

NATIONAL WEATHER SERVICE INSTRUCTION 30-2107

JANUARY 2, 2018

Maintenance, Logistics, and Facilities

Systems Maintenance, NWSPD 30-21

NOAA WEATHER RADIO ALL HAZARDS (NWR) MAINTENANCE

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>.

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Type of Issuance: Routine

SUMMARY OF REVISIONS: This directive supersedes NWSI 30-2107, *NOAA Weather Radio (NWR) Maintenance*, dated August 8, 2013. Changes were made to reflect the NWS Headquarters reorganization effective April 1, 2015.

Other changes were made to:

- Removed reference to General Electric (GE) and SRS Transmitters which were phased out
- Removed Appendix D which is no longer relevant

_____/signed/ 1/2/2018
Kevin C. Cooley Date
Acting Director, Office of Dissemination

NOAA Weather Radio (NWR) Maintenance

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1.0 Purpose

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

1.1 Policy

The NWS policy is to ensure all NWR stations are properly managed and maintained to meet NWS operational requirements. Responsible NWS offices, State/Federal Government personnel, cooperators and contractors should seek cost-effective, quality means for maintaining NWR equipment and systems to established performance and maintenance standards/requirements.

1.2 NWR Station Status

1.2.1 Government Owned

Equipment at these stations is owned by the Federal Government. These stations are maintained by NWS or contractor personnel. National and local contracts are implemented to maintain specific stations within the NWR network. Each local NWS Weather Forecast Office (WFO) is responsible for ensuring proper system maintenance for stations under their control. NWR station, equipment, and broadcast coverage are routinely monitored for quality assurance.

1.2.2 Cooperator Owned

Equipment at these stations is not owned by the Federal Government. These stations are maintained by State agencies, cooperator, or contractor personnel under separate contracts and agreements managed by the respective State agency or cooperator. In some instances, NWS personnel may perform this maintenance under a Joint Project Agreement (JPA) or as an emergency response under the National Maintenance Contract (NMC). Local NWS WFOs are responsible for ensuring proper system maintenance for these stations as well. Broadcast coverage for these stations is routinely monitored for quality assurance.

2.0 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 Policy Directive (NWSPD) 1-101, *NWS Directives System - Structure and Management*. General NWS maintenance guidance is provided in NWSPD 30-2101, *Systems Maintenance Management*.

3.0 Organizational Responsibilities

The organizational roles and responsibilities for WSH, Region Headquarters, and field personnel concerning NWR are identified in NWSPD 10-1711, *NOAA Weather Radio All Hazards (NWR) Systems Management*.

4.0 Maintenance Responsibilities

NWS employs a multi-tiered and multi-variant approach to monitoring, analyzing and effecting emergency, preventative and corrective maintenance of the NWR equipment and network. The required maintenance may be performed by NWS or contractor employees under local, regional or National contracts, and local, county, State, or Agency site owners or cooperators depending on Memoranda of Agreements (MOAs), Memorandum of Understanding (MOU) and JPAs as appropriate.

4.1 WSH NWR Maintenance Responsibilities

- a. Work with NWR Program Manager, NWR National Focal Point, NWR Regional Focal Points and designated Contracting Officer (CO), Contracting Officer's Representatives (COR) and Assistant CORs (ACORs) for over-all NWR network maintenance monitoring, analysis, and implementation to keep the NWR system and network operating within established NWR equipment, system and network performance requirements and NWS standards.
- b. Coordinate, develop, monitor, maintain, enforce and adjust the National Maintenance Contract (NMC) to effectively support the NWR network.
- c. Evaluate the network on an ongoing basis to determine performance deficiencies.
- d. Maintain the NWR station database.
- e. Coordinate all aspects of NWR station inspections, testing, corrective maintenance, and acceptance.
- f. 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.
- g. Monitoring NWR operational performance status of all stations not covered for full maintenance under the NMC.
- h. Maintain 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.
- i. Assure NWR contractor maintenance is performed at acceptable levels. Validating these requirements may be accomplished via random station inspections.
- j. Provide assistance and recommendations to WFO NWR technical representatives in the event the respective regional NWR Focal Point is unavailable and a critical NWR station outage or emergency exists.

