising technologies, report the results of such tests to NSF, and recommend or discourage operational use accordingly. (SOO C.6.3.1m)

### **1.3.2.3. Software Asset Management**

#### **1.3.2.3.01. Tech Ops – Software Maintenance**

**1.3.2.3.01-1.** The Contractor shall maintain documentation that tracks all software applications and their configuration. (SOO C.6.3.1c; C.6.3.1e)

**1.3.2.3.01-2.** The Contractor shall maintain and update a full software asset inventory and utilization information to ensure software licensing compliance, and effective allocation of the use of software applications. This inventory shall be available electronically to the NSF. (SOO C.6.3.1g; C.6.3.2a)

### **1.3.3. SERVICE SUPPORT**

#### **1.3.3.1. Applications and Desktop Support**

##### **1.3.3.1.01. Tech Ops – Desktop & Applications Support Mgmt HQ**

**1.3.3.1.01-1.** The Contractor shall provide USAP on-site technical assistance to grantees for the configuration or implementation of desktop technical requirements and the provision of standard IT&C based services. (SOO C.6.3.1c; C.6.3.1e)

**1.3.3.1.01-2.** The Contractor shall provide on-call, as-required technical support for ad hoc grantee field-support needs across the spectrum of desktop services supported by the Contractor. (SOO C.6.3.1c; C.6.3.1e)

**1.3.3.1.01-3.** The Contractor shall follow the Federal Desktop Core Configuration (FDCC) framework published by the National Institute of Standards and Technology (NIST) to help to ensure the security of all desktops on the USAP network. (SOO C.6.3.1c; C.6.3.1e)

**1.3.3.1.01-4.** The Contractor shall supply grantees with hardware, software, specialized computing assistance, and hands-on installation, calibration, maintenance and operation of systems and equipment, according to grant needs and budgets. (SOO C.6.3.1c; SOO C.6.3.1e)

##### **1.3.3.1.02. Tech Ops – Applications Support HQ**

###### **Application Support**

**1.3.3.1.02-1.** The Contractor shall host and administer application software in an operational workflow and Collaborative data center environment. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.3.1.02-2.** The Contractor shall provide training for common general use software applications, and specialty training for mission unique software supplied/supported by the Contractor. (SOO C.6.3.1c; C.6.3.1e)

##### **1.3.3.1.03. Tech Ops – Help Desk - HQ**

**1.3.3.1.03-1.** The Contractor shall provide an integrated service desk and service catalog solution for Tier 1, 2 and 3 support for internal and external customers at all Antarctic stations, non-Antarctic logistics centers, and research vessels. This support

shall include ancillary computing systems, to include file storage and print service peripheral equipment as required to meet USAP internal and external customer requirements at these locations. (SOO C.6.3.1c; C.6.3.1e)

**1.3.3.1.03-2.** The Contractor shall provide subscriber customer support services for internal and external customers, to include:

- A. Call-center help desk support
- B. On-call technical support to the subscriber's location
- C. Interface assistance of subscriber equipment to the local LAN environment and central LAN services
- D. Applications training for common general use software applications
- E. Specialty training for mission unique software supplied/supported by the Contractor

(SOO C.6.3.1c; C.6.3.1e)

**1.3.3.1.04. Tech Ops – Help Desk – McMurdo**

Refer to PWS 1.3.3.1.03.

**1.3.3.1.05. Tech Ops – Help Desk – South Pole**

Refer to PWS 1.3.3.1.03.

**1.3.3.1.06. Tech Ops – Training McMurdo**

**1.3.3.1.06-1.** The Contractor shall provide training curricula, material, qualified instructors, and training courses for Contractor staff and USAP program participants, as required, to ensure effective and proficient use of supplied IT&C computer hardware and software. (SOO C.6.3.1g; C.6.3.2a)

**1.3.3.1.07. Tech Ops Desktop Support Denver**

Refer to PWS 1.3.3.1.01.

**1.3.3.1.08. Tech Ops Desktop Support McMurdo**

Refer to PWS 1.3.3.1.01.

**1.3.4.1. Communications Operations**

**1.3.4.1.01. Tech Ops Comms Management**

**1.3.4.1.01-1.** The Contractor shall be responsible for the installation, operation, maintenance, and evolution of the NSF's terrestrial radio (HF radio and Land Mobile Radio) and wireless communications systems at all OCONUS logistics centers and all Antarctic operating areas. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2b; C.6.3.2d)

**1.3.4.1.01-2.** The Contractor shall ensure that all Radio Communications personnel receive the appropriate training and certifications required to maintain and operate radio communications systems.

**1.3.4.1.01-3.** The Contractor shall develop and deliver a Radio Operations Center Management Plan for Antarctic radio operations/dispatch centers that defines compliance approach to constraints, network control protocols/procedures, call logging procedures, audio recording/archive procedures, etc. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e)

Deliverable F036 (e) – Radio Operations Center Management Plan

**1.3.4.1.01-4.** The Contractor shall provide the skills and support for the erection and maintenance of antennas at all stations and field camp sites within the Antarctic area of operations, to include: maintain and repair antenna towers, curtains, platforms, tracking and mechanical movement components, radomes/enclosures, and feed cable of all installed antennas. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.4.1.01-5.** The Contractor shall operate and maintain repeater equipment as required to reach field parties beyond line-of-sight to Antarctic Stations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.4.1.01-6.** The Contractor shall perform routine electrical and mechanical tests, document findings, and repair as required maintain critical antenna systems. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**HF Radio Communications**

**1.3.4.1.01-7.** The Contractor shall operate and maintain regional and long haul HF radio communications at all Antarctic operating areas. (SOO C.6.3.1d; C.6.3.1e)

**1.3.4.1.01-8.** The Contractor shall operate and maintain HF communications systems according to the USAP documented and designated requirements. (SOO C.6.3.1c; C.6.3.1d; C.6.3.1e)

**1.3.4.1.01-9.** The Contractor shall operate and maintain all routine HF radio communications infrastructure and provide support of the SPAWAR Systems Center Charleston air traffic control and weather forecasting operations. (SOO C.6.3.1d; C.6.3.1e; C.6.3.2c)

**1.3.4.1.01-10.** The Contractor shall provide any other radio communication support to DoD activities supporting the USAP on an as required basis, subject to review and approval by NSF. (SOO C.6.3.2c)

**1.3.4.1.01-11.** The Contractor shall develop and deliver a Radio Communications Service Plan that includes operating procedures and on-going training programs that facilitate the unique skills required for high frequency (HF) radio communications in the polar regions. (SOO C.6.3.1d; C.6.3.1e)

Deliverable F036 (b) – Radio Communications Service Plan

## **Land Mobile and Marine Mobile Radio Communications**

**1.3.4.1.01-12.** The Contract shall operate and maintain regional VHF FM Land Mobile Radio (LMR) and VHF FM Marine Mobile (MM) radio communications for all Antarctic operating areas and the non-Antarctic logistics centers as required. (SOO C.6.3.1d; C.6.3.1e)

**1.3.4.1.01-13.** The Contract shall operate master base stations at dedicated communications sites with remote interfaces, small desk-top base stations, hand-held radios, and field deployable repeater transceivers as required. (SOO C.6.3.1d; C.6.3.1e)

**1.3.4.1.01-14.** The Contract shall operate and maintain, install, and maintain land mobile radio equipment in the USAP light and heavy vehicle fleets operating in all Antarctic areas. (SOO C.6.3.1d; C.6.3.1e)

## **Radio Frequency Spectrum Management**

**1.3.4.1.01-15.** The Contractor shall operate and maintain radio communication systems operation in conformance with the USAP radio frequency (RF) spectrum utilization, coordination, and management as administered by the USAP's designated RF spectrum authority. (SOO C.6.3.2b)

**1.3.4.1.01-16.** The Contractor shall coordinate all RF spectrum related planning, systems design, and operation of emitting or emissions susceptible equipment with the USAP designated RF spectrum authority. (SOO C.6.3.2b)

**1.3.4.1.01-17.** The Contractor shall comply with USAP electromagnetic (EM) spectrum management procedures. (SOO C.6.3.2b)

## **Satellite Communications**

**1.3.4.1.01-18.** The Contractor shall support the operation and maintenance of terrestrial earth stations (both fixed and mobile) and of maritime ship earth stations. Support shall include: the interface of the satellite systems with the premises, station/facility telecommunications infrastructure (wire/cable plant, switched voice network, Local Area Network (LAN) and data network), and satellite and terrestrial service provider networks for end-to-end service. (SOO C.6.3.1b; C.6.3.1c; C.6.3.1e; C.6.3.1n)

**1.3.4.1.01-19.** The Contractor shall provide management skills and support with sufficient organizational structure necessary to conduct a high standard of satellite communications support.

**1.3.4.1.01-20.** The Contractor shall provide, equip, outfit, and train field party and field camp operations personnel with deployable Iridium satellite communications equipment while maintaining sufficient inventory of deployable Iridium satellite equipment to meet projected needs. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1n)

**1.3.4.1.01-21.** The Contractor shall create and deliver an Iridium Mobile Satellite Service Plan to detail the annual resource demand, resource allocation, and budget forecasts for Iridium services in support of the USAP mission. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1n)

Deliverable F036 (c) – Iridium Mobile Satellite Service Plan

## **Telecommunications**

**1.3.4.1.01-22.** The Contractor shall procure, operate and maintain the NSF's common carrier transmission, mission unique transmission, and telecommunication services at all USAP facilities, to include CONUS and OCONUS logistics centers, ocean operating areas, and Antarctic operating areas. Sample services include: (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.4.1.01-23.** As approved by the NSF, the Contractor shall adapt evolving telecommunications services and technologies to meet the mission needs of the USAP. (SOO C.6.3.1b; C.6.3.1c)

**1.3.4.1.01-24.** The Contractor shall utilize a telecommunications asset management system to maintain current, complete and accurate record and documentation that relate to configuration control, maintenance and administration of the systems. (SOO C.6.3.1e)

**1.3.4.1.01-25.** As approved by the NSF, the Contractor will develop a plan for the upgrade of McMurdo, network and telecommunications infrastructure to improve and enhance services and performance while reducing maintenance costs. (SOO C.6.3.1e; C.6.3.1f)

**1.3.4.1.01-26.** The Contractor shall procure telephone services and provide management to support consistently high levels of operational availability of telecommunications and telephone service to include an enterprise-wide, web-enabled, telephone directory. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

## **Paging and Cellular Services**

**1.3.4.1.01-27.** The Contractor shall utilize commercial wireless paging and cellular phone services as required to support effective operations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.4.1.01-28.** The Contractor shall operate and maintain and support Station wireless paging infrastructure and operations for McMurdo Station and South Pole Station. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.4.1.01-29.** The Contractor shall support interfaces to the paging system to include: interconnection to automated management systems that automatically trigger paging functions, interconnection to external telecommunications telephone access, and establishing/ maintaining subscriber and group subscriber paging configurations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

**1.3.4.1.01-30.** The Contractor shall perform provisioning and replacement of paging equipment and subscriber management. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

## **Wire and Cable Plant Management**

**1.3.4.1.01-31.** The Contractor shall be responsible for the configuration, implementation, and sustained utilization of the cable (cooper wire and fiber optic) inside and outside telecommunications plants for all Antarctic stations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)



**1.3.4.1.01-32.** The Contractor shall develop and deliver an Antarctic Station Telecommunications Cable Management Plan, documenting the plan to formally manage Antarctic station telecommunications cable systems (outside plant and inside plant). The Contractor shall make available for inspection, on-demand, an electronic copy of the cable management data base (data and application software) used for administering the plan. The data shall be non proprietary and exportable. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k)

Deliverable F033 (e) – Antarctic Station Telecommunications Cable Management Plan

### **Aeronautical Flight and Telecommunications Network**

**1.3.4.1.01-33.** The Contractor shall operate and maintain the access to the New Zealand Civil Aviation Authority's Aeronautical Flight Telecommunications Network (AFTN) to support the management of McMurdo air traffic control, flight following, and weather observation reporting functions provided by SPAWAR Systems Center Charleston. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.4.1.01-34.** The Contractor shall operate, maintain and manage the interconnecting telecommunications circuit that interfaces the Contractor managed equipment with the AFTN access node. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

**1.3.4.1.01-35.** The Contractor shall support and maintain the custom developed GFE AFTN client and gateway software developed by the USAP to gain access to the New Zealand AFTN network. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

### **Antenna Installation and Maintenance**

**1.3.4.1.01-36.** The Contractor shall provide the skills and support for the erection and maintenance of antennas at all stations and field camp sites within the Antarctic area of operations, to include: maintain and repair antenna towers, curtains, platforms, tracking and mechanical movement components, radomes/enclosures, and feed cable of all installed antennas. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.4.1.01-37.** The Contractor shall operate and maintain repeater equipment as required to reach field parties beyond line-of-sight to Antarctic Stations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

**1.3.4.1.01-38.** The Contractor shall perform routine electrical and mechanical tests, document findings, and repair as required maintain critical antenna systems. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1f)

### **Electronics Bench Repair**

**1.3.4.1.01-39.** The Contractor shall provide electronics bench repair services to provide diagnostic, troubleshooting and repair services for the full spectrum of electronic systems utilized throughout the USAP.

#### **1.3.4.1.02. Tech Ops Comms – McMurdo**

Refer to PWS 1.3.4.1.01

#### **1.3.4.1.03. Tech Ops Comms – South Pole**

In addition to the work referred to in PWS 1.3.4.1.01, the following work items, specific to the South Pole Station, shall be performed:

**1.3.4.1.03-1.** The Contractor shall collaborate with NASA, as directed by the NSF, to provide high-speed satellite communications that utilize additional TDRSS space assets as they become available. (SOO C.6.3.1b)

**1.3.4.1.03-2.** The Contractor shall be responsible for the operation and maintenance of the South Pole Telecommunications Facility (SPTF) that consists of the RF Building, SPGMT Platform and SPTR-2 Platform, to include the satellite antennas, radomes and related equipment shelters. (SOO C.6.3.1c, e; C.6.3.2b)

**1.3.4.1.03-3.** The Contractor shall update and maintain the SPTF Management and Operations Plan. This plan shall address the overall management process; staffing plan to include roles, responsibilities, and authority levels; key maintenance processes; issue resolution processes; and performance measures for high operational availability of the SPTF. (SOO C.6.3.1c, C.6.3.1e; C.6.3.2b)

Deliverable F006 – Management, Standard Operating Procedures, and Preventive Maintenance (PM) Manuals

#### **1.3.4.1.04. Tech Ops Comms – Palmer**

Refer to PWS 1.3.4.1.01

#### **1.3.4.1.05. Tech Ops Telco – McMurdo**

In addition to the work referred to in PWS 1.3.4.1.01, the following work items, specific to McMurdo Station, shall be performed:

**1.3.4.1.05-1.** The Contractor shall be responsible for the configuration, implementation, and sustained utilization of the cable (cooper wire and fiber optic) inside and outside telecommunications plants for all Antarctic stations. (SOO C.6.3.1c; C.6.3.1e; C.6.3.1k; C.6.3.2c)

#### **1.3.4.1.06. McMurdo – Black Island**

In addition to the work referred to in PWS 1.3.4.1.01, the following work items, specific to the Black Island Telecommunications Facility, shall be performed:

**1.3.4.1.06-1.** The Contractor shall staff, operate and maintain a communications transmission and receiving facility at Black Island. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

**1.3.4.1.06-2.** The Contractor shall be responsible for the operation and maintenance of the Black Island Telecommunications Facility (BITF) to include electronics, support structures and other communications equipment housed at the BITF. (SOO C.6.3.1c, C.6.3.1c C.6.3.2b)

**1.3.4.1.06-3.** The Contractor shall update and maintain the BITF Management and Operations Plan. This plan shall address the overall management process; staffing plan to include roles, responsibilities, and authority levels; key maintenance processes; issue resolution processes; and performance measures for high operational availability of the BITF. (SOO C.6.3.1c, C.6.3.1c e; C.6.3.2b)

Deliverable F006 – Management, Standard Operating Procedures, and Preventive Maintenance (PM) Manuals

#### **1.3.4.1.07. South Pole Operations Center**

**1.3.4.1.07-1.** The Contractor shall procure the materials and provide the labor to maintain the South Pole Operations Center.

