North Warning System (NWS) Office Statement Of Work (SOW) Nov 2020

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NWS SOW Table Of Contents

SOW Section 1:

NWS Concept of Operations (CONOPS)

1.0 SOW Section 1 - NWS Concept of Operations

1.1 Post 2022 NWS CONOPS INTRODUCTION

1.2 NWS CONCEPT OF OPERATION & MAINTENANCE

1.2.1 The current life expectancy (LE) for the North Warning system (NWS) has been revised to 2035. This latest LE necessitates a shift in the concept of operations and maintenance (O&M) to ensure the NWS continues to meet its mission to the LE.

1.3 PURPOSE OF DOCUMENT

1.3.1 This document describes the required O&M concept for the NWS to realize an NWS LE of 2035. It provides the reader with an overview of the approach, requirements, and Canadian expectations for successful delivery of services.

1.4 EVOLUTION OF ARCTIC SURVEILLANCE O&M – PRE 2022

1.4.1 Distant Early Warning (DEW) Line Era Support

1.4.1.1 During the DEW Line era all radar sites were attended 24/7 by military staff and contractor technicians. Resupply originated via weekly “vertical” flights from Winnipeg to CAM-M and FOX-M stations, from there carrying on with “lateral” flights across the radar chain.

1.4.2 North Warning System Pre-2000

1.4.2.1 Constructed between 1986 and 1992 (with the exception of eight existing Distant Early Warning Line sites, circa 1950) the NWS is the product of the North American Aerospace Defence Modernization (NAADM) Memorandum of Understanding between the United States and Canada. The NWS O&M activity was a contracted service from its initial start-up and the first time that Canada used a contractor to operate and maintain a major defence system. NWS support was designed using a five zone concept linking the southern operations to zone logistic sites and thence zone radar sites. Planning started in 1993 for unattended operations at nine Long Range Radar (LRR) sites (with personnel remaining at CAM-M and FOX-M). The sites were then phased through minimum manning in 1994/5 to fully unattended in 1995. The other elements of the NWS, the Short Range Radar (SRR) sites, were designed to operate unattended.

1.4.3 NWS 2000 – 2022

1.4.3.1 The operations and maintenance concept evolved to contractor Care, Custody and Control of the entire NWS and its components. Under this concept, the Contractor has full responsibility for delivering radar data. At the working level, this means responsibility for all NWS O&M activities, for developing and implementing an effective sustainment program and ensuring adherence and compliance with all regulatory requirements. In return the Contractor is given control over prime mission equipment, supporting equipment and site infrastructure while Canada maintains overall configuration authority and project implementation approval.

1.5 OVERVIEW OF THE NORTH WARNING SYSTEM TODAY

1.5.1 NWS Mission

1.5.1.1 The mission of the NWS is to provide continuous aerospace surveillance of the northern approaches to North America; thus contributing to North American Defence and Canadian sovereignty. The Department of National Defence (DND) and the Canadian Armed Forces (CAF) are required by international and domestic obligation to ensure that the NWS is mission capable and properly maintained. The ability of the facility to be self-preserving or survivable in an unattended mode with minimal human intervention is critical to mission success.

1.5.2 Ownership

1.5.2.1 All NWS land is either owned outright by Canada, or is leased by Canada from Land Claim Authorities (LCAs). All NWS infrastructure and systems are owned by Canada with the exception of the US owned Lockheed Martin AN/FPS-117 LRR, AN/FPS-124 Short Range Radar (SRR) and Ground-Air-Ground (G/A/G) UHF/VHF tactical radios.

1.5.3 Configuration Control

1.5.3.1 Canada and the US retain configuration control over their respective property and/or equipment.

1.5.4 Geography and Environment

1.5.4.1 The NWS sites are strategically positioned across the Arctic and down the Labrador coast. A map and listing of the radar sites can be found in Annexes A and B respectively. The remote locations, severe Arctic climate and climate change can limit or delay site access which is normally done by helicopter augmented by small fixed wing aircraft.

1.5.5 NWS Infrastructure

1.5.5.1 Long Range Radar (LRR) Sites

1.5.5.1.1 There are ten (10) operational LRR sites in Canada extending from BAR-2 at Shingle Point in Yukon to LAB-6 at Cartwright in Labrador. LRR sites are equipped with AN/FPS-117 radars, G/A/G radios and Long Haul Communications Network (LHCN) connectivity. Site infrastructure consists of buildings and their integral mechanical and electrical systems, fire detection and suppression systems, power generation systems, fuel storage and distribution systems, radar towers and radomes, ground satellite terminal buildings and radomes, Automated Weather Observation System (AWOS) compounds, roads, helipads and runways. All LRRs are accessible by runway, three of which are commercial airports: Sanirijak, Cartwright and Cambridge Bay. The LRR sites have the appropriate infrastructure to accommodate personnel 24/7. There are four distinct LRR site configurations:

1.5.5.1.1.1 Main/Logistics Sites. Two sites, CAM-MAIN, Cambridge Bay, Nunavut and FOX-MAIN, Hall Beach, Nunavut, are DEW Line era main sites co-located with Logistics Support Sites (LSSs), which are occupied on a 24/7 basis;

1.5.5.1.1.2 Main Sites. Two sites are DEW Line era Main sites including PIN-MAIN, Cape Parry, Northwest Territories and DYE-MAIN, Cape Dyer, Nunavut;

1.5.5.1.1.3 Auxiliary (Aux) Sites. Three sites are DEW Line era Auxiliary Sites including BAR-2, Shingle Point, Yukon, CAM-3, Shepherd Bay, Nunavut and FOX-3, Dewar Lakes, Nunavut; and

1.5.5.1.1.4 East Coast Sites. There are three modern era East Coast sites built under the North American Air Defence Modernization (NAADM) project at BAF-3 Brevoort Island, Nunavut, LAB-2, Saglek, Labrador and LAB-6, Cartwright, Labrador.

1.5.5.2 Short Range Radar (SRR) Sites

1.5.5.2.1 There are 36 unattended SRR sites in Canada, extending from BAR-1 at Komakuk Beach in the Yukon to LAB-5 at Tukialik Bay in Labrador and one research and development radar facility in North Bay Ontario. SRR sites are equipped with AN/FPS-124 radar, G/A/G radios, LHCN and support communications equipment. Site infrastructure consists of a technical services building and the integral mechanical and electrical systems, power generation systems, fuel storage and distribution systems, fire detection and suppression systems, radar towers, satellite ground terminal radomes, helipad, AWOS compounds (at selected sites), and a beach re-supply area. The SRR site building houses Primary Mission Equipment (PME), support equipment and a segregated room that can be used as a shelter. Note that BAR-1, Komakuk Beach, Yukon and BAR-B, Stokes Point, Yukon are located in Ivvavik National Park. All work at these two sites needs to be coordinated with Parks Canada Agency (PCA). There are three types of SSR sites:

1.5.5.2.1.1 Type I SRR sites. These sites are equipped with two tactical G/A/G radios (one UHF and one VHF) as well as a VHF helicopter monitor radio;

1.5.5.2.1.2 Type II SRR sites. These sites are only equipped with a VHF helicopter monitor radio; and

1.5.5.2.1.3 SRR Short Range Development (SRD) Facility. The SRD in North Bay, Ontario is used for training, testing and development. It is configured as a Type I site.

1.5.5.2.2 PIN-3

1.5.5.2.2.1 The main building train at PIN-3; Lady Franklin Point and Nunavut, including all of its contents was destroyed by fire in January 2000. The remaining infrastructure at the site includes one garage, one warehouse, one fuel storage facilities, two satellite ground terminals, one hangar, limited Mobile Support Equipment (MSE) and inventory held in the warehouse at the time of the fire. With the loss of the power generating system (PGS) in the main building train, there is no power or heat for any of the remaining infrastructure, and no accommodations to house transient personnel. Minimal O&M requirements exist for the PIN-3 site (e.g. monitoring of infrastructure integrity).

1.5.5.3 Logistics Support Sites (LSSs)

1.5.5.3.1 The NWS in Canada is divided into five zones, each supported by a LSS, specifically LSS-I, Inuvik, Northwest Territories, LSS-C, Cambridge Bay, Nunavut, LSS-F, Hall Beach, Nunavut, LSS-Q, Iqaluit, Nunavut and LSS-G, Goose Bay, Labrador. Each LSS is comprised of warehousing and workshop facilities and is interconnected with other NWS elements via the LHCN. Each LSS is staffed to provide logistics and maintenance support for the assigned NWS sites within a zone. LSSs are categorized as follows:

1.5.5.3.1.1 Co-located: Two LSSs are co-located with LRR main sites (Hall Beach and Cambridge Bay); and

1.5.5.3.1.2 Community Based: LSS-I and LSS-Q are co-located with the Forward Operating Location (FOL) facilities in Inuvik and Iqaluit respectively and LSS-G is co-located with the 5 Wing Goose Bay air base.

1.5.5.4 North Warning System Control Centre (NWSCC)

1.5.5.4.1 The NWSCC is located in the 22 Wing North Bay Above Ground Complex (AGC) designated the David L. Pitcher Building. The NWSCC staff liaises with, and responds to, the 22 Wing System Maintenance (SM) Section to coordinate maintenance. The NWSCC is the focal point for reporting matters related to mission operations. The NWSCC staff monitors site and system status, control systems and provides direction to maintenance technicians at the LSSs. The Contractor's staff at the NWSCC performs maintenance on NWS LHCN and Control and Monitoring System (CMS), Programmer Logic Control (PLC) and Supervisory Control and Data Acquisition (SCADA) system located in the David L. Pitcher Building.

1.5.5.5 North Warning System Support Centre (NWSSC)

1.5.5.5.1 The NWSSC is located at 22 Wing North Bay (Building 109) and is staffed and operated by the Contractor. The role of the NWSSC is to provide depot level maintenance, training and logistics support for the AN/FPS-124 radar, LHCN equipment, and electronic control components of the NWS Power Generation Systems (PGS) and their associated Static Uninterruptible Power Supply (SUPS) units. The Short Range Development Site (SRD), located approximately 20 kilometers outside North Bay, is an integral part of the NWSSC and is used for training, problem resolution and testing as well as software and communications interface development.

1.5.6 NWS Equipment

1.5.6.1 Both Canadian and United States (US) owned equipment is installed/used on NWS sites. Responsibility for all of this equipment, including that owned by the United States, falls under Assistant Deputy Minister, Material (ADM(Mat)) and Assistant Deputy Minister, Infrastructure and Environment (ADM(IE)) as follows:

1.5.6.1.1 AN/FPS-117 Long Range Radar (LRR), US-owned;
1.5.6.1.2 AN/FPS-124 Short Range Radar (SRR), US-owned;
1.5.6.1.3 Ground-Air-Ground (G/A/G) UHF/VHF tactical radios, US-owned;
1.5.6.1.4 Long Haul Communications Network (LHCN);
1.5.6.1.5 Control and Monitoring System (CMS), SRR sites;
1.5.6.1.6 Programmable Logic Controller (PLC), LRR sites;
1.5.6.1.7 Supervisory Control and Data Acquisition (SCADA) system;
1.5.6.1.8 Automated Weather Observation System (AWOS);
1.5.6.1.9 Video Monitoring Network (VMN);
1.5.6.1.10 Radomes (radar and LHCN);
1.5.6.1.11 Lightning Protection Equipment;

1.5.6.1.12 Public Address (PA) systems;
1.5.6.1.13 Radar towers;
1.5.6.1.14 Buildings and Structures, including Satellite Ground Terminals (SGTs);
1.5.6.1.15 Heating, Ventilation and Air Conditioning (HVAC) systems;
1.5.6.1.16 Power Generating Systems (PGS);
1.5.6.1.17 Electrical systems;
1.5.6.1.18 Bulk Fuel Storage and Handling systems;
1.5.6.1.19 Potable Water systems;
1.5.6.1.20 Waste Water systems;
1.5.6.1.21 Fire Detection and Protection systems;
1.5.6.1.22 Private Branch Exchange (PBX) systems;
1.5.6.1.23 Roads and grounds including building pads, runways and helipads; and
1.5.6.1.24 Mobile Support Equipment (MSE) and ground transportation vehicles at LRR sites. Note: ground transportation vehicles at LSS-I, LSS-Q, LSS-G and North Bay are the responsibility of the O&M contractor.

1.6 Government Furnished Services and Material

1.6.1 Airlift

1.6.1.1 Government furnished airlift is provided to move personnel and air transportable equipment between LSSs and radar sites. An allotment of both fixed and rotary wing airlift is provided to the Contractor to meet O&M requirements. Supplemental airlift is provided in summer months to support annual fuel resupply and other sustainment requirements. There is also an annual airlift resupply to FOX-3 from FOX-M by heavy lift aircraft, normally C-130 Hercules.

1.6.2 Bulk Fuel

1.6.2.1 All NWS radar sites are supplied with government furnished JET A-1 fuel.

1.6.3 Satellite Transponder

1.6.3.1 The Government provides leased satellite transponder access to transmit radar, G/A/G radio and other supporting data to the NWS Canadian Air Defence Sector (CADS) demarcation point.

1.6.4 Test Equipment

1.6.4.1 A complete suite of test equipment is provided to support maintenance for both facilities and electronics systems.

1.6.5 Canadian and US Spares Inventory

1.6.5.1 Spares for Canadian owned and US-owned equipment is held at individual sites, LSSs and the NWSSC in North Bay. This allows NWS installed equipment and systems to be supported to the Line Replaceable Unit (LRU) level at the LSSs and the LRRs, and at the Shop Replaceable Unit (SRU) level at the applicable repair depot(s). This sparing concept ensures that the sites have sufficient spares to effect repair of the equipment and maintain the operational availability requirements. The inventory balances of both Canadian owned and US government owned equipment is held in the Canadian government owned and contractor operated MAXIMO enterprise asset management software. The US government adds a second level of accountability and provides access to the US government owned and contractor maintained Enterprise Solution - Supply (ES-S) system.

1.7 NWS Condition

1.7.1 A Facility Condition Assessment (FCA) was completed in summer 2019, with the final FCA report due in winter 2020. It is expected that the report will identify a requirement for significant capital investment to reach the required LE .

1.8 OPERATIONAL REQUIREMENTS

1.8.1 Operational Availability

1.8.1.1 The Contractor is required to provide useable radar and G/A/G radio signals between NWS sites and the CADS demarcation point Central Distribution Frame (CDF) at North Bay a minimum of 96% of the time on a weekly, monthly, quarterly and yearly basis for each site.

1.8.2 Operational Readiness

1.8.2.1 Readiness-Normal

1.8.2.1.1 The Contractor operates and maintains the NWS at a normal level of readiness such that radar data and G/A/G radio communications are available to the CDF at the performance standard specified in the SOW. The Contractor achieves PME outage restoral times as specified in the SOW except in cases where site preservation is at risk, wherein the Contractor provides an immediate response as specified in the SOW to ensure site preservation. Definitions of readiness-normal are as follows:

1.8.2.2 Readiness-Normal–LRR

1.8.2.2.1 The Contractor must provide continuous radar data from each NWS LRR to the CDF at the performance standard as specified in the SOW. The Contractor ensures that restoral for interruption of LRR data occurs within 48 hours at attended LRRs (72 hours at unattended LRRs).

1.8.2.3 Readiness-Normal–SRR

1.8.2.3.1 The Contractor must provide continuous radar data from each NWS SRR to the CDF at the performance standard as specified in the SOW. The Contractor ensures that restoral for interruption of SRR data occurs at the next opportunity for a site visit not to exceed 45 calendar days of interruption. However, if the adjacent site's radar is also unserviceable, one of the affected radars must be restored within 72 hours.

1.8.2.4 Readiness-Normal–Ultra High Frequency (UHF) Radios

1.8.2.4.1 The Contractor provides the following continuous UHF G/A/G radio communications to the CDF at the performance standard as specified in the SOW: LRRs – Guard, Airborne Intercept Common Control (AICC), and one (1) tactical channel, and at Type I SRRs one (1) tactical radio. The Contractor ensures that restoral for LRR UHF G/A/G radio communication as specified in the SOW occurs within 48 hours at attended LRRs (72 hours at unattended LRRs). The Contractor ensures that restoral for Type I SRR UHF G/A/G radio communication specified in the SOW occurs at the next opportunity for a site visit not to exceed 45 calendar days of interruption. However, if the adjacent site’s tactical UHF radio is also unserviceable, one of the affected tactical UHF radios must be restored within 72 hours.

1.8.2.5 Readiness-Normal–Very High Frequency (VHF) Radios

1.8.2.5.1 The Contractor provides continuous VHF guard and G/A/G radio communications channels from LRR sites and VHF G/A/G radio communications from Type I SRR sites to the CDF at the performance standard as specified in the SOW. The Contractor ensures that restoral of LRR VHF G/A/G radio communications specified in the SOW occurs within 48 hours at attended LRRs (72 hours at unattended LRRs). The Contractor ensures that restoral of Type I SRR VHF Tactical G/A/G radio communications specified in the SOW occurs at the next available site visit not to exceed 45 calendar days of interruption, unless the adjacent site’s VHF radio is also unserviceable, in which case one of the affected VHF radios will be restored within 72 hours.

1.8.2.6 Readiness-Normal-Special Designated SRRs and Radios

1.8.2.6.1 Due to the loss of radar and radio communications capability at PIN-3 (Lady Franklin), the following SRR sites must be permanently sustained at a heightened readiness and will be restored NLT 72 hours in the case of an outage:

1.8.2.6.1.1 PIN-2A (Harding River);
1.8.2.6.1.2 PIN-CB (Bernard Harbour);
1.8.2.6.1.3 PIN-DA (Edinburgh Island); and
1.8.2.6.1.4 PIN-EB (Cape Peel West).

1.8.3 Restoral of Service

1.8.3.1 When either continuous radar data or G/A/G radio communications from an LRR are interrupted, restoration is required within 48 hours at attended LRRs (72 hours at unattended LRRs). Generally speaking, i.e. when adjacent site's PME is fully operational, SRRs are required to be restored at next available opportunity to visit the site not to exceed 45 calendar days of interruption. Response times for other faults may be deferred if the fault does not affect operational effectiveness, site preservation, security or safety. Otherwise, for situations that threaten site integrity, security or safety, response will be as soon as possible to prevent the loss or limit the damage to the site and its equipment, and protect personnel.

1.8.4 Site Preservation

1.8.4.1 Situations which pose a threat to life, the environment, site security or government property are to be treated as emergencies requiring immediate response by LSS staff. In such cases, the emergency takes precedence over any other scheduled activity in the zone. Loss of redundancy in a given system may be considered a priority for action as opposed to an emergency provided there is no direct threat to the site. A priority maintenance visit will not necessarily take precedence over other scheduled work. The Contractor must perform Emergency CMs as LUC 72 and must submit a significant incident report as per related DID/CDRL.

1.9 SERVICE DELIVERY CONCEPT

1.9.1 Care, Custody and Control

1.9.1.1 Under this concept, the Contractor has full responsibility for delivering radar data. This means, at the working level, responsibility for all NWS O&M activities, ensuring adherence and compliance with all regulatory requirements and responsibility for developing and implementing an effective sustainment program. In return the Contractor is given control over prime mission equipment, supporting equipment and site infrastructure while Canada maintains overall configuration authority and project implementation approval.

1.9.2 Zone Concept

1.9.2.1 NWS is divided into five zones, supported directly from an LSS within each zone and centrally managed by Maintenance/Logistics staff in North Bay. Each LSS is staffed with a full-time Zone Manager that oversees the scheduling and completion of work within the Zone; responds to incidents to maximize operations and site preservation; and supports activities initiated by the Contract Management Office (CMO) or NWSO.

1.9.3 Remote Monitoring and Control

1.9.3.1 Systems at NWS radar sites interface with the LHCN and are monitored and controlled 24/7 from the NWSCC including the: LHCN, AN/FPS-117 and AN/FPS-124 radars, G/A/G radio, Power Generation System, fire detection and suppression, environmental control, intrusion/access control and Automated Weather Observation System. The NWSCC, in liaison with 22 Wing System Maintenance (SM) Section, controls system parameters, conducts remote maintenance troubleshooting and performs initial equipment reset/restart and fault diagnosis. NWS remote trouble shooting reset/restart and fault diagnosis is achieved through: SCADA, Maintenance Control System (MCS), Remote Controller Group (RCG) and Programmable Logic Controller (PLC) and non-PLC Control and Monitoring Systems (CMS).

1.9.4 Unattended Operations

1.9.4.1 SRR sites are unattended on a permanent basis and are remotely monitored and controlled from North Bay 24/7. Each radar site's sensor and monitoring information is automatically sent to CADS, located at 22 Wing North Bay, over the LHCN. The Contractor deploys personnel and resources from the LSSs/LRRS by Government-furnished airlift, to carry out contractually required work.

1.9.5 SRR Sites

1.9.5.1 SRR sites have an emergency shelter capable of housing six persons. The emergency shelter typically has a hot plate and basic food preparation area. An incinerating toilet is housed in the Technical Services Building (TSB). Should extreme circumstances arise, each SRR is to have emergency rations to support 8 persons for 14 days as well as emergency communications equipment.

1.10 Post Contract Award Service Delivery Implementation

1.10.1 General

1.10.1.1 Full service delivery post contract award is anchored on re-attending currently unattended LRR sites 24/7/365. Attending these LRR sites allows for increased maintenance at these locations, and for them to serve as staging points to complete PM and CM at SRR sites. The following critical considerations must be included in re-attending plans:

1.10.1.1.1 Water sources and onsite storage;
1.10.1.1.2 Water license limitations;
1.10.1.1.3 Waste water disposal;
1.10.1.1.4 Non-hazardous Waste Disposal;
1.10.1.1.5 Resupply of food/rations;
1.10.1.1.6 Crew Rotations;
1.10.1.1.7 Physical and mental health (morale and welfare);
1.10.1.1.8 Fixed wing flight access activities; and
1.10.1.1.9 POL refueling activities.
1.10.1.1.10

1.10.1.2 When LRRs are attended the Contractor must have a nine person crew that consists of a Site Supervisor, EMT, FMT-D, FMT-V, FMT-E, Logistician, Cook, Cleaner and HEO. In addition, space must be reserved for aircrew to include up to two pilots and a flight engineer;

1.10.1.3 LRR sites will be provided with an interim sheltering system for helicopters to allow Government Furnished airlift to remain at an LRR as required; and

1.10.1.4 LSS sites that are not co-located with a LRR must staff at a minimum a Zone Manager, Logistician and a clerk.

1.10.2 Phase I: 01 April 2022 – 30 September 2023 (to start once CCC has been assumed)

1.10.2.1 Staff BAF-3, LAB-2 and LAB-6 24/7/365 with helicopter access in the winter 2022/2023. Fill all water tanks at these three sites prior to freeze-up in fall 2022;

1.10.2.2 Staff BAR-2, PIN-MAIN, CAM-3, FOX-3 and DYE-MAIN 24/7/182 e.g. 01 August – 30 September in 2022 and then 01 April – 30 September in 2023;

1.10.2.3 Revise LRR site PM Program to add daily, weekly and monthly PM, as appropriate to existing PM tasks;

1.10.2.4 Identify and procure increased sparing to accommodate increased maintenance, primarily for LRR sites and for MSE;

1.10.2.5 Identify and procure increased test equipment to augment staging requirement;

1.10.2.6 Identify and procure additional MSE and complete training of Contractor's staff to coincide with sealift delivery of MSE in 2023;

1.10.2.7 Construct access to new (assumed) water sources at BAR-2 and PIN-MAIN; and

1.10.2.8 Complete design for interim helicopter sheltering system for BAR-2, PIN-MAIN, CAM-3, FOX-3, DYE-MAIN, BAF-3, LAB-2 and LAB-6. Procure material and sealift to site summer 2023.

1.10.3 Phase II: 01 October 2023 – 30 September 2025

1.10.3.1 Staff BAR-2, PIN-MAIN, CAM-3, FOX-3 and DYE-MAIN 24/7/365, in addition to BAF-3, LAB-2 and LAB-6. All sites except DYE-MAIN to support fixed wing access e.g. clear road and runway;

1.10.3.2 Complete construction of all interim helicopter shelters.

1.10.4 Phase III: 01 October 2025

1.10.4.1 Implement full concept of operations.

1.10.5 SRR Site Support.

Table A – SRR Sites Support Summary

LOCATION	SRR Sites Supported
BAR-2	BAR-1, BAR-B
LSS-I, Inuvik	BAR-BA3, BAR-3, BAR-DA1,
PIN-MAIN	BAR-4 BAR-E, PIN-1BD, PIN-1BG
PIN- 3/Kugluktuk	PIN-2A, PIN-CB, PIN-DA
CAM-M	PIN-EB,CAM-A3A, CAM-1A , CAM-B
CAM-3	CAM-2 CAM-CB, CAM-D, CAM-4
FOX-MAIN	CAM-5A, CAM-FA, FOX-1, FOX-A
FOX-3	FOX-2, FOX-B, FOX-CA,
DYE-MAIN	FOX-4, FOX-5
BAF-3	BAF-2, BAF-4A, BAF-5
LAB-2	LAB-1, LAB-3

LAB-6	LAB-4, LAB-5

Note 1: Consider supporting these sites from BAR-2 and PIN-MAIN
Note 2: Consider supporting PIN-2A from PIN-MAIN
Note 3: Table A is an example for planning purposes

1.10.6 Government Furnished Airlift

1.10.7 Government Furnished Airlift Assumptions

1.10.7.1 A total of five helicopters will be made available year round, one in each zone; and

1.10.7.2 Fixed wing support similar to that available in the current contract will be available.

1.11 Logistics Support

1.11.1 Logistics Support Sites (LSS)

1.11.1.1 LSSs serve as the logistics and maintenance hub for the NWS sites within their zone. The Contractor must maintain resident logisticians at each LSS at all times to support the completion of Preventive Maintenance (PM), Corrective Maintenance (CM) and sustainment projects within the zone.

1.11.2 NWSSC

1.11.2.1 The North Warning System Support Centre (NWSSC) at 22 Wing North Bay provides depot logistics support for the repair of AN/FPS-124 radars, LHCN equipment and PGS control equipment. The United States Air Force (USAF) provides depot level repair of AN/FPS-117 radar and G/A/G radios through a designated Air Logistics Center (ALC). Equipment not supported by the USAF or the NWSSC is repaired by commercial sources. In addition to providing support for the NWSSC repair mission, the NWSSC also serves as a customs consolidation point, repair coordination point for repairable equipment being repaired by commercial sources and a warehouse for the LSSs and NWS radar sites.

1.11.3 Warehousing

1.11.3.1 Both LSSs and the NWSSC have physical warehouse space for the storage of NWS inventory. Additional commercial warehousing space is currently required in Inuvik and Iqaluit to augment that available at LSS-I and LSS-Q which the Contractor must provide. This means there are only four warehouses and the other two must be leased by the contractor. Hall Beach, Cambridge Bay, Goose Bay and NWSSC have a warehouse, additional two required 1 at Inuvik and one at Iqaluit total six.

1.11.4 Inventory Control

1.11.4.1 Inventory control of Government Furnished Equipment (GFE) and Government Supplied Materiel (GSM) is maintained through standardized and documented procedures for the following activities:

1.11.4.1.1 Cataloguing and establishing stock levels;
1.11.4.1.2 Requisitioning and procurement processing;
1.11.4.1.3 Receipts and issues;
1.11.4.1.4 Repair/Beyond Economical Repair (BER) and disposal transactions;
1.11.4.1.5 Processing stock checks and inventory adjustments;
1.11.4.1.6 Identification and reporting of lost and/or damaged equipment and materiel;
1.11.4.1.7 Forecasting of GFE/GSM spares requirements; and
1.11.4.1.8 Redistribution of GFE/GSM spares/parts.

1.11.4.2 All GFE/GSM is tracked electronically, whether it is in use, in stock, in transit, in repair, in quarantine, ensuring all supply transactions and movement of materiel are track-able from start to end. A complete physical inventory of all US owned assets is conducted annually. A complete physical inventory of all Canadian owned assets is completed every two years.

1.11.5 Fuel Management

1.11.5.1 Effective management of the NWS bulk fuel inventory is critical for maintaining normal site operations. Key functions are as follows:

1.11.5.1.1 Fuel Forecasting

1.11.5.1.1.1 The Contractor prepares an annual fuel forecast for PGS, aviation and MSE usage from which annual bulk fuel delivery is based.

1.11.5.1.2 Bulk Fuel Delivery

1.11.5.1.2.1 All NWS radar sites are supplied with government furnished bulk fuel. Bulk fuel delivery is primarily by sealift, typically via barge is the west and ocean-going vessel in the east. Bulk fuel for landlocked SRR sites is first delivered by sealift to the nearest LRR site and then transferred by helicopter. The effort of the helicopter fuel transfer operations is a dual responsibility. The O&M must provide the quantity of fuel and schedule by site to the air carrier and the carrier must accomplish the task in accordance to his contract with the USAF.

1.11.5.2 Exceptions to the above are as follows

1.11.5.2.1 The SRD in North Bay, delivered by truck;
1.11.5.2.2 BAR-3, is delivered by truck from Tuktoyaktuk;
1.11.5.2.3 CAM-CB is delivered by truck from the community of Gjoa Haven;
1.11.5.2.4 BAR-1 and BAR-B are delivered via pipeline directly from barge to the summit tanks;
1.11.5.2.5 LRR Site FOX-3 is delivered annual utilizing a government provided heavy lift (C-130) aircraft from FOX-M;
1.11.5.2.6 CAM-4 and FOX-5 have their fuel delivered from the local community; and
1.11.5.2.7 In all cases, the Contractor is to be on-site during bulk fuel delivery.

1.11.5.3 On-Site Fuel Transfers and Issues

1.11.5.3.1 All on-site fuel transfers between the beach and summit, between fuel tanks at the summit and fuel issues to MSE are the responsibility of the Contractor.

1.11.5.4 Fuel Inventory Management

1.11.5.4.1 The Contractor is responsible for maintaining an up-to-date inventory for bulk fuel through accurate recording of receipts, issues, transfers and quarterly tank dips. Bulk fuel inventory levels are kept within normal parameters using, as a base, yearly operating gains and losses resulting from usage and temperature fluctuations.

1.11.6 Material Resupply Process

1.11.6.1 Most of the sites replenished with bulk cargo and heavy equipment/materials is conducted via summer sealift to beachheads adjacent to the destination radar sites. The Contractor is responsible for securing their own sealift. If available, the Contractor may "piggy-back" on Government contracted fuel barges for efficiency; however, maintains liability for non-delivery should those barges not reach their destination.

1.12 Maintenance Support

1.12.1 General

1.12.1.1 Facility maintenance is achieved through preventive maintenance, remote monitoring and control, corrective maintenance activities including emergency repairs, as well as planned work initiatives to ensure sustainment of the system to meet performance requirements.

1.12.2 Maintenance Planning

1.12.2.1 Implementation of a comprehensive Preventative Maintenance program, completion of Corrective Maintenance activities, and addressing contractual and other mission requirements represent a significant workload. In addition, weather and climate change continue to pose a significant risk to the successful execution of the O&M work. Implementation of the NWS O&M program requires the Contractor to:

1.12.2.1.1 Continuously review and prioritize maintenance requirements;

1.12.2.1.2 Employ enhanced logistics planning to ensure spares are available where and when they are required;

1.12.2.1.3 Employ effective resource planning to ensure qualified and trained technicians are available to perform the Work and that required test equipment is calibrated and available;

1.12.2.1.4 Effectively plan and prioritize the scheduling of work such that primary, secondary and tertiary priorities are identified and ready for implementation; and

1.12.2.1.5 Make full use of site infrastructure to support completion of site work.

1.12.3 Preventive Maintenance Program (PMP)

1.12.3.1 The Contractor is responsible for developing, implementing and updating a documented PMP for all NWS equipment and systems. The objective of the PMP is to balance the execution of Planned Maintenance (PM) with unplanned maintenance (CM) so that mission requirements can be achieved at an optimal cost. Updates to the PMP arise largely due to outputs from the Life Cycle Material Management (LCMM) function described further in this Statement of Work. PMP plan and any changes must be approved by DND/TA.

1.12.4 Corrective Maintenance (CM)

1.12.4.1 Levels of maintenance have been established to define the complexity and scope of maintenance work. The more complex the task, the further it is conducted away from its operating unit. As a rule, First Level Maintenance describes maintenance and servicing actions that are carried out on or adjacent to the prime vehicle or system in its immediate operating locale. Second Level Maintenance involves the temporary removal from operational service and the relocation of the system or item to a specialized maintenance unit. Third Level Maintenance are those tasks for which specialized heavy maintenance activities are carried out, usually at some distance from the operational locale, and often by contractor.

1.12.5 First Line

1.12.5.1 When a fault is detected remotely by the NWSCC and cannot be cleared by NWSCC staff, its probable cause and corrective measures are communicated to the appropriate LSS. Depending on the criticality of the fault and associated response requirements, technicians from the LSS respond by traveling as required to the radar site to perform first line maintenance. Corrective action for first line maintenance is normally conducted as Line Replaceable Units (LRUs) or Shop Repairable Units (SRUs), where the failed component is replaced on site and then either disposed of or sent out for repair to the second or third line repair facility as appropriate.

1.12.6 Second Line

1.12.6.1 The majority of second line (depot level) maintenance is provided by the NWSSC for LRUs/SRUs, with parts procured under the Fixed Firm Price (FFP) of the contract, software maintenance and system integration testing, to sustain the NWS equipment and systems listed in Section 1.5.6 fully operational. In some cases, second line maintenance is conducted at the site level such as PGS engine overhauls.

1.12.7 Third Line

1.12.7.1 The NWSSC coordinates third-line repair and overhaul for both Canadian and US owned equipment. Canadian owned equipment not repairable by the NWSSC is sent to third party commercial repair facilities. Repair of AN/FPS-117 radar components and G/A/G radios are sent to a USAF designated Air Logistics Center (ALC).

1.12.8 Emergency Maintenance

1.12.8.1 From time to time immediate action (work) will be required to protect life, limb, the environment and Government Property, correct immediate fire, safety or health hazards and to preclude a reduction in operational effectiveness. An emergency requires immediate action to carry out an investigation and to implement a temporary or where possible, permanent repair. The Contractor must perform Emergency CMs as LUC 72 and must submit a significant incident report as per related DID/CDRL.

1.13 Other Responsibilities of Note

1.13.1 General. The Contractor is responsible for delivering an operational NWS, which requires administrative services, financial management, logistics management, risk management, quality management, security, health and safety, information services, site management, maintenance, monitoring and control, life cycle maintenance, configuration control, fire protection, sustainment engineering, Five Year Operations and Sustainment Planning, small project management, project contracting, third party customer support, customer (government) support, airlift/sealift fuel coordination and environmental stewardship. The Contractor reports progress regularly, and reports issues to the NWSO as they develop, both verbally and in writing.

1.13.2 NWS Program Management

1.13.2.1 The Contractor is required to demonstrate comprehensive program management to meet NWS operational readiness and all contractual requirements in the areas of: administrative services, financial management, logistics management, risk management, quality management, security, health and safety, information services, site management, maintenance, monitoring and control, life cycle maintenance management, configuration control, fire protection, Five Year Operations and Sustainment Planning, sustainment engineering, project management, third party customer support, customer (government) support, airlift/sealift fuel coordination and environmental stewardship.

1.13.3 Risk Ownership

1.13.3.1 Along with responsibility for the operation and maintenance of the NWS, the Contractor also accepts the risks inherent with activities related to this contract including operations and maintenance activities and sustainment projects. The service contract is structured such that Canada has minimum exposure to risk and negative consequences.

1.13.4 Environmental Stewardship

1.13.4.1 The Contractor exercises due diligence and provides environmental stewardship in accordance with DND's policies and all applicable Federal, Provincial and Territorial legislation. Of note, regulations such as the Storage Tank System (STS) Regulations and Nunavut Water Board Licenses hold both the owner and operator accountable when violations occur.

1.13.5 Health and Safety

1.13.5.1 The Contractor exercises due diligence and provides a safe working environment in accordance with DND's policies and applicable legislation. NWS facilities and sites must not pose a safety hazard to Contractor's staff or anyone else granted access to a site. The Contractor must ensure that site visitors adhere to applicable safety regulations.

1.13.6 Site Access Control

1.13.6.1 Care, Custody and Control of all aspects of the NWS gives the Contractor complete control over the delivery of surveillance data to NORAD operators. With this authority comes significant responsibility as the Contractor must at all times adhere to applicable regulations, is responsible for the safety of all personnel on site, and is accountable for the safety, security and integrity of all facilities and equipment. Accordingly, there is an implicit duty to scrutinize all non-contractor requests to visit sites and to ensure visits occur on a non-interference basis. All requests to the Contractor for customer support must be coordinated with NWSO and all contractor proposals to support or deny a third party request must be reviewed by NWSO. The NWSO TA may veto the Contractor's proposed response to a Third Party Support (TPS) request.

1.13.7 Support to NWSO

1.13.7.1 Members of NWSO or organizations and personnel sponsored by NWSO to complete NWS related business will submit support requests to the Contractor for coordination.

1.13.8 Support to Third Parties (non-North Warning activities)

1.13.8.1 From time to time the Contractor will receive requests to provide support to personnel or organizations not affiliated with the NWS. The location and infrastructure available at the NWS sites, given it is such a remote and austere region, invites regular requests for support particularly in the wake of growing northern exploration. Thus, the Contractor can expect requests for support from other Government Departments and Agencies, including DND organizations not affiliated with the NWS mission, and nongovernmental (commercial or private) organizations. The Contractor may or may not wish to support such requests, but NWSO reserves the right at all times to review and possibly veto the Contractor's recommendation.

1.13.9 Life Cycle Management

1.13.9.1 The onus is on the Contractor to employ LCMMs to maximize the life expectancy of existing infrastructure and systems to meet the established LE. LCMMs have the primary responsibility of managing the life cycle for NWS installed equipment and systems for which they are assigned

1.13.9.2 In addition, the Contractor must employ Subject Matter Experts (SMEs) to work with US LCMMs and Canadian Technical Authorities (TAs) for the following systems:

1.13.9.2.1 AN/FPS-117 and AN/FPS-124 radars (in conjunction with US LCMM);
1.13.9.2.2 Radomes;
1.13.9.2.3 AWOS (in conjunction with Canadian LCMM); and
1.13.9.2.4 Test Equipment.

1.13.9.3 The LCMM has overall authority for managing all phases of equipment life cycle, including conception, acquisition, in service and disposal, and also has responsibility for the management of NWS configured items.

1.13.10 Sustainment Projects

1.13.10.1 The Contractor is responsible for the design and implementation of sustainment projects primarily arising from LCMM activities to remedy instances of obsolescence, but also to address changing legislative requirements, issues of occupational health and safety, cyber security risk management, and to address evolving mission requirements. Implementation of sustainment projects is to be all inclusive with the Contractor responsible for all aspects of the project from tendering to project close-out.

1.14 MISSION PARTNERS

1.14.1 NWSO

1.14.1.1 The NWSO Technical Authority (NWSO TA) is supported by the Procurement Authority (PA) and Contract Authority (CA). The NWSO was established in Ottawa in 1986 to operate and maintain the NWS sites in Canada on behalf of both governments. It is co-staffed by DND and USAF personnel and is the Canadian and American focal point for NWS O&M program management. The Directorate of Aerospace and Equipment Program Management (DAEPM) Radar and Communications Systems (R&CS), is designated the Director of the NWS with DAEPM (R&CS) 3 designated as NWSO Deputy Director for Mission Support. The USAF additionally fills a second Deputy Director position co-located with the NWS Office in the NCR. Communications & Electronics and Inuit Benefits TAs from ADM (MAT) as well as Facilities and Environmental TAs from ADM (IE) are also resident in the NWSO. Further, the NWSO TA has oversight of the Quality Assurance Program.

1.14.2 CADS

1.14.2.1 The Canadian Air Defence Sector (CADS), located at 22 Wing North Bay, is responsible for providing surveillance, identification, control and warning for the aerospace defence of Canada and North America at the Sector Air Operations Centre. Personnel of 21 Aerospace Control and Warning Squadron staff the "nerve center" of the CADS from 22 Wing's state-of-the-art two-story above ground complex that was officially opened in 2006. Duty crews, which include aerospace controllers and aerospace control operators, run the operation on eight-hour shifts. Their job is to monitor all radar feeds of air traffic approaching Canadian airspace.

1.14.3 22 Wing System Maintenance (SM) Section

1.14.3.1 The SM Section reports to the Mission Control Commander and is staffed by military technicians who are responsible for monitoring availability and quality of radar data and G/A/G communications on behalf of the MCC. The SM Section provides the interface between the MCC and the Contractor’s staff in the NWSCC.

1.14.4 USAF Technical Authorities

1.14.4.1 Hill Air Force Base provides the Configuration Management authorities for life cycle management of the AN/FPS-117 and AN/FPS-124 radars. Third line maintenance support for AN/FPS-117 parts resides in the USAF Logistics System. Third line maintenance of the AN/FPS-124 is performed at the NWSSC in North Bay.

1.14.5 USAF NWSO Detachment

1.14.5.1 The USAF Detachment oversees the execution of US contracts providing material and services to the Contractor, specifically bulk fuel and airlift transport.

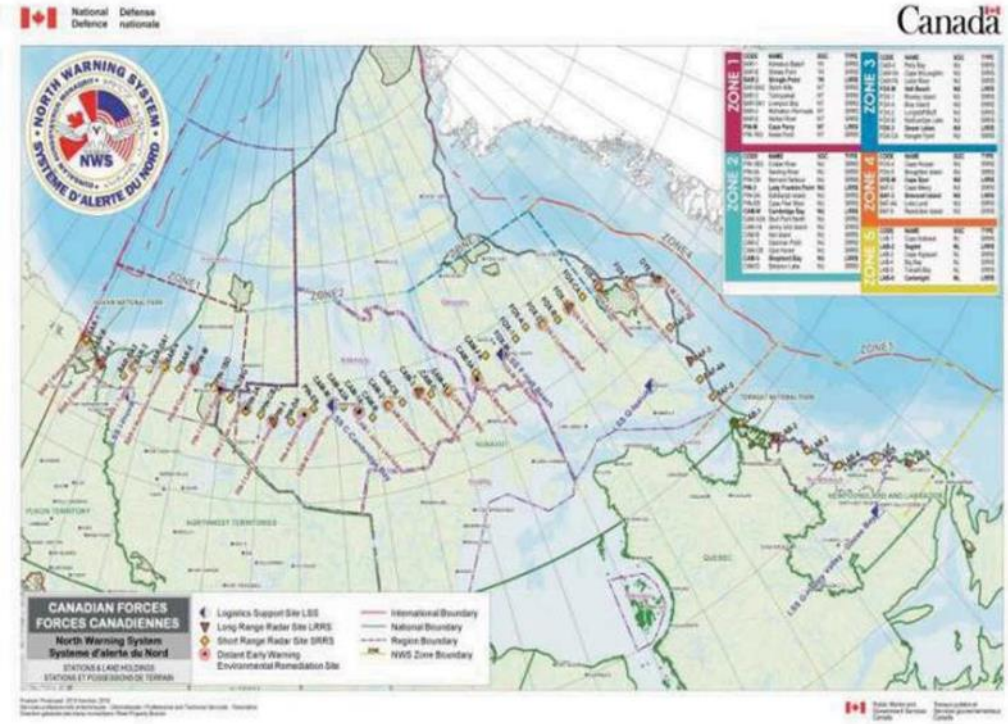
1.14.6 Regulatory Agencies

1.14.6.1 The Contractor is expected to have a positive professional relationship with regulatory agencies having interest in NWS sites, particularly Environment and Climate Change Canada and Crown-Indigenous Relations and Northern Affairs Canada whose inspectors visit selected sites each year.

1.14.6.2 Contractor Management Office (CMO)

1.14.6.2.1 The CMO is the focal point for planning, organizing and managing the Work requirement under the Contract and ensures all Inuit Benefit requirements are met. The Contractor must identify sufficient staff for the development and implementation of all the tasks and deliverables related to the Inuit Benefits Requirements and Inuit Training and Development Plan, as identified in more details in Annex D. The CMO must be located in the NCR.

1.15 ANNEX A - Map of the NWS Zones, LSS and Radar



1.16 ANNEX B – List of Sites by Zone

Zone 1 LSS Inuvik		Zone 2 LSS Cambridge Bay		Zone 3 LSS Hall Beach		Zone 4 LSS Iqaluit		Zone 5 LSS Happy Valley - Goose Bay	
LRR	SRR	LRR	SRR	LRR	SRR	LRR	SRR	LRR	SRR
BAR- 2	BAR- 1	PIN-3	PIN- 2A	FOX-M	CAM- 4	DYE-M	FOX- 4	LAB- 2	LAB- 1
PIN-M	BAR- B	CAM- M	PIN- CB	F0X- 3	CAM-5A	BAF- 3	FOX- 5	LAB- 6	LAB- 3
	BAR- BA3	CAM- 3	PIN- DA		CAM-FA		BAF- 2		LAB- 4
	BAR- 3		PIN- EB		FOX- 1		BAF- 4A		LAB- 5
	BAR- DA1		CAM- A3A		FOX- A		BAF- 5		
	BAR- 4		CAM- 1A		FOX- 2				
	BAR- E		CAM- B		FOX- B				
	PIN- 1BD		CAM- 2		FOX-CA				
	PIN- 1BG		CAM- CB						
			CAM- D						

1.17 ANNEX C – Flight Times Between Sites

Zone	From	To	One Way Distance (S.M.)	Fixed Wing / Helicopter	Flight Time (Hrs)
Zone 1 - LSS Inuvik	Inuvik	BAR-BA3	42	H	0.8
		BAR-3	79	H	1.5
		BAR-DA1	110	H	2.1
		BAR-2	105	H	2.0
		BAR-2	105	FW	1.3
		PIN-M	250	H	4.7
		PIN-M	250	FW	3.1
	BAR-2	BAR-1	85	H	1.6
		BAR-B	46	H	0.9
	PIN-M	BAR-4	101	H	1.9
		BAR-E	53	H	1.0
		PIN-1BD	80	H	1.5
		PIN-1BG	146	H	2.7
	Inuvik	BAR-1	189	H	3.5
		BAR-B	149	H	2.8
		BAR-4	158	H	3.0
		BAR-E	199	H	3.7
		PIN-1BD	307	H	5.7
		PIN-1BG	362	H	6.8
Zone 2 - LSS Cambridge Bay	CAM-M	CAM-B	138	H	2.5
		CAM-1A	86	H	1.6
		CAM-A3A	36	H	0.7
		PIN-EB	66	H	1.2
		PIN-3	207	H	3.8
		PIN-3	207	FW	2.6
		CAM-CB	233	H	4.3
		CAM-CB	233	FW	2.9
	CAM-CB	CAM-2	49	H	0.9
	PIN-3	PIN-2A	98	H	1.8
		PIN-CB	48	H	0.9
		PIN-DA	60	H	1.1
	CAM-M	PIN-2A	294	H	5.4
		PIN-CB	244	H	4.5
		PIN-DA	150	H	2.8
		CAM-2	185	H	3.4
		CAM-3	291		6.0
		CAM-D	329		6.8

Zone 3 - LSS Hall Beach	FOX-M	FOX-A	105	H	2.0
		FOX-1	58	H	1.2
		FOX-2	152	H	3.1
		CAM-FA	62	H	1.3
		CAM-5A	111	H	2.3
		CAM-3	304	H	6.3
		CAM-3	304	FW	3.8
	CAM-3	CAM-D	39	H	0.8
		CAM-4	97	H	2.0
	FOX-M	FOX-3	250	H	5.2
		FOX-3	250	FW	3.1
	FOX-3	FOX-B	50	H	1.0
		FOX-CA	53	H	1.1
	FOX-M	CAM-D	270	H	5.6
		CAM-4	215	H	4.4
		FOX-B	202	H	4.2
		FOX-CA	304	H	6.3
Zone 4 - LSS Iqaluit	Iqaluit	BAF-5	194	H	3.6
		BAF-4A	153	H	2.8
		BAF-3	139	H	2.6
		BAF-3	139	FW	1.7
		BAF-2	170	H	3.1
		DYE-M	289	H	5.3
		Broughton	299	H	5.5
		Broughton	299	FW	3.7
	Broughton	DYE-M	94	H	1.7
	Iqaluit	DYE-M	289	FW	3.6
	Broughton	FOX-5	10	H	0.2
		FOX-4	96	H	1.8
	Iqaluit	FOX-5	294	H	5.4
		FOX-4	329	H	6.0
Zone 5 LSS - Goose Bay	Goose Bay	LAB-4	167	H	3.4
		LAB-5	128	H	2.6
		LAB-6	141	H	2.9
		LAB-2	367	H	7.5
		LAB-2	367	FW	4.6
	LAB-2	LAB-1	118	H	2.4
		LAB-3	103	H	2.1
	Goose Bay	LAB-1	482	H	9.8
		LAB-3	266	H	5.4
		Cartwright	155	FW	1.9
	LAB-6	Cartwright	15	H	0.3

SOW Section 2:

NWS Program Management (PM)

2.0 Section 2.0 - NWS Program Management

2.1 Effective Program Management

2.1.1 The Contractor must provide effective program management to plan, schedule, direct, supervise, implement and report on the Work requirements under the Contract and administer the requirements of the Contract. The Inuit Benefit requirements are fully detailed in the Annex D of the Contract.

2.2 Maintain a Program Management Organization

2.2.1 The Contractor must maintain a program management organization that incorporates the following requirements:

2.2.1.1 A project organizational structure clearly linked to the Contractor's corporate management;

2.2.1.2 A managerial structure with clearly defined levels of responsibility and authority;

2.2.1.3 Complete Care, Custody and Control (CCC) of the North Warning System (NWS);

2.2.1.4 Policies, plans and procedures to control the Work and meet contractual and legislative requirements compliant to ISO standards as described in the Contract;

2.2.1.5 An NWSO/Contractor management team relationship based upon open communications between the Contractor's organization and the NWSO;

2.2.1.6 A return of the NWS with the same or better capability and functionality less fair wear and tear at the conclusion of the Contract; and

2.2.1.7 Any other business services the Contractor requires to fulfill the requirements of this contract; and

2.2.2 The Contractor must provide sufficient resources and qualified personnel to achieve the managerial functions and perform all of the Work requirements under the Contract. The Contractor must organize and staff a Contractor Management Office (CMO), the NWS Control Centre (NWSCC), NWS Support Centre (NWSSC) and the five Logistics Support Sites (LSSs).

2.3 Definitions

2.3.1 Refer to table of the definitions relevant to this section.

2.4 References

2.4.1 CTSs;
2.4.2 FYO&SP; and
2.4.3 NWS Risk Management Plan.

2.5 Program Management Plan

2.5.1 The Contractor must establish and implement a written Program Management Plan which must describe the Contractor's approach to meeting all of the requirements of this contract as per DID/CDRL 2.5.1.

2.6 Contractor Management Office

2.6.1 The Contractor must establish a Contractor Management Office (CMO) in the National Capital Region (NCR). Canada desires that there be a close working relationship with the NWS contractor including regular and frequent face to face meetings at all levels within the Canada and contractor teams. The contractor must provide office space for a maximum of 5 government personnel that may be used on an occasional or intermittent capacity. For this office space, the contractor must provide full service Wi-Fi internet, desks, chairs and printer access for use by government personnel when they occupy the office space provided. The contractor must ensure parking is available for government personnel.

2.7 Business Communications

2.7.1 The Contractor must engage the NWSO in scheduled meetings and adhoc discussions to support the day-to-day management and administration of the requirements of this SOW.

2.7.2 The Contractor must have qualified personnel attend two (2) Product Improvement Working Group (PIWG) meetings in the United States annually and two (2) Airlift/sealift conferences annually outside of the NCR.

2.7.3 The Contractor must maintain, online, a current listing of key Contractor personnel indicating functional responsibilities and contact names, telephone numbers and e-mail addresses.

2.7.4 The Contractor must establish and maintain a video conference capability between the CMO and the NWSO for the duration of the Contract. It must be Contractor's responsibility to conduct in person business communications at the North Warning System Office (NWSO) located at 455 Boulevard de la Carriere, Gatineau, Quebec unless waived on a case by case basis by the NWSO TA.

2.7.5 Contractor personnel in the NWSCC must liaise with and respond to DND operations in the CADS through the SM Section on a 24/7 basis regarding the provision of radar and communications data from the NWS radar sites.

2.7.6 The Contractor must ensure that the Information Management System (IMS) is the repository for NWS project information and that all data, plans, documents, reports and correspondence that are in electronic format are available online as specified in the Contract.

2.7.7 The Contractor must provide e-mail capability to facilitate communication and interchange of electronic correspondence. The e-mail capability must include internet e-mail for personnel when away from the office.

2.7.8 The Contractor must ensure that the Microsoft Office suite of software is used for the preparation of documents for interchange with the NWSO.

2.8 Program Review Meetings

2.8.1 The Contractor must schedule and hold quarterly program review meetings (PRM) with the NWSO. The PRM must be attended by the executive from both the Contractor and NWSO and must focus on issues which have not been resolved through normal business communications or can otherwise only be resolved by the executive.

2.8.2 The Contractor must send the draft presentation and agenda to the NWSO a minimum of one (1) week in advance of the meeting and must produce draft minutes within ten (10) days after the meeting.

2.8.3 PRMs must only be cancelled with written concurrence from the Contract Authority.

2.9 Qualifications and Training of Labour Resources Under the Contractor's Authority

2.9.1 The Contractor must ensure that labour resources under the Contractor's authority, whether employees or sub-contracted, meet or exceed the personnel qualifications and training requirements detailed in the Contract document.

2.9.2 The Contractor must maintain copies of all required trade, professional and other required certifications for their employees and must provide copies to the NWSO TA upon request.

2.9.3 The Contractor must prepare, implement and administer an NWS Training Plan to ensure the Contractor's personnel are provided initial and regenerative job specific training. The Contractor must ensure that the training of all staff working on the NWS is current.

2.9.4 The Contractor must prepare and maintain Course Training Standards (CTSs) for all training courses required at contract start, and prepare new CTSs for newly installed equipment and systems.

2.9.5 The Contractor must provide regenerative training for a maximum of two (2) NWSO personnel and/or NWSO sponsored personnel for the following courses:

2.9.5.1 Ground Air Ground (GAG) radios;
2.9.5.2 AN FPS 124 radar;
2.9.5.3 AN FPS 117 radar;
2.9.5.4 Long Range Radar (LRR) site Power Generating System (PGS);
2.9.5.5 Short Range Radar (SRR) site PGS; and
2.9.5.6 Long Haul Communications Network (LHCN).

2.9.6 When scheduling these courses, the Contractor must solicit the NWSO TA to verify if any NWSO personnel and/or NWSO sponsored personnel intend to attend one or more of these course.

2.10 Additional Training and Experience for Facilities Systems

2.10.1 If any specific piece of equipment no longer has OEM support, solutions for the training of personnel and obtaining of technical information/expertise will be developed by the Contractor with approval by the appropriate TA. All costs related associated with the solution will be paid by the Contractor.

2.10.2 Maintenance and Repair Personnel working on or are involved in the Bulk Fuel Systems will have completed fuel handling courses and hazardous material training in accordance with Provincial/Territorial legislation.

2.10.3 Within six months of the Operational Start Date of a site fitted with a Sprinkler System, Standpipe System or Fire Pump, the Contractor must have resources maintaining these systems trained on site by a person who is a Certified Sprinkler System Installer (Red Seal Interprovincial recognized) with at least five (5) years of experience. The Contractor must provide regenerative training on a five-year cycle.

2.10.4 Within six months of the Operational Start Date of a site fitted with a Kitchen Fire Suppression System, the Contractor must have resources maintaining these systems trained by the OEM, or the OEM's authorized designate. The Contractor must provide regenerative OEM training on a five-year cycle.

2.10.5 Within six months of the Operational Start Date of a site fitted with a Carbon Dioxide Fire Suppression System, the Contractor must have resources maintaining these systems trained on site by the OEM, or the OEM's authorized designate. Contractor must provide OEM regenerative training on a five-year cycle.

2.10.6 Within six months of the Operational Start Date of a site fitted with a Clean Agent Suppression System, the Contractor must have resources maintaining these systems trained on site by the OEM, or the OEM's authorized designate. The Contractor must provide OEM regenerative training on a five-year cycle

2.10.7 Within six months of the Operational Start Date for each site, the Contractor must have resources maintaining active Fire Alarm systems, voice communications systems and fire suppression releasing panels trained by a technician who is registered with the Canadian Fire Alarm Association (CFAA) as having successfully completed the "Fire Alarm Technology" program, having worked as an apprentice to a person who has been a CFAA registered technician for a period of not less than 1 year, and with at least five (5) years of experience working primarily on fire alarm systems. The Contractor must provide regenerative training on a five-year cycle. The Contactor must ensure that resources maintaining these systems have successfully completed the following CFAA courses:

2.10.7.1 An Introduction to the Fire Detection and Alarm Industry;
2.10.7.2 Basic Electricity; and
2.10.7.3 Fire Alarm Systems.

2.11 Key Personnel

2.11.1 The Contractor must employ the following key personnel.

2.11.1.1 Where a post-secondary degree or diploma is stated, the degree or diploma must be from a university or a college which has been granted the authority to award degrees or diplomas by its provincial ministry of education, and be a member of the Association of Universities and Colleges of Canada (AUCC) or Association of Canadian Community Colleges (ACCC), as appropriate. Degrees and diplomas from educational institutions outside of Canada can be accepted, provided they are granted equivalency from a Canadian university or college meeting the requirements stated above.

2.11.2 Program Manager

2.11.2.1 The Program Manager must be responsible for the administration of the NWS program and must have overall accountability for meeting the requirements of the Contract. The Contractor must ensure that the project manager has direct access to senior management levels within the Contractor's corporate organization to ensure that NWS project requirements are effectively supported from within the corporate structure. The NWS project manager must have the authority to make decisions on all matters with respect to the Work under the Contract and to commit the Contractor in all contractual matters. The NWS project manager must be a full-time employee of the Contractor and have no responsibility in the corporate organization for any work other than the Work requirements under the Contract. The Program Manager must be responsible for the preparation, implementation and administration of an NWS Program Management Plan. The Program Manager must:

2.11.2.1.1 Possess a post-secondary qualification; either a degree in the field of engineering or science or a technology diploma;

2.11.2.1.2 Possess a Project Management Professional (PMP) certificate or be eligible for PMP certification;

2.11.2.1.3 Have at least ten (10) years of direct experience working in an engineering or other technical services department; and

2.11.2.1.4 Have a minimum of five (5) years of experience managing a complex project.

2.11.3 Inuit Benefits Manager

2.11.3.1 The Inuit Benefits Manager must be responsible for guaranteeing that contractually required Inuit Benefits are achieved and for the development and successful implementation of an Inuit Training and Development Plan. The Inuit Benefits Manager must be responsible for the preparation, implementation and administration of an NWS Inuit Benefits Management Plan. The Inuit Benefits Manager must:

2.11.3.1.1 Be a beneficiary from the Inuvialuit, Nunavut or Labrador Comprehensive Land Claim Agreement (CLCA); and

2.11.3.1.2 Have a minimum of three (3) years of experience related to development of socio-economic benefits programs.

2.11.4 Sustainment Manager

2.11.4.1 The Sustainment Manager will be responsible for the sustainment of all NWS equipment, systems and infrastructure including:

2.11.4.1.1 Preparation, implementation and administration of an NWS Life Cycle Material Management (LCMM) Plan or the NWS to include on-going trend analysis on the performance of NWS equipment, systems and infrastructure with annual reporting;

2.11.4.1.2 Preparation, implementation and administration of an NWS Configuration Management Plan for NWS configured items;

2.11.4.1.3 Provision of engineering services for the design of sustainment projects; and

2.11.4.1.4 Implementation of sustainment projects.

2.11.4.2 The Sustainment Manager must

2.11.4.2.1 Have a degree in engineering in a field directly related to the requirements of this SOW or a diploma in engineering technology;

2.11.4.2.2 Be eligible for certification as a P. Eng. or CET;

2.11.4.2.3 Have at least ten (10) years of direct experience working in an engineering or other technical services department; and

2.11.4.2.4 Have a minimum of three (3) years of experience managing an engineering or technical services function.

2.11.5 Operations Manager

2.11.5.1 The Operations Manager must be responsible for coordinating the implementation of the current year of the NWS business plan and for 24/7 watch keeping of the NWS. The Operations Manager must:

2.11.5.1.1 Possess a post-secondary degree or diploma in a field directly related to the requirements of this SOW;

2.11.5.1.2 Have a minimum of ten (10) years of direct experience in their field; and

2.11.5.1.3 Have a minimum of three (3) years of experience managing an operations or technical services function.

2.11.6 Logistics Manager

2.11.6.1 The Logistics Manager must be responsible for:

2.11.6.1.1 The preparation, implementation and administration of an NWS Logistics Management Plan;

2.11.6.1.2 The coordination of all NWS resupply requirements including Repair and Overhaul (R&O) for both Canadian and United States Air Force (USAF) equipment;

2.11.6.1.3 Bulk fuel resupply and inventory management;

2.11.6.1.4 The coordination of airlift, sealift and ground transportation; and

2.11.6.1.5 The Logistics Manager must possess a designation as a Professional Logistician or be eligible for designation as a Logistics Professional and have a minimum of five (5) years of demonstrated experience in logistics management.

2.11.7 Occupational Health and Safety Officer

2.11.7.1 The Occupational Health and Safety (OH&S) Manager must be responsible for the preparation, maintenance and implementation of the OH&S Plan. The OH&S Manager must be a Canadian Registered Safety Professional or eligible for designation as a Canadian Registered Safety Professional and have three (3) years related experience in a safety management position.

2.11.8 Environmental Services Officer

2.11.8.1 The Environmental Services Manager must be responsible for ensuring compliance with all federal, provincial and territorial legislation. The Environmental Services Manager must:

2.11.8.1.1 Possess a post-secondary diploma or degree in the sciences;

2.11.8.1.2 Be designated a Certified Canadian Environmental Practitioner or eligible for designation as a Certified Canadian Environmental Practitioner; and

2.11.8.1.3 Have a minimum of ten (10) years of direct experience in the provision of environmental services.

2.11.9 Quality Systems and Risk Manager

2.11.9.1 The Quality Systems and Risk Manager must be responsible for:

2.11.9.1.1 The preparation, implementation and administration of an NWS Quality Management Plan;

2.11.9.1.2 Acquiring and maintaining ISO certifications; and

2.11.9.1.3 The preparation, implementation and administration of an NWS Risk Management Plan.

2.11.9.2 The Quality Systems and Risk Manager

2.11.9.2.1 Possess a post-secondary qualification; either a degree or diploma in a field directly related to one or more requirements of this SOW;

2.11.9.2.2 Have successfully passed an ISO Auditor course within the last twelve (12) months; and

2.11.9.2.3 Have a minimum three (3) years of experience working in an organization with a documented Quality Management System.

