

**FISH AND WILDLIFE SERVICE  
INFORMATION RESOURCES MANAGEMENT**

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**Overview, Authorities, and Responsibilities**

**2.1 What is the purpose of this chapter?** This chapter provides U.S. Fish and Wildlife Service (Service) employees with the information they need to ensure that our radio systems comply with international and national laws, the Department of the Interior's (Department) policies, and the National Telecommunications and Information Administration's (NTIA) regulations.

**2.2 What is the scope of this chapter?** This chapter applies to all Service use of radio frequencies, including radio transmitters/receivers and monitors. The chapter does not apply to personally owned radio equipment installed on Service property.

**2.3 What are the authorities for this chapter?**

- A. 377 DM 1 and 2, Telecommunications Management and Handbooks.
- B. The Telecommunications Act of 1996 (P.L. 104-104).

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C. Executive Order 12046, Relating to the Transfer of Telecommunications Functions.

**2.4 Who is responsible for radio management in the Service?** (You can find more detailed information about responsibilities for radio management in the *Service Radio Handbook*.)

A. The **Director** approves policy on radio management and ensures there is an effective radio management program in place that supports our mission.

B. The **Assistant Director - Information Resources and Technology Management (AD-IRTM)** is the Chief Information Officer and has overall responsibility for our radio program.

C. The **Radio Program Manager (RPM)** is in the Branch of Communication Technology and:

(1) Is responsible for radio frequency assignments and radio system management, including planning, design, and maintenance; and

(2) Manages the National Radio Helpdesk. (You should call the helpdesk for all radio support requests; you can find current contact information in the *Service Radio Handbook*.)

D. **Regional Radio Coordinators** are:

(1) Designated annually by the Regional Directors, and

(2) Responsible for serving as the liaisons between the Regions and the RPM.

E. **Site Radio Coordinators** are:

(1) Designated annually by the site manager, and

(2) Responsible for managing the radio system within the unit.

F. **End users** are responsible for using radio systems consistent with this policy.

**Planning for Radio Systems**

**2.5 What is a Statement of Radio Requirement, and when is it necessary?**

A. As soon as an employee identifies a new radio requirement, the Site Radio Coordinator must complete a Statement of Radio Requirement (FWS Form 3-2421) and a Radio Programming Information Table (FWS Form 3-2422) and send them to the Regional Radio Coordinator. The Site and Regional Radio Coordinators work with the RPM to ensure the need is justified and develop a system design (see sections 2.6 through 2.8).

B. The Site Radio Coordinator must complete the forms for:

(1) New radio systems,

(2) Modifications to existing systems, and

(3) Help with troubleshooting problems with existing systems.

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**C.** The Statement of Radio Requirement form helps us to ensure that potential radio systems get adequate review. The Radio Programming Information Table helps us to ensure that all frequencies, including all cooperator frequencies that the site wants to use, are properly authorized (see section 2.8 for information on Radio Frequency Authorizations).

**2.6 How does the Service justify establishing radio systems?**

**A.** A radio system is justified if it:

- (1)** Provides users with required radio coverage;
- (2)** Offers improved service to the public;
- (3)** Provides for the protection of life, health, safety, and property for the public and employees; and
- (4)** Meets the Departmental mandates to share radio frequencies, locations, or backbone equipment.

**B.** After receiving a Statement of Radio Requirement (FWS Form 3-2421) for a new site, the RPM assists the Site and Regional Radio Coordinators in investigating reasonable communication alternatives, including existing conventional or trunked radio systems in the area, to ensure that we choose the most cost-effective and useful system. In some areas, cell phone coverage may provide ample communications and make a radio system unnecessary. In other areas, cell phone coverage may be nonexistent or unreliable, and a radio system would provide vital communication.

**2.7 How does the Service design new radio systems?**

**A.** If there is adequate justification for a new radio system, the RPM collaborates with the Site and Regional Radio Coordinators to ensure that it will:

- (1)** Meet the needs of the field unit;
- (2)** Share frequencies, sites, or backbone equipment with nearby Federal Government radio systems; and
- (3)** Provide interoperability with cooperators when possible.