#### **1.3.4.2. Multi-Media**

##### **1.3.4.2.01. Multi-Media Management**

**1.3.4.2.01-1.** The Contractor shall provide, operate, and manage radio and television services at Antarctic stations and OCONUS logistic centers. Services shall include:

- A. Automatic feed of satellite multi-channel video and broadcast radio channels for rebroadcast on the local cable system
- B. Scheduled airing of Armed Forces Radio and Television (AFRTS) provided programming
- C. Operation of a general public information channel for station information;
- D. Operation of specialty information outlets for station operations information, to include aircraft flight information and weather conditions
- E. Radio station operations for automatic rebroadcast of satellite audio programming feeds
- F. Radio station operations for live radio shows
- G. Routine equipment alignment and maintenance per Navy Media Center specification
- H. Inventory control of video and audio materials
- I. Enforcement of copyright infringement restrictions

(SOO C.6.3.1c; C.6.3.1e)

##### **1.3.4.2.02. Multi-Media Video Production**

**1.3.4.2.02-1.** The Contractor shall facilitate the production and dissemination of program operations information of general interest, station operations information, weather conditions, flight management information, safety orientation, and any other information source identified as valuable or beneficial to the conduct of daily affairs in the Antarctic area of operations and the Christchurch, New Zealand, logistics center and support to OPP/OLPA for public awareness. (SOO C.6.3.1c)

**1.3.4.2.02-2.** The Contractor shall operate and maintain audio-visual equipment, maintenance, and operations for all Antarctic stations and the Christchurch logistics center, to include TV's, DVD players, public address systems, video projection equipment, and stereo equipment. (SOO C.6.3.1c)

**1.3.4.2.02-3.** The Contractor shall provide electronic dissemination outlets on the cable and broadcast radio systems for this information, as approved by the NSF. (SOO C.6.3.1c)

**1.3.4.2.02-4.** The Contractor shall provide the means to create original audio-visual content and/or programming for the purpose of supporting science, public affairs, educational outreach, training and safety, morale and welfare, station operations, and USAP operations. (SOO C.6.3.1c; C.6.1.2r)

**1.3.4.2.02-5.** The Contractor shall provide audio/video content creation for dissemination in a broad array of media types suited for computer, National Television System Committee (NTSC) television, and video system distribution. (SOO C.6.3.1c)

**1.3.4.2.02-6.** The Contractor shall provide capabilities, products, and services as required for small-scale audio-visual production and content, to include:

- A. Raw and pre-production edited video
- B. Video camera recording and simple in-field editing
- C. Graphics, text, and animation
- D. Streaming digital audio-video for web enabled applications and video kiosks

(SOO C.6.3.1c; C.6.1.2r)

**1.3.4.2.02-7.** The Contractor shall provide in studio production quality that meets NTSC broadcast standards. (SOO C.6.3.1c)

**1.3.4.2.02-8.** The Contractor shall film, archive, and manage stock footage as directed by NSF. (SOO C.6.3.1c)

**1.3.4.2.02-9.** The Contractor shall submit all audio-visual creations to NSF for editorial review and approval, unless otherwise directed by NSF. (SOO C.6.3.1c; C.6.1.2r)

#### **1.3.4.2.03. Multi-Media Web Development**

**1.3.4.2.03-1.** The Contractor shall maintain and manage the USAP.gov web site, to include providing content and data as required. (SOO C.6.3.1c; C.6.1.2r)

**1.3.4.2.03-2.** (b) (4)

**1.3.4.2.03-3.** The Contractor shall design, develop, and maintain browser based applications that are compliant with OMB's 508 web access standards and the NSF's Web Development Policy and Standards. (SOO C.6.3.1c; C.6.1.2r)

#### **1.3.4.2.04. Multi-Media AFRTS Support**

**1.3.4.2.04-1.** The Contractor shall provide local redistribution operations for direct downlink satellite video feed from the Armed Forces Radio and Television Service (AFRTS) live satellite feeds. (SOO C.6.3.1c; C.6.3.1e)

**1.3.4.2.04-2.** The Contractor shall operate, install, and maintain equipment provided by the US Navy Media Center for the purpose of supporting USAP radio and television broadcast services and shall coordinate directly with the US Navy Media Center for guidance on equipment management issues. (SOO C.6.3.1c; C.6.3.2c)

**1.3.4.2.04-3.** The Contractor shall provide a Navy Media Center Annual Report per specification of the NSF-Navy Media Center Memorandum of Agreement. (SOO C.6.3.1c; SOO C.6.3.2c)

Deliverable F036 (a) – Navy Media Center Annual Report

#### **1.3.4.3. IT Science Support**

##### **1.3.4.3.01. McMurdo Station**

**1.3.4.3.01-1.** The Contractor shall provide IT Science support for implementation, maintenance, operations and training activities involved with all communications and computing that is done in support of science. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.01-2.** The Contractor shall assist grantees with mission planning of the field component of the grantee's research program, especially in regards to the configuration of USAP provided telecommunications, radio communications, computer networking, and other special technical infrastructures. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.01-3.** The Contractor shall work with the grantee to capture requirements that define the optimal integration with the existing infrastructure. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.01-4.** The Contractor shall provide support to facilitate on-going scientific work, data collection, data analysis, and data transmission for grantees that "leave behind" equipment to continue experiment operation after they leave Antarctica. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.01-5.** All science support shall be planned for and agreed to among the grantees, NSF, and the Contractor as part of the grant planning process. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

##### **1.3.4.3.02. South Pole Station**

**1.3.4.3.02-1.** The Contractor shall provide IT Science support for implementation, maintenance, operations and training activities involved with all communications and computing that is done in support of science. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.02-2.** The Contractor shall assist grantees with mission planning of the field component of the grantee's research program, especially in regards to the configuration of USAP provided telecommunications, radio communications, computer networking, and other special technical infrastructures. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.02-3.** The Contractor shall work with the grantee to capture requirements that define the optimal integration with the existing infrastructure. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.02-4.** The Contractor shall provide support to facilitate on-going scientific work, data collection, data analysis, and data transmission for grantees that "leave behind" equipment to continue experiment operation after they leave Antarctica. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.02-5.** All science support shall be planned for and agreed to among the grantees, NSF, and the Contractor as part of the grant planning process. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

#### **1.3.4.3.03. Management**

**1.3.4.3.03-1.** The Contractor shall provide computers, materials, vessel personal protective clothing, sustaining operational spare parts, and computer media for vessel operations.

#### **1.3.4.3.04. RV Vessel Support Staff (aboard vessels)**

**1.3.4.3.04-1.** The Contractor shall install, test, operate, maintain and/or calibrate electronic equipment to support science missions (varies by mission).

#### **1.3.4.3.05. Palmer Station**

**1.3.4.3.05-1.** The Contractor shall provide IT Science support for implementation, maintenance, operations and training activities involved with all communications and computing that is done in support of science. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.05-2.** The Contractor shall assist grantees with mission planning of the field component of the grantee's research program, especially in regards to the configuration of USAP provided telecommunications, radio communications, computer networking, and other special technical infrastructures. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.05-3.** The Contractor shall work with the grantee to capture requirements that define the optimal integration with the existing infrastructure. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.05-4.** The Contractor shall provide support to facilitate on-going scientific work, data collection, data analysis, and data transmission for grantees that "leave behind" equipment to continue experiment operation after they leave Antarctica. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.05-5.** All science support shall be planned for and agreed to among the grantees, NSF, and the Contractor as part of the grant planning process. (SOO C.6.3.1f; C.6.3.1g; C.6.3.2a)

**1.3.4.3.06. Terascan**

**1.3.4.3.06-1.** The Contractor shall provide management of USAP satellite imagery, Terascan operations and imagery science support including remote sensing analyst, and supplies and equipment.

**1.3.4.3.07. SeaSpace Terascan Grooming**

**1.3.4.3.07-1.** The Contractor shall manage any subcontract activities related to Terascan as required.

**1. 4. INFRASTRUCTURE, OPERATIONS, AND PROFESSIONAL SERVICES (IOPS) REQUIREMENTS (SOO C.6.4; SOO C.6.4.1; SOO C.6.4.2)**

**1.4.1. INFRASTRUCTURE SUPPORT**

The USAP operates across a wide range of facilities, ranging in complexity from small tents and temporary field structures to world-class laboratories and technologically-advanced stations. The Contractor must be able to support all operational activities and facilities at all USAP operating locations.

The following service task requirements are derived from SOO paragraphs C.6.4 through C.6.4.2. Additional requirements have been derived to demonstrate what must be done to meet or exceed NSF expectations in the performance of the ASC.

**1.4.1.1. Construction & Planning**

**1.4.1.1.01. Construction Engineering Planning & Training**

**1.4.1.1.01-1.** The Contractor shall administer subcontracts necessary for specialist skills, such as Heat Trace Assessment.

**1.4.1.1.02. Planning and Controls Area Directorate**

Refer to PWS 1.1.1.3.02

**1.4.1.1.03. Construction Management**

**1.4.1.1.03-1.** The Contractor shall perform constructability reviews of drawings and specifications to assure compatibility with existing system components and spares. (SOO C.6.4.1n)

**1.4.1.1.03-2.** The Contractor shall coordinate with other USAP professional and technical service contractors for design review and construction. (SOO C.6.4.1n; C.6.4.1o; C.6.4.1p)

**1.4.1.1.03-3.** The Contractor shall provide top-level construction management for all construction activities, including Major Construction and Special Projects. (SOO C.6.4.1p; C.6.4.1r)

**1.4.1.1.03-4.** The Contractor shall provide labor to manage O&M, science and other USAP construction activities. (SOO C.6.4.1p; C.6.4.1r)

#### **1.4.1.2. Facilities Maintenance**

##### **1.4.1.2.01. Facilities Maintenance General**

**1.4.1.2.01-1.** The Contractor shall provide uninterrupted support for all IOPS functions from contract award through contract completion. (SOO C.6.4.1a)

**1.4.1.2.01-2.** The Contractor's operational knowledge, preventive maintenance program and ability to respond to emergency situations shall ensure uninterrupted operations of the Antarctic sites and vessels. (SOO C.6.4.1a)

**1.4.1.2.01-3.** The Contractor shall enhance the effectiveness and efficiency of USAP operations and infrastructure over the period of performance. (SOO C.6.4.1b)

**1.4.1.2.01-4.** The Contractor shall be flexible and responsive to changes in programmatic requirements and provide the expertise, management system and tool-set that provides for rapid adaptation to changing and emerging program needs. (SOO 6.4.1f)

**1.4.1.2.01-5.** The Contractor shall manage, operate, construct, and maintain USAP facilities. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

**1.4.1.2.01-6.** The Contractor shall manage, operate, and maintain all facilities, to include power, water, water treatment, and waste water disposal facilities, to provide continuous service at all USAP stations. (SOO C.6.4.1s)

**1.4.1.2.01-7.** The Contractor shall be responsible for the management, operation, and configuration control of all facilities/building systems at each site. Any changes to facilities configuration as a result of construction, testing, maintenance, repairs, equipment failure, or other conditions shall be coordinated with NSF prior to implementation. (SOO C.6.4.1d; C.6.4.1e; C.6.4f; C.6.4.1g)

**1.4.1.2.01-8.** The Contractor shall provide for safe and efficient operations at all USAP facilities. (SOO C.6.4.1r)

**1.4.1.2.01-9.** The Contractor shall provide a COTS Computerized Maintenance Management System (CMMS) and maintenance routines to record, prioritize, schedule, resource, control and report on maintenance tasks; to interface with the supply system for maintenance material readiness; to identify and disseminate information about asset use restrictions due to scheduled maintenance; to support life-cycle and Total Ownership Cost (TOC) analysis; and provide for maximum productivity and cost effectiveness. (SOO C.6.4.1g; C.6.4.1v)



**1.4.1.2.01-10.** The Contractor shall manage and administer the total work effort associated with USAP facilities' services, to include day-to-day facility operations, work orders, trouble calls, and recurring services including predictive/preventive maintenance (PdM, PM), repairs, operations and emergency management. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.02. McMurdo Maintenance Management**

**1.4.1.2.02-1.** The Contractor shall ensure facility/system maintenance, operations, reliability and availability meet established service levels; maximize efficiency and life expectancy; and continuously meet mission requirements. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.02-2.** The Contractor shall prepare Management, Standard Operating Procedures (SOPs), and Preventive Maintenance (PM) Manuals for buildings, facilities, and facilities systems to guide work performance, work flow and process integration. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d; C.6.4.1e; C.6.4.1g)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.4.1.2.02-3.** Facilities shall be operated within the parameters as prescribed by each site's standard operating procedures and standard configurations. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.02-4.** The Contractor shall regularly inspect station facilities for damage and/or defects such as electrical and plumbing deficiencies or safety hazards. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.02-5.** The Contractor shall provide incident reports to document any significant events that occur in the USAP, to include facilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1b; C.6.4.1d)

Deliverable F008 – Incident Reporting

**1.4.1.2.03. South Pole Maintenance Management**

**1.4.1.2.03-1.** The Contractor shall ensure facility/system maintenance, operations, reliability and availability meet established service levels; maximize efficiency and life expectancy; and continuously meet mission requirements. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.03-2.** The Contractor shall prepare Management, Standard Operating Procedures (SOPs), and Preventive Maintenance (PM) Manuals for buildings, facilities, and facilities systems to guide work performance, work flow and process integration. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d; C.6.4.1e; C.6.4.1g)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.4.1.2.03-3.** Facilities shall be operated within the parameters as prescribed by each site's standard operating procedures and standard configurations. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.03-4.** The Contractor shall regularly inspect station facilities for damage and/or defects such as electrical and plumbing deficiencies or safety hazards. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.03-5.** The Contractor shall provide incident reports to document any significant events that occur in the USAP, to include facilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1b; C.6.4.1d)

Deliverable F008 – Incident Reporting

**1.4.1.2.04. McMurdo Minor Projects**

**1.4.1.2.04-1.** The Contractor shall perform those large maintenance activities categorize as too small in value to be a project, too large for a work order as required based on the Annual Program Plan.

**1.4.1.2.05. Palmer Minor Projects**

**1.4.1.2.05-1.** The Contractor shall perform those large maintenance activities categorize as too small in value to be a project, too large for a work order as required based on the Annual Program Plan.

**1.4.1.2.06. South Pole Minor Projects**

**1.4.1.2.06-1.** The Contractor shall perform those large maintenance activities categorize as too small in value to be a project, too large for a work order as required based on the Annual Program Plan.

**1.4.1.2.07. Palmer Facilities Maintenance**

**1.4.1.2.07-1.** The Contractor shall ensure facility/system maintenance, operations, reliability and availability meet established service levels; maximize efficiency and life expectancy; and continuously meet mission requirements. (SOO C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.1.2.07-2.** The Contractor shall prepare Management, Standard Operating Procedures (SOPs), and Preventive Maintenance (PM) Manuals for buildings, facilities, and facilities systems to guide work performance, work flow and process integration. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d; C.6.4.1e; C.6.4.1g)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.4.1.2.07-3.** The Contractor shall provide incident reports to document any significant events that occur in the USAP, to include facilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1b; C.6.4.1d)

Deliverable F008 – Incident Reporting

**1.4.1.2.07-4.** The Contractor shall operate and maintain the pier at Palmer Station. (SOO C.6.4.1d)

**1.4.1.3. Area Directorates**

**1.4.1.3.01. McMurdo Area Directorate**

**1.4.1.3.01-1.** The Contractor shall prepare and submit a Weekly Station Report every Friday starting 04/30/2012. (SOO C.6.1.e)

Deliverable F018 – Weekly Station Report

**1.4.1.3.02-2.** The Contractor shall perform on-site management to ensure disciplined work processes and task execution for McMurdo Station, South Pole Station, and Palmer Station. (SOO C.6.1.2q)

**1.4.1.3.03-3.** The Contractor shall develop an air disaster response plan for both fixed-wing aircraft and helicopters. The response plan shall be reviewed on a regular basis with NSF, the ANG and the helicopter contractor. (SOO C.6.4.1r)

**1.4.1.3.01-4.** The Contractor shall provide decision support for strategic planning and on site schedule execution, coordinating resources and managing work flow. (SOO C.6.1.1d)

**1.4.1.3.02 Palmer & Marine Area Directorate**

**1.4.1.3.02-1.** Provide pier side support for vessels at Palmer Station as a collateral duty.

**1.4.1.3.02-2.** The Contractor shall perform on site management of resources in support of the Marine Science program. (SOO C.6.1.1a; C.6.1.1b)

**1.4.1.3.03. Palmer Area Directorate**

**1.4.1.3.03-1.** The Contractor shall prepare and submit a Weekly Station Report every Friday starting 04/30/2012. (SOO C.6.1.e)

Deliverable F018 – Weekly Station Report

**1.4.1.3.03-2.** The Contractor shall perform on-site management to ensure disciplined work practices and task execution for McMurdo Station, South Pole Station, and Palmer Station. (SOO C.6.1.1a; C.6.1.1b)

**1.4.1.3.03-3.** The Contractor shall provide decision support for strategic planning and on site schedule execution, coordinating resources and managing work flow. (SOO C.6.1.1d)

**1.4.1.3.03-4.** The Contractor shall track and coordinate field camp population movements, Search air rescue, MEDEVAC, MCI/Disaster Preparedness.

**1.4.1.3.04. South Pole Area Directorate**

**1.4.1.3.04-1.** The Contractor shall prepare and submit a Weekly Station Report every Friday starting 04/30/2012. (SOO C.6.1.e)

Deliverable F018 – Weekly Station Report

**1.4.1.3.04-2.** The Contractor shall perform on-site management to ensure disciplined work practices and task execution for McMurdo Station, South Pole Station, and Palmer Station. (SOO C.6.1.1a; C.6.1.1b)

**1.4.1.3.04-3.** The Contractor shall develop an air disaster response plan for both fixed-wing aircraft and helicopters. The response plan shall be reviewed on a regular basis with NSF, the ANG and the helicopter contractor. (SOO C.6.4.1r)

**1.4.1.3.04-4.** The Contractor shall provide decision support for strategic planning and on site schedule execution, coordinating resources and managing work flow. (SOO C.6.1.1d)

**1.4.1.3.04-5.** The Contractor shall track and coordinate field camp population movements, Search and rescue, MEDEVAC, MCI/Disaster Preparedness.

