



**NOAA Weather Radio (NWR) Service Maintenance**

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## **1 Purpose**

This instruction establishes specific NOAA Weather Radio (NWR) maintenance responsibilities, procedures, and reporting guidelines. It defines National Weather Service Headquarters (WSH), regional, and field roles. This instruction also documents methods to ensure Government and contractor compliance with documented NWR equipment performance and maintenance standards/requirements.

### **1.1 Policy**

Ensure that all NWR stations are properly managed and maintained to meet NWS operational requirements. Seek cost-effective, quality means for maintaining NWR equipment and systems to established standards and requirements through the use of National Weather Service (NWS) maintenance personnel, state/federal agencies, cooperators, national and/or local maintenance contractors. Allow for the acceptance and use of donated or loaned equipment, sites, and/or stations within the NWR network.

### **1.2 Federal NWR Stations**

These stations are owned by the Government. The stations are maintained by NWS, Government, cooperator or contractor personnel. National and local contracts are implemented to maintain specific stations within the NWR network. Local NWS Weather Forecast Offices (WFO) are responsible for ensuring that proper system maintenance for these stations is provided. NWR station, equipment, and broadcast coverage are routinely monitored for quality assurance.

### **1.3 Non-Federal NWR Stations**

These stations are not owned by the Government. These stations are maintained by state agencies, cooperator or contractor personnel under separate contracts and agreements. Local NWS WFOs are responsible for ensuring that proper system maintenance for these stations is provided. NWR station, equipment, and broadcast coverage are routinely monitored for quality assurance.

## **2 Implementation**

NWS seeks the most cost-effective means for maintenance of NWR network equipment and systems. Station maintenance may involve a mix of NWS personnel and national, state, or local service contractors. Each region implements this NWR instruction and designates NWR focal points for maintenance and contract compliance. This instruction may be supplemented at the regional level following guidance provided in NWS Instruction 1-101, *NWS Directives System - Structure and Management*. (General maintenance guidance is provided in NWS Instruction 30-2101, *Systems Maintenance Management*.)

## **3 Organizational Responsibilities**

The organizational roles and responsibilities for WSH, region and field personnel concerning NWR are identified in NWS Instruction 10-1711, *NOAA Weather Radio System Management*. A brief summary is included here.

### **3.1 Weather Service Headquarters (WSH)**

WSH, through the Dissemination Systems Group (OPS17), is responsible for designating a National NWR Focal Point who may also serve as the Contracting Officer's Representative (COR) for the NWR National Maintenance Contract (NMC).

#### **3.1.1 WSH NWR National Maintenance Contract (NMC) Contracting Officer (CO)**

The WSH CO coordinates with OPS17 to develop a NWR NMC to maintain specific NWR stations according to NWS standards and operational requirements (as outlined in Appendix A). The CO will identify the OPS17 NWR NMC COR by way of a designation letter.

#### **3.1.2 NWR Contracting Officer's Representative (COR)**

The NWR COR is responsible for all implementation and observance of NMC requirements, modifications and addendums. The NWR COR will monitor and provide technical management of the NMC, including any regional logistic support for regionally maintained stations. The NWR COR may also function as the national NWR Focal Point (see Section 3.1.3).

#### **3.1.3 National NWR Focal Point**

The national NWR focal point is the OPS17 NWR program representative. The national focal point is responsible for the NWR network; communicating with the regions, cooperators, partners, state and local governments; and resolving programmatic issues. The national focal point is also responsible for:

- Maintaining the NWR station database.
- Coordinating all aspects of NWR station inspections, testing, corrective maintenance, and acceptance.
- Monitoring NWR operational performance status of all stations not covered under the NMC.

### **3.2 Regional Headquarters**

Each regional headquarters is responsible for ensuring all NWR equipment within their region is maintained according to NWR operational requirements (see Appendix A). Each regional headquarters may choose to accomplish NWR maintenance using Government staff, the NMC, or contracts through regional, state and/or local providers. The regional headquarters will provide WSH OPS1 (via memorandum with a copy sent to OPS17) the information concerning the designated focal point(s) for the region, local NWR contract CORs, WFOs, and non-NWS stations (station managers and any other personnel that may be designated as NWR focal points for those stations to whom service calls may be initiated on a normal and emergency basis). The information contained in the memorandum should include the focal point's name, e-mail address, and telephone number(s).

#### **3.2.1 Government Staff**

NWS or other Government staff selected to maintain NWR stations will meet all NWS (or equivalent) training and safety certification standards (see Appendix B) prior to any maintenance task being assigned. They will also meet and follow all Occupational Safety and Health

Administration (OSHA) requirements. A list of these selected Government staff with the respective contact information should be sent via memorandum under separate cover to OPS1.

### **3.2.2 NMC Support**

The regional NWR focal point coordinates with each WFO/ Weather Service Office (WSO) or local NWR focal point. The regional NWR focal point is the link between the field and the national NWR focal point. All NMC work within the region will be coordinated with and/or through the region and their NWR focal point.

### **3.2.3 Regional, State, and Local NWR Maintenance Contracts**

Specific work requirements for regional, state, and local contractors should be detailed within the respective contracts (see Appendix C). One copy of each current regional, state, and/or local NWR maintenance contract (including any and all subsequent updates, changes, addendums and modifications) should be sent to the national NWR focal point (OPS17). The respective contract CORs keep the region NWR focal point aware of all logistics and maintenance issues. The regional NWR focal point assists the responsible COR to resolve any emergency or issue concerning NWR operation or maintenance within their region.

### **3.2.4 Non-NWS Owned, Operated, and Maintained NWR Station Support**

This sub-section relates to NWR stations not owned, operated, or maintained by NWS, or covered by NMC, region, or local NWS contracts (may be covered by federal, state, or local contracts through another state or local government agency). The technical point of contact (POC) will work through the regional NWR focal point for all NWR network, station, and equipment related issues including testing and logistic support. POC information for the respective maintenance personnel (reference NWR station/site name, POC first and last name, e-mail, telephone number, emergency contact number, etc.) should be collected and maintained at regional headquarters. The regional NWR focal point should annually update this contact list and submit a copy to OPS17.

### **3.2.5 Joint Project Agreement (JPA) Maintenance Support**

Those NWR stations that are covered by a JPA with NWS will work through the regional NWR focal point regarding their respective NWR network station. Information and issue resolution are described in Section 3.2.4.