2.11.10 Chief Security Officer

2.11.10.1 The Chief Security Officer must be responsible administering the requirements of the NWS Security Requirements Checklist (SRCL), specifically:

2.11.10.1.1 Ensuring the physical security of all NWS infrastructure;
2.11.10.1.2 Coordinating the security screening of all personnel;
2.11.10.1.3 Management of the NWS communications security (COMSEC) account; and
2.11.10.1.4 The Chief Security Officer must also be responsible for the preparation, implementation and administration of an NWS Security Plan. The Chief Security Officer must have a minimum of five (5) years of demonstrated industry experience in the preparation and implementation of security programs.

2.11.11 NWS Business Planner

2.11.11.1 The NWS Business Planner must be responsible for the preparation and on-going administration of the NWS Five Year Business Plan (FYBP). The NWS Business Planner must have a designation as a Project Management Professional and a minimum of five (5) years of project management experience.

2.11.12 Logistics Support Site Manager

2.11.12.1 The Logistics Support Site (LSS) Managers must be responsible for the daily implementation of work within their NWS zone. LSS Managers must have a post-secondary degree or diploma in a trade or technical field and/or a minimum seven (7) years collective experience directly related to one or more requirements of their position. The LSS manager must also demonstrate management experience within their trade or technical field.

2.11.13 Fire Services Officer

2.11.13.1 Fire Services Manager must be responsible for ensuring fire prevention and protection of all NWS infrastructure. The Fire Services Manager must be responsible for the preparation, implementation and administration of an NWS Fire Services Plan. The Fire Services Manager must be a certified NFPA 1021 Fire Officer 2 by a national certification organization acceptable to the Canadian Forces Fire Marshal's Office such as International Fire Service Accreditation Congress or Pro-Board Fire Service Professional Qualifications System.

2.11.14 Mobile Support Equipment Fleet Manager

2.11.14.1 The Mobile Support Equipment (MSE) Fleet Manager must be responsible for life cycle management of all NWS MSE. The MSE Fleet Manager must have demonstrated experience in the life cycle management of equipment fleets.

2.11.15 Chief Information Officer/Information System Security Officer

2.11.15.1 The Chief Information Officer/Information System Security Officer must be responsible for the Contractor's Information Management System and cybersecurity for the NWS. The Chief Information Officer/Information System Security Officer must lead the Risk based Cyber Mission Assurance Processes (RCMAP) for the NWS. The Chief Information Officer/Information System Security Officer will manage the Office and Staff of the CISSO for the NWS. The Chief Information Officer/Information System Security Officer must:

2.11.15.1.1 Possess a Bachelor's Degree in computer science, engineering or relevant field;

2.11.15.1.2 Minimum five (5) years' experience in information technology and data management;

2.11.15.1.3 Minimum five (5) years' experience in information technology security, cyber security and risk management for military operational systems;

2.11.15.1.4 Possess a Certified Information System Security Professional (CISSP), or a Certified Information System Manager (CISM) designation or equivalent experience;

2.11.15.1.5 Experience leading the completion of a Security Assessment & Accreditation of military operational systems to obtain Authority to Operate; and

2.11.15.1.6 Experience leading a small information systems security team.

2.12 Quality Management

2.12.1 The Contractor must prepare, implement and administer an NWS Quality Management Plan as per DID/CDRL 2.12.1.

2.13 Risk Management

2.13.1 The Contractor must prepare, implement and administer an NWS Risk Management Plan as per DID/CDRL 2.13.1.

2.14 Business Continuity

2.14.1 The Contractor must prepare and implement if required a Business Continuity Plan as per DID/CDRL 2.14.1.

2.15 NWS Five Year Operations and Sustainment Plan

2.15.1 The Contractor must prepare, implement and administer an NWS Five Year Operations and Sustainment Plan (FYO&SP), as per DID/CDRL 2.15.1.

2.16 CUSTOMER AND THIRD PARTY SUPPORT

2.16.1 Introduction Customer and Third Party Support

2.16.1.1 The North Warning System Office Technical Authority (NWSO TA) or NWSO TA sponsored personnel or agencies requiring access to NWS sites for purposes directly related to the Operation and Maintenance (O&M) and/or sustainment of the NWS must be considered Customer Support. Customer support may include but must not be limited to:

2.16.1.1.1 Inspections and audits;
2.16.1.1.2 Demonstrations and briefings;
2.16.1.1.3 Implementation of Task Authorization (TA)/ Additional Work Requirement (AWR) work;
2.16.1.1.4 Performance of particular or specialized work on NWS installed equipment and/or systems by authorized and qualified third parties; and
2.16.1.1.5 Supporting various agencies in accordance with established letters of agreement, Service Level Agreements (SLA) and/or Memorandums Of Understanding (MOU).

2.16.2 It must be incumbent on the NWSO TA to define the support requirements to include, but not limited to:

2.16.2.1 Rations and Quarters (R&Q);
2.16.2.2 Ground transportation;
2.16.2.3 MSE;
2.16.2.4 Airlift within the Zone;
2.16.2.5 Site escort;
2.16.2.6 Wildlife monitor; and
2.16.2.7 Access to the Contractor’s staff for technical support.

2.16.3 An individual, a group of individuals or a Government or corporate organization involved in operations or activities not directly associated with the operation and maintenance of the NWS must be considered Third Party Support (TPS). TPS must be subject to an approval/veto process further detailed in this SOW. Should any such Third Party Support be approved, it must only be provided on a non-interference basis with NWS requirements. Government furnished airlift and Mobile Support Equipment (MSE) must not be used for TPS. The Contractor must be reimbursed for the provision of TPS by the requestor based on the terms and condition in the NWS contract.

2.16.4 Customer Support Request (CSR)

2.16.4.1 Means requests for site access and support, submitted by Canada or its representatives who are directly involved in the O&M and/or sustainment of the NWS.

2.16.5 Third Party Support (TPS)

2.16.5.1 Means the support provided by the Contractor to an individual, a group of individuals or a Government or corporate organization involved in operations or activities not directly associated with the operation and maintenance of the NWS, and for which the Contractor's costs is to be reimbursed by that individual, or the group of individuals or by that Government or corporate organization.

2.16.6 References

2.16.6.1 DND/USAF AFTAC Memorandum of Understanding (M); and
2.16.6.2 Customer & Third Party Support Request Form (G).

2.16.7 Customer and Third Party Support Plan

2.16.7.1 The Contractor must prepare the proposal plan and related costing, implement and administer a Customer and Third Party Support Plan which details the Contractor’s approach to effectively and efficiently managing all NWS CSR and TPS requests as further detailed in the Contract. The plan must include procedures for requesting customer and third party support , as per DID/CDRL 2.16.7.1.

2.16.8 Customer and Third Party Support Database

2.16.8.1 The Contractor must establish and maintain a searchable database of all customer support and third party support requests. The database must be in Commercial Off The Shelf (COTS) software. The metadata for the database must be as recommended by the Contractor and accepted by the NWSO TA , as per DID/CDRL 2.16.8.1.

2.16.9 Site Orientation, Fire and Life Safety Briefings

2.16.9.1 The Contractor must provide site orientation, fire and life safety briefings to all non-Contractor staff arriving at NWS sites. The briefing must include such items as, but not limited to:

2.16.9.1.1 Location of site of messing and accommodations;
2.16.9.1.2 Restricted access areas;
2.16.9.1.3 General site safety requirements;
2.16.9.1.4 Wildlife awareness and safety; and
2.16.9.1.5 Response requirements in the event of a fire alarm, including muster locations.

2.16.9.2 The Contractor must record the name and date of each person receiving the briefing and this information must be entered into the Customer and Third Party Support Database.

2.16.10 Manage Customer Support

2.16.10.1 Upon receipt of a CSR, the Contractor must develop a proposed support plan and forward it to the originator of the CSR;

2.16.10.2 The Contractor must provide R&Q at NWS sites as requested on the CSR. R&Q must be to the same standard as provided to the Contractor's employees. The Contractor must be responsible for cleaning and laundry services for quarters and bedding. Provision of R&Q for CSRs must be provided on a non-interference basis with NWS operational requirements;

2.16.10.3 The Contractor must provide ground transportation as requested on the CSR at NWS LRR sites and Logistics Support Sites (LSS) Inuvik, Iqaluit and Goose Bay, and at the North Warning System Support Center (NWSSC) in North Bay Ontario. Provision of ground transportation for CSRs must be provided on a non-interference basis with NWS operational requirements;

2.16.10.4 The Contractor must provide MSE as requested on the CSR at NWS LRR sites. Provision of MSE for CSRs must be provided on a non-interference basis with NWS operational requirements;

2.16.10.5 The Contractor must coordinate government furnished airlift from the LSS forward within the zone as requested on the CSR. Coordination of government furnished airlift for CSRs must be provided on a non-interference basis with NWS operational requirements;

2.16.10.6 The Contractor must provide qualified staff to escort NWSO and NWSO sponsored personnel on visits to NWS work locations. The Contractor must ensure that escorts maintain access control and that security requirements are met at all times;

2.16.10.7 The Contractor must provide a wildlife monitor to escort NWSO and NWSO sponsored personnel on visits to NWS work locations where inspections are to be conducted outdoors; and

2.16.10.8 The Contractor must support requests from the NWSO TA or NWSO TA sponsored personnel for technical inspections, auditing/verification purposes, equipment/system demonstrations and briefings. The Contractor must provide qualified and trained personnel to support these requirements.

2.16.11 CSR: Audits

2.16.11.1 The Contractor must provide a finance and accounting point of contact and personnel as necessary to assist in any financial audit. The Contractor must ensure that answers and documentation are provided throughout all phases of the auditing process. For audit preparation, the Contractor must provide personnel to plan and assemble working paper files, prepare documentation for subsequent review, as well as scheduling and organizing the actual audit. During audits, the Contractor must ensure that personnel answer questions, address concerns, provide further account verification, answer work order inquiries, and provide cost analysis.

2.16.12 CSR: Government Furnished Airlift

2.16.12.1 The Contractor must provide R&Q, equipment support and meteorological information to the Government furnished airlift personnel at LSS-C and LSS-F, as follows for each location:

2.16.12.1.1 Two (2) persons year round;
2.16.12.1.2 One (1) additional person from 01 November to 31 March annually; and
2.16.12.1.3 Four (4) additional persons from 01 April to 30 September annually.

2.16.12.2 The Contractor must be prepared to support additional aircrew during scheduled crew change where two additional personnel will require R&Q; and

2.16.12.3 The Contractor must provide R&Q, equipment support and meteorological information to the Government furnished airlift personnel LSS-F to support the annual FOX-3 fuel lift. Support for 8 persons for 14 days must be provided.

2.16.13 Reimbursable Customer Support CSRs

2.16.13.1 The Contractor must provide costed CSR support to be reimbursed by Canada on a case by case basis. Reimbursable CSRs must normally be for project support.

2.16.14 Manage Third Party Support

2.16.14.1 Upon receipt of a TPS request, the Contractor must notify the NWSO TA and advise if it is to be accepted or rejected. If the TPS is to be rejected, the Contractor must provide its reason for this rejection. The NWSO TA reserves the right to veto any TPS request. If the TPS is to be supported, the Contractor must develop a support plan based on requirements of the TPS. The Contractor must flow requirements of this contract into the TPS support plan. All TPS support must be on a non-interference basis with NWS operational requirements. The Contractor must be reimbursed for all costs for TPS support by the TPS requestor. Canada must bear no costs for TPS support;

2.16.14.2 The Contractor must provide R&Q at NWS sites as requested on the TPS. R&Q must be to the same standard as provided to the Contractor's employees. Provision of R&Q for TPS requests must be provided on a non-interference basis with NWS operational requirements;

2.16.14.3 The Contractor must provide ground transportation as requested on the TPS at NWS LRR sites. Provision of ground transportation for TPS requests must be provided on a non-interference basis with NWS operational requirements;

2.16.14.4 The Contractor must provide MSE as requested on the TPS at NWS LRR sites. The Contractor must perform limited technical inspections on any MSE used for TPS. All maintenance and any repairs to MSE must be borne by the TPS requestor. Provision of MSE for TPS requests must be provided on a non-interference basis with NWS operational requirements;

2.16.14.5 Government furnished airlift must not be used for TPS; and

2.16.14.6 Implementation of approved TPS request must comply with the Security Requirements Check List (SRCL).

2.16.15 TPS: Air Force Technical Applications Centre (AFTAC)

2.16.15.1 The Contractor must provide equipment maintenance and R&Q to AFTAC personnel at LSS-C as outlined in the Department of National Defence (DND)/United States Air Force (USAF) Joint Seismic Research Facility in Cambridge Bay MOU. The Contractor must maintain financial records of AFTAC support and must submit quarterly invoices for this support to Canada for reimbursement based on USAF fiscal year 01 October to 30 September.

2.16.16 TPS: Support Search And Rescue (SAR)

2.16.16.1 The Contractor must support SAR requirements when requested from a Government agency and as approved by the Department of National Defence (DND) System Maintenance (SM) Section. Should the requesting agency indicate that there is imminent loss of life, the Contractor must provide the requested support without prior authorization from the SM section. When approval has been obtained, the Contractor must supervise the requested support under the direction of the requesting agency. Support must include release of Government furnished airlift, fuel, R&Q for SAR personnel, meteorological information and communications. The Contractor's support for SAR must be reimbursed by Canada.

2.17 Ancillary Support Introduction

2.17.1 This section of details the Contractor's responsibilities with respect to the provision of the following for all NWS locations:

2.17.1.1 Rations;
2.17.1.2 Quarters;
2.17.1.3 Potable water;
2.17.1.4 Power;
2.17.1.5 Sewage handling;
2.17.1.6 Laundry and cleaning services, and
2.17.1.7 Supplementary warehousing.

2.17.2 Rations

2.17.2.1 The Contractor must be responsible for providing rations for all of its staff at all NWS locations. All Rations are to be in accordance with the CF standards (CF Standard ADD A-85-269-001/FP001 Food Services Manual); and

2.17.2.2 The Contractor must be responsible for the provision of rations to support customer support requests (CSRs) further detailed in this SOW.

2.17.3 Quarters

2.17.3.1 The Contractor must provide Government furnished quarters for LSS staff at LSS-C and LSS-F;

2.17.3.2 No Government furnished quarters must be provided to the Contractor in Inuvik, Iqaluit, Goose Bay or North Bay to support LSS-I, LSS-Q, LSS-G, North Warning System Support Center (NWSSC) and North Warning System Control Center (NWSCC) staff. The Contractor must be responsible for quartering its staff in these locations;

2.17.3.3 The Contractor must provide Government furnished quarters at LRR sites to support the Work in the Contract; and

2.17.3.4 The Contractor must provide Government furnished quarters at SRR sites to support the Work in the Contract. SRR site quarters are emergency shelters integral to the Technical Services Building (TSB) capable of supporting up to six persons for short durations.

2.17.4 Potable Water

2.17.4.1 LSS-I and LSS-Q each has a fixed capacity potable water storage tank. The Contractor must be responsible for securing the provision of potable water at LSS-I and LSS-Q from the towns of Inuvik and Iqaluit respectively;

2.17.4.2 The Contractor must provide potable water at LSS-G by Canadian Forces Base (CFB) Goose Bay;

2.17.4.3 Potable water at the SRD, the NWSSC and the NWSCC must be provided by CFB North Bay;

2.17.4.4 The Contractor must be responsible for the provision of potable water at LSS-C, LSS-F, BAR-2, PIN-MAIN, CAM-3, FOX-3, DYE-MAIN, BAF-3, LAB-2 and LAB-6. The Contractor must draw raw water from an identified raw water source at each site though Government provided infrastructure or Government provided water truck. The Contractor must be responsible for the operation and maintenance of Government provided water treatment systems at each of these sites to produce potable water. The Contractor must be responsible to establish and implement a water testing program to monitor water quality to guarantee treated water is potable. The Contractor must be responsible for additional potable water management activities required by Nunavut Water Board (NWB) water licenses at LSS-C, CAM-3, LSS-F, FOX-3, DYE-MAIN and BAF-3 detailed further in the Contract; and

2.17.4.5 The Contractor must be responsible for the provision of potable water at 36 SRR sites. There is no identified raw water source or water treatment capability at any SRR site. If the Contractor intends to draw water at a SRR site it must be authorized by NWSO and regulatory requirements must be met.

2.17.5 Power

2.17.5.1 Power at LSS-C, LSS-F, all LRR and all SRR sites is provided by Government furnished Power Generation System (PGS). The Contractor must be responsible for the operation and maintenance of the Government provided PGS at each of these sites to ensure the continual supply of power.

2.17.5.2 Power at LSS-G must be provided by CFB Goose Bay;

2.17.5.3 Power at LSS-I and LSS-Q is commercially provided and reimbursed. The Contractor must be responsible for securing and maintaining commercial power at these locations; and

2.17.5.4 Power at the NWSSC, the NWSCC and the SRD is provided by CFB North Bay.

2.17.6 Sewage Handling

2.17.6.1 LSS-I and LSS-Q each have a fixed capacity sewage holding tank. The Contractor must be responsible for securing the pump out of this holding tank at LSS-I and LSS-Q from the towns of Inuvik and Iqaluit respectively;

2.17.6.2 The Contractor must provide sewage handling services at LSS-G by Canadian Forces Base (CFB) Goose Bay;

2.17.6.3 Sewage handling services at the SRD, the NWSSC and the NWSCC must provide by CFB North Bay;

2.17.6.4 The Contractor must be responsible for the provision of sewage handling at LSS-C, LSS-F, BAR-2, PIN-MAIN, CAM-3, FOX-3, DYE-MAIN, BAF-3, LAB-2 and LAB-6. The Contractor must be responsible for the operation and maintenance of Government provided sewage treatment/handling systems at each of these. The Contractor must be responsible for additional sewage management activities required by Nunavut Water Board (NWB) water licenses at LSS-C, CAM-3, LSS-F, FOX-3, DYE-MAIN and BAF-3 detailed further in the Contract; and

2.17.6.5 The Contractor must be responsible for the provision of sewage handling at 36 SRR sites. The Contractor must be responsible for the operation and maintenance of Government provided incinerating toilets at each of these sites.

2.17.7 Laundry and Cleaning Services

2.17.7.1 The Contractor must be responsible for the provision of laundry, repair and cleaning services for all NWS sites, including rugs, carpeting, curtains, bedding, linen and special purpose/protective clothing.

2.17.8 Supplementary Warehousing

2.17.8.1 The Contractor must be responsible for providing additional heated warehouse space in Inuvik and Iqaluit to supplement that available within LSS-I and LSSQ to support operational requirements within zones 1 and 4 respectively.

2.17.9 Heat

2.17.9.1 Fuel for heating systems at LSS-C, LSS-F, all LRR and all SRR sites is provided by USAF and is further detailed in Section 10 of this SOW;

2.17.9.2 Heat at LSS-G must be provided by CFB Goose Bay;

2.17.9.3 Fuel for heating at LSS-I and LSS-Q is commercially provided. The Contractor must be responsible for securing and maintaining commercial fuel at these locations; and

2.17.9.4 Heat at the NWSSC, the NWSCC and the SRD is provided by CFB North Bay.

2.18 SIGNIFICANT INCIDENTS

2.18.1 Introduction to Significant Incidents

2.18.1.1 The Contractor must manage significant incidents from identification through to successful resolution as detailed in this SOW. All related Significant Incidents Reports, as per DID/CDRL 2.18.1.1.

2.18.2 Definitions

2.18.2.1 Significant Incident means

2.18.2.1.1 Any incident, excluding those specifically described in the SOW (fire, medical emergency, medical incident, environmental, security, aircraft overdue, aircraft incident and vehicle incident), that could cause concern for the Department of National Defence (DND), Canadian Forces or Minister of National Defence as described in Defence Administrative Orders and Directives (DAOD) 2008-3 "Issue and Crisis Management", or otherwise negatively impacts North Warning System (NWS) operations;

2.18.2.1.2 A requirement to quarantine fuel or any incident involving quarantined fuel;

2.18.2.1.3 Fuel dips which cannot be reconciled; and

2.18.2.1.4 Any corrective maintenance item with a total cost to repair above the Corrective Maintenance (CM) Job Limit.

2.18.3 References

2.18.3.1 Defence Administrative Orders and Directives (DAOD) 2008-3 "Issue and Crisis Management".

2.18.4 Manage Significant Incidents

2.18.4.1 Within 6 hours from identification of a significant incident, the Contractor must submit an initial report, as per DID/CDRL 2.18.1.1.

2.19 TECHNICAL LIBRARY & DOCUMENT MANAGEMENT

2.19.1 The Contractor must maintain a central technical library to serve as a central registry, maintain document control and serve as the distribution authority for all NWS related publications and drawings for installed equipment, systems and MSE. The Contractor must maintain satellite libraries at each NWS, LRR and SRR site, the SRD site, the NWSSC and the NWSCC and LSSs.

2.19.2 References

2.19.2.1 Existing library listing and references table.

2.19.3 Library and Document Control Management Plan

2.19.3.1 The Contractor must prepare, implement and administer an NWS library and document control management plan as per DID/CDRL 2.19.3.1.

2.20 Work Management System Introduction

2.20.1 The Contractor must provide the resources necessary to effectively and efficiently manage NWS Work defined in this SOW for the duration of the Contract. Work Management includes:

2.20.1.1 Defining, planning and controlling maintenance and repair activities for all categories of NWS work;

2.20.1.2 Coordinating maintenance and repair to be performed at NWS sites and installations by the Contractor's technicians and subcontractors;

2.20.1.3 Tracking costs in support of Operations And Maintenance (O&M) work;

2.20.1.4 Monitoring equipment and service delivery performance; and

2.20.1.5 Collecting maintenance and failure data for use in Work Management, Life Cycle Management (LCM) and quality control activities.

2.20.2 The Contractor must use the government furnished IBM Maximo Asset Management software, here after referred to the Work Management System (WMS), to manage North Warning System (NWS) work. The existing WMS contains Historical Work Order (WO) information back to 2011.

2.20.3 The WMS has the capability to:

2.20.3.1 Generate individual Work Requests/Work Orders (WR/WO) for each activity;

2.20.3.2 Schedule maintenance tasks;

2.20.3.3 Provide exception reporting for overdue Preventive Maintenance (PM) tasks;

2.20.3.4 Capture the data and measurements collected by maintenance technicians;

2.20.3.5 Analyze a backlog of Corrective Maintenance (CM) tasks, estimate the required work load, prioritize the tasks for completion, and provide follow-up exception reporting;

2.20.3.6 Track the progress of Emergency Maintenance (EM), CM, capital project, self-help, and modification jobs using defined status codes, and report by status, zone or job;

2.20.3.7 Retain records of all completed work orders and generate related reports for analysis;

2.20.3.8 Generate reports for all outstanding PM and CM WOs with date originated, date approved and status for Work Management and monitoring;

2.20.3.9 Generate reports for all PM and CM WOs completed to assess overall system performance and condition; and

2.20.3.10 Track outage time by assigned Equipment Identification Number (EIN) for Prime Mission Equipment (PME) for which availability data is required.

2.21 Definitions

2.21.1 Labour Use Code (LUC) 72 Emergency Maintenance

2.21.1.1 Work that requires immediate action to protect life and limb, the environment and Government Property, and to preclude a reduction in operational effectiveness. An emergency requires prompt action to carry out an investigation and to implement a temporary or, where possible, permanent repair. Emergency maintenance is identical in scope and cost limitations to CM (LUC 74), but is differentiated by the urgency of the initial response. The Contractor must perform Emergency CMs as LUC 72 and must submit a significant incident report as per related DID/CDRL.

2.21.2 LUC 73 Preventive Maintenance (PM)

2.21.2.1 Predetermined, recurring and scheduled work to service and preserve NWS equipment and Government Property, including MSE, so that it can effectively meet its designed purpose with a minimum of unscheduled downtime and to prolong its useful life, in accordance with the established PM program.

2.21.3 LUC 74 Corrective Maintenance (CM)

2.21.3.1 Work required as a result of an equipment or Federal Real Property failure which prevents it from performing its designed function. CM is carried out on an as required and when permitted basis and usually requires the replacement or restoration of components or unserviceable parts. CM is subject to the CM job limit as detailed below.

2.21.4 LUC 75 Standing Job

2.21.4.1 Work performed for a predetermined requirement which recurs regularly in the same location, for which an accurate job description is written, but for which resource requirements cannot be accurately forecasted.

2.21.5 LUC 76 Capital Project

2.21.5.1 Work approved through the business planning process as specified in the Contract which falls within the scope of NWS O&M but falls outside the firm fixed price work, including:

2.21.5.1.1 LUC 77 Self-Help Project;
2.21.5.1.2 LUC 78 Minor Modification; and
2.21.5.1.3 Corrective Maintenance Job Limit.

2.21.6 LUC 77 Self-Help Project

2.21.6.1 Work designed and implemented by the Contractor at no cost to Canada (including labour and material). Self-help projects representing configuration changes will require NWSO TA approval. Transportation to be co-ordinated with scheduled NWS O&M activities.

2.21.7 LUC 78 Minor Modification

2.21.7.1 Work requiring any change to form, fit or function whether or not the item is configuration managed. Maximum cost per job for Minor Mods projects should not exceed $100K for facilities, and $50K for any other Minor Mods projects. Minor Mods are managed via Individual Tasks Authorizations.

2.21.8 Corrective Maintenance Job Limit

2.21.8.1 The initial twenty-five-thousand dollars in costs (excluding any material that may be government furnished) for each CM job which is paid by the Contractor and not reimbursed by Canada or claimable under this Contract; and
2.21.8.2 The Contractor must have plan for the legacy tasks from the previous contract and NWSO will provide the Contractor with the list of the legacy work orders.

2.21.9 Refer to the table of the definitions relevant to this section.

2.22 References

2.22.1 Related references are provided in table of references

2.23 Work Management Plan

2.23.1 The Contractor must prepare, implement and administer a Work Management Plan to document the Contractor's approach to effectively and efficiently managing all NWS work, and must detail at a minimum as per DID/CDRL 2.23.1.

2.24 Implement Work Management System

2.24.1 Categorize Work

2.24.1.1 The Contractor must categorize all NWS work into unique LUC as specified in paragraph 2.21 of this section.

2.24.2 Establish and Maintain Equipment Identification Numbers

2.24.2.1 The Contractor must assign a unique Equipment Identification Number (EIN) to identify equipment items, facilities and systems. The Contractor must ensure that EINs are broken down to the level required by Life Cycle Management (LCM), as specified in the Contract.

2.24.3 Work Requests

2.24.3.1 The Contractor must track all requirements for work via work requests. The Contractor must review work requests for completeness, accuracy, validity and feasibility. The Contractor must ensure that approved work requests become Work Orders (WOs).

2.24.4 Manage Work Orders (WOs)

2.24.4.1 The Contractor must manage NWS work via unique work orders. The Contractor must ensure that each work order contains the following, at a minimum:

2.24.4.1.1 Unique work order number;
2.24.4.1.2 LUC;
2.24.4.1.3 Job location (site, building and system as appropriate);
2.24.4.1.4 Scope of proposed work;
2.24.4.1.5 Justification for proposed work;
2.24.4.1.6 Labour and material requirements;
2.24.4.1.7 EIN;
2.24.4.1.8 Date of request;
2.24.4.1.9 Contact information of originator;
2.24.4.1.10 Status code to indicate progression of the Work; and
2.24.4.1.11 A priority code indicating the urgency of the Work.

2.24.4.2 The Contractor must update WOs as work proceeds to ensure the most current information is available up to completion and closure of the WO. Closed WOs must remain available for historical purposes. Cancelled WOs must similarly remain available for historical purposes. The Contractor must manage any backlog of work to ensure that CM WOs are completed within SOW requirements approval.

2.24.5 Work Order Backlog

2.24.5.1 The Contractor must ensure that WOs for LUC 74 CM are entered into a backlog and normally actioned on a first in first out basis by site. At contract start, the Contractor must adopt an existing backlog or WOs and incorporate completion of these WOs as part of the Contractor's normal operations.

2.25 SECURITY

2.25.1 Introduction to Security

2.25.1.1 The Contractor must maintain a security program to meet the requirements of the NWS Security Requirements Check List (SRCL) and to provide effective safeguards for Government Property, controlled goods, Communications Security (COMSEC) equipment and information against espionage, sabotage, theft, damage or destruction; and

2.25.1.2 The security program must include a cybersecurity component to achieve the desired level of residual risk.

2.25.2 References

2.25.2.1 IT Security Directive (ITSD) for the Control of COMSEC Material in the Canadian Private Sector ITSD-06A

2.25.3 NWS Security Plan

2.25.3.1 The Contractor must prepare, implement and administer a North Warning System (NWS) Security Plan describing the Contractor's security program and the procedures to be followed to provide effective security for NWS property, personnel and information. The NWS Security Plan as per DID/CDRL 2.25.3.1.

2.26 Provide Building Performance Reviews

2.26.1 The Contractor must conduct regular visual inspections of buildings at intervals commensurate with operational requirements.

2.26.2 The Contractor must conduct BPRs and submit BPR reports, in accordance with CDRL, for acceptance, consistent with the due date and format identified, or as requested, for each building:

2.26.2.1 Research relevant information on the real property assets and their serviceability;
2.26.2.2 Inspect each asset in a manner appropriate to its use, age, construction details, cladding system;
2.26.2.3 Potential for hidden deterioration;
2.26.2.4 Consult with designated occupant representatives; and
2.26.2.5 Provide information to support asset planning and budgeting.

2.27 OCCUPATIONAL HEALTH AND SAFETY

2.28 Introduction to Occupational health and Safety

2.28.1 The Contractor must ensure that a safe working environment is maintained for all personnel granted access to NWS locations. The Contractor must ensure that safety is an integral part of all work completed in this SOW.

2.29 Definitions

2.29.1 Refer to the table of definitions relevant to this section.

2.30 References,

2.30.1 Per table of the references.

2.31 Occupational Health and Safety Plan

2.31.1 The Contractor must prepare, implement and administer a NWS Occupational Health and Safety (OH&S) Plan, as per DID/CDRL 2.31.1.

2.32 Job Hazard Analysis

2.32.1 The Contractor must complete Job Hazard Analysis (JHA) for known recurring work such as preventive maintenance routines and for other work which can reasonably be expected to be performed on the NWS. The JHA must be documented and the results incorporated into the Contractor's safety program.

2.33 Lock Out/Tag Out

2.33.1 The Contractor must have documented lock out/tag out procedures for staff performing PM and CM on energized equipment. The procedure must include verifying the accuracy of panel schedules prior to commencing work. The Contractor must establish and maintain lock out/tag out kits in sufficient quantity to ensure work is not delayed. Any lock out/tag out kits available on NWS sites at contract start are available to the Contractor, however Canada will not replenish, repair or replace any such lock out/tag out kits or any such kits procured by the Contractor.

2.33.2 The written lockout procedures will identify what needs to be done, when it needs to be done, what tools are available to do it, who is supposed to do it, and who needs to be notified. The document should specify:

2.33.2.1 The actual specific machine, equipment, or process shutdown and isolation process;

2.33.2.2 How and where the lockout devices are installed;

2.33.2.3 How stored energy is controlled and subsequently de-energized; and

2.33.2.4 How the isolation can be verified.

2.33.3 Work instructions will identify how the lockout process is to be carried out in a step-by-step manner including how stored energy is controlled and de-energized, how isolation can be verified, and how and where lockout devices are installed. Work instructions are machine, equipment or process specific and include pictures or images of what is being described. An organization will have one lockout program document, and as many sets of work instructions as required, depending on the number of systems that require lockout. "

2.34 Emergency Shelters

2.34.1 The Contractor must maintain emergency shelters at LRR sites in a fully functioning condition at all times. All LRR site emergency shelters equipment must be certified as being clean, organized and in full functioning condition twice per year. Enough Cots, sleeping bags and emergency rations to allow for 3 meals per day and water for eight (8) persons for a minimum of 14 days must be sustained. All SRR sites must contain sufficient supplies to allow for three (3) meals per day and water for six (6) persons for fourteen (14) days.

2.35 Emergency Rescue

2.35.1 Contractor must ensure sufficient staff working at NWS sites have the requisite training to provide emergency rescue operations for occasions where personnel are injured. At a minimum, the Contractor must have the capability to provide confined space and high angle rescue.

2.36 Training

2.36.1 The Contractor must provide safety training to maintain a workforce capable of operating and maintaining the NWS safely and effectively. The Contractor must identify safety training requirements for all staff by position, develop Course Training Standards (CTSs) for those training courses and incorporate this training into the NWS Training Plan detailed in the Program Management section of this SOW.

2.37 Occupational Health and Safety Incidents

2.37.1 The Contractor must manage OH&S workplace incidents, which are defined as an injury to a person which may require the application of first aid or medical treatment, but does not pose a threat to life or limb.

2.37.2 The Contractor must submit initial and follow up OH&S incident reports to the NWSO TA. The initial report must be submitted within 6 hours of the incident occurring, with follow-up reports submitted as required until the incident has been fully investigated and the root cause of the incident has been identified. The final report must identify any required corrective action to prevent a recurrence of the incident as per DID/CDRL 2.18.1.1.

2.38 Medical Emergencies

2.38.1 The Contractor must manage workplace medical emergencies, which are defined as a personal injury or illness which is a direct threat to life and/or limb;

2.38.2 The Contractor must submit initial and follow up medical emergency incident reports to the NWSO TA. The initial report must be submitted within six (6) hours of the incident occurring, with follow-up reports submitted as required until the incident has been fully investigated and the root cause of the incident has been identified. The final report must identify any required corrective action to prevent a recurrence of the incident as per DID/CDRL 2.18.1.1.

2.39 NWS Annual Site Safety Audits

2.39.1 The OH&S Manager or qualified designate must perform annual safety audits at each LSS site, each LRR site, a minimum of one SRR site per zone, the NWSCC, the NWSSC and the Short Range Development (SRD) site. The inspections must ensure compliance, adequacy, quality and diligence of field level inspections being completed by staff and review the OH&S Plan to confirm its applicability and currency. Any findings not corrected at the time of the inspection must be tracked in the NWS Work Management System until corrective actions have been completed.

2.40 Personal Protective Equipment

2.40.1 The Contractor must be responsible for the provision of all Personal Protective Equipment (PPE) for its staff required to perform the Work in the Contract. Any PPE on NWS locations at contract start must be available to the Contractor, however Canada will not replenish, repair or replace any such PPE or any PPE procured by the Contractor.

2.41 Ensure Health and Safety in Real Property Assets

2.42 General

2.42.1 The Contractor must assume control and exercise responsibility for workplace OH&S matters in relation to work being carried out in NWS real property assets, except as specifically excluded in writing by the Real Property Technical Authority (RP-TA), whether carried out by:

2.42.1.1 The Contractor and its subcontractors; or

2.42.1.2 DND, and other contractors and subcontractors under contract to DND.

2.42.2 The Contractor must support DND in meeting its responsibilities as employers under the Canada Labour Code (CLC), Part II, and the TB's Fire Protection Standard and Standard for Fire Safety Planning and Fire Emergency Organization – Chapter 3-1.

2.42.3 The Contractor must comply with the requirements of authorities having jurisdiction, and, except as specifically excluded in writing by the RP-TA:

2.42.3.1 Act as Constructor for construction project work; and

2.42.3.2 Act as OH&S Control Authority, provide the services set out in this Part of the SOW, and for work carried out by third parties.

2.42.4 The Contractor must comply with Canadian Standards Association (CSA) Z462: workplace Electrical Safety and the province's Electrical Safety Code when conducting electrical work.

2.42.5 The Contractor must ensure that labeling (circuit identification, main switches etc.) is maintained in place. Keep and maintain drawings of circuits, notices, data etc., in known and accessible locations. The Contractor must ensure that single line schematic drawings are updated and revised to show the current status of circuits and equipment. The Contractor must keep and maintain drawings of circuits, system schematic layouts, notices, data etc. in accessible locations. Update single line schematic drawings to ensure they indicate the current status of circuits and equipment.

2.42.6 The Contractor must undertake lifting systems work safely in accordance with the most recent version of American Society of Mechanical Engineers (ASME) A17.1 / Canadian Standards Association (CSA) B44-16.

2.42.7 Apply a Real Property Occupational Health and Safety (OH&S) Program.

2.42.8 The Contractor must protect the health and safety of persons granted access to the workplace, including federal government employees, labour resources under the Contractor's authority, employees of other contractors and subcontractors under contract to DND, and the public.

2.42.9 The Contractor must apply a Real Property OH&S Program, in accordance with the accepted Real Property Service Delivery Regime (RP-SDR) specification, and comply with applicable legislation and DND requirements and obligations.

2.42.10 The Contractor must prepare and follow an OH&S plan for each building, in collaboration with Occupant OH&S committees, in accordance with the requirements of the OH&S Program, including an OH&S Code of Practice for safe operating procedures and other requirements.

2.42.11 The Contractor must develop specific OH&S requirements and safe work procedures and practices, including a job hazard and risk analysis for critical tasks, to eliminate or mitigate foreseeable hazards associated with work to be performed.

2.42.12 The Contractor must implement OH&S hazard communication procedures for labour resources under the Contractor's authority.

2.42.13 The Contractor must ensure that persons granted access to the workplace comply with building- and project-specific OH&S plans.

2.42.14 The Contractor must maintain overall control of activities regarding OH&S management, coordinate and control work in buildings and at multi-building sites, and establish appropriate safeguards to protect health and safety, and:

2.42.14.1 Manage other contractors' access to the building, in conjunction with building security measures;

2.42.14.2 Assign project work sites to other contractors, and coordinate and schedule use of loading docks and work site access routes;

2.42.14.3 Identify and communicate issues related to scheduling of work;

2.42.14.4 Provide an orientation to other contractors granted access to the site, and provide them with appropriate information, including:

2.42.14.4.1 The building OH&S plan;

2.42.14.4.2 A description of OH&S responsibilities and procedures;

2.42.14.4.3 A Code of Practice for safe work procedures and emergency preparedness procedures; and

2.42.14.4.4 Hazard assessments and job hazard analyses for critical tasks.

2.42.14.5 Attend and provide input to health and safety committee meetings and project meetings of other contractors and DND, as requested;

2.42.14.6 Act as the point of contact with authorities having jurisdiction and submit documentation required by them, such as notices of projects and related information;

2.42.14.7 Maintain copies of communications, reports and orders received as a result of visits by authorities having jurisdiction;

2.42.14.8 Control access to mechanical and electrical rooms and other building operations locations, and oversee work in these locations;

2.42.14.9 Organize and lead meetings with stakeholders as required for health and safety and construction coordination;

2.42.14.10 Coordinate construction activity;

2.42.14.11 Coordinate with occupants on building issues and issues related to ongoing and planned work;

2.42.14.12 Participate in identifying OH&S requirements for occupant and facilities management units performing electrical work;

2.42.14.13 Monitor the compliance of other contractors with OH&S legislation, building- and project-specific OH&S plans and other OH&S Standard Operating Procedures (SOPs), and instruct contractors as required to resolve OH&S issues;

2.42.14.14 Obtain regular feedback from health and safety personnel and workers to identify issues; and

2.42.14.15 Resolve issues related to construction coordination and other aspects of OH&S involving other contractors.

2.42.15 The Contractor must ensure that appropriate parties obtain necessary approvals and permits from authorities having jurisdiction, including building permits and confined space entry permits prior to performing work, such as asbestos abatement work, raised platform work, trenching and excavation work, hot work and live-steam work.

2.42.16 The Contractor must ensure that labour resources under the Contractor's authority are fully aware of, and adhere to, the requirements of applicable OH&S legislation when performing work.

2.43 Maintain Records and Report on Health and Safety

2.43.1 If requested, provide support to the designated DND OH&S authority when they are completing accident reports and hazardous occurrence investigation reports.

2.43.2 Maintain OH&S records, and provide OH&S information and reports related to the Work, in accordance with the requirements of the CLC, Part II, the Occupational Health and Safety Directive, DND policies and the requirements of authorities having jurisdiction.

2.43.3 The Contractor must provide information on building- and project-specific OH&S plans, hazard identification, safety training, life safety systems and equipment inspection, maintenance, testing and nonconformities, on request.

2.44 Manage Ongoing Change to the Service Delivery Regime

2.44.1 The Contractor must manage change to the RP-SDR to incorporate improvement opportunities, as requested, and to respond to:

2.44.1.1 Required changes in the Contractor's processes and procedures associated with the provision of each of the services set out in this section of the SOW and the Contractor's management regimes, programs, processes and capabilities required to support the delivery of those services; and

2.44.1.2 Issues, risks and problems.

2.44.2 The Contractor must propose changes to the RP-SDR for acceptance, including:

2.44.2.1 Defining the proposed adjustments to the RP-SDR Specification, including associated organizational and resource changes;

2.44.2.2 Presenting proposed changes to the RP-TA, with the associated rationale and options, in a manner similar to a business case of a standard commensurate with the impact of the change; and

2.44.2.3 Presenting the proposed changes to other stakeholders, as required.

2.45 NWS PM Position Requirements

Position	Qualifications
NWSCC Radar Crew Technician	Radar personnel must have graduated from a postsecondary program in an electronics field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Radar personnel must have a minimum of 5 years of experience working with electronics systems
NWSCC Communications Crew Technician	Communications personnel must have graduated from a postsecondary program in an electronics field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Communications personnel must have a minimum of 5 years of experience working with electronics systems
NWSCC Facilities Crew Technician	Facilities personnel must have graduated from a postsecondary program in an electromechanical field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Facilities personnel must have a minimum of 5 years of experience working with electromechanical systems.
Electronics Maintenance Technician (EMT)	All of the Contractor's journeymen technicians working on the NWS must have the prerequisite qualifications, experience, training and required Provincial or Territorial certification to perform the tasks to which they are assigned. Apprentices can be considered as an option if sufficient journeymen are available for supervision Minimum skill levels EMTs are: a. successful completion of a two-year electronic technician program from a recognized and accredited institution or Canadian military equivalent; b. experience on Automated Test Equipment (ATE); c. five years related job experience in maintaining electronic systems; d. experience in the use of general electronic test and repair equipment; and e. Successful completion of NWS equipment specialty training. Contractor personnel performing Preventive Maintenance (PM) and Corrective Maintenance (CM) on encryption equipment must have successfully completed mandatory training provided by DND
Life Cycle Material Manager (LCMM) / Life Cycle Facilities Manager (LCFM)	LCMMs must have a diploma from a recognized institution or military equivalency in a related discipline, and have a minimum of 5 years of related experience for the systems they are responsible for.
Vehicle Mechanic	Vehicle mechanics must be a qualified Motor Vehicle Mechanic 310S and/or 310T including diesel endorsement. Note: 310S Automotive service Technician up to 9,000Kg. A Provincial or Territorial Certificate of Qualification is required. Military QL 5,

	journeymen qualifications with appropriate qualification with 5 years proven hands-on field experience within the last 10 years in vehicle maintenance could also be considered.
Heavy Equipment Mechanics	Heavy Equipment Mechanics must be 420A qualified or equivalent and must possess the diesel endorsement. 420A is restricted to Off-Road equipment/earth moving equipment i.e. graders, loaders and backhoes. Heavy Equipment Mechanics must also be qualified to maintain the specialty vehicles in Table 12-1. A Provincial or Territorial Certificate of Qualification is required. Military QL 5, journeymen qualifications with appropriate qualification with 5 years proven hands-on field experience within the last 10 years in heavy equipment could also be considered
Vehicle Operators	Drivers and Operators of Personal Occupancy Vehicles and Heavy Equipment must be fully trained and licensed to operate the type of vehicle and or equipment assigned in accordance with current Provincial/Territorial Regulations the vehicle and or equipment will be operated in. Operators of air brake equipped GFE MSE must possess air brake certification. Operators of GFE MSE must complete a Safe Backing Course and if so employed must be experienced or trained on driving vehicles with attached trailer Operators of GFE MSE being operated on airport ramps or runways must be authorized to do so by the appropriate Airport Authority.
Petroleum, Oil and Lubricants (POL) Technician	Staff involved in the POL Services must have completed Fuel Handling Courses or worked within the petroleum industry for 5 years and have Fall Arrest, Hazardous Material Training and Confined Space Training
Cybersecurity Analyst	Cybersecurity Analysts must be jointly responsible for the cybersecurity analysis tasks associated with the Contractor's Information Management System and cybersecurity for the NWS. Possess a Bachelor's Degree in computer science, engineering or relevant field. Cybersecurity Analyst must: a. Possess a Bachelor's Degree in computer science, engineering or relevant field; b. Minimum 5 years' experience in cybersecurity, information technology, cybersecurity and risk management for military operational systems;

	c. Possess a Certified Information System Security Professional (CISSP) designation, or equivalent experience; and d. Experience in performing Security Assessment & Accreditation of military operational systems to obtain Authority to Operate.
Cybersecurity Engineer	Cybersecurity Engineers must be jointly responsible for the cyber security engineering tasks associated with the Contractor's Information Management System and cybersecurity for the NWS. The Cybersecurity Engineers must: a. Possess a Bachelor's Degree in Engineering in Computer Systems, Electrical, Information Security, or allied discipline; b. Be eligible to be licensed as a Professional Engineer in Canada; c. Minimum 5 years' experience in cybersecurity engineering, information technology security, cybersecurity, and risk management for military operational systems; d. Possess a Certified Information System Security Professional (CISSP) designation, with an Information Systems Security Architect Professional (ISSAP) specialization), or equivalent experience; e. Experience in performing Security Assessment & Accreditation of military operational systems to obtain Authority to Operate; and f. Must recommend the acceptance of the level of residual risk in the NWS.

SOW Section 3:

NWS Information Management (IM) / Information Technology (IT)

IM/IT

3.0 Information Management Services and Information Technology Introduction

3.1 The government will provide an Information Management System (IMS) platform (hereafter known as the North Warning (NW) IMS to the Contractor that includes all of the NWS Data, the application software (COTS/Developed) and hardware IT Assets to serve as a baseline in order for the Contractor to meet the data requirements of this SOW. The Contractor will provide access to the NW IMS after contract award, along with training on the various aspects of the system as it pertains to the requirements of this SOW. The Contractor will be responsible to either modify, acquire, and/or develop solutions for the NW IMS for those requirements of the SOW the NW IMS that currently does not meet within 6 months after Transition IN.

3.2 The government will also identify Information Technology (IT) Assets, software, licenses & Support and Services Agreements for command and control systems (Supervisory Control and Data Acquisition System (SCADA)), and maintenance and diagnostics (fleet management). A complete listing of all NW IMS/Information Technology applications, data directories & inventory is mentioned in the Contract document.

3.3 DEFINITIONS

3.3.1 Refer to table of definitions related to this section.

3.3.2 Information System

3.3.2.1 An information system is generally composed of data, computing platforms, communications networks, business applications, people, and processes, organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information. [NIST SP800-39, Reference 7, adapted]

3.3.3 IT Asset

3.3.3.1 A generic term used to represent business applications, electronic representations of information (data), and the hardware, software, and system data that information systems are composed of.

3.3.4 IT Security

3.3.4.1 The discipline of applying security controls, security solutions, tools, and techniques to protect IT assets against threats from compromises throughout their lifecycle, based on the security category of supported business activities, and in accordance with departmental and GC policies, directives, standards, and guidelines; and

3.3.4.2 The term Cybersecurity is used interchangeably with IT and Information Security.

3.3.5 IT Security Risk

3.3.5.1 The potential that a given threat will compromise IT assets and cause injury. (HTRA, Reference 1, adapted)

3.3.6 IT Security Risk Management

3.3.6.1 The process by which organizations manage IT security risks. IT security risk management is achieved through IT security and other risk management processes.

3.3.7 IT Security Residual Risk

3.3.7.1 The risk remaining after appropriate security controls have been implemented

3.4 System Requirements

3.4.1 The Contractor must ensure that all data, plans, reports and correspondence to support the execution of this SOW are generated in an electronic format compatible with MS Office applications and reside on the NWS IMS for access by NWS personnel 24/7.

3.4.2 The Contractor must establish and implement a Disaster Recovery Plan that outlines all actions required to provide continual data backup, off-site/local storage and restoral for the duration of the Contract on a daily, non-interference basis with a minimum one (1) full data back-up monthly to be included in the Cyber Incident Response Plan, 3.10.4.

3.4.3 The Contractor must ensure that the NWS IMS is available on a 24/7 basis to Government personnel.

3.4.4 The Contractor must ensure that this information is separate either logically, physically, or both, from other Contractor information to prevent unauthorized access to NWS data.

3.4.5 The Contractor must provide NWS personnel full access to the NWS IMS via a web-based portal application. Users will have the ability to save, print and export NWS IMS generated reports into the remote government workstation's applicable Microsoft Office application.

3.4.6 All contractor data generated by the execution of this SOW must be exchanged via electronic means, unless prior NWSO approval is received for hard copy transmission. Data provided by the Contractor to be in a file type that is compatible with Microsoft Office applications.

3.4.7 The Contractor must maintain data integrity by ensuring all data is accurate and updated within 24 hours of occurrence unless otherwise specified in the Contract.

3.4.8 The Contractor must generate Monthly Reliability and Maintainability Information System (REMIS) data file and generate a REMIS data query that will be saved to CD per the NW IMS-REMIS ICD.

3.4.9 The Contractor must ensure that personnel accessing the NWS IT systems possess a valid security clearance in accordance with the instructions of the SRCL.

3.5 Utilize the NWS IMS

3.5.1 The Contractor must utilize the NWS IMS for the effective management of the NWS O&M process by ensuring that the system continues to support the functional requirements of:

3.5.1.1 NWS financial and project cost accounting;
3.5.1.2 Project management;
3.5.1.3 Configuration management;
3.5.1.4 Life cycle management;
3.5.1.5 Work Management;
3.5.1.6 Equipment status reporting;
3.5.1.7 Logistics management;
3.5.1.8 Records and document management;
3.5.1.9 Quality assurance and quality control;
3.5.1.10 Cybersecurity risk management/Cyber Mission Assurance;
3.5.1.11 Human resources management;
3.5.1.12 Mobile support equipment fleet management;
3.5.1.13 Asset Management as described in this document; and
3.5.1.14 Cybersecurity risk management.

3.5.2 The Government retains ownership of the NW IMS hardware and all data records generated in the performance of this contract. Upon contract conclusion, the NWS IMS including all hardware and all data records (including historical) generated in the performance of the SOW will be transferred back to the Government.

3.5.3 The Contractor must establish a data address directory structure for all data generated by the execution of this SOW. Organizational structure of the directory should follow the construct of the SOW (i.e...by sections), with the address directory to be no more than four (4) levels deep in order to minimize time of data search.

3.5.4 The Contractor is responsible for providing their own IT systems and devices for those requirements and needs that are contractor specific.

3.6 Operate and Maintain the IMS

3.6.1 The Contractor must operate and maintain the NWS IMS as an unclassified system and ensure that no Contractor proprietary data or any other government classified data is entered into the system.

3.6.2 The Contractor must maintain all IT Assets and software associated with the NWS IMS ensuring licensing is current and updates are implemented within a week of receipt. The NWSO IT TA will be notified for each occurrence.

3.6.3 The Contractor must host the NWS IMS in the same location as their own IT system.

3.6.4 The Contractor must be responsible for the connectivity of the NWS IMS and their own IT systems as follows:

3.6.4.1 The Contractor must be responsible for providing connectivity and access for their personnel who are not residing in the LRR/LSS's; and

3.6.4.2 Connectivity for those personnel residing in the LRR/LSS's will be a combination of utilizing the DND satellite backbone to North Bay, where the Contractor must combine the user data streams between the NWSCC, NWSSC and be responsible for connectivity back to their own IT Systems and the NWS IMS through commercial means. The method of connectivity must be included in the Security Assessment and Authorization (SA&A) documentation package for accreditation.

3.6.5 The Contractor must support Pre-defined Queries that support the requirements outlined throughout this SOW. Additionally the Contractor will support Ad-Hoc Queries on an as needed basis from NWS TAs, providing details or summaries from data records. The Contractor will provide assistance to NWS personnel in the development of ad-hoc queries.

3.6.6 The Contractor must provide IMS technical support from 8:00 am to 4:00 pm (Eastern Time) Monday through Friday to assist with NWS personnel with questions/problems pertaining to the IMS system. Technical support must be provided through e-mail, telephone and in person when necessary.

3.6.7 The Contractor must maintain the IMS Users Guide that describes all of the applications and their functionality contained in the NW IMS as well as an updated file structure providing information about each data deliverable. The IMS User Guide must also include a complete listing, updated regularly of all report queries developed, complete with instruction on how to execute the query properly.

3.6.8 The Contractor must provide a review of the SOW requirements to determine what functionality the NWS IMS currently does not support, develop the functionality required and implement into the NWS IMS. This includes customization efforts using government provided COTS applications in order to meet and deliver those requirements within the NWS IMS. The requirements must be completed no later than six (6) months after Transition-in has been completed.

3.6.9 The Contractor must acquire all necessary NWS IMS licenses required for both Contractor and Government personnel to operate and access the NW IMS.

3.7 Other IT Systems

3.7.1 The Contractor must be responsible for the administration, support, and life cycle maintenance of SCADA hardware, software, licenses & Support and Services Agreements.

3.7.2 The Contractor must be responsible for the administration, support, and life cycle maintenance of software, licenses & Support and Services Agreements for maintenance and diagnostics in support of MSE fleet management

3.7.3 The Contractor must acquire and maintain Software Application Licenses for applications listed in this document.

3.8 Morale & Welfare

3.8.1 The Contractor must provide basic satellite television and internet access to all personnel at all LRR sites, including NWSO personnel. For SRR sites, one deployable system per zone for internet access during extended stays or installations, must be provided for the duration of the Contract using commercial means.

3.9 Security Assessment and Authorization (SA&A)

3.9.1 The Contractor must initiate the SA&A process in accordance with DND/CAF Security Assessment and Authorization Guideline (SAAG) and Director Information Management immediately after contract award, and maintain the Authority to Operate (ATO) of the NWS throughout the duration of the Contract. As part of the SA&A, the Contractor will:

3.9.1.1 Organize the physical site survey;

3.9.1.2 Incorporate information security into the concept of operations or author a specific security concept of operations;

3.9.1.3 Provide enterprise architecture diagrams: ov1, ov-5b, sv-1, and sv-2.

3.9.1.4 Draft the Statement Of Sensitivity (SOS) for NWSO TA approval;

3.9.1.5 Perform a Threat and Risk Assessment (TRA);

3.9.1.6 Complete system description(s);

3.9.1.7 Determine the system's security categorization (confidentiality/integrity/availability);

3.9.1.8 Ensure that the DIM Secur (Director Information Management Security) Director Information Technology Security (DIT Sec) 29 critical controls have been implemented and verified;

3.9.1.9 Ensure that the Radar and Communications Systems (R&CS) 9 critical controls have been implemented and verified; and

3.9.1.10 Submit all required documentation o NWSO for DIM Secur approval. If high risk is identified through the TRA or the SA&A process, the Contractor will mitigate the risk to a minimum acceptable level, in cooperation with NWSO, by making use of appropriate security controls as specified in ITSG-33. The Contractor will implement an approved information security change management process to ensure that any changes are assessed to determine their impact on the ATO. The Contractor must conduct appropriate re-assessment in accordance with DND/CAF SAAG, Director Information Management or changes that affect the configuration and security posture of NWS.

3.10 ITSEC & Cybersecurity Risk Management

3.10.1 The Contract must initiate, prepare, implement, administer, and maintain the Risk-based Cyber Mission Assurance Process (RCMAP) for the NWS based on a post TDM configuration in accordance with DRDC guidelines. This includes all communications, information processing, operating systems, and software. This applies to both data processing and integrated computational systems in the NWS.

3.10.1.1 The Contractor's Cyber security Team must support and participate in a System Security Working Group (SSecWG) that will be composed of both Contractor and government system security personnel to progress the RCMAP activities throughout the program. The SSecWG is to be held prior to completion of program milestones impacting security, to address Canada's comments on deliverables and upon request by Canada.

3.10.2 The Contractor must document, maintain and deliver a System Security Management Plan in accordance with CDRL & DID 3.10.2. The Contactor must conduct all Cybersecurity Work in accordance with the approved System Security Management Plan throughout the lifecycle of the NWS.

3.10.3 The Contractor must document, maintain and deliver a Mission Criticality Analysis and Asset Valuation report in accordance with CDRL& DID 3.10.3. in collaboration with Canada one (1) year after contract award. The Contractor must include the mission criticality statements as part of the system specification as non-functional requirements in accordance with the RCMAP Mission Criticality Analysis and Asset Valuation Report or alternative standard acceptable to Canada.

3.10.4 The Contractor must document, maintain and deliver the Security Scope Definition in accordance with DID/CDRL 3.10.4.

3.10.5 The Contractor must document, maintain and deliver the Security Risk Assessment in accordance with DID/CDRL 3.10.5. CS-003(3.10.4) and CS-004(3.10.5) are due one (1) year after the MCAAV per CDRL CS-002(3.10.3)

3.10.6 The contractor must develop and deliver an initial Security Design in accordance with DRDC-RDDC-2019-R999.

3.10.7 The Contactor must develop and deliver a Security Requirements Traceability Matrix per DID/CDRL 3.10.7.

3.10.8 The Contractor must prepare and deliver a Cybersecurity Fundamentals Plan per DID/CDRL 3.10.8.

3.10.9 The Contractor must develop and implement a Continuous Monitoring Plan per DID/CDRL 3.10.9 for the following systems:

3.10.9.1 SCADA;
3.10.9.2 LHCN;
3.10.9.3 VMN;
3.10.9.4 IMS; and
3.10.9.5 Other systems may be added later at Canada's discretion via contract amendment.

3.10.10 The Contractor must develop and implement as required an Incident Response Plan per DID/CDRL 3.10.10.

3.10.11 In the event of a cybersecurity issue the Contractor must develop and implement a Plan of Action & Milestones report per DID/CDRL 3.10.11.

SOW Section 4:

Sustainment Support

Sustainment Support

4.0 Section 4 - Sustainment Support

4.1 Introduction to LCMM and LCFM

4.1.1 The Contractor must employ comprehensive Life Cycle Materiel Management (LCMM) and Life Cycle Facilities Management (LCFM) programs with the goal of maximizing the life cycle of existing NWS systems, installed equipment and, facilities while meeting or exceeding mission requirements. Modification or replacement of existing systems, installed equipment or facilities is to only to be undertaken for the following reasons:

4.1.1.1 Obsolescence, specifically that equipment or a system or spare parts of a system are discontinued and no substitute can be found;

4.1.1.2 Life extension of equipment and/or systems through modification, mid-life refit or critical spares procurement;

4.1.1.3 Legislative compliance, particularly for OH&S and environmental protection and mandated improvements related to Canada's Federal Sustainable Development Strategy (FSDS);

4.1.1.4 Changing mission requirements which in turn result in an increase or decrease in the performance of a given system; and

4.1.1.5 The desired level of cyber residual risk is maintained.

4.2 Life Cycle Managers (LCMs)

4.2.1 The Contractor must employ LCMs who must have overall authority for managing all phases of materiel and facility life cycles including conception, acquisition, in service, disposal and must also have responsibility for managing NWS configured items as defined in Statement Of Work (SOW) section 4.18.2.

4.3 References

4.3.1 , as perPer table of the references.

4.4 NWS LCMM & LCFM Plan

4.4.1 The Contractor must prepare, implement and administer a NWS LCMM and LCFM plan. The plan must include the Contractor's approach as further detailed in DID/CDRL 4.4.1.

4.5 Qualifications and Training of Maintenance Personnel

4.5.1 The Contractor's LCMs must ensure minimum qualifications and training requirements for maintenance personnel performing PM and CM on NWS installed equipment, systems, buildings and other real property assets. LCMs must review Course Training Standards (CTSs) for training courses for their respective equipment and systems to ensure they provide relevant and meaningful training to maintenance personnel. LCMs must perform an initial audit of all training courses to ensure they meet the minimum standard to ensure maintenance personnel are able to effectively maintain NWS equipment, systems, buildings, cybersecurity controls and other real property assets and must audit each course any time it is amended or changed.

4.5.2 LCMMs must have a diploma from a recognized institution or military equivalency in a related discipline, and have a minimum of five years of related experience with the systems they are responsible for. Contractors must provide a minimum of four LCMMs for the electronics field. Contractors must provide regenerative LCMM training for LCMMs.

4.6 Maintain and Administer Preventive Maintenance Program

4.6.1 The Contractor should establish routines as directed in the Technical Orders or OEM manuals for attended locations.

4.6.2 The Contractor's LCMs must prepare and administer a Preventive Maintenance Program (PMP) for all NWS installed equipment and systems, buildings and other real property assets. Maintain the PMP so that it is consistent with the mentioned reference which provides a draft format and content. Ensure the PMP includes maintenance routines for all installed equipment, systems, buildings and other real property asset components. Develop, update and administer the PMP for all newly installed equipment and systems. Manage the PMP to ensure mission requirements as defined in the Contract are met or exceeded. Develop and amend maintenance routines considering:

4.6.2.1 The maintenance concept defined in the Contract;

4.6.2.2 Original Equipment Manufacturers' (OEM) requirements;

4.6.2.3 LCMM and LCFM trend analysis data further detailed in this section; and

4.6.2.4 The Contractor must maintain a controlled soft-copy of the PMP complete with all maintenance routines at each NWS radar site, including the SRD, one at the NWSSC, one at the NWSCC, one at the Contractor's CMO, and provide one to the NWSO TA. The NWSO TA reserves the right to have the Contractor amend the format and contents of the program at any time.

4.6.3 The Contractor must prepare and submit a quarterly PM Exception Report listing the PM tasks which were not completed including a detailed narrative as to why each was not completed. The PM Exception Report must be in a format proposed by the Contractor and accepted by the NWSO TA and must be delivered on the 15th day following the end of the quarter, or the first business day thereafter, and to submit the related quarterly reports as per DID/CDRL 4.6.7. The NWSO TA reserves the right to have the Contractor amend the format and contents of the report at any time.

4.6.4 The Contractor's LCMs must monitor the on-going in-service performance of NWS equipment, systems, buildings and other real property assets through the review and analysis all PM and CM WOs and Equipment Status Reports (ESRs) for the equipment and systems in their area of responsibility. The review must ensure each PM and CM WO and ESR is complete, accurate and is progressing towards closure in a timely manner, and the LCM must be proactive in ensuring these requirements are met.