**1.4.1.4. Work Centers**

**1.4.1.4.01. McMurdo Facilities PM Work Center**

**1.4.1.4.01-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.01-2.** The Contractor shall perform preventive maintenance and execute work orders.

**1.4.1.4.02. McMurdo Fire Protection Work Center**

**1.4.1.4.02-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.02-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.03. McMurdo Carpentry Work Center**

**1.4.1.4.03-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.03-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.04 McMurdo Electrical Work Center**

**1.4.1.4.04-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.04-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.05 McMurdo Paint Work Center**

**1.4.1.4.05-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.05-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.06. McMurdo Plumbing Work Center**

**1.4.1.4.06-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.06-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.07. McMurdo Metal Trades Work Center**

**1.4.1.4.07-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.07-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.08. McMurdo Lineman Work Center**

**1.4.1.4.08-1.** The Contractor shall provide a qualified, trained, licensed or certified trade craft group capable of conducting daily operations and scalable to the requirements for each season. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

**1.4.1.4.08-2.** The Contractor shall perform preventive maintenance and execute work orders. (SOO C.6.4.1d; SOO C.6.4.1e; SOO C.6.4.1g)

## **1.4.2. OPERATIONS SUPPORT**

### **1.4.2.1. General Operations**

#### **1.4.2.1.01. McMurdo Station Planning and Operations Center**

**1.4.2.1.01-1.** The Contractor shall track and coordinate field camp population movements, Search and rescue, MEDEVAC, MCI/Disaster Preparedness, Solar forecasting and SUMAC alerts.

**1.4.2.1.01-2.** The Contractor shall coordinate and conduct crash safety drills at least once each season at all McMurdo airfields and helicopter landing sites. (SOO C.6.1.2k)

#### **1.4.2.1.02. Spill Response**

**1.4.2.1.02-1.** The Contractor shall respond to all spill activities in accordance with site SOP's and as part of the emergency response tasking or as a collateral duty depending on the site.

**1.4.2.1.02-2.** The Contractor shall train the staff in spill response and prevention as part of the ESH and waste management tasking.

### **1.4.2.2. Vehicles & Equipment Maintenance**

#### **1.4.2.2.01. Palmer Vehicle Maintenance**

**1.4.2.2.01-1.** The Contractor shall manage, operate, and maintain vehicles, mechanical equipment, and utilities to industry standards and for the Antarctic environment. (SOO C.6.4.1h)

**1.4.2.2.01-2.** The Contractor shall operate and manage vehicles and equipment to ensure the assigned equipment or an alternative is available for station and science activities on a 24 hour a day basis. This work shall be in accordance with recognized industrial standards and practices and the manufacturers technical information. (SOO C.6.4.1h)

**1.4.2.2.01-3.** The Contractor shall prepare Standard Operating Procedures and PM Manuals for vehicles and heavy equipment. (SOO C.6.4.1h)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

#### **1.4.2.2.02. McMurdo Vehicle Maintenance**

**1.4.2.2.02-1.** The Contractor shall manage, operate, and maintain vehicles, mechanical equipment, and utilities to industry standards and for the Antarctic environment. (SOO C.6.4.1h)

**1.4.2.2.02-2.** The Contractor shall operate and manage vehicles and equipment to ensure the assigned equipment or an alternative is available for station and science activities on a 24 hour a day basis. This work shall be in accordance with recognized industrial standards and practices and the manufacturers technical information. (SOO C.6.4.1h)

**1.4.2.2.02-3.** The Contractor shall prepare Standard Operating Procedures and PM Manuals for vehicles and heavy equipment. (SOO C.6.4.1h)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.4.2.2.03. South Pole Vehicle Maintenance**

**1.4.2.2.03-1.** The Contractor shall manage, operate, and maintain vehicles, mechanical equipment, and utilities to industry standards and for the Antarctic environment. (SOO C.6.4.1h)

**1.4.2.2.03-2.** The Contractor shall operate and manage vehicles and equipment to ensure the assigned equipment or an alternative is available for station and science activities on a 24 hour a day basis. This work shall be in accordance with recognized industrial standards and practices and the manufacturers technical information. (SOO C.6.4.1h)

**1.4.2.2.03-3.** The Contractor shall prepare Standard Operating Procedures and PM Manuals for vehicles and heavy equipment. (SOO C.6.4.1h)

Deliverable F006 – Management, Stand Operating Procedures and Preventive Maintenance (PM) Manuals

**1.4.2.3. Equipment Operations**

**1.4.2.3.01. McMurdo Equipment Operations**

**1.4.2.3.01-1.** The Contractor shall maintain, and rebuild as necessary, the ice pier in McMurdo Station. (SOO C.6.4.1d)

**1.4.2.3.01-2.** The Contractor shall ensure that explosives are stored, handled, and transported in accordance with 49 USC 5101-5127, 49 CFR, and all other applicable Federal and DoD regulations. (SOO C.6.1.2o)

**1.4.2.3.01-3.** The Contractor shall ensure that procurement and use of explosives is in accordance with Federal regulations or the state regulations in which the blaster is certified. (SOO C.6.1.2o)

**1.4.2.3.01-4.** The Contractor shall ensure persons using explosive materials are fully trained and qualified in their use. (SOO C.6.1.2o)

**1.4.2.3.01-5.** The Contractor shall maintain all roads, snow roads, and transitions at all USAP locations. (SOO C.6.4.1d)

**1.4.2.3.01-6.** The Contractor shall provide equipment operations and surveying support for engineering and construction projects, site operations, science experiments, and specialized O&M support such as measuring and monitoring temperature and thickness of the sea ice runway and ice roads. (SOO C.6.4.1d)

**1.4.2.3.01-7.** The Contractor shall store, handle, and transport explosives that are used in the maintenance of roads, snow roads, and transitions in accordance with the

requirements of 49 USC 5101-5127, 49 CFR, and all other applicable Federal and DoD regulations. (SOO C.6.4.1d)

**1.4.2.3.01-8.** The Contractor shall procure and use explosives in accordance with Federal regulations or the state regulations in which the blaster is certified. (SOO C.6.4.1d; SOO C.6.4.2o)

#### **1.4.2.3.02. South Pole Equipment Operations**

**1.4.2.3.02-1.** The Contractor shall maintain all roads, snow roads, and transitions at all USAP locations. (SOO C.6.4.1d)

**1.4.2.3.02-2.** The Contractor shall provide equipment operations and surveying support for engineering and construction projects, site operations, science experiments, and specialized O&M support such as measuring and monitoring temperature and thickness of the sea ice runway and ice roads. (SOO C.6.4.1d)

**1.4.2.3.02-3.** The Contractor shall store, handle, and transport explosives that are used in the maintenance of roads, snow roads, and transitions in accordance with the requirements of 49 USC 5101-5127, 49 CFR, and all other applicable Federal and DoD regulations. (SOO C.6.4.1d)

**1.4.2.3.02-4.** The Contractor shall procure and use explosives in accordance with Federal regulations or the state regulations in which the blaster is certified. (SOO C.6.4.1d; SOO C.6.4.2o)

**1.4.2.3.02-5.** The Contractor shall provide ground support to the aircraft at the stations and camps. (SOO C.6.5.1b; C.6.5.1c)

#### **1.4.2.4. Solid Waste Collection/Disposal**

##### **1.4.2.4.01. Divisional HQ Waste Management**

**1.4.2.4.01-1.** The Contractor shall collect, process, package, and document solid waste generated by the USAP, including hazardous materials, to ensure acceptance for import and disposal at licensed commercial facilities. (SOO C.6.4.1t)

**1.4.2.4.01-2.** The Contractor shall be proficient in the procurement, management, and use of hazardous materials in accordance with all applicable regulations. (SOO C.6.4.1w)

**1.4.2.4.01-3.** The Contractor shall train personnel selected to manage waste in their permit and waste management requirements. (SOO C.6.4.1w)

**1.4.2.4.01-4.** The Contractor shall develop and implement procedures to manage and package waste meeting DOT/IATA performance packaging requirements and RCRA hazardous waste identification and labeling requirements. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.01-5.** The Contractor shall propose a waste reduction plan to minimize handling and shipping requirements. (SOO C.6.4.1t)



**1.4.2.4.01-6.** The Contractor shall assist with the return of solid waste from Antarctica by identifying a suitable reception point in the US. (SOO C.6.5.1c; C.6.5.1h)

**1.4.2.4.01-7.** The Contractor shall work with all sites in the management of retrograde and the disposal of all waste generated by USAP in Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.4.2.4.01-8.** The Contractor shall work with all Antarctic sites to ensure correct handling, packaging, documentation, manifesting and disposal of waste under NSF permit. (SOO C.6.5.1c; C.6.5.1h)

#### **1.4.2.4.02. Palmer Waste Operations**

**1.4.2.4.02-1.** The Contractor shall assume responsibility for all waste, including hazardous materials, from the time of its collection, through shipment off continent, to final disposition in the US or at another off-continent location. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.02-2.** The Contractor shall properly identify, classify, package, label, segregate, and stage waste in accordance with the Resource Conservation and Recovery Act (RCRA) as well as applicable Federal regulations and those of ports of entry. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.02-3.** The Contractor shall properly store and/or stage hazardous wastes for transport. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.02-4.** Domestic and industrial non-hazardous waste shall be segregated by type into separate waste streams at the point of generation. (SOO C.6.4.1t)

**1.4.2.4.02-5.** Collection containers for each waste category shall be located in dormitories, laboratories, work centers and other central areas. (SOO C.6.4.1t)

**1.4.2.4.02-6.** Collection containers shall be picked up by the Contractor and transported to processing areas for packaging and documentation prior to shipment. (SOO C.6.4.1t)

**1.4.2.4.02-7.** The Contractor shall accurately log and maintain documentation needed to control waste management from the point of generation through point of final disposition in the US. (SOO C.6.4.1t)

**1.4.2.4.02-8.** Classification, packaging, documentation and labeling shall be in accordance with the RCRA as well as applicable regulations issued by USDA, DOT, the International Air Transport Association (IATA), the International Maritime Dangerous Goods code (IMDG), and individual state requirements. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.02-9.** The Contractor shall comply with U.S. Department of Transportation regulations for packaging and transport of radioactive materials, and with Federal laws and regulations when disposing of radioactive waste generated in Antarctica and returned to the U.S. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.02-10.** The Contractor shall certify all hazardous cargo and maintain an auditable record system. (SOO C.6.4.1w)

**1.4.2.4.02-11.** The Contractor shall present orientation briefings on the USAP Waste Management Program to participants after arrival on site. (SOO C.6.4.1t)

**1.4.2.4.02-12.** The Contractor shall present specialized, small group training to researchers who work with radioisotopes and generate controlled waste streams. (SOO C.6.4.1w)

**1.4.2.4.03. McMurdo Waste Operations**

**1.4.2.4.03-1.** The Contractor shall assume responsibility for all waste, including hazardous materials, from the time of its collection, through shipment off continent, to final disposition in the US or at another off-continent location. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.03-2.** The Contractor shall properly identify, classify, package, label, segregate, and stage waste in accordance with the Resource Conservation and Recovery Act (RCRA) as well as applicable Federal regulations and those of ports of entry. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.03-3.** The Contractor shall properly store and/or stage hazardous wastes for transport. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.03-4.** Domestic and industrial non-hazardous waste shall be segregated by type into separate waste streams at the point of generation. (SOO C.6.4.1t)

**1.4.2.4.03-5.** Collection containers for each waste category shall be located in dormitories, laboratories, work centers and other central areas as well as at the airfields when they are operational. (SOO C.6.4.1t)

**1.4.2.4.03-6.** Collection containers shall be picked up by the Contractor and transported to processing areas for packaging and documentation prior to shipment. (SOO C.6.4.1t)

**1.4.2.4.03-7.** The Contractor shall accurately log and maintain documentation needed to control waste management from the point of generation through point of final disposition in the US. (SOO C.6.4.1t)

**1.4.2.4.03-8.** Classification, packaging, documentation and labeling shall be in accordance with the RCRA as well as applicable regulations issued by USDA, DOT, the International Air Transport Association (IATA), the International Maritime Dangerous Goods code (IMDG), and individual state requirements. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.03-9.** The Contractor shall comply with U.S. Department of Transportation regulations for packaging and transport of radioactive materials, and with Federal laws and regulations when disposing of radioactive waste generated in Antarctica and returned to the U.S. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.03-10.** The Contractor shall certify all hazardous cargo and maintain an auditable record system. (SOO C.6.4.1w)

**1.4.2.4.03-11.** The Contractor shall present orientation briefings on the USAP Waste Management Program to participants after arrival on site. (SOO C.6.4.1t)

**1.4.2.4.03-12.** The Contractor shall present specialized, small group training to researchers who work with radioisotopes and generate controlled waste streams. (SOO C.6.4.1w)

**1.4.2.4.03-13.** The Contractor shall identify retrograde for resale and manage the disposition of identified items.

**1.4.2.4.04. South Pole Waste Operations**

**1.4.2.4.04-1.** The Contractor shall assume responsibility for all waste, including hazardous materials, from the time of its collection, through shipment off continent, to final disposition in the US or at another off-continent location. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.04-2.** The Contractor shall properly identify, classify, package, label, segregate, and stage waste in accordance with the Resource Conservation and Recovery Act (RCRA) as well as applicable Federal regulations and those of ports of entry. (SOO C.6.4.1t; C.6.4.1w)

**1.4.2.4.04-3.** The Contractor shall properly store and/or stage hazardous wastes for transport. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.04-4.** Domestic and industrial non-hazardous waste shall be segregated by type into separate waste streams at the point of generation. (SOO C.6.4.1t)

**1.4.2.4.04-5.** Collection containers for each waste category shall be located in dormitories, laboratories, work centers and other central areas as well as at the airfields when they are operational. (SOO C.6.4.1t)

**1.4.2.4.04-6.** Collection containers shall be picked up by the Contractor and transported to processing areas for packaging and documentation prior to shipment. (SOO C.6.4.1t)

**1.4.2.4.04-7.** The Contractor shall accurately log and maintain documentation needed to control waste management from the point of generation through point of final disposition in the US. (SOO C.6.4.1t)

**1.4.2.4.04-8.** Classification, packaging, documentation and labeling shall be in accordance with the RCRA as well as applicable regulations issued by USDA, DOT, the International Air Transport Association (IATA), the International Maritime Dangerous Goods code (IMDG), and individual state requirements. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.04-9.** The Contractor shall comply with U.S. Department of Transportation regulations for packaging and transport of radioactive materials, and with Federal laws and regulations when disposing of radioactive waste generated in Antarctica and returned to the U.S. (SOO C.6.4.1t; SOO C.6.4.1w)

**1.4.2.4.04-10.** The Contractor shall certify all hazardous cargo and maintain an auditable record system. (SOO C.6.4.1w)

**1.4.2.4.04-11.** The Contractor shall present orientation briefings on the USAP Waste Management Program to participants after arrival on site. (SOO C.6.4.1t)

**1.4.2.4.04-12.** The Contractor shall present specialized, small group training to researchers who work with radioisotopes and generate controlled waste streams. (SOO C.6.4.1w)

#### **1.4.2.5. Utilities**

##### **1.4.2.5.01. Palmer Water Operations**

**1.4.2.5.01-1.** The Contractor shall operate the raw water supply, water treatment plant and distribution system to safely produce, treat and distribute quality, reliable potable water to meet demand. (SOO C.6.4.1s)

**1.4.2.5.01-2.** Water quality shall meet the following health and purity standards:

- A. McMurdo: pH 6.5 to 9.0, Chlorine = 4.0 mg/L MRDL\*, TDS = 500 mg/L
- B. South Pole: pH 6.5 to 8.5, Chlorine = 4.0 mg/L MRDL\*
- C. Palmer: pH 6.5 to 8.5, TDS 500 mg/L, UV

\*MRDL - Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water.

(SOO C.6.4.1h; SOO C.6.4.1s)

**1.4.2.5.01-3.** The Contractor shall provide incident reports to document any utilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1c; C.6.4.1s)

##### **1.4.2.5.02. McMurdo Water Utility**

**1.4.2.5.02-1.** The Contractor shall implement a Water Plant, Equipment and System Maintenance Plan. (SOO C.6.4.1s)

**1.4.2.5.02-2.** The Contractor shall operate the raw water supply, water treatment plant and distribution system to safely produce, treat and distribute quality, reliable potable water to meet demand. (SOO C.6.4.1s)

**1.4.2.5.02-3.** Water quality shall meet the following health and purity standards:

- A. McMurdo: pH 6.5 to 9.0, Chlorine = 4.0 mg/L MRDL\*, TDS = 500 mg/L
- B. South Pole: pH 6.5 to 8.5, Chlorine = 4.0 mg/L MRDL\*
- C. Palmer: pH 6.5 to 8.5, TDS 500 mg/L, UV

\*MRDL - Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water.