### **3.3 Weather Forecast Office/Weather Service Office (WFO/WSO)**

Each WFO/WSO is responsible for designating its own NWR focal point. This WFO/WSO NWR focal point is responsible for ensuring all NWR network equipment assigned to their office, by their respective region headquarters, is maintained in operational readiness according to established NWS policy, standards, and NWR operational requirements as specified in Appendix A. NWR station, equipment, broadcast coverage, and contractor performance are routinely monitored by WFO/WSO focal points for quality assurance.

### **3.3.1 NMC Support**

The local NWR focal point is the technical POC for all NMC related inquiries from regions or WSH. The local NWR focal point will coordinate and observe NMC work as directed by the regional and national NWR focal points including the NWR COR. The local NWR focal point will report back any discrepancies or issues as a result of NMC maintenance or emergency response.

### **3.3.2 Other NWR Support**

The local NWR focal point will monitor and assist as necessary all state and local NWR sites and the respective contractors (if any) to ensure proper operation and maintenance of the NWR network and compliance with respective contracts or memorandums of agreement (MOA). Monitoring may be remote using operational systems, random or scheduled site inspections, or in conjunction with contractor follow-up during corrective/preventive maintenance. The local NWR focal point will report all findings and issues to the regional NWR focal point. If a critical NWR station goes offline, the local NWR focal point is responsible for communication, coordination of assistance (if any), and reporting to the respective NWR focal points as to contractor performance to resolve the problem.

## **4 Authority**

Any Government staff as delegated by the CO has the authority to accept systems meeting established NWR technical or operational requirements. They also have the authority within the scope of the respective national, state, or local NWR maintenance contracts to authorize corrective adjustments as required to ensure proper system operation and contractor compliance for NWR stations, systems, and equipment within their scope of responsibility.

## **5 Emergency Measures**

When a NWR system is maintained under Government contract, the contractor is responsible for routine and emergency maintenance of the equipment under the terms and conditions of the contract, and any accepted/approved and signed amendments. Infringement on the scope, terms, and conditions of the agreements or maintenance contracts by Government employees is not permitted except in emergency situations and ONLY when directed by regional or WSH management. The Government reserves the right to return equipment to operating condition when circumstances dictate. When the Government does so, it will notify the proper CO of the action(s) taken as soon as practical after the occurrence, especially if obtaining prior CO approval was determined unreasonable. When a NWR system is not maintained by the Government or its contractor(s), the station owner or cooperator is responsible for routine and emergency maintenance of the equipment. Infringement by Government employees is not permitted except in emergency situations when station maintenance cannot meet operational restore time requirements. Implementation of emergency maintenance under established contracts (i.e., activation of 'emergency' maintenance contract line item numbers and provisions under the Statement of Objectives [SOO]) is at the discretion of the regional and national NWR focal points and respective COR.

## 6 Reference Documents

The following documents are to be maintained by the regional and national NWR focal points and as necessary by the local NWR focal points:

- *Energy-Onix Transmitter Maintenance Manual*
- *General Electric (GE) Transmitter Maintenance Manual*
- *Scientific Radio Systems (SRS), Inc. Transmitter Maintenance Manual*
- *Crown Transmitter Maintenance Manual*
- *Armstrong Transmitter Maintenance Manual*
- *National Maintenance Contract* (copy)
- Local Maintenance Contract(s): copies of all (as necessary)
- List of local NWR focal points and POCs
- NWSM 50-1115, *Occupational Safety and Health*
- Current Site Survey (copy)
- NWS Maintenance Directives, <http://www.nws.noaa.gov/directives>:
  - 1-101, *NWS Directives System -Structure and Management*
  - 10-1711, *NOAA Weather Radio System Management*
  - 30-2101, *Systems Maintenance Management*
  - 30-2104, *Maintenance Data Documentation*
  - 30-2107, *NOAA Weather Radio (NWR) Maintenance*
  - 30-2112, *Reporting systems, Equipment, and Communication Outages*
  - 30-60, *Acceptance and use of Donated Equipment*
- NWR Transmitter Preventive Maintenance Schedules (SRS, Crown, Armstrong, Energy-Onix, General Electric)
- NWR Modification, Maintenance, and Software Notes

## 7 Procedures

The following procedures are provided to ensure a uniform level of maintenance for the NWR network.

### 7.1 National NWR Focal Point

The national NWR Focal Point within OPS17 is responsible for drafting the NMC, maintaining the NWR network operational performance through coordination (teleconferencing and e-mail) with regional NWR focal points and addressing federal, state and local NWR issues when appropriate.

### **7.1.1 NMC Oversight**

The national NWR focal point will draft the NMC when necessary. The focal point will coordinate with the NMC COR and regional NWR focal points to monitor and keep track of NWR network NMC station operations and maintenance. The national NWR focal point will coordinate with regional NWR focal points to monitor NMC contractor performance and resolve any issues.

### **7.1.2 Regional Coordination**

The National NWR Focal Point will coordinate a monthly teleconference with regional NWR focal points to discuss problems, issues and resolutions concerning all respective NWR network stations (federal, state, local; cooperative and joint) as necessary.

### **7.1.3 NWR Station Inspections**

The national NWR focal point is required to maintain NWR operational performance and contractor maintenance at acceptable levels. Validating these requirements may be accomplished via random station inspections. The national NWR focal point may accompany the regional NWR focal point on inspections should the opportunity arise (see section 7.3.3).

### **7.1.4 WFO/WSO Coordination**

The National NWR Focal Point will provide assistance and recommendations to WFO/WSO NWR technical representatives in the event the respective regional NWR focal point is unavailable and a critical NWR station outage exists.

## **7.2 NMC COR**

The NMC COR is designated by the NMC CO for OPS17. The NMC COR is responsible for monitoring NMC contractor performance, coordinating NWR NMC equipment logistic supplies with the regions, and contacting the NMC contractor to schedule emergency equipment deliveries as necessary.

### **7.2.1 NMC Oversight**

The NWR NMC COR will monitor the equipment logistics and contractor maintenance provided by the NMC contractor. The NMC COR will coordinate with the National NWR Focal Point to monitor and keep records of requirements and contractor performance in NWR network operation and maintenance under the NMC. The NMC COR will coordinate with regional NWR focal points to monitor contractor performance and resolve equipment logistics issues as necessary.

