ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CT 6050.1E

August 5, 2004

Subj: Radio Frequency Communications Control and Frequency Management at the FAA Technical Center

1. PURPOSE. This order outlines the policy, functions, responsibilities, and procedures for the control of radio communications and management of radio frequencies employed at the FAA Technical Center. Agency guidance on this subject includes, but is not limited to, Spectrum Management Regulations and Procedures Manual, 6050.32A.

2. DISTRIBUTION. This order is distributed to all supervisory and management personnel, tenants, and contractors.

3. CANCELLATION. Order CT 6050.1D is cancelled.

4. BACKGROUND. Aviation is heavily dependent upon unimpaired radio frequency propagated surveillance, guidance, navigation, and control communications throughout the atmosphere. The FAA is a major user of the radio frequency (RF) spectrum assigned for government use. In both airborne and ground-based operations, the Center employs hundreds of RF operated systems, equipments, and radiating antennas. RF authorizations and continuing control of assigned radio frequencies, approved operating levels, and antenna configurations must be maintained. RF spectral radiating equipment must be carefully controlled within the Technical Center airspace to provide unimpeded RF service to the largest number or priority of qualified users.

5. POLICY. Authorization for the use of assigned frequencies of the RF spectrum at the Technical Center rests with the Frequency Management Officer (FMO). The FMO obtains the authorization for experimental and operational frequencies needed by local users and manages them for efficient non-interfering utilization. The FMO also reviews and evaluates qualified user applications for use of RF radiating systems and equipments. It is Center policy that transmitting equipment will not normally be permitted in or on buildings 300 or 316. Receiving equipment is permissible. This policy is based on FAA experience and guidelines in order to protect high priority ATC data processing equipment from RF interference. Exceptions to this policy will be approved only on the basis of in-depth testing and/or analysis acceptable to the organizational element having operating responsibility for the ATC data processing equipment.

6. FUNCTIONS AND RESPONSIBILITIES. The Technical Center Frequency Management Officer will:

a. Authorize all local frequency usage for non-regional FAA activities and will provide radio call signs as required. This includes all transmitters utilized by contract personnel during their completion of their duties/work, both permanent and temporary contractors.

b. Ensure compliance with all FAA orders and policies relative to frequency usage.

c. Provide initial resolution and continuing consultation on the avoidance of RF interference among equipment of Center users and between that of those users and other organizations.

d. Provide interference probability assessments where the prospect of interference in future or existing installations warrants documentation. Where applicable, an operational priority schedule to share service among the maximum number of users will be recommended.

e. Will coordinate frequencies or RF installation applications, which are prospective interference candidates. Testing and analysis will be coordinated among all affected equipment users. Evaluation of RF transmission will include documentation of maximum power output, wide ranging spectral analysis, intermodulation, cross modulation, spurious radiation, and related grounding calculations.

f. Review and evaluate qualified applications for recommendations to the Master Planning and Siting Board regarding location, installation, and operating approval of RF systems and equipment. The Board is to have full benefit of technical expertise and investigations of the Frequency Management Officer and the initiative of coordination is to be taken by FMO.

g. Be responsible to the Manager for Spectrum and Specialty Engineering Group, in carrying out the functions of the Frequency Management Officer.

h. It is not the responsibility of the FMO to regulate the use of cellular phones on the Technical Center. If cellular phone usage causes any RFI to any FAA communications, NAVAID, radar or data systems then the FMO will prohibit the use in the area of interference only. Cellular phone use safety issues will be referred to the Technical Center's safety office. If cellular use disturbs the working environment then this will be referred to the local Program Manager for resolution.

7. PROCEDURES. The procedures to be followed to obtain frequency authorization or approval to install RF equipment or operate handheld radio equipment are outlined below.

a. Contact the Center's Frequency Management Officer, for the following:

(1) To obtain a new frequency authorization. Frequency authorizations may take in excess of 30 days.

(2) To renew an existing authorization.

(3) To cancel a frequency authorization upon the determination the transmitting authorization is not needed. Note: If the frequency authorization is for a specific project, notify

the Frequency Management Officer within 30 days of the conclusion of project testing so the authorization can be cancelled.