4.2 Regional NWR Maintenance Responsibilities

- a. Work with WSH NWR Program Manager, the NWR National Focal Point, the field and regional contractors (as appropriate) to ensure that the NWR network operates and is maintained and conforms to NWR performance requirements/standards.
- b. Evaluate the region NWR network components on an ongoing basis to determine deficiencies and coordinate with WSH and DIS.

- c. Monitor the broadcast status of all NWR network stations within their region.
- d. Review and monitor station maintenance (see Section 9.0).
- e. Coordinate emergency outage resolution and logistic supply requirements with the National NWR Focal Point (and NMC Manager on a case-by-case basis).
- f. Participate in the monthly NWR Focal Point teleconference chaired by the National NWR Focal Point.
- g. Randomly inspect NWR network stations within their respective Region to ensure proper maintenance, contractor compliance, and equipment operation according to NWS standard operating procedures, contracts, and agreements. Their inspection findings (and resolutions, if any) will be forwarded to the National NWR Focal Point.
- h. Coordinate resolutions with the respective WFO 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.
- i. 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. The National NWR Focal Point will coordinate for all such assistance. Action begins after DISS or WSH receives notification that a NWR station will be maintained.
- j. Verifying sufficient funds are available to support any additional maintenance requirements requested. Discuss what can and cannot be accomplished with possible remedies when communicating with the National NWR Focal Point.
- k. Coordinate with the regional CO and national COR.
- l. Provide NWR station inspection, contractor evaluations, and supplemental reports to the National NWR Focal Point as requested.
- m. Maintain copies of all active NWR-related lease agreements and terms. Providing the National NWR Focal Point semi-annual updates and copies of any changes.
- n. When adding or removing a station comply to the NWR Configuration Management Plan process.

4.3 Field Responsibilities

- a. Schedule preventative and corrective maintenance for NWR equipment and systems as appropriate.
- b. Work with WSH and the regional Focal Points and contractors (as appropriate) to ensure that the NWR systems operate and are maintained and conform to NWR performance requirements/standards.
- c. Monitor maintenance work performed.
- d. Ensure work performed on the NWR equipment, systems and telecommunication networks are entered into the appropriate reporting and notification systems for region and WSH/DISS review.

- e. Keep the Regional NWR Focal Point informed as to NWR site equipment, systems and telecommunication status.

5.0 National Maintenance Contract (NMC)

The National Maintenance Contract (NMC) is the major maintenance vehicle for NWR network sites. The NMC is maintained and refreshed through the efforts of the NWS organizational team identified in NWSPD 10-1711, section 3.

NWS owned NWR sites not currently covered under the NMC may be added to the contract, through coordination with the NMC COR or ACOR, and the NWR Program Manager.

In addition, NWR sites not currently on the NMC may be temporarily covered through an emergency services order authorized by the NMC COR or ACOR if “emergency” conditions exist, such as;

- a. Loss of transmitter broadcast , which has an imminent effect on public safety,
- b. Inability of local, regional, cooperator, or contractor to affect timely repairs, and
- c. Degraded transmitter performance with Impending hazardous weather.

NOTE: Only the CO or NWR NMC COR or ACOR can direct the National Maintenance Contractor to ship or deliver NWR parts and spares, or provide services to NWR station locations not detailed in the NMC, by issuing an “Emergency Services Order”.

6.0 Government Maintenance 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 the selected Government staff with the respective contact information should be sent to the NWR Program Manager and the National NWR Focal Point.

7.0 Regional, State, and Local NWR Maintenance Contracts

Specific requirements for regional, state, and local contractors should be detailed within the respective contracts (see Appendix B). One copy of each current regional, state, and/or local NWR maintenance contract (including any subsequent updates, changes, addendums, and modifications) should be sent to the National NWR Focal Point. 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.

8.0 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 the NMC. The technical point of contact (POC) for these sites 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 the National NWR Focal Point.

8.1 Joint Project Agreement (JPA) Maintenance Support

Those NWR stations covered by a JPA with NWS will work through the regional NWR Focal Point regarding their respective NWR network station.

8.2 Memoranda of Agreement (MOA) Maintenance Support

Those NWR stations covered by an agency MOA with NWS will work through the National NWR Focal Point regarding their respective NWR network station.