<p><b>NOTE:</b> Only the national NWR CO or designated COR may direct the National Maintenance Contractor to ship or deliver NWR parts and spares to NWR station locations as specified in the NMC. Only the CO can direct the National Maintenance Contractor to ship or deliver NWR parts and spares to emergency NWR station locations not detailed in the NMC though covered under an “Emergency Task Order” clause.</p>
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### **7.2.2 Regional Coordination**

A monthly teleconference will be held with regional NWR focal points or their designees to discuss current needs and contractor issues.

### **7.2.3 NWR Station Inspections**

The NMC COR may be required by OPS17 to perform NWR station inspections to evaluate NMC contractor performance. Coordination with the respective regional NWR focal points is required.

### **7.2.4 WFO/WSO Coordination**

The National NWR Focal Point will provide assistance and recommendations to WFO/WSO NWR technical representatives in the event the respective regional NWR focal point is unavailable and a critical NWR station emergency exists.

## **7.3 Regional NWR Focal Point(s)**

The following procedures and responsibilities are required of regional NWR focal points for NWR network, stations, and equipment within their respective region.

### **7.3.1 WSH Coordination**

The regional NWR focal point will monitor the broadcast status of all NWR network stations within their region. They will use the Engineering Management Reporting System (EMRS) to review and monitor station maintenance. The regional NWR focal point will coordinate emergency outage resolution and logistic supply requirements with the national NWR focal point (and NMC COR on a case-by-case basis). The regional NWR focal point will participate in the monthly NWR focal point teleconference chaired by the national NWR focal point.

### **7.3.2 WFO/WSO Coordination**

The regional NWR focal point will coordinate resolutions with the respective WFO/WSO NWR focal point concerning equipment supplies, logistics, maintenance, safety, and performance issues. They will also address issues and resolutions concerning partnerships, agreements and cooperator contracts as necessary.

### **7.3.3 Coordination with Federal, State, MOAs, JPAs and Cooperatives**

The regional NWR focal point will provide or coordinate assistance to federal, state and local NWR network partners as authorized by approved contracts, MOAs, JPAs or as directed from WSH and OPS. All such assistance will be coordinated with the National NWR Focal Point.

- Action begins once notification from OPS or WSH is received that a NWR station is to be maintained.
- Verify sufficient funds are available to support the additional maintenance requirements requested. Note what can and cannot be accomplished with possible remedies when communicating with the National NWR Focal Point.

- When adding a station to regional maintenance and a logistic shortfall is predicted, the regional NWR focal point should coordinate with the regional CO and national COR to:
  - Exercise an addition within an active Contract Line Item Number (CLIN),
  - Exercise an option and activate a new CLIN,
  - Modify the contract to add another CLIN, or
  - Seek alternative funding sources.
- After funding is confirmed, contact the regional/local NWR maintenance contractor and provide station information per the specified SOO and CLIN.

#### **7.3.4 Site Inspections**

The regional NWR focal point will randomly inspect NWR network stations within their respective region to ensure proper maintenance, contractor compliance, and equipment operation is according to NWS standard operating procedures, contracts, and agreements. They will forward their inspection findings (and resolutions if any) to the National NWR Focal Point.

#### **7.3.5 Reporting**

The regional NWR focal point provides NWR station inspection, contractor evaluations and supplemental reports to the National NWR Focal Point as may be requested. Every two months a maintenance summary (see Appendix E) is submitted to the NWR NMC COR.

### **7.4 WFO/WSO NWR Focal Points**

Each WFO/WSO is technically responsible for each NWR network station in their County Warning Area (CWA). WFO management will designate a NWR focal point to observe and report to the regional NWR focal point on station maintenance and contractor performance. The selected focal point will monitor and report contractor performance under the NMC.

#### **7.4.1 Electronic Reporting**

WFO/WSO NWR focal points will ensure that all preventive, corrective, and emergency maintenance is documented in EMRS in accordance with NWSI 30-2104, *Maintenance Data Documentation*. All maintenance contractors will be required to provide data to EMRS; either submitted to the responsible WFO or entered directly into the EMRS database.

NWR station/equipment outage reports will be submitted using the Unscheduled Outage System (USOS) reporting criteria as spelled out in NWSI 30-2112, *Reporting Systems, Equipment, and Communication Outages*.

#### **7.4.2 Site Inspections**

Local NWR focal points will maintain their NWR contracted maintenance stations and cooperator/local maintained stations within NWR operational requirements. Station inspection will be completed on an annual basis. Specific site inspection criteria will be provided by the

regional NWR focal point. Inspections consist of site verification and operational testing of equipment. There are two types of inspections: routine and validation.

- **Routine Inspections:** Routine inspections are periodic and completed in a set time fashion.
- **Validation Inspections:** Validation inspections generally follow upon completion of a maintenance contractor's work on a NWR system. These inspections may follow or be conducted concurrent with completion of the maintenance action. Authority to accept or decline a contractor's work is provided in Section 4 of this document.

The selection and authorization of climbing personnel are at the discretion of the respective regional headquarters. All persons thus selected or employed via contract or MOA will be properly certified to work on the broadcast equipment, meet NWS Occupational Health and Safety requirements and OSHA standards.

### **7.4.3 Inspection Reports**

Inspection reports documenting findings and issues will be submitted to the regional NWR focal point, the respective contract CO, COR, station manager as necessary, and the maintenance contractor for the inspected NWR station.

**APPENDIX A - NOAA Weather Radio (NWR) Operating Procedures**

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**1 General**

NWR operating procedures, except as noted, are according to manufacturer’s recommendations and are documented in the respective instruction manuals.

- Login to check system/station status: Monthly or more often, as necessary.
- Identification of maintenance issue: 30 minutes.
- Corrective maintenance (CM): As needed to continue uninterrupted NWR broadcast service. If service is interrupted, CM should be completed within 24 hours.
- On-site preventive maintenance (PM): At least three times per year.

**2 Procedures for Station Inspection (sample)**

1. Contact the respective regional NWR focal point for a potential station list.
2. Coordinate with region, respective WFO maintenance technician (and local station manager/maintenance technician if other than federal, state or local NWR station).

**3 Procedures in Event of NMC NWR Station Outage/Emergency (sample)**

1. If the station is listed on the NMC and considered critical, start the response time clock for station outage.
2. Report the outage in USOS.
3. Contact the NWR station manager/maintenance technician to and inform of outage.
4. If the initial station report is within four hours from the initial contact, stop the response clock.
5. Once notification is received, stop response clock.
6. If equipment shipment is not necessary, start time to repair clock.
7. Contact the regional NWR focal point to report outage and check on regional spares. If spares are not available, the regional focal point will contact the NWR COR to request and ship spares from NMC
8. Note shipment arrival time(s) upon receipt. Start time to repair clock.
9. Stop repair clock when system is returned to standard operation.
10. Report maintenance activity accomplished including the time spent monitoring and coordinating contract maintenance using EMRS.