**B.** This planning requires an understanding of radio coverage, knowledge of current equipment, investigation of the terrain to be covered, and a familiarity with the duties of the personnel who will use the equipment. You can find a list of considerations in the *Service Radio Handbook*.

**C.** Once the RPM, the Site Radio Coordinator, and the Regional Radio Coordinator agree on a system design, the RPM coordinates with the Department to ensure the new system will maximize sharing opportunities and meet Departmental standards.

**D.** After the Department coordinates the new system's Radio Frequency Authorization with NTIA (see section 2.8), the RPM creates a system design drawing and provides it to the Site and Regional Radio Coordinators. You can find an example of a system design drawing and legend in the *Service Radio Handbook*.

## Getting Radio Frequency Authorizations (RFAs) and Using Them

**2.8 What are Radio Frequency Authorizations, and what are the requirements for using them?** A Radio Frequency Authorization (RFA) is a certification of the authority to use a particular frequency in a specific area. Except in emergency situations, when Service employees may transmit on any available frequency, no Service radio operator may use a radio frequency that does not have an official RFA that the Department has coordinated through the NTIA.

**A. Sharing frequencies:** We must reuse radio frequencies when possible and give priority to those systems that can share.

(1) When reviewing requests for new radio frequencies, the RPM searches for existing Government frequencies in the area and evaluates whether sharing appears feasible.

(2) If frequency sharing is feasible, the RPM contacts the affected Regional Radio Coordinator(s) to discuss the possibility.

(3) Except in an emergency situation, if we share a radio frequency (even within the Service), the Site Radio Coordinator must use an official Memorandum of Understanding (MOU) to document the joint operations, and must renew the MOU at least every 5 years. FWS Forms 3-2423 through 3-2425 are MOU templates. The Site Radio Coordinator may use the templates in their current form, modify the templates, or substitute another MOU as long as the essential information is included.

(a) The Site Radio Coordinator sends the signed MOUs to the RPM.

(b) The RPM reviews the information before sending it to the Department. One reason for the review is that sometimes our sites get a signed MOU allowing them to use a frequency that is not supported with an RFA or Federal Communications Commission (FCC) license, or that actually belongs to a third bureau or entity. The RPM makes sure that an RFA or FCC license exists, and that the signed MOU is between us and the original licensee.

(c) The RPM sends the MOUs and the request for a new or modified RFA to the Department. The Department coordinates with the NTIA. Once a request or modification is approved, the Department updates the NTIA's classified Government Master File and gives a copy of the RFA to the RPM. The RPM gives it to the Regional and Site Radio Coordinators. You can find a legend that interprets the fields of an RFA in the *Service Radio Handbook*.

**B. Sharing another site's frequency when the two sites' radio coverage areas are different:** Unless a frequency is marked as valid for the entire continental United States (the RFA will show "US"), or for the entire continental United States and U.S. possessions (the RFA will show "USP"), we may only use the frequency within the geographic area specified in the original RFA. The holder of the original RFA may apply for a modification to the RFA to expand the frequency area.

**C. One RFA for a shared frequency within the Service:** We need an RFA for any frequency use, regardless of whether the frequency is new and assigned specifically to the site or a shared frequency. Depending on the frequency's use, we may only need one RFA when more than one site within the Service shares a frequency.

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**2.9 What do RFAs cost, how long does it take to get one, and for how long are they valid?**

**A. Cost:** IRTM pays an annual fee for radio RFAs, which changes annually. In fiscal year 2012 IRTM paid approximately \$280 per RFA, totaling over \$865,000. Because of this cost, Site Radio Coordinators should carefully review their requests for frequencies.

**B. Lead time:** Site Radio Coordinators should plan new requirements for RFAs well in advance because sometimes approval takes extensive lead time.

