

APPENDIX A: FINAL RULES

A. Part 5 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 5 -- EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

1. The authority citation for Part 5 is revised to read as follows:

AUTHORITY: Secs. 4, 302, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 302, 303.
Interpret or apply sec. 301, 48 Stat. 1081, as amended; 47 U.S.C. 301.

2. The entire Part 5 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 5--EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)**Subpart A--General****Section**

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- 5.3 Scope of service.
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Subpart A--General

Section 5.1 Basis and purpose.

(a) The rules following in this part are promulgated pursuant to the provisions of Title III of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission to regulate radio transmissions and to issue licenses for radio stations.

(b) The purpose of this part is to prescribe the manner in which parts of the radio frequency spectrum may be made available for experimentation as defined and provided for in this part.

Section 5.3 Scope of service.

Stations operating in the Experimental Radio Service will be permitted to conduct the following type of operations:

- (a) Experimentations in scientific or technical radio research.
- (b) Experimentations under contractual agreement with the United States Government, or for export purposes.
- (c) Communications essential to a research project.
- (d) Technical demonstrations of equipment or techniques.
- (e) Field strength surveys by persons not eligible for authorization in any other service.
- (f) Demonstration of equipment to prospective purchasers by persons or state and local governmental subdivisions engaged in the business of selling radio equipment.
- (g) Testing of equipment in connection with production or regulatory approval of such equipment.
- (h) Development of radio technique, equipment or engineering data not related to an existing or proposed service, including field or factory testing or calibration of equipment.
- (i) Development of radio technique, equipment, operational data or engineering data related to an

existing or proposed radio service.

(j) Limited market studies.

(k) Types of experiments that are not specifically covered under paragraphs (a) through (j) of this section will be considered upon demonstration of need for such additional types of experiments.

Section 5.5 Definition of terms.

For the purpose of this part, the following definitions shall be applicable. For other definitions, refer to Part 2 of this chapter (Frequency Allocations and Radio Treaty Matters; General Rules and Regulations).

Authorized frequency. The frequency assigned to a station by the Commission and specified in the instrument of authorization.

Authorized power. The power assigned to a radio station by the Commission and specified in the instrument of authorization.

Experimental Radio Service. A service in which radio waves are employed for purposes of experimentation in the radio art or for purposes of providing essential communications for research projects that could not be conducted without the benefit of such communications.

Experimental Station. A station utilizing radio waves in experiments with a view to the development of science or technique.

Fixed service. A radiocommunication service between specified fixed points.

Fixed station. A station in the fixed service.

Harmful interference. Any radiation or induction that endangers the functioning of a radionavigation or safety service, or obstructs or repeatedly interrupts a radio service operating in accordance with the Table of Frequency Allocations and other provisions of Part 2 of this chapter.

Landing area. As defined by 49 U.S.C. Section § 40102(a)(28) of the Civil Aeronautics Act of 1938, as amended, any locality, either of land or water, including airdromes and intermediate landing fields, that is used, or intended to be used, for the landing and take-off of aircraft, whether or not facilities are provided for the shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo.

Land station. A station in the mobile service not intended for operation while in motion.

Mobile service. A radiocommunication service between mobile and land stations, or between mobile stations.

Mobile station. A station in a mobile service intended to be used while in motion or during halts at unspecified points.

Person. An individual, partnership, association, joint stock company, trust, or corporation.

Public correspondence. Any telecommunication that offices and stations, by reason of their being at the disposal of the public, must accept for transmission.

Radio service. An administrative subdivision of the field of radiocommunication. In an engineering sense, the subdivisions may be made according to the method of operation, as, for example, mobile service and fixed service. In a regulatory sense, the subdivisions may be descriptive of particular groups of licensees, as, for example, the groups of persons licensed under this part.

Station authorization. Any license or special temporary authorization issued by the Commission.

Subpart B--Applications and Licenses

Section 5.51 Eligibility of license.

(a) Authorizations for stations in the Experimental Radio Service will be issued only to persons qualified to conduct experimentation utilizing radio waves for scientific or technical operation data directly related to a use of radio not provided by existing rules; or for communications in connection with research projects when existing communications facilities are inadequate.