(SOO C.6.4.1h; SOO C.6.4.1s)

##### **1.4.2.5.03. McMurdo Power Utility**

**1.4.2.5.03-1.** The Contractor shall be responsible for the management, operation and configuration of utility production and distribution at each site. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.03-2.** The Contractor shall ensure facility/system reliability and availability meet the mission requirements. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.03-3.** The Contractor shall maintain the operations of all utility systems during any catastrophic, natural or manmade emergency. (SOO C.6.4.1c; 6.4.1g)

**1.4.2.5.03-4.** Utility systems shall be operated within the parameters as prescribed by each site's standard operating procedures and standard configurations. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.03-5.** The Contractor shall develop and promote a comprehensive energy conservation and reduction program. (b) (4)

(SOO 6.4.1d; 6.4.1e; C.6.4.1g)

**1.4.2.5.03-6.** The Contractor shall operate the electrical power generation plants, to safely produce reliable electrical power. The required standard of performance is continuous electrical power at a 99.97% availability rate to the sites. (SOO 6.4.1e; C.6.4.1g)

**1.4.2.5.03-7.** The Contractor shall be directly responsible for all electrical distribution systems in addition to power plants, including, but not limited to: transformers; transmission lines from the power plant to all main service switches; Uninterrupted Power Supplies (UPS); switchgear; protective relaying; circuit breakers; and feeder circuits and branch circuits. (SOO 6.4.1g)

**1.4.2.5.03-8.** The Contractor shall implement an Electrical Power Production maintenance plan that defines the schedule of activities that are necessary for proper and efficient operation of all electrical equipment and systems. (SOO 6.4.1g)

**1.4.2.5.03-9.** The Contractor shall ensure all electrical power work conforms to and complies with the requirements of the National Electrical Codes, manufacturers' instructions and recommendations, and all other applicable standards and codes for electrical system operations and maintenance. (SOO 6.4.1g)

**1.4.2.5.03-10.** The Contractor shall coordinate scheduled power outages for maintenance with the NSF and all affected customers. (SOO 6.4.1c; SOO 6.4.1g)

**1.4.2.5.03-11.** The Contractor shall operate and maintain all emergency power generation systems, to include maintaining the generators and making any necessary repairs per manufacturer's recommendations. (SOO 6.4.1g)



**1.4.2.5.03-12.** The Contractor shall periodically exercise emergency generators under load to ensure the operability and availability of these systems in case of power loss. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.03-13.** Following a complete loss of primary power, the Contractor shall respond to the outage as an emergency trouble call and confirm that existing emergency generating equipment is on-line. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.03-14.** After primary power has been restored, the Contractor shall confirm that all emergency generating equipment has returned to normal and is ready to provide power in case of future emergencies. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.03-15.** The Contractor shall provide qualified staff trained, certified and experienced in the operations of 24VDC, 48VDC, 120V, 208V, 240V, 480V and 4160V power systems. (SOO 6.4.1g)

**1.4.2.5.03-16.** The Contractor shall provide incident reports to document any utilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1c; C.6.4.1s)

#### **1.4.2.5.04 Palmer Power Operations**

**1.4.2.5.04-1.** The Contractor shall be responsible for the management, operation and configuration of utility production and distribution at each site. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.04-2.** The Contractor shall ensure facility/system reliability and availability meet the mission requirements. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.04-3.** The Contractor shall maintain the operations of all utility systems during any catastrophic, natural or manmade emergency. (SOO C.6.4.1c; 6.4.1g)

**1.4.2.5.04-4.** Utility systems shall be operated within the parameters as prescribed by each site's standard operating procedures and standard configurations. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.04-5.** The Contractor shall develop and promote a comprehensive energy conservation and reduction program. (b) (4)

[REDACTED] (SOO 6.4.1d; 6.4.1e; C.6.4.1g)

**1.4.2.5.04-6.** The Contractor shall operate the electrical power generation plants, to safely produce reliable electrical power. The required standard of performance is continuous electrical power at a 99.97% availability rate to the sites. (SOO 6.4.1e; C.6.4.1g)

**1.4.2.5.04-7.** The Contractor shall be directly responsible for all electrical distribution systems in addition to power plants, including, but not limited to: transformers; transmission lines from the power plant to all main service switches; Uninterrupted

Power Supplies (UPS); switchgear; protective relaying; circuit breakers; and feeder circuits and branch circuits. (SOO 6.4.1g)

**1.4.2.5.04-8.** The Contractor shall implement an Electrical Power Production maintenance plan that defines the schedule of activities that are necessary for proper and efficient operation of all electrical equipment and systems. (SOO 6.4.1g)

**1.4.2.5.04-9.** The Contractor shall ensure all electrical power work conforms to and complies with the requirements of the National Electrical Codes, manufacturers' instructions and recommendations, and all other applicable standards and codes for electrical system operations and maintenance. (SOO 6.4.1g)

**1.4.2.5.04-10.** The Contractor shall coordinate scheduled power outages for maintenance with the NSF and all affected customers. (SOO 6.4.1c; SOO 6.4.1g)

**1.4.2.5.04-11.** The Contractor shall operate and maintain all emergency power generation systems, to include maintaining the generators and making any necessary repairs per manufacturer's recommendations. (SOO 6.4.1g)

**1.4.2.5.04-12.** The Contractor shall periodically exercise emergency generators under load to ensure the operability and availability of these systems in case of power loss. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.04-13.** Following a complete loss of primary power, the Contractor shall respond to the outage as an emergency trouble call and confirm that existing emergency generating equipment is on-line. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.04-14.** After primary power has been restored, the Contractor shall confirm that all emergency generating equipment has returned to normal and is ready to provide power in case of future emergencies. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.04-15.** The Contractor shall provide qualified staff trained, certified and experienced in the operations of 24VDC, 48VDC, 120V, 208V, 240V, 480V and 4160V power systems. (SOO 6.4.1g)

**1.4.2.5.04-16.** The Contractor shall provide incident reports to document any utilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1c; C.6.4.1s)

#### **1.4.2.5.05 South Pole Power Utility**

**1.4.2.5.05-1.** The Contractor shall be responsible for the management, operation and configuration of utility production and distribution at each site. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.05-2.** The Contractor shall ensure facility/system reliability and availability meet the mission requirements. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.05-3.** The Contractor shall maintain the operations of all utility systems during any catastrophic, natural or manmade emergency. (SOO C.6.4.1c; 6.4.1g)



**1.4.2.5.05-4.** Utility systems shall be operated within the parameters as prescribed by each site's standard operating procedures and standard configurations. (SOO 6.4.1e; C.6.4.1g; C.6.4.1s)

**1.4.2.5.05-5.** The Contractor shall develop and promote a comprehensive energy conservation and reduction program. (b) (4)

(SOO 6.4.1d; 6.4.1e; C.6.4.1g)

**1.4.2.5.05-6.** The Contractor shall operate the electrical power generation plants, to safely produce reliable electrical power. The required standard of performance is continuous electrical power at a 99.97% availability rate to the sites. (SOO 6.4.1e; C.6.4.1g)

**1.4.2.5.05-7.** The Contractor shall be directly responsible for all electrical distribution systems in addition to power plants, including, but not limited to: transformers; transmission lines from the power plant to all main service switches; Uninterrupted Power Supplies (UPS); switchgear; protective relaying; circuit breakers; and feeder circuits and branch circuits. (SOO 6.4.1g)

**1.4.2.5.05-8.** The Contractor shall implement an Electrical Power Production maintenance plan that defines the schedule of activities that are necessary for proper and efficient operation of all electrical equipment and systems. (SOO 6.4.1g)

**1.4.2.5.05-9.** The Contractor shall ensure all electrical power work conforms to and complies with the requirements of the National Electrical Codes, manufacturers' instructions and recommendations, and all other applicable standards and codes for electrical system operations and maintenance. (SOO 6.4.1g)

**1.4.2.5.05-10.** The Contractor shall coordinate scheduled power outages for maintenance with the NSF and all affected customers. (SOO 6.4.1c; SOO 6.4.1g)

**1.4.2.5.05-11.** The Contractor shall operate and maintain all emergency power generation systems, to include maintaining the generators and making any necessary repairs per manufacturer's recommendations. (SOO 6.4.1g)

**1.4.2.5.05-12.** The Contractor shall periodically exercise emergency generators under load to ensure the operability and availability of these systems in case of power loss. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.05-13.** Following a complete loss of primary power, the Contractor shall respond to the outage as an emergency trouble call and confirm that existing emergency generating equipment is on-line. (SOO C.6.4.1c; SOO 6.4.1g)

**1.4.2.5.05-14.** After primary power has been restored, the Contractor shall confirm that all emergency generating equipment has returned to normal and is ready to provide power in case of future emergencies. (SOO C.6.4.1c; SOO 6.4.1g)



**1.4.2.5.05-15.** The Contractor shall provide qualified staff trained, certified and experienced in the operations of 24VDC, 48VDC, 120V, 208V, 240V, 480V and 4160V power systems. (SOO 6.4.1g)

**1.4.2.5.05-16.** The Contractor shall provide incident reports to document any utilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1c; C.6.4.1s)

#### **1.4.2.5.06 McMurdo Waste Water Treatment**

**1.4.2.5.06-1.** The Contractor shall implement a Water Plant, Equipment and System Maintenance Plan. (SOO C.6.4.1s)

**1.4.2.5.06-2.** The Contractor shall operate waste water treatment plants to produce a final effluent quality that exceeds secondary treatment standards 40 CFR Part 122, EPA. (SOO C.6.4.1s; C.6.4.1h)

**1.4.2.5.06-3.** The Contractor shall collect and containerize sludge for retrograde to states for disposal.

**1.4.2.5.06-4.** The Contractor shall implement a Wastewater Treatment maintenance plan. (SOO C.6.4.1s)

**1.4.2.5.06-5.** The Contractor shall provide incident reports to document any utilities system failure, root cause analysis of failure, short term response and recommended long term response. (SOO C.6.4.1c; C.6.4.1s)

#### **1.4.2.6. Fuels Management**

##### **1.4.2.6.01. Palmer Fuels Procurement**

**1.4.2.6.01-1.** The contractor shall procure fuels for Palmer Station power plant and heavy equipment.

##### **1.4.2.6.02. McMurdo Marble Point**

**1.4.2.6.02-1.** The Contractor shall staff, operate and maintain a fueling depot at Marble Point. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

##### **1.4.2.6.03. McMurdo Fuels Operation**

**1.4.2.6.03-1.** The Contractor shall manage, operate, and maintain all USAP bulk fuel storage and distribution systems. (SOO C.6.4.1d; C.6.4.1q)

**1.4.2.6.03-2.** The Contractor shall follow guidelines and regulations of American Petroleum Institute (API) with respect to fuels and major fuel processes and functions. (SOO C.6.4.2c)

**1.4.2.6.03-3.** The Contractor shall follow the International Code series and the National Fire Protection Association (NFPA) Code series for tanks with capacities less than 50,000 gallons, pipes less than four inches in diameter, and dispensers. (SOO C.6.4.2c)

- 1.4.2.6.03-4.** The Contractor shall provide fuel forecast requirements, based on annual consumption data and projected requirements, as input to the Annual Program Plan and long range plans. (SOO C.6.4.1q)
- 1.4.2.6.03-5.** The Contractor shall receive, maintain and control station fuel inventories. (SOO C.6.4.1d; C.6.4.1q)
- 1.4.2.6.03-6.** The Contractor shall maintain an accurate inventory of fuel amounts. (SOO C.6.4.1d; C.6.4.1q)
- 1.4.2.6.03-7.** The Contractor shall maintain accurate records at all times of receipt, issue and usage. (SOO C.6.4.1d; C.6.4.1q)
- 1.4.2.6.03-8.** Fuel shall be off-loaded as expeditiously as possible in accordance with the fuels safety and environmental protection procedures. (SOO C.6.4.1d; C.6.4.1q; C.6.4.1r)
- 1.4.2.6.03-9.** The Contractor shall segregate fuel and store test the fuel supply and apply controls as outlined in the site procedure to maintain quality within the fuel storage system. (SOO C.6.4.1d; SOO C.6.4.1q)
- 1.4.2.6.03-10.** The Contractor shall provide notification to the NSF of any discrepancy in the quantity or quality of fuel products. (SOO C.6.4.1d; C.6.4.1q)
- 1.4.2.6.03-11.** The Contractor shall operate and maintain fuels equipment on a year round basis, following API, NFPA and International Series guidelines when transferring fuel through hard pipelines and temporary hoses. (SOO C.6.4.1d; C.6.4.1q; C.6.4.1h)
- 1.4.2.6.03-12.** The Contractor shall segregated fuel and store by type, and distribute throughout the station as required for normal operations. (SOO C.6.4.1d; SOO C.6.4.1q)
- 1.4.2.6.03-13.** The Contractor shall provide fuels to South Pole Station and field sites as required from the fuel storage facilities at McMurdo Station. (SOO C.6.4.1d; C.6.4.1q)
- 1.4.2.6.03-14.** The Contractor shall conduct fuel operations in a manner that minimizes the risk of accidental spills and leakage, and maintain an effective 24-hour spill response capability that includes trained response teams and appropriate equipment. (SOO C.6.4.1d; C.6.4.1q; C.6.4.1r)
- 1.4.2.6.03-15.** The Contractor shall inspect storage tanks and surrounding areas, piping, and tank fittings such as valves, vents and pressure relief systems on a daily basis. (SOO C.6.4.1d; C.6.4.1q; C.6.4.1r)
- 1.4.2.6.03-16.** The Contractor shall provide aviation fuel operations to ensure quality fuel is available to meet issue requests in a safe and timely manner. (SOO C.6.4.1d; C.6.4.1q; C.6.4.1r)
- 1.4.2.6.03-17.** The Contractor shall pass fuel products to be delivered directly into aircraft through filter separators and monitors (go-no-go type filters). (SOO C.6.4.1d; C.6.4.1q; C.6.4.1r)

**1.4.2.6.03-18.** The Contractor shall establish, operate and remove fuel systems at the McMurdo and South Pole airfields according to the seasonal air operations schedules and the requirements of each airfield. (SOO C.6.4.1d; C.6.4.1q)

**1.4.2.6.03-19.** The Contractor shall ensure that such systems are safely established, inspected and operated while in place and that environmental controls are observed. (SOO C.6.4.1d; .6.4.1q; C.6.4.1r)

#### **1.4.2.6.04. South Pole Fuels Operation**

Refer to PWS 1.4.2.6.03.

#### **1.4.2.7. Fire Department**

##### **1.4.2.7.01. McMurdo – Antarctic Fire and Emergency Services (AFES)**

**1.4.2.7.01-1.** The Contractor shall provide emergency response and fire-fighting services at McMurdo Station, Palmer Station, and South Pole Station. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

**1.4.2.7.01-2.** The Contractor shall provide the staffing and skills needed for a three minute response (engine on scene) to any fire alarm received within the McMurdo Station complex. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

**1.4.2.7.01-3.** The Contractor shall staff and operate a response desk for medical emergencies, facilities/utilities/vehicle emergencies, and security problems on a 24x7 basis. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d)

**1.4.2.7.01-4.** The Contractor shall provide first responders to fuel spills and other potentially hazardous accidents involving industrial substances. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d; SOO 6.4.1e)

**1.4.2.7.01-5.** Emergency response force personnel shall be trained to the National Fire Protection Agency (NFPA) 472 standard. (SOO C.6.4.1b; SOO C.6.4.1c; SOO C.6.4.1d; SOO C.6.4.1r)

**1.4.2.7.01-6.** The Contractor shall implement a proactive and comprehensive fire, safety and related emergency prevention program, incorporating inspections, training and other forms of outreach and enforcement. (SOO C.6.4.1r)

**1.4.2.7.01-7.** The Contractor shall provide staff with NFPA Type 1 credentials to conduct regular inspections of fire detection and prevention equipment. (SOO C.6.4.1r)

**1.4.2.7.01-8.** The Contractor shall provide Aircraft Rescue and Fire Fighting (ARFF) response in accordance with DoD USAF Air Mobility Command (AMC) Aircraft Rescue and Fire Fighting (ARFF) regulations (AMC I 11-208). (SOO C.6.4.1r)

#### **1.4.2.8. General Field Assistants**

##### **1.4.2.8.01. General Field Assistants Labor Force**

**1.4.2.9. Station & Hospitality Services**

**1.4.2.9.01. Management of Station Services**

**1.4.2.9.01-1.** The contractor shall manage Station Services providing billeting, janitorial, food services, retail operations, recreation services, and beverage services.