**(1)** The RPM must work with the NTIA, the State Department, and the Canadian or Mexican governments to coordinate radio frequencies that we will use within 100 miles of the U.S. borders with Canada or Mexico. This process can take several years.

**(2)** Other systems, including microwave systems, require up to a year's lead time or longer if the Department runs into difficulties supplying frequencies.

**C. Recertification:** The NTIA requires our RPM to recertify each of our RFAs and review all the frequency sharing MOUs at least every 5 years. When a change is made to an existing radio system, the RPM must also review all the RFAs for that site.

**(1)** The RPM notifies the Regional Radio Coordinators when it is time to perform the 5-year reviews.

**(2)** The Regional and Site Radio Coordinators review the radio systems to:

**(a)** Ensure that no infrastructure changes have been made since the last review,

**(b)** Ensure that all the RFAs and MOUs are current, and

**(c)** Provide a current radio equipment inventory to the RPM before RFAs expire.

**(3)** If a Region is delinquent in reviewing sites, the RFAs may be deleted. If this happens, the affected Site and Regional Radio Coordinators must ask the RPM to reapply for RFAs and hope that the original frequencies are still available.

**2.10 What are the requirements after a site gets an RFA?**

**A.** The RPM gives a copy of the RFAs to the Regional and Site Radio Coordinators. The Site Radio Coordinator must post the RFA at each repeater and base station location in a place where employees can easily access it, but where it's protected from public view.

**B.** The site can only use the approved frequency in as many mobile/portable radios as the RFA stipulates. The Site Radio Coordinator may apply for a modification to the RFA to increase the number of radios that can use the frequency. Additional steps may be necessary for frequencies owned by other entities.

**C.** Each RFA is specific to the location for which it was created, including the geographic coordinates and the antenna height. If a base station or repeater needs to be moved more than 25 feet from the original location, or if an antenna needs to be moved more than 10 feet horizontally or vertically, the Site Radio Coordinator must send a new Statement of Radio Requirement (FWS Form 3-2421) to the Regional Radio Coordinator, who will send it to the RPM to determine whether or not to modify the original RFA.

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**2.11 Is RFA data sensitive?** Yes. We should only release RFA data to cooperators when necessary and in the best interest of the Service. Wildlife telemetry frequencies in the 162.000 - 173.999 MHz range and all law enforcement frequencies are exempt from Freedom of Information Act (FOIA) requests, but we must release other RFA data under FOIA requests unless specifically exempted from such a release. If the information is exempted, there will be an "X" in the "FOI" field in the RFA. The *Service Radio Handbook* includes a legend that interprets the fields of an RFA.

**General Radio System Use and Requirements**

**2.12 What are the general radio system requirements?**

**A. Digital narrowband requirements:** Except for radio equipment used on a cooperator's proprietary system, all new radio equipment we buy must conform to Association of Public Safety Communications Officials International, Project 25 (APCO 25) standards, also known as the Electronic Industries Association/Telecommunications Industry Association (EIA/TIA)-102 standards. All trunked equipment we buy must also meet the algorithm of the trunked system it will use. The equipment we use must operate in digital narrowband or trunked mode, except when using cooperator, marine, or aviation frequencies that are wideband or analog.

**B. Call signs:** We must use call signs to ensure that stations can be identified in the event of harmful interference. Users must announce the appropriate call sign at the beginning of each transmission, at the end of a series of transmissions, and at least every 10 minutes during continuous periods of transmission. Users may not substitute their names for the call sign. You can find more information about call signs in the *Service Radio Handbook*.

**C. Busy Channel Lockout:** We must program all our mobile and portable radios with the busy channel lockout function to prevent users from transmitting on channels that are already in use. When a user tries to transmit on a busy channel, his or her radio will sound an audible busy signal. This function is particularly important when we use talk groups (see section 2.12G).

**D. Encryption:** To ensure security, all critical law enforcement transmissions must be made in encrypted mode over radio systems encrypted with the Advanced Encryption Standard (AES). More information is available in the *Service Radio Handbook*.