(b) Applicants eligible for authorizations in an established service, and seeking to develop operational data or techniques directed toward the improvement or extension of that service shall file applications and conduct such projects under the developmental rules of the established service.

(c) A station license shall not be granted to or held by a foreign government or a representative thereof.

Section 5.53 Station authorization required.

(a) No radio transmitter shall be operated in the Experimental Radio Service except under and in accordance with a proper station authorization granted by the Commission. However, construction of proposed experimental satellite facilities may begin prior to Commission grant of an authorization. Such construction will be entirely at the applicant's risk and will not entitle the applicant to any assurances that its proposed experiment will be subsequently approved or regular services subsequently authorized. Additionally, the applicant must notify the Commission's Office of Engineering and Technology in writing that it plans to begin construction at its own risk.

(b) Persons desiring to install and operate radio transmitting equipment under this part should first submit an application for a radio station license in accordance with § 5.59.

(c) If installation and/or operation of the equipment may significantly impact the environment, see § 1.1307 of this chapter, an environmental assessment as defined in § 1.1311 of this chapter must be submitted with the application.

Section 5.55 Filing of applications.

(a) To assure that necessary information is supplied in a consistent manner by all persons, standard forms are prescribed for use in connection with the majority of applications and reports submitted for Commission consideration. Standard numbered forms applicable to the Experimental Radio Service are discussed in § 5.59 and may be obtained by calling the FCC FORMS hotline, (202) 418-FORM. If no standard form is applicable, the informal application procedure outlined in § 5.59 (f) should be followed.

(b) Any application for radio station authorization and all correspondence relating thereto shall be submitted to the Commission's Office of Engineering and Technology, Washington, DC 20554. (Applications requiring fees as set forth in Part 1, Subpart G of this chapter must be filed in accordance with § 0.401(b) of the rules.)

(c) Each application for station authorization shall be specific and complete with regard to station location, proposed equipment, power, antenna height, and operating frequency; and other information required by the application form and this part.

(d) Applications involving temporary operation: When an experimental program is expected to last no more than six months, its operation shall be considered temporary and the special temporary authorization procedure outlined in § 5.61 shall apply.

Section 5.57 Who may sign applications.

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and related

statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is a partnership; by an officer or duly authorized employee, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applications, amendments, and related statements of fact filed on behalf of eligible government entities, such as states and territories of the United States and political subdivisions thereof, the District of Columbia, and units of local government, including incorporated municipalities, shall be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

(b) Applications, amendments thereto, and related statements of fact required by the Commission may be signed by the applicant's attorney in case of the applicant's physical disability or of his/her absence from the United States. The attorney shall in that event separately set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorney's belief only (rather than his/her knowledge), he/she shall separately set forth reasons for believing that such statements are true.

(c) Only the original of applications, amendments, or related statements of fact need be signed; copies may be conformed.

(d) Applications, amendments, and related statements of fact need not be submitted under oath. Willful false statements made therein, however, are punishable by fine and imprisonment, U.S. Code, Title 18, Section 1001, and by appropriate administrative sanctions, including revocation of station license pursuant to Section 312(a)(1) of the Communications Act of 1934, as amended.

(e) "Signed," as used in this section, means an original handwritten signature; however, the Office of Engineering and Technology may allow signature by any symbol executed or adopted by the applicant with the intent that such symbol be a signature, including symbols formed by computer-generated electronic impulses.

Section 5.59 Forms to be used.

(a) *Application for experimental radio license.* Entities requesting an experimental authorization must submit FCC Form 442 (application). A single FCC Form 442 may be used for several radio components of an experimental program, however, unrelated experimental programs should be filed on separate applications.

(b) *Application for modification of experimental license.* An application for modification of experimental authorization shall be submitted on FCC Form 442. A blanket application may be submitted for modification of a group of authorizations of the same class as long as the scope of the modifications are specified in the application. The individual authorizations covered by such an application shall be clearly identified therein. However, application for modification to change location of an experimental authorization shall be filed as a separate application.

(c) *Application for renewal of experimental authorization.* Application for renewal of station license shall be submitted on FCC Form 405. A blanket application may be submitted for renewal of a group of station licenses in the same class in those cases in which the renewal requested is in exact accordance with the terms of the existing authorizations. The individual stations covered by such applications shall be clearly identified thereon. Unless otherwise directed by the Commission, each application for renewal of license shall be filed at least 60 days prior to the expiration date of the license to be renewed.