9.0 Electronic Reporting

NWR Focal Points, NWS technicians, maintenance personnel, contractors and cooperators shall use an authorized/approved electronic reporting system to document and track planned/scheduled preventative, corrective and emergency maintenance.

9.1 Maintenance Reporting

WFO NWR Focal Point will ensure all preventive, corrective, and emergency maintenance is documented in accordance with NWSPD 30-2104, *Maintenance Data Documentation*. All maintenance contractors will be required to provide data; either submitted to the responsible WFO or entered directly into the designated reporting database.

9.2 Outage reporting

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

10.0 Site Inspections

Local NWR Focal Points will maintain their NWR contracted maintenance stations and cooperator/local maintained stations within NWR operational requirements. Station inspections 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 Inspections:** Periodic and completed in a set time fashion.
- **Validation Inspections:** Follow upon completion of a maintenance contractor's work on a NWR system. These inspections may follow or be conducted concurrent with completion of a 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, and meet NWS Occupational Health and Safety requirements and OSHA standards.

10.1 Inspection Reports

Inspection reports document findings and issues and must be made upon completion of any NWR site inspection. Reports are submitted to the regional NWR Focal Point, the respective contract CO, COTR, station manager as necessary, and the maintenance contractor for the inspected NWR station. The reporting requirements and format are defined in the Engineering Handbook 7, Preventive Maintenance Schedule and Performance Measurements for each brand of transmitter.

11.0 Monitoring

NWR Focal Points will monitor site configuration, maintenance via electronic reporting, and transmitter operation to meet NWS performance requirements. Local NWR Focal Points (and Regional NWR Focal Points as needed) will monitor contractors and perform site inspections to assure quality standards.

12.0 Authority

Any Government staff, as delegated by the CO per contract vehicle, has the authority to accept systems which meet established NWR technical or operational requirements. These designated Government staff 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.

13.0 Emergency Measures

When a NWR system is maintained under Government contract, the contractor is responsible for routine preventative, corrective, 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 emergencies and ONLY when directed by Region Headquarters or DST. The Government reserves the right to return equipment to operating condition when circumstances dictate. When the Government does so, it will notify the proper COR/ACOR of the action(s) taken as soon as practical after the occurrence, especially if obtaining prior Region Headquarters or DST 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 preventative, corrective, and emergency maintenance of the equipment. Infringement by Government employees is not permitted except in emergencies 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 the respective COTR.

14.0 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:

- Maintenance Manuals for the approved 100Watt (W), 300W, and 1000W transmitter systems within the respective area of responsibility;
 - a. Crown, Inc.
 - b. Armstrong, Inc.
 - c. Nautel, Inc.
 - d. Continental Electronics Corporation (CEC)
- A copy of the current National Maintenance Contract
- Maintenance Contract(s) that pertain to sites within the area of responsibility
- List of NWR Focal Points and POCs germane to the position held
- Current Site Survey (copy) for each site within area of responsibility
- Current leases and agreements (JPAs, MOAs, memorandum of understanding [MOUs], etc.)
- NWS Policy and Procedure Directives, <http://www.nws.noaa.gov/directives>:
 - a. [*NWSPD 1-101, NWS Directives System - Structure and Management*](#)
 - b. [*NWSPD 10-1711, NOAA Weather Radio All Hazards \(NWR\) Systems Management*](#)
 - c. [*NWSPD 30-2101, Systems Maintenance Management*](#)
 - d. [*NWSPD 30-2104, Maintenance Data Documentation*](#)
 - e. [*NWSPD 30-2107, NOAA Weather Radio All Hazards \(NWR\) Maintenance \(This document\)*](#)
 - f. [*NWSPD 30-2112, Reporting systems, Equipment, and Communication Outages*](#)
 - g. [*NWSM 50-1115, Occupational Safety and Health*](#)
 - h. [*NWSPD 30-61, Acceptance and Use of Loaned or Donated Equipment*](#)
- NWR Transmitter Preventive Maintenance Schedules and Performance Measurements
- NWR Modification Notes, Maintenance Notes, and Transmitter Remote Interface Software
- NWR Configuration Management Plan