#### **1.4.2.9.02. Population Specialist**

**1.4.2.9.02-1.** The Contractor shall provide daily muster for personnel deployed to Antarctica.

#### **Food Services**

##### **1.4.2.9.03. Palmer Food**

**1.4.2.9.03-1.** The Contractor shall provide comprehensive meal planning and food services at the three stations and at field camps in Antarctica ensuring a reasonable variety and appropriate nutritional content. (SOO C.6.4.1i)

**1.4.2.9.03-2.** The Contractor shall staff and manage a complete kitchen and cafeteria-style dining facility at all permanent stations. (SOO C.6.4.1i)

**1.4.2.9.03-3.** During the austral summer at McMurdo and South Pole Stations, The Contractor shall serve four full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.03-4.** During the austral winter at McMurdo and South Pole Stations, and year-round at Palmer Station, The Contractor shall serve three full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.03-5.** The Contractor shall utilize industry standard COTS food services planning tools to plan nutritional menus compliant with HACCP guideline and tailored to site preferences; for automated serving and portion management; for waste minimization; and for food procurement planning and cost control. (SOO C.6.4.1i)

**1.4.2.9.03-6.** The Contractor shall manage food inventories at the station so that stock is rotated, variety and nutritional balance is maintained, and the reorder cycle keeps stocks at correct levels without significant shortages or overages. (SOO C.6.4.1i)

**1.4.2.9.03-7.** The Contractor shall provide catering services to support official site visits and events. (SOO C.6.4.1i)

**1.4.2.9.03-8.** The Contractor shall establish and maintain a quality assurance program to include periodic food testing and inspection. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.03-9.** The Contractor shall meet USAP food service sanitation standards. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.03-10.** The Contractor shall cooperate fully with all scheduled or ad hoc food service inspections conducted by the station medical staff or other federal agencies such as the U.S Army Veterinary Service. (SOO C.6.4.1i; C.6.4.1r)

##### **1.4.2.9.04. McMurdo Food**

**1.4.2.9.04-1.** The Contractor shall provide comprehensive meal planning and food services at the three stations and at field camps in Antarctica ensuring a reasonable variety and appropriate nutritional content. (SOO C.6.4.1i)

**1.4.2.9.04-2.** The Contractor shall staff and manage a complete kitchen and cafeteria-style dining facility at all permanent stations. (SOO C.6.4.1i)

**1.4.2.9.04-3.** During the austral summer at McMurdo and South Pole Stations, The Contractor shall serve four full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.04-4.** During the austral winter at McMurdo and South Pole Stations, and year-round at Palmer Station, The Contractor shall serve three full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.04-5.** Daily hot food delivery shall be provided to operational airfields as required from the McMurdo Dining Facility during its period of operation. (SOO C.6.4.1i)

**1.4.2.9.04-6.** The Contractor shall utilize industry standard COTS food services planning tools to plan nutritional menus compliant with HACCP guideline and tailored to site preferences; for automated serving and portion management; for waste minimization; and for food procurement planning and cost control. (SOO C.6.4.1i)

**1.4.2.9.04-7.** The Contractor shall manage food inventories at the station so that stock is rotated, variety and nutritional balance is maintained, and the reorder cycle keeps stocks at correct levels without significant shortages or overages. (SOO C.6.4.1i)

**1.4.2.9.04-8.** The Contractor shall provide catering services to support official site visits and events. (SOO C.6.4.1i)

**1.4.2.9.04-9.** The Contractor shall establish and maintain a quality assurance program to include periodic food testing and inspection. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.04-10.** The Contractor shall meet USAP food service sanitation standards. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.04-11.** The Contractor shall cooperate fully with all scheduled or ad hoc food service inspections conducted by the station medical staff or other federal agencies (SOO C.6.4.1i; C.6.4.1r)

#### **1.4.2.9.05. South Pole Food**

**1.4.2.9.05-1.** The Contractor shall provide comprehensive meal planning and food services at the three stations and at field camps in Antarctica ensuring a reasonable variety and appropriate nutritional content. (SOO C.6.4.1i)

**1.4.2.9.05-2.** The Contractor shall staff and manage a complete kitchen and cafeteria-style dining facility at all permanent stations. (SOO C.6.4.1i)

**1.4.2.9.05-3.** During the austral summer at McMurdo and South Pole Stations, The Contractor shall serve four full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.05-4.** During the austral winter at McMurdo and South Pole Stations, and year-round at Palmer Station, The Contractor shall serve three full meals six days per week, and a brunch and dinner on Sunday. (SOO C.6.4.1i)

**1.4.2.9.05-5.** The Contractor shall utilize industry standard COTS food services planning tools to plan nutritional menus compliant with HACCP guideline and tailored to site preferences; for automated serving and portion management; for waste minimization; and for food procurement planning and cost control. (SOO C.6.4.1i)

**1.4.2.9.05-6.** The Contractor shall manage food inventories at the station so that stock is rotated, variety and nutritional balance is maintained, and the reorder cycle keeps stocks at correct levels without significant shortages or overages. (SOO C.6.4.1i)

**1.4.2.9.05-7.** The Contractor shall provide catering services to support official site visits and events. (SOO C.6.4.1i)

**1.4.2.9.05-8.** The Contractor shall establish and maintain a quality assurance program to include periodic food testing and inspection. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.05-9.** The Contractor shall meet USAP food service sanitation standards. (SOO C.6.4.1i; C.6.4.1r)

**1.4.2.9.05-10.** The Contractor shall cooperate fully with all scheduled or ad hoc food service inspections conducted by the station medical staff or other federal agencies (SOO C.6.4.1i; C.6.4.1r)

#### **1.4.2.9.06. South Pole Growth Chamber**

**1.4.2.9.06-1.** The Contractor shall manage operation of the Food Growth Chamber (FGC) at South Pole to maximize production to support menu planning and morale. (SOO C.6.4.1i; C.6.4.1g)

#### **1.4.2.10. Housing Management**

##### **1.4.2.10.01. Palmer Housing Janitorial**

**1.4.2.10.01-1.** The Contractor shall keep common use living space, bathrooms, and other public areas at all stations in a sanitary condition. (SOO C.6.4.1k)

**1.4.2.10.01-2.** The Contractor shall provide and direct staff to clean common use living spaces and bathrooms to appropriate standards. (SOO C.6.4.1k)

**1.4.2.10.01-3.** The Contractor shall perform deep cleaning of specified work centers as identified through annual program plan tasking. (SOO C.6.4.1k)

**1.4.2.10.01-4.** The Contractor shall provide and manage housing and berthing for program personnel at all stations, at field camps, and on research vessels. (SOO C.6.4.1j)

**1.4.2.10.01-5.** The Contractor shall schedule housing for all program personnel at permanent and temporary sites and on vessels. (SOO C.6.4.1j)

**1.4.2.10-01-6.** The Contractor shall manage all berthing areas to include assignment of rooms, key control and enforcement of NSF-approved policies governing building use and housekeeping. (SOO C.6.4.1j)



#### **1.4.2.10.02. McMurdo Housing Janitorial**

**1.4.2.10.02-1.** The Contractor shall keep common use living space, bathrooms, and other public areas at all stations in a sanitary condition. (SOO C.6.4.1k)

**1.4.2.10.02-2.** The Contractor shall provide and direct a janitorial staff to clean common use living spaces and bathrooms to appropriate standards. (SOO C.6.4.1k)

**1.4.2.10.02-3.** The Contractor shall perform deep cleaning of specified work centers as identified through annual program plan tasking. (SOO C.6.4.1k)

**1.4.2.10.02-4.** The Contractor shall provide and manage housing and berthing for program personnel at all stations, at field camps, and on research vessels. (SOO C.6.4.1j)

**1.4.2.10.02-5.** The Contractor shall schedule housing for all program personnel at permanent and temporary sites and on vessels. (SOO C.6.4.1j)

**1.4.2.10.02-6.** The Contractor shall manage all berthing areas to include assignment of rooms, key control and enforcement of NSF-approved policies governing building use and housekeeping. (SOO C.6.4.1j)

#### **1.4.2.10.03 South Pole Housing**

**1.4.2.10.03-1.** The Contractor shall keep common use living space, bathrooms, and other public areas at all stations in a sanitary condition. (SOO C.6.4.1k)

**1.4.2.10.03-2.** The Contractor shall provide and direct a janitorial staff to clean common use living spaces and bathrooms to appropriate standards. (SOO C.6.4.1k)

**1.4.2.10.03-3.** The Contractor shall perform deep cleaning of specified work centers as identified through annual program plan tasking. (SOO C.6.4.1k)

**1.4.2.10.03-4.** The Contractor shall provide and manage housing and berthing for program personnel at all stations, at field camps, and on research vessels. (SOO C.6.4.1j)

**1.4.2.10.03-5.** The Contractor shall schedule housing for all program personnel at permanent and temporary sites and on vessels. (SOO C.6.4.1j)

**1.4.2.10.03-6.** The Contractor shall manage all berthing areas to include assignment of rooms, key control and enforcement of NSF-approved policies governing building use and housekeeping. (SOO C.6.4.1j)

#### **1.4.2.11. Recreation Services**

**1.4.2.11-1.** The Contractor shall provide site appropriate social, recreational and entertainment functions. (SOO C.6.4.1l)

##### **1.4.2.11.01. McMurdo Recreation**

Refer to PWS 1.4.2.11.

#### **1.4.2.11.02. McMurdo – Recreation**

Refer to PWS 1.4.2.11.

#### **1.4.2.11.03. Palmer Recreation**

Refer to PWS 1.4.2.11.

#### **1.4.2.11.04. Vessel Recreation**

Refer to PWS 1.4.2.11.

#### **1.4.2.12. Postal**

##### **1.4.2.12.01. General Postal**

**1.4.2.12.01-1.** The Contractor shall provide postal services at McMurdo Station and the Air Post Office (APO) in Christchurch, NZ. (SOO C.6.4.1m)

**1.4.2.12.01-2.** The Contractor shall support Postal service in accordance with the DD Form 1144 Support Agreement dated September 2005. (SOO C.6.4.2b)

##### **1.4.2.12.02. Palmer Post Office**

**1.4.2.12.02-1.** The Contractor shall provide postal services at Palmer Station as a collateral duty. (SOO C.6.4.1m)

##### **1.4.2.12.03. South Pole Post Office**

**1.4.2.12.03-1.** The Contractor shall provide postal services at South Pole Station, Palmer Station as a collateral duty. (SOO C.6.4.1m)

#### **1.4.2.13. Station Retail & Beverage**

**1.4.2.13-1.** The Contractor shall operate a self-sustaining working capital fund to support retail and club activities throughout the USAP. (SOO C.6.4.1x)

**1.4.2.13-2.** The Contractor shall utilize only those costs associated with the point-of-sale operations (e.g. station stores and clubs) for this self-sustaining working capital fund. (SOO C.6.4.1x)

**1.4.2.13-3.** The Contractor shall segregate self-sustaining working capital fund from recreational activities and equipment such as physical fitness facilities, outdoor gear issuance, and other NSF-approved activities offered for the morale and well being of deployed Antarctic personnel. (SOO C.6.4.1x)

**1.4.2.13-4.** The Contractor shall manage clubs; procure, store and restock inventories; recruit bartenders and other staff as needed from the population; and maintain financial records according to NSF approved accounting practices. (excludes South Pole and Palmer) (SOO C.6.4.1x)

**1.4.2.13-5.** The Contractor shall be responsible for ensuring safe and secure handling of cash and for the secure handling and storage of all retail products. (SOO C.6.4.1x)

**1.4.2.13-6.** The Contractor shall report theft or apparent theft of cash or resale products to site management if and when such incidents might occur, and shall cooperate with NSF management to investigate such incidents. (SOO C.6.4.1x)

**1.4.2.13.01. Retail Store Management (all 3 stations)**

**1.4.2.13.01-1.** The Contractor shall operate a self-sustaining working capital fund to support retail and club activities throughout the USAP. (SOO C.6.4.1x)

**1.4.2.13.01-2.** The Contractor shall utilize only those costs associated with the point-of-sale operations (e.g. station stores and clubs) for this self-sustaining working capital fund. (SOO C.6.4.1x)

**1.4.2.13.01-3.** The Contractor shall segregate self-sustaining working capital fund from recreational activities and equipment such as physical fitness facilities, outdoor gear issuance, and other NSF-approved activities offered for the morale and well being of deployed Antarctic personnel. (SOO C.6.4.1x)

**1.4.2.13.01-4.** The Contractor shall be responsible for ensuring safe and secure handling of cash and for the secure handling and storage of all retail products. (SOO C.6.4.1x)

**1.4.2.13.01-5.** The Contractor shall report theft or apparent theft of cash or resale products to site management if and when such incidents might occur, and shall cooperate with NSF management to investigate such incidents. (SOO C.6.4.1x)

**1.4.2.13.02. McMurdo**

**1.4.2.13.02-1.** The Contractor shall operate a self-sustaining working capital fund to support retail and club activities throughout the USAP. (SOO C.6.4.1x)

**1.4.2.13.02-2.** The Contractor shall utilize only those costs associated with the point-of-sale operations (e.g. station stores and clubs) for this self-sustaining working capital fund. (SOO C.6.4.1x)

**1.4.2.13.02-3.** The Contractor shall segregate self-sustaining working capital fund from recreational activities and equipment such as physical fitness facilities, outdoor gear issuance, and other NSF-approved activities offered for the morale and well being of deployed Antarctic personnel. (SOO C.6.4.1x)

**1.4.2.13.02-4.** The Contractor shall be responsible for ensuring safe and secure handling of cash and for the secure handling and storage of all retail products. (SOO C.6.4.1x)

**1.4.2.13.02-5.** The Contractor shall report theft or apparent theft of cash or resale products to site management if and when such incidents might occur, and shall cooperate with NSF management to investigate such incidents. (SOO C.6.4.1x)

#### **1.4.2.13.03. South Pole (sold through retail store)**

**1.4.2.13.03-1.** The Contractor shall operate a self-sustaining working capital fund to support retail and club activities throughout the USAP. (SOO C.6.4.1x)

**1.4.2.13.03-2.** The Contractor shall utilize only those costs associated with the point-of-sale operations (e.g. station stores and clubs) for this self-sustaining working capital fund. (SOO C.6.4.1x)

**1.4.2.13.03-3.** The Contractor shall segregate self-sustaining working capital fund from recreational activities and equipment such as physical fitness facilities, outdoor gear issuance, and other NSF-approved activities offered for the morale and well being of deployed Antarctic personnel. (SOO C.6.4.1x)

**1.4.2.13.03-4.** The Contractor shall be responsible for ensuring safe and secure handling of cash and for the secure handling and storage of all retail products. (SOO C.6.4.1x)

**1.4.2.13.03-5.** The Contractor shall report theft or apparent theft of cash or resale products to site management if and when such incidents might occur, and shall cooperate with NSF management to investigate such incidents. (SOO C.6.4.1x)

#### **1.4.2.13.04. Palmer (sold through retail store)**

**1.4.2.13.04-1.** The Contractor shall operate a self-sustaining working capital fund to support retail and club activities throughout the USAP. (SOO C.6.4.1x)

**1.4.2.13.04-2.** The Contractor shall utilize only those costs associated with the point-of-sale operations (e.g. station stores and clubs) for this self-sustaining working capital fund. (SOO C.6.4.1x)

**1.4.2.13.04-3.** The Contractor shall segregate self-sustaining working capital fund from recreational activities and equipment such as physical fitness facilities, outdoor gear issuance, and other NSF-approved activities offered for the morale and well being of deployed Antarctic personnel. (SOO C.6.4.1x)

**1.4.2.13.04-4.** The Contractor shall be responsible for ensuring safe and secure handling of cash and for the secure handling and storage of all retail products. (SOO C.6.4.1x)

**1.4.2.13.04-5.** The Contractor shall report theft or apparent theft of cash or resale products to site management if and when such incidents might occur, and shall cooperate with NSF management to investigate such incidents. (SOO C.6.4.1x)

#### **1.4.2.14. Meteorology**

##### **1.4.2.14.01. Aviation Support (all stations)**

**1.4.2.14.01-1.** The Contractor shall provide site specific aviation weather observations when required. (SOO C.6.4.1u)

**1.4.2.14.01-2.** The Contractor shall provide synoptic weather reporting as well as surface weather observations in support of aircraft operations and ship and small boat traffic. (SOO C.6.4.1u)

**1.4.2.14.01-3.** The Contractor shall operate and coordinate maintenance for recording equipment, and compile and transmit weather data according to World Meteorological Organization (WMO) standards year round. (SOO C.6.4.1u)

**1.4.2.14.01-4.** The Contractor shall furnish meteorological reports to researchers as specified in the Research Support Plans (RSPs). (SOO C.6.4.1u)

#### **1.4.2.15. Manager Field Support Services**

##### **1.4.2.15.01. Management and Oversight Support**

#### **Health and Safety**

**1.4.2.15.01-1.** The Contractor shall provide safety escorts scientific field deployments, providing field hazard recognition, emergency management support, and awareness for field risks and hazards.