## APPENDIX B - NOAA Weather Radio (NWR) Maintenance Personnel Requirements

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### 1 Personnel Requirements

All Government personnel performing routine preventive, corrective, or emergency maintenance on any NWR transmitter system will have appropriate technical qualifications, training, and experience to perform the required work on high power radio frequency (RF) VHF FM transmitter systems as specified in NWSM 50-1115, *Occupational Safety and Health*. Only those persons identified by the regions (within a position listed below) who have current status and received all requisite climbing training will perform a ‘physical climb-on’ tower inspection: Current requirements for the following positions are at the discretion of the region headquarters in order to maintain operational requirements and comply with established OPM/NWS position descriptions for education and experience:

- Electronic Technician (ET)
- Regional Maintenance Specialist (RMS)
- Electronics Program Manager (EPM)
- Regional Systems Specialist (RSS)

### 2 Tower Inspection Criteria

Personnel are required to meet region headquarters operational requirements and performance criteria according to NWS directives and applicable laws (OSHA/NEPA). This manual may be found on the National Weather Service Directives Web page: <http://www.nws.noaa.gov/directives>.

**APPENDIX C - NOAA Weather Radio (NWR) All Hazards Local Maintenance  
Statement of Work (sample)**

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## **1 Scope**

The National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS) operates and maintains the NOAA NWR network to provide continuous transmissions of recorded weather and appropriate all hazards warning information to the public.

### **1.1 General**

A NWR system consists of an audio control console located in a Government Weather Forecast Office (WFO), a transmitter system, including antenna and transmission line located at a remote site (often collocated with and hosted by a commercial or educational TV/radio transmitter and tower), and a communication link (telephone line, microwave, or UHF link) between the two locations. The statement of objectives (SOO) attached pertains only to the transmitter system portion of the NWR network. This contract covers systems located and installed within the NWS \_\_\_\_\_ region. The NWS \_\_\_\_\_ region maintains a NWR network consisting of \_\_\_\_\_ stations. A list of these stations is provided in Attachment 1. The list indicates the station name (city), responsible NWS WFO, type of transmitter (single or dual), transmitter manufacturer, frequency, and station owner.

### **1.2 Maintenance Services for Contractor Maintained Transmitter Systems**

The NWR maintenance contractor ("the contractor") will provide complete maintenance services as specified herein for the transmitter system sites listed in Attachment 2. These sites will be referred to as "contractor maintained." This list may be modified to include other sites as listed in Attachment 1, or remove sites listed in Attachment 2. The modification may be done at any time during the contract period by notification in writing from the NWS contracting officer (CO) according to the appropriate provisions within this contract for "adding" or "removing" a station.

### **1.3 Maintenance Support Services for Non-Contractor Maintained Transmitter Systems**

The Government, either using its own personnel or through contractual arrangements with other parties (state agency, cooperators, etc.), provides on-site maintenance for all NWR transmitter systems not listed in Attachment 2. These sites will be referred to as "non-contractor maintained."

### **1.4 Miscellaneous Services and Support Services**

The contractor will provide, on an as-needed basis, miscellaneous services, program support, and transition services according to this document for all transmitter sites listed in Attachment 2.

- Miscellaneous services are addressed in Section 5.
- Program support services are addressed in Section 6.
- Contract transition services are addressed in Section 7.

### **1.5 Other Contractual Arrangements**

The Government reserves the right to maintain by itself, or through other contractual arrangements, individual NWR transmitter sites or groups of sites. Due to possible additions of new transmitter sites through the NWR network upgrade and expansion process, relocations of existing sites, and changes to cooperative agreements with other parties during the contract period, the Government reserves the right, with contractor coordination, to change, or enhance the transmitter site equipment configuration; change the number of sites and site locations listed in Attachment 2; and, change or amend technical, operational, and depot support requirements. Any changes will be coordinated through the CO and officially submitted in writing in accordance with provisions herein. Contract change administration will be carried out by the CO only. No changes in, or deviation from, the scope of work will be in effect without a supplemental agreement executed by the CO authorizing such changes. In the event the contractor effects any such change at the direction of any person other than the CO, the changes will be considered to be without authority and no adjustment will be made in the contract price to cover any increase in cost incurred as a result thereof.

### **1.6 Contract Concept**

This contract is for a period of \_\_\_\_ months. The time frame to commence starts 30 days after contract award. No modifications or adjustments will be accepted 30 days prior to contract completion. Any letters of extension or adjustments to the established contract end date will be made by the Government in writing no less than 30 days prior to contract completion. The Government reserves the right to cancel or adjust the contract date for a shorter period of time at any time during the contract period with 30 days written notice to the contractor. Should the contractor be found negligent, the Government may terminate this contract upon contractor receipt of verbal or written notification from the CO.

### **1.7 Antenna Systems and Radio Frequency (RF) Transmission Lines**

Each contractor maintained transmitter system will be fully operational at the completion of routine, preventive, or corrective maintenance, new installations, or relocations. This includes installation, repair or replacement of antenna systems and RF transmission lines (RF coax), including any related hardware and components. The contractor will be provided maintenance materials as listed in Attachment 3. Although no antenna systems, coax, or related hardware are included in the list of contractor supplied materials (Attachment 3), the Government has historically maintained an appropriate stock level of these Government Furnished Property (GFP) located at the National NWR Maintenance contractor's facility for the contractor's use. These are items provided as GFP when required for performance of work under Sections 3.1, 3.2, 5.4.1, or 5.4.2. Until notified in writing, the Government will continue the practice of storing items as listed as major inventory items (MII) under the NWR National Maintenance Contract (NMC), and will replenish these supplies as necessary (see Section 5.7).

### **1.8 Major Items Inventory (MII)**

The NWR National Maintenance contractor stores, handles and ships from their facility those items listed in Attachment 4 and referred to as MII. These items are considered GFP (NWR program assets) that will only be released for issue by verbal or written authorization of the

national NWR Contracting Officer's Representative (COR), regional NWR focal point, and/or designated local NWR focal point(s). These items are either expendable or repairable major subsystems for use in routine or emergency maintenance of the NWR antenna or NWR transmitter systems. As per Section 1.7, the Government will replenish these items according to Section 5.7.