4.7 Manage Sparing

4.7.1 The Contractor must establish maximum and minimum sparing levels for NWS installed equipment and systems to ensure mission requirements established in the Contract are met. Sparing levels must be established based on LCM analysis of failure data primarily from ESRs and WOs to determine the mean time between CM actions. Sparing levels for repairable items must be selected to ensure CM action is not delayed due to the repairable cycle. Sparing levels must also take into consideration system redundancy and available storage.

4.7.2 The Contractor must work with OEMs and/or their distributors to identify replacement spares for discontinued or obsolete components to ensure sparing levels are maintained.

4.8 Ensure Regulatory Compliance

4.8.1 The Contractor's LCMs must ensure regulatory compliance of NWS installed equipment and systems is maintained by auditing existing equipment and systems, buildings and other real property assets against current legislation, and by reviewing and assessing any impact that anticipated changes to legislation will have. The Contractor must take proactive measures, particularly in cases of changes to legislation, to develop strategies to ensure continued legislative compliance.

4.8.2 The Contractor must maintain a Bill of Materials (BoM) that documents the information technology systems and their components. This BoM must document any and all changes throughout the life of the NWS installed equipment and system. The level of detail in the BoM must allow the Contractor to determine in a component is effected by a cybersecurity vulnerability that has been assigned a Common Vulnerabilities and Exposures (CVE) in The National Cybersecurity FFRDC.

4.9 Maintain Currency of Technical Documentation

4.9.1 The Contractor must maintain the currency of technical documentation including drawings held in the NWS library for all NWS installed equipment and systems, buildings and other real property assets. Updates from OEMs such as service bulletins must be incorporated into technical documentation. Changes in documentation identified through periodic inspection further detailed in the Contract must similarly be incorporated. The Contractor must initiate and manage Engineering Change Requests (ECRs) for modifications to ensure all documentation related to that modification is included in the NWS library and promulgated throughout the NWS as required.

4.9.2 The Contractor must maintain a Bill of Materials (BoM) that documents the information technology systems and their components. This BoM must document any and all changes throughout the life of the NWS installed equipment and system. The level of detail in the BoM must allow the Contractor to determine in a component is effected by a cyber-security vulnerability that has been assigned a Common Vulnerabilities and Exposures (CVE) in The National Cybersecurity FFRDC.

4.10 Maintain Configuration of NWS Equipment and Systems, Buildings and Other Real Property Assets

4.10.1 The Contractor must maintain configuration control of NWS installed equipment and systems, buildings and other real property assets as further defined in this section.

4.11 Conduct Root Cause Failure Analysis

4.11.1 The Contractor must review all incident reports as defined in the Contract and must conduct Root Cause Failure Analysis (RCFA) for those incidents where:

4.11.1.1 Regardless of the type of incident, its root cause is not readily obvious;
4.11.1.2 There is a serious OH&S impact, specifically where a serious injury occurs;
4.11.1.3 There is a serious environmental incident, specifically a fuel spill;
4.11.1.4 There is loss of government property;
4.11.1.5 The incident results in a serious degradation of the NWS mission;
4.11.1.6 There is the presence of a component identified in a CVE and/or any breach, potential breach, compromise of any component, or increase in the level of cybersecurity residual risk; and
4.11.1.7 Any other as directed by the NWSO.

4.11.2 Each root cause failure analysis must be prepared as a separate document and must bear the signature, at a minimum, of the Program Manager, Quality Manager and the LCM, and the Contractors Information System Security Officer (ISSO) responsible for the system which experienced the failure.

4.12 Trend Analysis

4.12.1 The Contractor must perform on-going trend analysis for the equipment and systems as per DID/CDRL 4.12.1.

4.13 Power Generation Report

4.13.1 The Contractor must prepare and submit a Power Generation Report as per DID/CDRL 4.6.7 (Quarterly Maintenance Report).

4.14 Prepare Unsatisfactory Condition Reports

4.14.1 The Contractor must prepare Unsatisfactory Condition Reports (UCRs) to address issues of:

4.14.1.1 Obsolescence, specifically for equipment, systems, or spare parts of systems that are discontinued and no substitute can be found;
4.14.1.2 Life extension of equipment and/or systems through modification, mid-life refit or critical spares procurement;
4.14.1.3 Legislative compliance, particularly for OH&S and environmental protection;
4.14.1.4 Changing mission requirements which in turn result in an increase or decrease in the performance of a given system;
4.14.1.5 Presence of CVE rate components that will result in an increase in the level of cybersecurity residual risk; and
4.14.1.6 Any other deficiency identified by the LCM which negatively impacts or has the potential to negatively impact the performance of the NWS.

4.14.2 Each UCR must include all substantiating documentation, including:

4.14.2.1 A clear and concise description of the unsatisfactory condition;
4.14.2.2 The impact if the unsatisfactory condition remains unresolved;
4.14.2.3 Work order data to substantiate failure rates;
4.14.2.4 Correspondence from OEMs, OEM distributors and/or repair vendors that a given piece of equipment has been discontinued that spare parts are in short supply or are unavailable or document the presence of a CVE;
4.14.2.5 Reference to new or draft legislation or regulation which demonstrates a real or potential non-compliance;
4.14.2.6 Correspondence from the authority having jurisdiction substantiating a change to mission requirements; and
4.14.2.7 Any other documentation required to support the UCR.

4.14.3 UCRs must be in a format as proposed by the Contractor and as accepted by the NWSO TA. Reference DID/CDRL for power generators is provided as guidance. The NWSO TA reserves the right to have the Contractor amend the format and contents of UCRs at any time.

4.14.4 UCRs for cybersecurity must be in a format as proposed by the Contractor and as accepted by the NWSO TA. The NWSO TA reserves the right to have the Contractor amend the format and contents of UCRs for cybersecurity at any time.

4.15 Prepare Business Case Options Analysis

4.15.1 The Contractor must prepare Business Case Options Analyses (BCOAs) for approved UCRs. Each BCOA must include:

4.15.1.1 Justification for the BCOA, specifically reference to the approved UCR;
4.15.1.2 Assumptions/constraints;
4.15.1.3 Options to address the unsatisfactory condition, including:

4.15.1.3.1 Advantages/disadvantages specifically addressing the feasibility of the option,
4.15.1.3.2 Risk assessment and in the case of cybersecurity assessments, the effect on the residual risk; and
4.15.1.3.3 Rough order magnitude cost.

4.15.1.4 The recommended option, and rationale for its recommendation specifically in comparison to the other options;
4.15.1.5 Any impacts to the NWS mission during implementation; and
4.15.1.6 A proposed schedule from design through to implementation.

4.15.2 BCOAs must be in a format as proposed by the Contractor and as accepted by the NWSO TA. References DID/CDRL for power generators is provided as guidance. The NWSO TA reserves the right to have the Contractor amend the format and contents of BCOAs at any time.

4.16 Decommissioning, Deconstruction and Disposal Plans

4.16.1 The Contractor must prepare plans for the decommissioning, deconstruction and disposal of NWS equipment and systems, information, buildings and other real property assets that have reached the end of their service life, that are deemed obsolete or are otherwise surplus to requirements. Decommissioning, deconstruction and disposal plans must be prepared in accordance with the requirements for disposal in section 8 – DND Logistics of this plans are to include, at a minimum:

4.16.1.1 Dismantling instructions;

4.16.1.2 Care and handling of hazardous materials and/or components;

4.16.1.3 Disposition of the decommissioned equipment;

4.16.1.4 Identification, removal from stock, and disposal of obsolete spares;

4.16.1.5 Identification, removal from NWS libraries and disposal of obsolete documentation. For equipment/systems to be decommissioning as part of IQ, the decommissioning plan is to be included in the final design package;

4.16.1.6 Sanitization, if possible, or destruction of all information holding components and systems. Methods of sanitization or destructions will be proposed by the Contractor and approved by the NWSO TA or NWSO ISSO. Effected components includes but is not limited to: hard drives, solid state drives, memory, printers and printer cartridges and ribbons, and other devices as required by the NWSO TA or NWSO ISSO; and

4.16.1.7 Removal/deletion of obsolete training courses/course training standards and preventive maintenance routines.

4.16.2 Decommissioning, deconstruction and disposal plans may be unique depending on the equipment/system/asset. The format must be as proposed by the Contractor and accepted by the NWSO TA. For equipment/systems/assets to be decommissioned, deconstructed and disposed of as part of a project, the plan must be prepared and included in the final design package as defined in the Contract. Packaging, label and shipping reference is A-LM-187-001/JS-001.

4.17 CONFIGURATION MANAGEMENT

4.18 Introduction to Configuration Management

4.18.1 The Contractor must accept at contract start the current configuration management baseline for NWS Configured Items (CIs) and their associated Equipment Breakdown Structure (EBS) and must maintain that baseline for the duration of the Contract.

4.18.2 The Contractor must manage the configuration of the following NWS equipment and systems, including its software and firmware, and it's associated technical documentation as appropriate:

4.18.2.1 Radar towers;
4.18.2.2 Buildings and structures, including Satellite Ground Terminal (SGT) radomes;
4.18.2.3 Heating, Ventilating and Air Conditioning (HVAC) systems;
4.18.2.4 Power Generating System (PGS);
4.18.2.5 Electrical systems;
4.18.2.6 Bulk fuel storage and handling systems;
4.18.2.7 Potable water systems;
4.18.2.8 Waste water systems;
4.18.2.9 Fire systems;
4.18.2.10 Ground/Air/Ground (G/A/G) radio Ultra-High Frequency (UHF)/Very High Frequency (VHF), Radio Control Switch and ancillary equipment;
4.18.2.11 Private Branch-Exchange (PBX) systems;
4.18.2.12 Long Haul Communications Network (LHCN);
4.18.2.13 Video Monitoring Network (VMN);
4.18.2.14 Grounding and lightning protection systems;
4.18.2.15 Public Address (PA) systems;
4.18.2.16 Mobile Support Equipment (MSE).
4.18.2.17 AN/FPS-117 and AN/FPS-124 radars and radomes for both (in conjunction with United States Air Force (USAF) Life Cycle Material Manager (LCMM));
4.18.2.18 Automated Weather Observation System (AWOS) in conjunction with Canadian LCMM, including towers and tilt poles;
4.18.2.19 Test equipment.
4.18.2.20 PGS and SUPS
4.18.2.21 Information Management Systems (IMS);
4.18.2.22 Supervisory Control And Data Acquisition (SCADA) systems and components;
4.18.2.23 All information processing, storage, and transmission equipment,
4.18.2.24 Cryptographic equipment and key management systems; and
4.18.2.25 CMS/RICC/PLC/RTU/SCADA.

4.18.3 The Contractor must manage the NWS CI EBS in the Government provided Enhanced Automated Graphical Logistics Environment (EAGLE) database.

4.19 Definitions

4.19.1 Refer to definitions table.

4.20 References

4.20.1 Current NWS Configuration Management Plan and EAGLE data base;

4.20.2 DND Standard, D-01-002-007/SG-006, Criteria for the Selection of Configuration Items; and

4.20.3 Personnel Qualifications, Experience and Training.

4.21 Produce and Maintain Technical Documentation

4.21.1 Master drawings to be maintained at a central location as defined in this SOW. Prepare documentation for new equipment and system installations. Update documentation for modified equipment and systems. Remove documentation from decommissioned equipment and systems. Ensure that drawings conform to accepted professional practice and to the standards prescribed in:

4.21.1.1 Clauses- DND/CAF Engineering Drawings And Associated Lists;

4.21.1.2 CETO C-98-002-CAD/FP-003, DND STANDARDS - DND DRAWING STANDARDS & CONVENTIONS; and

4.21.1.3 CFTO C-98-001-003/MS-004, Site Record Drawings.

4.21.2 Create new drawings electronically using a Computer-Aided Design and Drafting (CADD) program. Maintain site record drawings provided by the Government to the Contractor at Contract start. Redline discrepancies between site record drawings and actual field conditions. Maintain two copies of site record drawings at each site. Ensure that both copies of site record drawings are redlined and one copy retained at a central location for revision of the applicable master drawing(s). Issue two copies of the revised drawings to the applicable site. After contact award date all contractor produced drawings and diagrams must be online. Updated drawings are to be submitted to the NWSO TA for furtherance to Director of Supply Chain Operations (DSCO) 5, in accordance with standards, within thirty (30) days after any approved change, in Tagged Image File Format.

4.22 Configuration Management Plan

4.22.1 The Contractor must establish, implement and administer an NWS Configuration Management Plan to detail the processes and procedures employed to identify CIs baseline and how the life cycle of CIs are managed including their hardware, software, firmware, drawings and technical documentation, as per DID/CDRL 4.22.1.

4.22.2 The Contractor must include in the Configuration Management Plan how cyber security requirements, equipment, systems, and solutions are maintained to ensure that the level of residual risk is maintained at an acceptable level.

4.23 Configuration Status Accounting

4.23.1 The Contractor must maintain the existing Configuration Status Accounting (CSA) in the Government provided EAGLE application. The CI baseline must be held in this application.

4.24 Configuration Item Identification

4.24.1 The Contractor must identify new CIs at the appropriate levels of product structure to facilitate the documentation, control and support of the identified CI.

4.24.2 The Contractor must determine the types of configuration documentation required for each new CI to define its performance, physical and functional attributes, including internal and external interfaces (form, fit and function) which provides the basis to develop and procure software/parts/material, inspection, test items and maintenance of systems. All CI documentation must be controlled.

4.24.3 The numbering convention for CIs as established for the CI baseline must be applied to newly identified CIs.

4.24.4 The Contractor must establish Equipment Breakdown Structures (EBSs) for new CIs. New EBSs must be entered into the Government provided EAGLE application.

4.24.5 New CIs and their respective EBSs must only be entered into the Government Provided EAGLE application upon NWSO TA approval.

4.25 Configuration Change Management

4.25.1 The Contractor must maintain the integrity of CI baseline and its associated documentation by ensuring that only approved changes are incorporated.

4.25.2 The Contractor must have documented procedures to manage changes to the CI baseline to include:

4.25.2.1 Change request initiation and approval through the preparation of Unsatisfactory Condition Reports (UCRs) and Engineering Change Requests (ECRs);

4.25.2.2 Implementation for approved changes to include:

4.25.2.2.1 Support for Time Compliant Technical Orders (TCTOs) for the modification of USAF equipment;

4.25.2.2.2 Preparation of Technical Data Action Notices (TDANs) for changes required to Communications and Electronics (C&E) drawings that are controlled by the Director of Supply Chain Operations (DSCO) for registration;

4.25.2.2.3 Preparation of Document Change Notices (DCNs) to notify changes of NWS Canadian facilities technical documentation and drawings due to errors or omissions that have been identified; and

4.25.2.2.4 Support for the AFTO form 22 process for changes to USAF documentation.

4.25.2.3 Preparation and submission of Request For Waiver (RFW) for approval by the NWSO TA to accept a CI which is found to depart from specified requirements, but is considered suitable for "use as is", or after rework by an approved method;

4.25.3 The Contractor must establish, implement and maintain procedures to manage the configuration of all NWS software.

4.25.4 The Contractor must establish, implement and maintain procedures to manage the configuration of all NWS components to ensure that the desired level of cyber security residual risk is maintained.

4.26 Configuration Audits

4.26.1 The Contractor will perform Configuration Audits as per DID/CDRL 4.26.1.

4.27 Perform configuration status accounting.

4.27.1 The Contractor must perform configuration status accounting using a Configuration Item (CI) database to record and report NWS configuration status. The Contractor must make this database available online, and must ensure that the database includes the following information:

4.27.1.1 Technical data index;

4.27.1.2 Support items specific to the associated CI (e.g. tools and test equipment); and

4.27.1.3 Configuration Items, including: next higher assembly/module, part/software module number, serial number, revision number, version number, specification/specification control number, OEM/vendor/ repair sub-contractor, location and status (ECRs pending and completed).

4.27.1.4 Bill of Materials

4.28 Update CI Baseline.

4.28.1 The Contractor must ensure the CI baseline is updated within 20 business days of any change.

4.28.2 The Contractor must ensure the CI baseline is updated within 48 hours of any change resulting from the presence of a CVE or off the level of residual risk.

4.29 SUSTAINMENT ENGINEERING

4.30 Introduction to Sustainment Engineering

4.30.1 The Contractor must have the capability to provide sustainment engineering services for the design of projects to replace or modify existing NWS equipment and systems to ensure the NWS mission is maintained to its life expectancy (LE) of 2035.

4.31 Definitions

4.31.1 Refer to definitions table.

4.32 References

4.32.1 Refer to table of references.

4.33 NWS Sustainment Engineering Services Plan

4.33.1 The Contractor must prepare, implement and administer an NWS Sustainment Engineering Services Plan as per DID/CDRL 4.33.1.

4.34 Sustainment Engineering Design Services

4.34.1 The Contractor must provide engineering design services for approved Business Case Option Analysis (BCOA) provided by the Life Cycle Manager (LCM). No design must proceed without an approved BCOA. Designs based on approved BCOAs must be tracked in the Government provided MAXIMO application as Labour Use Code (LUC) 76 Additional Work Requirement (AWR)/Task Authorization (TA) projects.

4.34.2 The Contractor must provide 12,000 productive drafting hours annually to:

4.34.2.1 Prepare design drawings;

4.34.2.2 Prepare AS-BUILT drawings from redlined drawings upon completion of a project, to include the design drawings and all site record drawings impacted by the project work; and

4.34.2.3 Update site record drawings on an on-going basis to address discrepancies identified during implementation of the Work detailed in the Contract, or to update site record drawing format and/or revision level.

4.34.3 Each design must be tracked in the Government provided MAXIMO application as a LUC 76 project and each must have a unique project number. The design process must normally require the submission to the NWSO TA preliminary designs and final designs as further detailed in this section. The preliminary design stage may be waived upon the request of the Contractor and as approved by NWSO TA. Waiving of preliminary designs must only be in cases where the final design solution is deemed straightforward and therefore at low risk, for rework or for instances where a design solution is urgently required.

4.34.4 Each design at both the preliminary and final stages must include a fire services compliance review and environmental impact assessment as further detailed in the Contract, and airfield impact review. Should the airfield impact review identify risks to the site's aerodrome, the Contractor must ensure all required precautions to eliminate the risk of aircraft incidents are taken, up to and including ensuring Notice To Airmen (NOTAM) is issued through the authority having jurisdiction (AHJ). Each review must include a certificate signed by the Contractor for acceptance by the NWSO TA. The Contractor may recommend that any of these three reviews at the preliminary stage is deemed adequate for the final design if sufficient information is available at the preliminary design stage to ensure no further review is required. In addition to preliminary and final design reviews, the NWSO TA reserves the right to conduct additional reviews for complex or high risk designs.

4.34.5 Each preliminary design must include, at a minimum:

4.34.5.1 A draft scope of work, outlining the project requirements;

4.34.5.2 Identification of any known risks associated with completing the project, and to normal NWS operations while the Work is on-going, and mitigation strategies to eliminate or mitigate these risks;

4.34.5.3 A preliminary drawing package, showing equipment/system layout;

4.34.5.4 A preliminary engineering cost estimate for site support, labour, materials, subcontract and transportation;

4.34.5.5 Preliminary environmental, fire, and airfield certificates signed by the Contractor;

4.34.5.6 A draft monitoring and control plan, as applicable; and

4.34.5.7 Any other documentation unique to the project required to give the NWSO TA sufficient information to accept the preliminary design.

4.34.6 Each final design must include, at a minimum:

4.34.6.1 A complete technical specification prepared in National Master Specification (NMS) format bearing the stamp of a professional engineer. The technical specification itself must include:

4.34.6.1.1 A clear detailed description of the Work;

4.34.6.1.2 A clear description of the site, the local environment and work location and any limitations this will place on implementation of the Work;

4.34.6.1.3 A clear description of any site support available, including Mobile Support Equipment (MSE), Government Furnished Material (GFM), Government Furnished Equipment (GFE) and ration and quarters; and clear description of the site, the local; and

4.34.6.1.4 The standards the Work is to be performed to include in each section of the NMS specification relevant to the Work.

4.34.6.2 A complete drawings package to describe the Work. The drawing package must include:

4.34.6.2.1 Construction drawings each bearing the stamp of a professional engineer;

4.34.6.2.2 Any existing NWS site reference drawings to compliment the construction drawings in describing the Work or work location; and

4.34.6.2.3 Any shop drawings or vendor drawings relevant to the Work.

4.34.6.3 A detailed engineering cost estimate to represent the complete cost of the project, including: site support; labour; materials; equipment; subcontract, transportation, spare parts, special tools and training. The detailed engineering cost estimate must be prepared in Microsoft EXCEL, and must include a narrative as to how costs were derived. The level of detail must be to the satisfaction of the NWSO TA;

4.34.6.4 Any Factory Acceptance Test (FAT) plan for equipment or systems to be procured as part of the project;

4.34.6.5 A commissioning plan for the completed work;

4.34.6.6 Final environmental, fire and airfield certificates signed by the Contractor;

4.34.6.7 A risk mitigation strategy to eliminate or mitigate risks to the NWS mission implementation of the Work may have;

4.34.6.8 List of critical spares;

4.34.6.9 List of special tools;

4.34.6.10 Maintenance procedures for the new installation;

4.34.6.11 Training requirements, specifically any new Course Training Standard (CTS) and training course;

4.34.6.12 List of deliverables;

4.34.6.13 Decommissioning plan as required and as provided by the LCM; and

4.34.6.14 Any other documentation unique to the project required to provide the NWSO TA sufficient information to accept the final design.

4.34.7 The Contractor must bear full responsibility for any and all errors, omissions and defects in designs stamped by the Contractor's engineers.

4.35 Provide technical specifications.

4.35.1 Provide technical specifications which describe the Work, and the standards to which it is to be completed. Specifications for facilities projects are to conform to the standards prescribed in the National Master Specification (NMS) Specifier's Instruction Manual. Specifications for electronics and software projects are to be in a format proposed by the Contractor and accepted by the NWSO TA.

4.36 Provide Implementation Drawings.

4.36.1 Provide implementation drawing packages to completely describe the TA/AWR work. All drawings are to be to the standards described in the drawings should be in accordance with DID/CDRL 4.36.1.

4.37 Provide TA/AWR Management

4.37.1 Manage TA/AWR projects. Management services are to include, as a minimum, and as appropriate for each TA/AWR project:

4.37.1.1 Provision of engineering designs;
4.37.1.2 Preparation of tender documents;
4.37.1.3 Tendering, bid analysis and award;
4.37.1.4 Preparation of implementation proposals, complete with all costs to complete the project;
4.37.1.5 Contracting services to third parties as appropriate who will implement the Work in whole or in part;
4.37.1.6 Securing licenses and/or permits for the Work;
4.37.1.7 Material procurement;
4.37.1.8 Financial administration, including the preparation and submission of claims for payment, and 75% notification of commitment of TA/AWR dollar amount;
4.37.1.9 Review and approval of project deliverables, as specified in the final design;
4.37.1.10 Preparation of AS-BUILT drawings;
4.37.1.11 Preparation and submission of Final completion Certificate;
4.37.1.12 Project close-out; and
4.37.1.13 Preparation of the TA/AWR status report as per DID/CDRL 4.37.1.13.

4.38 Engineering Support to Third Parties

4.38.1 The Contractor must provide engineering support to third parties implementing a design on behalf of Canada that bears the stamp of the Contractor's engineers. Engineering support in these cases must include, at a minimum:

4.38.1.1 Answering question from bidders during tendering and/or during implementation of the Work;

4.38.1.2 Review and approval of requested material substitutions;
4.38.1.3 Review and acceptance of change orders; and
4.38.1.4 Review and approval of shop drawings.

4.39 Specialized Engineering Services

4.39.1 For cases where the Contractor can demonstrate to the NWSO TA that a design requirement is outside the engineering capability included in this contract, the Contractor must secure this capability is acquired as a TA/AWR. TA/AWR requirements for specialized engineering must be subject to terms and conditions in the Contract.

4.40 Project File Management

4.40.1 The Contractor must accept at contract start both historical hard copy project files and electronic project files. Historical hard copy files must be made available to the NWSO TA within three (3) business days of request. Historical electronic project files must be available on-line to the NWSO TA in accordance with information management requirements detailed in this contract.

4.40.2 The Contractor must create new electronic project files for all LUC 76, LUC 77 and LUC 78 projects. Electronic project files must be held in a searchable project file database to include:

4.40.2.1 UCR;
4.40.2.2 BCOA;
4.40.2.3 Preliminary design including all documentation detailed in this section;
4.40.2.4 Final design including all documentation detailed in this section; and
4.40.2.5 Status and date the project was entered at that status.

4.40.3 The project file database must hold all project files, including those in progress, completed and those that are rejected or cancelled in the event one or more of them becomes feasible should NWS mission requirements change.

4.41 Prepare LUC 77 Self-Help Projects

4.41.1 The Contractor may prepare LUC 77 projects for submission to the NWSO TA for approval. LUC 77 projects must be initiated through a UCR and must not proceed without NWSO TA approval of that UCR. LUC 77 projects must not include any work which adds, modifies or removes any NWS configured equipment or system. The Contractor must prepare all documentation required to describe and implement the Work, including drawings and specifications stamped by an engineer if required. The Contractor must submit an Engineering Change Request (ECR) for each LUC 77 project to ensure all affected documentation is updated.

4.42 Prepare LUC 78 Minor Modification Projects

4.42.1 The Contractor must prepare LUC 78 projects. Any Time Compliant Technical Orders (TCTOs) must be included as LUC 78 projects. LUC 78 projects must be initiated through a UCR/excluding TCTO's and must not proceed without NWSO TA approval of that UCR. The Contractor must submit an Engineering Change Order (ECO) for each LUC 78 project to ensure all affected documentation is updated. The Contractor must prepare all documentation required to describe and implement the Work, including drawings and specifications stamped by an engineer if required. The maximum cost per job for Minor Mods projects should not exceed $100K for facilities, and $50K for any other Minor Mod projects. The Contractor may request an increase to the maximum limit with appropriate justification on a case by case basis which may be approved by the NWSO TA. Any such approval must not constitute precedence for the limit of any future LUC 78 projects. The actual cost of each LUC 78 project must be recorded in the Government provided MAXIMO application. Minor Mods are managed via Individual Tasks Authorizations.

4.43 Design Schedule

4.43.1 The Contractor must prepare and administer a schedule for the delivery of designs for LUC 76, LUC 77 and LUC 78/TCTO projects. The schedule must be created in Microsoft Office and must contain all steps in the design process as detailed in this section. The schedule must be based on realistic resource allocations for Contractor personnel preparing designs, and must include three (3) weeks for each NWSO TA review. The schedule must show slack time for each design. The Contractor must update the schedule continually as existing designs progress and as new designs are added. The schedule must be available to the NWSO TA online in read only format.

4.44 NWS Software, Firmware and Hardware Engineering Plan

4.44.1 The Contractor must prepare, implement and administer a Software, Firmware and Hardware Engineering Plan which must be based on the requirements of the latest version of ISO 15288.

4.45 Software, Firmware and Hardware Design Services

4.45.1 The Contractor must provide software, firmware and hardware design for the following systems:

4.45.1.1 AN/FPS-124 radar;

4.45.1.2 On-site communications, including Security And Video Monitoring Systems (SAVMS), public address (PA) system, Private Branch-Exchange (PBX) and Programmable Logic Controllers (PLCs);

4.45.1.3 Long Haul Communications Network (LHCN);

4.45.1.4 North Warning System Support Centre (NWSSC) maintenance equipment;

4.45.1.5 Automated Test Equipment (ATE) hardware including test program sets;

4.45.1.6 Heating, Ventilating And Air Conditioning (HVAC) systems;

4.45.1.7 Power Generating Systems (PGS);

4.45.1.8 Potable water systems;

4.45.1.9 Sewage systems;

4.45.1.10 Fire protection and detections systems;

4.45.1.11 Supervisory, Control And Data Acquisition (SCADA) systems and associated site sensor systems;

4.45.1.12 All cyber security controls including authentication and authorization systems; and

4.45.1.13 Internet of Things (IoT) systems and associated site sensor systems.

4.45.2 The Contractor must provide 15,000 productive design hours annually across the following disciplines:

4.45.2.1 Mechanical;

4.45.2.2 Electrical;

4.45.2.3 Civil;

4.45.2.4 Fire Systems; and

4.45.2.5 Software.

4.45.3 All software, firmware and hardware designs requirements must be initiated by ECR. No design efforts must commence prior to approval of the ECR by the NWSO TA. All design requirements must include a risk statement that documents any threats, their likelihood and impact, and any change on the level of cyber security residual risk.

4.45.4 The Contractor must prepare and implement a Software Project Quality Plan using Allied Quality Assurance Publication (AQAP) 2210 as a guidance documents for each approved software, firmware and hardware ECR. The Project Software Quality Plan must include at a minimum:

4.45.4.1 Requirements definition;

4.45.4.2 Code changes;

4.45.4.3 Version description document;

4.45.4.4 Preparation and implementation of the validation plan; and

4.45.4.5 Version control acceptance.

4.45.5 Specifications for software, firmware and hardware projects must be in a format as proposed by the Contractor and as accepted by the NWSO TA.

4.45.6 The Contractor must maintain and update Computer Program Identification Number (CPIN) for all USAF owned firmware and software.

4.45.7 Final acceptance of the associated work on approved ECRs must be by the NWSO TA upon review and acceptance of project deliverables.

4.46 Specialized Software, Firmware and Hardware Engineering Services

4.46.1 For cases where the Contractor can demonstrate to the NWSO TA that a software, firmware or hardware design requirement is outside the engineering capability included in this contract, the Contractor must secure this capability is acquired as a TA/AWR. TA/AWR requirements for specialized engineering must be subject to terms and conditions in the Contract.

4.47 Software, Firmware and Hardware Design Schedule

4.47.1 The Contractor must prepare and administer a schedule for the delivery of software, firmware and hardware design projects. The schedule must be created in Microsoft Office and must contain all steps in the design process as detailed in this section. The schedule must be based on realistic resource allocations for Contractor personnel preparing designs, and must include a minimum of three (3) weeks for each NWSO TA review. The schedule must show slack time for each design. The Contractor must update the schedule continually as existing designs progress and as new designs are added. The schedule must be available to the NWSO TA online in read only format. The schedule must identify cybersecurity specific activities and milestones, including risk assessment and identification of residual risk.

4.48 Manage OMNIBUS TAs.

4.48.1 The Contractor must manage OMNIBUS TAs, including but not limited to those for: GFE; reimbursable customer support for CSRs; freight; FPS-124 spares; and repair & calibration for test equipment. Report to PWGSC when 75% of the ONMIBUS dollar amount has been committed to the Project Authority.

4.49 PROJECT MANAGEMENT SERVICES

4.50 Introduction to Project Management Services

4.50.1 The Contractor must implement Labour Use Code (LUC) 76 TA/AWR projects, LUC 77 Self-Help projects and LUC 78 Minor Modification projects. LUC 76 projects must be implemented from an approved costing proposal submitted by the Contractor and approved by the NWSO TA and the Contracting Authority (CA). LUC 77 projects must be completed at no cost to Canada.

4.51 Definitions

4.51.1 Refer to the table of definitions relevant to this section.

4.52 References

4.52.1 Per table of references.

4.53 Personnel Qualifications, Experience and Training

4.53.1 Nil.

4.54 NWS Project Management Services Plan

4.54.1 The Contractor must prepare, implement and administer a NWS Project Management Services Plan as per DID/CDRL 4.54.1.

4.55 Manage LUC 76 Capital Projects

4.55.1 The Contractor must manage the preparation and implementation of LUC 76 projects to include:

4.55.1.1 Preparation of tender documents;

4.55.1.2 Tendering and bid analysis for work which is to be subcontracted in whole or in part;

4.55.1.3 Preparation of implementation proposals, complete with all costs to complete the project based on the recommended bid, as appropriate in accordance with the Articles of the Contract;

4.55.1.4 Contracting services to third parties as appropriate who will implement the Work in whole or in part;

4.55.1.5 Securing of any required licenses and/or permits for the Work;

4.55.1.6 Equipment and/or material procurement;

4.55.1.7 Financial administration, including the preparation and submission of claims for payment and 75% notification of commitment of TA/AWR project dollar amount;

4.55.1.8 The preparation and submission of change orders as further detailed in this section;

4.55.1.9 Inspection of the Work, review and approval of project deliverables, as specified in the final design;

4.55.1.10 Preparation of AS-BUILT drawings;

4.55.1.11 Preparation and submission of Final Completion Certificates;

4.55.1.12 Project close-out; and

4.55.1.13 Any other requirement unique to a given project to ensure its successful completion.

4.55.2 The Contractor must allow a minimum of three weeks for CA and NWSO TA review of AWR/TA proposals.

4.55.3 The Contractor must not alter any requirement of a LUC 76 projects during implementation without concurrence of the CA through the issuing of a change order. Change orders must be submitted for the following:

4.55.3.1 Changes in the scope of work;

4.55.3.2 Equipment or material substitutions;

4.55.3.3 Alternate methods for testing and/or acceptance criteria; and

4.55.3.4 Any other change to the stamped specifications or drawings identified during implementation of the Work.

4.55.4 Change orders must be a format proposed by the Contractor and as accepted by the NWSO TA.

4.56 Implement LUC 77 Self-Help Projects

4.56.1 The Contractor must implement LUC 77 Self-Help projects. All costs associated with Self-Help Projects are included in the FFP NWS Contract price.

4.56.2 The Contractor must update and distribute any documentation affected by implementation of a LUC 77 project within 60 calendar days after site work has been completed.

4.57 Implement LUC 78 Minor Modification Projects

4.57.1 The Contractor must implement LUC 78 Minor Modification projects under the Minor Mods Individual Task Authorizations. The Contractor must track all costs associated with each LUC 78 project in the Government provided MAXIMO application, to include:

4.57.1.1 Labour;
4.57.1.2 Shipping/freight;
4.57.1.3 Commercial travel;
4.57.1.4 Equipment;
4.57.1.5 Material;
4.57.1.6 Subcontract; and
4.57.1.7 Any other cost realized during implementation of the Work.

4.57.2 The Contractor must not apply any mark-ups to the cost of LUC 78 projects.

4.57.3 The Contractor must update and distribute any documentation affected by implementation of a LUC 76 project within 60 calendar days after site work has been completed.

4.58 Manage Government OMNIBUS Task Authorizations

4.58.1 The Contractor must manage and implement the requirements OMNIBUS Task Authorization, including but not limited to those for:

4.58.1.1 Procurement of GFE and GSM primarily for Corrective Maintenance (CM) requirements;
4.58.1.2 Reimbursable customer support for Customer Support Requests (CSRs);
4.58.1.3 Freight;
4.58.1.4 AN/FPS-124 repair parts spares; and
4.58.1.5 Repair and calibration of test equipment.

4.58.2 The Contractor must continually monitor commitments against each OMNIBUS Task Authorization and must report to the PA when the commitment reaches 75% of the ONMIBUS dollar value.

4.59 DEPOT LEVEL SUPPORT

4.60 Introduction and Definition to Depot Level Support

4.60.1 The Contractor must provide qualified, experienced and trained personnel required to manage, supervise, perform and coordinate the Depot level maintenance and repair of Canadian and United States Air Force (USAF) assets and software from the North Warning System Support Center (NWSSC) located in North Bay, Ontario. The Contractor must operate and maintain Government provided Communications System Test Bed (CSTB) and Automatic Test Equipment (ATE) in direct support of Depot functions. The Contractor must coordinate maintenance and repair of assets not maintained or repaired by the Depot, with Outside Repair Agencies (ORAs). The Contractor must use the CSTB and the Short Range Development (SRD) site to hot test repaired assets prior to field installation. Refer to the table of the definitions relevant to this section.

4.61 References

4.61.1 The notations against the references have the following meanings: M - Adherence is mandatory. G - The policies and procedures contained therein are not mandatory, but proposals for alternatives must be submitted in full detail to, and be accepted by the North Warning System Office Technical Authority (NWSO TA). Furthermore, alternatives must fully interface with procedures in use globally. Reference for this SOW section are as follows:

4.61.1.1 NWS Frequency Management Plan (G);

4.61.1.2 DNDP 35 Management of the Radio Frequency Spectrum (M);

4.61.1.3 DAOD 8012-0 Meteorology and Oceanography (M);

4.61.1.4 DAOD 8012-1 Meteorological and Oceanographic Products and Services Program (M);

4.61.1.5 D-02-002-003/SG-000 "Standard for Repair and Overhaul of Ground Radar, Navigation Aids and Ancillary Equipment by Civilian Contractors (G); and

4.61.1.6 AQAP 2210 (M); 2015 (2015-01-01), NATO SUPPLEMENTARY SOFTWARE QUALITY ASSURANCE REQUIREMENTS TO AQAP-2110 OR AQAP-2310.

4.62 Depot Maintenance Management Plan

4.62.1 The Contractor must prepare, implement and administer a Depot Maintenance Management Plan, as per DID/CDRL 4.62.1.

4.63 Software Maintenance

4.63.1 Software/Firmware Maintenance Plan and Report

4.63.1.1 Produce and submit a copy of CPIN software/firmware package to the NWSO TA. All documentation and reporting to be provided as per DID/CDRL. Contractor must prepare, implement and administer a Software/firmware Management Plan compliant to AQAP 2210. The plan must cover all NWS software/Firmware. All documentation and reporting to be provided as per DID/CDRL 4.63.1.1.

4.64 Test Equipment Management

4.64.1 NWS Test Equipment Management Plan

4.64.1.1 The Contractor must prepare, implement and administer a Test Equipment Management Plan that must describe in detail the Contractor's method of calibrating or having calibrated, and of repairing or having repaired, all test equipment. The Plan must be provided as per DID/CDRL 4.64.1.1.

4.64.2 Frequency Management

4.64.2.1 The Contractor must prepare, implement and administer an NWS Frequency Management Plan to govern the management of the NWS spectrum for all radar, radio, LHCN and G/A/G operational frequencies. The spectrum must be managed under the policy and procedures stated in reference DNDP 35 Management of the Radio Frequency Spectrum (M), and all documentation must be provided as per DID/CDRL 4.64.2.1. NWSO will supply the current plan for reference.

4.64.3 Network Switching Plan

4.64.3.1 The Contractor must prepare, implement and administer an NWS Network Switching Plan, as per DID/CDRL 4.64.3.1. NWSO will supply the current plan for reference.

4.65 Perform Depot Level Sustainment/Software/Hardware Engineering

4.65.1 Perform Depot level Sustainment/software/hardware engineering on electronic systems equipment (21000 hours) either in-house, through OEM maintenance depots or other qualified organisation when applicable for those systems identified in the Contract Develop a Depot Level Engineering Support Plan using ISO 15288:2015 as a guidance document for all depot activities to include by not limited to the repair, fabrication, manufacture, rebuilding, assembly overhaul, modification, prototyping, refurbishment, test, analysis, repair-process design, in-service engineering, upgrades, painting and disposal of parts, assemblies, subassemblies, software components, or end items that require shop facilities, tooling, support equipment, and/or personnel of higher technical skills, or processes beyond the organizational level capability. Final acceptance of the associated work on approved ECRs will be by the NWSO TA per review of the each project's deliverables following the guidance of Section 4.22.1 it is NWS Configuration Management Plan.

4.66 Perform Depot Level Change Management

4.66.1 All software/firmware/hardware changes suggested by the Contractor must be submitted to the NWSO TA through the ECR process.

SOW Section 5:

C&E Maintenance

5.0 SOW Section 5 – C&E Maintenance

5.1 Introduction

5.1.1 The Contractor must be responsible to provide all qualified, experienced and trained personnel required to manage, supervise and perform inspections, testing, monitoring, maintenance and repair activities on North Warning System (NWS) radar, communications and ancillary equipment, including:

5.1.1.1 AN/FPS-117 radar;
5.1.1.2 AN/FPS-124 radar (Test Program Sets, Obsolescence, and Depot Repair);
5.1.1.3 Ground-Air-Ground (G/A/G) radio Ultra High Frequency (UHF)/Very High Frequency (VHF)) and ancillary equipment;
5.1.1.4 Private Branch Exchange (PBX) Systems;
5.1.1.5 Long Haul Communications Network (LHCN);
5.1.1.6 Automated Communication System (ACS);
5.1.1.7 Supervisory, Control and Data Acquisition (SCADA) system;
5.1.1.8 Programmable Logic Controller (PLC), including Control and Monitoring System (CMS) and Remote Interface Communications Controller (RICC);
5.1.1.9 Automated Weather Observation System (AWOS);
5.1.1.10 Grounding and Lightening Protection Systems;
5.1.1.11 Public Address (PA) System;
5.1.1.12 Radomes;
5.1.1.13 Security and Video Monitoring Systems (SAVMS) and Video Monitoring Network (VMN);
5.1.1.14 Communications System Test Bed (CSTB);
5.1.1.15 Automated Test Equipment (ATE);
5.1.1.16 Crypto equipment;
5.1.1.17 All new Equipment;
5.1.1.18 NWSCC; and
5.1.1.19 Software Maintenance/Modifications for all NWS Systems.

5.2 References

5.2.1 The notations against the references have the following meanings: M - Adherence is mandatory. G - The policies and procedures contained therein are not mandatory, but proposals for alternatives must be submitted in full detail to, and be accepted by the North Warning System Office Technical Authority (NWSO TA). Furthermore, alternatives must fully interface with procedures in use globally. Reference for this SOW section are as follows:

5.2.1.1 Clauses- DND/CAF Engineering Drawings And Associated Lists

5.2.1.2 CFTO C-98-001-003/MS-004, Site Record Drawings (G);
5.2.1.3 Configuration Item (CI) Baseline (Eagle) (G);
5.2.1.4 Historical LCMM data (G);
5.2.1.5 National Master Specification (NMS) (G); and
5.2.1.6 NWS Configuration Management Plan (G).

5.3 RADAR & COMMUNICATIONS SYSTEMS MAINTENANCE & OPERATIONAL ACTIVITIES

5.3.1 Personnel Qualifications, Experience and Training

5.3.1.1 All of the Contractor's personnel working on NWS sites must possess the physical capabilities to perform their required duties with no restriction and having demonstrated that they are fully capable to understand and perform the tasks to which they are assigned. Sites are not handicap accessible.

5.3.1.2 All of the Contractor's journeymen technicians working on the NWS must have the prerequisite qualifications, experience, training and required Provincial or Territorial certification to perform the tasks to which they are assigned. Apprentices can be considered as an option if sufficient journeymen are available for supervision.

5.3.1.3 Minimum skill levels for Contractor work involving electronics maintenance must be:

5.3.1.3.1 Successful completion of a two-year electronic technician program from a recognized and accredited institution or Canadian military equivalent;
5.3.1.3.2 Experience on Automated Test Equipment (ATE);
5.3.1.3.3 Five years related job experience in maintaining electronic systems;
5.3.1.3.4 Experience in the use of general electronic test and repair equipment; and
5.3.1.3.5 Successful completion of NWS equipment specialty training.

5.3.1.4 Contractor personnel performing Preventive Maintenance (PM) and Corrective Maintenance (CM) on encryption equipment must have the required security clearance and have successfully completed mandatory training provided by DND.

5.4 Radar and Communications Systems Preventive Maintenance

5.4.1 The Contractor must implement and Maintain Radar and Communications Systems Preventive Maintenance Program as per DID/CDRL 5.4.1.

5.4.2 The Contractor must provide all labour and material to implement and maintain Volume I and II of the Preventive Maintenance Program (PMP) as provided by the NWSO TA. Preventive Maintenance Inspections (PMI) are for radar, communications and related systems as listed in this document and all PMI's must be maintained on-line. PMI's must be tracked in the NWS Work Management system. PMI's not completed must be recorded as exceptions, and included in a maintenance report DID/CDRL 4.6.7 (Quarterly Maintenance Report) (LUC 72, 73, 74, 76, 77, 78, & PGS)}. PMI exceptions greater than quarterly must remain open, and must be completed at the earliest opportunity, but no later than the next quarterly visit. Any change to the PMP must be approved by the NWSO TA.

5.5 Calibrate AWOS

5.5.1 List of the Non-Prime Mission Equipment identifies applicable AWOS equipment. AWOS equipment are installed in 29 Radar sites. Check calibration of AWOS equipment to Original Equipment Manufacturers' (OEM) specifications annually. Verify calibration in accordance with DAOD 8012-0 and DAOD 8012-1. Confirm calibration of sensors. Conduct annual meteorology inspection in accordance with DAOD 8012-0 and DAOD 8012-1 and produce reports as defined in DID/CDRL.

5.5.2 AWOS Annual Reporting

5.5.2.1 The Contractor must prepare annual AWOS Meteorological Inspection Reports in accordance with DAOD 8012-1, quantities as follows: Zone 1 = 8 sites, Zone 2 = 4 sites, Zone 3 = 5 site, Zone 4 = 7 sites, Zone 5 = 5 sites, for a total 29 sites. The reports must be completed and available on-line no later than 30 November each year , as per DID/CDRL 5.5.2.1.

5.5.3 AWOS certification

5.5.3.1 The Contractor will assist the DND rep (DMET OC) with 1 EMT for the re-certification of all AWOS systems. All AWOS are required to be recertified for three zones each year by a DMET OC certified MET tech.

5.6 Radar and Communications Systems Corrective Maintenance

5.6.1 The Contractor must provide all labour to implement Labour Use Code (LUC) 74 Corrective Maintenance (CM) up to CM Job Limit on failed or functionally degraded equipment. All United States Air Force (USAF) and Department of National Defence (DND) material and freight for CM work must be Government provided and must be managed by the Contractor. All other costs for implementation of the CM work up to the CM Job Limit must be borne by the Contractor. All CM work orders must include fault diagnosis. Repair activities must be as specified in OEM requirements. All replacement parts must operate as original and must not create an increased risk to readiness normal or reduce the operating efficiency or life span of the equipment or system.

5.6.2 Perform Radar and Communications Systems Emergency Corrective Maintenance

5.6.2.1 The Contractor must perform emergency CM as LUC 72 work orders on failed and functionally degraded radar, communications and ancillary equipment and systems that pose immediate risk to the mission, the environment and Occupational Health and Safety (OH&S). All United States Air Force (USAF) and Department of National Defence (DND) material and freight for CM work must be Government provided and must be managed by the Contractor. All other costs for implementation of the CM work up to the CM Job Limit must be borne by the Contractor. Repair efforts should be continued until systems are operational or until risk has been mitigated allowing for further planning. All replacement repairs must return the system to its original operating parameters so as not to create an increased risk to the mission, environment and health and safety of individuals or reduce the operating efficiency/life span of the equipment or system. All emergencies must have an accompanying incident report applicable to the nature of the emergency as defined throughout this Statement Of Work (SOW). The Contractor must implement the Emergency Response Plan if warranted, as defined in the Contract.

5.6.3 Site Preservation

5.6.3.1 Upon notification (site alarms, etc.) of a condition that jeopardizes site preservation, initiate response within 2 minutes of situations that threaten site preservation in accordance with Contractor developed (NWSO TA reviewed and Canada accepted) SOPs, to prevent the unacceptable loss of, or damage to, a site and its equipment, or mitigate until site is restored to full operability. Ensure that this response takes priority over normal readiness restoral time considerations. Situations which have the potential to cause loss or damage to a site and its equipment and precipitate a response , as per DID/CDRL 5.6.3.1 and /or DID/CDRL 2.18.1.1 if applicable. The Contractor must perform Emergency CMs as LUC 72 and must submit a significant incident report as per related DID/CDRL.

5.7 Radar and Communications Systems Operational Activities

5.7.1 Radar Evaluation Squadron (RADES) Radar Baseline Evaluation

5.7.1.1 The Contractor must support QETE, Radar Evaluation Squadron (RADES) and other USAF agencies, to enable completion of tests or investigations on NWS sites as required.

5.7.1.2 The Contractor must perform AN/FPS 124 target simulator tests for radar baseline efforts. 84 RADES performs radar baseline evaluations on all USAF radars every ten years. AN/FPS-124 Simulator tests are performed on radars prior to 84 RADES evaluations. Conduct baseline test (ARTIS) using government furnished test equipment. Conducting external tests requires 8 hours per SRR, plus 4 hours of support in North Bay per site year. For LRRs 10-12 days of support are required per LRRs.

5.7.2 Produce annual Technical Engineering Sustainment Inspection (TESI) Plan.

5.7.2.1 The Contractor must prepare an annual Technical Engineering Sustainment Inspection plan as per DID/CDRL 5.7.2.1.

5.7.3 Produce annual Technical Engineering Sustainment Inspection (TESI) Report.

5.7.3.1 The Contractor must prepare an annual Report as per DID/CDRL 5.7.3.1.

5.8 Produce and Implement Depot Maintenance Plan

5.8.1 The Depot Maintenance Plan must describe in detail the Contractor's method of managing and performing repair and overhaul on all equipment for which it has been authorized. All repairs must conform to instructions in D-02-002-003/SG-000 "Standard for Repair and Overhaul of Ground Radar, Navigation Aids and Ancillary Equipment by Civilian Contractors" , as per DID/CDRL 4.62.1.

5.9 Perform Depot Level Maintenance and Repair

5.9.1 Perform Depot level maintenance and repair capabilities of LRUs/SRUs, with parts procured under FFP, software maintenance and system integration testing, to sustain the following NWS equipment and systems fully operational:

5.9.1.1 AN/FPS-124 radar (including software maintenance, modification, refinement and firmware);

5.9.1.2 On-site communications (including, but not limited to, SAVMS, VMN, PA system, PBX, PLC (RICC, RTU));

5.9.1.3 LHCN;

5.9.1.4 NWSSC maintenance equipment;

5.9.1.5 Automated Test Equipment (ATE) hardware including Test Program Sets (TPS);

5.9.1.6 SCADA Servers and associated site sensor systems;

5.9.1.7 Control and Monitoring System (CMS);

5.9.1.8 SUPS;

5.9.1.9 AWOS;

5.9.1.10 GAG; and

5.9.1.11 PGS.

5.10 Produce Depot Maintenance Report

5.10.1 Repair Summary Report

5.10.1.1 The Report must be prepared and available on-line quarterly in Contractor format. The Contractor must provide the following information on all equipment cycled through the NWSSC or ORA for repair, overhaul or modification as per DID/CDRL 5.10.1.1.

5.11 Non-NWSSC Repairable Repair and Overhaul Vendors List

5.11.1 The Report must be prepared and made available on-line quarterly in Contractor format. The Report must provide a summary listing of all repair and overhaul vendors maintaining equipment beyond the capabilities of the NWSSC. The Report must:

5.11.1.1 Identify components of the AN/FPS-124 UAR, Weather Communication Network (WCN) and the PGS controller which cannot be repaired at the NWSSC;

5.11.1.2 Identify repair and overhaul vendors for each component identified in para 5.11.1.1; and

5.11.1.3 Provide estimated vendor repair time for each component identified in para 5.11.1.1.

5.12 NWSSC Repair and Overhaul Report

5.12.1 For more details refer to the DID/CDRL 4.62.1 (Depot maintenance Plan).

5.13 Software Maintenance Summary Report

5.13.1 For more details refer to the DID/CDRL 4.63.1.1. (Software Maintenance Plan).

5.14 Obsolescence Sustainment Engineering Reports

5.14.1 Sustainment Engineering Reports must be prepared quarterly and available on-line in contractor format as per DID/CDRL 5.14.1.

5.15 Depot Level System Sustainment Engineering

5.15.1 In conjunction with LCMMs, perform system sustainment engineering efforts to monitor and correct operational sustainment problems, such as technology obsolescence, diminishing sources of piece parts, aging systems, and reliability performance degradation, to prolong in-service life, modifications and support equipment obsolescence studies at depot level for systems identified in this SOW.

5.16 Maintain Firmware and Software

5.16.1 Create, implement and maintain a Software Maintenance Plan as per DID/CDRL 4.63.1.1.

5.17 Utilize Program for USAF Software

5.17.1 Maintain and update CPIN Master listing spreadsheet and associated deliverables for all USAF owned firmware and software. Provide a copy of CPIN documentation to the NWSO TA after every change.

5.18 Coordinate third party external R&O.

5.18.1 Receive, evaluate condition status and distribute assets of any equipment not supported at the Maintenance Support Facility to the appropriate OEM or alternate repair facility as determined by the Contractor. Handling and transportation is covered under Section 4 in the SOW.

5.19 Coordinate R&O activities for USAF furnished NWS AN/FPS-117 radar and G/A/G radio LRUs and sub-assemblies.

5.19.1 Receive, evaluate condition status and distribution of assets for 11 FPS-117 radars and 157 G/A/G radios to the appropriate OEM or repair facility as determined by the USAF. Handling and transportation is covered under Section 9 in the SOW.

5.20 Produce Implement and Maintain Test Equipment Maintenance Plan

5.20.1 The Test Equipment Maintenance Plan must be prepared as per DID/CDRL 4.64.1.1.

5.21 Implement LUC 78 Minor Modifications projects required for TCTO's and tracked under LUC 78.

5.21.1 Implement LUC 78 Minor Modifications projects, including Time Compliant Technical Orders (TCTO's). The maximum cost per job for Minor Mods projects should not exceed $100K for facilities, and $50K for any other Minor Mods projects. Minor Mods are managed via Individual Tasks Authorizations.

5.22 Implement Minor Modifications projects on Communication and Electronic Systems to be tracked under LUC 78.

5.22.1 Implement Minor Modification projects on Communication and Electronic Systems to be tracked under LUC 78. The maximum cost per job for Minor Mods projects should not exceed $100K for facilities, and $50K for any other Minor Mods projects.

5.23 Perform CM work on jobs in excess of the CM Job Limit.

5.23.1 Perform CM work on jobs in excess of the CM Job Limit.

5.24 Procure test equipment.

5.24.1 As requested by the NWSO TA, procure test equipment to replace that which is obsolete or BER.

SOW Section 6:

Operations (Ops)

6.0 Section 6 – OPERATIONS (Ops)

6.1 References

6.1.1 The notations against the references have the following meanings: M - Adherence is mandatory. G - The policies and procedures contained therein are not mandatory, but proposals for alternatives must be submitted in full detail to, and be accepted by the North Warning System Office technical authority (NWSO TA). Furthermore, alternatives must fully interface with procedures in use globally. Reference for this SOW section are as follows:

6.1.1.1 NWS Frequency Management Plan (G);

6.1.1.2 DNDP 35 Management of the Radio Frequency Spectrum;

6.1.1.3 DAOD 8012-0 Meteorology and Oceanography;

6.1.1.4 DAOD 8012-1 Meteorological and Oceanographic Products and Services Program;

6.1.1.5 D-02-002-003/SG-000 "Standard for Repair and Overhaul of Ground Radar, Navigation Aids and Ancillary Equipment by Civilian Contractors"; and

6.1.1.6 AQAP 2210 (2015 (2015-01-01), NATO SUPPLEMENTARY SOFTWARE QUALITY ASSURANCE REQUIREMENTS TO AQAP-2110 OR AQAP-2310).

6.2 NWS CONTROL AND MONITORING

6.2.1 Introduction

6.2.1.1 The Contractor must operate and maintain the North Warning System (NWS) at a level of readiness to achieve not less than the minimum performance requirements for availability of radar data and Ground/Air/ Ground (G/A/G) radio communications, site preservation, equipment outage restoral times, operational flexibility and environmental protection detailed in this Statement Of Work (SOW). Unless directed otherwise by North Warning System Office (NWSO), the Contractor must maintain all NWS sites in an operational status, providing radar data and G/A/G radio signals over government furnished communication circuits (satellite transponder) to the NWS Canadian Air Defence Sector (CADS) demarcation point. The CADS demarcation point must be the Combined Distribution Frame (CDF) in the Above Ground Complex (David L. Pitcher building) at 22 Wing North Bay. The Contractor must operate out of the North Warning System Control Centre (NWSCC), located in the Above Ground Complex (AGC).

6.3 Personnel Qualifications

6.3.1 Radar personnel must have graduated from a postsecondary program in an electronics field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Radar personnel must have a minimum of 5 years of experience working with electronics systems.

6.3.2 Communications personnel must have graduated from a postsecondary program in an electronics field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Communications personnel must have a minimum of 5 years of experience working with electronics systems.

6.3.3 Facilities personnel must have graduated from a postsecondary program in an electromechanical field or must have Canadian Armed Forces (CAF) military equivalent (QL 5). Facilities personnel must have a minimum of 5 years of experience working with electromechanical systems.

6.4 NWS Control and Monitoring Plan

6.4.1 The Contractor must prepare, implement and administer a NWS Control and Monitoring Plan. The plan must document, at a minimum, the Contractor's approach to, providing control and monitoring of the NWS as per DID/CDRL 6.4.1.

6.5 Coordinate and plan for equipment downtime.

6.5.1 The Contractor must provide to the 22 Wing SM a plan for monthly scheduled downtime and attend PMI scheduling meetings with CADS personnel as requested by CADS.

6.6 Maintain Availability Report

6.6.1 The Contractor must produce a PME radar data and G/A/G communications availability report as per DID/CDRL 6.6.1. The availability report must include availability as calculated using the provided formulas.

6.7 Maintain Hard Copy Log Books

6.7.1 The Contractor must maintain hard copy log books at the NWSCC for the Network Control Facility (NCF), Electronic Control Facility (ECF) and Maintenance Control Facility (MCF) for each NWS zone (15 log books total). Also Log Books required for each PME location in the NWS. The log books must record equipment parameter changes and radio communications with the NWS operation and maintenance (O&M) aircraft , as perDID/CDRL 6.7.1.

6.8 Manage Equipment Status Reports

6.8.1 The Contractor must open, update and ultimately close Equipment Status Reports (ESRs) for all PME whenever the equipment status changes from fully serviceable. Reports must be managed in cooperation with the SM section. Refer to 1 Canadian Air Division Orders, Vol 4, 4-308 Equipment Status Reports (ESR) (http://rcaf.mil.ca/en/1-cad/cado.page) and CFACM 50 301 (ESR Procedures Manual) and Standard Operating Procedures A-GA-135-003/AG-001 (Change #1 - 19 November 2019) Airworthiness Investigation Manual (AIM)) for reporting on ESRs , as per DID/CDRL 6.8.1.

6.8.2 The Contractor will provide a Daily Status Board each morning to NWSO personnel , as per DID/CDRL 6.8.2.

6.9 Monitor and Respond to Automated Notifications and Alarms

6.9.1 The Contractor must respond to automated notifications and alarms. Response must consist of remotely analyzing and correcting system faults from the NWSCC or dispatching repair teams from the local LSS to mitigate damage/loss to site infrastructure and mitigate loss of operational capability.

6.9.2 Upon notification of a condition that jeopardizes site preservation, the Contractor must initiate immediate response to prevent the unacceptable loss of or damage to a site and/or its equipment. Site preservation must take priority over normal readiness restoral time considerations. Situations which have the potential to cause loss or damage to a site and its equipment and precipitate a response include:

6.9.2.1 Heat or power failure;

6.9.2.2 Loss of power generating redundancy when the last remaining serviceable Diesel Electric Generator (DEG) is brought on line;

6.9.2.3 Loss of remote monitoring and control capability, either directly or through the loss of communication to the site;

6.9.2.4 Loss of structural integrity of sites which would expose equipment and facilities to damage;

6.9.2.5 Fire alarms;

6.9.2.6 Fuel spills, low fuel levels or suspected fuel leaks; and

6.9.2.7 The Contractor must monitor security systems including security alarms and cameras remotely through data communications links to the NWSCC. When alarm systems are activated the Contractor must:

6.9.2.7.1 Verify that the alarm is caused by an intruder by confirming the initial indication(s) with other sensors;

6.9.2.7.2 Advise SM section of the intrusion and provide follow-up information;

6.9.2.7.3 With the use of the public address system, attempt to contact the intruder and if successful, advise the SM section of name, purpose of visit and other relevant data pertaining to the intrusion;

6.9.2.7.4 Make a log entry as to date, time, site and any other relevant data pertaining to the intrusion;

6.9.2.7.5 Open a work order so that the site is surveyed for damage on the next site visit;

6.9.2.7.6 Submit a security incident report to NWSO with a copy to the 22 wing military police , as per DID/CDRL 6.9.2.7.6 and DID/CDRL 2.18.1.1 if applicable; and

6.9.2.7.7 The Contractor must quarantine all manual and electronic logs after any significant incident occurs.

6.10 Report All System Outages, Emergencies and Incidents.

6.10.1 The Contractor must report all PME outages greater than 2 minutes using the Equipment Status Report (ESR) system as per DID/CDRL 6.8.1. The Contractor must keep the SM section informed of PME outages by continuously updating the ESR until the outage has been corrected.

6.10.2 The Contractor must report all non-PME outages via a Work Order System as per (Work Management Section of SOW). The Contractor must continuously update the Work Orders until corrective action have been completed.

6.10.3 The Contractor must report all PME outages. Provide SM Section with updates for corrective maintenance, site and equipment status on PME via the ESR system, as per related section(s) Update when status changes. Report all non-PME outages via a Work Order System, as per related sections inform SM Section within 15 minutes of NWS site emergencies and incidents. Report emergencies and incidents as specified in the Contract. Respond to NWSO or CADS requests for clarification on the status of NWS operations and maintenance activities. Respond to queries from, interface with and interact with the military authorities of the CADS, SM Section. Interactions may occur through telephone, internet or in person. Quarantine all manual and electronic logs after any significant incidents identified by or reported to the NWSCC. Confirm operational status of NWS equipment after downtime.

6.11 Open/Update ESRs and Work Requests/Work Orders.

6.11.1 ESRs are required for all PME whenever the equipment status changes from fully serviceable. Reports will be completed in cooperation with the SM section. Provide SM Section with updates for corrective maintenance, site and equipment status as per DID/CDRL 6.8.1.

6.12 Monitor and Respond to Aircraft Radio

6.12.1 The Contractor must respond to and initiate radio voice communications with NWS O&M aircraft. The Contractor must attempt to initiate contact with aircraft 60 minutes overdue at their scheduled destination and for which the position of the aircraft is unknown. The Contractor must contact Nav Canada Flight Services to ascertain the status of the aircraft. The Contractor must submit an Aircraft Overdue report to NWSO, as per DIDs/CDRLs 5.6.3.1 and 2.18.1.1.

6.13 Change Equipment Parameters

6.13.1 The Contractor must change equipment parameters as requested by Canadian Air Defence Sector (CADS) for AN/FPS117 and AN/FPS 124 radars. All parameter changes must be logged.