**1.4.2.15.01-2.** The Contractor shall provide marine safety and lifeboat instruction for passengers associated with the ASC projects. (SOO C.6.1.1u; C.6.1.1v)

#### **Field Science and Technical Project Services**

**1.4.2.15.01-3.** Provide personnel and material resources for field events in accordance with the APP and RSPs. (SOO C.6.2.1d)

**1.4.2.15.01-4.** Coordinate transportation for all field events in accordance with the needs defined in the APP and RSPs. (SOO C.6.2.1d)

**1.4.2.15.01-5.** Coordinate support from other program functional areas (e.g., transportation and logistics, IT&C, etc.) and from associated agencies to ensure that integrated support activities meet event needs as defined in the APP and RSPs. (SOO C.6.2.1d)

**1.4.2.15.01-6.** Update the USAP Field Guide, as necessary. (SOO C.6.1.1dd)

Deliverable F009 – Publications

#### **Field Support**

**1.4.2.15.01-7.** The Contractor shall plan, construct, operate and maintain seasonal field camps that support populations from 10 to more than 100 people. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d)

**1.4.2.15.01-8.** The Contractor shall operate and maintain remote sites in the McMurdo Sound area in support of the science program. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d)

**1.4.2.15.01-9.** The Contractor shall construct and maintain skiways at field camps and remote sites. (SOO C.6.4.1d)

#### **1.4.2.15.02. Field Safety Training**

**1.4.2.15.02-1.** The Contractor shall provide field safety and marine safety training to support science operations in Antarctica to include hazardous terrain, safety and risk assessments. (SOO C.6.1.1u; C.6.1.1v; C.6.1.1x)

**1.4.2.15.02-2.** The Contractor shall provide safety escorts scientific field deployments, providing field hazard recognition, emergency management support, and awareness for field risks and hazards.

#### **1.4.2.15.03. Renewable Energy**

**1.4.2.15.03-1.** The Contractor shall provide a comprehensive range of field support services for USAP grantees, to include: vehicle and equipment maintenance and repair, construction and fabrication, renewable energy resources and direct and indirect aviation support. (SOO C.6.4.1b; SOO C.6.4.1c)

### **1.4.3. *PROFESSIONAL DESIGN/ENGINEERING SUPPORT***

#### **1.4.3.1. Engineering Division Management**

##### **1.4.3.1.01. Engineering Division Management**

**1.4.3.1.01-1.** The Contractor shall manage Engineering Services to ensure engineering support for all USAP activities as required.

**1.4.3.1.01-2.** The Contractor shall provide Long Range Planning assistance to NSF ABMs for engineering and construction projects.

#### **1.4.3.2. Engineering Services**

##### **1.4.3.2.01. Engineering Services**

**1.4.3.2.01-1.** The Contractor shall provide facilities engineering services to maintain and improve the efficient and reliable operation of facilities and utilities systems. (SOO C.6.4.1b; C.6.4.1f; C.6.4.1g)

**1.4.3.2.01-2.** The Contractor shall utilize Professional Engineers, in all engineering disciplines, for engineering design and review of all construction, renovations, and facility maintenance requirements. (SOO C.6.4.1o)

**1.4.3.2.01-3.** The Contractor shall maintain and update a technical library including O&M technical manuals, facilities descriptive books, and a submittal register of NSF-approved materials and finishes. (SOO C.6.4.1b; C.6.4.1c; C.6.4.1d; C.6.4.1e; C.6.4.1g)

**1.4.3.2.01-4.** The Contractor shall develop engineering designs as required for new infrastructure or modifications to existing facilities. (SOO C.6.4.1n)

Deliverable F012 – Drawings

**1.4.3.2.01-5.** The Contractor shall provide professional engineers in all engineering disciplines for design reviews and site support to facilities engineers and others. (SOO C.6.4.1o)

**1.4.3.2.01-6.** The Contractor shall have all engineered designs stamped by a professional engineer and/or architect. (SOO C.6.4.1n)

**1.4.3.2.01-7.** The Contractor shall perform constructability reviews of drawings and specifications to assure compatibility with existing system components and spares. (SOO C.6.4.1n)

**1.4.3.2.01-8.** The Contractor shall maintain an as-built drawings library for facilities at each site. Copies shall be provided to NSF upon request in either electronic or hardcopy format. (SOO C.6.4.1n)

Deliverable F012 – Drawings

**1.4.3.2.01-9.** The Contractor shall, when appropriate, incorporate value engineering criteria to reduce installation costs. (SOO C.6.4.1n)

**1.5. TRANSPORTATION AND LOGISTICS (T&L) REQUIREMENTS (SOO C.6.5; SOO C.6.5.1; SOO C.6.5.2)**

**1.5.1. NEW ZEALAND OPERATIONS**

**1.5.1.1. New Zealand Support Operations (separate NZ-based support company aligned with SSC)**

**1.5.1.1.01. USAP Support in Christchurch**

**1.5.1.1.01-1.** The Contractor shall administer the USAP lease with the New Zealand Airport Authority. (SOO C.6.5.1b)

**1.5.1.1.01-2.** The Contractor shall manage vehicle and equipment leases for the Christchurch NZ operations. (SOO C.6.5.1b)

**1.5.1.1.01-3.** The Contractor shall operate the USAP administrative offices, personnel processing, cargo staging and aviation support facilities at the International Antarctic Center (IAC) and Harewood Airport under an existing lease agreement with the Christchurch Airport Authority. (Note: New Zealand's Antarctic Program and the Italian Antarctic Program also maintain offices in the IAC.) (SOO C.6.5.1c)

**1.5.1.1.01-4.** The Contractor shall provide support for other foreign nationals transiting NZ under the auspices of their own national programs when directed by NSF. (SOO C.6.5.1c)

**1.5.1.1.01-5.** The Contractor shall coordinate preflight activities at Christchurch, NZ such as: briefing for on-ice waste management and safety; supporting NZDF briefings on checking bags, security screening, and departure information; and supporting aircraft safety briefings. (SOO C.6.5.1e)

**1.5.1.1.01-6.** The Contractor shall coordinate shared NZ/US Antarctic program support for flight and cargo support as required. (SOO C.6.5.1c; C.6.5.1h)

**1.5.1.1.01-7.** The Contractor shall operate and maintain a warehouse and clothing issue center at Christchurch, New Zealand in support of the USAP. (SOO C.6.5.1b; C.6.5.1c)

**1.5.1.1.01-8.** The Contractor shall be available on a 24/7 basis to provide deployment services at Christchurch, NZ (SOO C.6.5.1g)

**1.5.1.1.01-9.** The Contractor shall process all USAP participants transiting New Zealand. (SOO C.6.5.1g)

**1.5.1.1.01-10.** The Contractor shall arrange for hotel and motel accommodations in Christchurch, New Zealand. (SOO C.6.5.1g)

**1.5.1.1.01-11.** The Contractor shall prepare clothing issue for each participant based on his/her personal information form. (SOO C.6.5.1g)

#### **1.5.1.1.02. Facilities NZ**

**1.5.1.1.02-1.** The Contractor shall maintain a year-round support facility and staging area in Christchurch, NZ. (SOO C.6.5.1e)

#### **1.5.1.1.03. Christchurch Security**

**1.5.1.1.03-1.** The Contractor shall provide security guard services at main Administration Building, air cargo yard and flight line.

#### **1.5.1.1.04. Tenant Support**

**1.5.1.1.04-1.** The Contractor shall provide support to agencies transiting NZ including aviation spare parts and supplies for 139<sup>th</sup> ANG.

#### **1.5.1.1.05. Extreme Cold Weather (ECW) Gear**

**1.5.1.1.05-1.** The Contractor shall maintain Extreme Cold Weather (ECW) inventory. (SOO C.6.5.1b; C.6.5.1c)

**1.5.1.1.05-2.** The Contractor shall clean and repair clothing when returned. (SOO C.6.5.1b; C.6.5.1c)

**1.5.1.1.05-3.** The Contract shall store, issue, maintain, and replace the various items of clothing that constitute the USAP ECW package (marine ECW for the peninsula side) provided to each Antarctic-bound civilian and military participant. (SOO C.6.5.1b; C.6.5.1c)

#### **1.5.1.1.06. Terminal Operations NZ**

**1.5.1.1.06-1.** The Contractor shall manage the International Antarctic Center (IAC) passenger terminal in Christchurch, NZ, to include: scheduling passenger check-in and briefings, arranging for ground transportation, provisioning in flight meals, providing postal services, and performing customs activities. (SOO C.6.5.1c)

**1.5.1.1.06-2.** The Contractor shall be "Direct Liaison" with the New Zealand Defense Forces (NZDF) personnel assigned to cargo handling and passenger processing duties at the IAC and airport. (SOO C.6.5.1h)



**1.5.1.1.06-3.** The Contractor shall coordinate aircraft boarding/deplaning with flight crews. (SOO C.6.5.1b; C.6.5.1c)

**1.5.1.1.06-4.** The Contractor shall conduct pre-flight briefings. (SOO C.6.5.1b; C.6.5.1c)

**1.5.1.1.06-5.** The Contractor shall ensure that cargo is prepared for shipment, staged and forwarded as close to schedule as flying conditions allow. (SOO C.6.5.1c; C.6.5.1h)

**1.5.1.1.06-6.** The Contractor shall procure fresh food and locally available supplies for shipboard personnel subsistence. (SOO C.6.5.1f)

**1.5.1.1.06-7.** The Contractor shall keep mail for the station and ships in bonded storage at the warehouse while awaiting onward transportation. (SOO C.6.5.1b; C.6.5.1c)

1.5.1.1.06-8. The Contractor shall maintain, repair and, as authorized, operate aircraft ground support equipment (AGE) in support of Christchurch Air Operations. (SOO C.6.4.1d; C.6.5.1a)

#### **1.5.1.1.07 Shipping Agents – Other Ports (Lyttleton, NZ)**

**1.5.1.1.07-1.** The Contractor shall arrange for surface shipment of other vessel cargo received throughout the year from Lyttleton to the airport where it is staged for air shipment to Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.1.1.07-1.** The Contractor shall coordinate stevedoring support for the annual re-supply vessel twice each year (January and February) at Port of Lyttleton. (SOO C.6.5.1c; C.6.5.1h)

**1.5.1.1.07-1.** The Contractor shall coordinate ship husbanding and stevedoring services for the USAP icebreaking research vessels when at Lyttleton. (SOO C.6.5.1c; C.6.5.1h)

#### **1.5.1.1.08. SFA Christchurch Support**

**1.5.1.1.08-1.** The contractor shall provide material support in the form of office supplies and form reproduction to Support Force Antarctica.

### **1.5.2. LOGISTICS MANAGEMENT**

#### **1.5.2.1. Logistics and Procurement**

**1.5.2.1-1.** The Contractor shall utilize COTS applications to facilitate requirements, capacity and resource planning and maximum utilization and efficiency of available assets. COTS applications shall support the integration and efficiency of supply chain functions to include: acquisition management, inventory management and optimization, warehousing optimization, container loading optimization, electronic travel planning, In-Transit Total Asset Visibility (ITV & TAV), process modeling and optimization, and shipping distribution network modeling, Supply chain process performance measurements (metrics and measures) shall be supported by SCM COTS applications. (SOO C.6.5.1c)

**1.5.2.1-2.** The Contractor shall operate the existing GFE electronic tracking and control systems involved in personnel and cargo movement and for inventory control until such time as these systems are replaced. (SOO C.6.5.1c)

1.5.2.1-3. (b) (4)

(SOO C.6.5.1c)

1.5.2.1-4. The Contractor shall operate an enterprise computer-based cargo and passenger tracking system that provides in-transit visibility (ITV) for personnel, materials, and equipment throughout the supply chain and transportation networks. (SOO C.6.5.1c; C.6.5.1d)

1.5.2.1-5. The Contractor shall provide an ITV capability that links ASC Program Headquarters with NSF, New Zealand, Chile, the Antarctic stations, Port Hueneme, and other USAP support organizations. (SOO C.6.5.1c)

#### 1.5.2.1.01. Director Logistics

Transportation and Logistics (T&L) Requirements. The USAP relies on a transportation system composed of a mix of civilian, military, and international logistical support elements. In the case of operations for Palmer Station, Antarctica, the Contractor is responsible for all transportation. However, in the continental Antarctic system that includes McMurdo Station, South Pole Station, and the majority of deep field operating locations, the USAP uses a mix of civilian and military transportation. The U.S. Coast Guard and foreign countries provide icebreaker escort into McMurdo, U.S. Military Sealift Command provides fuel tankers and cargo ships, the U.S. Air National Guard provides LC-130 aircraft, and the U.S. Air Force provides C-17 strategic airlift to support the program. NSF also contracts for light, on-continent, aircraft and helicopters to support deep field and local activities near the major stations in Antarctica. A fleet of surface vehicles provides local, on-continent, transportation.

The Contractor is responsible for coordinating, supporting, and, in some cases, operating the various transportation functions as well as for providing logistics support for the entire program.

The following service task requirements are derived from SOO paragraphs C.6.5 through C.6.5.2d. Additional requirements have been derived to demonstrate understanding of what must be done to meet or exceed NSF expectations in the performance of ASC.

1.5.2.1.01-1. The Contractor shall ensure uninterrupted operations during the contract transition. (SOO C.6.5.1.a)

1.5.2.1.01-2. The Contractor shall provide performance excellence management and business process engineering support to enable more effective and efficient service support and optimize service value. (SOO C.6.5.1.b)

1.5.2.1.01-3. The Contractor shall provide innovation recommendations and transform services to become more effective and efficient. (SOO C.6.5.1.b)

#### T&L Management

1.5.2.1.01-4. The Contractor shall implement a transportation and logistics management program that ensures efficient utilization of all NSF resources, minimizes labor

requirements, reduces loss due to obsolescence, ensures all program requirements have necessary resources, and provides for uninterrupted support for all T&L functions from contract award through contract completion. (SOO C.6.5.1a, C.6.5.1b).

**1.5.2.1.01-5.** The Contractor responsibilities shall include: Improve scientific mission support performance; Maintain safety; Increase reliability of the T&L System; Reduce program costs; Support Risk Management; and Minimize Footprint. (SOO C.6.5.1a; C.6.5.1b)

**1.5.2.1.01-6.** The Contractor shall implement a continuous improvement process to include periodic reviews of the effectiveness all T&L practices and procedures and the commercial air, sea, truck and rail carrier agreements. (SOO C.6.5.1b)

**1.5.2.1.01-7.** The Contractor shall provide management skills and support with sufficient organizational structure necessary to conduct a high standard of logistical support. (SOO C.6.5.1b)

**1.5.2.1.01-8.** The Contractor shall include an appropriate Transportation and Logistics HQ staff; local management and staff at domestic terminal operation at Port Hueneme, CA; International terminal operations staffing at Christchurch, NZ, and Punta Arenas, Chile; and the appropriate levels of field management and staffing at the Antarctic Stations. (SOO C.6.5.1b)

**1.5.2.1.01-9.** The Contractor shall provide the on ice management skills and resources to efficiently organize and direct the workforce and coordinate daily operations with NSF and other support organizations such as the Air National Guard, SPAWAR, US Coast Guard, helicopter and fixed wing contractors, and science groups. (SOO C.6.5.1b)

**1.5.2.1.01-10.** The Contractor shall ensure all T&L personnel receive appropriate training according to their primary job assignment, work location and cross-trained for any supplemental duties as assigned. (SOO C.6.5.1b)

**1.5.2.1.01-11.** The Contractor shall have direct interface with all USAP, contractor, and site leads on all T&L related functions and activities. (SOO C.6.5.1a; C.6.5.1b)

**1.5.2.1.01-12.** The Contractor shall manage the cargo operations for the annual re-supply vessel and the chartered research vessels. (SOO C.6.5.1e)

**1.5.2.1.01-13.** The Contractor shall monitor, track and control the entire cargo operation, from order placement to arrival at final destination in Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-14.** The Contractor shall monitor, track and control the entire cargo operation from the point of departure to arrival at final destination in Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-15.** The Contractor shall perform all USAP logistics functions in the US (CONUS), Christchurch, New Zealand, Punta Arenas, Chile, onsite at the Antarctic stations, at all field camps approved through the Annual Program Plan (APP), and for the USAP Research Vessels. (SOO C.6.5.1b)

**1.5.2.1.01-16.** The Contractor shall provide logistical reviews of scientific grant proposals. (SOO C.6.5.1b)

**1.5.2.1.01-17.** The Contractor shall provide a fully integrated supply chain that includes both cargo movement networks (air, land, and sea), and personnel movement networks (air, land, and sea) and an electronic tracking and control system that provides in-transit visibility (ITV) for personnel, materials, and equipment throughout the supply chain and transportation networks. (SOO C.6.5.1c, C.6.5.1d)

**1.5.2.1.01-18.** The Contractor shall manage cargo staging and loading and unloading for aircraft and ships at all supply chain network nodes. (SOO C.6.5.1h)

**1.5.2.1.01-19.** The Contractor shall coordinate with all USAP civil service operations at each of the Supply Chain Nodes. (SOO C.6.5.1c; C.6.5.1h)

### **Transportation and Cargo Operations Management**

**1.5.2.1.01-20.** The Contract shall plan, schedule, and coordinate the use of USAP aircraft and vessels for the most efficient and cost effective movement of personnel, equipment, and material through the supply chain.