(d) *Application for consent to assign an experimental authorization.* Application on FCC Form 702 shall be submitted when the legal right to construct or to control the use and operation of a station is to be

transferred as a result of a voluntary act (contract or other agreement) or an involuntary act (death or legal disability) of the grantee of a station authorization or by involuntary assignment of the physical property constituting the station under a court decree in bankruptcy proceedings, or other court order, or by operation of law in any other manner. Such application must be accompanied by the FCC Form 442 of which only the certification need be signed by the proposed assignee. No other information is required to be submitted on this form.

(e) *Application for consent to transfer control of Corporation holding experimental authorization.* Application for consent to transfer control shall be submitted on FCC Form 703 whenever it is proposed to change the control of a corporation holding a station authorization.

(f) *Informal application.*

(1) An application not submitted on a standard form prescribed by the Commission is considered to be an informal application. Each informal application shall be submitted normally in letter form, and with the original signed in accordance with § 5.57. Each application shall be clear and complete within itself as to the facts presented and the action desired.

(2) An informal application for authority to operate transmitting equipment will be accepted only under the conditions set forth for special temporary authorizations in § 5.61.

Section 5.61 Procedure for obtaining a special temporary authorization.

(a) The Commission may issue a special temporary authorization under this part in cases in which a need is shown for operation of a station for six months or less, provided such operation is not in conflict with the Commission's rules in this part. In cases in which an applicant sets forth compelling reasons why a special temporary authorization must be granted expeditiously, preference will be given to processing the application.

(b) Extensions of a special temporary authorization will be granted provided that an application for a regular experimental license has been filed at least 15 days prior to the expiration of the licensee's temporary authority. When such an application is timely filed, operations may continue in accordance with the other terms and conditions of the temporary authority pending disposition of the application, unless the applicant is notified otherwise by the Commission.

(c) An application for special temporary authorization may be filed as an informal application in the manner prescribed by § 5.59(f) and shall contain the following information:

- (1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.
- (2) Description of why an STA is needed.
- (3) Description of the operation to be conducted and its purpose.
- (4) Time and dates of proposed operation.
- (5) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).
- (6) Description of the location(s) and geographical coordinates of the proposed operation. Indication of which coordinate datum (NAD-27 or NAD-83) applies.
- (7) Equipment to be used, including name of manufacturer, model and number of units.
- (8) Frequency(ies) desired.
- (9) Maximum effective radiated power (ERP).
- (10) Emission designator (see § 2.201) or describe emission (bandwidth, modulation, etc.)

(11) Overall height of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see Part 17 of the Commission's rules concerning notification to the FAA).

Section 5.63 Supplementary statements required.

(a) Each applicant for an authorization in the Experimental Radio Service must enclose with the application a narrative statement describing in detail the program of research and experimentation proposed, the specific objectives sought to be accomplished; and how the program of experimentation has a reasonable promise of contribution to the development, extension, or expansion, or utilization of the radio art, or is along lines not already investigated. An applicant may request non-disclosure of proprietary information submitted under this part. These requests should follow the procedures for submission set forth in § 0.459 of this chapter.

(b) If the authorization is to be used for the purpose of fulfilling the requirements of a contract with an agency of the United States Government, the applicant shall submit a narrative statement describing the project, the name of the contracting agency, and the contract number.

(c) If the authorization is to be used for the sole purpose of developing equipment for exportation to be employed by stations under the jurisdiction of a foreign government, the applicant shall submit a narrative statement describing the project, any associated contract number, and the name of the foreign government concerned.

(d) The provisions of paragraph (a) of this section shall not be applicable to applications for an authorization in the Experimental Radio Service to be used for communications essential to a research project in which other means of communications are inadequate or not available. In such cases, applicants shall include as part of the application for an authorization the following:

- (1) A description of the nature of the research project being conducted.
- (2) A showing that communications facilities are necessary for the research project involved.
- (3) A showing that existing communications facilities are inadequate or unavailable.

Section 5.65 Defective applications.

(a) Applications that are defective with respect to completeness of answers to required questions, execution or other matters of a purely formal character may not be received for filing by the Commission, and may be returned to the applicant with a brief statement as to the omissions.