6.14 Annual Operational Scenario

6.14.1 The Contractor must conduct an annual synthetic exercise as per DID/CDRL 6.14.1.

6.15 Request authorization from SM Section prior to taking PME out of service for a scheduled activity.

6.15.1 The Contractor must request authorization from SM Section 24 hours in advance, 2 hours prior to and immediately in advance of, taking PME out of service for scheduled maintenance, training or modification purposes. Log all requests and attend monthly PMI schedule meetings with CADS personnel.

6.16 Coordinate equipment downtime.

6.16.1 The Contractor must liaise with SM Section to include logging of all notifications. Initiate ESRs for any reportable equipment status changes and report status changes to SM. Confirm operational status of NWS equipment after downtime and prior to return to operational control.

6.17 Respond to queries and requests for information.

6.17.1 The Contractor must respond to e-mails, telephone calls and correspondence regarding NWS maintenance information or assistance from NWSO TA or NWSO approved agencies.

6.17.2 The Contractor must monitor the quality of radar data and initiate appropriate corrective action.

6.17.3 The Contractor must monitor both LRR and SRR radar data continuously in accordance with readiness levels detailed in mentioned sections of this SOW. Ensure optimal radar data is available at the operations centre. Data quality and status is assured by monitoring and analyzing data provided by the Maintenance Control System (MCS) for the AN/FPS 117 radar, PDSS for the AN/FPS 117, SDUs for the UPX 39 MSSR, RCG for the AN/FPS 124 and the BML for the AN/FPS 124. Quarantine all manual and electronic logs after any significant incidents identified by or reported to the NWSCC.

6.18 Provide technical assistance to remote site maintenance personnel.

6.18.1 Technical assistance includes: troubleshooting, restoration, fault isolation and equipment reconfiguration.

6.19 Flight Safety.

6.19.1 The Contractor must participate in the RCAF Flight Safety Program in accordance with as defined in the Aeronautics Act and DAOD 2015. Participation in the program at a minimum must include adherence to reporting requirements, support to investigations and implementation of recommendations.

SOW Section 7:

NWS Mobile Support Equipment (MSE) Fleet Management

7.0 SOW SECTION 7 – Mobile Support Equipment (MSE)

7.1 Introduction to MSE

7.1.1 The Contractor must be responsible for the procurement, operation, maintenance and life cycle management of North Warning System (NWS) mobile support equipment (MSE), including the procurement of replacement and new MSE.

7.2 Definitions

7.2.1 Refer to the table of the definitions relevant to this section.

7.3 References

7.3.1 NWS MSE Vehicle Listing;
7.3.2 NWS MSE Preventive Maintenance Program;
7.3.3 Example of Fleet Management Report;
7.3.4 Example of Limited Technical Inspection;
7.3.5 Sample MSE Cumulative Cost Data Report;
7.3.6 Sample Vehicle Accident Report Form; and
7.3.7 Sample of Administrative Support Vehicles Report.

7.4 NWS MSE Management Plan

7.4.1 The Contractor must prepare, implement and administer an NWS MSE management plan , as per DID/CDRL 7.4.1.

7.5 MSE Operations

7.5.1 MSE Fleet Management Report , as per DID/CDRL 7.5.1.

7.6 MSE Incidents

7.6.1 The Contractor must submit initial and follow-up reports for all vehicle incidents. Follow-up reports are to document the status of the investigation and corrective actions which are planned/completed until such time as the incident is considered closed. The Contractor must bear all cost for MSE repairs due to MSE incidents , as per DID/CDRL 7.6.1 and referenced Sample Vehicle Accident Report form.

7.7 Maintain Fuel Truck Certification

7.7.1 The Contractor must maintain certification of fuel trucks as required by CSA B620. Certification reports must be submitted to the NWSO TA upon receipt , as per DID/CDRL 7.7.1.

7.8 Provide MSE

7.8.1 The Contractor must identify MSE deficiencies that have an operational impact to the North Warning System to the NWSO MSE TA. Upon approval the NWSO MSE TA the Contractor will procure the MSE using the TA/AWR process. Procurement of new vehicles should be in line with current NWS equipment standards and be standardized across all sites.

7.8.2 The Contractor must be responsible for the procurement and maintenance of Contractor owned administrative support MSE at Inuvik, Northwest Territories, Iqaluit, Nunavut, Goose Bay, Labrador and North Bay, Ontario. Administrative MSE in these locations must not bear Department of National Defence (DND) license plates.

7.9 Manage MSE Spares

7.9.1 The Contractor must manage MSE spares in MAXIMO with Min/Max levels based on levels determined by the LCMM and approved by NWSO.

7.10 MSE Preventive Maintenance

7.10.1 Implement MSE Preventive Maintenance Program

7.10.1.1 The Contractor must provide all labour and material to implement the NWS MSE Preventive Maintenance Program as provided by the NWSO TA. Preventive Maintenance (PM) tasks are for vehicles and MSE as listed in the MSE Management Plan DID/CDRL 7.4.1. A listing of all PM tasks must be maintained on-line. PM must be tracked as tasks in the NWS Work Management system. PM tasks not completed must be recorded as exceptions, and included in the PM Exception report, as per DID/CDRL 4.6.7. PM exceptions greater than quarterly must remain open, and must be completed at the earliest opportunity.

7.10.2 Perform Limited Technical Inspections (LTI's)

7.10.2.1 The Contractor must perform LTIs on NWS vehicles and MSE , as per DID/CDRL 7.10.2.1.

7.11 MSE Corrective Maintenance

7.11.1 Perform MSE Corrective Maintenance

7.11.1.1 The Contractor must provide all labour and material to perform Corrective Maintenance (CM) activities on NWS MSE up to the MSE job limit. The Contractor must notify the NWSO TA prior to commencing work if the MSE repairs are known or expected to exceed the MSE job limit. Repair activities on NWS MSE must be as specified by the Original Equipment Manufacturer (OEM) where applicable. Replacement parts must operate as original and must not create an increased risk to the environment and health and safety of individuals or reduce the operating efficiency/life span of the MSE.

7.12 MSE Fleet Life Cycle Management

7.12.1 The Contractor must provide a list of GFE MSE that is recommended for replacement for the next three years. Replacements are to be justified through LCMM best practices. The list is to be provided to the NWSO TA annually by 15 December.

7.13 Track vehicle and MSE cumulative cost data.

7.13.1 The Contractor must track all vehicle and MSE cumulative cost data and provide it in an annual report , as per DID/CDRL 7.13.1.

7.14 Maintain Lift Platforms Certification

7.14.1 The Contractor must maintain certification of lift platforms as required by the manufacturer. Certification reports must be submitted to the NWSO TA upon receipt from a qualified inspector.

7.15 Manage Trip Tickets

7.15.1 The Contractor must manage Trip Tickets for DND Vehicles operating at community based LRR sites. The Contractor's MSE coordinator will send a copy of all Trip tickets to the MSE TA on a quarterly basis.

7.16 Vehicle daily inspections

7.16.1 Contractor drivers must fill in the Vehicle Dailey inspection (daily log) each time a new driver is using DND vehicle.

7.17 License Plates.

7.17.1 The NWSO MSE TA will issue the Canadian Military License plates for vehicles owned by the Department of National Defence. Contractor is to install the plates on DND vehicles. Contractor is to report loss/missing license plates to NWSO MSE TA. Local police Force and Canadian Military Police. Contractor must participate with the investigation efforts by Local/Military Police Force and accordingly implement any provided recommendations to NSWO MSE TA.

7.18 Vehicle disposal

7.18.1 For vehicle disposal, the Contractor must submit an appropriate Disposal Form, updated Limited Technical Inspection report and must provide the latest pictures for each Vehicle/MSE being disposed. NWSO MSE TA will coordinate vehicle/MSE disposals through GOC (Government of Canada) Surplus Website.

7.19 Manage Vehicle Task Card

7.19.1 Maintain Volume 1 of the NWS PM Program and all Vehicles Fleets and Mobile support equipment task cards. Update task cards including maintenance intervals and methods to ensure continued serviceability of equipment and system, any task card changes must be approved by NWSO MSE TA. Provided in the MSE vehicle listing.

7.20 Snow and Ice Control

7.20.1 Develop and Implement site specific SNIC plans to allow for normal NWS operations in winter months and to mitigate erosion of gravel surfaces during the spring melt. Establish an annual program, based on the requirements of the plan, and integrate into the CY of the FYO&SP. Guarantee airfield, apron and roads at FOX-3 are serviceable to support the annual bulk fuel resupply in summer months. Coordinate airfield SNIC schedule and emergency airfield SNIC work with contract air carrier at least 24 hours in advance of work initiation. Plans detailing SNIC duties must be in accordance with DID/CDRL 7.20.1.

SOW Section 8:

NWS

DND

Logistics

8.0 Sow Section 8 DND LOGISTICS

8.1 Introduction

8.1.1 The purpose of this Statement of Work (SOW) is to provide special instructions and procedures required for all in and out of country Contractors engaged in the management of national inventory on behalf of the Department of National Defence (DND).

8.1.2 .

8.1.3 .

8.1.4 Definitions

8.1.4.1 Refer to the table of the definitions relevant to this section.

8.1.5 Government Furnished Equipment (GFE)

8.1.5.1 Government Furnished Equipment (GFE) is government owned equipment provided by DND to a contractor to be used during the Contract period and returned in essentially the same condition (subject to fair wear & tear) at the end of the Contract.

8.2 References

8.2.1 A-LM-186-001/JS-001 Warehousing and Materiel Handling Manual (M);

8.2.2 A-LM-187-001/JS-001 (1995-11-30), Packaging and Preservation;

8.2.3 A-LM-187-001/JS-001 Packaging & Preservation Vol. 1, A-LM-187-002/ JS-001 Packaging & Preservation Vol. 2 and A-LM-187-003/ JS-001 Detailed procedures DND packaging and packing Procedures (M);

8.2.4 A-LM-007-014/AG-001 (2020-08-31), Supply Administration Manual (SAM) http://material.mil.ca/assets/MAT_Intranet/docs/en/business-functions-materiel-management/manual-sam.pdf);

8.2.5 International Traffic in Arms Regulations (ITAR) (M);

8.2.6 PWGSC's Controlled Goods Directorate's Web Site (M) at; at https://www.tpsgc-pwgsc.gc.ca/pmc-cgp/index-eng.html

8.2.7 C-02-007-000/AG-001 (2016-01-01), CONTROLLED TECHNOLOGY ACCESS AND TRANSFER (CTAT) MANUAL);

8.2.8 Current hazardous materials plan;

8.2.9 List of hazardous materials at contract start;

8.2.10 NWS Inventory Listing;

8.2.11 Maximum Repair Cost Listing;

8.2.12 Declaration of Surplus/CF 1303 Form; and

8.2.13 Special Instructions for Repair and Overhaul A-LM-184-001/JS-001 (2019-08-14)

8.2.14 Procurement Administration Manual A-PP-005-000/AG-002 (http://materiel.mil.ca/en/business-functions-procurement-contracting/pam-table-of-contents.page).

8.3 SYSTEM OF RECORD

8.3.1 All GFE and GSM supply transactions and movements of materiel must have a complete electronic audit trail within the Government supplied MAXIMO application. The Contractor must manage all GFE/GSM logistics activities defined in this section through documented procedures. The Contractor must exercise control for the complete inventory of GFE and GSM Material. The Contractor must be responsible for supporting MAXIMO queries as requested by the North Warning System Office Technical Authority (NWSO TA).

8.3.2 MAXIMO to DRMIS Migration and Inventory Management Plan

8.3.2.1 Develop, implement and manage a Maximo to DRMIS migration and inventory management plan, as per DID/CDRL 8.3.2.1.

8.4 SUPPLY SYSTEM CONOPS

8.4.1 General

8.4.1.1 Within the context of Contractor Care, Custody and Control of the NWS, the Contractor must plan and execute the acquisition of all material and spares, warehouse and distribute material to meet system and program requirements, repair and overhaul NWS spares, and manage and dispose materiel in accordance with the requirements of this SOW , as per DID/CDRL 8.4.1.1.

8.4.2 Supply System Structure

8.4.2.1 The North Warning System sites are divided into first-line, second-line, and third-line units. These units are defined as follows:

8.4.2.1.1 First Line: SRR & LRR sites;

8.4.2.1.2 Second Line: Logistical Support Sites; and

8.4.2.1.3 Third Line: National Inventory Control Point (Supply Depot). The North Warning System.

8.4.2.2 Support Centre (NWSSC) at 22 Wing North Bay fulfills this role and must be used as the central point for:

8.4.2.2.1 Logistical support for the repair and overhaul of NWS repairable items;

8.4.2.2.2 Coordination of repairable items not supported by the NWSSC by commercial sources;

8.4.2.2.3 Customs consolidation; and

8.4.2.2.4 Provide 3rd line warehousing of NWS national inventory.

8.4.3 Sparing Levels Requirement

8.4.3.1 The Contractor must ensure sufficient serviceable spares are available in order to satisfy minimum and maximum stock levels and entitlements for each stocked item to ensure that NWS equipment and systems are maintained to meet NWS mission requirements, as per DID/CDRL 8.4.3.1.

8.4.3.2 Entitlements

8.4.3.2.1 First-line units are allocated spare entitlements based upon the equipment and amount of storage located on-site and based on work order history at a zone.

8.4.3.2.2 Entitlements Levels must be recommended by the Contractor and accepted by the NWSO TA. Where spares are required to support multiple sites, the Contractor must determine the optimal storage location, considering warehousing capacity, and transportation accessibility and must ensure warehouse levels are set to meet the designated requirement and ensure any special storage precautions are satisfied. DND will provide the current entitlement level list and the Contractor must maintain and adjust the entitlement IAW operations and maintenance requirements. Entitlements must not be adjusted upward or downward by the Contractor without acceptance from the NWSO TA.

8.4.4 Stock Levels

8.4.4.1 Stock levels are set at defined levels to ensure that NWS equipment and systems can meet mission requirements.

8.4.4.2 Min/max stock levels must be maintained and upgraded based on life cycle material management (LCMM) data as detailed further in this Statement Of Work (SOW), on-going consumption data and must consider available storage space. Once the minimum stock level is breached the MAXIMO system should automatically create a purchase order.

8.5 Materiel Movement

8.5.1 Materiel Movement Plan

8.5.1.1 The Contractor must prepare, implement and administer an annual Materiel Movement Plan, as per DID/CDRL 8.5.1.1.

8.5.2 Sealift

8.5.2.1 Establishing Sealift Shipping Contracts

8.5.2.1.1 The Contractor must procure and manage a sealift cargo capability for the movement of GFE/GSM excluding bulk fuel as follows:

8.5.2.1.1.1 Movement of North bound cargo to the NWS Sites;
8.5.2.1.1.2 Lateral movement of cargo between sites; and
8.5.2.1.1.3 South bound retrograde of cargo and equipment including hazardous waste from the NWS Sites.

8.5.2.2 In the West, the Contractor may utilize deck space on the USAF contracted fuel supply barges. When utilizing the services of the USAF Contracted service provider, the cost for the deck space must be between the Contractor and the transportation company. Sites where USAF does not deliver fuel, the Contractor must be responsible to arrange for delivering the cargo to the designated location and bear the cost.

8.5.3 Manage Materiel Movement – Sealift

8.5.3.1 The Contractor must manage all aspects of sealift movement of materiel including at a minimum the following:

8.5.3.1.1 Assembling a detailed Sealift Consist List and an additional list to move material between LSS-F to FOX-3 which is a land locked site. This materiel movements list must be an annex to the Materiel Movement Plan;

8.5.3.1.2 Plan, organize and document all cargo activities;

8.5.3.1.3 Coordinate the movement of cargo from vendors to points of embarkation;

8.5.3.1.4 Coordinate the loading and offloading operation between the carrier and Contractor personnel;

8.5.3.1.5 Prepare hazardous materials cargo for transport;

8.5.3.1.6 Prepare hazardous waste for retrograde as required by TDG regulations. (Transportation of Dangerous Goods Regulations (2020-02-19), https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html;

8.5.3.1.7 Prepare retrograde cargo and cargo to be transferred for shipment and place it at the site warehouse or high water mark as agreed with the carrier;

8.5.3.1.8 Communicate with carriers to establish exact date and time of arrivals;

8.5.3.1.9 Concept of Operations Hazardous Material Management http://materiel.mil.ca/assets/MAT_Intranet/docs/en/business-functions-engineering-maintenance/conops-hazardous-materials.doc); and

8.5.3.1.10 Receipt and warehousing cargo within 30 days of delivery.

8.5.4 Airlift

8.5.4.1 The Contractor must manage all aspects of airlift movement of materiel. Government furnished airlift as detailed in this SOW is provided to the Contractor to meet the requirements of this SOW including airlift to move material between FOX-3 and FOX-M. The Contractor must use USAF provided airlift in the most efficient and economical manner as determined by the NWSO TA.

8.5.5 Ground Transportation

8.5.5.1 Manage Materiel Movement – Ground Transportation

8.5.5.1.1 The Contractor must provide ground transportation for materiel movement where physically and economically possible particularly between vendors and sealift embarkation/debarkation points. The Contractor is responsible for the movement of materiel from NWS site sealift areas to its final destination on site using MSE. The Contractor must ensure that required site MSEs to support sealift delivery are serviceable and available.

8.5.5.2 Manage Additional Materiel Movement (in & out)

8.5.5.2.1 The Contractor must provide and manage additional cargo movement as required by the NWSO TA for items not covered under the fixed price of the Contract on a reimbursable basis. Cargo will be primarily for AWR/TA project material. The following are the estimated average annual cargo movement;

8.5.5.2.2 One typical SRR site: Northbound sealift: 3 tonnes; Southbound sealift: 0 tonnes; Inbound airlift: 8.25 tonnes; Outbound airlift: 6.5 tonnes;

8.5.5.2.3 One typical unattended LRR site: Northbound sealift: 95 tonnes; Southbound sealift: 13.5 tonnes; Inbound airlift: 30.5 tonnes; Outbound airlift: 23 tonnes;

8.5.5.2.4 LSS-C (CAM-MAIN): Northbound sealift: 46 tonnes; Southbound sealift: 36 tonnes; Inbound airlift: 40 tonnes; Outbound airlift: 46 tonnes; Inbound commercial airlift: 52 tonnes; Outbound commercial airlift: 13 tonnes; and

8.5.5.2.5 LSS-F (FOX-MAIN): Northbound sealift: 147 tonnes; Southbound sealift: 74 tonnes; Inbound airlift: 46 tonnes and outbound airlift: 53 tonnes; Inbound commercial airlift: 33 tonnes; Outbound commercial airlift: 25 tonnes; Inbound C-130 airlift: 32.5 tonnes; Outbound C-130 airlift: 24.5 tonnes.

8.6 INVENTORY

8.6.1 Stocking-taking

8.6.1.1 The Contractor must conduct stocktaking as per DID/CDRL 8.3.2.1 (MAXIMO to DRIMS Migration and Inventory Management Plan).

8.6.2 Inventory Adjustments

8.6.2.1 The Contractor must conduct inventory adjustments as per DID/CDRL 8.6.2.1.

8.6.3 Loss and Damage Report

8.6.3.1 The Contractor must conduct Loss and Damage Report as per DID/CDRL 8.6.3.1.

8.7 Warehousing

8.7.1 Government Furnished Warehousing

8.7.1.1 Description of scope: #warehouses 6, 2113 different items, quantity 11558.DND will provide the Contractor warehousing and storage for government owned materiel and hazardous waste. Each warehouse must be divided into the following sections: receipts/issues, serviceable spares (divided between RCAF/USAF spares), repair & disposal (divided between RCAF/USAF items), project/IQ material. Contractor must use MAXIMO to perform Material Management functions related to this contract. NWS materiel having a specific shelf life with a time expiration date must be controlled using the First-In-First-Out (FIFO) principle. Contractor must adhere to the Warehousing policies and procedures detailed in ALM-186;

8.7.1.2 One electronic capability to track warehousing of NWS inventory. Not more than one error in 20 randomly selected electronic records for inventory 100% of the time. Canadian GFE/GSM: Total unique line items is 2113, total quantity is 11558 items; and

8.7.1.3 Support equipment and material: Not more than one error in a random sample of 20 items.

8.7.2 Warehouse Distribution and Movement of National Stock

8.7.2.1 Issue and Redistribute Stock;

8.7.2.2 First-In-First-Out;

8.7.2.3 NWS materiel having a specific shelf life with a time expiration date must be controlled using the First-In-First-Out (FIFO) principle;

8.7.2.4 The Contractor must review, at a minimum annually, authorized entitlement and stock levels and determine optimal positioning of spares based on failure rates, number of spares and transportation limitations. The DND TA may request a rapid ad hoc assessments of specific spares as and when required; and

8.7.2.5 Stock Movement via the Most Efficient Means Possible.

8.7.2.5.1 The Contractor must issue and redistribute theatre stock of GFE and GSM accordingly to meet NWS mission requirements as defined in the Contract. The Contractor must distribute theatre stock in the most efficient and cost-effective manner evaluating the cost-effectiveness of redistribution within the NWS versus the cost of procuring an item through commercial sources. Factors to be considered must be transportation costs and methods, source availability and priority of the requirement. Robbing parts or components from serviceable equipment not in-use to be installed on similar non-serviceable equipment in order to bring that in-use equipment to an operational state must be permitted. Robbing must be rigidly controlled, kept to an absolute minimum and must be properly recorded and accepted by the NWSO TA.

8.8 Packaging

8.8.1 Specific packaging instructions must be adhered to by the Contractor in order to assure maximum life, utility and performance of materiel.

8.8.2 The Contractor must be responsible for the packaging of NWS materiel for transport to ensure its security, to prevent damage and to guarantee legislative compliance particularly for hazardous materials and hazardous waste. Packaging of materiel is an on-going requirement. No examples of materiel or equipment damaged during transport due to poor packaging. All hazardous materiel must be packaged as per regulatory requirements. Packaging, label and shipping reference is A-LM-187-001/JS-001.

8.9 Labeling

8.9.1 The Contractor must label shipments based on content, destination, transportation mode, urgency, such as MICAP/HPR, and in accordance with legislative requirements such as hazardous materials and hazardous waste. Labeling is an on-going Requirement. No instance of a package being improperly labeled. All HAZMAT packaging to be labeled as required by legislation.

8.10 Shipping

8.10.1 The Contractor must group and consolidate items for shipping by destination to meet priority requirements and required delivery dates including shipment of USAF-owned items to US destinations. The Contractor must provide customs brokerage services and must process all documents required to support the shipping function including manifests, shipper's declarations for dangerous goods, and customs documents for items being shipped to and from the US. All of the Contractors staff involved in shipping must be ITAR-trained.

8.10.2 All manifests are accurate. All HAZMAT shipments accompanied by appropriate declarations. No more than one instance annually of a shipment to/from the US delayed in customs due to improper documentation. Contractor to demonstrate that all staff involved in shipping has valid ITAR training.

8.11 Repair and Overhaul

8.11.1 Contractor must submit a monthly Repair Status Report for items at repair facilities, as per DID/CDRL 8.11.1

8.11.2 Establish and Manage Repair Contracts

8.11.2.1 For NWS repairable items not supported by the NWSSC, the Contractor must establish and manage repair contracts with third parties vendors. The Contractor must ensure that third party repair vendors are Original Equipment Manufacturers (OEMs), their authorized distributors or other service providers who possess the necessary qualifications and expertise to implement the required repair. The Contractor must maintain an Approved NWS Repair Vendor List.

8.11.2.2 Contractor to initiate and maintain repair contracts for those items not repaired in-house. No example of repairs being delayed due to the lack of a repair contracts.

8.11.3 The Contractor must coordinate the repair of unserviceable GFE/GSM to meet operational requirements as specified in the Contract and on a priority basis to maintain available sparing levels. All repairs and calibration activities must be coordinated through the NWSSC. Repair and shipping costs must be TA/AWR funded through an annual OMNIBUS Task Authorization provided by Canada. The MRC must be 75% of replacement cost. The MRC is subject to market variables and the Contractor must review it periodically and update it accordingly to ensure accuracy , as per DID/CDRL 8.11.3.

8.11.4 The Contractor must repair and overhaul equipment and spares when it's economically advantageous to do so and they have received authorization. This authority is in accordance with the Selection Notice and Priority Summary (SNAPS). Stores Removal Request (SRR), an approved Repairable Materiel Request (RMR) for a Repairable Materiel Account or Task Authorization/DND 626. It is the Contractor's responsibility to determine amount of repair and overhaul work to be performed to ensure that sufficient equipment and spares are available to support NWS operations.

8.11.5 Different types of DND equipment to be repaired are categorized as either:

8.11.5.1 Selected equipment;
8.11.5.2 Non selected equipment;
8.11.5.3 Major equipment;
8.11.5.4 Repair Of Sub-Components And Accessories; and
8.11.5.5 Refer to Chapter 1.4 of A-LM-184-001/JS-001 for further information on the different types of DND Equipment that are authorized for repair and the category types.

8.11.6 Repair and Overhaul (In And Out Of Country) Process

8.12 Inspection

8.12.1 Selection Notice Observation Message (SNOM)

8.12.1.1 The Contractor must use a SNOM to report any or all observations to the Procurement Authority for in and out of country contracts; and
8.12.1.2 Refer to Chapter 2.1 of A-LM-184-001/JS-001 for further information on SNOMs.

8.13 Initial Inspection of Repairable Material

8.13.1 The Contractor may be granted authority to strip the equipment to assess its repair or overhaul potential and to estimate costs.

8.13.2 Refer to Chapter 2.3 of A-LM-184-001/JS-001 for further instruction on inspection of repairable material.

8.14 Work Control

8.14.1 The Contractor must ensure that the repair of all DND equipment is controlled by an internal serial numbered work order in accordance with Chapter 3.0 of A-LM-184-001/JS-001vNICP.

8.14.2 Completion of Work:

8.14.2.1 On completion of Repair or Overhaul, the Contractor must transfer the material from unserviceable Storage Location or Work Order to the serviceable Storage Location;

8.14.2.2 Refer to Chapter 3.1 of A-LM-184-001/JS-001vNICP for further information on completion of work;

8.14.2.3 SELECTION NOTICE AND PRIORITY SUMMARY (SNAPS) (As applicable on an exceptional basis);

8.14.2.4 The SNAPS is a report found in the DRMIS BI Portal application and is designed to show all MMRs which are selected for repair to that RMA/SLOC, the Maximum Repair Cost (MRC) and the 24-month forecast. The information on the SNAPS must be prepared by the Contractor for the TA's approval on an annual basis; and

8.14.2.5 Refer to Chapter 4 of A-LM-184-001/JS-001 for further information on Annual Repair Forecasts.

8.14.3 Cost Control and Records

8.14.3.1 The Contractor must monitor the cost of each repair to ensure that total repair costs remain within approved limits. While undergoing repair, total cost must be monitored to determine whether or not to continue the repair. The Contractor must prepare forms and maintain records. The limits are usually a 75% rule that once exceeded it will be BER, unless the Contractor is unable to purchase a new one.

8.15 Warranty and Recall

8.15.1 Refer to the warranty provisions within the Contract.

8.16 Cataloguing

8.16.1 The Contractor must maintain the existing NWS catalogue as contained in the Government provided MAXIMO application. The Contractor must over the course of the Contract, update and maintain the accuracy of the NWS catalogue by deleting redundant or obsolete catalogued items and catalogue new GFE and GSM used in support of the NWS as required. Cataloguing procedures must be in accordance with the DND Supply Administration Manual policies The Contractor must ensure that the NWS catalogue contains the standard parameters used to research GFE/GSM materiel and contains at a minimum the following mandatory data fields , as per DID/CDRL 8.16.1.

8.17 Requisitioning

8.17.1 Requisitioning General Requirements

8.17.1.1 The Contractor must raise requisitions in the Government provided MAXIMO application. The Contractor must prepare, implement and administer procedures for tracking and hastening requisitions. The procedures must include codes indicating the status of each requisition, including at a minimum: new requirements, in procurement, in transit, back-ordered, inspection and testing, and receiving to monitor each requisition as it moves through the process. All requisitioning actions must have a comprehensive audit trail.

8.17.2 Requisitions for GFE and/or AN/FPS-124 Radar Spares

8.17.2.1 The Contractor must prepare requisitions for procurement of GFE and/or AN/FPS-124 Repair Part Spares. Requisitions must be in the form of a proposal or the use of DND form 2227 and must be submitted through DAP 7 for approval. Requirements must be evaluated on a case by case basis and the NWSO TA must decide on whether the procurement must be by Canada or by the Contractor. In the case of a contractor procurement, the Contractor must track shipment information including destination, requisition number, and estimated delivery date, and must notify the receiving party of the incoming shipments. The Contractor must maintain and update the Outstanding Requisitions List for GFE and AN/FPS-124 SRR Spares in Maximo. There are an estimated five general and five GFE requisitions monthly. There must not be any operational delays caused by improper requisitioning. All requisitioning actions must have a comprehensive audit trail.

8.17.3 Mission Capable (MICAP) and High Priority Requirements (HPR)

8.17.3.1 The Contractor must process instances of MICAP and HPR as the highest priority to ensure the minimal interruption of the NWS mission. Instances of MICAP and HPR must be satisfied through the redistribution of available theatre spares/parts, procurement through NWSO TA or by robbing. Report MICAP/HPR status changes to NWSO until the situation has been resolved. Contractor to demonstrate that all MICAP/HPRs are expedited as the highest priority. No instance of delays due to improper requisitioning. There are an estimated three MICAP/HPRs annually.

8.18 Procurement

8.18.1 Materiel Procurement

8.18.1.1 The Contractor must plan, execute, and manage the procurement of GFE, GSM AN/FPS 124 Repair Parts Spares to support NWS Fixed Firm Price (FFP) maintenance requirements and TA/AWR projects. Procurement must be done in accordance with Government of Canada policies and regulations. There must not be any operational delays caused by improper procurement. All procurements must have a comprehensive audit trail. Materiel Procurement, Government of Canada policies and regulations – (Financial Administration Act (2020-04-11) - https://laws-lois.justice.gc.ca/eng/acts/f-11/)

8.18.2 Receipts

8.18.2.1 The Contractor is responsible for the receipt, identification, inspection and distribution of all materiel, as well as the processing of receipt documentation and transactions within MAXIMO at all NWS sites; and

8.18.2.2 The Contractor must report any discrepancies in shipments to the vendor/shipper to ensure that corrective action is taken including replacement or credit provided from vendor/shipper.

8.19 Defense Supply Chain (DSC) Supply Documents (DND 2227-2228)

8.19.1 The DSC Supply Document, DND 2227 and DND 2228, are the approved multi-purpose documents used to process supply transactions. They are used to identify and control materiel during requisitions, distributions, returns, transfers, adjustments and services requirements. Once transmitted, DND Supply Services will update the supply document with a system generated requisition number and provide the customer with a copy of the supply document for retention. All materiel being returned to R&D Sections must be accompanied with a CF 942 Condition Tag. It is prohibited to add/delete/change the DND 2227 form, reference is Supply Administration Manual (SAM) A-LM-007-100/AG-001 (31 August 2020) , as per DID/CDRL 8.19.1.

8.20 Disposal

8.20.1 Disposal of GFE and GSM

8.20.1.1 For items identified as obsolete, scrap, surplus or BER, the Contractor must complete the CF1303 DOS form and submit to the NWSO for approval and disposal instructions , as per DID/CDRL 8.20.1.1.

8.20.2 Dispose of MSE

8.20.2.1 The Contractor must prepare Report Of Surplus (ROS) documentation for obsolete or BER MSE and submit it to the NWSO TA for approval. Upon approval by the NWSO TA, the Contractor must move the asset to the designated disposal facility. The Contractor must remove the asset from the Government Loan once it has been delivered to the disposal facility. The Contractor must comply with all CTAT, ITAR or TDG requirements in the disposal of MSE. There are an estimated 20 disposals annually and no disposal will proceed without NWSO TA's approval , as per DID/CDRL 8.20.2.1.

8.20.3 Disposal of Retrograde

8.20.3.1 The Contractor must not leave any retrograde at a beach location over the winter.

8.21 Hazardous Material and Controlled Goods

8.21.1 Due diligence must be exercised when carrying out duties and responsibilities associated with hazardous material and controlled goods.

8.21.2 Refer to Chapter 2.4 of A-LM-184-001/JS-001 for further information on HAZMAT and controlled goods.

8.22 Hazardous Materials Management Plan

8.22.1 The Contractor must be responsible for the cataloguing, procurement, shipping, storage and tracking of all NWS hazardous materials. The Contractor must prepare, implement and administer an NWS Hazardous Materials Management Plan, as per DID/CDRL 8.22.1.

8.22.2 Transport of Hazardous Materials

8.22.2.1 Transport of hazardous materials is on-going. The Contractor must establish, implement and administer Standard Operating Procedures (SOPs) for the Receipting, Identification, and Packaging and Storage of Hazardous materials in the North Warning System (NWS) as per DID/CDRL 8.22.2.1.

8.22.3 Hazardous Waste Management

8.22.3.1 The Contractor must prepare, implement and administer an NWS Hazardous Waste Management Plan, as per DID/CDRL 8.22.3.1.

8.23 Compliance with NWS Licenses

8.23.1 The Contractor must comply with the requirements for waste management detailed in the NWB water license for CAM-MAIN (LSS-C), Cambridge Bay, CAM-3, Shepherd Bay, FOX-MAIN (LSS-F), Hall Beach, FOX-3, Dewar Lakes, DYE-MAIN, Cape Dyer and BAF-3, Brevoort Island.

8.24 Non-Hazardous Waste Management

8.24.1 The Contractor must prepare, implement and administer a non-hazardous waste management plan, as per DID/CDRL 8.24.1.

8.24.2 Prohibited Activities for the Disposal of Non-Hazardous Waste

8.24.2.1 Non-hazardous waste must be retrograded from NWS sites as detailed in the Contract; and

8.24.2.2 The Contractor is prohibited the land filling of any waste. On-site burning may be possible in some zones with the proper licence.

8.24.3 Domestic Waste Management

8.24.3.1 The Contractor must manage NWS site domestic waste to ensure the health and safety of personnel is preserved, to ensure domestic waste does not accumulate on site and that it is stored in such a manner as to not attract wildlife. The Contractor must not burn or landfill domestic waste. Sites BAF-3, Brevoort Island, Nunavut, LAB-2, Saglek, Labrador and LAB-6, Cartwright, Labrador each has an incinerator. The Contractor may incinerate domestic waste at these sites provided the incinerator is in good working order. All other domestic waste must be removed from site for disposal. The Contractor must be responsible for establishing agreements, contracts and/or permits for the disposal of domestic waste.

8.24.4 All Site Historical General Non-Hazardous Waste Retrograde

8.24.4.1 The Contractor must implement a program of all site historical general non-hazardous waste retrograde as per DID/CDRL 8.24.4.1.

8.25 Emergency Rations

8.25.1 The Contractor must maintain emergency rations for NWS long rang radar (LRR) sites BAR-2, PIN-MAIN, CAM-3, Fox-3, DYE-MAIN, BAF-3, LAB-2 and LAB-6 (8 sites total) and each short range radar (SRR) site (36 total). The Contract must ensure emergency rations for 8 persons, three meals per day for 14 days.

8.25.2 Total of 336 rations per site, total of 44 sites. No instance of emergency rations not being available on each site. Not more than two site annually with expired rations.

8.26 Contractor Use of DND Equipment and Publications

8.26.1 Written consent must be provided by DND for contractor use of DND publications, tools, test-equipment or jigs and fixtures for commercial work.

8.26.2 Refer to Chapter 10.0 of A-LM-184-001/JS-001 for more information.

SOW Section 9:

NWS

USAF

Logistics

9.0 SOW Section 9 USAF Log

9.1 Introduction

9.1.1 Training

9.1.1.1 All contractor staff involved in shipping of NWS materiel to have ITAR / Controlled Goods training;

9.1.1.2 Personnel must complete USAF Base-Level Supply Customer Training if required. Reference AFI 23-101 Chap 4 para 4.3.2; Chap 5 para 5.3.7.3; 5.4.2.7:

9.1.1.2.1 Block I (General Supply Indoctrination);

9.1.1.2.2 Block II (Repair Cycle training); and

9.1.1.2.3 Block III (Equipment Management training).

9.1.1.3 Personnel must meet the requisite requirements as defined by Trusted Associate Sponsorship System (TASS) for access to USAF computer systems. The Contractor will coordinate with the NWSO TA for TASS in a timely manner to ensure no delays/work stoppages occur that limits the Contractor's ability to access ILS-S.

9.1.2 Definitions

9.1.2.1 For USAF Logs related definitions, refer to SOW Definitions Table.

9.2 USAF NWSO Detachment

9.2.1 The USAF Detachment oversees the execution of US contracts providing material and services to the Contractor, specifically bulk fuel and airlift transport.

9.3 USAF Technical Authorities

9.3.1 Hill Air Force Base provides the technical authorities for life cycle management of the AN/FPS-117 and AN/FPS-124 radars. Depot level (third-line) maintenance, including software support, is provided through the USAF for AN/FPS-117 radar and G/A/G radios. The USAF provides depot level repair of AN/FPS-117 radar and G/A/G radios through a designated Air Logistics Center (ALC). Third line maintenance support for AN/FPS-117 parts resides In the USAF Logistics System.

9.3.2 As part of implementation of a Transition Out Plan (TOP) executed to close out the current contract, a full physical inventory of all USAF assets will be conducted at all NWS locations

9.4 Requirements

9.4.1 The Contractor must maintain inventory control of Government Furnished Equipment (GFE) and Government Supplied Materiel (GSM). The Contractor must submit a semi-annual Organizational Visibility List (OVL) report and summarizing should be traceable from start to end. Therefore, all transactions concerning the movement of materiel or the transfer of responsibility for items of materiel must be supported by appropriate computer transactions. The Contractor must be able to query the Information-Management System (IMS) and produce any reports (NSN/PN/PSCN, Sites/Location, Usage (dormant stock), Critical Items, etc.) upon request.

9.4.2 USAF assets procured from commercial sources (i.e. Form 9 and Government Purchase Cards (GPC)) to the USAF Accountable Officer, as per DID/CDRL 9.4.2.

9.5 Maintain USAF SSOI for the NWS

9.5.1 Contractor will provide the USAF SSOI on contract effective date and will be responsible to maintain with updates and revisions. Report updates to USAF SSOI are to be reviewed submitted to the NWSO by June 1 and accepted by the Canada, as per DID/CDRL 9.5.1.

9.6 Train Supply Specialist for USAF Supply System Operations

9.6.1 The Contractor must ensure that they have a minimum three personnel qualified at the all times of the Contract. Supply Specialist for USAF Supply System operations will be required to attend a USAF supply course to learn basic system transaction requirements. Depending on availability, training may be provided on Contractor's site. Any government-initiated supply system changes will require additional training at USAF expense. Any Contractor-initiated personnel changes will require additional training at Contractor's expense. Contractor to demonstrate that all personnel accessing the USAF supply system have the required training.

9.7 USAF Stocktaking Requirements and Inventory Adjustments

9.7.1 The Contractor must ensure that a physical inventory of all USAF assets maintained in ILS-S is conducted at least annually. This inventory also requires the Contractor to update or aid USAF personnel in updating ILS-S database records to reflect the Date-Of-Last-Inventory (DOLI). USAF assets maintained on the Organizational Visibility List (OVL) will be inventoried semi-annually. Report of Surveys will be conducted IAW established procedures for inventory losses meeting the reporting threshold. The Contractor will provide a formal letter to the USAF Accountable Officer, reflecting the results of all inventories. The Contractor will ensure an itemized report/listing of each asset inventoried is attached and clearly reflects the transactions processed for each asset.

9.7.2 Where variances are identified, the Contractor must recommend inventory adjustments for all USAF-owned equipment and spares. Provide initial report of all inventory variance within 24 hours of discovery to the USAF Accountable Officer. All adjustments or corrections to accountable records must be accomplished within 30 days following initial comparison of the count to the record balance. Ensure USAF Accountable Officer approval prior to processing inventory adjustment.

9.7.3 Parts Removed from USAF Serviceable Stock for Troubleshooting/Repair

9.7.3.1 A technician may remove multiple parts from USAF inventory locations to support Next Higher Assembly (NHA) or End Item System (EIS) troubleshooting purposes. Only consumed part(s) will require ILS-S processing. All parts initially removed from USAF Serviceable Stock must be signed out using the Troubleshooting log for accountability. The part(s) that were removed and not consumed in the repair of the NHA or EIS will be returned to USAF Serviceable Stock with appropriate documentation in the Troubleshooting log.

9.8 Perform Inventory Control Of USAF GFE Through USAF ILS-S.

9.8.1 The Contractor must maintain a separate inventory control of USAF-owned assets, to include entering data transactions in the USAF ILS-S for all materiel processing (including project materiel), e.g., requisitions, issues, receipts, turn-ins, repairs, shipments, disposals, cataloguing and inventory adjustments. This requires monitoring system-generated reports on document transactions, repair cycles, stock number user directory, funding/expenditures, equipment and supply point listings, transaction status and history and MICAP status. Maintain the Inventory Balance Table, and submit reports. Provide a certification statement on current supply management listings, (i.e. Q13, R14, and R12) that all assets are physically accounted for, report any variance to the authorized inventory balance to the NWSO Technical Authority/Accountable Officer for ILS-S within 24 hours of discovery or first business day after discovery. Provide initial Inquiry results due to shortage or excess inventory within five business days. Ensure records are updated annually to reflect physical inventory balances, and no DOLI records exceed 365 days from date of last inventory. Identify and report all USAF assets to the USAF Accountable Officer. USAF assets to be identified and reported on include those that are physically in possession, but not reflected on any accountability records.

9.9 Provide Inventory Balance Table for All Controlled Goods and USAF GFE

9.9.1 The Contractor must provide the updated Inventory Balance Table to NWSO in electronic format monthly and on CD semi-annually , as per DID/CDRL 9.9.1.

9.10 Cataloguing

9.10.1 The Contractor must maintain an electronic NWS Catalogue of equipment, materiel and spares/parts. Accurately catalogue equipment, materiel and spares/parts used in support of the North Warning System. Ensure that the NWS catalogue contains the standard parameters used to research US materiel , as per DID/CDRL 9.10.1.

9.11 Repair USAF Equipment

9.11.1 Repairable items must be identified by the Contractor in the NWS Catalogue and in the ILS-S Stock Number User Directory (SNUD) through the use of ERRC Codes as specified in CATALOGING SECTION. Maintain an electronic Work Management system in accordance to track and record materiel and labour data for repairs. Process repair documentation in the ILS-S as appropriate for items that follow the USAF repair process. For AN/FPS-117 radar and G/A/G radio unserviceable items, consolidate, package and document for return to the USAF. Ship these unserviceable items to a designated USAF repair facility with ILS-S generated shipping documentation based on shipping exception codes. These items are exchanged on a one-for-one basis from the USAF.

9.11.2 Coordinate the repair of items designated as repairable in the designated USAF ALC. Items designated as repairable will include, but not be limited to, AN/FPS-117 Radar, AN/FPS-124 Radar and G/A/G Radio LRUs/SRUs including test equipment calibration and repairs. Consolidate AN/FPS-117 Radar and G/A/G Radio repairable items to be forwarded to a designated USAF repair facility. Report through the ILS-S repair status for AN/FPS-124 radar items.

9.12 Test Equipment Repair and Calibration.

9.12.1 Electronically manage and control test equipment and track calibration frequency, last calibration date and calibration due date for each test equipment item. Schedule test equipment for calibration and coordinate the repair of unserviceable test equipment in accordance with USAF contract. Submit Test Equipment Repair and Calibration Report annually.

9.13 Produce And Maintain Test Equipment Reports.

9.13.1 The Test Equipment Maintenance Report must be prepared and available on-line in Contractor format. The following four (4) Test Equipment Maintenance Reports must be included as part of the Test Equipment report:

9.13.1.1 USAF Test Equipment Master List;
9.13.1.2 USAF Test Equipment Calibration Report;
9.13.1.3 USAF Test Equipment Calibration Non-Compliance Report; and
9.13.1.4 USAF Test Equipment Repair Report.

9.14 USAF Test Equipment Master List;

9.14.1 The List must be prepared and made available on-line quarterly in Contractor format. The Contractor must provide a Master List of all Test Equipment for which the Contractor is responsible , as per DID/CDRL 9.14.1.

9.15 Test Equipment Master List

9.15.1 Test equipment master list must be organized by NSN/PSCN and by Site/Location, as per DID/CDRL 9.14.1.

9.16 Test Equipment Calibration Report

9.16.1 The Report must be prepared and made available on-line quarterly in Contractor format. The Report must document calibration of test equipment for which the Contractor is responsible , as per DID/CDRL 9.16.1.

9.17 Test Equipment Calibration Non-Compliance Report

9.17.1 The Report must be prepared and made available on-line quarterly in Contractor format. The Report must provide a summary of test equipment items not calibrated in accordance with the schedule of requirements , as per DID/CDRL 9.17.1.

9.18 Test Equipment Repair Report.

9.18.1 The Report must be prepared and made available on-line quarterly in Contractor format. The Report is a summary of repairs to NWS test equipment , as per DID/CDRL 9.18.1.

9.19 Implement USAF GFE Warehousing

9.19.1 The Contractor must implement warehousing, using AFI 23-101 and AFMAN 23-122 as reference, to include issues/redistribution of materiel, shelf life program, USAF ownership and ERRC codes, critical items and stock levels for operational requirements, receipts, bin labelling, cataloguing data, electrostatic discharge (ESD) asset management, stocktaking, and data entry. Provide customs broker to process customs documentation.

9.20 Issue and Redistribute Within Theatre Stock General Requirements

9.20.1 The Contractor must issue and redistribute materiel from within theatre stock in the most efficient and cost-effective manner. Evaluate the cost-effectiveness of redistribution within the NWS versus the cost of procuring an item through commercial sources or requisitioning through the ILS-S. Consider factors including transportation costs and methods, source availability and priority of the requirement. Review authorized stock levels and determine optimal positioning of spares based on failure rates, number of spares and transportation limitations. Where operationally and economically feasible, redistribute assets for use at other locations within the NWS. Respond to Redistribution Orders (RDOs) from the ILS-S when spares are available and exceed authorized levels to meet the operational requirements of other USAF locations. Reverse Post of RDOs require pre-approval from the NWSO TA for ILS-S/USAF Accountable Officer. Provide RDO shipping, including preparation of shipping and customs documentation. In Robbing is the act of removing parts or components from serviceable equipment not in-use, then installing it on similar non-serviceable equipment, in order to bring that in-use equipment to an operational state. Robbing includes the principle that action be taken immediately to obtain replacement, by normal means, for those parts removed from the robbed equipment. Robbing must be rigidly controlled, kept to an absolute minimum and must be properly recorded and approved by the TA.

9.21 Requisitioning General Requirements.

9.21.1 Requisitions must be raised using ILS-S, or commercial procurement. Implement and maintain follow-up procedures for tracking and hastening requisitions (i.e. ILS-S, or commercial procurement). Ensure that these procedures include codes indicating the status of each requisition, including at a minimum:

9.21.1.1 New requirements;
9.21.1.2 In procurement;
9.21.1.3 In transit;
9.21.1.4 Back-ordered;
9.21.1.5 Inspection and testing; and
9.21.1.6 Receiving to monitor each requisition as it moves through the process.

9.22 Requirement for GFE and/or AN/FPS-124 Radar Spares

9.22.1 Prepare requisitions for procurement AN/FPS-124 Radar Spares (proposal or DND 2227 form) as per DID/CDRL 9.22.1.

9.23 Mission Capable (MICAP) and High Priority Requirements (HPR) Situations

9.23.1 Mission Capable (MICAP) and High Priority Requirements (HPR) situations: Obtain spares/parts to satisfy the requirement, while ensuring minimal interruption of the NWS mission. Process MICAPs and HPRs as the highest priority. Satisfy MICAP and HPR requirements through redistribution of available theatre spares/parts, procurement through NWSO, robbing, or demands on the ILS-S. Establish MICAPs for USAF assets through the ILS-S when there are no available spares/parts in stock. Report MICAP status changes to NWSO until the requisition has been satisfied.

9.24 Coordinate The Procurement Of USAF Equipment/Materiel.

9.24.1 The Contractor must coordinate the procurement of USAF equipment/materiel via Form 9 and Government Purchase Cards through the Accountable Officer. Submit monthly procurement report. Provide monthly Procurement Report AN/FPS-124 SRR Spares must also be reported on this report, as per DID/CDRL 9.24.1.

9.25 Labelling and Packaging

9.25.1 The Contractor must label shipments based on content, destination and transportation mode. Ensure that special labelling for urgent shipments such as MICAP, and HPR is displayed prominently for ease of identification. For packaging; all shipping and storage containers provided by USAF to be managed in accordance with AFI 24-203.

9.26 Shipping and Receipting

9.26.1 The Contractor must group and consolidate items for shipping by destination to meet priority requirements and required delivery dates including shipment of USAF-owned items to US destinations. Provide Customs Broker and process documents required to support the shipping function including manifests, Shipper's Declarations (HAZMAT), and customs documents for items being shipped to and from the US. Ensure that USAF owned materiel is properly manifested and marked as US Government property and identified as duty-free. All staff involved in shipping must be ITAR trained.

9.26.2 The Contractor must inspect and receipt incoming materiel, equipment, and services against specifications. The Contractor must provide confirmation to the NWSO, that procured GFE/Radar 124 Spares have been received. Identify and track receipts through a status code system, including partial shipments and discrepancies including overages, and lost or damaged items. Report any discrepancies in shipments to the vendor/shipper to ensure that corrective action including replacement or credit is provided by the vendor/shipper.

9.26.3 All discrepancies in receipts must be documented and reported to the USAF Accountable Officer or the NWSO, as appropriate, within two business days. No instance annually of a shipment to/from the US delayed in customs due to improper documentation.

9.27 Disposal of USAF Owned Equipment and Materiel.

9.27.1 No disposal proceeding without USAF approval, dispose of USAF equipment and materiel. Ensure that if instructions from the USAF ALC Item Manager authorize disposal through CADC, the disposition letter (USAF) accompanies the ROS submitted to Canada for approval. Mandatory coordination with the NWS TA for ILS-S is required prior to disposal of USAF assets. The Contractor to ensure that the USAF Supply System is updated to report shipment to DLA disposition services. Exclusion: CTAT, ITAR/HAZMAT items, which have regulated guidelines for disposal. Submit Disposal Report for USAF GFE 100% of items authorized for disposal to have an approved audit trail to disposal location. Prepare a Report of Surplus (NWSO Disposal Form (or equivalent, as provided by NWSO), as per DID/CDRL 9.27.1.

9.28 Schedule And Attend Supply Management Meetings.

9.28.1 Semi-annually (Spring/Fall). One Supply Working Group meeting - forum to discuss USAF/DoD Supplier performance in supporting NWSO - conducted at Hill AFB, Utah. Schedule and attend the following USAF Supply Management Meetings: two two-day forums for Contractor Logistics Reviews - forum to discuss:

9.28.1.1 ILS-S processes;
9.28.1.2 Compliance; and
9.28.1.3 Accountability procedural changes impacting NWSO operations.

9.29 Contractor to Prepare agendas 2 week prior and producing signed minutes submitted no later than five business following the meeting

SOW Section 10:

NWS

Bulk Fuel

10.0 BULK FUEL

10.1 Introduction

10.1.1 The Government must supply NWS bulk fuel to meet NWS mission requirements. A 36 month supply of fuel is normally provided for each LRR site, and a 24 month supply for each SRR site. The exceptions are CAM-MAIN and FOX-MAIN, both of which serve as staging sites for fuel to be forwarded to adjacent sites, and therefore receive additional fuel. Fuel is transferred on site by pipeline, fuel truck or by helicopter.

10.1.2 Fuel type is aviation turbine fuel, kerosene type Jet A-1, in accordance with the latest edition of CAN/CGSB.3.23 with Fuel System Icing Inhibitor (FSII), and conductivity additive. Fuel is delivered with a minimum Cetane number of 40.0, a freeze point of minus 52 degrees Celsius or lower, and with Sulphur Content of 15mg/kg maximum when tested to either ASTM D2622, D5453 or D7039. , as per Diesel Fuel Regulations (SOR/DORS/2002-254) fuel is stored and dispensed from storage tanks certified for PGS and aviation use.

10.1.3 The Contractor must be responsible for the complete management of the NWS bulk fuel inventory as detailed in this Section.

10.2 References

10.2.1 The notations against the references have the following meanings: M - Adherence to the policies, procedures, act, orders and regulations contained therein is mandatory. G - The policies and procedures contained therein are not mandatory, but proposals for alternatives must be submitted in full detail to, and be accepted by the Technical Authority. Furthermore, alternatives must fully interface with procedures in use globally.

10.2.1.1 NWS Bulk Fuel Management Plan (G);
10.2.1.2 CAN/CGSB.3.23: Aviation Turbine Fuel, most recent edition (M);
10.2.1.3 C-82-010-007/TP-000: Procedures and Responsibilities for Aviation Fluids Handling (M);
10.2.1.4 DQAO 2-42/DNWSO 4-2 form (NWS Policy 104, Nov 93) (M);
10.2.1.5 NWS Bulk Fuel Inventory (M); and
10.2.1.6 Current bulk fuel forecast.

10.3 Personnel Qualifications, Experience and Training

10.3.1 Personnel involved in the receipt, transfer and on-site management of NWS bulk fuel must have completed a fuel handling courses or worked within the petroleum industry for a minimum of 5 years and must have fall arrest, hazardous material training, confined space training and spill response training.

10.4 Bulk Fuel Management Plan

10.4.1 The Contractor must prepare, implement and administer a North Warning System (NWS) Bulk Fuel Management Plan describing the Contractor's approach to meeting the following requirements as further detailed in this Section:

10.4.1.1 The preparation of a bulk fuel forecast for the upcoming three contract years;
10.4.1.2 The preparation of an annual bulk fuel transfer plan for the upcoming contract year;
10.4.1.3 Liaising with government bulk fuel contractors for the preparation of the annual transfer program, and on-going during the transfer season;
10.4.1.4 The provision of wildlife monitors during fuel receipt and transfer operations;
10.4.1.5 The inspection and repair of bulk fuel equipment and infrastructure prior to transferring fuel;
10.4.1.6 Receiving bulk fuel from government suppliers;
10.4.1.7 Performing on-site fuel transfers to meet NWS mission requirements;
10.4.1.8 The marking of aviation fuel tanks;
10.4.1.9 Fuel testing;
10.4.1.10 Quarantining fuel which is out of specification;
10.4.1.11 Reconstitution of quarantined fuel;
10.4.1.12 Maintaining a bulk fuel inventory;
10.4.1.13 Dipping fuel tanks;
10.4.1.14 Reconciliation of fuel tank dips; and
10.4.1.15 Attending semi-annual airlift/sealift conferences.

10.4.2 The plan is to be in a format proposed by the Contractor and accepted by the NWSO TA. Reference 1.3.2 is provided as a guidance document. The plan must be reviewed and updated at a minimum annually no later than 31 March.

10.5 Fuel Forecast

10.5.1 The Contractor must prepare a bulk fuel forecast for delivery during CY+1, CY+2 and CY+3. The forecast must include the requirements for each site forecasted in liters for aviation, MSE and PGS usage and must ensure a 36 month capacity for LRR sites and 24 month capacity for SRR sites.

10.5.2 The forecast must be in a format proposed by the Contractor and accepted by the NWSO TA. The forecast must be submitted to NWSO TA by 01 February each year.

10.6 Annual Bulk Fuel Transfer Program

10.6.1 The Contractor must establish and manage an annual bulk fuel transfer program to ensure that all required transfers occur. The annual program is to include, at a minimum:

10.6.1.1 Sites where transfers are to take place, and how each transfer is to happen e.g. pipeline, tanker truck or helicopter;

10.6.1.2 Number of crews, crew size and training requirements;

10.6.1.3 A schedule for where the transfers are to occur; and

10.6.1.4 A risk assessment for the annual program identifying threats to completing the transfers, and providing contingencies/mitigating strategies to eliminate or mitigate these risks.

10.6.2 The annual bulk fuel transfer program must be in a format proposed by the Contractor and accepted by the NWSO TA and submitted no later than 31 March.

10.7 Government Bulk Fuel Suppliers

10.7.1 The Contractor must liaise directly with Government bulk fuel suppliers for the following:

10.7.1.1 During preparation of the annual bulk fuel transfer program, specifically for scheduling site delivery dates; and

10.7.1.2 Continually during the transfer season to ensure the delivery schedules are met and/or to establish corrective action where schedule slippage occurs.

10.8 Wildlife Protection

10.8.1 The Contractor must provide wildlife monitors to protect fuel transfer crews during the performance of their duties.

10.9 Integrity of Bulk Fuel Infrastructure and Transfer Equipment

10.9.1 Prior to receiving bulk fuel or transferring fuel on site, the Contractor must inspect and repair the bulk fuel infrastructure and transfer equipment to prevent spills from occurring and to eliminate delays in performing these receipts and transfers. All corrective maintenance identified and implemented must be tracked in the Government provided MAXIMO application as further detailed in the Contract.

10.10 Receive Bulk Fuel

10.10.1 The Contractor must receive bulk fuel deliveries from Government suppliers via ship, barge or from community sources. The Contractor must have staff accompany the Government suppliers for the entire duration of the transfer operations.

10.10.2 The Contractor must conduct any required on-site fuel transfers prior to fuel delivery to ensure sufficient tank capacity is available to receive the fuel.

10.10.3 The estimated average volume of transfers in litres are as follows:

10.10.3.1 Community Supplied:

10.10.3.1.1 CAM-CB: 50,000;
10.10.3.1.2 CAM-4: 80,000;
10.10.3.1.3 FOX-5: 80,000;

10.10.3.2 Average SRR Site Sealift Delivery: 80, 000;
FOX-2: 240 000; and
BAR-3: 130 000.

10.10.3.3 Average Sealift Delivery to LRR sites:

10.10.3.3.1 BAR-2: 350,000;
10.10.3.3.2 PIN-MAIN: 400, 000;
10.10.3.3.3 CAM-MAIN: 1,100,000;
10.10.3.3.4 CAM-3: 350,000;
10.10.3.3.5 FOX-MAIN: 1, 500,000;
10.10.3.3.6 FOX-3 (transferred from FOX-MAIN via C-130 airlift): 280, 000;
10.10.3.3.7 DYE-MAIN: 450,000;
10.10.3.3.8 BAF-3: 350,000;
10.10.3.3.9 LAB-2: 650, 000; and
10.10.3.3.10 LAB-6: 640,000.

10.10.4 Upon completion of the bulk fuel delivery at each site, the Contractor must record the quantity of fuel delivered at each site using form DQAO 2-42/DNWSO 4-2 (NWS Policy 104, Nov 93). The Contractor must sign fuel delivery receipts for the Government supplier and must ensure that signed copies are provided in the Bulk Fuel Delivery Report detailed below. The Contractor must record the quantity of fuel delivered at each site, in their respective tanks and in Maximo, within 10 business days of the deliveries.

10.10.5 The Contractor must prepare and submit a separate Bulk Fuel Delivery Report for the east and for the west. The reports must document the quantity of fuel delivered to each site and must include the signed fuel delivery receipts. The reports must be in a format proposed by the Contractor and accepted by the NWSO TA. Each report must be submitted within15 days of the last fuel delivery date for the east and west.

10.11 Site Bulk Fuel Transfer Operations

10.11.1 The Contractor must have complete responsibility for the on-site transfer of fuel to meet NWS mission requirements, including those transfers required prior to receipt of bulk fuel transfers from Government suppliers and to meet the needs for PGS, aviation, MSE and fuel fired heating equipment and/or systems.

10.11.2 The Contractor must be responsible for transferring fuel via:

10.11.2.1 Pipeline;
10.11.2.2 Rotary wing aircraft;
10.11.2.3 Fixed wing aircraft;
10.11.2.4 Tanker truck; or
10.11.2.5 Any combination of the above.

10.11.3 The Contractor must prepare and submit a separate Rotary Wing Fuel Transfer report for the east and west. The reports must document the quantity of fuel transferred by rotary wing aircraft on each site. The reports must be in a format proposed by the Contractor and accepted by the NWSO TA. Each report must be submitted within15 days of the last fuel delivery date for the east and west.

10.11.4 The Contractor must maintain all quantities of fuel transferred in the NWS Fuel Transfer application in MAXIMO, within 10 business days of the transfers.

10.11.5 The contractor must ensure that there are no examples of a required transfer not taking place due to factors deemed to be in the Contractor's control or due to insufficient capacity at the beach tanks.

10.11.6 The contractor must ensure that there is no example of a site failing due to lack of fuel transferred to the summit.

10.12 Mark Aviation Tanks

10.12.1 The Contractor must be responsible for the marking of aviation fuel tanks in accordance with C-82-010-007/TP-000. Tanks must be marked as "Certified" for those which have fuel tested to aviation standard as further detailed in this section, or "Not Certified" for those tanks which have fuel testing pending or have a failed fuel test.

10.13 Fuel Testing

10.13.1 The Contractor must take fuel samples and perform Schedule A, Schedule B, Schedule C and particulate testing of bulk fuel as follows:

10.13.1.1 Upon fuel delivery prior to discharge from the vessel;
10.13.1.2 Post-discharge, when receiving bulk fuel delivery;
10.13.1.3 Periodic testing of inventory;
10.13.1.4 Pre-shipment for bulk fuel transfer via aircraft from site to site;
10.13.1.5 Decanting such as tank cleaning;
10.13.1.6 For a crashed aircraft; and
10.13.1.7 Any other requirement to guarantee the quality of the fuel.

10.13.2 Test samples must be submitted to a fuel testing laboratory that is accredited by the Standards Council of Canada. Fuel test results must include at a minimum:

10.13.2.1 Fuel quality;
10.13.2.2 Date testing was conducted;
10.13.2.3 Method of testing; and
10.13.2.4 Results of test.

10.13.3 The Contractor must retain a hard copy of all fuel test results. All fuel test results must be available to the NWSO TA on-line within 10 business days of receipt.

10.14 Quarantine Fuel

10.14.1 The Contractor must quarantine fuel which is failed a fuel test or has suspected as being contaminated. Any tank with quarantined fuel must be locked or otherwise removed from service and physically tagged as being quarantined.

10.14.2 The Contractor must issue notification of the quarantine to the affected site, its LSS and to Government airlift carriers.