(4) To resolve RF interference.

(5) To obtain a radio call sign for identification.

b. Applications for antenna installation and operation of new RF equipment must be submitted to Frequency Management Officer for review and analysis of possible impact upon on-going operations prior to installation and operation. These applications are available on the Technical Center's Intranet web site or by contacting the Technical Center's Frequency Management Officer. Findings will be forwarded for Master Planning and Siting Board approval. Accompanying information required with each new RF installation application includes identification of the following:

(1) Latitude and Longitude of antenna location/installation. In the case of Handheld Radio equipment, the area of operation must be detailed in the application.

(2) Height above the surrounding terrain and height above Mean Sea Level.

(3) Frequency or band of operation requested if frequency or band of operation is not known.

(4) Transmitting and/or receiving capability.

(5) Power output of transmitter to be used. Note. The amount of power output used will be limited to the maximum amount to satisfy the communications/transmissions purpose. If RF interference (RFI) occurs the transmissions will cease until the RFI is resolved. This includes the use of handheld type transmitters.

(6) Type/nomenclature, size and weight of antenna.

(7) Radiation pattern of the antenna, omni or directional.

(8) If a directional antenna is used, document the azimuth the antenna will be oriented including altitude coverage is required.

(9) Building type/mast tower, approximate roof location, and height above roof.

(10) Fixed or rotating antenna.

(11) Housing or radome required.

(12) Power/control voltage and cables to rooftop.

(13) Type transmission line and length limitations.

(14) A wide-ranging spectrum of transmitter output prepared from tests using matched dummy antenna.

(15) If the antenna installation is for a project, an estimated completion date of the project will be included. If no completion date is known at the time of the application, the authorization will be valid for a period not to exceed 1 year from the authorization date and will be reviewed, if needed, on 1-year intervals.

(16) Name and organization of contact for additional information.

(17) Conduct personal radiation hazard survey, if necessary. Surveys will be conducted in accordance with Occupational Safety and Health Order CT 3900.55, Chapter 9, Radiation Program and Occupational Health Order 3900.19B, Chapter Radiation Safety Program.

c. Proposed antenna/mast installation and geographic location must also be cleared with Airport Operations, to ensure compliance with lighting and obstruction criteria.

d. Upon receipt of license to radiate, Facility Transmitting Authorization (FTA) FAA Form 6050 –1, and after approval of the Master Planning and Siting Board, submit Work Request to the trouble desk for installation. The Work Request should include a copy of all information provided in paragraph 7b above, corrected to show exact location and height of antenna in accordance with operating approval. The requestor is responsible for funding all installation and removal costs.

e. Obtain a Construction Authorization Permit from Facilities Services and Engineering Division (per Construction Authorization Order, CT Order 4443.1). Any RF equipment and antenna installations need to be properly grounded per National Electrical Codes and FAA standards. Any rooftop installations must be structurally sound (carry weight and resist high wind loads) and any penetrations through the roofing must be watertight and such that any roofing warranty is not compromised.

f. All antenna installations will be inspected by the Technical Center’s construction inspection personnel and Frequency Management Officer to insure compliance to all National Electrical Codes and FAA installation and grounding standards upon completion. If any installation is found to be non-compliant, the owner will be notified and will have 10 days to correct any discrepancies. If the discrepancies are not correct within 10 days the antenna, hardware and feedline will be removed.

g. All antennas installed will be permanently labeled with the purpose, frequency of operation, a point of contact and to whether a radiation hazard exists. If a radiation hazard exists the safe distance will be marked.

h. If the antenna that is installed supports a project, the antenna, all supporting hardware and feedline will be removed within 30 days upon cancellation or completion of the project. The installation site will be returned to the condition upon which the site was found prior to the

installation.

8. FORM/APPLICATION. The form/application used in frequency management at the Technical Center is CT Form 6050-1, Request for Frequency Assignment, and may be obtained from the Technical Center's Frequency Management Officer as needed or eventually via the Technical Center's Intranet website.

/s/

Anne Harlan
Director, FAA William J. Hughes Technical Center