(b) If an applicant is requested by the Commission to file any documents or information not included in the prescribed application form, a failure to comply with such request will constitute a defect in the application.

(c) Applications that are not in accordance with the Commission's rules, regulations, or other requirements will be considered defective unless accompanied either by: (1) a petition to amend any rule, regulation, or requirement with which the application is in conflict; or

(2) a request of the applicant for waiver of, or an exception to, any rule, regulation, or requirement with which the application is in conflict. Such request shall show the nature of the waiver or exception desired and set forth the reasons in support thereof.

Section 5.67 Amendment or dismissal of applications.

(a) Any application may be amended or dismissed without prejudice upon request of the applicant prior to the time the application is granted. Each amendment to, or request for dismissal of an application shall be signed, authenticated, and submitted in the same manner and with the same number of copies as required for the original application. All subsequent correspondence or other material that the applicant desires to have incorporated as a part of an application already filed shall be submitted in the form of an amendment to the application.

(b) Failure to prosecute an application, or failure to respond to official correspondence or request for additional information, will be cause for dismissal. Such dismissal will be without prejudice.

Section 5.69 Partial grants.

In cases in which the Commission grants an application in part, or with any privileges, terms, or conditions other than those requested, or subject to any interference that may result to a station if designated application or applications are subsequently granted, the action of the Commission shall be considered as a grant of such application unless the applicant shall, within 30 days from the date on which such grant is made or from its effective date if a later date is specified, file with the Commission a written request rejecting the grant as made. Upon receipt of such request, the Commission will coordinate with the applicant in an attempt to resolve problems arising from the grant.

Section 5.71 License period.

(a) The regular license period for stations in the Experimental Radio Service is either 2 or 5 years. An applicant desiring to apply for a 5-year license must provide justification for its need for a license of that duration. A license may be renewed upon an adequate showing of need.

(b) A license will not be granted for a period longer than that which is required for completion of the experimental project. If such period is estimated to be less than 2 years, or between 2-5 years, a statement to that effect by the applicant may facilitate grant of the application. See also § 5.69.

Section 5.73 Experimental report.

(a) Unless specifically stated as a condition of the authorization, licensees are not required to file a report on the results of the experimental program carried on under this subpart.

(b) The Commission may, as a condition of authorization, request the licensee to forward periodic reports in order to evaluate the progress of the experimental program.

(c) An applicant may request that the Commission withhold from the public certain reports and associated material and the Commission will do so unless the public interest requires otherwise. These requests should follow the procedures for submission set forth in § 0.459 of this chapter.

Section 5.75 Number of licenses required.

An application for a station embracing widely divergent and unrelated experimentations will normally require a separate license for each experiment. However, if the experiments are related or conducted by the same manufacturer, an applicant may apply for a blanket license encompassing the entire experimental

program. If a blanket license is granted, licensees will be required to notify the Commission of the specific details of each individual experiment, including location, number of base and mobile units, power, emission designator, and any other pertinent technical information not specified by the blanket license.

Section 5.77 Change in equipment and emission characteristics.

(a) A change may be made in a licensed transmitter without specific authorization from the Commission provided that the change does not result in operations inconsistent with any term of the outstanding authorization for the station involved.

(b) Discrete changes in emission characteristics may be made without specific authorization from the Commission provided that the Commission is given written notification demonstrating that such changes will not exceed the maximum emissions envelope established in the existing authorization. Changes made pursuant to such notification that become a permanent part of the licensee's experimental program must be listed in the licensee's next application for renewal.

(c) Prior authorization from the Commission is required before the following antenna changes may be made at a station at a fixed location:

(1) Any change that will either increase the height of a structure supporting the radiating portion of the antenna or decrease the height of a lighted antenna structure.

(2) Any change in the location of an antenna when such relocation involves a change in the geographic coordinates of latitude or longitude by as much as one second, or when such relocation involves a change in street address.

Section 5.79 Transfer and assignment of station authorization.

A station authorization, the frequencies authorized to be used by the grantee of such authorization, and the rights therein granted by such authorization shall not be transferred, assigned, or in any manner either voluntarily or involuntarily disposed of, unless the Commission shall, after securing full information, decide that such a transfer is in the public interest and give its consent in writing. Requests for authority to transfer or assign a station authorization shall be submitted on the forms prescribed by § 5.59.