10.14.3 The Contractor must report instances of quarantined fuel as significant incidents as detailed in the Contract.

10.15 Reconstitute Fuel

10.15.1 For instances where fuel on inventory is determined by laboratory testing to be contaminated or otherwise out of specification, the Contractor must take measures to return the fuel to a useable state. All such measures must be taken in consultation with a CSA certified laboratory. For instances where fuel cannot be reconstituted, it must be disposed of in accordance with the requirements of this SOW.

10.15.2 For instances where fuel delivered by a Government supplier is determined by laboratory testing to be contaminated or otherwise out of specification, the NWSO TA may request that the Contractor reconstitute the fuel on a case by case TA/AWR basis.

10.16 Bulk Fuel Inventory

10.16.1 The Contractor must maintain the NWS Bulk fuel inventory in the Government provided MAXIMO application. Bulk fuel inventory data must include:

10.16.1.1 Location;
10.16.1.2 Identification (LOCID, tank number);
10.16.1.3 Status e.g. in use, out-of-use or decommissioned;
10.16.1.4 Content – certified as aviation or PGS;
10.16.1.5 Quantities in litres;
10.16.1.6 Receipts, issues, and transfers;
10.16.1.7 Date of verification of level and method used;
10.16.1.8 Calculated level for automated fuel transfer/issues; and
10.16.1.9 Actual level for manual transfer/issues.

10.16.2 The inventory must be kept up to date through accurate recording of all receipts, issues and transfers.

10.16.3 The inventory must be confirmed through fuel tank dipping and the reconciliation of fuel tank dips as further detailed in this Section.

10.17 Fuel Tank Dipping

10.17.1 The Contractor must manually dip fuel tanks to determine fuel level. Each dip must record temperature and fuel volumes must be normalized to standard temperature. Tank dips must be taken:

10.17.1.1 Upon receipt of fuel;
10.17.1.2 During fuel transfer operations;
10.17.1.3 Each scheduled O&M preventive maintenance site visit;
10.17.1.4 When a fuel spill occurs to confirm the volume of the spill; and
10.17.1.5 Any other instance where a fuel tank dip is required to maintain the integrity of the bulk fuel inventory.

10.17.2 The Contractor must maintain fuel tank dip records in the Government provided MAXIMO application, within 10 business days of the dips.

10.18 Reconcile Bulk Tank Dips

10.18.1 The Contractor must reconcile all fuel tank dips to ensure fuel is accounted for on a tank-by-tank basis. Each tank dip must be reconciled against actual issues and transfers in cases where these actions are performed manually, or calculated against estimated consumption where issues and transfers are automated.

10.18.2 Fuel reconciliation must reside in the Government provided MAXIMO application.

10.18.3 Discrepancies identified during reconciliation must be investigated immediately. Where the discrepancy is the result of a fuel spill, the Contractor must report the spill and initiate a cleanup as further detailed in the Contract. Discrepancies which cannot be reconciled and are determined not to be the result of a fuel spill are to be reported to the NWSO TA as a significant incident. Further investigation, with a follow up report within 72 hours, is to be conducted in order to determine the likely cause of the discrepancy and/or effect corrective actions to resolve the discrepancy.

10.19 Semi-annual Airlift and Bulk Fuel Meetings

10.19.1 The Contractor must attend semi-annual Airlift and Bulk Fuel Meetings and brief the status of the NWS bulk fuel program. The meetings are normally held in Canada or the United States, but outside the National Capital Region. The Contractor must prepare a slide deck presentation detailing planned/completed activities, lessons learned and any issues or concerns which may negatively impact the NWS bulk fuel inventory.

SOW Section 11:

NWS

Airlift

11.0 Government Furnished Airlift

11.1 Introduction

11.1.1 Airlift is provided to Canada for use on this contract by the United States Air Force per the Memorandum of Understanding between both countries. Airlift hereafter will be denoted as Government Contracted Airlift. Government Contracted Airlift will be with commercial air carriers hereafter referred to as Airlift Carriers. The Contractor must use Government Contracted Airlift for the movement of personnel and cargo between NWS locations as required for delivery of services as stated in the Contract. Airlift for Contractor personnel and cargo into and out of LSS Zones must be by commercial air carriers operating on established scheduled routes and is not reimbursed by the Government.

11.1.2 Current flight operations for the NWS fall under the Canadian Aviation Regulations (CARs) Part VII. Subpart, 702 Aerial Work (for external Cargo etc.) and 703 Air Taxi Operations (passenger carriage) 704 commuter operations. The rotary carriers operate under two different ops Environment depending on the time of year. For summer operations, the helicopters fly VFR day with a single pilot from March 15 to Oct 1, when daylight hours permit. For winter operations the helicopters fly VFR with a two pilot crew, day and night, from Oct 1 to March 15 when day light hours are reduced.

11.1.3 Helicopters are equipped for IFR and crew are IFR qualified for night flight, however it should be noted that there is a lack of radio navigation aids and or certified (published) procedures at the radar sites. Planning for night Approaches to sites require weather information complemented by AWOS Systems and remote cameras images. In any case regulatory requirements regarding weather minima required for night flight must be obeyed. , as per the CARs flight crews are restricted to 14 hours of duty per day.

11.1.4 Aviation fuel located on each NWS site must be provided at no cost to the airlift Carrier.

11.1.5 A specific number of hours/miles are provided to the Contractor each year based on the mutual agreed upon forecasted number of hours/miles and the amount of funding the Government has to provide for airlift resources. If the Contracted hours/miles are exceeded then the Contractor must be responsible for incurred the costs associated with the exceeded hours/miles. The Contractor must ensure the most cost effective means are used to maximize the allotted airlift resources.

11.1.6 Government-contracted airlift must include:

11.1.6.1 A rotary-wing aircraft and its crew based at each of the five LSSs and available on a 12 hour flight day, 7 days-a-week basis;

11.1.6.2 Two supplemental rotary-wing aircraft and its crew that rotate between each of the five LSSs and available on a 12 hour flight day, 7 days-a-week basis during the months of June - September;

11.1.6.3 On call fixed-wing aircraft based at the adjacent communities specified in Government-Contracted Airlift contracts, available with 48 hours-notice on an as required basis for routine day-to-day NWS support; and

11.1.6.4 Rotary-wing beach to summit fuel transfer at 32 SRR sites, and heavy lift fixed-wing aircraft, utilizing bladder fuel tanks for bulk fuel transfer from Hall Beach and LRR FOX-3, as detailed in this SOW.

11.1.7 Government-contracted airlift may from time to time be unavailable for service to the Contractor due to scheduled or unscheduled aircraft maintenance and the requirement to participate in search and rescue operations. Under these circumstances, or for any other reason not attributable to the Contractor, when the service (including alternate sources) is unavailable for the Contractor's normal O&M activities, and when this unavailability directly impacts the Contractor’s ability to meet performance standards as required in the Contract, the delay caused by the aircraft unavailability must be addressed as defined in the Contract.

11.1.8 Flight operations are a year round requirement and assets required to support these operations must be maintained to ensure they are available 24/7.

11.2 References

11.2.1 The notations against the references have the following meanings: M - Adherence to the policies, procedures, act, orders and regulations contained therein is mandatory. G The policies and procedures contained therein are not mandatory, but proposals for alternatives must be submitted in full detail to, and be accepted by the Project Authority. Furthermore, alternatives must fully interface with procedures in use globally. (R) Reference Only.

11.2.2 NWS Government Furnished Airlift Management Plan (G);

11.2.3 USAF Government Furnished Airlift Statement of Work for all 8 Airlift contracts HTC711-10-D-R001 through -R008 inclusive (R);

11.2.4 Aviation Fuel Tank Listing (M);

11.2.5 Main Rotary Wing Flight Operations Delay Average (G);

11.2.6 Government Furnished Airlift Estimate (G);

11.2.7 Bulk Fuel Resupply Airlift Forecast (G);

11.2.8 Monthly Airlift Schedule (G); and

11.2.9 Contractor Performance Assessment Report (CPAR) (M).

11.3 Government Furnished Airlift Management Plan

11.3.1 The Contractor must prepare, implement and administer a North Warning System (NWS) Government Furnished Airlift Management Plan describing the Contractor's approach to meeting the following requirements as further detailed in this Section:

- 11.3.1.1 Forecasting airlift requirements;
- 11.3.1.2 Scheduling government furnished airlift;
- 11.3.1.3 Managing government furnished airlift resources to meet NWS mission requirements in the most efficient manner possible;
- 11.3.1.4 The provision of aircraft support, specifically: aviation fuel, hangar space where available, aircraft loading and unloading services, slinging services, power and towing vehicle;
- 11.3.1.5 Review of flight logs for completeness and accuracy;
- 11.3.1.6 Preparation and review of flight manifests;
- 11.3.1.7 Actioning occurrences of aircraft overdue;
- 11.3.1.8 Actioning aircraft incidents; and
- 11.3.1.9 Attending semi-annual airlift and bulk fuels conferences.

11.3.2 The plan is to be in a format proposed by the Contractor and accepted by the NWSO TA. Reference "Government Furnished Airlift Estimate" is provided as a guidance document. The plan must be reviewed and updated at a minimum annually no later than 31 March.

11.4 Forecast Government Airlift Requirements

11.4.1 The Contractor must prepare and submit an annual forecast of airlift requirements for the upcoming period 01 April to 31 March. The annual forecast must be divided by Zone, aircraft type (rotary/fixed wing) and by task. The forecast must have two parts:

- 11.4.1.1 A planning document reflecting each airlift requirement; and
- 11.4.1.2 A summary document reflecting the total requirement.

11.4.2 The forecast must be in a format proposed by the Contractor and as accepted by the NWSO TA and be submitted by 12 February each year. References Annual Airlift Forecast and Bulk Fuel Resupply Airlift Forecast are provided as a guidance document.

11.4.3 The Contractor must prepare and submit an annual forecast of airlift to support bulk fuel resupply for the upcoming period 01 April to 31 March. The forecast must include rotary wing requirements for the refueling of SRR sites and heavy lift fixed wing aircraft requirements for the refueling of FOX-3 from FOX-MAIN.

11.4.4 The forecast must be in a format proposed by the Contractor and as accepted by the NWSO TA and be submitted by 31 August each year. References Annual Airlift Forecast and Bulk Fuel Resupply Airlift Forecast are provided as a guidance document.

11.4.5 Estimated average rotary wing flights annually by Zone (hours):

11.4.5.1 Zone 1: 400;
11.4.5.2 Zone 2: 300;
11.4.5.3 Zone 3: 300:
11.4.5.4 Zone 4: 400; and
11.4.5.5 Zone 5: 400.

11.4.6 Estimated average fixed wing flights annually by Zone (miles):

11.4.6.1 Zone 1: 30 000;
11.4.6.2 Zone 2: 20 000k;
11.4.6.3 Zone 3: 20 000;
11.4.6.4 Zone 4: 30 000; and
11.4.6.5 Zone 5: 20 000.

11.5 Schedule Government Furnished Airlift Resources

11.5.1 The Contractor must liaise with Government furnished airlift carriers to coordinate and schedule airlift support to meet mission requirements 48 hours in advance. Airlift is to be scheduled to ensure the maximum use of NWS aviation fuel to avoid the airlift carrier buying commercial.

11.5.2 The Contractor must prepare and submit a monthly airlift schedule. The schedule must identify zone, date, and type of aircraft, task type and estimated hours/miles.

11.5.3 The monthly schedule must be in a format proposed by the Contractor and as accepted by the NWSO TA and must be submitted by 25th day of each month for the following month. Reference 1.3.8 is provided as a guidance document.

11.5.4 The Contractor must prepare and submit a weekly update to the monthly schedule, including:

11.5.4.1 Aborted flights;
11.5.4.2 Scheduled flights which did not occur;
11.5.4.3 Unscheduled flights which occurred; and
11.5.4.4 Missing or inaccurate flight logs, as further detailed in this Section.

11.5.5 The weekly update must include applicable back up documentation to explain variances e.g. flight logs, weather reports, ESRs, work orders as examples. The monthly schedule must be updated weekly to reflect on-gong changes.

11.5.6 The weekly update must be in a format proposed by the Contractor and as accepted by the NWSO TA and must be submitted by Tuesday of each week. Reference 1.3.8 is provided as a guidance document.

11.6 Manage Government Furnished Airlift Resources

11.6.1 The Contractor must ensure that the allotted hours/miles provided for airlift support are not exceeded. The Contractor must notify the NWSO TA when 75% of the hours/miles have been used by the airlift carrier in each zone.

11.6.2 Within 24 hours of any maintenance required by the Airlift Carrier which will negatively impact the Contractor's maintenance or project schedule, the Contractor must prepare and submit an impact statement on what the unavailability of airlift will have. The impact statement must include mitigating measures to eliminate or reduce these impacts.

11.6.3 The Contractor must prepare monthly Air Carrier Performance Assessment Reports for the preceding month. The report must include:

11.6.3.1 Availability of the aircraft to support the flying schedule;
11.6.3.2 Air carrier controlled flight delays; and
11.6.3.3 Statement certifying quality of service provided by the air carrier.

11.6.4 The Air Carrier Performance Assessment Report must be prepared using References Annual Airlift Forecast and Bulk Fuel Resupply Airlift Forecast are provided as guidance document and must be submitted to the NWSO TA by the 10th day of each month.

11.7 Provide Aircraft Support

11.7.1 In conjunction with the bulk fuel portion of this SOW, the Contractor must maintain a listing of NWS bulk fuel tanks which are certified for aviation use. The listing must be kept current as tanks are added, removed, their fuel is pending testing results or is quarantined.

11.7.2 The Contractor must provide a list of aviation certified tanks by locations and LOCID to the airlift carriers to meet NWS mission requirements. The Contractor must ensure that all infrastructure at NWS sites required to refuel Government furnished aircraft is serviceable.

11.7.3 The Contractor must ensure that hangar space is provided to Government furnished airlift carriers at LSS-C, Cambridge Bay, Nunavut, and LSS-F, Hall Beach, Nunavut for housing the aircraft and its associated maintenance equipment, tools and spare parts. Hangar space at these two locations must be made available to the Government furnished airlift carriers 24/7/365.

11.7.4 The Contractor must ensure that all NWS sites have 115V power available to Government furnished airlift carriers 24/7/365.

11.7.5 The Contractor must ensure that LSS-C and LSS-F have a vehicle capable of towing Government furnished aircraft 24/7/365. All towing of aircraft must be performed by the Government furnished airlift carrier.

11.7.6 The Contractor must provide loading and unloading services for all Government furnished aircraft to meet NWS mission requirements. The Contractor must ensure any MSE required to load or unload aircraft is serviceable.

11.7.7 The Contractor must coordinate the airlift of hazardous materials and hazardous waste on Government furnished aircraft with air carriers. The Contractor must be responsible for all packaging, labeling and documentation for the airlift of hazardous materials and hazardous waste.

11.7.8 The Contractor must support precision sling operations relevant to the two (2) seasonal supplemental helicopters and regular sling relevant to the five (5) resident helicopters.

11.8 Flight Logs

11.8.1 The Contractor must review all Government furnished airlift carrier flight logs for completeness and accuracy. There must be a flight log for every flight, and a nil flight log on days when there is no flying. Flight logs must include the purpose of flight as a:

11.8.1.1 Number of legs and actual destination(s) including any aborted legs;

11.8.1.2 Time up and time down for each leg;

11.8.1.3 Flight time and distance for each leg;

11.8.1.4 Fuel consumed for each leg;

11.8.1.5 Refueling location, if any, to include tank number (if NWS fuel tank) and quantity taken;

11.8.1.6 Description and weight of cargo for each leg;

11.8.1.7 Number and names of passengers for each leg; and

11.8.2 The Contractor must sign all flight logs to certify they are complete and correct. Contractor must not sign any flight log if its information is incomplete or inaccurate.

11.8.3 The Contractor must notify the NWSO TA of incomplete or missing flight logs by next weekly update to the monthly schedule.

11.8.4 The Contractor must maintain an electronic repository of flight logs which must be available to the NWSO TA. Flight logs must be in the repository within 48 hours of receipt as well as maintain the NWS Flight Manifest application in MAXIMO within 48 hours of receipt.

11.9 Flight Manifests

11.9.1 The Contractor must prepare and submit a flight manifest for each flight to the Government furnished airlift carrier prior to flight departure. Flight manifests must include:

11.9.1.1 Proposed destination(s);
11.9.1.2 Listing of cargo, including weight;
11.9.1.3 Names and number of passengers;
11.9.1.4 Unique flight number;
11.9.1.5 Purpose of trip; and
11.9.1.6 Notification of hazardous materials and/or hazardous waste being transported.

11.9.2 Following review and certification of the flight log, the Contractor must update the flight manifest with accurate information pertaining to the actual flight.

11.9.3 The Contractor must maintain an electronic repository of flight manifests which must be available to the NWSO TA. Flight manifests must be in the electronic repository within 48 hours of receipt as well as maintain the NWS Flight Manifest application in MAXIMO within 48 hours of receipt.

11.10 Aircraft Overdue

11.10.1 The Contractor must action instances of any aircraft which is 60 minutes overdue at their scheduled destination and for which the position is unknown. The Contractor must take action to follow-up with Nav Canada Flight Services to ascertain the status of the aircraft.

11.11 Aircraft Incidents

11.11.1 The Contractor must respond to aircraft incidents to provide support/assistance as required to preserve life, property and the environment. In the case of a catastrophic incident, the Contractor must preserve the scene for investigation.

11.11.2 The Contractor must submit initial and follow-up reports for aircraft incidents. The initial report must be submitted within 6 hours of the incident occurring, with follow-up reports submitted as required until the incident has been fully investigated and corrective action has been completed. Follow-up reports must document the status of the investigation and corrective actions which are planned/completed until such time as the incident is considered closed.

11.12 Semi-annual Airlift and Bulk Fuel Meetings

11.12.1 The Contractor must attend semi-annual Airlift and Bulk Fuel Meetings and brief the status of the NWS airlift program. The meetings are normally within Canada, but outside the National Capital Region. The Contractor must prepare a slide deck presentation detailing planned/completed activities, lessons learned and any issues or concerns which may negatively impact the NWS airlift program.

SOW Section 12:

Introduction to Infrastructure SOW

ADM (IE)

12.0 Introduction to Infrastructure SOW

12.1 Scope

12.1.1 The scope of work includes the provision of Real Property Management Services, Maintenance Management and Engineering Services, Facilities Maintenance Services and Project Delivery Services. The majority of assets consists of special purpose space.

12.1.2 Buildings are typically stand-alone; however, there are multi-building sites, some of which include facilities that provide common services to other buildings. Building requirements vary according to their functional use. In addition to buildings, other assets are included under the Contract.

12.2 Contractor Totally Responsible for Service Delivery

12.2.1 The Contractor is responsible for the Real Property Service Delivery Regime (RP-SDR) associated with infrastructure services, including the programs, management systems and other systems, processes, procedures and performance management capabilities needed to fulfill the Contract requirements.

12.3 Definitions

12.3.1 Refer to the table of the definitions relevant to this section.

12.3.2 ***Constructor*** – the Constructor, Prime Contractor, Principal Contractor or Contractor, as the prime accountable authority for health and safety and Occupational Health and Safety (OH&S) in relation to construction, as defined in provincial and territorial jurisdictions and their applicable legislation.

12.3.3 ***Including*** – where "including" is used preceding a colon, followed by a list, the list is non-exclusive.

12.3.4 ***Occupants*** – people present in a DND building.

12.3.5 ***Occupational Health and Safety Control Authority –*** the authority accountable for OH&S, in relation to Management Services and ongoing base-building operations.

12.3.6 ***Operations and Maintenance (O&M)*** – work activities associated with providing building operations and maintenance services.

12.3.7 ***RP-SDR Acceptance*** – the Contract Initiation milestone that indicates successful completion of the Final Acceptance Review and acceptance of the Contractor's RP-SDR Specification prior to the Readiness Checkpoint.

12.3.8 ***RP-SDR Acceptance-in-Principle*** – the Contract Initiation milestone that indicates successful completion of the Preliminary Acceptance Review and Acceptance-in-Principle of the descriptions of the management regimes, services, programs, processes and capabilities that will govern the provision of services, enabling the Contractor to proceed with operations under the Contract as of the Infrastructure Operational Start Date.

12.3.9 ***Workplace*** – the workplace as defined in the Canada Labour Code (CLC), Part II.

12.4 References

12.4.1 The Contractor must apply and meet the requirements of the most recent applicable reference. In case of discrepancy, document a recommended course of action, seek guidance from the RP-TA, and as requested, obtain the RP-TA's written acceptance.

12.4.2 Notations against the references apply as follows:

12.4.2.1 M – Mandatory: the Contractor must adhere to the standards, policies, procedures, DND /CAF Orders, and legislative requirements (acts, regulations, codes) cited;

12.4.2.2 G – General: the Contractor must comply with the policies and procedures cited to the extent practicable. The Contactor may propose alternatives, subject to obtaining written acceptance by the RP-TA and ensuring that related activities are harmonized with, and do not conflict with mandatory requirements;

12.4.2.3 A -GG-040-004/AG-001 - General Safety Program - Hazardous Materials Safety and Management Manual. (M);

12.4.2.4 American Petroleum Institute Standards for Inspection and Repair of Fuel Tanks (M);

12.4.2.5 Arctic Waters Pollution Prevention Act (M);

12.4.2.6 ASTM E2018 - Property Condition Assessment Process (G);

12.4.2.7 Guidelines for Canadian Drinking Water Quality (M);

12.4.2.8 Canada Labour Code, Part II (M);

12.4.2.9 Impact Assessment Act (M);

12.4.2.10 Canada Water Act (M);

12.4.2.11 Canadian Electrical Code (M);

12.4.2.12 CFTO C-98-001-003/MS-004, Site Record Drawings (G);

12.4.2.13 Configuration Item (Cl) Baseline (G);

12.4.2.14 CSA C22.2 No 141 - Emergency Lighting Equipment (M);

12.4.2.15 DND Environmental Assessment Manual (G);

12.4.2.16 DND Fire Safety Plan Template (G);

12.4.2.17 Defence Administrative Order & Directive (DAOD) 4007-1: Reporting and Investigation of Fires & Incidents (M);

12.4.2.18 Environmental Protection Pan for the NWS (G);

12.4.2.19 Federal Halocarbon Regulations (M);

12.4.2.20 Fisheries Act (M);

12.4.2.21 FOX-MAIN Beach Clean-Up Reference Map (M);

12.4.2.22 Guidance for Drinking Water in Areas of Federal Jurisdiction (M);

12.4.2.23 Hazardous Products Act (M);

12.4.2.24 Historical LCMM data (G);

12.4.2.25 Historical POL tank inspection reports. (G);

12.4.2.26 Historical Tower Inspection Reports (G);
12.4.2.27 Long Term Maintenance Plan for NWS DEGS (G);
12.4.2.28 Migratory Birds Convention Act (M);
12.4.2.29 MOU Parks Canada (M);
12.4.2.30 MOU Between DND and the Hamlet of Hall Beach (M);
12.4.2.31 NFPA 10 - Standard for Portable Fire Extinguishers (M);
12.4.2.32 NFPA 12 - Standard on Carbon Dioxide Extinguishing Systems (M);
12.4.2.33 NFPA 13 - Standard for the Installation of Sprinkler Systems (M);
12.4.2.34 NFPA 15 - Standard for Water Spray Fixed Systems for Fire Protection (G);
12.4.2.35 NFPA 17 - Standard for Dry Chemical Extinguishing Systems (M);
12.4.2.36 NFPA 17 A - Standard for Wet Chemical Extinguishing Systems (M);
12.4.2.37 NFPA 20 - Standard for the Installation of Stationary Pumps for Fire Protection (M);
12.4.2.38 NFPA 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (M);
12.4.2.39 NFPA 30 - Flammable and Combustible Liquids Code (M);
12.4.2.40 NFPA 80 - Standard for Fire Doors and Other Opening Protective (M);
12.4.2.41 NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations (M);
12.4.2.42 NFPA 170 - Standard for Fire Safety and Emergency Symbols (G);
12.4.2.43 NFPA 471 - Recommended Practice for Responding to Hazardous Materials Incidents (G);
12.4.2.44 NFPA 551 - Guide for the Evaluation of Fire Risk Assessment (G) NFPA 600 - Standard on Industrial Fire Brigades (M);
12.4.2.45 NFPA 720 - Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment (M);
12.4.2.46 NFPA 750 - Standard on Water Mist Fire Protection Systems (M);
12.4.2.47 NFPA 921 - Guide for Fire & Explosion Investigations (M);
12.4.2.48 NFPA 1041 - Standard for Fire Service Instructor Professional Qualifications (M);
12.4.2.49 NFPA 1021 - Standard for Fire Officer Professional Qualifications (M);
12.4.2.50 NFPA 1081 - Standard for Industrial Fire Brigade Member Professional Qualifications (M);
12.4.2.51 NFPA 1620 - Standard for Pre-Incident Planning (G);
12.4.2.52 NFPA 1962 - Standard for the Care, Use, Inspection, Service Testing & Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances (M);
12.4.2.53 NFPA 2001 - Standard on Clean Agent Fire Extinguishing Systems (M);
12.4.2.54 NWB Licenses for CAM-M, CAM-3, FOX-M, FOX-3, DYE-M and BAF-3 (M);
12.4.2.55 NWS Site Plans and Site historical Data (M);
12.4.2.56 NWS Fire Services Plan (G);

12.4.2.57 NWS Configuration Management Plan (G);
12.4.2.58 National Building Code of Canada (M);
12.4.2.59 National Fire Code of Canada (M);
12.4.2.60 PIN-MAIN Beach Clean-Up Reference Map (M);
12.4.2.61 Realty Asset Management Manual - Chapter 10, or substitute (M);
12.4.2.62 Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (SOR/2008-197) (M);
12.4.2.63 Species At Risk Act (M);
12.4.2.64 TP 312 Aerodromes Standards and Recommended Practices (G);
12.4.2.65 Tank Inspection Report Templates - Vertical & Horizontal (G);
12.4.2.66 Transport Canada Advisory Circular (AC) No. 300-004 for Unpaved Runway Surfaces (G) National Master Specification (NMS) (G);
12.4.2.67 Transportation of Dangerous Goods Act (M);
12.4.2.68 ULC S524 - Standard for the Installation of Fire Alarm Systems (M);
12.4.2.69 ULC S536 - Inspection & Testing of Fire Alarm Systems (M);
12.4.2.70 ULC S537 - Verification of Fire Alarm Systems (M);
12.4.2.71 Volume I of the PM Program (G); and
12.4.2.72 Water Safety Act (M).

SOW Section 13:

Real Property Management Services

ADM (IE)

13.0 Provide Real Property Management Services

13.1 General Requirements- Overview

13.1.1 The Contractor must support DND in complying with legislation and government-wide policies, directives and standards, and other applicable guidance documents, and, as requested, in implementing DND strategies and initiatives.

13.1.2 The Contractor must establish and maintain close business and operational relationships with the RP-TA.

13.1.3 The Contractor must deliver solutions that provide Best Value to Canadians, based on the optimal use of allocated labour, financial and other resources, in a manner consistent with the TB Policy on Management of Real Property and the TB Guide to the Management of Real Property.

13.1.4 The Contractor must manage the quality of products and services and continually evaluate and propose new industry processes and innovations to improve the efficiency and effectiveness of services, and initiate changes to the RP-SDR accordingly.

13.1.5 The Contractor must plan and schedule work to minimize disruption to operations.

13.2 Ensure Labour Resources Are Qualified

13.2.1 The Contractor must ensure that, at a minimum, resources have the following qualifications. Where a post-secondary degree or diploma is stated, the degree or diploma must be from a university or a college which has been granted the authority to award degrees or diplomas by its provincial ministry of education, and be a member of the Association of Universities and Colleges of Canada (AUCC) or Association of Canadian Community Colleges (ACCC), as appropriate. Degrees and diplomas from educational institutions outside of Canada can be accepted, provided they are granted equivalency from a Canadian university or college meeting the requirements stated above.

13.2.2 The Contractor must ensure that labour resources under the Contractor's authority, whether employees or sub-contracted, undertaking design work and supervision are registered, as follows:

13.2.2.1 Architects, Engineers, & Geoscientists must hold a professional license (e.g. P.Eng designation) IAW appropriate provincial or territorial requirements.

13.2.2.2 .

13.2.3 The Contractor must meet the requirements set out in Table 1: Resource Qualification Requirements, and otherwise ensure that labour resources under the Contractor's authority are suitably trained and supervised to perform assigned work.

13.2.4 If work is to be carried out by Apprentices, Engineers in Training or Architect Interns, in accordance with a Territorially-approved requirements, the Contractor must ensure that a suitably trained and qualified resource provides direct and comprehensive supervision of the Work.

13.3 Table 1: Real Property Resource Qualification Requirements

Nature of work	**Requirements**
Design - General	Persons performing architecture or engineering design work must be licensed to practice architecture or engineering.
Electrical	Persons working on electrical systems, including electrically-powered door systems are licensed with Trades Journeymen Qualification Certificates in accordance with the Newfoundland, Northwest Territories or Nunavut's Electrical Safety Authorities.
	Persons working on or altering the configuration of electrically-powered systems are licensed in accordance with the Northwest Territories or Nunavut Electrical Safety Authority.
HVACR	Persons working on HVAC installations are appropriately trained and experienced, and are licensed in accordance with the requirements of the appropriate provincial or to cover all provinces and territorial authority (YK, NWT, NU, and NFLD).
	Persons installing or servicing air conditioning/refrigeration equipment must be licensed in the Newfoundland, Northwest Territories or Nunavut as refrigeration mechanics and possess an Ozone Depletion Prevention (ODP) certificate issued by the HRAI, or Territorially-recognized proof of environmental awareness training in locations where the ODP certificate is not issued.
Power Plant Mechanical Systems	Persons working on power plant mechanical systems must have Industrial Mechanic/Millwright journeyman trade certification in accordance with the Northwest Territories or Nunavut's Trade and Occupations Certification Act and have successfully completed the interprovincial Red Seal examination
Oil-fired Systems	Persons working on oil-fired systems hold a valid Oil-Heat System Certificate appropriate to the systems on which they are working.
Plumbing	Persons working on plumbing have a Northwest Territories or Nunavut Plumbing License.
	Persons implementing, altering the configuration of, or seeking code approval for work on plumbing installations possess a Master Plumber License/Examiner's Certificate.

Nature of work	Requirements
Fire Suppression	Persons installing, modifying, inspecting, testing or maintaining water or foam based suppression systems are certified Sprinkler System Installers (Red Seal recognized).
	Persons installing, modifying, inspecting, testing or maintaining ITM of clean agent, chemical, carbon dioxide suppression systems are qualified to manufacturer requirements for the specific systems and are certified by the manufacturer for each type of system.
	Persons installing, modifying, inspecting, testing or maintaining of suppression systems containing halocarbons are qualified to manufacturer requirements and certified by the Underwriters' Laboratory of Canada (ULC) to the service category for the type of suppression agent associated with the system being maintained.
Life Safety Systems	Persons installing, modifying, inspecting, testing or maintaining Life Safety Systems are competent and licensed as required in the Northwest Territories or Nunavut.
Cleaning	In addition to standard trade training, persons involved in cleaning are trained in: a) proper use of green cleaning products and equipment to ensure proper usage and handling; b) proper disposal methods for cleaning products/equipment to be used; and c) Federal, Territorial and municipal regulations applicable to the products being used.
Lifting installations	Persons installing, modifying, inspecting, testing or maintaining lifting installations or equipment are duly licensed for the Work and device. Copies of mechanic's certificates are provided to the RP-TA prior to commencement or work and upon renewal of certificates.
Quarry	Persons responsible for the quarry and persons conducting quarry operations must be duly licensed in accordance with applicable Northwest Territories or Nunavut legislation.
Storage tanks	Persons installing, modifying, inspecting, testing or maintaining storage tanks are suitably qualified, trained and supervised in the inspection of ASTs in accordance with federal Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.
Water Sampling	Persons performing water sampling are suitably qualified, trained and supervised in the collection and testing/analysis of raw water samples. Persons undertaking other environmental services as requested are suitably qualified, trained and supervised.
Fire alarm, voice communicatio n systems, or intrusion alarm	Persons installing, modifying, inspecting, testing or maintaining fire alarm or voice communication systems are qualified as follows: a) Are currently registered by the Canadian Fire Alarm Association (CFAA) as having successfully completed the "Fire Alarm Technology" program and have a minimum of one years' experience;

Nature of work	Requirements
	b) Are certified and registered electricians having completed a recognized post-secondary program or course for fire alarm systems Maintenance approved by Canadian Forces Fire Marshal (CFFM); or c) Work for a fire alarm company listed under the Fire Alarm and security alarm Certificate Service of Underwriters Laboratories of Canada.
Hazardous Materials	Persons working with Hazardous Materials have appropriate training and experience in handling and managing Hazardous Materials; if a new Hazardous Material is introduced under the Contract, take reasonable steps to ensure that operatives receive appropriate information, instruction, training and equipment to safely manage the new material.
Integrated Pest Management	In addition to standard trade training, e.g. in WHMIS, persons performing Pest Management work are trained and licensed in the Northwest Territories or Nunavut on proper use of pest control products and equipment and have the knowledge required for their proper use, handling and storage in accordance with applicable regulations.
Kitchen Systems	Personnel working on kitchen systems are certified by CFESA or a similar industry-accepted organization, and meet Plumber or Electrician licensing or certification.
Safety Officer	The Safety Officer must be a Canadian Registered Safety Professional or eligible for designation as a Canadian Registered Safety Professional
Environmental Services Officer	The Environmental Services Officer must possess: a) A post-secondary diploma or degree in the sciences; b) Be designated a Certified Canadian Environmental Practitioner or eligible for designation as a Certified Canadian Environmental Practitioner; and c) Have a minimum of ten (10) years of direct experience in the provision of environmental services.
Fire Services Officer	The Fire Services Officer must be a certified NFPA 1021 Fire Officer 2 by a national certification organization acceptable to the Canadian Forces Fire Marshal's Office (e.g. International Fire Service Accreditation Congress or Pro-Board Fire Service Professional Qualifications System).
The Fire Services Training Coordinator	The Fire Services Training Coordinator must be certified NFPA 1041 Fire Service Instructor 2 by a national certification organization acceptable to the Canadian Forces Fire Marshal's Office (e.g. International Fire Service Accreditation Congress or Pro-Board Fire Service Professional Qualifications System).
Industrial Fire Brigade Leaders and Assistant Fire Brigade Leaders	Industrial Fire Brigade Leaders and Assistant Fire Brigade Leaders must be qualified to meet the "Entrance Requirements" and "Industrial Fire Brigade Leader" chapters outlined in NFPA 1081 as well as the "Medical and Job-Related Physical Requirements" section outlined in NFPA 600 for Incipient Stage Fire Fighting. Industrial Fire Brigade Leaders and Assistant Fire Brigade Leaders must be trained to NFPA 600 Incipient Stage Fire Fighting.

Nature of work	Requirements
Industrial Fire Brigade Members	Industrial Fire Brigade Members must be qualified to meet the "Entrance Requirements" and "Incipient Industrial Fire Brigade Members" chapters outlined in NFPA 1081 as well as the "Medical and Job-Related Physical Requirements" section outlined in NFPA 600 for Incipient Stage Fire Fighting. Industrial Fire Brigade Members must be trained to NFPA 600.

13.4 Real Property Performance Measurement Requirements

13.4.1 Introduction

13.4.1.1 The Real Property Performance Management Regime (RP-PMR) is aimed at supporting the RP-TA and supporting organizations and other subject matter experts involved in Oversight and Quality Monitoring (QM) and to evaluate the Contractor's annual real property service delivery performance completed after March 31 of each year.

13.4.1.2 The RP-PMR is a mechanism aimed at:

13.4.1.2.1 Providing insight into how well the Contractor is delivering services;

13.4.1.2.2 Supporting a dialogue with the Contractor aimed at jointly fostering continual improvement; and

13.4.1.2.3 Providing input to Performance Real Property Performance Indicators

13.4.1.3 The RP-PMR is modelled on a balanced scorecard approach that comprises the following areas of Performance Indicators:

13.4.1.3.1 *Area of Asset Integrity*: success in sustaining the value and condition of assets and complying with applicable policy and legislation. This area consists of 6 distinguished Performance Indicators;

13.4.1.3.2 *Area of Satisfaction*: success in meeting RP-TA expectations, promoting Occupier satisfaction, safeguarding the well-being of Occupiers and promoting ease of doing business. This area consists of 3 distinguished Performance Indicators;

13.4.1.3.3 *Area of Financial*: success in delivering affordable services that represent Best Value. This area consists of 2 distinguished Performance Indicators; and

13.4.1.3.4 *Area of Information Integrity*: success in ensuring that required information is trustworthy, available and easily accessible. This area consists of 2 distinguished Performance Indicators.

13.4.2 Integration of the RP-PMR with Quality Management Requirements

13.4.2.1 Treatment of Nonconformities

13.4.2.1.1 A Nonconformity (NC) is raised when the Contractor fails to comply with the requirements set out in the SOW, including applicable Service Levels, Performance levels and the Contractor's Service Delivery Regime as accepted by the RP-TA.

13.4.2.1.2 There are three sources of NCs: Environmental Regulatory Compliance, Occupational Health and Safety and General;

13.4.2.1.3 The onus is on the Contractor to identify NCs using its Quality Management System (QMS), including identifying root causes and taking timely corrective measures in accordance with corrective action plans. NCs identified by the Contractor do not affect the PfM Result unless they are outstanding or recurring. See the Impact Criteria and Nonconformities subsection for information related to NCs identified by the RP-TA;

13.4.2.1.4 The Contractor, the RP-TA or delegate are the only resources who can raise an NC. However, an NC can be initiated by DND's Real Property Operations organization (RPOps) through the regional QM lead and forwarded to the NWS Office. A Recurring NC arises when the corrective action for a specific NC does not resolve it. If an NC recurs within a 12-month period from the time of its closure, it is deemed to be a recurring NC. A second recurrence of the same NC is weighted by a factor of 2 and recurrences beyond the second by a factor of "n" where "n" is 3, 4, 5 etc. If the NC recurs outside the 12-month period it is considered as new; and

13.4.2.1.5 Outstanding NCs occur when:

a) The root cause of an NC is not identified and corrective actions have not been assigned within five business days after the NC was first identified, unless the has agreed to an extension including associated due dates; or
b) Corrective actions are not completed by the accepted target date; or
c) Effectiveness of corrective actions is not verified within the designated timeline identified in the associated corrective action plan; or
d) The NC has not been closed-out within the designated timeline subsequent to successful verification.

13.4.2.2 Impact Criteria and Non-Conformities (NC)

13.4.2.2.1 The PfM Result (A TA-identified NC will count as one occurrence if DND assesses that one or more of the Impact Criteria for a specific FY apply) will be changed when the RP-TA identifies an NC (Environmental, OH&S or General) where one or more Impact Criteria apply. The impact criteria are identified for a specific FY. For example, DND identified impact criteria may include:

a) Gross Negligence: A conscious and voluntary disregard of the need to use reasonable care, which is likely to cause foreseeable grave injury or harm to persons, property, or both, have an impact on the reputation of the department,

contravene regulatory compliance or represents a significant material loss and or accounting irregularity. To be invoked, DND must clearly demonstrate how gross negligence occurred;

b) Chronic, systemic and pervasive issues affecting multiple portfolios: This refers to chronic, systemic and pervasive issues identified by DND, with supporting evidence, affecting multiple portfolios under the RP contracts;
c) Root Cause Analysis and Action Plan are not acceptable: This refers to the Contractor developed Root Cause Analysis (RCA) and Action Plan required for each NC submitted by DND, and to the need for DND to clarify its expectations in terms of prescribed timeframes and quality of these deliverables. The impact determination must be based on the established acceptability criteria; and
d) "Significant" contract deliverables or terms not met: This refers to key deliverables or terms not being met by the RPC that would have a profound effect on the quality of service delivery and that would become precedent setting. Until concrete examples are identified and documented to further define what constitutes "significant contract deliverables", members of the Contract Management function must agree upon submitted findings meeting this criterion.

13.4.3 Performance Measures – Awareness Guidance

13.4.3.1 General

13.4.3.1.1 The various PfMCs are not independent of one another, i.e. changing the calculation method or range for one PfMC could have unintended consequences. It is paramount that participants in PfMC range and text revision discussions be sensitive to potential ripple effects throughout the RP-PMR.

13.4.3.2 Contractor/TA Range-Setting Sessions

13.4.3.2.1 Range-setting is an inexact process that requires good faith and trust from both parties. The following will be considered in these discussions:

a) Conducting a review of the applicable RP-PI Results by month for an entire FY, e.g. if the trend is indicating the result is always between the BL and BM, there is likely a case to move one or both upward – incremental continual improvement;
b) Whether Transition and Stabilization periods may be useful, e.g. to address extenuating circumstances such as the introduction of a new process by either the Contractor or Canada;
c) Unintended consequences, e.g. lowering the range for AI-6: Building Cleaning Index could result in significantly more service calls and perhaps jeopardize the attainment of applicable service levels; and
d) Industry benchmarks that might apply.

13.4.3.3 Elaborating Performance Measurement Requirements – PfMC Characteristics

13.4.3.3.1 Each PfMC is associated with a RP-PI and has the following general descriptive information:

a) Numeric identifier, e.g. AI-1, and text identifier e.g. "Environmental Regulatory Compliance Nonconformity Reduction Index";
b) Description, e.g. "measures compliance with applicable regulations";
c) PfMC score;
d) Units – either a number or percentage;
e) Reporting frequency – monthly, quarterly, P3, P6, P8, P10 or annually; and
f) Performance range for a specific year consisting of a Min, BL and BM.

13.4.3.4 For each PfMC, a result is calculated by the Contractor based on data collected by them and stored in their system. There are three generic types of PfMC Results:

13.4.3.4.1 A number, e.g. number of NCs;

13.4.3.4.2 Ratio expressed as a percentage, i.e. A / B × 100, e.g. Project Completion Checklist; or

13.4.3.4.3 Variance expressed as a percentage, i.e. [(A – B) / B] × 100, e.g. Forecast accuracy = (Actual – Forecast) /Forecast

13.4.3.5 Program of Projects (POP)

13.4.3.5.1 For RP-PMR purposes, there are three types of POP defined as follows:

a) *Initial POP*: determined by the RP-TA and Contractor before March 31st of the preceding FY, including associated funding;
b) *Acknowledged POP*: determined by the RP-TA and Contractor by April 30th; and
c) *Adjusted POP*: incorporating adjustments to the Acknowledged POP, as mutually agreed by the RP-TA and Contractor, to account for:
    - Project cancellation (whether client-driven or to accommodate emergency projects);
    - Project substitutions;
    - Incremental funding;
    - Emergency projects; or
    - Project category changes (Category 1 to 2 and vice versa).

13.4.3.6 Key Dates

13.4.3.6.1 Key dates to be aware of are indicated in the following table. This schedule is to be coordinated and integrated with the process for the entire SOW.

13.4.3.6.2 RP-PMR - Timing of Key Activities

Activity	OPIs	Timing
Initial discussions on PIs, PfMs, PfMCs, ranges and the identification of Category III special projects.	RP-TA & the Contractor	February 1
Development and sharing of proposals for as many PfMCs as possible.	RP-TA & the Contractor	March 1
Definition of the POP for RP-PMR purposes.	RP-TA	Initial POP March 31st
		Acknowledged POP April 30th
		Adjusted POP that caters for adds/deletes throughout the FY in accordance with accepted rules
Conduct discovery sessions.	RP-TA & the Contractor	April/May
Preliminary acceptance.	RP-TA	June 15th
Final acceptance of PIs that will count, including their ranges. If no agreement than ranges default to those of the previous FY.	RP-TA	July 15th

13.4.3.7 RP-PI/PfM Reporting

13.4.3.7.1 The following reports are relevant, particularly regarding individual tracking of PfM Results:

a) *RP-PMR Monthly Report Dashboards and Event printouts; and*
b) *Other quantitative reports Listed in Table – RPDRL.*

13.4.3.8 PfMC, PfM Result and Score Calculations

13.4.3.8.1 The Contractor is responsible for providing various types of performance information, including individual PfMC performance ranges for a specific FY with graphs indicating MIN, BL and BM, how the PfM Result is calculated and determination of the actual score, and the source of data required for the calculation.

13.4.3.9 Performance Measures and Component Descriptions

PI	Performance Measure (PfM)	Performance Indicator Description and Business Objective	Performance Measure Components (PfMC)	Performance Range	
				Min	BM
Area of Asset Integrity	AI-1 Facility Condition Index (FCI) and System Condition Index (SCI).	Measures the current condition of facilities to assess how much work, if any, is recommended to maintain or change their condition to acceptable levels to support NWS missions. Must be tied to a strong Building Condition Assessment (BCA) methodology.	The minimum requirement to achieve a satisfactory (Pass) result in AI-1 is to ensure that both indexes are maintained at the level provided to the contractor at the beginning of the contract. Moreover, contractor must provide plans to improve both indexes to keep them at fair level (0.1 to 0.3).	BCA done at BCA done for 20% of buildings per year	100% of Complete BCA every 5 years
	AI-2: Environmental Regulatory Compliance Nonconformity Reduction Index.	Measures compliance with applicable regulations. The objective is to encourage the Contractor behaviors that will result in full compliance with associated regulations.	AI-1.1: Number of -identified environmental NCs.	5	0
			AI-1.2: Number of environmental NC recurrences identified by either the Contractor or RP-TA.	1	0
			AI-1.3: Number of environmental outstanding NCs identified by either the Contractor or RP-TA	1	0
	AI-3: OH&S Program	Measures success in OH&S	AI-2.1: Number of RP-TA	5	0

	Nonconformity Reduction Index.	compliance. The objective is to encourage the Contractor behaviors that will result in full compliance with associated regulations.	identified OH&S nonconformities.		
			AI-2.2: Number of OH&S NC recurrences identified by either the Contractor or RP-TA.	1	0
			AI-2.3: Number of outstanding OH&S NC identified by either the Contractor or RP-TA.	1	0
	AI-4: General Nonconformity Reduction Index.	Measures success in reducing quality nonconformities. The objective is to encourage the Contractor behaviors to comply with accepted service delivery processes.	AI-3.1: Number of General nonconformities identified by the RP-TA.	10	0
			AI-3.2: Number of General NC recurrences identified by either the RP-TA or Contractor.	2	0
			AI-3.3: Number of outstanding General NCs identified by either the Contractor or RP-TA.	2	0
	AI-5: Maintenance Completion Index.	Measures success in completing legislated and life-cycle maintenance. The objective is to encourage the Contractor behaviors that will result in full compliance with associated	AI-4.1: Number of legislated maintenance activities not completed by the legislated timeframe.	8	0
			AI-4.2: Number of scheduled life-cycle maintenance activities not	25	7

		legislation and to successfully complete lifecycle maintenance.	completed within 45 days of their targeted start date.		
	AI-6: POP Progress Index.	Measures success in delivering a baseline POP. The objective is to encourage the Contractor to ensure that project requirements are fully met, and to provide assurances that POP implementation is proceeding as planned.	AI-5.1: Ratio of number of projects with fulfilled requirements as indicated in Project Quality Checklists, to the total completed projects in the accepted POP.	80	100
			AI-5.2: Ratio of the actual amount invoiced to the end of P3, P6 and P8 to the total funding in the applicable POP. To achieve the score allocated to P3, P6 and P8 the Contractor must spend, by the end of each of these periods, at least the percentage targets established for that year.	P3 10 %	
				P6 20 %	
				P8 50 %	
Area of Satisfaction	S-1: Service Call Responsiveness Index.	Measures success in responding to Occupier-initiated service calls in a timely, professional and effective manner. The objective is to encourage Contractor behaviour that meets Service Call	Response effectiveness expressed as the percentage of service calls addressed within the allowable Maximum Response Time (MRT).	80%	95%

		requirements and foster Occupier satisfaction.			
	S-2: Incident Management Index.	Measures the failure to prevent or respond to incidents (critical and non-critical) based on documenting and reporting incidents once they have occurred, including the Contractor's responsibility in preventing or foreseeing the event. The objective is to encourage the Contractor to foresee, prevent and respond effectively to incidents.	The Incident Management Index is the sum of the Critical Incident and Non-Critical Incident scores.	20	14
	S-3: Building Cleaning Index.	Measures success in maintaining building cleanliness to a level that meets requirements. The objective is to encourage the Contractor to ensure that cleaning requirements are fully met.	The average scores of building cleaning assessments, in accordance with the number of cleaning inspection elements and schedule accepted by the RP-TA.	80%	90%

PI	Performance Indicator	Performance Indicator Description and Business Objective	Performance Indicator Components	Performance Range	
				Min	BM
Area of	F-1: Cost Control Index	Measures success in controlling project costs to levels in final approved	F- 1.1: POP cost control for Category 1 projects, as reflected in the CAT1 PL,	80	95

PI	Performance Indicator	Performance Indicator Description and Business Objective	Performance Indicator Components	Performance Range	
				Min	BM
		Work Authorizations for Additional Work, and stabilizing O&M costs. The objective is to encourage Contractor behaviours that will minimize project change orders and control year-over-year O&M costs.	expressed as a ratio of 'A' to 'B' where: • 'A' equals the number of projects whose variance between total actual cost of the project and final Work Authorization is equal to or less than 10%; and • 'B' equals the total number of completed CAT 1 projects.		
			F- 1.2: Stabilization of O&M costs: variance between current Fiscal Year accepted Annual Building Plan (as of the same date each year) and the previous year ABP (at the same date) compared to a performance range that considers the Annual Inflation Adjustment (AIA).	CPI plus 2%	CPI plus 0.5%
	F-2: Forecast Accuracy Index.	Measures: • Accuracy of forecast expenditures from different periods to year-end: and • Number of unplanned carry-over projects. The objective is to encourage the Contractor to forecast accurately for both projects and O&M and Utilities spending, to plan projects effectively and to	F-2.1: POP forecast accuracy (including the Cat 1 PL, and CAT 2 & 3 projects), variance between POP year-end actuals and forecast expenditures including carry-over projects, at P3, P6 and P8 to year-end where Variance = (Actuals minus Forecast)/Forecast.	+1.5 & -4%	+/-1%
			F-2.2: O&M and Utilities forecast accuracy: variance between O&M and Utilities year-end actuals and forecast expenditures at P3, P6 and P8 to year-end where	+1.5 & -4%	+/-1%

PI	Performance Indicator	Performance Indicator Description and Business Objective	Performance Indicator Components	Performance Range	
				Min	BM
		minimize unplanned carry-over projects.	Variance = (Actuals minus Forecast)/Forecast.		
			F-2.3: Unplanned carry-over projects: Ratio of total number of unplanned carry-over projects, to the total number of projects (excluding carry-over projects) in the accepted POP.	+15%	5%
Area of Information Integrity	II-1: Deliverable Rejection Index.	Measures success in meeting RPDRL content and format requirements.	Expressed as a ratio of 'A' to 'B' where: • 'A' equals the number of rejected RPDRL deliverables over the course of a year; and • 'B' equals the total number of deliverables submitted over the course of a year.	30	10
	II-2	Information availability Index.	Conformity with RPDRL submission frequency and timing requirements.	80	95

13.4.3.10 Performance Measure and Component Data Sources

Performance Measure (PfM)	Performance Measure Component (PfMC)	Data and Source
AI-1: Facility Condition Index (FCI) and System Condition Index (SCI).	AI-1.1	Available Data Source Manager – Building Condition Assessment (BCA) Export Report.
AI-2: Environmental Regulatory Compliance Nonconformity Reduction Index.	AI-2.1 AI-2.2 AI-2.3	▪ Number of NCs; and ▪ Quality Management Tool.
	AI-3.1 AI-3.2	▪ Number of NCs; and ▪ Quality Management Tool.

Performance Measure (PfM)	**Performance Measure Component (PfMC)**	**Data and Source**
AI-3: OH&S Program Nonconformity Reduction Index.	AI-3.3	
AI-4: General Nonconformity Reduction Index.	AI-4.1	▪ Number of NCs; and ▪ Quality Management Tool.
	AI-4.2	
	AI-4.3	
AI-5: Maintenance Completion Index.	AI-5.1	Available Data Source Manager – PM Work Order Export Report.
	AI-5.2	
AI-6: POP Progress Index.	AI-6.1	Available Data Source.
	AI-6.2 (P3, P6 & P8)	Available Data Source – POP Progress Index.
S-1: Service Call Responsiveness Index.		Available Data Source.
S-2: Incident Management Index.		Quality Management Tool (Incident Tracker), Closed Incidents and Evaluation.
S-3: Portfolio Building Cleaning Index.		Completed cleaning inspection forms.
F-1: Cost Control Index.	F-1.1	Available Data Source – POP Cost Control Report.
	F-1.2	Available Data Source.
F-2: Forecast Accuracy Index.	F-2.1	Available Data Source – Cost Efficiency Report.
	F-2.2	Available Data Source – Cost Efficiency Report
	F-2.3	Available Data Source – Cost Efficiency Report.
II-1	-	RPDRL Tracking.
II-2	-	RPDRL Tracking.

13.4.4 Real Property Performance Indicators (RP PIs) and Financial Responsibilities.

13.4.4.1 Knowing the importance of RP PIs in overall performance of the contract, 6 out of 13 RP PIs had been part of the Strategic Performance Measures (SPMs) in the **Annex F** for the contract; and

13.4.4.2 6 RP PIs that are tied with the Strategic Performance Measures (SPMs) Key Performance Indicators (SPM-3 KPIs) in the Annex F and have financial incentives for the Contractor, include:

13.4.4.2.1 KPI related to Facility Condition Index (FCI) and System Condition Index (SCI);
13.4.4.2.2 KPI related to Maintenance Completion Index;
13.4.4.2.3 KPI related to Program of Projects (POP) Progress Index;
13.4.4.2.4 KPI related to General Nonconformity Reduction Index; and
13.4.4.2.5 KPI related to Environmental Regulatory Compliance Nonconformity Reduction Index.

13.4.4.3 Associated Performance Indicators

13.4.4.3.1 PI 3.1 Invoicing;
13.4.4.3.2 PI 3.2 Cost Control Index;
13.4.4.3.3 PI 3.3 Forecast Accuracy Index; and
13.4.4.3.4 PI 3.4 Deliverable Rejection Index.

13.5 Provide Planning Services

13.5.1 General

13.5.2 The Contractor must develop:
- 13.5.2.1 Annual Building Plans (ABPs) for each building and other major assets;
- 13.5.2.2 A Labour Resource Plan;
- 13.5.2.3 Site Plans;
- 13.5.2.4 Corrosion Prevention Plan;
- 13.5.2.5 Diesel-Electric Generating Systems Long-term Maintenance Plan;
- 13.5.2.6 Gravel Plan;
- 13.5.2.7 Erosion Control Plan;
- 13.5.2.8 Site Radar Tower Management Plan;
- 13.5.2.9 Spill Contingency Plan, as set out in the Provide Environmental Management Services Section; and
- 13.5.2.10 A NWS Infrastructure Summary Plan as input to the NWS Five-Year Operations and Sustainment Plan (FYO&SP).

13.5.3 The Contractor must ensure that planning is undertaken considering:
- 13.5.3.1 Overall NWS objectives, strategies and priorities;
- 13.5.3.2 Opportunities to improve the condition of buildings, extend the life of assets and otherwise improve Facility Condition Indices (FCIs), where these have been established; and
- 13.5.3.3 Sustainability, in accordance with Sustainability requirements.

13.5.4 Develop Annual Building Plans

13.5.5 The Contractor must develop ABPs and:

13.5.5.1 Participate in ABP familiarization presentations;

13.5.5.2 Collaborate in ABP preparation kick-off meetings to confirm objectives and priorities;

13.5.5.3 analyze relevant documentation to reflect the real property priorities, strategies and plans, considering the recommendations provided in the Building Performance Review (BPR), the AMP, building-specific strategies, plans and other relevant information;

13.5.5.4 Recommend appropriate service levels for the building;

13.5.5.5 Provide the building-level allocations of the Labour Resource Plan estimated labour cost summary, detailed by position, role or subcontract, as appropriate; and

13.5.5.6 Submit proposed prioritized Project Listings to seek acceptance of planned projects in accordance with the requirements for each Project Category, as described in the Provide Project Delivery Services section, for the coming Fiscal Year, or Fiscal Years, as applicable:

13.5.5.6.1 obtain acceptance of the overall recommended cost envelope for labour use code (LUC) 76 TA/AWR projects, labour use code LUC 77 Self-Help projects, and Labour use code LUC 78 Minor Modification projects, and once project funding has been allocated, present a proposed Project Listing; and

13.5.5.6.2 Present a proposed prioritized Project Listing for each of labour use code (LUC) 76, labour use code LUC 77 and Labour use code LUC 78 projects.

13.5.6 The Contractor must present the ABPs to the RP-TA, and to the respective DND, respond to questions and adjust accordingly to obtain acceptance of ABPs and to support related TAs/AWRs.

13.5.7 The Contractor must submit proposed changes to the Work-set out in the ABP as the basis for supporting decisions for new TAs/AWRs or amendment of existing ones.

13.6 Develop Labour Resource Plans

13.6.1 The Contractor must develop an annual Labour Resource Plan to support the TA/AWR process for Additional Services, including Optional Services, if Canada exercises its option for one or more of these:

13.6.1.1 Describe the organizational strategy, key roles and responsibilities of the Contractor's core organization and provide an organization chart;

13.6.1.2 Describe other key roles and responsibilities or functions that are subcontracted or otherwise provided; and

13.6.1.3 Provide an estimate of the cumulative labour costs for resources under the Contractor's authority for the planning year, including employees and subcontracted labour resources.

13.6.2 Organize the labour resource information so that labour allocations can be readily presented at both the building and Contract levels.

13.6.3 Submit the proposed Labour Resource Plan one month in advance of the required Annual Building Plan submission date, to enable its analysis as part of the Annual Building Plan acceptance process.

13.6.4 Present the Labour Resource Plan to the TA, respond to questions and adjust accordingly to obtain acceptance of the plan and to support related TAs/AWRs.

13.7 Develop Site Plans

13.7.1 The Contractor must develop Site Plans, by the ABP submission date, including roll-ups and summaries of information provided in the ABPs, and:

13.7.1.1 Provide annual Site financial summaries for each Site;

13.7.1.2 Provide a strategic Site overview;

13.7.1.3 Provide the Site-level allocations of the Labour Resource Plan estimated labour cost summary, detailed by position, role or subcontract, as appropriate; and

13.7.1.4 Describe the Program of Projects (POP), planned as an integrated program, excluding other real property projects, with projects and their requirements organized in accordance with the Project Categories set out in the Provide Project Delivery Services section:

13.7.1.4.1 Submit a proposed, prioritized Project Listing for each Project Category as part of the POP to support associated TAs/AWRs;

13.7.1.4.2 Recommend the inclusion of projects on the basis of expected funding, commensurate with funding allocated in April of each Fiscal Year;

13.7.1.4.3 Include back-up projects to ensure full use of authorized funding, as requested; and

13.7.1.4.4 Include multi-building site planning content for each Site.

13.7.2 The Contractor must submit a Site Planning Listing, identifying opportunities for achieving economies of scale in resourcing similar work activities.

13.7.3 The Contractor must present the Site Plans to the RP-TA, respond to questions and adjust plans as requested to obtain acceptance and to support related TAs/AWRs.

13.8 Develop Corrosion Prevention Plan

13.8.1 The Contractor must establish and annually update a Corrosion Prevention Plan for metal surfaces in accordance with the Real Property Deliverable Requirements List (CDRL). The Contractor must document the approach and methodology for preventing corrosion at NWS sites, for ensuring regulatory compliance to the federal Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, at a minimum covering the following:

13.8.1.1 Petroleum, Oil and Lubricants (POL) tanks. Tanks to be painted and repaired as recommended by certified inspector within two years;

13.8.1.2 POL pipelines. Piping to be painted and repaired as recommended by a NACE certified Corrosion Expert within two years;

13.8.1.3 Painting of LRR site radar towers at least once every 10 years, as counted from the last time they were painted;

13.8.1.4 Metal helipads and walkways;

13.8.1.5 Building pilings;

13.8.1.6 Satellite Ground Terminals and other exterior installed metal structures;

13.8.1.7 Building trim and other metal facades;

13.8.1.8 Water and sewage tanks; and

13.8.1.9 SRR site towers.

13.8.2 The Contractor must establish and maintain a Corrosion Analysis Program that meets the requirements of the Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

13.8.2.1 Maintain records of the Corrosion Analysis Program; and

13.8.2.2 Provide documentation as per related CDRL, DID.

13.9 Update and Maintain the Diesel Electric Generating Systems Long-Term Maintenance Plan

13.9.1 The Contractor must update and maintain the Long-Term Maintenance Plan for NWS DEGS in accordance with the CDRL, covering the maintenance philosophy, concept, approach, methods and scope of work for the repair and overhaul of NWS DEGS. The Contractor must review and update the plan, including as a minimum, information gathered from the previous year's repair and overhaul data.

13.10 Prepare and Maintain the NWS Gravel Plan

13.10.1 The Contractor must prepare and maintain the NWS Gravel Plan in accordance with the DD/CDRL, including:

13.10.1.1 The approach to crushing gravel, e.g. whether undertaken in-house or subcontracted;

13.10.1.2 Location of crushers;

13.10.1.3 Required Mobile Support Equipment (MSE) available by site and how it will be used; and

13.10.1.4 Gravel requirements forecast for the Current Year (CY) through CY+4 to be added to the FYO&SP, borrow pit locations, and volume of existing stockpiles. The annual forecast will be in Contractor format, to be reviewed and accepted by Canada. The initial plan is to be prepared no later than six months after contract award, and then is to be reviewed and updated at a minimum annually by 30 November.

13.11 Establish and Maintain an Erosion Control Plan

13.11.1 The Contractor must develop an Erosion Control Plan in accordance with the CDRL, and annually update it to incorporate lessons learned from the previous year, covering at a minimum, planned PM and CM for the following:

13.11.1.1 Gravel airfields and aprons at BAR-2, PIN-MAIN, PIN-3, CAM-3, FOX-3, DYE-MAIN and BAF-3;

13.11.1.2 Gravel roads, shoulders, parking areas and other gravel surfaces at LSS-I, BAR-2, PIN-MAIN, PIN-3, CAM-MAIN, CAM-3, FOX-MAIN, FOX-3, LSS-Q, DYE-MAIN, BAF-3, LAB-2 and LAB-6;

13.11.1.3 Gravel helipads;

13.11.1.4 Sealift points, excluding SRRs;

13.11.1.5 Clearing of ditches, catch basins, swales and culverts, and removal of encroaching overgrowth; and

13.11.1.6 Measures to mitigate erosion of gravel surfaces during the spring melt.

13.12 Develop the NWS Infrastructure Summary Plan

13.12.1 The Contractor must develop an annual NWS Infrastructure Summary Plan in accordance with the CDRL, including:

13.12.1.1 A strategic overview and management analysis for the Contract;

13.12.1.2 A roll-up and summary of Site Plan information; and

13.12.1.3 A subcontracting plan.

13.13 Assist DND in Sustainability Planning

13.13.1 The Contractor must identify opportunities and support DND in preparing its Sustainable Development Strategy (SDS) to meet federal SDS requirements by assisting in establishing objectives and plans.