### **1.9 Excess Inventory**

The contractor will not store or handle any surplus items as listed in Attachment 4 that may be referred to as excess inventory. These items are Government property and are for the Government's discretionary use only. All identified excess inventory originally sent by the NWR National Maintenance contractor will be returned to the NWR National Maintenance contractor facility as soon as practical.

## **2 Government Furnished Property and Information**

The Government will furnish to the contractor property and information which includes spare parts and initial equipment manuals as specified below.

### **2.1 Government Furnished Property (GFP)**

The Government will furnish the items listed in Attachment 4 in order to aid in providing the services required by Section 3, 4 and 5 of this contract. Thereafter, the contractor will be required to maintain the spare parts (consumable) listed in Attachment 5 until the end of this contract (including any extensions). End-of-contract (EOC) minimum levels are to be maintained at contractor expense to satisfy the requirements of Sections 3 and 4 of this contract. The Government does not guarantee the condition of GFP, but will make every effort to transfer property that is in good working order. All GFP will be transferred to the contractor during the phase-in period (Section 7). Upon receipt of the GFP from the Government, the contractor will: inspect and test (at its expense) the transferred Government property to its satisfaction; and, repair as necessary (with Government written approval and at Government expense subject to the terms and conditions of the Government Property Clause contained in Section I of this contract) to ensure that all items are in proper operating condition. Any claim for reimbursement resulting from test and inspection identified herein will be made within 60 days after receipt of the GFP. The contractor will be responsible for the security of all GFP transferred to the contractor.

### **2.2 Government Furnished Information (GFI)**

Equipment manuals required to perform the services under this contract will be provided initially by the Government; subsequent requirements will be at the contractor's expense.

## **3 Contractor Maintained Transmitter Sites**

Unless otherwise specified, the contractor will have complete responsibility for, and will bear all costs associated with, providing all maintenance and maintenance support services for the NWR transmitter systems equipment at the locations listed in Attachment 2.

### **3.1 Required Maintenance Services**

Maintenance services will be provided in such a manner that the availability requirements specified in Section 3.5 are met.

### **3.2 Warranty Maintenance and Parts Support**

All NWR transmitter equipment has a one-year Original Equipment Manufacturer (OEM) parts warranty from the date of delivery to the transmitter site. The Government will initially provide the contractor any appropriate warranty data on applicable transmitter sites listed in Attachment 2.

#### **3.2.1 Parts Support for non-SRS Transmitter Systems Beyond Warranty Period**

The Government will provide replacement or repair parts from the NWR National Maintenance contractor facility and MII for the transmitter and transmitter system equipment. The Government will replenish these government furnished parts inventories on an as needed basis. The Government may require the contractor to order the replenishment items or it may procure the needed items through its own supply channels.

### **3.3 Routine/Preventive Maintenance**

The contractor will obtain approval from the controlling NWS forecast office before performing any routine or corrective maintenance that would potentially cause an outage.

#### **3.3.1 On-Site Routine Maintenance**

The contractor will perform routine maintenance every 120 days, as a minimum, according to the requirements stated in the NWR transmitter maintenance schedules. The Government reserves the right to periodically modify the maintenance schedules to meet NWS NWR station operational requirements. In addition, the maintenance data log attached to the transmitters will be updated and a copy of the log submitted to the designated Government offices. Upon completion of routine maintenance, the transmitter system will be fully operational and functional at the authorized output power, within required frequency and modulation tolerance, and in compliance with all technical descriptions and specifications for the requisite NWR transmitter and the OEM equipment manuals. Any change in signal level from the previous visit should be reported back to the forecast office.

#### **3.3.2 Routine Remote Monitoring**

The contractor will monitor remotely or locally the transmitters at all contractor maintained sites on a monthly basis to verify that parameters are within specifications. Monitoring is to be done using dial-in software on Crown and Armstrong transmitters and dial-in ROAMS (Remote Off-Air Monitoring System) on the others. Refer to the NWR transmitter maintenance schedules to perform this function.

### **3.4 Corrective Maintenance**

The contractor will accomplish all corrective maintenance whether identified by the contractor or requested via a service call. When corrective maintenance is required due to a service call,

routine maintenance according to Section 3.3 will also be performed prior to leaving the transmitter site. Upon completion of corrective maintenance, the transmitter system will be fully tested to ensure that the system is fully operational and functional at authorized output power, within required frequency and modulation tolerance, and in compliance with all technical descriptions and specifications of NWR operational specifications and requirements and the OEM equipment manuals.

### **3.4.1 Service Calls**

The contractor will provide a means to guarantee that calls for service will be answered and responded to 24 hours a day.

### **3.4.2 Response Time**

The contractor will report to the affected NWR station within \_\_\_\_ hours after service call receipt.

### **3.5 System Availability**

The NWR transmitter system operates 24 hours a day, every day of the year. Corrective maintenance will be provided so that no contractor maintained transmitter system will experience site outage in excess of 88 hours per year.

#### **3.5.1 Site Outage and Restoration**

A site outage is defined as the loss of the ability to transmit broadcast-quality audio at the required output power. Site outages caused by “Acts of God” or vandalism will be corrected as soon as possible under Section 5.7 (see the following Note). All other site outages will be corrected so that the Mean Time to Restore (MTTR) per site will not exceed 12 consecutive hours. The maximum restoration time for any site outage will not exceed 24 consecutive hours (including nights, weekends and holidays, regardless of contractor's normal business hours) for all corrective service calls, unless an extended period is granted by the COR. Any extension request will be made to the COR within 24 hours of the site outage. Outage time begins when the contractor is notified of a problem or when an attempt is made to notify the contractor through the specified method in Section 3.5.2 and the contractor cannot be reached. The outage time ends when: (1) the Government is notified by the contractor that the system is repaired and is available for use, that broadcast-quality audio is again being transmitted at full authorized output power, and the transmitting system meets all the required technical specifications of Attachment 1 and the OEM equipment manuals; and (2) the Government monitoring system, as applicable, verifies the quality of the received signal.

<p><b>NOTE:</b> Restoration time and cost will be coordinated with the COR for those types of outages. Current weather conditions or forecasts for the affected site area will determine the urgency of the restoration.</p>
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### **3.5.1.1 Degraded Operational Capability**

A transmitter site configured with a dual transmitter is considered in a degraded operational mode if either transmitter is not capable of operating at its full authorized power. The contractor will perform corrective maintenance on a degraded site as described in Section 3.4. The contractor will respond to an operationally degraded site within 48 hours of notice and restore it to full operation within 72 hours. A site outage is considered an emergency and has precedence over a degraded site.