Section 5.81 Discontinuance of station operation.

In case of permanent discontinuance of operation of a fixed or land station in the Experimental Radio Service, or in case of permanent discontinuance of operation of all transmitter units listed in the license for a mobile station in the Experimental Radio Service, the licensee shall forward the station license to the Commission's Office of Engineering and Technology for cancellation.

Section 5.83 Cancellation provisions.

The applicant for a station in the Experimental Radio Services accepts the license with the express understanding: (a) that the authority to use the frequency or frequencies assigned is granted upon an experimental basis only and does not confer any right to conduct an activity of a continuing nature; and (b) that said grant is subject to change or cancellation by the Commission at any time without hearing if in its discretion the need for such action arises.

However, a petition for reconsideration or application for review may be filed to such Commission action.

Section 5.85 Frequencies and policy governing their assignment.

(a) Stations operating in the Experimental Radio Service may be authorized to use any government or non-government frequency designated in the Table of Frequency Allocations set forth in Part 2 of this chapter, provided that the need for the frequency requested is fully justified by the applicant.

(b) Each frequency or band of frequencies available for assignment to stations in the Experimental Radio Service is available on a shared basis only, and will not be assigned for the exclusive use of any one applicant, and such use may also be restricted to one or more specified geographical areas. Not more than one frequency in a band of frequencies will normally be assigned for the use of a single applicant unless a showing is made demonstrating that need for the assignment of additional frequencies is essential to the proposed program of experimentation.

(c) Frequency assignments will be made only on the condition that harmful interference will not be caused to any station operating in accordance with the Table of Frequency Allocation of Part 2 of this chapter.

(d) Use of Public Safety Frequencies: Applicants in the Experimental Radio Service must avoid use of public safety frequencies except when a compelling showing can be made that use of such frequencies is in the public interest. Public safety frequencies are identified in Subpart B (Public Safety Radio Services) and Subpart C (Special Emergency Radio Service) of Part 90 of the Commission's rules. In addition, Subpart S of Part 90 contains rules for the assignment of frequencies that may be used by Public Safety Radio Services in the 806-824 MHz and 851-869 MHz bands. If an experimental license to use public safety radio frequencies is granted, the authorization will be conditioned to require coordination between the experimental licensee and the appropriate frequency coordinator and/or all of the public safety licensees in its intended area of operation.

(e) The Commission may, at its discretion, condition any experimental license or STA on the requirement that before commencing operation, the new licensee coordinate its proposed facility with other licensees that may receive interference as a result of the new licensee's operations.

(f) Protection of FCC monitoring stations:

(1) Applicants are advised to give consideration, prior to filing applications, to the need to protect FCC monitoring stations from harmful interference. Geographical coordinates of such stations are listed in § 0.121(b) of the Commission's Rules. Applications for stations (except mobile stations) that will produce on any frequency a direct wave fundamental field strength of greater than 10 mV/m in the authorized bandwidth of service (-65.8 dBW/m^2 power flux density assuming a free space characteristic impedance of $120\pi \text{ ohms}$) at the referenced coordinates, may be examined to determine the extent of possible interference. Depending on the theoretical field strength value or other ambient radio field signal levels at the indicated coordinates, a clause protecting the monitoring station may be added to the station authorization.

(2) In the event that calculated value of expected field strength exceeds 10 mV/m (-65.8 dBW/m^2) at the reference coordinates, or if there is any question whether field strength levels might exceed the threshold value, advance consultation with the FCC to discuss any protection necessary should be considered. Prospective applicants may communicate with the Technology Division, Compliance and Information Bureau, telephone (202) 418-1210, Federal Communications Commission, Washington, D.C. 20554.