13.13.2 The Contractor must include proposals in ABPs for meeting targets identified by DND and demonstrate how SDS targets will be achieved through specific projects.

13.13.3 The Contractor must identify opportunities to assist DND in greening government operations, as requested, including activities to:

13.13.3.1 Reduce greenhouse gas and other air-polluting emissions;
13.13.3.2 Provide for green procurement;
13.13.3.3 Remediate contaminated sites;
13.13.3.4 Improve the management of waste; and
13.13.3.5 identify opportunities to assist DND in greening real property assets, including ensuring that buildings renovated under the Contract meet the energy efficiency targets set out by DND.

13.14 Provide Input to Asset Management Plans

13.14.1 Review existing AMPs annually, provide information, participate in meetings to support the development of AMPs and BCRs by DND, and undertake associated work to support the AMP development process, as requested.

13.15 Use and Maintain Government-Furnished Property

13.16 Use and Maintain Government-Furnished Accommodation

13.16.1 Locate Contractor labour resources in GFA provided, including general purpose office space, as indicated in the Contract:

13.16.1.1 Locate key building operations labour resources under the Contractor's authority within the space provided;
13.16.1.2 Obtain written approval to alter GFA, including the furniture configuration;
13.16.1.3 Undertake approved alterations at the Contractor's expense; and
13.16.1.4 Maintain furnishings and GFE in good working order at the Contractor's expense.

13.17 Manage Real Property Incidents

13.17.1 The Contractor must manage and respond to incidents in accordance with the accepted RP-SDR Specification, or as requested:

13.17.1.1 Minimize the risk and reduce the impact of incidents on the safety of people and assets; and

13.17.1.2 Maintain performance and Occupant satisfaction.

13.17.2 The Contractor must manage and respond without delay to unexpected events that could result in injury to persons, damage to equipment, material or the environment, or the temporary disruption of essential services and where immediate action is required.

13.17.3 The Contractor must notify designated authorities, respond and take corrective measures within defined timeframes.

13.17.4 The Contractor must communicate in accordance with defined criteria, advising the RP-TA on progress during incidents, and submit incident reports.

13.17.5 The Contractor must comply with investigation and reporting requirements of regulatory authorities.

13.17.6 The Contractor must collect data and analyze incident trends to identify root causes, recommend measures to reduce incidents, identify improvement opportunities, including rectification of operational deficiencies, inadequate asset maintenance and shortcomings in ABPs or BPRs and provide reports as requested.

13.18 Develop Asset Management Plans and Facilities Condition Surveys, and Provide Building Condition Assessments

13.18.1 The Contractor must develop Asset Management Plans (AMPs) and Facilities Condition Surveys (FCSs), and provide Building Condition Assessments (BCAs), in accordance with the accepted RP-SDR Specification and associated TAs/AWRs.

13.18.2 The Contractor must develop supporting plans, processes and procedures for AMPs, FCSs and BCAs and include these in the RP-SDR.

13.18.3 A full description of the facilities, works, equipment and infrastructure is provided in the most recent Facilities Condition Assessment and accompanying documents, and are available to the Contractor to support their operations.

13.18.4 The Contractor must develop AMPs and Level 2 and Level 3 BCRs in accordance with applicable policies and procedures and the CDRL.

13.18.5 Undertake NWS Facilities Condition Surveys.

13.18.6 The FCS is aimed at complementing the annual Trend Analysis Report set out in Part 4 – Sustainment of the SOW, and the FYO&SP to provide an overview of how the service life of NWS facilities is being sustained and support Transition Out activities.

13.18.7 The Contractor must perform an NWS Facilities Condition Survey (FCS) on a five-year cycle referring to the reference provided. The Contractor must complete the first FCS by 30 November of year three of the Contract, for NWS Northern sites, LSSs and the SRD. Thereafter, sites are to be visited on a two-year cycle, with the updated FCS submitted by 30 November with the sites visited in that year. The Contractor must ensure that findings not corrected at the time of the inspection are tracked to completion in the WMS. The Contractor must report findings in accordance with the CDRL, including at a minimum, the following information for each site:

13.18.7.1 Major maintenance initiatives which occurred, and how they impact the condition/life span of facilities;

13.18.7.2 TA/AWR work, and how it has affected the condition/anticipated life span of facilities;

13.18.7.3 Historical CM listing, sorted by system; and

13.18.7.4 Historical PM listing, particularly PM that was missed.

13.18.8 The Contractor must develop the FCSs, drawing on the most recent previous FCS as a starting point, by 30 November of year three of the Contract, covering NWS Northern sites, LSSs and the SRD. Thereafter, the Contractor must visit sites over a two-year period starting after the third year, submitting the updated FCS for the sites visited in that year. The Contractor must track findings not corrected at the time of the inspection to completion in the NWS Work Management System.

13.18.9 Prepare and Submit Active and Passive Fire Protection System PM Task Reports

13.18.9.1 Within six months of the Operational Start Date of the North Warning System sites, the Contractor must prepare draft checklist documentation in electronic format for preventative maintenance inspection, testing, and maintenance tasks on active and passive fire protection and life safety systems. The Contractor must draft electronic checklists to the RP-TA for review and acceptance prior to their use. The Contractor must organize the Checklist according to the frequency of the PM task (i.e. frequency of the inspection, testing, and maintenance requirements) for each of the active and passive fire protection and life safety system as required within the latest editions of the following standards:

13.18.9.1.1 NFPA 12 for mechanical and electrical components of a Carbon Dioxide (CO2) Extinguishing System;

13.18.9.1.2 NFPA 25 for Water Based Fire Protection Systems Including Fire Pumps used for fire protection purposes;

13.18.9.1.3 NFPA 17 for Dry-Chemical Extinguishing Systems or NFPA 17A for Wet-Chemical Extinguishing Systems as part of a Kitchen Extinguishing System;

13.18.9.1.4 NFPA 96 for Kitchen Exhaust Hoods used for ventilation control as part of a Kitchen Extinguishing Systems;

13.18.9.1.5 NFPA 2001 for Clean Agent systems such as FM-200 Systems; and

13.18.9.1.6 ULC S536 for Fire Alarm Systems, Voice Communication Systems, and Fire Suppression Releasing Panels.

13.18.9.2 The Contractor must prepare reports within 15 days of completion of the PM task, and posted on-line. The Contractor must provide reports to RP-TA for audit purposes within 5 business days of being requested.

13.18.10 Establish and Maintain NWS LRR Site Radar Tower Management Plan

13.18.10.1 The Contractor must establish and maintain an NWS LRR Site Radar Tower Management Plan. The plan is to document the Contractor's approach to ensuring the life cycle of NWS LRR site radar towers extends beyond the end of the current contract. Incorporate the findings of previous tower studies as per provided info, and other 3rd party structural inspection reports as applicable into the plan. The plan is to document at a minimum:

13.18.10.1.1 Cross reference to the preventive maintenance routines included in the NWS Preventive Maintenance Plan;

13.18.10.1.2 Cross references, as appropriate, to the Corrosion Prevention Plan.

13.18.10.1.3 Include an inspection to CSA S37-01 Antennas, Towers, and Antenna-Supporting Structures on LRR site towers annually; and

13.18.10.1.4 Implementation of non-destructive testing (NDT) on a minimum of 3 LRR site towers annually.

13.18.10.2 The scope and approach to implementing repair of cracks found. FFP repair of cracks is subject to a Radar Tower CM Job Limit of $50K per site annually. Where applicable, address towers at individual sites where a particular or unique issue exits or is otherwise discovered during the course of annual inspections, and what additional measures are proposed for that particular tower. The plan is containing an Annex which details the annual program for the current Fiscal Year. Starting in year 2, and for each year thereafter, the annual program is to incorporate lessons learned from implementation of the previous year's program.

13.18.11 Submit NWS LRR Site Radar Tower Inspection Reports

13.18.12 The Contractor must submit inspection reports prepared as part of implementation of the NWS LRR Site Radar Tower Management Plan as per DID/CDRL 13.19 for each tower inspected/repaired each year. The Contractor must ensure that reports clearly detail the inspection and/or testing completed, repairs completed at the time of the inspection, or planned to be completed, and when they will be completed, submit these to the RP-TA no later than 30 November

13.19 Provide Work Deliverables

13.20 General

13.20.1 The Contractor must prepare, maintain and submit the deliverables set out in the CDRLs in accordance with the requirements of this section of the SOW, associated TAs/AWRs and the most current versions of this section of the SOW IM/IT Standard and the Real Property Contract Deliverable Item Descriptions Standard.

13.20.2 The Contractor must seek direction from the RP-TA if deliverable requirements are not clear.

13.20.3 The Contractor must propose formats for acceptance for deliverables numbered "CG-XX" for which a Deliverable Item Description (DID) is not prescribed.

13.20.4 The Contractor must use existing Contractor documents and formats wherever possible to fulfill DID requirements, drawing to the maximum extent possible on existing information contained in Contractor documentation and systems.

13.21 Meet DID/CDRL Requirements

13.21.1 The Contractor must prepare deliverables to meet CDRL item and associated DID requirements, as requested:

13.21.1.1 *Original document*: maintain official final documents and transfer these to the RP-TA for archiving, as required and on completion of projects;

13.21.1.2 *Master copy*: submit signed official file copies in the form in which they are intended to be distributed; and

13.21.1.3 *Copies*: submit printed media copies of deliverables, as specified in the associated TA/AWR, in a condition suitable for immediate distribution.

13.21.2 The Contractor must keep electronic documents and data in native format and provide deliverables as set out in associated TAs/AWRs in:

13.21.2.1 Hard copy format, ensuring that reproduced copies show actual signatures in lieu of electronic signatures; and

13.21.2.2 Electronic format, which should include an indication of the signature and the date the document was signed.

13.21.3 The Contractor must maintain document deliverables in the following native formats:

13.21.3.1 PDF files, as the preferred format in an acceptable version of Adobe Reader™; and

13.21.3.2 MS Word, Excel and PowerPoint, as the preferred format for word processing documents, spreadsheets and presentations, respectively, compatible with acceptable versions of MS Office and the MS Windows operating system.

13.21.4 The Contractor must include a signature page in documents requiring indication of acceptance in hard copy, as required, indicate RP-TA involvement in the change process for these documents, and submit for review and acceptance.

13.21.5 The Contractor must obtain acceptance of deliverables in accordance with the CDRL and associated TAs/AWRs.

13.21.6 The Contractor must provide non-deliverable items, for example, items to support Quality Monitoring or due diligence activities, as requested.

13.21.7 The Contractor must apply the document status described in the CDRL – Draft, Preliminary, Final or Current – to indicate the status of documents as they evolve through their life cycle.

13.22 Control Documentation Change

13.22.1 The Contractor must issue documentation change notices whenever minor changes or updates have occurred in final versions of deliverables that have been delivered to DND.

13.22.2 The Contractor must indicate changes or updates when documents need to be reviewed again by the RP-TA or by the Occupant.

13.22.3 The Contractor must issue a complete revision of the document and deliver it in accordance with the initial instructions when major changes are required.

13.22.4 The Contractor must obtain acceptance of proposed changes to documents that require acceptance before making changes.

13.22.5 The Contractor must indicate that acceptance is pending on document title pages until acceptance has been received, and revise the title and signature pages accordingly upon acceptance.

13.23 Obtain Acceptance of Deliverables

13.23.1 The Contractor must ensure that deliverables meet the document fidelity, DID/CDRL requirements to support their acceptance, as follows:

13.23.1.1 Submit documents, whether draft, preliminary, final or current, as part of a review package or individually, as requested; the RP-TA will indicate *accepted*, *accepted with modification* or *as noted*, or *rejected*;

13.23.1.2 The RP-TA will indicate the reason for rejection or conditional acceptance of final documents that are *rejected* or *accepted as noted*; resubmit the documents within the requested timeframe; the RP-TA will indicate *accepted*, *accepted with modification* or *as noted*, or *rejected*; and

13.23.1.3 Notify the RP-TA immediately if documents that were previously *accepted* are found to be based on erroneous information, noting that such prior acceptance will not be construed as a change in Contract requirements.

13.23.2 The Contractor must submit deliverables requiring acceptance on time, by ensuring that:

13.23.2.1 The document is received on or before the Contractual due date; and

13.23.2.2 The document is accepted during the initial review and acceptance process.

SOW Section 14:

Maintenance Management, Engineering, and Facilities Maintenance Services

ADM (IE)

14.0 Provide Maintenance Management and Engineering Services

14.1 General

14.1.1 The Contractor must ensure that real property assets are functional and available 24 hours per day, 365 days per year.

14.1.2 The Contractor must provide Maintenance Engineering and Maintenance Management Services with a view to sustaining the maintainability, reliability, and availability of NWS equipment, systems and real property assets and in accordance with the accepted RP-SDR Specification and associated TAs/AWRs.

14.1.3 The Contractor must ensure that work is consistent with applicable legislation and government-wide policies, directives and standards, comply with the National Building Code, the National Fire Code of Canada and provincial and territorial building and fire codes, meeting the more stringent of these requirements, and, if there is conflict among them, advise the RP-TA and recommend an appropriate course of action for acceptance.

14.1.4 Refer to Site plans, Site Historical Data and Facility Condition Assessment (2009 and 2019) Survey and subsequent upgrades, for information regarding the various equipment at 36 SRRs, nine LRRs, three LSSs, SRD and two main sites.

14.2 Provide Services to Protect Heritage Assets

14.2.1 The Contractor must ensure that services for designated heritage assets respect and conserve heritage character, are provided in accordance with FHBRO requirements and meet related obligations.

14.2.2 The Contractor must provide services for heritage buildings, coordinating specialized architectural, engineering, technical and historical material conservation requirements.

14.2.3 Protect the heritage character of Recognized and Classified heritage buildings, including:

14.2.3.1 familiarity with heritage values to be protected based on heritage character statements, statements of significance and other guidance documents available to ensure full coordination of services;

14.2.3.2 Ensuring O&M work is consistent with protection of the heritage character of heritage assets;

14.2.3.3 Ensuring base-building information is organized and available, including information on civil, structural, architectural, mechanical and electrical construction and systems and significant modifications over time;

14.2.3.4 Conducting regular inspections to monitor conditions over time and provide input into maintenance and project plans and priorities;

14.2.3.5 Using condition documentation information to establish trends to measure performance with respect to the objective to protect heritage character;

14.2.3.6 Ensuring understanding of historical construction, construction history, structural performance, material characteristics and conditions, building envelope performance and environmental impacts;

14.2.3.7 Developing conservation approaches and treatments consistent with the Standards and Guidelines for the Conservation of Historic Places in Canada;

14.2.3.8 Submitting reports, plans and specifications for Classified Heritage Assets to FHBRO for review;

14.2.3.9 Coordinate requirements and activities, as requested, through DND Regional Heritage Conservation Coordinators and nationally through the DND National Heritage Coordinator, to support monitoring and reporting;

14.2.3.10 Ensuring appropriate review and oversight of deliverables and services provided by third parties on designated assets;

14.2.3.11 Reviewing FHBRO intervention review reports and ensure reviews are considered in project delivery; and

14.2.3.12 Supplementing commissioning activities by providing maintenance information that includes documentation of conservation treatments, materials and methods, and technical maintenance guidelines.

14.3 Provide Maintenance Engineering Services

14.4 General

14.4.1 The Contractor must prepare Class A, B, C and D Cost estimates IAW Cost Estimate Classifications as defined by Treasury Board using appropriately-adjusted pricing data and RS Means as required.

14.4.2 The Contractor must prepare scopes of work as requested by the RP-TA.

14.4.3 Prepare Design Packages.

14.4.4 The Contractor must prepare design packages, including plans and specifications, duly signed and sealed by a professional engineer of the appropriate discipline in accordance with legislation. The Contractor must prepare specifications in accordance with the National Master Specifications (NMS) unless otherwise specified by the RP-TA. The Contractor must ensure that design packages include detailed statements prescribing materials, dimensions, legislative (e.g. safety, legal, technical code requirements) and workmanship requirements.

14.4.5 The Contractor must conduct civil, structural, mechanical, and electrical engineering investigations to resolve problems as required to determine the Best Value from the perspective of acquisition, maintenance of structures, equipment and utilities as requested by the RP-TA. The Contractor must prepare and submit reports on investigations.

14.5 Provide Maintenance Engineering Input

14.5.1 The Contractor must provide maintenance engineering advice as requested by RP-TA. The Contractor must conduct a review of each project and TA/AWR using the DND Environmental Impact Assessment (EIA) process.

14.5.2 As requested, the Contractor must provide technical support to third parties designated by the RP-TA, such as Defence Construction Canada (DCC) and visiting military engineering units, including drawing reviews, inspection assistance and hand-over assistance for projects undertaken by third parties.

14.6 Provide Drafting Services

14.6.1 The Contractor must reproduce drawings for DND and record drawing reproductions in a log identifying the name of the authorized requestor and the number of sheets requested.

14.7 Prepare and Submit Site Approvals

14.7.1 The Contractor must conduct property surveys and collect field data for incorporation in location maps and records in support of civil engineering for a minimum five (5) sites per year starting in the second year of the contract and all sites completed by the tenth (10) and when construction activities result in a fundamental change of a map or data set. After the tenth (10) year, this will repeat, starting with the oldest surveys on record. Set control points, grade stakes, locate underground utilities and other appurtenances. The Contractor must provide certification by a registered land surveyor when required.

14.7.2 The Contractor must approve and issue digging permits prior to start of digging operation. Verify the area from as-built drawings and, as required, toning services performed to confirm location of underground structures, appurtenances and utility lines, prior to excavating.

14.7.3 The Contractor must prepare special drawings, including charts, posters, signs, and blow-outs of portions of existing drawings with color-coding of specific buildings.

14.7.4 The Contractor must provide new or updated AutoCAD drawings for new or existing work.

14.7.5 The Contractor must maintain record drawings (as-built) for facilities, works and installed equipment.

14.7.6 The Contractor must maintain the MRPDP. Identify required projects and record them in the MRPDP. The. The Contractor must ensure that projects are completed as per the MRDPP priority provided by the RP-TA.

14.8 Provide Maintenance Management Services

14.9 General

14.9.1 The Contractor must apply maintenance strategies consistent with the OMP.

14.9.2 The Contractor must coordinate maintenance activities with QMS continual improvement activities and ongoing performance measurement, considering occupancy requirements and relevant factors such as:

14.9.2.1 Occupant operations and reliability requirements;

14.9.2.2 Asset Group, age, construction details, condition, heritage designation and exposure conditions; and

14.9.2.3 O&M costs.

14.9.3 The Contractor must ensure that systems and equipment requiring maintenance are identified, and record applicable data, drawings, manuals and other information in the IMS.

14.10 Maintain Buildings

14.10.1 The Contractor must conduct maintenance in accordance with maintenance strategies.

14.10.2 The Contractor must appropriately identify and label systems and equipment, and include associated information in the IMS.

14.10.3 The Contractor must undertake maintenance based on evidence of need and:

14.10.3.1 Ensure a safe, healthy and productive work environment for occupants;

14.10.3.2 Meet Occupant requirements for building availability and system and equipment reliability;

14.10.3.3 Ensure that operations are cost-effective and that asset and equipment systems perform at peak efficiency;

14.10.3.4 Comply with warranty requirements;

14.10.3.5 Preserve asset integrity and the value of capital investments, and realize the maximum economic life expectancy of systems and equipment;

14.10.3.6 Demonstrate due diligence and minimize legal exposure to Canada; and

14.10.3.7 Provide effective analysis, decision-making and planning for future repair programs, capital investments and re-commissioning of assets.

14.10.4 The Contractor must manage, assemble, organize and retain system and equipment data, drawings and manuals and schedules and:

14.10.4.1 identify, schedule and implement predictive, preventive and corrective maintenance inspections, tests, analyses, surveys, checks, treatments, tasks and monitoring based on legislative requirements and appropriate industry standards and practices;

14.10.4.2 Plan and schedule maintenance to minimize disruption of Occupant operations and to minimize related costs;

14.10.4.3 Coordinate scheduling of maintenance that might disrupt Occupant operations with the RP-TA and the Occupant; and

14.10.4.4 Provide the RP-TA and occupants with a minimum of two weeks advance notice, or other period, as requested, of proposed shutdowns and other work that may disrupt Occupant operations, to allow time for contingency planning.

14.10.5 The Contractor must inspect and maintain equipment and systems, correct minor deficiencies, schedule and implement maintenance and repairs identified during inspections, and record maintenance activities.

14.10.6 The Contractor must continually monitor maintenance activities to ensure compliance with life-safety, health and environmental legislation.

14.10.7 The Contractor must provide certification annually that inspection, testing and maintenance of life safety, health and environmental systems and equipment have been performed in accordance with legislative requirements and policy, and that life safety, health and environmental systems and equipment meet legislative requirements.

14.10.8 The Contractor must analyze building maintenance management data and initiate corrective action accordingly and:

14.10.8.1 Analyze issues and trends in key areas, such as system and equipment failures and unscheduled repair costs, and make recommendations for improvements;

14.10.8.2 Analyze maintenance problems, prepare reports and maintain records and data to achieve the optimum balance between repairs and predictive, preventive and corrective maintenance activities;

14.10.8.3 Measure maintenance results, including building, system and equipment availability, downtime and O&U costs, and provide maintenance management information as requested;

14.10.8.4 Provide technical support to project commissioning activities for projects carried out by the Contractor and by third parties;

14.10.8.5 Use maintenance information as inputs to planning and project identification for capital improvements, repairs and re-commissioning; and

14.10.8.6 Monitor the effectiveness maintenance strategies and the OMP, and make improvements and adjustments to practices, processes and resources to reflect the results of experience, to meet requirements of legislative and regulatory changes, manufacturer recalls and changes in industry practices, and to ensure cost-effectiveness.

14.11 Inspect, Test, Maintain and Repair Life Safety Systems

14.11.1 The Contractor must repair, replace or install life safety systems in accordance with the CSA Z91, CSA Z259, CSA Z271 and Provincial Safety Standards, as applicable to the site or system.

14.11.2 If the system or components being installed or replaced form part of a window cleaning safety system, the Contractor must undertake work in accordance with ANSI/IWCA I-14.1-2001 Window Cleaning Standard.

14.11.3 Where no CSA or ANSI standard exists for a material or product being installed, the Contractor must utilize materials or products that follow good industry practice and are fit for purpose.

14.11.4 During the course of the Contract, if changes in legislation require more frequent or less frequent inspection or testing of Life Safety Systems, the Contractor must negotiate adjustments with the RP-TA and ensure these changes are applied.

14.11.5 The Contractor must analyze building maintenance management data and initiate corrective action accordingly:

14.11.5.1 Benchmark operating, maintenance and repair costs;

14.11.5.2 Analyze issues and trends in key areas, such as system and equipment failures and unscheduled repair costs, and recommend improvements; and

14.11.5.3 Prepare reports and maintain records and data to achieve the optimum balance between repairs and predictive, preventive and corrective maintenance activities.

14.11.6 The Contractor must review and update the effectiveness of maintenance strategies and the OMP, and improve and adjust associated practices, processes and resources to reflect the results of experience, to meet requirements of legislative and regulatory changes, manufacturer recalls and changes in industry practices, and to ensure cost-effectiveness.

14.11.7 The Contractor must use maintenance information as inputs to planning and project identification for capital improvements, repairs and re-commissioning.

14.11.8 The Contractor must maintain records on site pertaining to inspection, testing and maintenance in accordance with the National Fire Code, and make structural drawings and assessments available to emergency responders.

14.12 Provide Commissioning Oversight

14.12.1 The Contractor must apply the Commissioning Oversight Program.

14.12.2 The Contractor must ensure that the requirements of the Provide Project Delivery Services section are met, including the requirements that:

14.12.2.1 Property Management Services required to support commissioning activities are provided;

14.12.2.2 The commissioning process covers the complete project life cycle, from concept to occupancy and operation;

14.12.2.3 Project deliverables and outputs are designed, installed and tested and will be operated in a manner that will meet operational requirements;

14.12.2.4 Commissioning is completed; and

14.12.2.5 Assets are effectively placed into operation.

14.12.3 The Contractor must assess each project using an appropriate tool to:

14.12.3.1 Determine the extent of commissioning required, commensurate with project size, scope and complexity; and

14.12.3.2 Document the assessed commissioning requirements in accordance with the Commissioning Oversight Program.

14.12.4 The Contractor must ensure that O&M concerns are resolved, that the quality of commissioning documentation and activities is adequate, and that communication among stakeholders, including DND, is effective.

14.12.5 The Contractor must provide advice, identify opportunities to improve building performance through commissioning, and recommend re-commissioning and retro-commissioning priorities in support of asset management planning.

14.13 Provide Facilities Maintenance Services

14.14 General

14.14.1 The Contractor must provide Facilities Maintenance Services in accordance with the Service Levels set out in Appendix E, and the Service Standards set out in its Attachment 1 and in accordance with the accepted RP-SDR Specification and associated TAs/AWRs.

14.14.2 The Contractor must repair and maintain building systems and equipment, including building envelopes, HVAC, electrical systems, locks and doors, etc., of properties listed in the Facilities Catalogue in accordance with applicable laws, good industry practice and the standards set out in the SOW.

14.14.3 Coordinate Overall Facilities Maintenance Services.

14.14.4 The Contractor must plan work in ABPs for individual buildings designated in [Reference] considering opportunities for coordination, economies of scale and grouping of similar work to provide Best Value and reduce overall downtime.

14.14.5 The Contractor must coordinate work with other organizations responsible for services such as information technology and telecommunication services, as requested.

14.14.6 The Contractor must provide support to provincial and territorial authority for the inspection/certification of pressure vessels, boilers and elevating devices. Maintain the MAXIMO database up-to-date.

14.15 Operate Building Systems and Equipment

14.15.1 The Contractor must operate building systems and equipment 24 hours per day, 365 days per year, and:

14.15.1.1 Ensure that buildings are available and meet Occupant operational requirements, and provide healthy and safe work environments during normal working hours, or as requested; and

14.15.1.2 Coordinate day-to-day operational activities with occupants, including activities carried out during extended hours of operation as requested.

14.15.2 The Contractor must operate and maintain NWS infrastructure and distribution systems, including:

14.15.2.1 Heating and cooling distribution;

14.15.2.2 Sanitary sewer system piping;

14.15.2.3 Storage tanks;

14.15.2.4 Storm drainage systems;

14.15.2.5 Utility tunnels and cabling;

14.15.2.6 Water resource systems, including drinking water sources, storage and distribution systems;

14.15.2.7 Emergency standby generation and distribution;

14.15.2.8 Electrical distribution systems;

14.15.2.9 Pad-mounted transformers and electrical vaults; and

14.15.2.10 Energy management and control systems.

14.15.3 The Contractor must operate building systems and equipment in accordance with the most current release of appropriate industry standards and government policies and guidelines, including:

14.15.3.1 American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) Standards for Thermal Environmental Conditions for Human Occupancy and Ventilation for Acceptable Indoor Air Quality;

14.15.3.2 CSA S832, Seismic Risk Reduction of Operational and Functional Components (OFCs) of Buildings;

14.15.3.3 CSA Z204 Guideline for Managing Indoor Air Quality in Office Buildings;

14.15.3.4 Health Canada Guidelines for Indoor Air Quality and Drinking Water Quality;

14.15.3.5 National Joint Council (NJC) – OH&S Directive;

14.15.3.6 *CLC*, Part II; and

14.15.3.7 National Energy Code of Canada for Buildings.

14.15.4 The Contractor must implement appropriate practices to prevent indoor air quality problems.

14.15.5 The Contractor must have SOPs consistent with the CLC, Part II, keep them current and provide copies of these when requested.

14.15.6 The Contractor must immediately report issues and problems associated with indoor air and potable water quality identified as a result of testing.

14.15.7 The Contractor must resolve issues and problems related to health and safety and the provision of working environments, and provide reports related to resolution of these problems, as requested.

14.15.8 The Contractor must provide operations support to commissioning activities for projects carried out by the Contractor and by third parties.

14.16 Operate and Maintain Potable Water Systems

14.16.1 The Contractor must ensure potable water is available at LSS Iqaluit and LSS Inuvik.

14.16.2 The Contractor must provide potable water at 8 LRR sites (LAB-6, LAB-2, BAF-3, DYE-M, FOX-3, CAM-3, PIN-M, BAR-2) and 2 co-located sites CAM-M and FOX-M by transferring water from lakes/reservoirs and operating the existing water filtration systems. The Contractor must treat water in accordance with Federal, Provincial and Territorial requirements within the operating parameters of the existing filtration systems. The Contractor must establish and implement a water testing program to continuously monitor water quality to guarantee portability. Gather and record information for Potable Water System Activity Report.

14.16.3 The Contractor must provide potable water at 36 SRR sites.

14.16.4 Prepare and Submit Potable Water System Activity Reports.

14.16.5 The Contractor must prepare and submit Potable Water System Activity Reports in accordance with the CDRL, including at a minimum:

14.16.5.1 Quantity of chemicals used and water treated;
14.16.5.2 Water transfer information (total fresh water consumption, quantity of water in storage);
14.16.5.3 Testing results from the Volume 1 of the PM Program;
14.16.5.4 PM activities performed;
14.16.5.5 CM activities performed;
14.16.5.6 Abnormal operating conditions and malfunctions; and
14.16.5.7 Location Identifiers (LOCIDs) as appropriate.

14.17 Operate and Maintain Sanitary Collection Systems

14.17.1 The Contractor must remove sewage at LSS-I and LSS-Q. Sewage at LSS-I and LSS-Q is held in a holding tank, which requires periodic pump-out.

14.17.2 The Contractor must monitor and test sewage effluent.

14.17.3 Prepare and Submit Sewage System Activity Reports.

14.17.4 The Contractor must prepare and submit Sewage System Activity Reports in accordance with the CDRL, including at a minimum:

14.17.4.1 The volume of treated sewage effluent discharged at CAM-MAIN and FOX-MAIN, and effluent testing as per the task card;
14.17.4.2 for LRR site with visits in excess of one month in duration, the volume of sewage discharged and effluent testing as per the task card;
14.17.4.3 CM activities performed;
14.17.4.4 Abnormal operating conditions and malfunctions; and
14.17.4.5 LOCIDs as appropriate.

14.17.5 The Contractor must report as required to Territorial, Provincial and Federal agencies.

14.18 Provide Preventive Maintenance Services

14.18.1 The Contractor must implement a Preventive Maintenance (PM) Program for equipment and systems in this Section at NWS installations (Main Sites, Northern Auxiliary Sites, East Coast Sites, SRR Sites and LSS's).

14.18.2 The Contractor must provide labour and material to implement Volume I of the PM Program as provided in this SOW. Work is to be scheduled and implemented as part of the Five-Year Operations & Sustainment Plan, as per DID/CDRL 2.15.1. A listing of PM tasks must be maintained on-line. Specialties include: Buildings, Structures, Lands and Grounds; Heating, Ventilation and Air Conditioning; Power Generating Systems; Electrical; Bulk Fuel; Potable Water; Waste Water; and Active and Passive Fire Protection Systems. Priority facilities systems is considered to be PGS, fire protection systems, fuel transfer systems and sleep mode equipment. Completion of PM work on priority facilities systems is to take precedence. PM must be tracked as tasks in the NWS Work Management system. PM tasks not completed must be recorded as exception, and included in the report detailed in this SOW. PM exceptions must remain open, and must be completed at the earliest opportunity

14.18.3 Perform POL Tank Cleaning and Inspection

14.18.3.1 The Contractor must clean and inspect vertical POL tanks at a maximum every 5 years, or more frequently as required by the most recent tank inspection report. Clean and inspect horizontal POL tanks at a maximum every 10 years, or more frequently as required by the most recent tank inspection report. Inspection of POL tanks is to be in accordance with reference 12.4.2.65. As applicable, The Contractor must inspect POL tank and ensure compliance with STS Regulations. Recommended and necessary repairs identified through inspections are subject to the CM Job Limit.; and

14.18.3.2 The Contractor must establish and maintain the POL tank inspection report database as per relevant DID/CDRL. Tank inspection reports are to be submitted as per the relevant DID/CDRL.

14.18.4 Implement the Corrosion Protection Plan

14.18.4.1 The Contractor must implement the Corrosion Protection Plan. The Contractor must establish an annual program in accordance with the plan, and integrate activities into the CY of the FYO&SP.

14.18.5 Implement Erosion Control

14.18.5.1 Perform Erosion Control in accordance with the Erosion Control Plan. MSE available for this work is as detailed in Section 12. The Contractor must ensure that gravel surfaces are maintained to a level required to support normal NWS operations. Implement site specific activities to mitigate erosion of gravel surfaces during the spring melt. The Contractor must establish an annual program, incorporated in the ABO and CY of the FYO&SP based on the requirements of the plan. The Contractor must ensure that airfield, apron and roads at FOX-3 are serviceable to support the annual bulk fuel resupply in summer months. The Contractor must coordinate the infield repair schedule and emergency airfield repair work with the Contracted air carrier at least 24 hours in advance of work initiation.

14.18.6 The Contractor must maintain and conduct minor repairs of airfield pavement at LAB 2, including repair of:

14.18.6.1 Cracks and surface breaks;
14.18.6.2 Heaves and settlements;
14.18.6.3 Joint spalls;
14.18.6.4 Surface scaling;
14.18.6.5 Joint seals;
14.18.6.6 Deteriorated shoulders;
14.18.6.7 Pavement paint markings;

14.18.6.8 Drainage pipes; and

14.18.6.9 Catch basins, culverts and ditches.

14.18.7 The Contractor must coordinate airfield repair schedule and emergency airfield repair work with the Contracted air carrier at least 24 hours in advance of initiating work.

14.18.8 Implement Long Term Diesel-Electric Generating Systems Maintenance Plan

14.18.8.1 The Contractor must implement the Long-Term Diesel-Electric Generating Systems Maintenance Plan, as detailed in the CDRL. The Contractor must establish an annual repair and overhaul program, based on the requirements of the plan, and integrate it in the CY of the FO&SP.

14.18.9 Implement the Gravel Plan

14.18.9.1 The Contractor must identify gravel sources and implement the Gravel Plan. The Contractor must use government furnished gravel crushers to provide gravel for maintenance. The Contractor must establish an annual program, based on the requirements of the plan, and integrate it as part of the Current Year of the Five-Year Operating and Sustainment Plan. Forecast CY+1 and CY+2 requirements to determine movement of crushers by sealift. The Contractor must crush gravel in accordance with Transport Canada Advisory Circular (AC) No. 300-004 standards for gravel roads and airfields.

14.18.10 Maintain Certification of Fire Protection System Cylinders

14.18.10.1 The Contractor must maintain certification of fire protection system cylinders. The Contractor must ensure that testing and certification of cylinders is completed for all types of gases and clean agents in service in accordance with applicable NFPA standards. Only the OEM or OEM's authorized designate may discharge cylinders prior to shipment for testing.

14.18.11 Perform PM Tasks on Water-based Fire Suppression Systems Including Fire Pumps

14.18.11.1 The Contractor must perform PM tasks in accordance with the NFCC and NFPA 25. The Contractor must ensure that PM tasks, up to and including quarterly tasks on water-based fire suppression systems including fire pumps, is performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that other PM tasks are performed by a Certified Sprinkler System Installer (Red Seal interprovincial recognized) with a minimum of five years of experience. The Contractor must submit water-based fire suppression system PM reports in accordance with the CDRL.

14.18.12 Perform PM Tasks on Kitchen Fire Suppression Systems

14.18.12.1 The Contractor must perform PM tasks in accordance with the NFCC, NFPA 17, NFPA 17A, and NFPA 96. The Contractor must ensure that PM tasks up to and including quarterly PM tasks on kitchen fire suppression systems are performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that other PM tasks are performed by the OEM or by an OEM authorized representative. The Contractor must submit kitchen fire suppression system PM reports in accordance with the CDRL.

14.18.13 Perform PM Tasks on Carbon Dioxide Fire Suppression Systems

14.18.13.1 The Contractor must perform PM tasks in accordance with the NFCC and NFPA 12. The Contractor must ensure that PM tasks up to and including quarterly PMIs on carbon dioxide fire suppression systems are performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that other PM tasks are performed by the OEM, or by an OEM authorized representative. The Contractor must submit carbon dioxide fire suppression system PM reports in accordance with the CDRL.

14.18.14 Perform PM Tasks on Clean Agent Fire Suppression Systems

14.18.14.1 The Contractor must perform PM tasks in accordance with the NFCC and NFPA 2001. The Contractor must ensure that PM tasks up to and including quarterly PM tasks on clean agent fire suppression systems are performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that PM tasks: The Contractor must ensure that PM tasks to be conducted less frequently than quarterly at LRR sites and at a minimum of two SRR sites per zone, on a rotational basis, are performed annually are performed by a person who is qualified to manufacturer's requirements, is an employee of a company which is certified by Underwriters' Laboratory of Canada (ULC) to the appropriate service category for this type of suppression agent, and who has a minimum of five years of experience. The Contractor must ensure that other PM tasks to be conducted less frequently than quarterly at the remaining SRR sites are conducted by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must submit clean agent fire suppression system PM reports in accordance with the CDRL.

14.18.15 Perform PM Tasks on Fire Alarm Systems, Voice Communication Systems and Fire Suppression Releasing Panels

14.18.15.1 The Contractor must perform PM tasks in accordance with the NFCC and ULC S536. The Contractor must ensure that PM tasks up to and including quarterly PM tasks (quarterly PM tasks to include the monthly) on fire alarm, voice communications systems and fire suppression releasing panels are performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that PM tasks to be conducted less frequently than quarterly at LRR sites and at a minimum of two SRR sites per zone, on a rotational basis, are performed annually by a technician who is registered with the Canadian Fire Alarm Association (CFAA) as having successfully completed the "Fire Alarm Technology" program, having worked as an apprentice to a person who has been a CFAA registered technician for a period of not less than one year, and with at least five years of experience working primarily on fire alarm systems. The Contractor must ensure that other PM tasks to be conducted less frequently than quarterly at the remaining SRR sites, are performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must submit fire alarm system, voice communication system, and fire suppression releasing panel PM reports in accordance with the CDRL.

14.18.16 Perform PM Tasks on Portable Fire Extinguishers

14.18.16.1 The Contractor must perform PM tasks in accordance with the NFCC and NFPA 10. The Contractor must ensure annual certification of portable extinguishers is performed by the OEM, or by an OEM-authorized representative. The Contractor must submit portable fire extinguisher PM reports in accordance with the CDRL.

14.18.17 Perform PM Tasks on Passive Fire Protection Systems

14.18.17.1 The Contractor must perform PM tasks in accordance with the NFCC and NFPA 80. At a minimum, the Contractor must exercise fire doors to ensure proper operation and inspect the integrity of fire breaks. The Contractor must submit passive fire protection system PM reports in accordance with the CDRL.

14.18.18 Perform PM Tasks on Emergency Lighting Systems

14.18.18.1 The Contractor must perform PM tasks in accordance with the NFCC and CSA C22.2 No 141. Submit emergency lighting system PM reports in accordance with the CDRL.

14.18.19 Implement Current-Year Program of LRR Site Radar Tower Management Plan.

14.18.19.1 The Contractor must implement the Current-year program of the LRR Site Radar Tower Management Plan as detailed in the CDRL. The Contractor must enter the activities for the CY in the FYO&SP. The Contractor must submit radar tower inspection reports in accordance with the CDRL.

14.18.20 Perform annual beach clean-up at PIN-Main and FOX-Main.

14.18.20.1 The Contractor must perform annual beach clean-up at PIN-MAIN and FOX-MAIN to remove debris deposited due to winter ice scouring action. Areas to be inspected and cleaned as per maps PIN-MAIN Beach Clean-Up Reference Map and FOX-MAIN Beach Clean-Up Reference Map. Dispose of waste collected as per the requirements detailed in this SOW.

14.19 Corrective Maintenance

14.19.1 The Contractor must perform or coordinate LUC 74 CM on failed and functionally-degraded equipment, systems and facilities. The Contractor must perform repair activities on equipment as specified in applicable Maintenance Manuals or OEM recommendations. The Contractor must continue repair efforts until systems are operational. The Contractor must ensure that replacement parts operate as original and must not create an increased risk to the environment and health and safety of individuals or reduce the operating efficiency/life span of the equipment or system.

14.19.2 The Contractor must perform Emergency CM on failed and functionally-degraded equipment and facilities that pose immediate risk to the mission, the environment or to health and safety.

14.19.2.1 The Contractor must perform Emergency CM as LUC 72 work orders on failed or functionally-degraded equipment or systems to protect life, the environment and government property. The Contractor must continue repair efforts until systems are operational or until risk has been mitigated allowing for further planning and more extensive repair. The Contractor must repair equipment as specified in applicable Maintenance Manuals or in accordance OEM recommendations. The Contractor must ensure that replacement parts operate as original and do not create an increased risk to the environment or to health and safety, or reduce the operating efficiency/life span of the equipment or system. In case of emergency, the Contractor must implement the Emergency Response Plan if warranted, and prepare and submit an accompanying incident report.

14.19.3 Perform CM On Water-based Fire Protection Systems and Fire Pumps

14.19.3.1 The Contractor must perform CM in accordance with the NFCC, NFPA 13, NFPA 20, and NFPA 25. The Contractor must perform CM level by a qualified journeyman. The Contractor must ensure that other CM is performed by a person who is a Certified Sprinkler System Installer (Red Seal interprovincial recognized) with a minimum of five years of experience.

14.19.4 Perform CM on Kitchen Fire Suppression Systems

14.19.4.1 The Contractor must perform CM in accordance with the NFCC, NFPA 17, NFPA 17A, and NFPA 96. The Contractor must perform CM on kitchen fire suppression systems by a qualified journeyman. The Contractor must ensure that other CM is performed by the OEM, or the OEM's authorized designate.

14.19.5 Perform CM on Carbon Dioxide Fire Suppression Systems

14.19.5.1 The Contractor must perform CM in accordance with the NFCC and NFPA 12. The Contractor must ensure that CM on carbon dioxide fire suppression systems is performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that other CM is performed by the OEM, or the OEM's authorized designate.

14.19.6 Perform CM on Clean Agent Fire Suppression Systems

14.19.6.1 The Contractor must perform CM in accordance with the NFCC and NFPA 2001. The Contractor must ensure that CM on clean agent fire suppression systems is performed by a journeyman who meets the requirements of Table 1: Real Property Resource Qualification Requirements. The Contractor must ensure that other CM is performed by the OEM, or the OEM's authorized designate.

14.19.7 Perform CM on Fire Alarm Systems, Voice Communications Systems And Fire Suppression Releasing Panels.

14.19.7.1 The Contractor must perform CM in accordance with the NFCC and NFPA80.

14.19.8 Perform CM on Passive Fire Protection Systems.

14.19.8.1 The Contractor must perform CM in accordance with the NFCC and NFPA80.

14.19.9 Perform CM on Emergency Lighting.

14.19.9.1 The Contractor must perform CM in accordance with the NFCC and CSA C22.2 No. 141.

14.20 Provide Cleaning Services

14.20.1 The Contractor must perform interior and exterior cleaning to ensure a sanitary and healthy work environment that promotes Occupant satisfaction and preserves the value of real property assets.

14.20.2 The Contractor must maintain a level of cleanliness appropriate to the use of the space, the type of asset and specific Occupant needs:

14.20.2.1 Establish acceptable tasks and frequencies for cleaning operations to meet the required level of cleaning services;
14.20.2.2 Adjust the level of service to reflect changes, as required;
14.20.2.3 Provide laundry, repair and cleaning services for NWS rugs, carpeting, curtains, bedding, linen and special purpose/protective clothing;
14.20.2.4 Use environmentally-friendly products certified in accordance with applicable industry standards such as products with the eco-logo or green seal logo; and
14.20.2.5 Protect heritage finishes from damage that could be caused by cleaning.

14.20.3 Provide Pest Control Services

14.20.4 The Contractor must provide pest control services as requested:

14.20.4.1 Apply pest control methods in accordance with Integrated Pest Management practices set out in the TB Manual, Pesticides Directive, and Chapter 2-15:
14.20.4.2 Safeguard the treatment area during the application of insecticides and pesticides;
14.20.4.3 Ensure that the treatment area is thoroughly ventilated before occupants are permitted to reoccupy the space following fumigation or treatment;
14.20.4.4 Use only insecticides and pesticides that have been approved by provincial and municipal authorities having jurisdiction;
14.20.4.5 Ensure that individuals performing the application of pesticides possess active pesticide operator’s licences and pesticide exterminator licences; and
14.20.4.6 Ensure that pest control product documentation conforms to workplace Hazardous Materials Information System (WHMIS) requirements.

14.21 Coordinate Facilities Maintenance Services for Multi-Building Sites

14.21.1 The Contractor must plan work in ABPs for individual buildings located on multi-building sites, considering opportunities for coordination, economies of scale and grouping of similar work at the site to provide Best Value and reduce overall downtime.

14.22 Manage Energy

14.22.1 The Contractor must maintain and report information on energy consumption and on changes affecting energy consumption as per the related CDRL, DID.

14.22.2 The Contractor must manage building energy and:

14.22.2.1 Manage energy use and adjust building operations to ensure efficient energy performance:

14.22.2.1.1 Tune-up equipment;
14.22.2.1.2 Monitor HVAC and lighting systems efficiency; and
14.22.2.1.3 Institute optimum equipment servicing and minor repairs.

14.22.2.2 Establish measures to reduce energy use outside of Occupant operating hours through actions such as temperature setback and equipment shutdown;
14.22.2.3 Make recommendations for re-commissioning selected energy systems in ABPs, on a three- to five-year cycle;
14.22.2.4 Implement approved energy retrofit projects and track and report on results in relation to the approved business case and applicable commissioning reports, and as requested;
14.22.2.5 Incorporate energy-efficient technologies into project design activities; and
14.22.2.6 Collect energy performance data, monitor results, including actual energy savings, report annually and conduct benchmarking.

14.23 Provide Grounds Upkeep Services

14.23.1 The Contractor must provide grounds upkeep services appropriate to the needs of each building and in accordance with applicable environmental standards.

14.23.2 The Contractor must maintain civil infrastructure including roads, bridges, tunnels and drainage ditches.

14.23.3 The Contractor must conduct seasonal grounds upkeep:

14.23.3.1 Control pests using integrated pest management practices in accordance with the Provide Pest Control Services section;
14.23.4 Maintain fences and walls;
14.23.5 Maintain exterior signage;
14.23.6 Removal of encroaching overgrowth;
14.23.7 Maintain exterior civil, mechanical and electrical systems;
14.23.8 Collect litter and empty garbage from waste receptacles;
14.23.9 Empty and maintain ashtrays; and
14.23.10 Protect heritage features from damage from grounds upkeep.

14.24 Provide Common Services

14.24.1 The Contractor must provide common services on multi-building sites, including:

14.24.1.1 Distribution of electrical, heating and other utilities; and
14.24.1.2 Planning for new and increased electrical loads and metering.

14.24.2 The Contractor must coordinate work with others responsible for other services such as communications operations, information technology and telecommunications, as requested.

14.24.3 The Contractor must, in coordination with RP-TA, liaise with authorities having jurisdiction, as required.

14.24.4 The Contractor must report on common services in accordance with the RP-SDR and adjust the RP-SDR as required to document changes in service delivery associated with common services governed by the CDRL.

14.24.5 The Contractor must provide signage services, including signage needs identification and procurement, installation, maintenance and removal of base-building primary and common-use signage, building exterior signage, main and floor directory boards, and direction-finding and room identification signage.

14.25 Provide Other Services as Required

14.25.1 The Contractor must perform the following services as-and-when required by the RP-TA in accordance with TAs/AWRs:

14.25.1.1 CM work on jobs in excess of the CM Job Limit;
14.25.1.2 Maintenance of DEW Line Clean Up (DLCU) landfill sites. Upon the request of the RP TA, perform periodic maintenance of DLCU landfills at NWS LRR sites. Scope of work to be provided by the RP TA;
14.25.1.3 LUC 78 Minor Modification projects in excess of annual cumulative limit;
14.25.1.4 ; and
14.25.1.5 Identification of gravel sources in support of gravel crushing activities.

SOW Section 15:

Project Delivery Services

ADM (IE)

15.0 Provide Project Delivery Services

15.1 General

15.1.1 The Contractor must apply the PDR and provide project delivery services in accordance with the accepted RP-SDR Specification.

15.1.2 The Contractor must ensure effective communications with stakeholders throughout the life cycle of projects.

15.1.3 The Contractor must apply flexible workforce and resource management mechanisms to respond to unforeseen projects and unexpected changes in project volume.

15.1.4 The Contractor must develop and maintain an audit-ready Project File for each project in accordance with the CDRL, and submit it to the RP-TA on request without delay and:

15.1.4.1 Develop a Generic Project File Checklist for each Project Category, aligned with applicable project milestones, to measure the completeness and accuracy of project file documentation and to support associated cost tracking; and

15.1.4.2 Tailor the Project File Checklist to the needs of each project.

15.1.5 The Contractor must collaborate with DND project design reviews, as requested.

15.1.6 The Contractor must provide on-site coordination and other project support to projects delivered by others and interact with various organizations, as required, to ensure effective delivery of projects, including organizations such as:

15.1.6.1 Government organizations, including:

15.1.6.1.1 DND authorities;

15.1.6.1.2 Federal regulatory authorities and other federal stakeholders;

15.1.6.1.3 Defence Construction Canada (DCC); and

15.1.6.1.4 DND national and regional centers of expertise.

15.1.6.2 Third parties, such as:

15.1.6.2.1 Other contractors providing services; and

15.1.6.2.2 Regulatory authorities having jurisdiction.

15.1.7 The Contractor must organize projects according to the following categories:

15.1.7.1 Category I Projects: projects up to $24,999;
15.1.7.2 Category II Projects: projects from $25,000; to $999,999; and
15.1.7.3 Category III Projects: projects greater than $1M.

15.1.8 The Contractor must deliver projects as an integrated POP.

15.1.9 The Contractor must manage risk effectively:

15.1.9.1 Assess project risk using an appropriate toolset and appropriate processes; and
15.1.9.2 Triage projects according to their level of risk, complexity and cost, in accordance with the needs of each Project Category.

15.2 Initiate and Plan Construction Projects

15.3 General

15.3.1 The Contractor must initiate and plan construction projects, including:

15.3.1.1 New construction projects;
15.3.1.2 Repair, heritage conservation and replacement projects;
15.3.1.3 Improvements to extend the life of buildings, enhance their performance or prevent or delay functional obsolescence; and
15.3.1.4 Alteration, fit-up, and refit and space optimization projects.

15.3.2 The Contractor must prepare project-specific OH&S plans for each project, and ensure that the plan is suited to the type of work to be performed and will conform to the building OH&S plan.

15.3.3 The Contractor must identify and develop project options to meet requirements in a manner that ensures:

15.3.3.1 Consideration of viable options and risk; and
15.3.3.2 That recommended options will provide Best Value for DND and occupants.

15.3.4 The Contractor must recommend design solutions consistent with the most current versions of DND technical and accommodation standards and in keeping with the character of existing building architectural and engineering components.

15.3.5 The Contractor must identify heritage requirements and:

15.3.5.1 Conduct a heritage review for designated buildings and ensure project objectives include protection of heritage character;

15.3.5.2 Provide a multi-disciplinary approach to architectural, engineering, technical and material conservation considerations;

15.3.5.3 Develop options and solutions that meet functional requirements while minimizing harm to heritage character and the impact on heritage values and that include appropriate conservation treatments; and

15.3.5.4 Document interventions and provide maintenance information resulting from project work.

15.3.6 The Contractor must seek and obtain approval of heritage authorities having jurisdiction, as requested, for projects involving exterior modifications or design changes to federal buildings, for which local legislative provisions may apply, including territorial and municipal heritage authorities.

15.3.7 The Contractor must define security requirements, including identification of:

15.3.7.1 Security criteria for projects based on baseline security requirements and a threat and risk assessment suited to each building; and

15.3.7.2 Options that balance security concerns with protection of the heritage character of heritage assets.

15.3.8 The Contractor must include required security specifications in plans, requests for proposals and tender documentation.

15.3.9 The Contractor must plan projects with appropriate milestones and decision points, in accordance with DND project management frameworks.

15.3.10 The Contractor must co-operate and participate with the RP-TA during project Quality Monitoring inspections and provide required resources and supporting information.

15.3.11 The Contractor must prepare project cost estimates consistent with appropriate industry practices, and as required, to support DND approval processes.

15.3.12 The Contractor must provide information and support DND in determining whether proposed projects qualify as projects as defined by the Impact Assessment Act, and whether an environmental effects evaluation is required.

15.3.13 The Contractor must prepare and submit project initiation and planning documents to support government approval processes, in accordance with the requirements for the applicable Project Category, and as requested, including:

15.3.13.1 Statements of requirement (SORs);
15.3.13.2 Project charters, in accordance with DND requirements;
15.3.13.3 Requirements definition and feasibility studies;
15.3.13.4 Heritage Reviews; and
15.3.13.5 Short- and long-form Investment Analysis Reports (IARs), including:

15.3.13.5.1 Consideration of life cycle resource consumption and environmental burdens in project investment analyses,
15.3.13.5.2 Life cycle costing,
15.3.13.5.3 Evaluation of social impacts,
15.3.13.5.4 Mitigation of negative impacts; and
15.3.13.5.5 Completed Impact Assessment Act documentation and environmental effects evaluations.

15.4 Monitor and Control Construction Project Performance

15.4.1 The Contractor must monitor and control project performance and change, ensuring that projects are delivered in accordance with TAs/AWRs:

15.4.1.1 Ensure that accountability for outcomes is clear, controls appropriate to the level of project complexity and risk are in place, key project stakeholders are consulted, and outputs and outcomes are monitored and reported; and
15.4.1.2 Provide additional project oversight requirements for selected projects, as requested.

15.4.2 The Contractor must notify the RP-TA and obtain approval to proceed prior to undertaking modifications to projects that require approval, such as changes to the impact on base-building systems, scope, cost, schedule and occupants.

15.4.3 The Contractor must measure cost, schedule and quality, track deviations from plan and provide associated performance data:
15.4.3.1 Establish baseline estimated project costs using data indicated in the approved business case format for Category II projects to determine and improve estimating accuracy;
15.4.3.2 Compare estimated and actual project costs and planned and actual schedules at project completion; and
15.4.3.3 Indicate reasons for variances.

15.4.4 The Contractor must provide monthly updates to the approved POP Listing, in accordance with the CDRL, and participate in monthly project review meetings.

15.5 Execute Construction Projects

15.5.1 The Contractor must execute construction projects in accordance with TAs/AWRs.

15.5.2 The Contractor must execute Category I projects, ensuring that they do not exceed the $24,999 limit and the overall Category I project cost envelope of associated TAs/AWRs.

15.5.3 The Contractor must execute Category II projects in accordance with the associated TA/AWR for each project, and submit, for each project:

15.5.3.1 An amended IAR at the final design stage prior to tendering, for acceptance;

15.5.3.2 A request for approval to proceed to contract award if required by the associated TA/AWR; and

15.5.3.3 Other project execution deliverables as requested.

15.5.4 The Contractor must ensure that the structural, electrical, architectural, mechanical and functional integrity of buildings is maintained.

15.5.5 The Contractor must design and implement projects, incorporating materials, methods and workmanship standards consistent with existing architectural and heritage characteristics, building design, functional use and the DND's strategic direction for the building.

15.5.6 The Contractor must conduct more detailed planning and design work, as required, to respond to unanticipated conditions arising during the performance of physical work, including repairs, construction and, in some cases, deconstruction.

15.5.7 The Contractor must modify and refine schedules, work breakdown structures, cost plans and estimates, project plans, risk management plans and risk assessments prepared during the project identification stage.

15.5.8 The Contractor must protect against damage to building elements that define heritage character during construction activities.

15.5.9 The Contractor must submit completed monthly inventory data for Real Property Betterments upon completion of projects to be capitalized, in accordance with the CDRL.

15.5.10 The Contractor must manage change to the organizational structure involved in providing the Management Services set out in this section of the SOW, required as a result of project implementation.

15.5.11 The Contractor must provide security design, construction and modification services and:

15.5.11.1 Identify and incorporate security requirements applicable to each construction project stage; and

15.5.11.2 Submit proposed changes to base-building physical security for approval by DND DSOs.

15.5.12 The Contractor must provide project-specific security services, and coordinate physical security services with those providing security services in support of projects delivered by third parties.

15.6 Provide Commissioning Services

15.6.1 The Contractor must carry out commissioning activities in accordance with the associated TA/AWR and the commissioning assessment conducted for each project, and:

15.6.1.1 Prepare and implement a Commissioning Plan setting out commissioning activities to be conducted over the life cycle of the project;

15.6.1.2 Identify operational requirements, issues and concerns;

15.6.1.3 Provide input and comments during the design phase;

15.6.1.4 Develop commissioning specifications for testing of equipment, systems, subsystems and integrated systems;

15.6.1.5 Document the concept of operations;

15.6.1.6 Apply heritage conservation specialty knowledge, and engage regulatory authorities having jurisdiction;

15.6.1.7 Inspect and test equipment and systems;

15.6.1.8 Place equipment and systems in operation;

15.6.1.9 Balance equipment and systems;

15.6.1.10 Evaluate performance against the intended design specification;

15.6.1.11 Ensure the timely transfer of project documentation from the project team to those responsible for O&M, including warranty management documents, as-built drawings and updated base-building drawings;

15.6.1.12 Prepare and issue operating manuals; and

15.6.1.13 Train building operators.

15.7 Deliver Other Real Property Projects

15.7.1 The Contractor must deliver other real property projects in accordance with the associated TA/AWR, which may require application of specialized technical knowledge and expertise, analysis, and superior business and technical written communications competencies, including projects involving, for example:

15.7.1.1 Specialty areas associated with:
15.7.1.1.1 Sustainability;
15.7.1.1.2 Performance measurement;
15.7.1.1.3 Architecture;
15.7.1.1.4 Drafting services;
15.7.1.1.5 Security;
15.7.1.1.6 Interior design;
15.7.1.1.7 Urban studies;
15.7.1.1.8 Engineering;
15.7.1.1.9 Heritage conservation and archaeological studies;
15.7.1.1.10 Environmental considerations and contaminated sites; and
15.7.1.1.11 Illumination.

15.7.1.2 Application of conservation specialist knowledge and expertise for heritage assets, including:

15.7.1.2.1 Recording of heritage assets and production of heritage recording reports;
15.7.1.2.2 Studies to ensure understanding of historic construction, construction history;
15.7.1.2.3 Structural performance, material characteristics and conditions, building envelope performance and environmental impacts, and to determine primary causes of deterioration of heritage components and assemblies, and
15.7.1.2.4 Documentation of baseline conditions;

15.7.1.3 Conversion services to transfer hard-copy asset information to Computer Aided Design and Drafting (CADD) and other electronic formats;

15.7.1.4 Studies and assessments as may be requested as an outcome of environmental assessments;

15.7.1.5 Services and building studies not involving construction, including:
15.7.1.5.1 Post-occupancy evaluations; and
15.7.1.5.2 Coordination and planning of professional and technical specialized discipline services.

15.7.1.6 Professional and technical expertise pertaining to areas such as:
15.7.1.6.1 The legislative environment;
15.7.1.6.2 Feasibility studies, investigations and reports; and
15.7.1.6.3 Documentation and communications services.

15.7.2 The Contractor must plan and manage other real property projects, as requested:

15.7.2.1 Develop specific, appropriate approaches to the management of scope, schedule, cost and risk;
15.7.2.2 Define processes and procedures;
15.7.2.3 Incorporate specialized expertise and resources; and
15.7.2.4 Provide required reporting and information and deliverables, as requested by the RP-TA.

15.8 Manage Project Warranties and Warranty Information

15.8.1 The Contractor must manage project warranties until project close-out and provide warranty information to enable subsequent warranty management.

15.9 Manage Project Technical Information

15.9.1 The Contractor must develop and provide technical documentation produced as a result of projects or to record other building changes, as required, including:

15.9.1.1 Architectural, mechanical, structural and electrical drawings and specifications;
15.9.1.2 Building Information Modeling (BIM) data;
15.9.1.3 Shop drawings;
15.9.1.4 As-built drawings;
15.9.1.5 Single-line diagrams; and
15.9.1.6 Other graphical representations.

15.9.2 The Contractor must convert original information to electronic format, as requested, if changes are made to assets for which original drawings are in non-electronic or another form that is not compliant with accepted standards.

15.9.3 The Contractor must manage DND-provided CADD drawings in accordance with the requirements of the most recent DND National CADD Standard and the Information Management Methodology:

15.9.3.1 Maintain drawings throughout the life cycle of projects;
15.9.3.2 Ensure that drawings are filed with other project information; and
15.9.3.3 Update drawings and return them on project completion using appropriate transmittal forms.

15.9.4 The Contractor must provide electronic CADD master drawing files to the RP-TA in accordance with the CDRL, including:

15.9.4.1 Mechanical, electrical, architectural and structural information from construction projects, for updating of CADD master files; and

15.9.4.2 Single-line electrical diagram CADD master files.

15.9.5 The Contractor must ensure that CADD construction drawings are available in accordance with DND CADD standards at the project tender stage, and transmit them to the RP-TA as requested.

15.9.6 The Contractor must provide CADD as-built and record drawings and ensure that they represent the project as constructed.

15.9.7 The Contractor must provide electrical diagrams:

15.9.7.1 Update single-line diagrams, and installation and other drawings after completion of work for buildings and multi-building sites, and ensure they are posted in the main electrical room, or where required by the users, in accordance with requirements of authorities having jurisdiction; and

15.9.7.2 Ensure that electrical as-built and single-line drawings are kept current and in accordance with DND's Electrical Safety policy (DP-058).