**E. Network Access Codes (NAC Codes):** To reduce potential radio frequency interference, we must program Service repeaters to use a NAC code (also known as a Network ID). There is no specific list of authorized NAC codes; the RPM selects a NAC code for each repeater during system design.

**F. Station Logs:** The Site Radio Coordinator must maintain a station record or log for all radio transmissions that go through a base station, regardless of where that base station is located (see 377 DM 1 and 2).

(1) The DM also requires that the log contain the following information:

- (a) Date and period of operation,
- (b) Frequencies used,
- (c) Call signs employed, and
- (d) Identification of the operator in charge.

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(2) We encourage Site Radio Coordinators to use a logging recorder to ensure that there is a record of any critical transmission or any transmission that may cause interference to other stations. These records may be critical evidence in civil suits or criminal investigations. Records may be destroyed after 6 months.

**G. Talk Groups:** We use talk groups to direct radio transmissions to specific groups so that users do not hear radio traffic that does not concern them. The Department has a list of recommended talk groups. The RPM assigns talk groups from this list to each radio system. For trunked systems, the office managing the trunked system assigns talk groups and unit IDs.

**2.13 Where can employees learn more about the requirements for other special radio frequencies?**

Certain radio frequency assignment applications require special handling, as do certain radio frequency bands. The requirements for these applications, including common use, fire use, drug interdiction, and flight following frequencies, are in the *Service Radio Handbook*. The requirements for Travelers' Information Service (TIS) radio systems are also in the handbook.

**Buying Radio Equipment and Lifecycle Management**

**2.14 How do employees buy and program new radio equipment?**

**A.** The Department requires that employees get approval from the RPM before buying new radio equipment, regardless of cost. Employees can buy parts (e.g., batteries) without approval. See the *Service Radio Handbook* for details about buying equipment.

**B.** The RPM:

(1) Must confirm that an RFA or wildlife telemetry project is in place or can be obtained before the equipment can be purchased, and

(2) Considers the desires of the individual site and Region, but if the requested equipment does not meet technical requirements such as APCO 25/TIA 102 standards, the RPM will not approve the purchase and will recommend alternate equipment.

**C.** To ensure that all of our radios are properly programmed and use only authorized frequencies, we recommend that the RPM or someone else in his/her office program all new radio equipment (except for wildlife telemetry equipment and trunked or marine radios). They use the Radio Programming Information Table (FWS Form 3-2422) provided by the Site Radio Coordinator to do the programming.

(1) The Site Radio Coordinator may program the radio equipment him/herself, or hire someone to do the programming if they meet the specific requirements in the *Service Radio Handbook* first.

(2) The owner of a trunked system determines who should program radios for that system.

(3) You can find more information on Service radio programming in the *Service Radio Handbook*.

**2.15 How often do Site Radio Coordinators need to assess their radio systems?**

**A. Annually:** The Site Radio Coordinator must report any radio equipment inventory changes to the RPM annually through the Regional Radio Coordinator.

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**B. Every 5 years:** For long-term system effectiveness, the Site Radio Coordinator must assess the radio system at least every 5 years to:

- (1) Determine if any equipment needs to be replaced, and
- (2) Ensure that there haven't been any technical changes such as antenna height or gain, transmitter power, equipment coordinates, and equipment configurations.

**C. As changes occur:** The Site Radio Coordinator must report any technical system changes to the RPM through the Regional Radio Coordinator as they occur.

**2.16 How often does radio equipment need to be replaced?**

**A.** Ten years is an average replacement cycle for portable and mobile radios, and replacement funds should be set aside accordingly. When we replace radio equipment, we also need to change the RFAs unless the new equipment is identical to the old.

**B.** A Site Radio Coordinator may need to change or expand a radio system to meet new requirements. To do this, he/she must send a Statement of Radio Requirement (FWS Form 3-2421) to the RPM early in the planning stage to allow time to review the radio system, make changes, and modify the affected RFAs.

