Western Region Technical Attachment
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RADIO TRANSMISSION LICENSING REQUIREMENTS

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ALERT systems transmit data via line of site radio signals. Transmission of these signals require that licensing be obtained from the Federal Communications Commission (FCC). The FCC has set up specific procedures for obtaining licensing for the transmission of hydrologic data, the category ALERT data comes under. There are frequencies reserved strictly for the transmission of hydrologic data and are in the range of 170 MHz for VHF broadcasts, 410 MHz for UHF. (The UHF frequencies are rarely used for ALERT data, because they are more susceptible to interference.)

The FCC relies on the advice of the Hydrologic Radio Frequency Coordination Group (HRFCG) of the Hydrology Subcommittee of the Interagency Advisory Committee on Water Data (IACWD). The IACWD is a committee of several different Federal agencies dealing with water resources. They have created several different subcommittees and working groups to deal with particular issues.

The membership of the HRFCG includes representatives from the Tennessee Valley Authority and the Departments of Agriculture, Defense, Energy, Interior, and Commerce, the parent agency of the National Weather Service. The representative of the National Weather Service serves as the permanent chairperson of the HRFCG.

All requests for hydrologic frequencies are initially screened for two criteria:

1. They must be sponsored by a Federal agency (although that agency need not sit on the HRFCG).

2. The information transmitted must be of a hydrologic nature.

Once these two criteria are satisfied, the HRFCG will check to make sure that the request will not conflict with an existing use of that frequency. If there is a conflict, the HRFCG will go back to the originator of the request to determine if an alternate frequency can be used.

When the determination is made that there are no conflicts with the frequency, the HRFCG will recommend to the FCC and the Interdepartment Radio Advisory Board (IRAC) that the request be approved. IRAC is part of the National Telecommunications and Information Administration, (NTIA), an agency which manages and allocates radio frequency assignments for the Federal government.

At this point, the path the request takes depends on which agency is going to hold the license. If a Federal agency plans to hold the license, then the request must be approved by the NTIA. If any other entity, including a state or local government agency, wishes to hold the license, then the FCC must be formally petitioned.

The National Weather Service processes the requests for radio frequency assignments and is frequently the agency that holds the license.

The issue of who holds the licenses should be taken very seriously. The agency that is assigned these authorizations is responsible for the transmissions that take place. If the transmissions are causing interference with another project, whoever holds the license will be ordered (by the FCC) to rectify the situation.

Similarly, all agencies participating in a project must understand that a certain degree of control is ceded to the licensee. If the licensee says that transmissions must stop, this request must be obeyed.

In almost all cases, the healthy degree of cooperation between the agencies involved in an ALERT system should preclude a situation deteriorating to the point where a project must shut down. However, all parties should be aware of the legal ramifications of the radio licensing procedures.

Information Needed

The following information should be supplied to the National Weather Service representative handling the radio frequency requests:

1. The name of the location
2. The type of station (gage, repeater, base station, etc.)
3. Location in latitude and longitude (to the nearest second, if possible)
4. Type of hydrologic data to be transmitted, such as precipitation, river gage, etc.
5. Frequencies required
6. Output power of transmitter in watts
7. Transmitter manufacturer and model
8. Transmitter emission
9. Operation schedule, such as event oriented, hourly, daily, etc.
10. Antenna characteristics
    a. Antenna name
    b. Orientation (degrees from true north)
    c. Gain in dB
    d. Ground elevation at the gage site
    e. Height of antenna above ground elevation