15.9.8 The Contractor must provide other project-specific information:

15.9.8.1 Assemble project specifications using appropriate information formats, typically in PDF format;

15.9.8.2 Retain originals of signed tender drawings in a secure area not accessible to the public or labour resources involved in building operations;

15.9.8.3 assemble and file drawings with other project information and project deliverables using the Information Management Methodology, and maintain an electronic list for ease of reference; and

15.9.8.4 Send copies of drawings and other project-specific information to the RP-TA, as requested.

15.9.9 The Contractor must provide Geometrics information as requested, in accordance with DND's National CADD Standard, TB and DND Policies on Information Management, TB Metadata Standards and the TB Standard on Geospatial Data.

15.10 Close Out Projects

15.10.1 The Contractor must submit completed Project Reports, other forms as requested by DND upon completion of projects and a final cost report to support the associated TA/AWR.

15.10.2 The Contractor must close out projects in accordance with the project plan, ensuring relevant stakeholder participation and sign-off.

15.10.3 The Contractor must conduct project assessments covering the full scope of the PDR and in accordance with the CDRL.

15.10.4 The Contractor must conduct a project assessment for:

15.10.4.1 Category I projects based on a statistically valid, random sample of projects;
15.10.4.2 Each Category II project; and
15.10.4.3 Category III projects, as requested.

15.10.5 The Contractor must use a Project Quality Checklist and Project Assessment Procedure, in accordance with the CDRL, to validate project quality, including design, workmanship and materials, licences and permits, coordination and commissioning, project cost estimates and the project schedule and:

15.10.5.1 Tailor the Project Quality Checklist and the assessment procedure to the needs of each project to be reviewed prior to project execution;
15.10.5.2 Complete the Project Quality Checklist at project completion;
15.10.5.3 Provide performance data and an assessment of cost estimating, scheduling and scope results obtained against plan; and
15.10.5.4 Submit the tabulated responses to the Project Quality Checklist, including an analysis of results and recommendations for rectifying deficiencies, and document lessons learned.

15.10.6 The Contractor must complete applicable documentation and include it in the Project File and:

15.10.6.1 Ensure that as-built drawings are provided at the end of each project and that building drawings are current; and
15.10.6.2 Conduct a project file review, complete the tailored Project File Checklist and ensure the Project File is complete.

15.10.7 The Contractor must demonstrate project completion and:

15.10.7.1 Use a Generic Project Completion Survey for each Project Category to measure RP-TA satisfaction with project delivery services;
15.10.7.2 Tailor the Project Completion Survey to the needs of each project to be surveyed prior to project execution;
15.10.7.3 Conduct project completion surveys, including interviews with commissioning managers, for base-building projects; and
15.10.7.4 Submit responses to project completion surveys, including an analysis of results and recommendations for further action to rectify deficiencies.

15.10.8 The Contractor must document lessons learned, ensuring that these are shared across the Contractor’s project delivery services organization.

SOW Section 16:

Fire Protection Services

ADM (IE)

16.0 Provide Fire Protection Services

16.1 General

16.1.1 The Contractor must provide the following services: emergency operations, stand up and maintenance of Industrial Fire Brigade to fight incipient stage fires (in accordance with NFPA 600), fire protection and fire prevention.

16.1.2 The Contractor must continually plan, develop and update a fire protection and fire prevention program, allowing inspections of Emergency Service related areas by the RP-TA and support audits by Canadian Forces Fire Manual (CFFM).

16.1.3 Fire Prevention and Fire Protection Coverage includes Active and Passive Fire Protection systems installed throughout the NWS as described in the 2018 CFFM Compliance Review.

16.1.4 The Contractor must ensure that emergency response personnel are available 'on call' at LSS-C, LSS-F and at attended LRR sites on a 24/7 basis.

16.2 Implement the Fire Services Plan

16.2.1 The Contractor must implement the Fire Services Plan (FSP) and provide an Industrial Fire Brigade trained to Perform Incipient Level Fire Fighting.

16.2.2 The Contractor must ensure that each LSS has the capability to form a fire brigade consisting of, at a minimum, one fire brigade leader, one assistant fire brigade leader, and fire brigade members to respond to fire alarm conditions. A brigade must be available at all times at LSS-C, LSS-F and attended LRR sites.

16.2.3 The Contractor must establish and maintain a Fire Services Plan (FSP) including the following:

16.2.3.1 An organizational statement;
16.2.3.2 Identification of emergency services personnel (including industrial fire brigade personnel);
16.2.3.3 Roles and responsibilities of the command structure;
16.2.3.4 Fire training, fire prevention inspection, response to fires;
16.2.3.5 At unattended LRR sites and SRR sites, as received by the Contractor's 24/7 organization;
16.2.3.6 Fire incidents from attended sites where a full industrial fire brigade is present; and

16.2.3.7 Fire investigation, and a detailed description and physical location of the fixed and portable fire protection equipment and systems.

16.2.4 The Contractor must review and update the FSP every years in accordance with the CDRL. The Contractor must distributed controlled copies to each LRR, each LSS, the NWSSC, the NWSCC, the CMO and Canada.

16.2.5 The Fire Services Officer must prepare and maintain Fire Safety Plans using the ONO Fire Safety Plan template. The Contractor must distribute and update Fire Safety Plans in accordance with the National Fire Code of Canada for each site. The Contractor must review and update Fire Safety Plans at a minimum annually or more frequently as circumstances warrant. Fire safety Plans for LSS-G will be done by the ONO Goose Bay Fire Department. Fire Safety Plans for the SRD will be done by 22 Wing North Bay Fire Prevention Office.

16.2.6 Fire alarm and suppression system failures shall be dealt by category:

Category A sites – Attended Long Range Radars (LRRs):

- The site will continue to operate as normal and a fire picket will immediately be established;
- Additional personnel used for fire picketing are to be trained to the incipient level of firefighting training;
- Once additional fire picket personnel are on site, non-critical work may resume.

Category B sites – Unattended Long Range Radars (LRRs) and high priority Short Range Radars (SRRs PIN-DA, PIN-2A, PIN-B, and PIN-CB). It should be noted that as LRRs transition from unattended to attended, they will shift between Category B and Category A:

- The site is to be shut down immediately and the contractor will attend the site within the timelines dictated by this SOW to resume site operations, establish a fire picket, and effect repairs;
- If a site cannot be attended within the timelines dictated by this SOW due to weather or flight access concerns, NWSO is to be informed immediately. Once repairs have been completed and the fire system is operational, all personnel will depart and unattended operations resumed.

Category C sites – All other Short Range Radars (SRRs) not listed in Category B:

- The site is to be immediately shut down and will remain so until contractor can attend the site and effect repairs within the timelines required by this SOW;
- While attending the site, it will be required to establish a fire picket.

Actions applicable to any sites:

- Deputy Director NWSO , R&CS 3-3, NWSO Ops O, OC Det NWS and the Det NWS Fire Systems TA are to be notified by phone within three hours of the failure;
- Contractor is to coordinate with the local fire department, if one is present;

- Contractor is to provide a detailed brief, actions taken, and future activities within 24 hours of the failure;
- Daily reports are to be sent to the personnel list above detailing the current situation until it is resolved or otherwise directed by NWSO.

Note: North Warning System operations continue to take precedence and required restoral timelines remain as described in the SOW.

16.3 Provide a Fire Brigade Organization Chart

16.3.1 The Contractor must provide a Fire Brigade organization chart indicating the positions of personnel on the fire brigade. The LSS Manager must have contact information for brigade members on hand for after hour's calls. Organization charts are to be located outside the main office of the site manager for each zone.

16.4 Respond to Fire Alarms

16.4.1 The Contractor must respond to fire alarms with a fire brigade. In the event that the alarm is the result of a fire, as opposed to a false alarm, the brigade must provide incipient firefighting, and if warranted, activate the Emergency Response Plan. The Contractor must submit fire incident reports for each alarm, including false alarms. Conduct a fire investigation in the event of a fire.

16.5 Conduct Portable Fire Extinguisher Training (PFET)

16.5.1 The Contractor must ensure that LSS resources who are not part of the fire brigade, Contractor labour resources who occasionally visit LSSs, LRR sites and/or SRR sites and other labour resources under the Contractor’s authority who will be working and living on NWS sites receive Portable Fire Extinguisher Training (PFET), and receive instruction on fire safety in their areas of responsibility. The Contractor must provide labour resources in this category with PFET within 24 hours of arriving on a site must receive, and refresh PFET training on a four-year cycle. The Contractor must ensure that labour resources receive a training certificate/card upon completion of the training.

16.6 Perform Fire Warden Inspections

16.6.1 The Contractor must perform daily Fire Warden Inspections at sites while attended, including community based LSS's (i.e. LSS-I, LSS-Q, and LSS-G), to ensure that labour resources under its authority are not exposed to avoidable hazards. The Fire Warden must immediately correct unsafe conditions. The Contractor must track deficiencies that cannot be readily corrected through the WMS to completion. The Contractor must conduct inspections based on a checklist tailored to the unique characteristics of each NWS site. As a minimum, the Contractor must ensure that inspections include the following:

16.6.1.1 Ensuring exits and fire escapes are clearly marked, function properly and are unencumbered;

16.6.1.2 Interior and exterior fire protection systems are active, and there are no trouble alarms on fire panel;

16.6.1.3 Fire protection equipment is in place;

16.6.1.4 Work sites are cleaned up at the end of the day, and combustible materials are properly disposed of; and

16.6.1.5 Circumstances under which a fire picket will be established based on the Fire Warden identifying a significant fire risk which cannot be readily corrected.

16.6.2 The Contractor must annotate the Fire Warden checklist with the name of the Fire Warden, the date, site, findings, actions taken or pending, and work orders and/or ESRs opened to track outstanding deficiencies. The Contractor must retain checklists in accordance with the CDRL and submit these on request to the RP-TA within two business days.

16.7 Practice Fire Drills

16.7.1 The Contractor must practice fire drills in accordance with the National Fire Code of Canada to ensure that labour resources under its authority are aware of, and have the necessary knowledge of the action to be taken in the event of fire. The Contractor must conduct drills, at a minimum, as follows:

16.7.1.1 Semi-annually at LSS-I and LSS-Q;

16.7.1.2 Quarterly at LSS-C and LSS-F; and

16.7.1.3 Within 48 hours after an LRR site is attended, and monthly thereafter until the site is unattended.

16.7.2 Note that fire drills at LSS-G are conducted by 5 Wing Goose Bay fire department. The Contractor must record fire drill scenarios and the results of the drill in a log and submit in accordance with the SDRL. The Contractor must submit fire drill logs to the RP-TA upon request within two business days.

16.8 Conduct Fire Prevention and Life Safety Inspections

16.8.1 The Contractor must conduct Fire Prevention and Life Safety Inspections at NWS locations as follows:

16.8.1.1 Semi-annually;
16.8.1.2 LRR sites - annually;
16.8.1.3 Sites - a minimum of 2 sites inspected annually per Zone, with different sites being visited in subsequent years until site in the Zone have been inspected;
16.8.1.4 SRO - annually;
16.8.1.5 NWSCC - semi-annually; and
16.8.1.6 NWSSC - semi-annually.

16.8.2 The Contractor must ensure that inspections include, at a minimum:

16.8.2.1 An inspection of buildings to NFC classification and Fire Marshal Directive (FMD) and Fire Protection Program (FPP);
16.8.2.2 Assurance of compliance, adequacy, quality and diligence of field level inspections being completed by Fire Wardens;
16.8.2.3 Fire evacuation drills to ensure resources knowledge and level of training;
16.8.2.4 Review the fire services plan to confirm its applicability and currency;
16.8.2.5 Training to on-site resources as required; and
16.8.2.6 Assessment of the fire protection facilities, and recommendations for improvements.

16.8.3 The Contractor must submit Fire Prevention Inspection Reports, as detailed in the CDRL, no later than 20 working days following the inspection and track findings not corrected at the time of the inspection to completion within six months in the WMS.

16.9 Issue Hot work or Other Hazardous Process Permit

16.9.1 The Contractor must issue Hot work or other Hazardous Process Permit to labour resources under its authority carrying out burning/welding/cutting operations. The Contractor must check and inspect the area for hazards when hot work or hazardous process are being undertaken prior to and following hot work or hazardous process operations as required by the NFCC. The Fire Services Officer must retain a copy of Hot work Permits and submit these the RP-TA upon request.

16.10 Conduct Fire Investigations

16.10.1 If an alarm is an actual fire, the Fire Services Officer must conduct fire investigations as per DAOD 4007-1 and NFPA 921. The Fire Services Officer must notify the CFFM immediately in the case of a Cat 1 fire, secure the fire scene, and await direction from the CFFM. The Contractor must submit fire Investigation Report in accordance with the CDRL.

16.10.2 The Contractor must update the Risk Management Plan on completing and reviewing the report, or sooner if warranted, to eliminate or otherwise mitigate the chance of reoccurrence.

16.11 Submit Fire Incident Reports

16.11.1 The Contractor must submit initial and follow-up reports for fire incidents. The Contractor must submit the initial report within six hours of the incident occurring, with follow-up reports submitted as required until the incident has been fully investigated, and corrective action has been completed.

16.12 Maintain a Log of Fire Alarm and Fire Protection System Malfunction Alarms

16.12.1 The Contractor must maintain a log of fire alarms and fire protection system malfunction alarms, including at a minimum:

16.12.1.1 The name of the individual making the entry;
16.12.1.2 The site, date, time, alarm details;
16.12.1.3 Immediate actions taken upon receipt of the alarm; and
16.12.1.4 The ESR or work Order opened to track the alarm, and the time the log entry was completed.

16.12.2 The Contractor must complete the entry for each alarm event within 12 hours after occurrence, and provide the RP-TA with a copy of the log upon request within two business days.

16.13 Review of Project Files

16.13.1 The Fire Services Officer must review project files to ensure compliance of the designs and the approach to implementation to the required references stated in the Contract. The Contractor must include a signed Fire Marshal Certificate in each file in accordance with the CDRL.

16.14 Safety Provisions

16.14.1 The Contractor must ensure that employees are in possession of clothing appropriate to the extreme weather conditions for operations at NWS sites.

16.14.2 The Contractor must initiate emergency procedures as provided in the Contractor's Emergency Services Plan in the event of disaster, breakdown or contamination.

16.14.3 The Contractor must comply with measures not otherwise specified in this contract, but which are consistent with prudent management and industry practices.

16.14.4 The Contractor must provide personnel with Personal Protective Equipment (PPE) and ensure site visitors comply with PPE requirements.

SOW Section 17:

Environnemental Management Services

ADM (IE)

17.0 Provide Environmental Management Services

17.1 General

17.1.1 The Contractor must manage the provision of environmental services by implementing the Environmental Management System (EMS), adhere to the policies, plans and procedures set out in the SOW, comply with applicable legislation, and undertake the following functions as they relate to environmental matters in accordance with applicable references:

17.1.1.1 Define and ensure currency of regulatory and contractual requirements;
17.1.1.2 Establish environmental policy, risks, procedures, objectives, and targets;
17.1.1.3 Develop and implement training programs;
17.1.1.4 Ensure the proper selection, transport, handling, and storage of hazardous materials and manage their disposal;
17.1.1.5 Ensure the proper handling, storage, transport, and disposal of non-hazardous waste;
17.1.1.6 Maintain proper procedures for erosion control and natural resource protection;
17.1.1.7 Perform internal audits of performance and status;
17.1.1.8 Identify required corrective and preventive actions;
17.1.1.9 Conduct environmental impact assessments and define technical specifications;
17.1.1.10 Establish and manage a spill response program;
17.1.1.11 Perform remediation projects on new contaminated sites. Preform remediation projects on contaminated sites pre-dating this SOW as requested by the RP-TA as TA/AWR;
17.1.1.12 Maintain the workplace Hazardous Material Information System (WHMIS); and
17.1.1.13 Communicate with senior management, the RP-TA, and other agencies.

17.1.2 The Contactor must designate emergency contacts for environmental matters and ensure they are available 24/7/365.

17.1.3 The Contactor must ensure that the Environmental Protection (EP) portion of this contract is managed by a qualified person as set out in Table 1: Real Property Resource Qualification Requirements.

17.1.4 The Contractor must ensure that each person responsible for the handling or shipment of hazardous waste and materials is qualified regarding hazardous waste management as required by federal regulations, and ensuring that personnel responsible for the proper packaging and shipping of hazardous materials for transportation have appropriate certifications.

17.1.5 The Contractor must ensure that employees responsible for the hazardous waste packaging function possess a recognized certification in the Transportation of Dangerous Goods Act (TDGA.)

17.1.6 The Contractor must ensure that members of the Environmental Audit team have sufficient educational background and years of relevant experience; the degree of involvement and roles in similar projects must be identified. The Contractor must ensure that the audit team is led by an employee of the firm certified with the Canadian Environmental Certification Approvals Board (CECAB) as a Compliance Auditor (EP (CEA)). The Contractor must ensure that other factors are considered in assuring the adequacy of personnel qualifications, in addition to EP(CEA) certification, include experience in conducting environmental compliance audits on federal facilities on DND bases and the type and complexity of audits they have conducted.

17.1.7 The Contractor must (in coordination with the RP-TA), liaise on environmental matters as required with outside agencies, including federal, territorial, and provincial governments regarding compliance, permits, inspections and emergencies.

17.1.8 The Contractor must provide Environmental Awareness and Protection training to labour resources under its authority in accordance with the CTS at least once by the end of the Transition-In period for initial personnel. The Contractor must provide such training to follow-on personnel within three months of coming on strength.

17.1.9 The Contractor must exercise due diligence and provide environmental stewardship in accordance with DND's policies and applicable Federal, Provincial and Territorial legislation.

17.1.10 The Contractor must comply with applicable environmental legislation, and meet the requirements of applicable environmental policies and related guidance.

17.1.11 The Contractor must report on environmental activities and collect, maintain and make available environmental data, as requested, using appropriate, industry-recognized tools such as GREEN UP, Leadership in Energy and Environmental Design (LEED) and Green Globes tools.

17.1.12 The Contractor must conduct environmental performance assessments for individual buildings on a five-year cycle, using an acceptable industry-recognized tool such as LEED EB: O&M.

17.1.13 The Contractor must undertake approved work to meet DND SDS targets, monitor progress and report quarterly, and as requested, on performance against these plans.

17.1.14 The Contractor must support DND in meeting DND's Environmental Compliance Monitoring Program (ECMP).

17.1.15 The Contractor must provide information and support DND in determining whether proposed activities require environmental screening by an organization other than DND or the Contractor.

17.1.16 The Contractor must comply with mitigation measures and follow-up requirements, as requested, consequent to environmental assessments of projects.

17.1.17 The Contractor must provide support, identify requirements and undertake work to ensure compliance with the *Canadian Environmental Protection Act* and other applicable environmental legislation, such as the *Transportation of Dangerous Goods Act*, Impact Assessment Act, and the *Species at Risk Act*, the *Navigable Waters Protection Act*, the *Canada Water Act* and the *Fisheries Act*.

17.1.18 The Contractor must collect, maintain and make available environmental performance data, as requested, and:

17.1.18.1 Ensure that data is available no later than May 1; and

17.1.18.2 Conduct environmental benchmarking, reporting and data management services, as requested.

17.1.19 The Contractor must apply prudent environmental processes and practices, and use environmentally friendly products in the delivery of services.

17.1.20 The Contractor must conduct annual compliance self-assessments for individual assets and buildings to identify non-compliance.

17.1.21 The Contractor must support DND in conducting Quality Monitoring and process audits as set out in DND guidance documents, as requested, including demonstration of adequacy in supporting DND's ECMP and external audits conducted on behalf of the RP-TA to confirm the adequacy of the EMS for the duration of the Contract.

17.1.22 The Contractor must respond to Quality Monitoring findings and adjust the EMS accordingly during the Contract Period.

17.1.23 The Contractor must recycle construction materials as part of non-hazardous waste management and recycling.

17.1.24 The Contractor must identify opportunities and make recommendations to reduce greenhouse gas emissions to meet requested targets as part of the ABP development processes.

17.2 Provide Environmental Planning Services

17.2.1 The Contractor must provide a documented Environmental Management System (EMS) as pre the relevant DID, CDRL.

17.2.2 The Contractor must provide an Environmental Protection Plan (EPP) as per related CDRL, DID.

17.2.3 The Contractor must provide a Spill Plan as per related CDRL, DID. The Contractor must identify species at risk and advise the RP-TA accordingly.

17.2.4 The Contractor must employ effective processes and practices for:

17.2.4.1 Managing POL and associated storage tanks, including preparing and maintaining the records required by the regulations and preparing and submitting the necessary forms as per the related CDRL, DID;

17.2.4.2 Managing Asbestos Containing Material (ACM) in accordance with federal acts and regulations, statutes, standards, directives, legislation, and any other pertinent governing bodies, maintaining all existing Asbestos Management Plans (AMP), and conducting Asbestos Survey Reports (ASR) and preparing and maintaining AMP for sites; and

17.2.4.3 Managing other environmental concerns and initiatives, as requested.

17.2.5 The Contractor must include environmental emergency response planning input as part of site-specific environmental emergency response plans in emergency planning and take immediate action to manage and mitigate the impact of environmental incidents and emergencies.

17.3 Provide Halocarbon Management Services

17.3.1 The Contractor must manage halocarbons and meet DND reporting requirements in accordance with the Environmental Code of Practice on Halon 1/RA-3. The Contractor must implement the Halocarbon Management section of the EPP.

17.3.2 The Contractor must retain NWS Halocarbon Inventory as per the related CRDL, DID.

17.3.3 Submit Semi-annual Halocarbon Release Reports as per related CDRL, DID.

17.4 Manage HAZMAT, Waste HAZMAT, and Solid Waste

17.4.1 The Contractor must implement the Hazardous Materials General Management and Storage and Tracking of Waste HAZMAT sections of the EPP.

17.4.2 The Contractor must provide Transportation of Dangerous Goods (TDG) training by road, sea and/or air to labour resources under its authority involved in the transport of dangerous goods, as per the appropriate CTS.

17.4.3 The Contractor must collect and dispose of general/non-hazardous wastes off site. Open burning of waste is forbidden. The Contractor must comply with requirements of the license with respect to the disposal of solid waste where the site is governed by an NWB license. The Contractor must clean up spillage of non-hazardous wastes resulting from handling during collection and disposal. Most non-hazardous waste in each Zone can be brought back to the host LSS for disposal in lnuvik, Cambridge Bay, Hall Beach, Iqaluit and Goose Bay, subject to the Contractor having agreements in place with those communities.

17.4.4 The Contractor must provide properly labelled containers for HAZMAT waste at each NWS site in accordance with Federal/Territorial regulations.

17.4.5 Maintain Solid Waste Management Records as per the related CDRL, DID

17.4.6 The Contractor must retain HAZMAT inventory as required by the HAZMAT General Management section of the EPP as per the relevant CDRL, DID.

17.4.7 The Contractor must submit quarterly waste HAZMAT storage area inspection checklists as required by the Storage and Tracking of Waste HAZMAT Plan, ensuring that checklists to be completed by 30 September.

17.4.8 The Contractor must submit a Hazardous Waste Report in accordance with the CDRL containing details of Hazardous Waste handling, locations and disposal, including waste descriptions and quantity of waste types.

17.4.9 The Contractor must manage hazardous waste, as requested:

17.4.9.1 Advise the RP-TA when seeking permits and arranging for the removal or disposal of Polychlorinated Biphenyls (PCBs); and

17.4.9.2 Arrange, as requested, for the collection, storage, transfer and final disposal of hazardous waste as defined by the legislative authority having jurisdiction, in accordance with legislative requirements and DND practices, provided these are not in conflict with applicable law, and in case of conflict, seek guidance from respective legislative authorities.

17.4.10 The Contractor must maintain an Inventory of Regulated Systems, Building Equipment and Components documented in accordance with the CDRL.

17.5 Document and Maintain Environmental Information

17.5.1 The Contractor must prepare and implement annual environmental objectives as per the related CDRL, DID.

17.5.2 Develop and maintain an Environmental Aspects Database as per the related CDRL, DID.

17.5.3 Develop and maintain an Environmental Risk Database as per the related CDRL, DID.

17.5.4 Develop and maintain a Compliance Obligations Database as per the related CDRL, DID.

17.5.5 The Contractor must prepare and submit a Semi-annual Environmental Status Report as per the related CDRL, DID.

17.6 Manage Environmental Incidents

17.6.1 The Contractor must prepare environmental incident reports as per the related CDRL, DID. Where the incident is a spill, the Contractor must implement the Spill Plan. All spills less than 205 litres cleaned up within 3 days of discovery weather permitting. All spills less than 1000 litres cleaned up within 15 days of discovery weather permitting. No example of enforcement action taken by a regulator due to inadequate response to a spill. Clean up criteria must comply with CCME Canada Wide Standards for Petroleum hydrocarbons in soil and CCME Soil Quality guidelines.

17.6.2 The Contractor must maintain spill kits at NWS radar sites with contents as set out in the EPP and associated Spill Plan and implement the Spill Plan for POL and hazardous materials spills for such incidents.

17.6.3 The Contractor must conduct spill sampling and assessment to delineate the extent of a spill, and to determine the rate of remediation of an existing or legacy spill.

17.6.4 The Contractor must provide Spill Response training to LSS resources and POL technicians with topics including as a minimum, types and causes of spills possible at NWS sites, reporting procedures, spill kit familiarization, spill response actions for a variety of scenarios, post-spill site assessment, post-spill review, and health and safety. The Contractor must incorporate training requirements into the Environmental Protection Plan. Instruction methods will include lectures, audio-visual presentations, and field simulations exercises. The Contractor must provide regenerative training on a two-year cycle.

17.6.5 The Contractor must perform simulated spill response exercises at least annually, based on scenarios developed by Environmental Services resources, for a spill of a size and location that poses a direct threat to fish habitat. The purpose of the simulation is to test contingency response procedures and identify areas of activity requiring improvement, as well as ensuring resources preparedness. The Contractor must record results of the simulation for review by the Contractor and the RP-TA. , as per the related CDRL, DID.

17.6.6 The Contractor must maintain a database of environmental incidents as per the related CDRL, DID.

17.6.7 In the event that the cost of response/remediation activities to an environmental incident exceeds the amount of the insurance deductible for such occurrences, the RP-TA may request a proposal to complete the response/remediation activities as TA/AWR.

17.7 Manage Permits and Licenses

17.7.1 The Contractor must obtain, or as required, assist the RP-TA in obtaining required permits for the services covered in the SOW, for example Nunavut Water Board licenses. The Contractor must coordinate with Parks Canada to secure required permits for access to BAR-1 and BAR-B as required for O&M activities.

17.7.2 The Contractor must comply with special requirements for O&M of SRR BAR-B (Stokes Point) and SRR BAR-1 (Komokuk Beach) located in lvvavik National Park, Yukon Territory, as these have been identified in the lnuvialuit Final Agreement (IFA) and in the Cooperation Agreement between the lnuvialuit Regional Corporation and the DND. The Cooperation Agreement allowed for the construction of the Stokes Point SRR site under the conditions that the site:

17.7.2.1 Would not damage wildlife or wildlife habitat;

17.7.2.2 Would not infringe upon native land use;

17.7.2.3 Would adhere to Parks Canada rules and procedures for the National Park; and

17.7.2.4 BAR-1 (Komakuk Beach) SRR site was constructed prior to the expansion of the park boundaries and is now subject to the National Parks Act and associated regulations. The Contractor must manage BAR-1 according to regulations in effect for lvvavik National Park.

17.7.3 The Contractor must administer Nunavut Water Board (NWB) licenses for, CAM-MAIN, CAM-3, FOX-MAIN, FOX-3, DYE-MAIN and BAF-3 including:

17.7.3.1 Continually audit NWS work being performed against the requirements of the licenses to guarantee compliance. Investigate root causes of any non-conformance. Develop and implement corrective actions as required;

17.7.3.2 Review work planned for potential to conflicts with the requirements of the NWB license. Prepare plans or mitigation measures to modify the Work to comply with the license;

17.7.3.3 Ensure that a qualified person attends site inspections conducted by an NWB representative, typically every two years. Assist the NWB inspector as required;

17.7.3.4 Monitor and comply with domestic water consumption for each LRR site governed by an NWB license;

17.7.3.5 Monitor sewage effluent for each LRR site governed by an NWB license; and

17.7.3.6 Prepare NWB license annual reports as per related CDRL, DID.

17.7.4 The Contractor must retain the following:

17.7.4.1 Permits to operate in lvvavik National Park;

17.7.4.2 Annual domestic water consumption records;

17.7.4.3 Annual sewage effluent test results; and

17.7.4.4 Annual NWB licenses reports for BAF-3, DYE-M, FOX-M, FOX-3, CAM-M and CAM-3.

17.8 Environmental Impact Assessments

17.8.1 The Contractor must complete Environmental Impact Assessments (EIAs) and screen proposed projects, programs and activities for potential environmental impacts in accordance with the Impact Assessment Act and territorial environmental assessment acts. Appropriate mitigation measures for potential impacts will be identified and included in project specifications. Projects not captured by Impact Assessment Act or territorial environmental assessment acts will require "due diligence" EIAs to be generated.

17.8.2 The Contractor must submit EIAs as per related CDRL, DID.

17.8.3 The Contractor must establish and maintain an EIA listing as per related CDRL, DID.

17.8.4 The Contractor must Retain EIAs.

17.9 Environmental Audits

17.9.1 The Contractor must Conduct annual Environmental Audits for NWS sites and ensure that the auditing program includes assessments of the Contractor's conformance to procedures and guiding documents and examinations of the physical status of NWS sites, including the sampling of contaminated sites. Sites are to be audited over a two-year period

17.9.2 Submit Site Environmental Audit Reports as per the relevant CDRL, DID.

17.9.3 Develop and maintain an Environmental Corrective Action Registry as per the relevant CDRL, DID.

17.9.4 The Contractor must retain Audit Reports.

SOW Section 18:

Real Property Service Delivery Regime Development, Acceptance, and Reviews

18.0 Service Delivery Regime and Acceptance Review Requirements

18.1 Scope of the Service Delivery Regime

18.1.1 The scope of the RP-SDR covers the processes and procedures associated with the provision of each of the services set out in this section of the SOW and the Contractor's management regimes, programs, processes and capabilities required to support the delivery of those services, including the Contractor's capabilities for real property services, covering the:

18.1.1.1 Quality Management System (QMS);
18.1.1.2 Performance Measurement Regime (PMR);
18.1.1.3 Occupational Health and Safety (OH&S) Programs;
18.1.1.4 Optimized Maintenance Program (OMP);
18.1.1.5 Environmental Management System (EMS);
18.1.1.6 Information Management Methodology;
18.1.1.7 Work Management System (WMS);
18.1.1.8 Commissioning Oversight Program; and
18.1.1.9 Project Delivery Regime (PDR).

18.2 Have Service Delivery Processes and Procedures

18.2.1 The Contractor must have processes, procedures, documentation and tools required to provide Management Services, Facility Management Services and Project Delivery Services, as well as Optional Services, if and when Canada exercises its option for one or more of these.

18.2.2 The Contractor must provide copies of the Contractor's existing procedural documentation covering the scope of the Service Delivery Regime in accordance with the CDRL.

18.3 Ensure that the Performance Measurement Regime Meets RP Requirements

18.3.1 The Contractor must have a PMR that meets the needs of the services and requirements set out in this section of the SOW.

18.4 Have Real Property Occupational Health and Safety Programs

18.4.1 The Contractor must have OH&S Programs that meet the needs of the services and requirements set out in this section of the SOW, consistent with the most current release of CAN/CSA-Z1000 – Occupational Health and Safety Management Standard, including an Asset OH&S Program.

18.4.2 The Contractor must ensure that the OH&S Programs include measures to comply with applicable legislation, and DND policy and obligations.

18.4.3 The Contractor must ensure that appropriate hazard communication procedures are in place.

18.5 Ensure That the Risk Management Program Meets RP Requirements

18.5.1 The Contractor must ensure the Risk Management Program meets the needs of the services and requirements set out in this section of the SOW, including risk management processes, roles and responsibilities, and management system capabilities.

18.6 Real Property Optimized Maintenance Program

18.6.1 The Contractor must have an OMP to optimize Site O&M strategies using a reliability-centred approach and the IMS to:

18.6.1.1 Reduce life cycle cost;
18.6.1.2 Minimize unscheduled repairs and eliminate unnecessary maintenance activities;
18.6.1.3 Identify the best opportunities to perform maintenance;
18.6.1.4 Minimize disruptions to occupants; and
18.6.1.5 Maximize building availability.

18.6.2 The Contractor must ensure that the OMP meets LCFM requirements, including capabilities to:

18.6.2.1 Analyze failure data to identify maintenance problems and challenges, and improve reliability and operating efficiency;

18.6.2.2 Rationalize spares, consumables and supply requirements; and
18.6.2.3 Position maintenance materiel and resources so as to reduce costs and improve responsiveness.

18.6.3 The Contractor must ensure that the OMP provides Site maintenance strategies for the systems, equipment and components that influence overall building availability, including:

18.6.3.1 Inspection, testing and maintenance of life safety and fire protection and control equipment;
18.6.3.2 Heating, Ventilation And Air Conditioning (HVAC) systems;
18.6.3.3 Electrical supply and distribution systems;
18.6.3.4 Structural and architectural components;

18.6.3.5 Results of seismic screening and assessments, carried out in accordance with DND's Seismic Resistance of DND Buildings policy;
18.6.3.6 Vertical transportation systems;
18.6.3.7 Energy systems;
18.6.3.8 Water, sewer and plumbing systems;
18.6.3.9 The building envelope; and
18.6.3.10 Storage tanks and associated piping systems.

18.6.4 The Contractor must ensure that the OMP provides for assessment of individual buildings to determine the optimum balance between repairs and predictive, preventive and corrective maintenance, considering factors such as:

18.6.4.1 The nature of operations and Occupant reliability requirements;
18.6.4.2 Maintenance service requirements set out in the most recent commissioning report;
18.6.4.3 The type of asset, its age, condition, structure, construction details, risk of hidden deterioration, exposure conditions, systems and equipment;
18.6.4.4 Failure rates;
18.6.4.5 Service call trends;
18.6.4.6 Capital investment strategy;
18.6.4.7 Cost; and
18.6.4.8 Heritage designation.

18.7 Ensure That the Environmental Management System Meets RP Requirements

18.7.1 The Contractor must have an EMS that meets the needs of the services and requirements set out in this section of the SOW, as per the DID/CDRL 17.2.1.

18.8 Ensure that the Work Management System Meets RP Requirements

18.8.1 The Contractor must have a WMS that meets the needs of the services and requirements set out in this section of the SOW to ensure disciplined methods for:

18.8.1.1 Initiation and authorization of work;
18.8.1.2 Implementation and control of work;
18.8.1.3 Inspection of completed work; and
18.8.1.4 Financial management, payment and tracking of progress and expenditures.

18.8.2 The Contractor must ensure that the WMS includes time tracking capabilities, at the individual resource and summary levels, including:

18.8.2.1 Information on labour hours, including:

18.8.2.1.1 The employee's actual total work hours performed on a weekly basis, regardless of whether hours worked were dedicated to SOW work;

18.8.2.1.2 The specific services, as set out in this section of the SOW, to which the employee's work hours pertain;

18.8.2.1.3 For overtime compensation, the multiplicative factor associated with the time spent in excess of the predefined work hours for the week;

18.8.2.1.4 A mechanism to differentiate between salaried and hourly paid employees;

18.8.2.1.5 The total predefined number of work hours for hourly-paid employees;

18.8.2.1.6 The predefined number of work hours for salaried employees; and

18.8.2.1.7 A unique identifier, e.g. employee number, to readily differentiate among employees with similar names.

18.8.2.2 Time reporting capabilities for employees performing work, including the aggregate hours worked, identifying that which is for DND and for other clients, within a weekly time frame, indicating the nature of the Work and number of hours applicable to each individual project and service.

18.8.3 Within one year of the Operational Start Date demonstrate that a WMS compliant with the requirements of this section of the SOW is in place.

18.9 Have a Commissioning Oversight Program

18.9.1 The Contractor must have a Commissioning Oversight Program that meets the needs of the services and requirements set out in this section of the SOW to ensure that commissioning of projects, whether conducted by the Contractor or others, is consistent with the most current release of CSA Z320 – Building Commissioning Standard & Check Sheets, considering applicable DND commissioning policy and guidance documents.

18.9.2 The Contractor must have a designated single point of contact for the Commissioning Oversight Program to:

18.9.2.1 Represent DND's interests;

18.9.2.2 Ensure that appropriate guidance is in place for commissioning;

18.9.2.3 Facilitate the overall commissioning process;

18.9.2.4 Accept end products; and

18.9.2.5 Ensure the quality and effective integration of project outputs into building O&M on behalf of DND.

18.10 Ensure That the Project Delivery Regime Meets RP Requirements

18.10.1 The Contractor must have a PDR that meets the needs of the services and requirements set out in this section of the SOW, with processes and procedures suited to each Project Category as set out in the Provide Project Delivery Services section.

18.10.2 The Contractor must ensure that the PDR is consistent with the most current versions of the Project Management Institute's (PMI's) standards and associated guidelines as recognized by the American National Standards Institute (ANSI), including:

18.10.2.1 The Standard for Program Management – ANSI/PMI 08-002;
18.10.2.2 The Standard for Site Management – ANSI/PMI 08-003;
18.10.2.3 A Guide to the Project Management Body of Knowledge (PMBOK Guide) – ANSI/PMI 99-001; and
18.10.2.4 The Construction Extension to the PMBOK Guide.

18.10.3 The Contractor must provide for application of the PDR at the Site level and to each project, in a manner suited to:

18.10.3.1 DND's project management policy framework and systems; and
18.10.3.2 The complexity and level of risk of each project.

18.11 Obtain Acceptance of the Real Property Service Delivery Regime

18.12 General

18.12.1 The Contractor must submit an RP-SDR Acceptance Review Plan within 21 calendar days following Contract Award, in accordance with the CDRL, setting out how the Contractor will undertake the Work to obtain acceptance of the RP-SDR, including:

18.12.1.1 Key contacts;
18.12.1.2 A schedule and milestones;
18.12.1.3 A plan covering the RP-SDR Acceptance Process labour resource requirements; and
18.12.1.4 Other costs.

18.12.2 The Contractor must submit an Acceptance Review Risk Dashboard, within two weeks after delivery of RP-SDR Acceptance Review Plan with subsequent updates, in accordance with the CDRL.

18.12.3 The Contractor must document its RP-SDR in an RP-SDR Specification in accordance with the CDRL, ensuring that the specification of each RP-SDR component:

18.12.3.1 Is appropriate, clearly articulated and reflects an understanding of RP-TA/DND and Occupant needs;

18.12.3.2 Is consistent with and traceable to the Contractor's proposal;

18.12.3.3 Provides for results that will comply with the requirements set out in this section of the SOW, including:

18.12.3.3.1 Compliance with applicable policy and standards,

18.12.3.3.2 Demonstration of due diligence regarding compliance with applicable legislation, and

18.12.3.3.3 Consistency with good industry practice, considering unique-to-government requirements; and

18.12.3.4 Will result in services that represent Best Value.

18.12.4 The Contractor must manage and participate in the overall RP-SDR Acceptance Process, which covers the scope of Management Services, Facility Management Services and Project Delivery Services, as well as Optional Services, if the option for one or more of these is exercised, and includes:

18.12.4.1 A Preliminary Acceptance Review, based on high-level descriptions of the RP-SDR components and more detailed descriptions of selected RP-SDR components, to achieve Acceptance-in-Principle;

18.12.4.2 a Critical Acceptance Review, based on detailed specifications for selected RP-SDR components, and updates of other RP-SDR descriptions, to achieve the Critical Acceptance milestone; and

18.12.4.3 A Final Acceptance Review, to achieve the RP-SDR Acceptance milestone.

18.12.5 The Contractor must provide appropriate presentation material, documents, samples and demonstrations for each RP-SDR Acceptance Review, including:

18.12.5.1 Descriptions of programs, systems, processes, procedures and information templates, and other documentation indicating how services will be delivered, their performance measured and their quality assured, to a level of detail commensurate with the purpose of the specific RP-SDR Acceptance Review; and

18.12.5.2 Demonstrations and documentation samples, additional information and further explanation as requested by Canada.

18.12.6 The Contractor must provide an advance sample of information, within three weeks after Contract Award, in the form of a description of a program, a system, processes, procedures and information templates, demonstrations and sample documentation applicable to a selected property management service, to be used by Canada to provide feedback as to the adequacy of the information that the Contractor proposes to submit at the Preliminary RP-SDR Acceptance Review.

18.12.7 The Contractor must plan and administer RP-SDR Acceptance Reviews of an appropriate duration, to be held at DND facilities in the National Capital Region (NCR).

18.12.8 The Contractor must provide an updated RP-SDR Acceptance Review Plan no later than two weeks prior to each review session, setting out the proposed approach, schedule and deliverables for the review session, and:

18.12.8.1 Content of advance submission of deliverables to be reviewed;
18.12.8.2 Draft agendas and provisions for simultaneous translation; and
18.12.8.3 Proposed turnaround times for Contactor follow-up and response to issues and concerns raised by Canada.

18.12.9 The Contractor must provide additional information and explanation, and revise the RP-SDR Specification as required to respond to issues and concerns raised by Canada as a result of each RP-SDR Acceptance Review in relation to conformance with the requirements of this section of the SOW.

18.13 Conduct Service Delivery Regime Acceptance Reviews

18.13.1 Conduct the Preliminary Acceptance Review.

18.13.2 The Contractor must plan, coordinate with the RP-TA and conduct the Preliminary Acceptance Review session no later than 60 calendar days before the Infrastructure Operational Start Date, or as requested.

18.13.3 The Contractor must undertake required activities, including the provision and presentation of information to obtain Acceptance-in-Principle of the RP-SDR as an outcome, to enable the Contractor to fulfill Infrastructure Operational Transition requirements.

18.13.4 The Contractor must provide the following no later than two weeks in advance of the scheduled review session:

18.13.4.1 Overviews of the proposed processes and procedures associated with each service set out in this section of the SOW, in the form of presentations;
18.13.4.2 a description and the status of Contractor capabilities that will support the delivery of those services, a preliminary gap analysis in relation to the requirements of this section of the SOW and a plan for closing identified gaps; and
18.13.4.3 Detailed descriptions of selected components of the RP-SDR, as determined by the RP-TA, including how the Contractor will:

18.13.4.3.1 Manage incidents and respond to service calls;
18.13.4.3.2 Provide selected capabilities for managing information, reporting and keeping records;
18.13.4.3.3 Provide environmental management services and EMS capabilities, including emergency response capabilities for environmental incidents;
18.13.4.3.4 Use and maintain GFA;
18.13.4.3.5 Measure and provide performance information;
18.13.4.3.6 Ensure OH&S;
18.13.4.3.7 Conduct procurement and revenue collection;
18.13.4.3.8 Use the WMS, including labour time reporting and cost control;
18.13.4.3.9 Operate building systems and equipment;
18.13.4.3.10 Provide maintenance services;
18.13.4.3.11 Manage energy and utilities;
18.13.4.3.12 Provide security services; and
18.13.4.3.13 Provide other selected management regimes, services, programs, processes or capabilities as requested.

18.13.5 The Contractor must provide an acceptable follow-up plan to rectify deficiencies and respond to issues, risks or problems identified by Canada by the end of the review session.

18.13.6 The Contractor must provide information to the RP-TA within two weeks after completion of the review session, including evidence to confirm that required changes to the Contractor's RP-SDR arising from the Preliminary Acceptance Review session have been made.

18.13.7 The Contractor must obtain RP-SDR Acceptance-in-Principle by 1 May 2020, as the basis for proceeding to provide Management Services, Facility Management Services, Project Delivery Services and Optional Services if these are invoked, as of the Infrastructure Operational Start Date, in a manner consistent with the RP-SDR information provided.

18.13.8 Conduct the Critical Acceptance Review

18.13.9 The Contractor must plan, coordinate with the RP-TA and conduct the Critical Acceptance Review session no later than 20 May 2020, or as requested.

18.13.10 The Contractor must undertake required activities to achieve the RP-SDR Critical Acceptance milestone, including the provision and presentation of information in accordance with the CDRL, to obtain acceptance of selected components of the RP-SDR Specification for which detailed descriptions were required as part of the Preliminary Acceptance Review.

18.13.11 The Contractor must provide the RP-SDR Specification for the selected components of the RP-SDR as reviewed during the Preliminary Acceptance Review a minimum of 40 calendar days in advance of the scheduled Critical Acceptance Review session.

18.13.12 The Contractor must provide follow-up information to the RP-TA within two weeks after completion of the review session, including evidence to confirm that required actions are being taken to address deficiencies in the RP-SDR Specification components.

18.13.13 The Contractor must provide the entire RP-SDR Specification, including the balance of management regimes, services, programs, processes or capabilities not covered by the Critical Acceptance Review, and updates to those as required, no later than 40 calendar days in advance of the Acceptance Review session.

18.13.14 The Contractor must provide follow-up information to the RP-TA within two weeks after completion of the review session, including evidence to confirm that required actions are being taken to address deficiencies in the RP-SDR Specification components.

18.13.15 Conduct the Final Acceptance Review.

18.13.16 Plan, coordinate with the RP-TA and conduct the Final Acceptance Review session no later than 10 June 2020, or as requested.

18.13.17 The Contractor must provide the RP-SDR Specification no later than 10 calendar days in advance of the Final Acceptance Review session.

18.13.18 Conduct the review process, aimed at achieving the RP-SDR Acceptance milestone no later than 1 July 2020.

SOW Section 19:

Transition In (TI)

19.0 TRANSITION IN

19.1 Introduction Transition In

19.1.1 The Contractor must prepare and implement a Transition In Plan (TIP) to assume Care, Custody and Control (CCC) of the North Warning System (NWS) as detailed in this statement of work (SOW). The TIP must align with the Transition Out Plan (TOP) as provided by Canada. The TIP must take into consideration the following parameters:

19.1.1.1 The total transition period must be 01 April 2022 to 30 September 2022;

19.1.1.2 CCC of all NWS sites must remain with the out-going Contractor until 31 July 2022. At that time, CCC of all NWS sites must be transferred to the new Contractor;

19.1.1.3 As part of implementation of a TOP executed to close out the current contract, the following must occur:

19.1.1.3.1 A full physical inventory of all United States Air Force (USAF) assets must be conducted at all NWS locations;

19.1.1.3.2 A full inventory of all Canadian accountable Government Furnished Equipment (GFE) and Government Supplied Material (GSM) with a value greater than $500, less installed equipment, and attractive items, must also be conducted at all NWS sites; and

19.1.1.3.3 There must be a site acceptance visit for each NWS location performed in conjunction with (5.1.1.3.1) and (5.1.1.3.2) above coordinated with a representative from Canada. Communication security (COMSEC) must be transferred from the out-going Contractor to the in-coming Contractor at that time as well.

19.1.1.4 Reference plans provided in the Contract (historical library) must be deemed by Canada to be adequate to manage the requirements of this SOW during the Transition-In period and three months thereafter; and

19.1.1.5 Transition meetings must be scheduled minimum weekly for the duration of the transition period.

19.2 Definitions

19.2.1 Refer to the table of definitions relevant to this SOW.

19.3 References

19.3.1.1 Current NWS Transition Out Plan (M);

19.4 PERSONNEL QUALIFICATIONS

19.4.1 The Transition-In Manager must have at least 10 years of experience managing complex projects, and direct experience transitioning one or more projects. The Transition-In Manager must be familiar with project management of multi-disciplinary services/functions as demonstrated through work history. Replacement of the Transition-In Manager must be approved by the Canada.

19.5 SAFETY

19.5.1 The Contractor must comply with all safety measures in this contract, and any additional safety measures not otherwise specified in this contract, but which are consistent with prudent management and industry practices.

19.6 DESCRIPTION OF EXISTING CONDITIONS

19.6.1 Descriptions of existing conditions are provided in all Sections of this SOW as appropriate.

19.7 SECURITY

19.7.1 All contractor personnel must meet the requisite security requirements as defined by the Security Requirements Checklist (SRCL) before being allowed to visit or work at any NWS location.

19.8 TRANSITION-IN ADMINISTRATION

19.8.1 Establish Transition Team

19.8.1.1 The Contractor must establish a Transition Team within 5 business days of contract award.

19.8.1.2 Transition Team Organization Chart:

19.8.1.2.1 The Contractor must prepare and submit to the Contract Authority an organization chart detailing the Transition Team, its reporting structure up to the Transition-In Manager and roles and responsibilities for each team member. The organization chart must include all contact information for the Transition Team including names, business phone numbers and business email addresses.

19.8.2 Transition Meetings

19.8.2.1 The Contractor must attend at a minimum, weekly scheduled transition meetings with Canada. Additional transition meetings must be held as required. Transition meetings must only be rescheduled/cancelled with the written approval of Canada;

19.8.2.2 The Contractor must prepare agendas for each transition meeting. Agendas must be submitted to Canada at a minimum of 3(three) business day prior to the meeting; and

19.8.2.3 The Contractor must prepare minutes for each transition meeting. Meeting minutes must be submitted to Canada no later than two business days following the meeting.

19.9 TRANSITION-IN IMPLEMENTATION

19.9.1 Prepare TIP

19.9.1.1 The Contractor must submit a draft TIP within 30 calendar days from contract start. The draft TIP must be based on the requirements of this Section and must demonstrate how the Contractor intends to assume all responsibilities of this SOW. The TIP must be written to compliment the TOP provided by Canada. The TIP must include the following:

19.9.1.1.1 Identification of the transition team;

19.9.1.1.2 A proposed detailed schedule for assuming CCC of the NWS, including site visits to witness inventory conducted as part of the TOP, and to participate in site handover;

19.9.1.1.3 A staffing plan to take over CCC of the NWS by 31 July 2022. In particular, the staffing plan must address the requirements of the SRCL to ensure that all personnel have the required security clearance to perform their assigned duties;

19.9.1.1.4 A training schedule for staff, and how this will be completed prior to staff assuming their assigned duties in conjunction with the transfer of CCC of NWS sites;

19.9.1.1.5 A procurement schedule for any Contractor supplied equipment, material and/or mobile support equipment (MSE);

19.9.1.1.6 A schedule for delivery of required plans and related documentation (templates etc.) required by this SOW;

19.9.1.1.7 Any interim measures implemented by the Contractor to meet the requirements of the SOW through the transition period; and

19.9.1.1.8 Personnel requirements from the LSS forward to implement the transition plan;

19.9.1.1.9 A risk mitigation strategy to ensure that the Contractor is ready to assume full CCC of the NWS by 31 July 2022.

19.9.2 The Contractor must finalize the TIP incorporating comments from Canada no later than 45 days after contract start.

19.9.3 Implement TIP

19.9.3.1 The Contractor must implement the TIP in conjunction with Canada to ensure CCC is achieved by 31 July 2022.

SOW Section 20:

Transition Out (TO)

20.0 TRANSITION OUT

20.1 Introduction

20.1.1 The Contractor is to revise and maintain a Transition Out Plan (TOP) as provided by Canada to be implemented at the end of this contract. The TOP is to be reviewed and updated at a minimum annually to incorporate lessons learned from implementation of the Transition-In Plan (TIP), address any changes to the Contract or how the Contractor implements the requirements of this statement of work (SOW). A finalized TOP is to be ready for implementation no later than 60 days prior to the end of this contract.

20.2 Definitions

20.2.1 Refer to the table of the definitions relevant to this section.

20.2.2 References.

20.2.2.1 Current North Warning System (NWS) Transition Out Plan (M);

20.3 PERSONNEL QUALIFICATIONS

20.3.1 The Transition-Out Manager must have at least 10 years of experience managing complex projects, and direct experience transitioning one or more projects. The Transition-Out Manager must be familiar with project management of multi-disciplinary services/functions as demonstrated through work history. Replacement of the Transition-Out Manager must be approved by Canada.

20.4 SAFETY

20.4.1 The Contractor must comply with all safety measures in this contract, and any additional safety measures not otherwise specified in this contract, but which are consistent with prudent management and industry practices.

20.5 DESCRIPTION OF EXISTING CONDITIONS

20.5.1 Descriptions of existing conditions are provided in all Sections of this statement of work (SOW) as appropriate.

20.6 SECURITY

20.6.1 All contractor personnel must meet the requisite security requirements as defined by the Security Requirements Checklist (SRCL) before being allowed to visit or work at any NWS location.

20.7 TRANSITION-OUT ADMINISTRATION

20.7.1 Maintain a Current TOP

20.7.1.1 Within 1 year of Contract start, the Contractor must finalize the TOP as provided by Canada with lessons learned from implementation of the TIP and taking into consideration how the Contractor meets the requirements of this SOW. The TOP must be reviewed and updated at a minimum annually to take into consideration any changes in the mission, the Contract, or how the Contractor meets the requirements of this SOW. The annual review and update must be completed no later than 60 days prior to the end of the Fiscal Year.

20.7.2 Establish Transition-Out Team:

20.7.2.1 The Contractor must establish a Transition-Out team no later than 30 days prior to the start of the transition period;

20.7.2.2 Transition-Out Team Organization Chart; and

20.7.2.3 The Contractor must prepare and submit to the Contract Authority an organization chart detailing the Transition-Out Team, its reporting structure up to the Transition-Out Manager and roles and responsibilities for each team member. The organization chart must include all contact information for the Transition Team including names, business phone numbers and business email addresses.

20.7.3 Schedule and Attend Transition-Out Meetings

20.7.3.1 The Contractor must attend at a minimum, weekly scheduled transition-out meetings with Canada. Additional transition-out meetings must be held as required. Transition-out meetings must only be rescheduled/cancelled with the written approval of Canada;

20.7.3.2 The Contractor must prepare agendas for each transition-out meeting. Agendas must be submitted to Canada at a minimum of 1 business day prior to the meeting; and

20.7.3.3 The Contractor must prepare minutes for each transition-out meeting. Meeting minutes must be submitted to Canada no later than two business days following the meeting.