(3) Advance consultation is suggested particularly for those applicants who have no reliable data that indicates whether the field strength or power flux density figure indicated would be exceeded by their proposed radio facilities (except mobile stations). In such instances, the following is a suggested guide for

determining whether an applicant should coordinate:

- (i) All stations within 2.4 kilometers (1.5 statute miles);
 - (ii) Stations within 4.8 kilometers (3 statute miles) with 50 watts or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;
 - (iii) Stations within 16 kilometers (10 statute miles) with 1 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station;
 - (iv) Stations within 80 kilometers (50 statute miles) with 25 kW or more average ERP in the primary plane of polarization in the azimuthal direction of the Monitoring Station.
- (4) Advance coordination for stations operating above 1000 MHz is recommended only where the proposed station is in the vicinity of a monitoring station designated as a satellite monitoring facility in § 0.121(c) of the Commission's Rules and also meets the criteria outlined in paragraphs (d) (2) and (3) of this section.
- (5) The Commission will not screen applications to determine whether advance consultation has taken place. However, applicants are advised that such consultation can avoid objections from the Commission.

Section 5.87 Frequencies for field strength surveys or equipment demonstrations.

(a) Authorizations issued under §§ 5.3 (e) and (f) will normally not have specific frequencies designated in a station license. Prior to the commencement of a survey or demonstration, the licensee will request a specific frequency assignment and submit the following information:

- (1) Time, date and duration of survey.
- (2) Frequency to be used.
- (3) Location of transmitter and geographical area to be covered.
- (4) Purpose of survey.
- (5) Method and equipment to be used.
- (6) Names and addresses of persons for whom the survey is conducted.

Section 5.89 School and student authorizations.

The Commission may issue an authorization to schools or students for the purpose of presenting experiments or technical demonstrations for school or school approved projects that require the use of radio for a limited period of time. Such authorizations may be granted at the discretion of the Commission.

(a) An application for a school or student authorization may be filed in letter form and must comply with the provisions of § 5.63, except where specified below. The application must be accompanied by a signed statement from a member of faculty of the school, on appropriate letterhead, indicating the person under whose general supervision the project will be conducted. In the case of student authorizations, the letter must state that the project has the approval of the school

(b) Frequencies in the following bands are available for assignment in authorizations issued under this section:

27.23-27.28 MHz.
460-461 MHz.
462.525-467.475 MHz.
2402-2483.5 MHz.
10.00-10.50 GHz.

(c) Operations under this section shall not exceed a peak envelope output power of 4 watts. The Commission may authorize a greater power if a satisfactory showing is made that such greater power is necessary and that appropriate measures will be taken to prevent interference.

(d) The frequency of operation must be measured or checked prior to each time of operation.

(e) Subject to the provisions of (b), (c) and (d), the provisions in Subpart C of this part are waived insofar as such provisions require a station authorized under this section to observe the technical and operating restrictions set forth therein.

(f) The licensee holding an authorization issued under this section shall maintain a record of operation containing the following information:

(1) A brief description of the experimentation being conducted.

(2) The date and time of each period of operation.

(3) The frequency of operation as measured or checked at the beginning of each period of operation.

(g) The record of operation shall be retained for one month after the termination of the authorization.

Section 5.91 Notification to the National Radio Astronomy Observatory.

In order to minimize possible harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia, any applicant for a station authorization other than mobile, temporary base, temporary fixed, Personal Radio, Civil Air Patrol, or Amateur seeking a station license for a new station, or a construction permit to construct a new station or to modify an existing station license in a manner that would change either the frequency, power, antenna height or directivity, or location of such a station within the area bounded by 39 deg. 15' N on the north, 78 deg. 30' W on the east, 37 deg. 30' N on the south and 80 deg. 30' W on the west shall, at the time of filing such application with the Commission, simultaneously notify the Director, National Radio Astronomy Observatory, P.O. Box NZ2, Green Bank, West Virginia, 24944, in writing, of the technical particulars of the proposed station. Such notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity if any, frequency, type of emission, and power. In addition, the applicant shall indicate in its application to the Commission the date notification was made to the Observatory. After receipt of such applications, the Commission will allow a period of twenty (20) days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the twenty-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate.

Section 5.93 Limited market studies.

Unless otherwise stated in the instrument of authorization, licenses granted for the purpose of limited market studies pursuant to § 5.3(j) are subject to the following conditions:

(a) All transmitting and/or receiving equipment used in the study shall be owned by the licensee.

(b) The licensee is responsible for informing anyone participating in the experiment that the service or device is granted under an experimental authorization and is strictly temporary.

(c) The size and scope of the experiment are subject to limitations as the Commission shall establish on a case-by-case basis. If the Commission subsequently determines that a market study is not so limited, the study shall be immediately terminated.