### **3.5.2 Notification of Outage**

The Government will notify the contractor of any contractor maintained NWR station outage. The contractor will specify the method and phone number where the contractor can be notified of any such outage. It is the responsibility of the contractor to ensure that notification can be made per Section 3.4.1. Upon completion of the corrective maintenance service: (1) the controlling WFO will be notified that the transmitter is repaired, available for use, and broadcast-quality audio is again being transmitted at full authorized output power; (2) the transmitting system meets all the required technical specifications and OEM equipment manuals; and, (3) the Government monitoring system, as applicable, verifies the monitored transmitter parameters are within the prescribed limits and the received signal is of good quality.

The contractor will provide in the next Monthly Maintenance Activity Report to the Government, specific details on the reason(s) for the equipment outage and the nature of the corrective action(s) taken.

### **3.5.3 False Repair Calls (FRC)**

The contractor may expect to receive service calls that are not directly related to a failure of a contractor maintained NWR transmitter system. When the contractor responds to a service call that is subsequently classified as an FRC, the contractor notifies the COR and also notes and documents the cause and effect of the NWR transmitter outage in the Monthly Maintenance Activity Report. The cost of an FRC to the same site for the same cause and effect within a five-day period will be reimbursed by the Government at cost. Historically, less than 8 percent of all service calls have been classified as an FRC in the past. However, there is no guarantee that this rate is indicative of the future.

### **3.6 Annual Signal Strength Measurement**

The contractor will perform annual signal strength measurements at each contractor maintained transmitter site to ensure that overall system performance has not deteriorated. The signal strength measurements will be made at a minimum of four different land locations that are approximately 90 degrees apart and a minimum of 5 to a maximum of 20 statute miles radius from the transmitter site (the contractor will use the same locations as used the previous year and each year thereafter for continuity). The time interval between the annual measurements will be from nine to 13 months. The contractor will ensure it receives previous signal strength reports from the Government for each site to show the annual signal strength measurement locations. A signal strength measurement report will be provided to the Government (COR) within 15 days of the performed measurements. The report will detail the transmitter site data, antenna data (orientation, height, etc.), the readings (in  $\mu\text{V}/\text{m}$  and  $\text{dB } \mu\text{V}/\text{m}$ ), and approximate radial distance

of each measurement from the transmitter. The measurements at all sites will be performed using calibrated (traceable to the National Institute for Standards and Technology (NIST)) test equipment designed to measure RF field strength in the appropriate units and using identical measurement procedures.

### **3.7 Contractor Personnel Technical Requirements**

All contractor personnel performing routine and corrective maintenance on the NWR transmitter system will have appropriate technical qualifications, training, and experience to perform the required work on high power RF VHF FM transmitter systems. These qualifications will be met by appropriate schooling in electronics and associated theory, and specific training and/or schooling in job related experience in the maintenance of related type transmitter equipment. The contractor will notify the Government in writing of any change of technical field personnel along with their technical qualifications, training and related experience.

### **3.8 Contractor Performance Monitoring**

The Government reserves the right to monitor the routine and corrective maintenance performance of the contractor at any contractor maintained NWR transmitter site listed in Attachment 2. The monitoring will be performed by NWS personnel. The factors the Government will monitor are all contractor performance requirements specified in Section 3 of this document.

### **3.9 Maintenance Support Services**

The contractor will provide logistics support and replenishment services as identified in Section 3.2 and Section 4.

### **3.10 Other Maintenance Support Services**

The contractor will provide maintenance and logistics support of the ROAMS if installed at NWR transmitter sites. Maintenance will involve defective whole unit replacement. Logistic support will be whole unit shipment to and from the field with whole unit replacement provided by the Government from MII. The Government will bear all costs associated with shipping these units.

## **4 Non-Contractor Maintained Transmitter System Maintenance Support Services and Requirements**

The Government may at its discretion request the contractor to provide maintenance and support services for the non-contractor maintained NWR transmitter systems. The Government will bear all costs associated with such requests. All requests will be provided in writing to the contractor by the Government CO.

## **5 Miscellaneous Services**

The contractor will provide, on an as-needed basis, the miscellaneous services described in the following paragraphs, which may be ordered periodically by the Government. These services will incorporate the technical work directives of the Government and will be based on the

contractor's proposals provided in response to Government requests for specific services when work is performed on a fixed fee performance (FFP) basis. Regarding limits of services under this arrangement, the Government will not be required to place any orders for such services, but will have the right to place orders that may include a cumulative yearly estimated quantity of 8,320 service hours. This maximum level will not be interpreted as setting a level of obligation for ordering or use on the part of the Government, but will serve as a yearly ceiling for ordering. Miscellaneous services are comprised of emergency and non-emergency services.

### **5.1 Emergency Services**

The contractor will respond to verbal requests by the CO or COR (if delegated). All emergency repairs should only be approved by the CO or a designated COR to provide emergency work associated with contractor maintained, Attachment 2, or other non-contractor maintained NWR transmitter sites included in Attachment 1. Emergency work is that which is required to restore a NWR transmitter system to full operational status, due to the criticality and time-sensitive nature of the NWR transmitter network and program. Such work may include, but not be limited to, antenna system repair/replacement, transmitter system repair, refurbishment or replacement, or any service(s) specified within Section 5 and classified as an "emergency" by the CO or COR.

### **5.2 Non-Emergency Services**

The contractor will respond with a written technical and cost proposal for the performance of non-emergency services within 30 days following the Government issuance of each request for a Task Order proposal. The contractor will keep the Government informed promptly of any delays in submission beyond the 30-day response period.

### **5.3 Site Surveys**

Upon issuance of a Task Order, the contractor will be responsible for performing and documenting detailed technical surveys of identified transmitter facilities within a service area to determine the suitability for installing a NWR transmitter system. A written survey report will be submitted to the COR within 30 days after issuance of an order for each full survey performed. A service area is defined as the geographic area in which a 5.0 decibel micro volt per meter (5dB $\mu$ V/m) signal strength (or greater) is present at a distance of 40 statute miles on eight radials over land (N, NE, E, SE, S, SW, W and NW) from the NWR antenna site.