**1.5.2.1.01-21.** The Contractor shall prepare annual logistics plans by dates agreed upon between the Contractor and the NSF. (SOO C.6.5.1e)

**1.5.2.1.01-22.** The Contractor shall provide support for the direct planning and logistical operations support for approved science projects in the APP, with a total baseline field compliment of up to 800 science and technical participants each year. (SOO C.6.5.1e)

**1.5.2.1.01-23.** The Contractor shall coordinate with all military airlift operators for regularly or specially scheduled military transports that support T&L operations to and from and in Antarctica. (SOO C.6.5.1e)

**1.5.2.1.01-24.** The Contractor shall perform all necessary planning for movement of scientific and non scientific materials and personnel to and from Antarctica. (SOO C.6.5.1e)

**1.5.2.1.01-25.** The Contractor shall coordinate the involvement of the 62nd Air Wing, Air National Guard, SPAWAR and other organizations in the annual logistics planning process. (SOO C.6.5.1e)

**1.5.2.1.01-26.** The Contractor shall assist in the development of detailed plans for the annual airlift schedule and aviation support. (SOO C.6.5.1e)

**1.5.2.1.01-27.** The Contractor's T&L planning activities shall include considerations for staging of materials, transshipment and storage of materials at the Antarctic stations. (SOO C.6.5.1e)

**1.5.2.1.01-28.** The Contractor shall provide logistical planning support to any NSF approved projects and incorporate as part of the annual planning activities. (SOO C.6.5.1e)

**1.5.2.1.01-29.** The Contractor shall comply with rules and regulations governing transportation to the requisite ports and airfields as enforced by the Federal and State's Departments of Transportation and the Federal Aviation Administration throughout the USAP. (SOO C.6.5.2b)

**1.5.2.1.01-30.** The Contractor shall utilize the U.S. Air Force or cooperative international logistic support as negotiated by the Government for air transportation of cargo and passenger transportation between Christchurch, NZ and McMurdo Station, Antarctica. (SOO C.6.5.2c)

**1.5.2.1.01-31.** The Contractor shall utilize ships chartered through Military Sealift Command and provided by the Government for movement of bulk fuels and cargo to McMurdo Station, Antarctica. (SOO C.6.5.2c)

**1.5.2.1.01-32.** The Contractor shall utilize air transportation of cargo and personnel from McMurdo Station, Antarctica to inland locations (e.g. field camps and South Pole Station) provided by the Government. (SOO C.6.5.2c)

**1.5.2.1.01-33.** The Contractor shall coordinate the use of military and commercial air and sea carriers. (SOO C.6.5.1d; C.6.5.1e)

**1.5.2.1.01-34.** The Contractor shall submit transportation requests for coordination with appropriate USAP transportation provider agencies in support of the APP. (SOO C.6.5.1e)

**1.5.2.1.01-35.** The Contractor shall develop an annual airlift plan for the program. (SOO C.6.5.1e)

**1.5.2.1.01-36.** The Contractor shall coordinate closely with all Antarctic flight operations which may include Air National Guard (LC-130), US Air Force (C-17), the Royal New Zealand Air Force (C-130) and any other USAP directed and supported flight operations as required. (SOO C.6.5.1e)

**1.5.6.2.1.01-37.** The Contractor shall coordinate USAP sealift operations. (SOO C.6.5.1e)

**1.5.2.1.01-38.** The Contractor shall track movement of cargo to, from, and within the continent. (SOO C.6.5.1e)

**1.5.2.1.01-39.** The contractor shall provide shipping services to include packaging, crating, marking, labeling, staging, load planning, manifest documentation, loading and in-transit visibility of equipment and materials moving through the supply chain aboard military and commercial modes of transportation. (SOO C.6.5.1c; C.6.5.1d)

**1.5.2.1.01-40.** The Contractor shall receive and transport all the materials and capital equipment identified for acquisition within the individual Research Support Plans (RSPs). (SOO C.6.5.1c; C.6.5.1d; C.6.5.1h)

**1.5.2.1.01-41.** The Contractor shall manage the use of all USAP sea containers, and coordinate the shipment and protection of cargo with special requirements (frozen food, science samples, science equipment, etc.). (SOO C.6.5.1c; S C.6.5.1h)

**1.5.2.1.01-42.** The Contractor shall coordinate any special requirements such as delicate or hazardous cargo, excess baggage, etc. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-43.** The Contractor shall document the contents of all cargo prepared for shipment. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-44.** The Contractor shall ensure that hazardous/dangerous cargo is properly documented, packaged and shipped according to all applicable government and military regulations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-45.** The Contractor shall ensure that hazardous/dangerous cargo is controlled according to national and international regulations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-46.** The Contractor shall operate and maintain the existing Cargo Tracking System (CTS) until a replacement system is configured, tested and installed for use at all of the Antarctic and contractor support locations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-47.** The Contractor shall update and reconcile cargo operations and ensure integrity of data input on a daily basis. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-48.** The Contractor shall provide receiving services to include verification of items for receipt (e.g., nomenclature, order/delivery quantity, quality inspection); interface with purchasing and reconciliation action for shipment errors; movement of items to designated storage location or end user; and data input into automated inventory management receipt module for accountability and tracking through the supply chain. (SOO C.6.5.1c)

**1.5.2.1.01-49.** The Contractor shall publish and update air and sea operation schedules. (SOO C.6.5.1e)

**1.5.2.1.01-50.** The Contractor shall arrange for other services in support of the USAP cargo and cargo transportation as needed. (SOO C.6.5.1c; C.6.5.1h)

**1.5.2.1.01-51.** The Contractor shall provide grantees with logistical assistance prior to, during, and after their field deployment. (SOO C.6.5.1g)

#### **1.5.2.1.02. Procurement**

**1.5.2.1.02-1.** The Contractor shall implement a purchasing system that complies with the requirements of FAR Part 44 and is DACO, DCAA approved. (SOO C.6.1.1i)

**1.5.2.1.02-2.** The Contractor shall acquire materials and services on a best value, low-risk basis. (SOO C.6.1.1b; C.6.1.1i)

**1.5.2.1.02-3.** The Contractor shall develop specifications, solicit providers and coordinate the procurement of all required materials including consumables, equipment, foodstuffs, construction materials, tools and scientific instruments, and their movement to required destinations. The Contractor shall provide and operate in accordance with a DCMA approved Procurement System and established corporate purchasing policy, procedures and processes. The Contractor shall utilize COTS application(s) to facilitate



the procurement process and provide ready access to procurement status and performance information. (SOO C.6.5.1f)

**1.5.2.1.02-4.** The Contractor shall assist in the determination of specifications and delivery requirements with grantees and arrange domestic transportation and packaging for science samples (e.g. special containers, customs clearance, hazardous material documentation, etc.). (SOO C.6.5.1f)

**1.5.2.1.02-5.** The Contractor shall arrange for the procurement of fuel and lubricants for the Research Vessels and all lubricants required for operation of USAP vehicles and equipment in Antarctica. (SOO C.6.5.1f)

**1.5.2.1.02-6.** The Contractor shall acquire materials according to the operational requirements and budgetary allowances as approved by NSF in the Annual Program Plan (APP). (SOO C.6.5.1f)

**1.5.2.1.02-7.** The Contractor shall arrange for the payment of the material costs of the shipboard science programs. (SOO C.6.5.1f)

**1.5.2.1.02-8.** The Contractor shall ensure that all services and materials are delivered to the assigned destination in time to support the mission requirements defined in the APP. (SOO C.6.5.1f)

**1.5.2.1.02-9.** (b) (4)

(SOO C.6.5.1b; SOO C.6.5.1c)

### **1.5.3. TRAVEL SERVICES**

#### **1.5.3.1. Travel & Deployment**

**1.5.3.1-1.** The Contractor shall provide a fully integrated supply chain that includes both cargo movement networks (air, land, and sea), and personnel movement networks (air, land, and sea) and an electronic tracking and control system that provides in-transit visibility (ITV) for personnel, materials, and equipment throughout the supply chain and transportation networks. (SOO C.6.5.1c, C.6.5.1d)

**1.5.3.1-2.** The Contractor shall plan, schedule, and coordinate the use of USAP aircraft and vessels for the most efficient and cost effective movement of personnel, equipment and material through the supply chain.

**1.5.3.1-3.** The Contractor shall utilize COTS applications to support deployment and travel planning, shipping distribution network optimization; container loading optimization and ITV TAV tracking and status of people and products moving through the supply chain. (SOO C.6.5.1e)

**1.5.3.1-4.** The Contractor shall utilize efficient and effective travel processes to provide all commercial airline ticketing, customs information and travel itineraries as required to fulfill the annual program. (SOO C.6.5.1g)

#### **1.5.3.1.01 Travel Processing**

**1.5.3.1.01-1.** The Contractor shall provide an automated, user-friendly travel management program to arrange travel for all travelers (USAP participants and employees) as authorized by the NSF. (SOO C.6.5.1g)

**1.5.3.1.01-2.** The Contractor shall utilize the existing Participant Tracking System and maintain the USAP participant information in that system until such time it is replaced. (SOO C.6.5.1g)

**1.5.3.1.01-3.** The Contractor shall utilize the new Participant Tracking System application upon its implementation by the program. (SOO C.6.5.1g)

#### **1.5.3.1.02 Deployment Specialist Group (DIG) Administration - HQ**

**1.5.3.1.02-1.** The Contractor shall provide deployment services to include travel (in accordance with the Federal Travel Regulation and OPP direction for all deployment travel) extreme cold weather clothing, and other required gear to participants traveling to USAP sites. The Contractor shall provide an electronic travel planning application distributed across the enterprise to facilitate travel planning, ticketing, and cost effectiveness. (SOO C.6.5.1c; C.6.5.1g)

**1.5.3.1.02-2.** The Contractor shall support the deployment activities for all required workforce and other participants for projects and program operational support activities as outlined in the approved Annual Program Plan. (SOO C.6.5.1g)

**1.5.3.1.02-3.** The Contractor shall support the redeploy activities for all required workforce and other participants for projects and program operational support activities as outlined in the approved Annual Program Plan. (SOO C.6.5.1g)

**1.5.3.1.02-4.** The Contractor shall act as the primary interface for information dissemination to USAP participants regarding transportation of participants and cargo for all deployment and redeployment activities. (SOO C.6.5.1g)

**1.5.3.1.02-5.** The Contractor shall provide deployment support to grantees in Antarctica as approved in RSPs and the science program summary. (SOO C.6.5.1g)

**1.5.3.1.02-6.** The Contractor shall provide all instruction and information necessary to ensure that USAP participants complete the deployment process. (SOO C.6.5.1g)

#### **1.5.3.1.03. Grantee Travel Processing**

Refer to PWS 1.5.3.1.02.

#### **1.5.3.1.04. NSF Contractor Travel**

Refer to PWS 1.5.3.1.02.

#### **1.5.3.1.05. Support Contractor Non-deployment Travel**

Refer to PWS 1.5.3.1.02.

#### **1.5.3.1.06. Grantee Science Non-deployment Travel**



Refer to PWS 1.5.3.1.02.

### **1.5.3.2. Military Travel**

#### **1.5.3.2.01. NAVCHAPS Support**

**1.5.3.2.01-1.** The Contractor shall support NAVCHAP personnel and provide travel arrangements for deployments to assist with the offload of the annual resupply vessel (SOO C.6.5.1.g)

#### **1.5.3.2.02. Military Accommodations NZ**

**1.5.3.2.01-1.** The Contractor shall arrange berthing for military groups, including Air National Guard, Support Force Antarctica and NAVCHAPS.

### **1.5.4. AVIATION SUPPORT**

#### **1.5.4.1. Aircraft Support**

##### **1.5.4.1.01. Fixed Wing Support**

**1.5.4.1.01-1.** The Contractor shall maintain, during summer, an air planning office in McMurdo to coordinate daily flight activities. (SOO C.6.5.1e)

**1.5.4.1.01-2.** The Contractor shall develop optimized USAP air cargo load plans to take advantage of allotted space. (SOO C.6.5.1e)

**1.5.4.1.01-3.** The Contractor shall utilize light aircraft support in Antarctica provided by the Government. (SOO C.6.5.2d)

**1.5.4.1.01-4.** The Contractor shall coordinate changes/updates to schedules and load plans during field season. (SOO C.6.5.1e)

**1.5.4.1.01-5.** The Contractor shall manage and optimize the aircraft workload during the season. (SOO C.6.5.1e)

**1.5.4.1.01-6.** The Contractor shall conduct a review and analysis of the entire science program for each season to determine the most effective aviation support strategy. (SOO C.6.5.1e)

**1.5.4.1.01-7.** The Contractor shall prepare the preliminary flight schedule and Research Support Plan (RSP) cargo load plans with applicable transportation support agencies and the NSF. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.01-8.** The Contractor shall provide direct and indirect aviation support for the science program. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.01-9.** The Contractor shall plan and coordinate grantee fixed-wing aircraft support requirements. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.01-10.** The Contractor shall process all fixed-wing aircraft passengers traveling to and from McMurdo Station. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.01-11.** The Contractor shall prepare manifests for fixed wing passengers. (SOO C.6.5.1b; C.6.5.1c)

#### **1.5.4.1.02 Helicopter Support**

**1.5.4.1.02-1.** The Contractor shall utilize helicopter support in Antarctica provided by the Government. (SOO C.6.5.2d)

**1.5.4.1.02-2.** The Contractor shall coordinate changes/updates to schedules and load plans during field season. (SOO C.6.5.1e)

**1.5.4.1.02-3.** The Contractor shall prepare the preliminary flight schedule and Research Support Plan (RSP) cargo load plans with applicable transportation support agencies and the NSF. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.02-4.** The Contractor shall provide direct and indirect aviation support for the science program. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.02-5.** The Contractor shall prepare manifests for helicopter passengers. (SOO C.6.5.1b; C.6.5.1c)

**1.5.4.1.02-6.** The Contractor shall maintain, during summer, a scheduling office for the helicopter operations to coordinate daily flight activities. (SOO C.6.5.1b; C.6.5.1c)

#### **1.5.4.2. Ground & Equipment**

##### **1.5.4.2.01. Air Ground Equipment (AGE) - McMurdo**

**1.5.4.2.01-1.** The Contractor shall maintain, repair and, as authorized, operate aircraft ground support equipment (AGE). (SOO C.6.4.1d)

**1.5.4.2.01-2.** The Contractor shall provide ground support to the aircraft at the stations and camps. (SOO C.6.5.1b; C.6.5.1c)

##### **1.5.4.2.02. Air Drop Equipment**

**1.5.4.2.02-1.** The contractor shall provide airdrop equipment to support schedules activities for airdrops in support of science activities and training requirements for military aircrews.