Subpart C-- Technical Standards and Operating Requirements

Section 5.101 Frequency stability.

An applicant must propose to use a frequency tolerance that would confine emissions within the band of operation, unless permission is granted to use a greater frequency tolerance. Equipment is presumed to operate over the temperature range -20 to +50 degrees celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

Section 5.103 Types of emission.

Stations in the Experimental Radio Service may be authorized to use any of the classifications of emissions covered in Part 2 of this chapter.

Section 5.105 Authorized bandwidth.

Each authorization issued to a station operating in this service will show, as the prefix to the emission classification, a figure specifying the maximum necessary bandwidth in kilohertz for the emission used. The authorized bandwidth is considered to be the occupied or necessary bandwidth, whichever is greater. This bandwidth should be determined in accordance with § 2.202 of this chapter.

Section 5.107 Transmitter control requirements.

Each licensee shall be responsible for maintaining control of the transmitter authorized under its station authorization. This includes both ensuring that transmissions are in conformance with the operating characteristics prescribed in the station authorization and that the station is operated only by persons duly authorized by the licensee.

Section 5.109 Antenna and tower requirements.

(a) Applicants with fixed stations that use antennas that exceed 6 meters in height above the ground level or more than 6 meters in height above an existing building must comply with the requirements of Part 17 of this chapter.

(b) The licensee of any radio station that has an antenna structure required to be painted and illuminated pursuant to the provisions of Section 303(q) of the Communications Act of 1934, as amended, and Part 17 of this chapter, shall perform the inspections and maintain the tower marking and lighting, and associated control equipment, in accordance with the requirements of §§ 17.43 through 17.57 of this chapter.

Section 5.111 General limitations on use.

(a) The following transmission limitations are applicable to all classes of stations in the Experimental Radio Service:

(1) Stations may make only such transmissions as are necessary and directly related to the conduct of the licensee's stated program of experimentation as specified in the application for license and the related station instrument of authorization, and as governed by the provisions of the rules and regulations

contained in this part. All transmissions shall be limited to the minimum practical transmission time.

(2) When transmitting, the licensee must use every precaution to insure that the radio frequency energy emitted will not cause harmful interference to the services carried on by stations operating in accordance with the Table of Frequency Allocations of Part 2 of this chapter and, further, that the power radiated is reduced to the lowest practical value consistent with the program of experimentation for which the station authorization is granted. If harmful interference to an established radio service develops, the licensee shall cease transmissions and such transmissions shall not be resumed until it is certain that harmful interference will not be caused.

(b) If experimental stations are to be used to retransmit signals of any other station or to render any communications service to third parties, a full disclosure of this must be made in the application for license.

Section 5.113 Adherence to program of research.

(a) The program of experimentation as stated by an applicant in its application for license or in the station instrument of authorization, shall be substantially adhered to unless the licensee is authorized to do otherwise by the Commission.

(b) Where some phases of the experimental program are not covered by the general rules of the Commission or by the rules of this part, the Commission may specify supplemental or additional requirements or conditions in each case as deemed necessary in the public interest, convenience, or necessity.

Section 5.115 Station identification.

Each class of station in the experimental services shall, unless specifically exempted by the terms of the station authorization, transmit its assigned call sign at the end of each complete transmission: Provided, however, that the transmission of the call sign at the end of each transmission is not required for projects requiring continuous, frequent, or extended use of the transmitting apparatus, if, during such periods and in connection with such use, the call sign is transmitted at least once every thirty minutes. The station identification shall be transmitted in clear voice or Morse code. All digital encoding and digital modulation shall be disabled during station identification.

Section 5.117 Suspension of transmission required.

The radiations of the transmitter shall be suspended immediately upon detection or notification of a deviation from the technical requirements of the station authorization until such deviation is corrected, except for transmissions concerning the immediate safety of life or property, in which case the transmissions shall be suspended as soon as the emergency is terminated.

Section 5.119 Posting station licenses.

The current original authorization for each station shall be retained as a permanent part of the station records but need not be posted.

Section 5.121 Retention of station records.

Records required to be kept by this part shall be retained for a period of at least one year.

Section 5.123 Inspection of stations.