#### **5.3.1 Full Survey**

Upon issuance of a Task Order, the contractor will perform a full survey for determining location of prospective sites that will meet the requirements of a service area (as defined in Section 5.3) and provide detailed technical survey information on the building for the transmitter equipment and tower facilities for the antenna system at these sites. A written survey report will be submitted to the COR within 30 days after issuance of an order for each full survey performed. The Government will make the final selection of a tower facility within a designated service area upon receipt of the written full survey report(s).

### **5.3.2 Mini Survey**

Upon issuance of a Task Order, the contractor will perform a mini survey on a specific tower facility designated by the Government that is within a given service area (as defined in Section 5.3) for the purpose of gathering the necessary technical information for an installation or relocation of a transmitter system. A written survey report will be submitted to the COR within 30 days after issuance of an order for each mini survey performed.

## **5.4 Site Installations and Relocations**

Upon issuance of a Task Order, the contractor will be responsible for the installation of a new NWR transmitter system, the relocation of an existing system, or deactivation of an existing system.

### **5.4.1 New Site Installations**

Upon issuance of a Task Order, the contractor will complete or support the completion of new site installations.

#### **5.4.1.1 Contractor Installations**

The contractor will not begin any installation work on a transmitter system until notified by the Government that a contract for the use of the tower and building facility has been signed, and the contractor has received an "Authorization to Implement" notification from the Government. The contractor will have full responsibility for installation of the transmitter system at the tower and building facility and will, within 30 days of equipment availability, provide all material, facilities and services required to make the system fully operational, such as antenna and coaxial cable mounting, cabling, connectors, isolators (if required), audio lines within the station facility, transmitter venting, or air conditioning (if required), lightning protection circuitry, emergency power systems and all power and cable connections between the station power panels and the transmitters. The contractor will be responsible for obtaining all necessary clearances for personnel and material access to the site. The Government reserves the right to inspect and approve any and all work performed by the contractor on a new site installation.

#### **5.4.1.2 Non-Contractor Installations**

The Government reserves the right to install transmitters using other services than by the contractor. These sites will generally be installed by the OEM. Upon issuance of a Task Order, the contractor will assist in the installation of a transmitter system by someone other than the contractor. The contractor will also receive up to 8 hours of training on the new equipment if identified in the Task Order. The contractor will monitor the installation process and resulting operation of the equipment including RF interference and purity of RF frequency spectrum. Any deviations from best commercial practices and/or deviations from proper operation as defined in the technical specifications and the OEM manuals will be reported to the COR or Associate Contracting Officer's Technical Representative (ACOTR) as soon as possible.

### **5.4.2 Site Relocation**

Upon issuance of a Task Order, the contractor will be responsible for the relocation of an existing NWR transmitter system to a new location within 30 days of receipt of the Task Order. The Government may request such assistance as help in selecting a new site within the existing service area, and a full and/or mini survey as outlined in Section 5.3. The requirements of Section 5.4.1 also apply to site relocations. In addition, the Government may request assistance in removing a transmitter system from an existing site and shipping it to a new location.

### **5.4.3 Radiation/Intermodulation Interference**

During the course of site installations and relocations, the contractor will take the necessary precautions to eliminate radiation interference to a NWR transmitter system from other transmitting equipment and to eliminate any radiation emanating from the NWR transmitter system that may interfere with the normal services of other communications and broadcast systems, devices, services, or facilities within or outside the United States. Radiation interference problems arising after installation of a contractor-maintained NWR transmitter system will be corrected by the contractor at the contractor's expense, where it has been proven that the transmitter system is not performing according to specifications. In all other cases, interference problems will be the Government's responsibility and corrected under Section 5.7.

### **5.5 Modifications**

The contractor will have the capability to design and accomplish modifications to the NWR transmitter system according to instructions and requirements issued by the Government.

**NOTE:** Not all transmitter locations have lightning protection systems installed. The contractor will provide the Government a list of all contractor maintained transmitter sites that do not have antenna, AC power, or phone line lightning protection equipment or devices properly installed on the transmitter system.

### **5.6 Technician Training**

The contractor may be required by the Government, by issuance of a Task Order, to provide at its facility, or at a Government designated site, training for electronics technicians in the theory and maintenance of the transmitter systems.

### **5.7 Other Services**

In addition to the services outlined above, the Government may issue a Task Order for the contractor to provide such other support services as: transmitter venting; installation of lightning protection kits; assistance in the resolution of radiation/intermodulation interference problems (as defined in Section 5.4.3); construction of transmitter shelters; ordering and stocking of antenna system components; repairs caused by "Acts of God" and vandalism; replacement of assemblies, repairable and non-repairable, not returned from non-contractor maintained sites; and any other services needed of a similar nature to support the NWR transmitter systems. Other services may include the upgrading of transmitters and GFP and the purchase of substitute

property by the contractor for the Government under this contract, or periodic maintenance of emergency power systems.

## **6 Program Support**

The contractor will provide the following NWR national transmitter maintenance support functions and required monthly reports.

### **6.1 Support Functions**

The contractor will provide the following functions in support of the NWR national maintenance program:

#### **6.1.1 Program Management**

A program management position will be delegated for the purpose of coordination and quality control of the performance under the NWR transmitter maintenance and support contract. This position will be the focal point between the regional NWR focal point, CO, and the contractor.

#### **6.1.2 Logistics Contact**

The contractor will provide a point of contact for ordering logistics items for non-contractor maintained transmitter sites.

As a provision in any state or local NWR maintenance contracts initiated by NWS regional representatives, all state and local contractors will request maintenance logistic parts, spares, equipment, systems, and assistance through the WFO. The WFO will then coordinate with the respective regional NWR focal point.

Non-federal maintenance staff should coordinate all logistics (if needed) through the local NWR focal point.

#### **6.1.3 Test Equipment Maintenance**

Any Government furnished test equipment listed as GFP (Attachment 4) will be maintained and kept in current calibration at the contractor's expense. The test equipment calibration will be performed by the equipment manufacturer or by a calibration laboratory approved by the Government. The special test equipment manufactured by Scientific Radio Systems, Inc. will be calibrated by the contractor according to the procedures in the equipment manuals or by contractor-prepared procedures approved by the Government. If any contractor-owned test equipment is used in the performance of this contract, it will be maintained and kept in current calibration at the contractor's expense according to manufacturer's recommendations and traceable to the NIST.