15.0 Acronyms

Acronym Definition

ACOR	Alternate Contracting Officer's Representative
CEC	Continental Electronics Corporation
CLIN	Contract Line Item Number
CM	Corrective Maintenance
CO	Contracting Officer
COR	Contracting Officer's Representative
CWA	County Warning Area
EPM	Electronics Program Manager
ET	Electronic Technician
FM	Frequency Modulation
JPA	Joint Project Agreement

MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969
NMC	National Maintenance Contract
NOAA	National Oceanic and Atmospheric Administration
NWR	NOAA Weather Radio All Hazards
NWS	National Weather Service
NWSPD	National Weather Service Policy Directive
OPM	Office of Personnel Management
OPR	Office of Primary Responsibility
OSHA	Occupational Safety and Health Administration
PM	Preventive maintenance
POC	Point of contact
RF	Radio frequency
RES	Regional Equipment Specialist
RMS	Regional Maintenance Specialist
SOO	Statement of Objectives
USOS	Unscheduled Outage System
VHF	Very High Frequency
W	Watt
WFO	Weather Forecast Office
WSH	National Weather Service Headquarters
WSO	Weather Service Office

**APPENDIX A –
NOAA Weather Radio All Hazards (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.

- A. Login to check system/station status: Monthly or more often, as necessary.
- B. Identification of maintenance issue: 30 minutes.
- C. Corrective maintenance (CM): As needed to continue uninterrupted NWR broadcast service. If service is interrupted, CM should be completed within 48 hours.
- D. On-site preventive maintenance (PM): From one to three times per year, determined by site circumstances.

2 Procedures for Station Inspection (sample)

- A. Contact the respective regional NWR Focal Point for a potential station list.
- B. 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 NWR Station Outage/Emergency (sample)

- A. If the station is considered critical, start the response time clock for station outage.
- B. Report the outage in USOS in accordance with [NWSPD 30-2112, Reporting Systems, Equipment, and Communications Outages.](#)
- C. Contact the NWR station manager/maintenance technician to inform of outage.
- D. If the initial station report is within four hours from the initial contact, stop the response clock.
- E. Once notification is received, stop response clock.
- F. If equipment shipment is not necessary, start time to repair clock.
- G. If the site is covered under the NMC, regions should call the NMC contractor directly for spare parts.
- H. Note shipment arrival time(s) upon receipt. Start time to repair clock.
- I. Stop repair clock when system is returned to standard operation.
- J. Report maintenance activity accomplished including the time spent monitoring and coordinating contract maintenance using approved NWS electronic report system.

**APPENDIX B -
NOAA Weather Radio All Hazards 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) very high frequency (VHF) frequency modulation (FM) transmitter systems as specified in NWS Directive 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 regional headquarters in order to maintain operational requirements and comply with established Office of Personnel Management (OPM) and NWS position descriptions for education and experience:

- Electronics Technician (ET)
- Regional Maintenance Specialist (RMS)
- Electronics Program Manager (EPM)
- Regional Equipment Specialist (RES)

2 Tower Inspection Criteria

Personnel are required to meet regional headquarters operational requirements and performance criteria according to NWS directives and applicable laws (OSHA/National Environmental Policy Act [NEPA]). Tower requirements/Fall protection can be found in NWSPD 50-1115. <http://www.nws.noaa.gov/directives/sym/pd05011015curr.pdf> . Lightning protection, grounding, bonding, shielding, and surge protection requirements can be found in NWSM-30-4106 <http://www.nws.noaa.gov/directives/sym/pd03041006curr.pdf>

3 Maintenance Training

Training courses are offered at the NWS Training Center to enable a technician to possess the necessary skills to work on a transmitter from a specific manufacturer.

<http://www.nws.noaa.gov/training/CourseListing.php>

**APPENDIX C –
Emergency Contact Telephone Numbers for 2018**

Weather Service Headquarters	Telephone Numbers
DISS	TBD
DST Craig Hodan	Office: (301) 427-9678 Cell: (240) 676-7197
NWR Program Manager Giao Pham	Office: (301) 427-9816 Cell: (202) 384-3886
NWR National Focal Point Giao Pham	Office: (301) 427-9816 (202) 384-3886
NMC CO Shaun I. Squyres, Jr.	Office: <u>757-441-3413</u>
NMC COR Ronald DeWaters	Office: 301-427-9696 Cell: (301) 832-8684
ACOR Giao Pham	Office: (301) 427-9816 Cell (202) 384-3886