All stations and records of stations in the Experimental Radio Service shall be made available for inspection at any time while the station is in operation or shall be made available for inspection upon reasonable request of an authorized representative of the Commission.

Section 5.125 Authorized points of communication.

Generally, stations in the Experimental Radio Service may communicate only with other stations licensed in the Experimental Radio Service. Nevertheless, upon a satisfactory showing that the proposed communications are essential to the conduct of the research project, authority may be granted to communicate with stations in other services and U.S. Government stations.

B. Part 90 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 90 - PRIVATE LAND MOBILE RADIO SERVICES

1. The authority citation for Part 90 continues to read as follows:

AUTHORITY: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, and 332, unless otherwise noted.

2. Section 90.203 is amended by revising paragraph (a) and by adding a new paragraph (k), to read as follows:

Section 90.203 Type acceptance required.

(a) Except as specified in paragraphs (b) and (k) of this section, each transmitter utilized for operation under this part and each transmitter marketed as set forth in § 2.803 of Part 2 of this chapter must be of a type that is included in the Commission's current Radio Equipment List as type accepted for use under this part; or, be of a type that has been type accepted by the Commission for use under this part in accordance with the procedures in paragraph (a)(2) of this section.

* * * * *

(k) Ocean buoy and wildlife tracking transmitters operating in the band 40.66-40.70 MHz or 216-220 MHz under the provisions of Section 90.248 of this part shall be authorized under the notification procedure pursuant to Subpart J of Part 2 of this chapter.

3. A new Section 90.248 is added to read as follows:

Section 90.248 Wildlife and ocean buoy tracking.

(a) The frequency bands 40.66-40.70 MHz and 216-220 MHz may be used for the tracking of, and the telemetry of scientific data from, ocean buoys and animal wildlife.

(b) Transmitters operating under the provisions of this section are not subject to the technical standards contained in §§ 90.205-90.217. In lieu thereof, the transmitters shall comply with the provisions in this section.

(c) Classes of emission are limited to N0N, A1A, A2A, A2B, F1B, J2B, F2A, F2B, and/or F8E.

(d) The authorized bandwidth shall not exceed 1 kHz.

(e) Frequency stability:

(1) For transmitters operating in the 40.66-40.70 MHz frequency band, the frequency stability shall be sufficient to ensure that, at the carrier frequency employed, the sum of the authorized bandwidth plus the bandwidth required for frequency stability are confined within this band.

(2) In the 216-220 MHz frequency band, transmitters shall employ a minimum frequency stability of 0.005 percent (50 parts per million). The carrier frequency shall be selected to ensure that the sum of the authorized bandwidth plus the bandwidth required for frequency stability are confined within this band.

(3) The frequency stability standards shall be met over a temperature range of -30° to +50° centigrade at normal supply voltage and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of +20° C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(f) The maximum peak transmitter output (carrier) power shall not exceed 1 milliwatt for airborne wildlife applications, 10 milliwatts for terrestrial wildlife applications or 100 milliwatts for ocean buoys.

(g) Emissions appearing outside of the authorized bandwidth shall be attenuated below the carrier power by at least 26 dB, following the procedures specified in § 90.210(m).

4. Section 90.259 is amended, to read as follows:

Section 90.259 Assignment and use of frequencies in the bands 216-220 MHz and 1427-1435 MHz.

Frequencies in the bands 216-220 MHz and 1427-1435 MHz may be assigned to applicants under this part provided the bands are listed in the individual radio service under which they establish eligibility. Use of these bands is limited to telemetering purposes, except that the 216-220 MHz band may also be used for wildlife and ocean buoy tracking operations pursuant to § 90.248. All operation is secondary to Federal Government operations, and operation in the 216-220 MHz band is also secondary to the maritime mobile service and operation in the 1427-1429 MHz band is also secondary to the space operation service (earth-to-space). Base stations authorized in these bands shall be used to perform telecommand functions with associated mobile telemetering stations. Base stations may also command actions by the vehicle itself, but will not be authorized solely to perform this function. Airborne use will not be authorized. Each application will be coordinated with the Federal Government by the Federal Communications Commission and is subject to such technical and operational limitations as may be imposed by the government. Each application should include precise information concerning emission characteristics, transmitter frequency deviation, output power, type and directional characteristics, if any, of the antenna, and the minimum necessary hours of operation.