**2.17 What do Site Radio Coordinators do with equipment they're no longer using?**

**A.** If the Site Radio Coordinator can identify another Service site that wants the unused radio equipment, he/she can transfer the equipment to the site, obtain signed property transfer documents, and update the site radio equipment inventory. The Site Radio Coordinator must also notify the Regional Radio Coordinator of the transfer, so the Regional Radio Coordinator can update the Region's radio equipment inventory and ensure that RFAs are requested or modified as appropriate. Regions typically prefer to reuse radio equipment within the same Region, if possible.

**B.** If the Site Radio Coordinator is unable to locate another interested Service site, he/she must send a list of unused radio equipment to the Regional Radio Coordinator. The Regional Radio Coordinator will review the list and determine whether any of the equipment is useful for another site in the Region.

(1) If so, the Regional Radio Coordinator arranges for a transfer and ensures that RFAs are requested or modified, as appropriate.

(2) If not, the Regional Radio Coordinator gives the list to the RPM for coordination with the other Regional Radio Coordinators. If the equipment can be reused in another Region, the receiving Regional Radio Coordinator is responsible for coordinating property documentation and RFA modifications.

**C.** If no one in the Service can use the equipment, the RPM must work with the Department to determine if anyone else in the Department can use it.

**D.** If the equipment is no longer useable, it should be excessed in accordance with excess procedures within the office/Region/program (see 310 FW 5).

**2.18 What do Site Radio Coordinators have to do to equipment before transferring or excessing it?**

Before transferring equipment, the Site Radio Coordinator should send it to the RPM for reprogramming. Before excessing equipment, the Site Radio Coordinator should ensure the frequencies are removed, as well as any frequency-determining software or channel elements.

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**2.19 What happens if radio equipment is lost or stolen?** The Site Radio Coordinator must fill out appropriate paperwork (see 310 FW 6) and send copies to the RPM through the Regional Radio Coordinator. As appropriate, the RPM will alert anyone who may be able to help track or remotely disable the equipment. This is particularly urgent for equipment containing encryption capabilities.

**Wildlife Telemetry**

**2.20 What is wildlife telemetry?** Wildlife telemetry is the use of radio equipment to track wildlife. The NTIA sets aside 925 specific frequencies in the 162.000 – 173.999 MHz band and 18 in the 30 MHz band for wildlife telemetry studies. Some frequencies in the 218 – 220MHz band may also be used. More information about these frequencies is in the *Service Radio Handbook*.

**2.21 What are the requirements for using wildlife telemetry frequencies?**

**A.** Employees may only use the specific frequencies referenced in the *Service Radio Handbook*.

**B.** As required by the Department (see 377 DM 2), the RPM coordinates all radio telemetry projects in the 162.000 – 173.999 MHz band and maintains a database of these projects for the Federal Government.

**(1)** Employees must have an authorized telemetry project before purchasing telemetry equipment. They may only use the telemetry equipment on the specific frequencies assigned to the project. Although some equipment manufacturers may claim that no license is required for their units, the only time employees do not have to use the frequencies assigned is when they're using satellite transmitters that do not use VHF frequencies.

**(2)** To request use of telemetry frequencies, the lead for the telemetry project must complete a Telemetry Radio Frequency Request (FWS Form 3-2427) and send it to the RPM. You do not need to submit a Statement of Radio Requirement for wildlife telemetry projects.

**(3)** The RPM can process telemetry requests quickly if there are no conflicts with the requested frequencies. We recommend you allow 3 months of lead time for negotiations with existing projects, if necessary, and for the manufacturer to create transmitters. Telemetry projects that will be conducted near the U.S. borders with Canada and Mexico, or that track species that may cross these borders, may require additional coordination.

**C.** Only Federal Government agencies or entities in cooperative agreements funded by the Federal Government may use the frequencies.

**D.** Wildlife telemetry transmitters must not exceed ten milliwatts (10 mW or 0.010 W) output of power.

**E.** All telemetry frequency assignments are exempt from FOIA requests.

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DEPUTY DIRECTOR

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