20.8 TRANSITION-OUT IMPLEMENTATION

20.8.1 Implement Transition-Out Plan

20.8.1.1 The Contractor must implement the finalized TOP. The TOP is to be implemented to ensure Care, Custody and Control (CCC) of all NWS sites is transferred from the current contract to the new contract within a defined 6 month transition period

21.0 List of the NWS SOW Doc Acronyms

AA	Accountable Advance
ABP	Annual Building Plan
ACCC	Association of Canadian Community Colleges
AFTAC	Air Force Technical Applications Centre
AGC	Above Ground Complex
AHJ	Authority Having Jurisdiction
AMP	Asset Management Plan
AQAP	Allied Quality Assurance Publication
ATE	Automated Test Equipment
ATO	Authority To Operate
AUCC	Association of Universities and Colleges of Canada
AWOS	Automated Weather Observation System
AWR	Additional Work Requirement
BCOA	Business Case Option Analysis
BCR	Building Condition Report
BER	Beyond Economical Repair
BPR	Building Performance Review
CA	Contracting Authority
CADD	Computer-Aided Design and Drafting
CADS	Canadian Air Defence Sector
CAF	Canadian Armed Forces
CCC	Care, Custody and Control
CDF	Combined Distribution Frame
CDRL	Contract Data Requirements List
CEPA	Canadian Environmental Protection Act
CFAA	Canadian Fire Alarm Association
CFB	Canadian Forces Base
CFSM	Canadian Forces Supply Manual
CGCS	Canadian Government Catalogue System
CHI	Contractor Held Inventory
CI	Configured Item
CIS	Contractor Issued Spares
CLC	Canada Labour Code
CLCA	Comprehensive Land Claim Agreement
CM	Corrective Maintenance
IMS	Computerized Maintenance Management System
CMO	Contract Management Office
CMS	Control and Monitoring system
COMSEC	Communications Security

COTS	Commercial Off The Shelf
CPCI	Computer Program Configuration Items
CPIN	Computer Program Identification Number
CPR	Cardiopulmonary Resuscitation
CSA	Configuration Status Accounting
CSA	Canadian Standards Association
CSE	Communication Security Establishment
CSEMP	Cyber Security Event Management Plan
CSN	Canadian Switchboard Network
CSR	Customer Support Request
CSTB	Communications System Test Bed
CTAT	Controlled Technology Access and Transfer
CTS	Course Training Standard
CY	Current Year
DAOD	Defence Administrative Orders and Directives
DCN	Document Change Notice
DEG	Diesel Electric Generator
DID	Data Item Description
DLCU	Dew Line Clean Up
DND	Department of National Defence
DOS	Declaration of Surplus (Form 1303)
DRMIS	Defence Resource Management Information System
DSCO	Directorate Of Supply Chain Operations
EAGLE	Enhanced Automated Graphical Logistics Environment
EBS	Equipment Breakdown Structure
ECF	Electronic Control Facility
ECMP	Environmental Compliance Management Program
ECR	Engineering Change Request
EIA	Environmental Impact Assessment
EIN	Equipment Identification Number
ELE	Estimated Life Expectancy
EM	Emergency Maintenance
EPP	Environmental Protection Plan
ERP	Enterprise Resource Planning
ERRC	Expendability, Reparability, Recoverability Category
ESR	Equipment Status Report
FAT	Factory Acceptance Test
FCI	Facility Condition Index
FEDLOG	Federal Logistics Data
FFP	Fixed Firm Price
FHBRO	Federal Heritage Buildings Review Office

FIFO	First In First Out
FY	Fiscal Year
FYO&SP	Five Year Operations and Sustainment Plan
GAG	Ground Air Ground
G/A/G	Ground-Air-Ground
GFA	Government-Furnished Accommodation
GFE	Government Furnished Equipment
GFI	Government-Furnished Information
GFM	Government Furnished Material
GOCC	Government Owned Materiel in Contractor Custody
GOM	Government Owned Materiel
GSM	Government Supplied Material
HPA	Hazardous Products Act
HPR	High Priority Requirements
HR	Human Resources
HVAC	Heating, Ventilation and Air Conditioning
IMS	Information Management System
ISO	International Standards Organization
IP	Internal Protocol
ISSMS	Information Security Management System
IT	Information Technology
ITAR	International Trade in Arms Regulations
ITSE	Information Technology/Software Engineering
ITSG	Information Technology Security Guidance
IV	Inherent Availability
JHA	Job Hazard Analysis
KPI	Key Performance Indicator
LCFM	Life Cycle Facilities Management
LCM	Life Cycle Manager
LCMM	Life Cycle Material Manager
LHCN	Long Haul Communications Network
LOCID	Location Identifiers
LRR	Long Range Radar
LRU	Line Replaceable Unit
LSS	Logistics Support Site
LTI	Limited Technical Inspection
LUC	Labour Use Code
m and m^2	metre and square metre
MCF	Maintenance Control Facility
MCS	Maintenance Control System
MMIS	Maintenance Management Information System
MOU	Memorandum of Understanding

MRC	Maximum Repair Cost
SDS	Safety Data Sheet
MSE	Mobile Support Equipment
MTBCMA	Mean Time Between Corrective Maintenance Action
MTBF	Meant Time Between Failure
MTTR	Mean Time To Repair
NAPEG	Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists
NCR	National Capital Region
NCF	Network Control Facility
NDQAR	National Defence Quality Assurance Representative
NMS	National Master Specification
NOTAM	Notice To Airmen
NSN	NATO Stock Number
NW	North Warning
NWB	Nunavut Water Board
NWS	North Warning System
NWSCC	North Warning System Control Center
NWSO	North Warning System Office
NWSO TA	North Warning System Office Technical Authority
NWSSC	North Warning System Support Center
OEM	Original Equipment Manufacturer
OH&S	Occupational Health and Safety
OMP	Optimized Maintenance Program
O&M	Operation and Maintenance
ORA	Outside Repair Agency
PA	Public Address
PA	Procurement Authority
PBX	Public Exchange
PCRA	Project Complexity and Risk Assessment
PDR	Project Delivery Regime
PDSS	Performance Database Support Software
PGS	Power Generation System
PI	Performance Indicator
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PMBOK	Project Management Body of Knowledge
PME	Prime Mission Equipment
PMI	Project Management Institute
PMP	Program Management Plan
PMP	Preventive Maintenance Program
PMR	Performance Measurement Regime
POL	Petroleum, Oil and Lubricants
PPE	Personal Protective Equipment

PRM	Program Review Meeting
PSCN	Permanent system control number
QDR	Quality Deficiency Report
RCAF	Royal Canadian Air Force
RCFA	Root Cause Failure Analysis
RCG	Remote Control Group
REMIS	Reliability and Maintainability Information System
RF	Radio Frequency
RFW	Request For Waiver
RICC	Remote Interface Communications Controller
R&O	Repair and Overhaul
CDRL	Real Property Deliverable Requirements List
RP-SDR	Real Property Service Delivery Regime
RP-TA	Real Property Technical Authority
R&Q	Rations and Quarters
SAVMS	Security and Video Monitoring Systems
SCADA	Supervisory Control and Data Acquisition System
SDLC	System Development Lifecycle
SDR	Service Delivery Regime
SDS	Sustainable Development Strategy
SDU	Site Display Unit
SGT	Satellite Ground Terminal
SIR	Stocktaking Investigation Report
SLA	Service Level Agreement
SM	Systems Maintenance
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SOW	Statement Of Work
SRD	Short Range Development
SRC	Security Requirements Check List
SRR	Short Range Radar
SRU	Shop Repairable Unit
SSC	Shared Services of Canada
SSR	Stocktaking Summary Report
STO	Stock Transfer Order
STS	Storage Tank System
TA	Technical Authority
TB	Treasury Board
TBS	Treasury Board of Canada Secretariat
TCTO	Time Compliant Technical Order
TCP	Transport Connect Protocol
TDAN	Technical Data Action Notice
TDG	Transport of Dangerous Goods
TPS	Third Party Support

TRA	Threat Risk Assessment
TSB	Technical Services Building
UCR	Unsatisfactory Condition Report
UHF	Ultra High Frequency
US	United States
USAF	United States Air Force
UAR	Unattended Radar
VHF	Very High Frequency
VMN	Video Monitoring Network
WHMIS	Workplace Hazardous Materials Information System
WMS	Work Management System
WO	Work Order
WR	Work Request
WRB	Warranty Review Board
WUC	Work Unit Code

22.0 List of the References for the NWS SOW Sections

	NWS SOW Section 1, 2, 3 and 4 (CONOPS, PM, IM/IT & Sust) List of references
ITEM	**REFERENCE**
1	Course Training Standards (G)
2	CSEC Industrial COMSEC Material Control Manual ITSD-CSD-01, Directives for the Application of Communications Security in the Government of Canada (M)
3	IT Security Directive for the Control of COMSEC Material in the Canadian Private Sector ITSD-06A
4	Historical 5 Year Business Plan (G)
5	Library Index (M)
6	ISO standards 9001 and 14001 (M)
7	NWS General Health and Safety Plan (G)
8	NWS Risk Management Plan (G)
9	NWS Security Plan (G)
10	Treasury Board Secretariat Framework for the Management of Risk (G)
11	Treasury Board Secretariat Risk Management Policy.
12	Monthly Mandatory IB Management Report Template (M)
13	ISO 10005 Quality Management Systems - Guidelines for Quality Plans, latest edition (G)
14	NWS Work Management Plan (G)
15	Test Equipment Management Plan (G)
16	Test Equipment Reports (G)
17	Software Management Plan (G)
18	NWS Configuration Management Plan (G)
19	NWS LCMM Plan
20	General Inuit Benefits Management Plan (G)
21	A-IM-100-000/AG-001 Certification and Accreditation requirements (M)
22	Work Management System Users Guide (G)
23	NWS IMS Communications Architecture Schematic (G)
24	MAXIMO 7 EAM User Guide (G)
25	MAXIMO 7 User Guide (G)
26	NW IMS Hardware and Software listing (G)
27	DND/USAF AFTAC Memorandum of Understanding (M)
28	CSR/TPS Database
29	Customer Support Request Form (G)
30	NW IMS Forms Guide (G)
31	NW IMS REMIS ICD (G)
32	Environmental Incident Reports
33	System Security Plan
34	Inuit Training and Development Plan (G)
35	Quarterly Inuit Training and Development Program Reports (G)
36	Nunavut Land Claims Agreement (M)
37	Labrador Inuit Land Claims Agreement (M)
38	Existing library listing
39	Government of Canada Cyber Security Event Management Plan (GC CSEMP) 2018
40	IT Security Risk Management in the Government of Canada (ITSE.10.033)
41	TBS, Policy on Service and Digital
42	TBS, Policy on Government Security
43	A-IM-100-000/AG-001 – DND/CAF Security Orders and Directives for Classified Information Systems
44	NIST SP800-39
45	HTRA
46	Defence Administrative Orders and Directives (DAOD) 2008-3 "Issue and Crisis Management".
47	DND/CAF Security Assessment and Authorization Guideline (SAAG), Director Information Management
48	ITSG 33 (M)
49	MITRE Common Vulnerabilities and Exposure (CVE) database (G)
50	Work Management System Users Guide (G)
51	Customer & Third Party Support Request Form (G)

52	LCMM and LCFM Plan
53	Preventive Maintenance Plan
54	Preventive Maintenance Exception Report
55	Trend Analysis Report
56	Unsatisfactory Condition Reports (UCR) template
57	Engineering Change Requests (ECRs);
58	Power Generation Report
59	DND Standard, D-01-002-007/SG-006, Criteria for the Selection of Configuration Items
60	Personnel Qualifications, Experience and Training
61	Time Compliant Technical Orders (TCTOs)
62	Preparation of Technical Data Action Notices (TDANs)
63	Director of Supply Chain Operations (DSCO)
64	Preparation of Document Change Notices (DCNs)
65	Request For Waiver (RFW)
66	D-02-002-003/SG-000 "Standard for Repair and Overhaul of Ground Radar, Navigation Aids and Ancillary Equipment by Civilian Contractors (G);
67	NWS Frequency Management Plan (G)
68	DNDP 35 Management of the Radio Frequency Spectrum (M)
69	DAOD 8012-0 Meteorology and Oceanography (M);
70	DAOD 8012-1 Meteorological and Oceanographic Products and Services Program (M);
71	D-02-002-003/SG-000 "Standard for Repair and Overhaul of Ground Radar, Navigation Aids and Ancillary Equipment by Civilian Contractors (G);
72	AQAP 2210 (M)- 2015 (2015-01-01), NATO SUPPLEMENTARY SOFTWARE QUALITY ASSURANCE REQUIREMENTS TO AQAP-2110 OR AQAP-2310
73	Some CDRL's & DID's Listing: Third Party R&O Vendor List, Quality Deficiency Reports (QDRs), Supply Deficiency Reports (SDR), Repair Summary Report, NWSSC R&O Report, Produce and Maintain CPIN Documentation, Software Maintenance Summary Report, Test Equipment Master List, Test Equipment Calibration Report, Test Equipment Calibration Non-Compliance Report and Test Equipment Repair Report
74	Business Case Options Analysis template
75	Document Change Notice template
76	00-5-1 AF TECHNICAL ORDER SYSTEM
77	00-5-16 USAF AUTOMATED COMPUTER PROGRAM
78	00-25-234_026 GENERAL SHOP PRACTICE REQUIREMENTS FOR THE REPAIR, MAINTENANCE, AND TEST OF ELECTRICAL EQUIPMENT
79	1CAD ORDERS - Vol4
80	NWI 960 003 050
81	AFI 21-116 MAINTENANCE MANAGEMENT OF COMMUNICATIONS-ELECTRONICS
82	AFI 32-1065 GROUNDING SYSTEMS
83	Aide Memoire to Certification and Accreditation
84	AQAP 2210 - NATO Quality Assurance Requirements
85	C-02-005-013-AM-000 Maintenance Policy Shelf Life & Storage of Materiel
86	C-02-010-004-AG-000 Use of Modification Labels
87	C-02-005-009/AM-000 MATERIEL MANAGEMENT POLICY INSPECTION AND CONDITIONING OF MATERIEL RETURNED TO AND HELD IN SUPPLY SYSTEM
88	C-06-005-012 Comms Elec Maint Policy
89	C-06-006-005-VB-000 Electrostatic Discharge Control HBK
90	C-06-010-006-CJV-011 Handbook Siting Procedures Radar Facilities
91	C-06-011-001-VC-001 Prevention and Control of Corrosion. part 1
92	C-06-011-001-VC-001 Prevention and Control of Corrosion. part 2
93	C-06-030-003/TM-001 TEST EQUIPMENT MAINTENANCE MANAGEMENT INFORMATION SYSTEM (TEMMIS)
94	C-55-040-001-TS-001 Radio Frequency Safety Program
95	C-98-001-003/MS-004 HANDBOOK SITE RECORD DRAWINGS

96	C-9C-98-002-CAD-FP-005-eng DND Standards Symbols8-001-003-MS-004 Site Record Drawings
97	C-98-002-CAD-FP-006-eng DND Standards Guide for AutoCAD
98	C-98-002-CAD-FT-003 DND Standards Drawing Standards & Conventions
99	DND CF SecOrders and Directives for Classified Information Systems
100	C-98-016-001/DD-001 – Lightning Protection Requirements For Department of National Defence Critical Buildings.
101	IEEE STD 830-1998 Recommended Practice for Software Requirements Specifications.
102	dndp-35-MANAGEMENT OF THE RADIO FREQUENCY SPECTRUM MIL-HDBK-61A(SE) 7 February 2001 CONFIGURATION MANAGEMENT GUIDANCE
103	mil_hdbk_263b MIL HBK ELECTROSTATIC DISCHARGE CONTROL
104	mil_hdbk_274 MIL HBK ELECTRICAL GRD FOR AC SAFETY
105	mil_hdbk_338b MIL HBK ELECTRONIC RELIABILITY DESIGN HBK
106	mil_hdbk_470a DoD HBK DESIGN AND DEVELOP MAINTAINABLE PRODUCTS AND SYSTEMS VOLI
107	mil_hdbk_781a DOD HBK FOR RELIABILITY TEST METHODS
108	MIL-C-17G Gen Spec for cables, Rad Freq, Flexible and Semi rigid
109	MIL-STD-188-124 MILITARY STD GRDING, BONDING AND SHIELDING
110	mil_std_461 DEPARTMENT OF DEFENSE INTERFACE STANDARD REQUIREMENTS FOR THE CONTROL OF ELECTROMAGNETIC INTERFERENCE CHARACTERISTICS OF SUBSYSTEMS AND EQUIPMENT
111	mil_std_1686c DREPARTMEN OF DEFENSE STANDARD PRACTICE ELECTROSTATIC DISCHARGE CONTROL PROGRAM FOR PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS, I ASSEMBLIES AND
112	MIL-C-17G MILITARY SPECIFICATION CABLES, RADIO FREQUENCY, FLEXIBLE AND SEMIRIGID, GENERAL SPECIFICATION FOR
113	MIL-HDBK-419AMILITARY HANDBOOK GROUNDING, BONDING, AND SHIELDING FOR ELECTRONIC EQUIPMENTS AND FACILITIES VOLUME II OF 2 VOLUMES
114	MIL-STD-188-124 MILITARY STANDARD GROUNDING, BONDING AND SHIELDING for Common Long Haul Tactical Communication Systems Including Ground Based Communications-
115	MIL-STD-461E. DEPARTMENT OF DEFENCE INTERFACE STANDARDSS
116	S20.20-2007 ESD For the Development of an Electrostatic Discharge Control Program for – Protection of Electrical and Electronic Parts, Assemblies and Equipment (E
117	A9R17AF Drawing Engineering and Associated List tmp
118	A9R17D2 Engineering Drawing Practices .tmp
119	AFD 030419 00-5-1_locked
120	AFD-091005-063 TESTING AND INSPECTION PROCEDURES FOR PERSONNEL SAFETY AND RESCUE EQUIPMENT
121	AFD-091005-067 GENERAL SHOP PRACTICE REQUIREMENTS FOR THE REPAIR, MAINTENANCE, AND TEST OF ELECTRICAL EQUIPMENT
122	AFD-091006-032 CLEANING AND CORROSION CONTROL CLEANING AND CORROSION CONTROL Vol 1
123	ALM184001JS001 SPECIAL INSTUCTIONS REPAIR AND OVERHAUL CONTRACTORS
124	aqap150e NATO QUALITY ASSURANCE REQUIREMENTS FOR SOFTWARE DEVELOPMENT
125	aqap-2110-2016-eng-data
126	C-02-005-009-AM-000 INSPECTION AND CONDITIONING OF MATERIEL RETURNED TO AND HELD IN THE SUPPLY SYSTEM
127	c17g General Specification for cables, Radio Frequency, Flexible and Semi-rigid
128	C-55-040-001-TS-001 Radio Frequency Safety Program
129	C-98-001-003-MS-004 Site Record Drawings
130	CFACM 50-301Communications and Electronics Equipment Status Report (ESR) Procedures Manual
131	D-02-002-002_SG-000 GENERAL REQUIREMENTS FOR REPAIR, OVERHAUL AND RESTORATION OF ELECTRONIC AND AVIONIC EQUIPMENT BY CIVILIAN CONTRACTORS
132	D-02-002-003_SG-000 REPAIR AND OVERHAUL OF GROUND RADAR, NAVIGATION AIDS AND ANCILLARY EQUIPMENT BY CIVILIAN CONTRACTORS

133	DND/ANADIAN FORCES Security Orders AND DIRECTIVES FOR CLASSIFIED INFORMATION SYSTEMS
134	EIA J-STD-001C Joint Industry Standard Requirement for Soldered Electrical & Electronic Assemblies
135	f866f7af-ESD ASSICIATION STANDARDS
136	j-std-001c-cs-addendum JOINT INDUSTRY STANDARDS
137	j-std-001cs-addendum JIS Space Applications Electronic Hardware Addendum to Requirements for Soldered Electrical and Electronic Assemblies
138	TO_00-25-234_CHG-36
139	ANSI/ESD S20.20-2007 For the Development of an Electrostatic Discharge Control
140	Program for – Protection of Electrical and Electronic Parts, Assemblies and Equipment
141	DAOD 8012-0, Meteorology and Oceanography
142	DAOD 8012-1 Meteorological and Oceanographic Products and Services Program
143	TBITS 6.9 Wire and Cable Standards
144	TO 31-10-24, Chg 4, 30 Nov 01. Installation Practices: Communications Systems Grounding, Bonding, and Shielding
145	00-25-234 GENERAL SHOP PRACTICE REQUIREMENTS
146	31P6-2FPS117(I)-06 WORK UNIT CODE MANUAL
147	31P6-2FPS117(I)-8-4 (PDSS)
148	31P6-2FPS117(I)-8-5 (ODAS)
149	31P6-2FPS117(I)-8-6 (SGS)
150	31P6-2FPS117(I)-21-1 CHAPTER 1, GENERAL
151	31P6-2FPS117(I)-21-2 CHAPTER 2, INSTALLATION CHAPTER 3, PREPARATION
152	31P6-2FPS117(I)-21-3 CHAPTER 4, OPERATION
153	31P6-2FPS117(I)-21-4 CHAPTER 5, THEORY OF OPERATION
154	31P6-2FPS117(I)-21-5 CHAPTER 6, MAINTENANCE
155	31P6-2FPS117(I)-23-1 TRANSCEIVE GROUP (FIGURES 2-1 THROUGH 2-42)
156	31P6-2FPS117(I)-23-3 TRANSCEIVE GROUP (FIGURE 2-155 THROUGH FIGURE 2-292.1)
157	31P6-2FPS117(I)-23-5 TRANSCEIVE GROUP (FIGURES 2-335 THROUGH 2-394)
158	31P6-2FPS117(I)-24 ILLUSTRATED PARTS BREAKDOWN
159	31P6-2FPS117(I)-26 SCHEDULED INSPECTION, SERVICING, AND LUBRICATION REQUIREMENTS
160	31P6-2FPS117(I)-141 REMOTE MAINTENANCE CONTROL SYSTEMS
161	31P6-2FPS117(I)-151 LOGISTICS SET
162	31P6-2FPS117(I)-237 COTS SOFTWARE INSTALLATION PROCEDURES
163	31P6-2FPS117(I)-302 MSSR 2000 I Maintenance and Repair Manual
164	31P6-2FPS117(I)-311 MSSR 2000 I Operation Manual
165	31P6-2FPS117(I)-337 ITPS
166	31P7-2FPS124-1-1 COMBINED OPERATION AND MAINTENANCE ORGANIZATION LEVEL RADAR INSTATALTION
167	31P7-2FPS124-1-2 PREPARATION FOR USE AND RESHIPMENT OPERATION
168	31P7-2FPS124-1-3 THEORY OF OPERATION
169	31P7-2FPS124-1-4 MAINTENANCE CIRCUIT DIAGRAMS AND REFERENCE DATA GLOSSARY AND INDEX
170	31P7-2FPS124-06 WORK UNIT CODE amend copy
171	31P7-2FPS124-13-1 COMBINED OPERATION AND MAINTENANCE DEPOT LEVEL
172	31P7-2FPS124-13-2 COMBINED OPERATION AND MAINTENANCE DEPOT LEVEL
173	31P7-2FPS124-14- I ILLUSTRATED PARTS BREAKDOWN
174	31P7-2FPS124-14-2 ILLUSTRATED PARTS BREAKDOWN
175	31P7-2FPS124-15 FACILITY STANDARDS MANUAL
176	31P7-2FPS124-16_THRU_C-001 INSPECTIONLUBRICATION REQUIREMENTS
177	31P7-2FPS124-21 LOCAL CONTROLLER GROUP SOFTWARE MAINTENANCE EQUIPMENT TESTER-SIMULATOR
178	31P7-2FPS124-25 FACILITY STANDARDS MANUAL (ALASKAN ADAPTATION)

179	31P7-2FPS124-31 LOCAL CONTROLLER GROUP SOFTWARE MAINTENANCE EQUIPMENT DEVELOPMENT SYSTEM
180	31P7-2FPS124-41 REMOTE CONTOLLER GROUP SOFTWARE MAINTENANCE EQUIPMENT TESTER-SIMULATOR
181	31P7-2FPS124-51-UAR UVEPROM CARD LOADERVERIFIER T-5000
182	31P7-2FPS124-63-1 CIRCUIT DIAGRAMS FUNCTIONAL SIGNAL FLOW DIAGRAMS FIGURES FO-1 THRU FO-7
183	31P7-2FPS124-63-2 CIRCUIT DIAGRAMS FUNCTIONAL SIGNAL FLOW DIAGRAMS FIGURES FO-8 THRU FO-9
184	31P7-2FPS124-63-3 CIRCUIT DIAGRAMS FUNCTIONAL SIGNAL FLOW DIAGRAMS FIGURES FO-10 THRU FO-12
185	31P7-2FPS124-63-4 CIRCUIT DIAGRAMS SCHEMATICS
186	31P7-2FPS124-63-5 CIRCUIT DIAGRAMS SCHEMATICS
187	31P7-2FPS124-63-6 CIRCUIT DIAGRAMS SCHEMATICS
188	31S5-4-3703-1 RADAR DATA PROCESSOR SOFTEWARE MAINTENANCE EQUIPMENT
189	31R-1-06-4 WORK UNIT CODE MANUAL -- DEPOT, INTERMEDIATE AND ORG MAINT -- GENERAL AND UTILITY ELECTRONIC EQUIP AN/FSC-78 (V), AN/GRA, AN/GRC, AN/GRR, AN/GRT, AN/TRC, AN/URA, AN/URC (BENDIX)
190	31R1-2GR-141 OPR INSTR -- ANTENNA COUPLER, TYPE CU-547/GR
191	31R1-2GR-142 SVC INSTR -- ANTENNA COUPLER, TYPE CU-547/GR
192	31R1-2GR-143 O/H INSTR -- ANTENNA COUPLER, TYPE CU-547/GR
193	31R1-2GR-146WC-1 SCHEDULED PERD INSP WORKCARDS -- ANTENNA COUPLER, TYPE CU-547/GR
194	31R2-2GR-1091 OPR AND MAINT INSTR WITH IPB -- COUPLER, TYPE CU-2274/GR (RF PRODUCTS, INC)
195	31R2-2GRR-112 SVC INSTR AND CIRCUIT DIAGRAMS -- RADIO RECEIVER, TYPE AN/GRR-23(V), -24(V) (INTERNATIONAL TELEPHONE AND TELEGRAPH-AEROSPACE/OPTICAL DIVISION
196	31R2-2GRR-114 IPB -- RADIO RECEIVER, TYPE AN/GRR-23(V), -24(V) (INTERNATIONAL TELEPHONE AND TELEGRAPH)
197	31R2-2GRR-116WC-1 SCHEDULED PERIODIC INSP WORKCARDS -- RADIO RECEIVER, AN/GRR-23(V), AN/GRR-24(V), PN 8004203G-1 THRU 20
198	31R2-2GRT-102 SVC INSTR AND CIRCUIT DIAGRAMS -- RADIO XMTR SET, TYPE AN/GRT-21(V), -22(V) (INTERNATIONAL TELEPHONE AND TELEGRAPH-AEROSPACE/OPTICAL DIVISION)
199	31R2-2GRT-104 IPB -- RADIO XMTR SET, TYPE AN/GRT-21(V) AND AN/GRT-22(V) (INTERNATIONAL TELEPHONE AND TELEGRAPH)
200	32A6-21-69-1 FIXTURE, BEARING REMOVAL AND REPLACEMENT
201	77A100004G1 AND 77A100004G4
202	C-98-016-MIS/MF-003 Facilities Engineering Electrical Exterior Facilities
203	Some list of Mentioned Plans: NWS Frequency Management Plan, Depot Maintenance Management Plan (See CDRL's & DID's), Software/Firmware Maintenance Plan and NWS Test Equipment Management Plan
204	CETO (Construction Engineering Technical Order) C-98-002-CAD/FP-003
205	JT-25 CTS - GAG Radio Procedures
206	JT-25 CTS - GAG Radio Procedures
207	T-04 CTS - AN FPS-124 Radar Technician Level II
208	T-07 CTS - GAG Radio Maintenance
209	T-10 CTS - PGS SRR
210	T-11 CTS - LRR PGS Maintainers Course
211	T-12 CTS – LHCN
212	T-12A CTS - LHCN – NWSCC

213	T-21 CTS - Depot Maintenance Course
214	T-39 CTS – AWOS
215	T-33 CTS - AN FPS-117 Radar Level I & II
216	T-38 CTS - Video Monitoring Network
217	T-44 CTS - PLC Field Maintenance Technical Course
218	T-48 CTS - CMS Training
219	T-44 CTS - EDS
220	T-29 CTS – OJT TRAINING FOR AUTOMATED TEST EQUIPMENT (ATE)
221	T-31 CTS – NWS SCADA OPERATORS COURSE
222	T-34 CTS – NWS ATE SOFTWARE MAINTENANCE AND USER SUPPORT TRAINING PRORAM
223	T-35 CTS – NWS SCADA SYSTEM SOFTWARE MAINTENANCE AND SUPPORT TRAINING PROGRAM
224	T-38 CTS – VIDEO MONITORING NETWORK (VMN)

	NWS SOW Sections 5, 6 and 7 (C&E Maint, Ops and MSE Fleet Mgmt) List of reference
1	Manufacturers' (OEM) specifications and recommendations for use, servicing, maintenance and repair of GFE MSE. Table 12-1 refers. (M)
2	MSE Cumulative Cost Data Report (G)
3	PSPC National CADD Standard Computer-Aided Design and Drafting
	CFTO-98-000-MIS/SF-003, DND CAD Standard (G)
5	CFTO C-98-001-003/MS-004, Site Record Drawings (G)
6	Configuration Item (CI) Baseline (G)
7	CFACM 50-301 (ESR Procedures Manual) (M)
8	Operations Support Plan (G)
9	SCADA operator manuals (M)
10	Historical LCMM data (G)
11	National Master Specification (NMS) (G)
12	Limited Technical Inspection Reports (G)
13	Quarterly Vehicle and MSE Hours, Oil and Fuel Tracking Report (G)
14	GFE MSE Fleet Management Report (M)
15	MSE Management Plan (G)
16	NWS Fuel Truck Certification Reports (M)
17	NWS GFE MSE PM Program.
18	MSE Daily Log Checklist (M)
19	Network Switching Plan (G)
20	Frequency Management Plan (G)
21	Depot Maintenance Plan (G)
22	Depot Level Engineering Support Plan (G)
23	Refer to Table 13-4 for an additional list of reference documentation.
24	NWS MSE Vehicle Listing
25	1 Canadian Air Division Orders, Vol 4, 4-308 Equipment Status Reports (ESR)
26	Some Plans (mentioned in the SOW): Emergency Response Plan, Technical Engineering Sustainment Inspection (TESI) Plan, Depot Maintenance Plan and Detail an emergency response plan to address HAZMAT spills.
27	CDRL's & DID's Listing: Manage Equipment Status Reports, The Contractor must prepare annual AWOS Meteorological Inspection Reports, The Technical Engineering Sustainment Inspection Plan Reports, Produce Depot Maintenance Report and NWSSC Repair Summary Report
28	NWS MSE Preventive Maintenance Program

	NWS SOW Sections 8, 9, 10 and 11 (DND Log, USAF Log, Bulk Fuel and Airlift) List of references
1	Supply/Materiel Processing Plan (G)
2	Hazardous Materials Listing
3	Hazardous Waste Listing
4	USAF Form 9 (M)
5	Inventory Balance Table For Canadian GFE, GSM, Controlled Goods and USAF GFE (M)
6	GFE/GSM Stock Level Entitlement Report (G)
7	Monthly Repair Status Report (G)
8	Repairable Items List (G)
9	MSDS Database (G)
10	Hazardous Waste Destruction Certificates (M)
11	NWSO Disposal Form (or equivalent, as provided by NWSO TA) (M)
12	Volume II of the PM Program (G)
13	A-LM-186-001/JS-001 Warehousing and Materiel Handling Manual (G)
14	A-LM-187 Series Packaging and Preservation - General and Detailed procedures DND packaging and Handling Procedures (M)
15	A-LM-007-014/AG-001 Canadian Forces Supply Manual (G) A-LM-007-100/AG-001
16	A-LM-007-100/AG-001
17	USAF SSOI (Supply System Operating Instruction), Formerly NWSP (G)
18	USAF Technical Orders (M)
19	International Traffic in Arms Regulations (ITAR) (M)
20	A-LM-184-001/JS-001 Special Instructions - Repair and Overhaul Contractors (G)
21	USAF AFMAN 23-110 USAF Supply Manual (M)
22	AF123-111 Management of Government Property in Possession of the Air Force (M)
23	Hazardous Materiel safety and Management Manual (A-GG-040-004-AG-001) (M)
24	AFI 24-203, Capter 9 - Air Force Refusable Container Program (M)
25	A-GG-040-004/AG-001 (EN) and A-GG-040-004/AG-002 (FR),
26	PWGSC's Controlled Goods Directorate's Web Site (M)
28	DND 2227 Form-CFSS Supply Document (M)
29	DND 2586 Form - Certificate of Demilitarization (M)
30	CAN/CGSB.3.23: Aviation Turbine Fuel, most recent edition (M)
31	C-82-010-007/TP-000: Procedures and Responsibilities for Aviation Fluids Handling (M)
32	NWS Bulk Fuel Management Plan (G)
33	Annual Fuel Transfer Program (G)
34	Annual Fuel Forecast (G)
35	DQAO 2-42/DNWSO 4-2 form (NWS Policy 104, Nov 93) (M)
36	MOU W5829-01-0135/01-NX (M)
37	MOU W5829-01-0137/01-NX (M)
38	Fuel Reconciliation Spreadsheet (M)
39	NWS Bulk Fuel Inventory (M)
40	MOU W5829-01-0136/01- NX (Pending) (M)
41	Aviation Fuel Tank Listing (M)
42	Airlift Management Plan (G)
43	Bulk Fuel Resupply Airlift Forecast (G)
44	A -GG-040-004/AG-001 - General Safety Program - Hazardous Materials Safety And Management Manual (M)
45	Historical Flight Manifest (G)
46	Historical Flight Logs (G)
47	Annual Airlift Forecast (G)
48	Main Rotary Wing Flight Operations Delay Average (G)
49	Government Furnished Airlift Estimate (G)
50	Cargo Movement Plan (G)

51	CSA B620 - Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods, most recent edition (M)
52	Supply/Materiel Processing Plan (G)
53	Hazardous Materials Listing
54	Hazardous Waste Listing
55	Current hazardous materials plan
56	List of hazardous materials at contract start
57	NWS Inventory Listing
58	Maximum Repair Cost Listing
59	Some Plans (mentioned in the SOW): Emergency Response Plan, Technical Engineering Sustainment Inspection (TESI) Plan, Depot Maintenance Plan ; Detail an emergency response plan to address HAZMAT spills; Current hazardous materials plan; MAXIMO to DRMIS Migration Plan; Materiel Movement Plan; Hazardous Materials Management Plan and Hazardous Waste Management Plan
60	A-LM-187-001/JS-001 (1995-11-30), Packaging and Preservation
61	A-LM-007-014/AG-001 (2019-12-18), Supply Administration Manual (SAM)
62	C-02-007-000/AG-001 (2016-01-01), CONTROLLED TECHNOLOGY ACCESS AND TRANSFER (CTAT) MANUAL)
63	Transportation of Dangerous Goods Regulations (2020-02-19),
64	Concept of Operations Hazardous Material Management
65	Some CDRL's & DID's Listing: Declaration of Surplus/DND 1303 Form; Retrograde Exception Report; Inventory Adjustments - Monthly Inventory Adjustment Report; Selection Notice and Priority Summary (SNAPS); Stores Removal Request (SRR); Repairable Materiel Request (RMR); Task Authorization/DND 626; Selection Notice Observation Message (SNOM); Requisitions for… DND form 2227/2228; Mission Capable Report MICAP/HPR status changes; Disposal of GFE and GSM, CF1303 DOS form; DND 2586 Certificate of Demilitarization and Hazardous Materials List. Two reports/year
66	Declaration of Surplus/DND 1303 Form
67	http://materiel.mil.ca/en/business-functions-materiel-management/supply-administration-manual-sam.page
68	http://materiel.mil.ca/en/business-functions-procurement-contracting/procurement-administration-manual.page
69	http://materiel.mil.ca/en/business-functions-engineering-maintenance/mmi.page
70	http://materiel.mil.ca/en/business-functions-engineering-maintenance/materiel-identification.page

	NWS SOW Section 12 (ADM (IE)) List of references
1	Arctic Waters Pollution Prevention Act
2	Canada Water Act
3	Canada Wildlife Act
4	
5	Canadian Environmental Protection Act
6	Environmental Enforcement Act
7	Explosives Act
8	Firearms Act
9	Fisheries Act
10	Hazardous Products Act
11	Pest Control Products Act
12	Asbestos Abatement Regulations
13	Asbestos Waste Disposal Guidance Document
14	Environmental Emergency Regulations
15	Controlled Products Regulations
16	Federal Halocarbon Regulations
17	National Pollutant Release Inventory
18	Ozone-depleting Substance Regulations
19	PCB Regulations
20	Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations
21	Release and Environmental Emergency Notification Regulations
22	Surface Coating Materials Regulations
23	Migratory Birds Convention Act
24	Species At Risk Act
25	Endangered Species List Regulations
26	Transportation of Dangerous Goods Act
27	Water Safety Act
28	Canada Occupational Health and Safety Regulations
	Impact Assessment Act
29	Inter-territorial Movement of Hazardous Waste Regulations
30	Canada Labour Code, Part II
31	Canadian Electrical Code
32	National Building Code of Canada
33	National Fire Code of Canada
34	National Master Specification (NMS)
35	National Plumbing Code of Canada
36	Canadian Council of Ministers of the Environment (CCME) Codes of Practice
37	Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products
38	Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems
39	Federal Sustainable Development Strategy for Canada
40	Guidance for Drinking Water in Areas of Federal Jurisdiction
41	Guidelines for Canadian Drinking Water Quality, Health Canada
42	Guidelines for Effluent Quality and Waste Water Treatment of Federal Establishments (EPS 1-EC-76-1)
43	Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (SOR/2008-197)
44	TP 312 Aerodromes Standards and Recommended Practices
45	Transport Canada Advisory Circular (AC) No. 300-004 for Unpaved Runway Surfaces
46	Treasury Board Fire Protection Standard (https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316)
47	C-09-005-002/TS-000 Ammunition and Explosives Safety Manual Vol 2 Storage and Facility Operations

48	A -GG-040-004/AG-001 - General Safety Program - Hazardous Materials Safety and Management Manual
49	C-98-001-003/MS-004, Site Record Drawings
50	CFTOs applicable to POL Storage and Handling, Wastewater and Water Treatment and Storage
51	DND Environmental Assessment Manual
52	DND Fire Safety Plan Template
53	DAOD 2008-3 Issue and Crisis Management
54	DAOD 3015-1 Management of Green Procurement
55	DAOD 4001-0 Real Property Lifecycle Management
56	DAOD 4003-0 Environmental Protection and Stewardship
57	DAOD 4003-1 Hazardous Material Management, Spill Reporting
58	DAOD 4003-2 Environmental Assessment, Management of Storage Systems for Petroleum Products and Allied Petroleum Products
59	DAOD 4003-3 Responding to Environmental Enforcement Actions
60	DAOD 4003-4 To Reduce the Use of Pesticides on DND Properties
61	DAOD 4003-5 Halocarbon Management
62	DAOD 4003-7 Management and Monitoring of Liquid Effluents
63	DAOD 4003-9 Hazardous Materials Management Plans
64	DAOD 4007-1: Reporting and Investigation of Fires & Incidents
65	DAOD 5018-2, Reports of Injuries and Exposure to Toxic Substances.
66	DAOD 5021-1, Respiratory Protection
67	DAOD 7014-0 Memoranda of Understanding (MoU)
68	Canadian Forces Construction Engineering Manual (CFCEM)
69	Canadian Forces Fire Marshal Directives
70	CETO C-98-15F-002/MG-001, Grease and Oil Interceptors
71	CETO C-98-15W-002/MG-010 Operations and Maintenance - Water Supply and Distribution Systems
72	CETO C-98-15W-003/MS-010 Comprehensive Maintenance Manual - Chlorination of Canadian Drinking Water Quality Guidelines
73	Environmental Impact Assessment Directive, June 2016 (DND-DGIEGPS)
74	DND / CAF Storage Tank System, Mandatory Monthly Visual Inspection Checklist, Record for Leak Detection
75	DND / CAF Monthly Checklist v 3.0, RP Ops North, Canadian Forces Real Property Operations Group, 21 October 2016
76	National Defence Security Orders and Directives (NDSODs), Physical Security Technical Standards
77	Environmental Directive ED 4003-4/07 To Reduce The Use Of Pesticides on DND Properties
78	CFAO 29-7 Energy Management and Conservation
79	CFAO 34-46 Pest Control
80	CFAO 36-4 Disinfection of vehicles, military equipment and personal goods entering mainland Canada
81	CFAO 55-28 Disinfection, Medical and Quarantine International Requirements for Aircraft
82	CETOs applicable to POL Storage, Handling and Wastewater Water Treatment and Storage
83	A-GG-040-004/AG-001 General Safety Program – Hazardous Materials Safety and Management Manual
84	A-MD-005-000/AA-001 Canadian Forces Dental Services Infection Control Guideline
85	C-98-007-002/TP-001 Asbestos Cement Products
86	A-LM-007-014/AG-001 CF Supply Manual for POL/Fuel Handling, Vol 3 Chap 18
87	Ozone depleting Substances Regulations, 1998
88	DND/CAF Asbestos Management Directive dated March 2007
89	DND/CAF Environmental Directive 4003– 05
90	Environmental Impact Assessment Directive, June 2016 (DND-DGIEGPS)
91	FMD 4000 Electromagnetic Door Locks
92	FMD 4003 Fire Protection and Life Safety Engineering Design Guide
93	FMD 4005 Partial Occupancy
94	FMD 4006 Fire Protection System Impairments
95	FMD 4007 Fire Alarm Policy

96	Asbestos Management Plan
97	NWS Gravel Plan
98	Volume I of the PM Program
99	Facilities Condition Assessment (2009 or most current)
100	CFFM Waiver, Reference Number 7665-0, Dated 07 April 2009
101	Configuration Item (Cl) Baseline
102	Environmental Protection Pan for the NWS
103	FOX-MAIN Beach Clean-Up Reference Map
104	Historical LCMM data)
105	Historical POL tank inspection reports
106	Historical Tower Inspection Reports
107	Long Term Maintenance Plan for NWS DEGS
108	MOU Parks Canada
109	MOU Between DND and the Hamlet of Hall Beach
110	NWB Licenses for PIN-3, CAM-M, CAM-3, FOX-M, FOX-3, DYE-M and BAF-3
111	NWS Site Plans and Site historical Data
112	NWS Fire Services Plan
113	NWS Configuration Management Plan
114	PIN-MAIN Beach Clean-Up Reference Map
115	Waiver - NWS Maintenance, Inspection and Testing of Fire Detection, Suppression and Alarm Systems, as provided by the CFFM, 7665-0, dated 01 April 2009
116	Corrosion Prevention Plan
117	Potable Water Activity Reports
118	Sewage System Activity Reports
119	NWS Gravel Plan
120	Erosion Control & Snow and Ice (SNIC) Plan
121	Applicable Base Standing Orders for each specific site/area
122	Air Pollution Control
123	Dangerous Goods Transportation
124	Endangered Species
125	Environmental Assessment
126	Environmental Control - Water and Sewage
127	Environmental Protection
128	Halocarbons
129	Heating Oil Storage Tank Systems
130	Pesticides Control
131	Used Oil Control
132	Waste Management
133	Occupational Health and Safety
134	Water Resources
135	Wildlife and Animal Protection
136	Hazardous Products Regulations
137	American Petroleum Institute Standards for Inspection and Repair of Fuel Tanks
138	American Water Works Association (AWWA), A100-90 to F102-91 - Provides direction on the full range of fluid handling for Water and Wastewater systems
139	ASTM D4258, Standard Practice for Surface Cleaning Concrete
140	ASTM D4488: Standard Guide for Testing Cleaning Performance of Products Intended for Use on Resilient Flooring and Washable Walls
141	ASTM E2018 - Property Condition Assessment Process
142	Building for the Future, A Guide to Masonry Construction
143	CSA C22.2 No 141 - Emergency Lighting Equipment
144	CSA Z91 - Health and safety code for suspended equipment operations

145	CSA C282 – Emergency Power Supply for Buildings
146	CSA Z259 - Connecting components for personal fall-arrest systems (PFAS)
147	CSA Z271- Safety code for suspended platforms
148	CSA Z460 – Control of hazardous energy - Lockout and other methods
149	CSA Z462 – Workplace Electrical Safety (Arch Flash Protection)
150	CSA Z773 Environnemental Compliance Audition
151	Emergency Response Guidebook (2016)
152	NFPA 10 - Standard for Portable Fire Extinguishers
153	NFPA 11 – Standard for Low-, Medium-, and High-Expansion Foam
154	NFPA 12 - Standard on Carbon Dioxide Extinguishing Systems
155	NFPA 12A – Standard for Halon 1301 Fire Extinguishing Systems
156	NFPA 13 - Standard for the Installation of Sprinkler Systems
157	NFPA 13D - Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes
158	NFPA 13R - Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height
159	NFPA 14 - Standard for the Installation of Standpipe and Hose Systems
160	NFPA 15 - Standard for Water Spray Fixed Systems for Fire Protection
161	NFPA 16 – Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
162	NFPA 17 - Standard for Dry Chemical Extinguishing Systems
163	NFPA 17 A - Standard for Wet Chemical Extinguishing Systems
164	NFPA 20 - Standard for the Installation of Stationary Pumps for Fire Protection
165	NFPA 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
166	NFPA 30 - Flammable and Combustible Liquids Code
167	NFPA 72: When this standard is referenced, replace it with applicable ULC standards where these are available, namely: CAN/ULC-S536 Inspection and Testing of Fire Alarm Systems and CAN/ULC-S552 Maintenance and Testing of Smoke Alarms.
168	NFPA 80 - Standard for Fire Doors and Other Opening Protective
169	NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
170	NFPA 170 - Standard for Fire Safety and Emergency Symbols
171	NFPA 409 – Standard on Aircraft Hangars
172	NFPA 471 - Recommended Practice for Responding to Hazardous Materials Incidents
173	NFPA 551 - Guide for the Evaluation of Fire Risk Assessment
174	NFPA 600 - Standard on Industrial Fire Brigades
175	NFPA 720 - Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment
176	NFPA 750 - Standard on Water Mist Fire Protection Systems
177	NFPA 921 - Guide for Fire & Explosion Investigations
178	NFPA 1021 - Standard for Fire Officer Professional Qualification
179	NFPA 1041 - Standard for Fire Service Instructor Professional Qualifications
180	NFPA 1081 - Standard for Industrial Fire Brigade Member Professional Qualification
181	NFPA 1620 - Standard for Pre-Incident Planning
182	NFPA 1962 - Standard for the Care, Use, Inspection, Service Testing & Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances
183	NFPA 2001 - Standard on Clean Agent Fire Extinguishing Systems
184	Terrazzo, Tile and Marble Association of Canada's (TTMAC) 2000 Maintenance Guide.
185	ULC S524 - Standard for the Installation of Fire Alarm Systems
186	ULC S536 - Inspection & Testing of Fire Alarm Systems
187	ULC S537 - Verification of Fire Alarm Systems
188	ULC-S552 – Maintenance and Testing of Smoke Alarms
189	ULC/ORD C1058.18-1993 - Servicing of Halon Extinguishing Systems
190	ULC/ORD-C1058.5-1993 - Halon Recovery and Reconditioning Equipment
191	Environmental Choice CCD-104, for hand cleaners and hand soaps

192	Environmental Choice CCD-112, for digestion additives for cleaning and odor control, and Environmental Choice CCD-113, for drain or grease traps additives.
193	Environmental Choice CCD-115, for odour control additives.
194	Environmental Choice CCD-146, for hard surface cleaners.
195	Environmental Choice CCD-147, for hard floor care.
196	Environmental Choice CCD-148, for carpet and upholstery care.
197	For anodized aluminum surfaces, refer to The Anodized Aluminum Council
198	For carpet surfaces, refer to the Canadian Carpet Institute and the Carpet and Rug Institute's Carpet Maintenance Guidelines for Commercial Applications
199	For wood surfaces, solid wood core doors and facings refer to the Architectural Woodwork Manufacturers Association of Canada (AWMAC)
200	Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes.
201	Green Seal GS-40, for industrial and institutional floor care products.
202	Master Painters Institute's Architectural Painting Specification Manual, 'Cleaning of Vinyl Wall Coverings'
203	National Fire Code of Canada (NFCC) – 2015 Ed
204	National Building Code of Canada (NBCC) – 2015 Ed
205	Canadian Electrical Code (CEC), Part I, C22.1-18 Ed
206	C282-15 Emergency Electrical Power Supply for Buildings
207	(A-GG-005-000/AG-001) Fire Protection Program
208	CAN/ULC-S524:2019 Standard for Installation of Fire Alarm Systems
209	CAN/ULC-S536:2019 Standard for Inspection and Testing of Fire Alarm Systems
210	CAN/ULC-S537:2019 Standard for Verification of Fire Alarm Systems
211	CAN/ULC-S525:2016-REV1 Audible Signaling Devices for Fire Alarm and Signaling Systems, including Accessories
212	CAN/ULC-S526:2016 Visible Signaling Devices for Fire Alarm and Signaling Systems, including Accessories
213	CAN/ULC-S527:2019 Standard for Control Units for Fire Alarm Systems
214	CAN/ULC-S528-14-REV1 Standard for Manual Stations for Fire Alarm Systems, including Accessories
215	CAN/ULC-S529:2016-REV2 Standard for Smoke Detectors for Fire Alarm Systems
216	CAN/ULC-S530-M91-R2018 Standard for Heat Actuated Fire Detectors for Fire Alarm Systems
217	CAN/ULC-S531:2019 Standard for Smoke Alarms
218	CAN/ULC-S533-15 Standard for Egress Door Securing and Releasing Devices
219	CAN/ULC-S559-13-R2018 Standard for Equipment for Fire Signal Receiving Centers and Systems
220	CAN/ULC-S561-13-R2018 Standard for Installation and Services for Fire Signal Receiving Centers and Systems
221	CAN/ULC-S132:2016 Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware
222	CAN/ULC-S1001-11-R2018 Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems;
223	NFPA 10, Standard for Portable Fire Extinguishers, 2018 Ed
224	NFPA 12, Standard on Carbon Dioxide Extinguishing Systems, 2018 Ed
225	NFPA 13, Standard for the Installation of Sprinkler Systems, 2019 Ed
226	NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 2019 Ed
227	NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2017 Ed
228	NFPA 17A, Standard for Wet Chemical Extinguishing Systems, 2017 Ed
229	NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2019 Ed
230	NFPA 22, Standard for Water Tanks for Private Fire Protection, 2018 Ed
231	NFPA 25, Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems, 2020 Ed
232	NFPA 80, Standard for Fire Doors and Other Opening Protective, 2019 Ed
233	NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems, 2018 Ed
234	NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, 2017 Ed

235	NFPA 750, Standard on Water Mist Fire Protection Systems, 2019 Ed
236	NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems, 2018 Ed
237	Canadian Forces Fire Marshal Directive FMD 4003 – Fire Protection & Life Safety Engineering Design Guide; December 2014 Ed.
238	Canadian Forces Fire Marshal Directive FMD 4005 – Partial Occupancy, April 2019 Ed;
239	Canadian Forces Fire Marshal Directive FMD 4006 – Fire Protection System Impairments, September 2009 Ed;
240	Canadian Forces Fire Marshal Directive FMD 4011 – Fire Protection for Information Technology Facilities and Equipment, January 2015 Ed
241	Canada Occupational Health and Safety (OH&S) Regulations;
242	Federal Halocarbon Regulations (FHR), 2003 Ed.; and
243	Canadian Forces Technical Order (CFTO)-98-000-MIS/SF-003, Drawings Standards and Symbols.

23.0 NWS SOW Definitions Table

NWS SOW Definitions
Definitions In this Contract, the following terms shall have the following meaning:

Administrative Support MSE	Means passenger and light cargo carrying vehicles assigned to support day to day site operations.
Attended LRR Site	Means an LRR site which, although normally un-crewed, has a contingent of at least 6 persons executing Work at the site for no less than seven (7) consecutively scheduled days.
Authority Granting Access	Means the individual given authority by the Contractor to grant access.
Beyond Economical Repair (BER)	means a condition classification assigned to unserviceable equipment which is either obsolete, or as the result of the application of financial criteria, is considered uneconomical to repair because such repair costs will exceed seventy-five percent (75%) of the acquisition costs (excluding transportation costs) for replacement equipment.
Bitmap Logger (BML)	Means, for the AN/FPS 124, the Oracle database that captures all radar set parameters, alarms, faults and switch actions.
Canadian Air Defence Sector (CADS)	Means the military operational organization established within 22 Wing North Bay having control and operating authority for the NWS.
Canadian Forces Fire Marshall (CFFM)	Means the authority having jurisdiction for all fire protection and prevention issues for the NWS.
Category (CAT-1) GFE MSE	Means GFE MSE required for daily site operations, or otherwise to support normal operations.
Category (CAT-2) GFE MSE	Means GFE MSE required to supplement site operations on a periodic basis.
Collocated Site	Means an occupied Logistical Support Site (LSS) collocated with the CAM-M or the FOX-M radar stations.
Complex Project	Difficulty arising from managing and keeping track of huge numbers of different interconnected tasks and activities; complexity arising from interconnection between multiple interdependent solution options, normally where there are no precedence for that technique or approach in the organization. This can also apply to very technical or design problems where complexity is created by ambiguity related to multiple potential interpretations of goals or objectives. Also relates

	to changing environmental or strategic direction outside the control of the project team.
Configuration Item (CI)	Means an aggregation of hardware and/or software, or any of its discrete portions, which satisfies an end use function and is designated for configuration management.
Configuration Management	Means the process that identifies functional and physical characteristics of an item during its life cycle, controls changes to those characteristics, provides information on status of change actions and audits the conformance of configuration items to approved configuration baselines.
Consumables	mean items that are: (i) Consumed or expended or which lose original identity by incorporation in or attachment to another assembly; (ii) Under five thousand dollars (Cdn) in value; and (iii) Not ITAR/CTAT controlled items.
Controlled Technology Access and Transfer (CTAT)	Means technical data (including software), material or equipment that is specifically designed or modified for strategic or military purpose.
Cooperation Agreement between Inuvialuit Regional Corp (IRC) and DND	Means the agreement between the IRC and the DND regarding participation of the Inuvialuit in the activities occurring on NWS sites in the Inuvialuit Settlement Region.
Corrective Maintenance (CM)	Means those actions taken to restore full serviceability after failure/functional degradation has occurred and includes all repair and replacement tasks not previously identified in the Contractor's Preventive Maintenance Plan. Corrective maintenance is also referred to as Labour Use Code (LUC) 74 maintenance.
Customer Support Request (CSR)	Means requests for site access and support, submitted by Canada or its representatives who are directly involved in the operation and maintenance of the NWS.
Depot Level Maintenance	means maintenance activities including the repair, fabrication, rebuilding, assembly overhaul, modification, prototyping, refurbishment, rebuilding, test, analysis, repair-process design, in-service engineering, upgrade, painting and disposal of parts, assemblies, subassemblies, software, components, or end items that require shop facilities, tooling,

	support equipment, and/or personnel of higher technical skills, or processes beyond the organizational level capability.
EcoNet	Means the database used to track information related to fuel storage tanks, contaminated sites and solid wastes landfills managed by DND/CF (e.g. Location, type, contents, compliance etc.), including compliance with applicable laws and regulations.
Electronic Support Equipment	Means equipment required to support either Prime Mission Equipment (PME) or site operations (i.e. Telephone PBX).
Emergency Maintenance	Means maintenance that is required to be done in order to prevent or correct failure that involves immediate risk to life, limb, the environment or Government property. Emergency maintenance is also referred to as Labour Use Code (LUC) 72 maintenance.
Engineering Change Request (ECR)	Means a request for an engineering change to: correct a drawing or engineering document error; correct a usability, reliability or safety problem; fix a software problem or product defect; improve performance and/or functionality; improve productivity; lower cost; incorporate new customer requirements; enhance installation, service or maintenance; or, respond to regulatory requirements.
Equipment Status Reports	Means a report detailing equipment status changes for PME subject to and prepared in accordance with CFACM 50-301 (ESR Procedures Manual).
Expendability, Reparability, Recoverability Category (ERRC)	Means a categorization process that identifies ownership (US or Canadian), type of equipment and reparability.
Fire Services Manager	Means the designated Contractor representative having responsibility for maintenance and implementation of the Fire Services Plan, and the organization, management and functions of the Industrial Fire Brigade.
Fire Services Training Coordinator	Means the designated Contractor representative having responsibility for coordinating effective, consistent, and quality training within the Industrial Fire Brigade training and education program.
Firm Fixed Price (FFP)	Means the price for Work which normally is not subject to any adjustment unless certain provisions

	(such as a Contract change) are included in the Contract.
First Line Maintenance	Means field level maintenance (replacement).
Government Furnished Equipment Mobile Support Equipment (GFE MSE)	Means those vehicles or equipment provided by DND (NWSO) for the Contractor's use in direct support of the operation and maintenance of the NWS.
Government Property	Means all materials, parts, components, specifications, equipment, software, articles and things supplied to the Contractor by or on behalf of Canada for the purposes of performing the Contract including, for greater certainty the NWS and anything acquired by the Contractor in any manner in connection with the Work the cost of which is paid by Canada under the Contract, including government issue under the Defence Production Act.
Incipient Level Fire Fighting	Means firefighting performed inside or outside of an enclosed structure or building in which the progression has not developed beyond that which can be extinguished using either portable fire extinguishers or hand lines flowing up to 473l/min (125 gpm).
Increased Readiness/Reconstitution	Means the manning of an otherwise unattended site to ensure an increased level of readiness to decrease response time on PME to 15 minutes.
Industrial Fire Brigade	Means an organized group of at least 3 individuals within an industrial occupancy who are knowledgeable, trained, and skilled in, at a minimum basic fire-fighting operations, and whose full-time occupation may or may not be the provision of fire suppression and related activities.
International Traffic in Arms Regulations (ITAR)	Means those regulations pursuant to the Arms Export Control Act of the United States of America, which control the export and import of defence-related articles and services on the United States Munitions List.
Labour Use Code	Means the code used to track deployment of labour for specifically identified activities or Work. For example, Labour Use Code LUC 72 - Emergency Maintenance.
Line Repairable Unit (LRU)	Means a component that can be replaced at first line maintenance.
Long Range Radar (LRR)	Means an air surveillance system capable of detection and interrogation of targets up to 250

	nautical miles, and includes the AN/FPS-117 radar.
Long Term Tenants	Means NWSO and NWSO sponsored representatives that are at collocated sites for an extended period of time and include AFTAC personnel at LSS Cambridge Bay and the Airlift Carrier crews at Hall Beach and Cambridge Bay.
Logistical Support Site (LSS)	Means a warehouse and staging site for first line maintenance and a workshop where technicians perform limited second line maintenance.
Maintenance Control System (MCS)	Means the system that controls the AN/FPS 117 radar and determines faults, provides status of the system and reconfigures radar set for optimization.
Major Engine Overhaul	means a fixed scope of work including, but not limited to the replacement of components from both the top end and bottom end of an engine intended to return it to as close to its original specification as possible.
Manager	Means a Contractor employee who oversees and is accountable for the activities of five or more Contractor employees, and has financial management responsibilities, and includes manager trainees.
Manager (IB)	For the purpose of Inuit Benefits this means a Contractor employee who oversees and is accountable for the activities of five or more Contractor employees, and has financial management responsibilities, and includes manager trainees.
Mean Time Between Failure (MTBF)	Means the predicted elapsed time between inherent failures of a system during operation.
Mean Time To Repair (MTTR)	Means the average time required to repair a failed component or device.
Medical Emergency	Means a personal injury or illness which is a direct threat to life and/or limb.
Minor CM	Means a CM having an estimated completion time of less than one hour of labour and for which the required resources are available on site.

Minor Modification	Means work completed under the Task Authorizations (TA) contract requiring any change to form, fit or function (whether or not the item is configuration managed or not). The maximum cost per job for Minor Mods projects should not exceed $100K for facilities, and $50K for any other Minor Mods projects. Minor Mods are managed via Individual Tasks Authorizations.
Minor Engine Overhaul	Means a fixed scope of work including, but not limited to the replacement of components from the top end on an engine, and an inspection of the bottom end, to ensure its continued performance until it is due for a major overhaul.
Mission Capable (MICAP)	Means to report and resolve mission capability of the radar due to failed parts.
Mission Control Commander (MCC)	Means the operational authority for the CADS.
MSE Job Limit	Means the limit for MSE, being eighty (80) or less hours to complete a specific MSE task.
NATO Stock Number (NSN)	Means the 13-digit numeric coding system used to define and identify NATO military supply equipment. This is referred to in the USA as the National Stock Number.
Normal Readiness	Means 96% availability as calculated in accordance with this SOW.
North Warning System Control Centre (NWSCC)	The focal point for reporting in all matters relating to mission operations, located in the North Bay Above Ground Complex.
North Warning System Support Centre (NWSSC)	Located at 22 Wing North Bay and provides depot level maintenance, training and logistics support for the AN/FPS-124 radar, LHCN equipment, and electronic control components of the NWS Power Generation Systems (PGS) and their associated Static Uninterruptible Power Supply (SUPS) units.
Notice to Airmen (NOTAM)	Means a notice submitted to NAV CANADA containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
NWS	Means the North Warning System as more specifically described in Section 1 of the NWS SOW.

Occupational Health and Safety Incident	Means an injury to a person which may require the application of first aid or medical treatment, but does not pose a threat to life or limb.
OMNIBUS Task Authorizations	Are TAs used to satisfy multiple requirements related to a specific activity (i.e. Transportation, Repair & Overhaul, etc.).
Operational Imperative	Means a situation where the contractor is required to initiate, redirect or refocus work effort as a result of a military priority requirement.
Operational Start Date	In terms of infrastructure, means when CCC is assumed (ex 1 Aug)
Performance Database Support Software (PDSS)	Means an Oracle database that captures all AN/FPS 117 radar set parameters, alarms, faults and switch actions.
Power Generating System (PGS)	Means a system which provides power to sustain complete operation of the LRR and SRR sites and equipment on a 24 hour/day, 365 day /year basis. Predictive Maintenance means a maintenance process which determines the condition of in-service equipment in order to predict when maintenance should be performed.
Preventive Maintenance (PM)	Means predetermined, recurring and scheduled work to service and preserve NWS equipment and Government Property, including MSE, so that it can effectively meet its designed purpose with a minimum of unscheduled downtime and to prolong its useful life, in accordance with an established preventive maintenance program.
Preventive Maintenance Inspection (PMI)	Means the care and servicing by personnel for the purpose of maintaining equipment and facilities in satisfactory operating condition by providing for systemic inspection, detection and correction of incipient failures either before they occur or before they develop into major defects.
Prime Mission Equipment (PME)	Means those elements of the NWS that provide radar data to the North Bay Above Ground Complex along the Ground/Air/Ground voice communications access including: the AN/FPS-117 radar; the AN/FPS-124 radar; the G/A/G radios, the LHCN, the DEGs, the electrical distribution system as well as the POL distribution system.
Project	The term “Project” refers to the entire effort which can include multiple tasks required to complete the Work. For example, the project to install radomes had multiple tasks that included procurement,

	shipping, sling and installation, which all constitutes one project. If a project spans over multi-years a proposal must be submitted and approved by Canada for that contract years' work. The same Task Authorization (TA) number will be assigned to the same project every contract year. However, the current year project will be counted towards the annual estimated quantity for that contract year. Individual projects that are grouped into one proposal to make efficiencies in labour and travel that benefits both Canada and the contractor will still be counted as two projects but under one TA. Essentially a project is work required to accomplish a goal and is justified by a requirement such as a BCOA or UCR. Project lifecycle starts with design work, goes through implementation and ends when removed items have been retrograded.
Realty Asset Information System (RAIS)	Means a database used to track and report on the inventory of realty assets across CF/DND, and provides the ability to associate property data with environmental data, construction engineering information and facilities investment information by extracting data from other Infrastructure and Environment (I&E) applications.
Remote Control Group (RCG)	Means, the monitoring and control system which controls the AN/FPS 124 radar and determines faults, provides status of the system, reconfigures radar set for optimization, in conjunction with the BML.
Report of Surplus (ROS)	Means a report describing all surplus items held in inventory.
Response Time	means the elapsed time from when a requirement is identified, by or to the Contractor, until (i) The requisite qualified personnel, equipment, necessary tools and parts/materials are on site and available; and (ii) Work is commenced at the Work site.
Reimbursable Customer Support Request (CSR)	Means requests submitted by Canada for site access and support when Canada has entered into separate arrangements with consultants,

	contractors and/or other parties to assist Canada in the performance of this Contract.
Second Line Maintenance	Means workshop level maintenance (repair).
Security Incident	Means any incident which compromises or has the potential to compromise the physical security of NWS sites or the NWS Contractor's sites, NWS electronic data or hard copy data; constitutes or could constitute a controlled goods violation; theft; vandalism; and, incidents or threats of physical violence.
SeeSOR	Means the monitoring and performance reporting software program used to evaluate service delivery directly against the SOW requirements.
Self-Help Project	Means work designed and implemented by the Contractor at no cost to Canada (including labour and material), and requiring no dedicated Government furnished transportation. Self-help projects are also referred to as Labour Use Code (LUC) 77 projects.
Shop Repairable Unit (SRU)	Means a component that can be repaired/replaced at second or third line maintenance.
Short Range Development (SRD) Site	Means a fully operational Short Range Radar site located outside of North Bay, Ontario, used for testing and development of modifications prior to them being implemented on the NWS, and for the training of staff on SRR site systems and equipment.
Short Range Radar (SRR)	Means an air surveillance system capable of detection and interrogation of targets up to 130 nautical miles and includes the AN/FPS-124 radar.
Significant Incident	Means: (i) any incident, excluding those specifically described in the SOW (fire, medical emergency, medical incident, environmental, security, aircraft overdue, aircraft incident and vehicle incident), that could cause concern for the DND, Canadian Forces or Minister of National Defence as described in Defence Administrative Orders and Directives (DAOD) 2008-3 "Issue and Crisis Management", or otherwise negatively impacts NWS B77 operations, (ii) A requirement to quarantine fuel or any incident involving quarantined fuel and

	(iii) Any corrective maintenance item with a total cost to repair above the CM Job Limit.
Site Display Units (SDUs)	Means a display unit for the UPX 39 MSSR control the radar and determine faults, provide status of the system and reconfigure radar set for optimization.
Standing Job	Means work performed for a predetermined requirement which recurs regularly in the same location, for which an accurate job description is written, but for which resource requirements cannot be accurately forecasted. Standing jobs are also referred to as Labour Use Code (LUC) 75 jobs.
Stocktaking	Means the procedure of counting and reconciling actual holdings of Government Supplied Materiel and Government Furnished Equipment (GFM/GFE) held under the Contractor's responsibility with applicable records and documentation in a given point in time.
Supervisor	For the purpose of Inuit Benefits this means a Contractor employee who oversees and is accountable for the activities of two or more Contractor employees, and includes supervisor trainees.
Support Equipment	Means all other NWS systems other than those identified as PME. This includes Power Generation Systems (PGS); fuel systems; ventilation systems; electrical distribution systems; and Static Uninterruptable Power Supply (SUPS).
Systems Maintenance (SM) Section	Means the Military Section located in the above Ground Complex in North Bay, being the operational control authority for the NWS.
Task Authorizations	Means Work that is within the scope of the Contract; however, the precise requirements (scope, frequency etc.) cannot be pre-determined and those costs are excluded from the Contract price.
Technical Library	Means the Contractor maintained central registry and distributing authority for all NWS-related publications, technical documentation and drawings.
Temporarily Attended Site	Means a radar station that has personnel stationed at the station for a specified period of time for specific projects or maintenance activities. The

	radar station is considered to be a Temporarily Attended Site during the period of time that personnel are stationed at the site.
Temporary Worker	Means an individual engaged for a specifically defined task and/or specifically defined period, who is not on the Contractor's payroll and who is not entitled, at law, to benefits.
Third Line Maintenance	Means depot level maintenance (refurbishment).
Third Party Support (TPS)	Means the support provided by the Contractor to an individual, a group of individuals or a Government or corporate organization involved in operations or activities not directly associated with the operation and maintenance of the NWS, and for which the Contractor's costs is to be reimbursed by that individual, or the group of individuals or by that Government or corporate organization.
Transaction	Means an activity as identified in a Transaction Table.
United States Air Force Supply System Operating Instructions (SSOI)	Means operating instructions which detail procedures to operate the USAF Enterprise Solution-Supply (ES-S) in order to track USAF-owned assets (GFA).
United States Federal Logistics Catalogue (FED LOG)	Means the US logistics information system that allows retrieval of information from the Federal Logistics Information System (FLIS).
United States Government Furnished Assets (GFA)	Means assets supplied by the United States Air Force (USAF) that pertain to radars, radomes, and G/A/G radios, and their integral components as specified in USAF technical orders, including test equipment, for use by the Contractor in providing the Work.
Unsatisfactory Condition Report (UCR)	Means a document used to report deficiencies in NWS equipment, material, software, and technical documentation, maintenance procedures and training.
Wildlife Monitor or ***bear monitor***	Means an individual responsible for monitoring for wildlife, providing protection and preservation of/from wildlife to/from NWS visitors.
Work Management System means	A computerized system that provides the resources necessary to effectively and efficiently manage the Work for the duration of the Contract.
Task Authorizations	
CATEGORY DESCRIPTION	**CATEGORY DESCRIPTION**
Professional Engineer	A person who holds a current designation as a

	professional engineer in one or more Canadian province and/or territory.
Engineer	A person who: 1) has a bachelor's degree in engineering from a Canadian university with an accredited engineering program, but who does not hold a current designation as a professional engineer in a Canadian province or territory; 2) has a degree in engineering from outside of Canada, but which is recognized as being equivalent by a Canadian university with an accredited engineering program.
Engineering Technologist	A person who has a diploma in engineering technology from a post-secondary educational institution.
Drafting Technologist	A person who has a diploma in drafting technology from a post-secondary educational institution.
Project Coordinator	A person who has the educational background and/or the Work experience to assume responsibility for the on-site implementation of a given IQ project.
Journeyman	A person who is a certified journeyman in at least one Canadian province or territory
Apprentice	A person who is not a journeyman, but is working in a trade under the supervision of certified journeyman.
Professional	Aside from the professional categories noted above, a person who has the academic credentials to qualify as a professional in their field of practice.
Skilled Labour	A person who has experience in a particular field, but lacks the academic credentials to qualify as a professional in that field.
Cook/Chef	A person who is qualified to provide culinary services.
Janitor	A person who has the requisite experience to provide janitorial services.
Site Supervisor	A person who has the requisite experience to supervise the day to day operation of a Long Range Radar site when it is attended for the purpose of implementing IQ work.
Wildlife Monitor	A person qualified and authorized to provide persons working outdoors with protection from dangerous wildlife.

Unskilled Labourer	A person who is performing a task which requires no formal education or experience.