##### **1.5.4.2.03. McMurdo Airfield Support**

**1.5.4.2.03-1.** The Contractor shall construct, operate, support and maintain airfields adjacent to McMurdo Station and at South Pole Station. (SOO C.6.4.1d)

**1.5.4.2.03-2.** The Contractor shall conduct inspections to ensure airfield lighting systems are operational and deficiencies are reported in a timely manner. (SOO C.6.4.1d)

**1.5.4.2.03-3.** The Contractor shall provide information for Notice To Airmen (NOTAMS) detailing hazards at specific sites. (SOO C.6.4.1d)

**1.5.4.2.03-4.** The Contractor shall execute the requirements of aviation safety programs (Foreign Object Debris (FOD) and Bird Aircraft Strike Hazard (BASH)) to ensure appropriate actions are taken to minimize hazards to aircraft. (SOO C.6.4.1r)

**1.5.4.2.03-5.** The Contractor personnel responsible for operation of vehicles on the airfield shall complete Airfield Vehicle Operations Information Checklist (AVOIC) training and receive a license to operate vehicles on the airfield. (SOO C.6.4.1d; C.6.4.1h)

### **1.5.5. SUPPLY OPERATIONS**

#### **1.5.5.1. Supply & Inventory**

##### **1.5.5.1.01. General Supply Inventory**

- **1.5.5.1.01-1.** The Contractor shall establish appropriate reorder guidelines and stock levels for equipment/supplies as needed. (SOO C.6.5.1b; C.6.5.1c)
- **1.5.5.1.01-2.** The Contractor shall manage the acquisition, storage and restocking of station inventories. (SOO C.6.5.1b; SOO C.6.5.1c)
- **1.5.5.1.01-3.** The Contractor shall store, control, issue and restock all supplies for the Antarctic stations and Research Vessels. (SOO C.6.5.1b; SOO C.6.5.1c)
- **1.5.5.1.01-4.** The Contractor shall ensure that inventories are matched to mission, minimizing storage requirements, obsolescence and cost of the inventory. (SOO C.6.5.1b; SOO C.6.5.1c)
- **1.5.5.1.01-5.** The Contractor shall perform periodic evaluations of the effectiveness and adequacy of the inventory and submit recommendations for improvement to NSF. (SOO C.6.5.1b; C.6.5.1c)

##### **1.5.5.1.02. Supply Support**

**1.5.5.1.02-1.** The Contractor shall be responsible for the warehousing and distribution of equipment, material, and supplies for the various McMurdo station work centers (SOO C.6.5.1b; C.6.5.1c)

**1.5.5.1.02-2.** The Contractor shall maintain, operate and control enclosed warehouse space and outside storage areas at McMurdo. Warehousing and storage space shall include:

- A. Segregation of heated and unheated areas
  - B. Frozen food storage
  - C. Flammable and explosive storage (maintained in accordance with industrial safety standards)
  - D. Retail items
  - E. Specialized requirements: frozen/live scientific specimens
  - F. Control key issue and access where applicable
- (SOO C.6.5.1b; C.6.5.1c)

## **1.5.6. LOGISTICS SUPPORT**

### **1.5.6.1. Logistics**

#### **1.5.6.1.01. South Pole Logistics**

**1.5.6.1.01-1.** The Contractor shall provide logistics support to any approved on-site construction activities. (SOO C.6.5.1h)

**1.5.6.1.01-2.** The Contractor shall be responsible for certifying hazardous and dangerous items for air shipment. (SOO C.6.5.1c; C.6.5.1d; C.6.5.1h)

**1.5.6.1.01-3.** The Contractor shall offload, receive, and distribute incoming cargo at all USAP stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.01-4.** The T&L cargo processing tasks shall include: unloading/loading aircraft; transporting cargo to and from the station; controlling security at the staging areas; and distributing cargo throughout the station. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.01-5.** The Contractor shall coordinate aircraft boarding/deplaning with flight crews. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.01-6.** The Contractor shall ensure that cargo is prepared for shipment, staged and forwarded as close to schedule as flying conditions allow. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.01-7.** The Contractor shall perform all unloading of materials and transshipment and storage of materials at the Antarctic stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.01-8.** The Contractor shall prepare, document, stage, and on-load all retrograde cargo from the Antarctic Station. (SOO C.6.5.1c; C.6.5.1h)

#### **1.5.6.1.02. Peninsula Area Logistics**

**1.5.6.1.02-1.** The Contractor shall provide logistics support to any approved on-site construction activities. (SOO C.6.5.1h)

**1.5.6.1.02-2.** The Contractor shall assist with the planning for and handling of all hazardous materials transported into and out of Antarctica by USAP. (SOO C.6.5.1e)

**1.5.6.1.02-3.** The Contractor shall offload, receive, and distribute incoming cargo at all USAP stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-4.** The Contractor shall perform all unloading of materials and transshipment and storage of materials at the Antarctic stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-5.** The Contractor shall off-load, receive and distribute cargo received by ship at Palmer Station (principally from the Laurence M Gould). (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-6.** The Contractor shall be responsible for filling marine transportation vans. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-7.** Upon approval from the NSF, The Contractor shall transport hazardous and radioactive waste generated at Palmer Station to McMurdo station by research

vessel for integration into McMurdo waste stream for final processing. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-8.** The Contractor shall control pier activities for cargo operations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-9.** The Contractor shall be responsible for direct cargo ship off-load and on-load operations at the pier. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.02-10.** The Contractor shall prepare, document, stage, and on-load all retrograde cargo from the Antarctic Station. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.03. Shipping Agents – Pilot Services, Wharf Services**

**1.5.6.1.03-1.** The Contractor shall provide support for USAP participants transiting South America (Santiago and Punta Arenas). (SOO C.6.5.1c)

**1.5.6.1.03-2.** The Contractor shall assist with the planning for and handling of all hazardous materials transported into and out of Antarctica by USAP. (SOO C.6.5.1e)

**1.5.6.1.03-3.** The Contractor shall manage retrograde cargo returned from Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.03-4.** The Contractor shall be responsible for the receipt and proper storage of science samples returned from Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.03-5.** The Contractor shall handle receipt, reconciliation and distribution of cargo received from the Antarctic stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.03-6.** The Contractor shall arrange for ship husbanding services in Chile or elsewhere. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.03-7.** The Contractor shall procure fresh food and locally available supplies for shipboard personnel subsistence. (SOO C.6.5.1f)

**1.5.6.1.03-8.** The Contractor shall operate and maintain a warehouse and clothing issue center at Punta Arenas, Chile in support of the USAP. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.03-9.** The Contractor shall provide field equipment for parties deploying to other areas of the Peninsula, on an NSF approved basis from the Punta Arenas warehouse. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.03-10.** The Contractor shall be available on a 24/7 basis to provide deployment services at Punta Arenas Chile (SOO C.6.5.1g)

**1.5.6.1.03-11.** The Contractor shall process all USAP participants transiting Chile. (SOO C.6.5.1g)

**1.5.6.1.03-12.** The Contractor shall arrange for hotel and motel accommodations in Punta Arenas Chile. (SOO C.6.5.1g)

**1.5.6.1.03-13.** The Contractor shall prepare clothing issue for each participant based on his/her personal information form. (SOO C.6.5.1g)

**1.5.6.1.04. Operations & Science Traverse**

**1.5.6.1.04-1.** The Contractor shall support intra-continental traverse operations. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.05. Science Shipments**

**1.5.6.1.05-1.** The Contractor shall be responsible for the onward transportation (usually to an academic institution) of science samples returned from Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.06. HQ Shipping & Receiving**

**1.5.6.1.06-1.** The Contractor shall assist with the planning for and handling of all hazardous materials transported into and out of Antarctica by USAP. (SOO C.6.5.1e)

**1.5.6.1.06-2.** The Contractor shall be responsible for the onward transportation (usually to an academic institution) of science samples returned from Antarctica. (SOO C.6.5.1c; C.6.5.1h) The Contractor shall be responsible for certifying hazardous and dangerous items for air shipment. (SOO C.6.5.1c; C.6.5.1d; C.6.5.1h)

**1.5.6.1.06-3.** The Contractor shall process all USAP cargo transiting through the Headquarters facility, Denver Colorado. (SOO C.6.5.1c)

**1.5.6.1.07. Terminal Operations – Port Hueneme**

**1.5.6.1.07-1.** The Contractor shall staff, manage and operate a domestic cargo terminal at Port Hueneme, CA in support of USAP operations in Antarctica. (SOO C.6.5.1e)

**1.5.6.1.07-2.** The Contractor shall be responsible for certifying hazardous and dangerous items for air shipment. (SOO C.6.5.1c; C.6.5.1d; C.6.5.1h)

**1.5.6.1.07-3.** The Contractor shall manage receipt, inspection, reconciliation, repackaging (as needed), and documentation of cargo at Port Hueneme. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-4.** The Contractor shall manage retrograde cargo returned from Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-5.** The Contractor shall use commercial air transport as needed throughout the season for reshipment of priority cargo from California to New Zealand and to South America. (SOO C.6.5.1c)

**1.5.6.1.07-6.** The Contractor shall optimally pack and ship cargo destined for Antarctica. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-7.** The Contractor shall receive cargo destined for Antarctica in Port Hueneme or Christchurch depending on primary delivery point. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-8.** The Contractor shall process all USAP cargo transiting Port Hueneme. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-9.** The Contractor shall handle receipt, reconciliation and distribution of cargo received from the Antarctic stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.07-10.** The Contractor shall be responsible for filling marine transportation vans. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.08. Navy Base Ventura County**

**1.5.6.1.08-1.** The Contractor shall administer a subcontract with Navy Base Ventura County for packing and crating services.

**1.5.6.1.09. Terminal Operations Antarctica**

**1.5.6.1.09-1.** The Contractor shall provide support for USAP participants transiting McMurdo Station. (SOO C.6.5.1c)

**1.5.6.1.09-2.** The Contractor shall assist with the planning for and handling of all hazardous materials transported into and out of Antarctica by USAP. (SOO C.6.5.1e)

**1.5.6.1.09-3.** The Contractor shall be responsible for certifying hazardous and dangerous items for air shipment. (SOO C.6.5.1c; C.6.5.1d; C.6.5.1h)

**1.5.6.1.09-4.** The Contractor shall offload, receive, and distribute incoming cargo at all USAP stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-5.** The Contractor shall manage and operate cargo and passenger transportation under a combined terminal operations function at McMurdo Station. (SOO C.6.5.1c; C.6.5.1e)

**1.5.6.1.09-6.** The T&L cargo processing tasks shall include: unloading/loading aircraft; transporting cargo to and from the station; controlling security at the staging areas; and distributing cargo throughout the station. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-7.** The Contractor shall manage and operate the Movement Control Center (MCC). (SOO C.6.5.1c; C.6.5.1e)

**1.5.6.1.09-8.** The Contractor responsibilities at the MCC shall include:

- A. Passenger reception and cargo staging area;
- B. Transport station mail to the McMurdo post office;
- C. Controlled inventory storage.

(SOO C.6.5.1c; C.6.5.1e)

**1.5.6.1.09-9.** The Contractor staffing at the MCC shall include:

- A. Double scheduled shifts to support air and sea operations during summer season
  - B. Single shift scheduled shifts to manage supply operations in winter
- (SOO C.6.5.1c; C.6.5.1e)

**1.5.6.1.09-10.** The Contractor shall manage and process all cargo received at McMurdo Station, transshipped to other locations, or prepared for shipment at McMurdo through the MCC. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-11.** The Contractor shall coordinate changes/updates to schedules and load plans during field season. (SOO C.6.5.1e)

**1.5.6.1.09-12.** The Contractor shall coordinate aircraft boarding/deplaning with flight crews. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-13.** The Contractor shall meet return flights, arriving passengers from Antarctica (or flights to Antarctica aborted while in air) and process their return. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-14.** The Contractor shall arrange transportation to and from airfields. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-15.** The Contractor shall manage and operate a scheduled shuttle bus service (passenger vans and all terrain bus) between McMurdo and the airfields. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-16.** The Contractor shall provide an on-call taxi and baggage handling service for residents/passengers within the McMurdo complex. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-17.** The Contractor shall support required personnel shuttles at applicable supply chain nodes. (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-18.** The Contractor shall provide 24/7 shuttle service (depending on flight schedules). (SOO C.6.5.1b; C.6.5.1c)

**1.5.6.1.09-19.** The Contractor shall ensure that cargo is prepared for shipment, staged and forwarded as close to schedule as flying conditions allow. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-20.** The Contractor shall perform all unloading of materials and transshipment and storage of materials at the Antarctic stations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-21.** The Contractor shall coordinate stevedoring work with contractor activities during ship off-load/on-load evolution, as authorized "Direct Liaison" with the US Navy Cargo Handling detachment. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-22.** The Contractor shall be responsible for filling marine transportation vans. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-23.** The Contractor shall operate the marine terminal (ice pier) next to Winter Quarters Bay. (SOO C.6.5.1c; C.6.5.1h)



**1.5.6.1.09-24.** The Contractor shall control pier activities for cargo operations. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-25.** The Contractor shall be responsible for direct cargo ship off-load and on-load operations at the pier. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-26.** The Contractor shall be responsible for staging of cargo to be transshipped from the Antarctic the following season. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-27.** The Contractor shall coordinate with any required support for the fuel tanker, USCG icebreakers, and the research vessels as required. (SOO C.6.5.1c)

**1.5.6.1.09-28.** The Contractor shall prepare, document, stage, and on-load all retrograde cargo from the Antarctic Station. (SOO C.6.5.1c; C.6.5.1h)

**1.5.6.1.09-29.** The Contractor shall properly clean Milvans used to transport waste according to applicable regulations before returning them to Port Hueneme inventory or other points of origin. (SOO C.6.5.1c; C.6.5.1h)

## 2.0 GOVERNMENT FURNISHED PROPERTY, EQUIPMENT, AND SERVICES

### 2.1 GENERAL

The NSF shall provide facilities, equipment, materials, and/or services necessary to perform the service tasking elements of this PWS.

### 2.2 EQUIPMENT

The NSF will provide equipment as defined in J.1.4, and J.1.5 – Equipment greater than \$25,000 and less than \$25,000 respectively.

### 2.3 SERVICES

#### 2.3.1 UTILITIES

All utilities in the facility will be available for the Contractor's use in performance of duties outlined in this PWS. The Contractor shall instruct employees in utilities conservation practices. The Contractor shall be responsible for operating under conditions that preclude the waste of utilities.

### 2.4 FACILITIES

The NSF will furnish the necessary workspace for the Contractor staff to provide the support outlined in this PWS to include desk space, telephones, computers and other items necessary to maintain an office environment.

## 3.0 CONTRACTOR FURNISHED ITEMS AND SERVICES

Except for those items specifically stated to be Government furnished in Section 3, the Contractor shall furnish everything required to perform this PWS.

## 4.0 APPLICABLE PROCEDURES/PUBLICATIONS

Publications applicable to this PWS are listed below. The publications are coded as "Directive" (mandatory) or "Guidance" (advisory). The table also indicates the date of the publication and what chapters or pages are applicable to the requirement.

<i>D or G</i>	<i>NAME</i>	<i>TITLE</i>	<i>RELEVANT PASSAGE</i>
<b>Federal Citations</b>			
D	Antarctic Conservation Act	Public Law 95-541 (as amended by Public Law 104-227)	Protects native mammals, birds, and plants and their ecosystems. Applies to all U.S. citizens, whether or not they go to Antarctica with the U.S. Antarctic Program. It applies to all expeditions to Antarctica that originate from the United States.
D	Antarctic Conservation Act (ACA) – Conservation of Fauna, Flora, and Ecosystems	45 CFR Part 670	Establishes regulations intended to conserve and protect the native mammals, birds, and plants.
D	Antarctic Conservation Act (ACA) – Waste Management	45 CFR Part 671	Establishes regulations controlling the use or release of designated pollutants or wastes in Antarctica.
D	Medical examinations and deployment qualifications	45 CFR Part 675	Requirements for medical examinations and criteria used to determine eligibility for deployment to Antarctica.
D	Resource Conservation and Recovery Act (RCRA)	40 CFR Part 261	Standards for the classification of RCRA regulated wastes which are returned to the United States for disposal.
D	Resource Conservation and Recovery Act (RCRA)	40 CFR Part 279	Standards for generator identification, importation of waste, manifesting, packaging, and labeling for wastes which are returned to the United States.

<b>D or G</b>	<b>NAME</b>	<b>TITLE</b>	<b>RELEVANT PASSAGE</b>
G	Code of Federal Regulations	49 CFR	The group of Federal regulations governing all modes of hazardous material transportation. 49 CFR accepts use of international documents such as ICAO and IMDGC. It does not apply to military air shipments.
G	Hazardous Materials Shipment	49 USC 5101-5127	Classification, packaging, labeling, and manifesting of hazardous materials
G	Oil Pollution Act of 1990 (OPA-90)	40 CFR Part 112	Regulations governing spill prevention, contingency and countermeasures planning and response to spills in the U.S.
D	Management of Federal Information Resources (Office of the President, Office of Management and Budget)	Circular A-130, Revised	Entire or selections of document, as directed
G	Electronic Communications Privacy Act of 1986	Public Law 99-508	Entire document, as expressed in OMB Circular A-130, Revised
G	Information Technology Management Reform Act of 1996 (Clinger-Cohen Act)	Public Law 104-106	Entire document, as expressed in OMB Circular A-130, Revised
D	Federal Information Security Management Act of 2002	Public Law 107-347	Entire document, as expressed in OMB Circular A-130, Revised
D	Management and Operation of Armed Forces Radio and Television Service (AFRTS); Armed Forces Radio and Television Service (AFRTS) Program Materials, as revised (Department of Defense, Office of the Assistant Secretary, Public Affairs)	DoD Instruction 5120.20-R, as revised; to include Appendix F	In compliance with NSF-Navy Media Center Memorandum of Agreement for broadcast video and radio service
D	Plant Quarantine Act & Federal Plant Pest Act	TBA	Quarantine process for importation of food waste into U.S.
<b>International Citations</b>			
G	IATA (Int'l Air Transport Association) Dangerous Goods Regulations	Based on the ICAO Technical instructions which are in turn accepted by 49 CFR.	Airline regulations that govern the transport of hazardous materials on commercial aircraft.
G	ICAO (Int'l Civil Aviation Organization) Technical Instructions For The Safe Transport Of Dangerous Goods By Air	Accepted by the U.S. DOT (49 CFR) for use in the US.	The ICAO technical instructions govern the airlift of hazardous materials on civil aircraft. They are what the IATA regulations are based on. Most countries have accepted/adopted these instructions as law.
G	IMDGC International Maritime Dangerous Goods Code	Accepted by the U.S. DOT (49 CFR) for use in the US.	International regulations on transporting hazardous cargo by ocean vessel.
<b>Industry Citations</b>			
G	A Systems Engineering Capability Maturity Model, Version 1.1 (Software Engineering Institute, Carnegie Mellon University)	Maturity Model SECMM-95-01, CMU/SEI-95-MM-003, November, 1995	Entire model, as documented and revised
G	Capability Maturity Model <sub>SM</sub> Integration, CMMI for Development, Version 1.2 (Software Engineering Institute, Carnegie Mellon University)	Software Engineering Institute, CMU/SEI-2006-TR-008, August 2006	Entire model, as documented and revised

**5.0 PERFORMANCE REQUIREMENTS SUMMARY**

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