#### **6.1.4 Computer Support**

The computer systems provided as GFP (Attachment 4) will be maintained and kept in good repair at the contractor's expense. All programming, report generators, software, databases, etc. generated to fulfill the documentation requirements or any other requirement in this contract will be accomplished at the contractor's expense. Once generated, this software and all other related

programming documentation will become the property of the Government. The contractor will provide automated data processing (ADP) dial-in capability or a secure Internet connection to authorized Government personnel to access the GFP NWR inventory management database. The contractor will provide ADP system security to limit access to authorized contractor personnel only. The Government will provide a list of authorized Government personnel to the contractor.

## **6.2 Monthly Reports**

The contractor will provide the following monthly report by the 15th of each month to the designated contracting officials/representative:

### **6.2.1 Maintenance Activity/Status Report**

The contractor will provide a status report describing all significant actions for each maintained site under the contract by entering the required data fields into the Government Electronic Maintenance Reporting System (EMRS).

## **7 Contractor Transition Services**

The contractor will perform the following Phase-In and Phase-Out services as required:

### **7.1 Contractor Phase-In Services**

During the 6-week Phase-In period, the contractor will provide the services required in Section 7.1.1 through 7.1.4 inclusive. During this time period, since the incumbent contractor will be providing the services required in Sections 3, 4, 5, and 6 and services similar to Section 7.2 of this contract, the contractor will provide the services required in Sections 7.1.1 through 7.1.4 inclusive in a manner that does not interfere with the contract performance of the incumbent contractor. The contractor will take over full responsibility for the services required in Sections 3, 4, 5 and 6 of this contract at midnight (Eastern Time) the last day of the Phase-In period. The contractor will be responsible for all shipping and insurance costs FOB origin (incumbent's facility) associated with the transfer of all GFP. The contractor will perform a complete inventory and inspection of all incoming GFP within 60 days after the receipt of each item. If the GFP is received by the contractor in a condition not suitable for its intended use, the contractor will notify the CO within 60 days. Any such claim for reimbursement by the Government will be made within this time period. Failure to notify the CO, in writing, within this time period, will result in an automatic waiver of the contractor's right to reimbursement.

#### **7.1.1 Spare Parts and Assemblies**

The contractor will receive the Government-owned spare parts and assemblies from the Government as GFP (see Attachment 4).

#### **7.1.2 Maintenance Van Test Equipment and Transmitter/Antenna Systems**

The contractor will receive as GFP, test equipment and transmitter/antenna systems from the maintenance vans used by the incumbent contractor. After receipt of the subject test equipment

and transmitter/antenna systems, the contractor will perform a complete inventory and report any discrepancies to the Government in writing.

### **7.1.3 Indoctrination of Contractor**

The contractor will inspect transmitter locations listed in Attachment 2 accompanied by a Government representative or by the incumbent contractor, for indoctrination purposes. The contractor will ensure that they receive and understand any site access procedures, on-site equipment and maintenance logs, filing systems, and status of any current ongoing projects. The contractor will accept all required keys, lock combinations, parking permits, etc. required for site access from the Government or its designated representative.

### **7.1.4 Technical Capability**

Should the contractor's maintenance personnel require additional specialized training, it will be at the contractor's expense.

## **7.2 Contractor Phase-Out Services**

The Government may exercise an option for a three-month Phase-Out period. If the Phase-Out option is exercised, the contractor will perform all requirements outlined in Sections 3, 4, 5, and 6, plus the events listed in Sections 7.2.1, 7.2.2, and 7.2.3 during the Phase-Out period.

### **7.2.1 Government Furnished Property (GFP)**

All GFP listed in Attachment 4 delivered at the onset of the contract will be inventoried and replenished to initial quantities at the contractor's expense. Any discrepancies noted by the Government will be resolved by the contractor. This Government property will then be appropriately packed for shipment to the successor contractor. Each line item part will be individually packed and labeled with quantity, part number, and nomenclature. These in turn may be placed and appropriately packed in larger containers suitable for freight shipment at the incumbent contractor's expense. Each container will have an inventory list specifying its contents by part number and nomenclature. The contractor will provide to the Government a signed copy of all inventory lists specifying what items were turned over to the successor contractor.

### **7.2.2 Test Equipment Calibration**

Test equipment provided as GFP requiring calibration, and any new test equipment procured during the contract by the Government will be repaired if necessary and re-calibrated, if not in current calibration prior to turning over to the Government, at the contractor's expense. Any test equipment, procured and used by the contractor in satisfying the requirements of the contract, will be maintained in good repair and calibration at the contractor's expense. Test equipment not requiring calibration will be checked for proper operation and repaired if necessary at the contractor's expense.

### 7.2.3 Indoctrination

The contractor will accompany a Government representative and the successor contractor, if any, on transmitter site inspection trips; go over any procedures required for access; introduce (where appropriate) the site owner; turn over any keys, lock combinations, parking permits, etc.; explain any site peculiarities, and site access procedures; turn over files and equipment maintenance logs; explain filing system, etc.; and provide the status of ongoing or current projects and activities. Local area maps showing the signal strength measurement locations for each contractor-maintained transmitter site will be provided to the Government representative.

## 8 Test Procedures and Test Fixtures

### 8.1 Test Procedures

The contractor will develop test procedures and perform post-repair testing of the spare assemblies and the transmitter systems according to the contractor's proposed test procedures. The contractor's test procedures will be maintained at the contractor's facility and be made available for Government inspection.

**NOTE:** Equipment drawings and test procedures (other than those contained in the equipment manuals) are not available to the Government for transfer to the contractor.

### 8.2 Test Fixtures

The contractor will provide any test fixtures required to perform the test procedures in Section 8.1.

## 9 List of Attachments

The following attachments form a part of this contract:

**NOTE:** All attachments are required to be developed by the region prior to completion of these contract requirements, approval and submission for bid.

- Attachment 1 List of All Regional NWR Stations
- Attachment 2 Contractor Maintained NWR Stations List
- Attachment 3 Contractor Supplied Materials
- Attachment 4 Government Furnished Property (GFP)
- Attachment 5 Spare Parts List
- Attachment 6 Statement of Objective

**APPENDIX D - Emergency Contact Telephone Numbers for 2009 – 2010**

<b>Weather Service Headquarters</b>	<b>Telephone Numbers</b>
OPS1 Al Wissman	Office: (301) 713-1824 x133
OPS17 Craig Hoden	Office: (301) 713-9480 x187 Cell: (240) 676-7197
NMC CO Lamar Carlson	Office: (301) 713-3405 x194
NMC COR Ronald Vaillant	Office: (301) 713-9478 x171
National NWR Focal Point Ronald Vaillant	Office: (301) 713-9478 x171

