

GENERAL GUIDE FOR STANDARD BROADCAST PERMITTEES

The following information has been compiled for the holders of construction permits for new or modified standard broadcast facilities.

It is suggested that this guide be read and followed as the procedure outlined will enable you to sidestep most of the difficulties that have been encountered by stations in the past. Careful examination and study of this guide may be the means of saving you time, trouble and money.

It is recommended that you secure a copy of Part (3), Rules Governing Radio Broadcast Services from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C. This publication will prove beneficial to you in connection with the construction of your station and subsequent operation. Amendments to the Rules may be obtained by completing the coupon attached to the part and forwarding it to the Federal Communications Commission in Washington.

TIME TO CONSTRUCT STATION

Your construction permit requires completion of construction by a specific date. If it is found that the station will not be ready for operation by this date, an application for extension of time within which to construct the station must be filed on FCC Form 701 at least 30 days prior to the date of required completion of construction. Your attention is invited to Section 1.314 of the Rules and Regulations relative to automatic forfeiture of construction permits.

OWNERSHIP REPORTS

Sections 1.342 and 1.343 of the Rules require the filing of contracts, documents and other instruments, as well as information concerning the ownership and control of a broadcast facility. Since these rules cover permittees as well as licensees, you have been requested to report fully all the information covered by the rules, and to submit contracts, documents and other instruments referred to therein. This report should have been filed with the Commission within 30 days of the date of the grant of your construction permit. If for any reason there has been a delay in the filing of the report or submission of contracts and other instruments, it will be necessary for you to submit the required material at this time with an adequate explanation as to the reasons therefor. Final action cannot be taken on your license application until the above material has been filed.

Relevant to the filing of such ownership information, you should be full apprised of the requirements of Sec. 310(b) of the Communications Act. These sections require that the written consent of the Commission be requested and received prior to a transfer of control, or assignment of permit or license. Any deviations from ownership representations as set out in the appropriate ownership report; any change which amounts to a transfer of control or assignment of permit must not be consummated prior to the receipt of Commission consent. The proper forms and procedure to be followed in requesting Commission consent are described in Sections 1.321, 1.322 and 1.324 of the Rules.

EQUIPMENT TEST

Section 3.95 Equipment tests.--(a) During the process of construction of a standard broadcast station, the permittee, after notifying the Commission and Engineer in Charge of the radio district in which the station is located, may without further authority of the Commission, conduct equipment tests during the experimental period for the purpose of such adjustments and measurements as may be necessary to assure compliance with the terms of the construction permit, the technical provisions of the application therefor, the Rules and Regulations, and the applicable engineering standards. In addition, the Commission may authorize equipment tests other than during the experimental period if such operation is shown to be desirable to the proper completion of construction and adjustment of the transmitting equipment and antenna system. An informal application for such authority, giving full details regarding the need for such tests, shall be filed with the Commission at least two (2) days (not including Sundays and Saturdays and legal holidays when the offices of the Commission are not open) prior to the date on which it is desired to begin such operation.

(b) The Commission may notify the permittee to conduct no tests or may cancel, suspend, or change the date for the beginning of equipment tests as and when such action may appear to be in the public interest, convenience, and necessity.

(c) Equipment tests may be continued so long as the construction permit shall remain valid and shall be conducted only during the experimental period (12 midnight to local sunrise) unless otherwise specifically authorized.

(d) Inspection of a station will ordinarily be required during the equipment test period and before the commencement of program tests. After construction and after adjustments and measurements have been completed to show compliance with the terms of the construction permit, the technical provisions of the application therefor, the Rules and Regulations and the applicable engineering standards, the permittee should notify the Engineer in Charge of the radio district in which the station is located that it is ready for inspection.

(e) The authorization for tests embodied in this section shall not be construed as constituting a license to operate but as a necessary part of construction.

During the equipment test period you must perform the necessary adjustments of the transmitting equipment and antenna system and make the required measurements to show compliance with the construction permit.

Equipment tests are to be made during the experimental period. However, it is realized that stations employing directional antenna systems may not be able to make the final adjustments and take the necessary field intensity measurements required to show compliance with the construction permit during the normal experimental period. The Commission may authorize equipment tests for this purpose during daytime hours with either full power or power reduced as necessary.

to provide protection to other stations, provided, however, that the system has been adjusted as closely as possible to the expected operating values during the experimental period. Such authority will be considered on the basis of an informal application which sets forth the need therefor and the time required. In connection with requests for daytime operation cognizance must of course be taken of interference problems, if any, that may exist with respect to such temporary operation. In addition, problems may occur incident to construction, particularly where an existing station is authorized to increase facilities but desires to continue operation during construction. In either instance it is recommended that the Commission be advised of the problem at the earliest date, together with a suggested plan of procedure which includes a chronological list of the various temporary authorities that may be required from the beginning of construction to the commencement of program tests. This plan will receive careful consideration and will be either approved or another plan will be worked out with you which will become the pattern for subsequent informal requests during the transition period. Cooperation of this nature has been found to be mutually beneficial and prevents misunderstanding.

Equipment tests should be conducted with the carrier unmodulated except for voice identification each half hour, unless otherwise approved.

FREQUENCY CALIBRATION

It is an essential part of the test of all broadcast transmitting equipment to determine that the operating frequency is within the prescribed limits of the assigned frequency and that the frequency monitor is calibrated to within five parts per million of the assigned frequency (3 cycles at 550 kilocycles, 5 cycles at 1000 kilocycles, or 7.5 cycles at 1500 kilocycles).

To determine this, a check of the frequency should be made during the equipment test period with an external standard of known accuracy, such as the commercial frequency monitoring services offered by several firms. The operating frequency of the transmitter should be adjusted to show zero deviation on the monitor and then the check is made with the standard. If this reveals that the frequency is more than five parts per million from the assigned frequency, adjustments should be made and further check obtained until several readings indicate that the proper accuracy has been obtained and maintained.

ANTENNA IMPEDANCE MEASUREMENTS

In accordance with Sec. 3.14(h) the antenna impedance measurements for non-directional operation must be made on the antenna side of the antenna ammeter. Final antenna impedance measurements must be made after all construction including tower fences, burial of ground radials, etc., have been completed. This final value is to be inserted in the enclosed FCC Form No. 302.

PROOF OF PERFORMANCE

Sec. 3.33 (b) of the Rules requires the filing of a proof of performance if your construction permit specifies a directional antenna. Sections 3.151 and 3.186 set forth information in regard thereto. However, there are a number of things which should be carefully considered before and while conducting the proof of performance.

In the first place it is suggested that a complete non-directional proof of performance be made, even if it is not required by your construction permit,

as the data obtained can be used to good advantage in evaluating the directional proof of performance measurements. If your construction permit requires a non-directional proof of performance, or if you find it desirable to make one, then before taking the non-directional field intensity measurements the towers not used should be effectively isolated and the resistance of the non-directional antenna be determined.

The field intensity measurements for non-directional operation should be taken as nearly as possible in accordance with the Technical Standards and with special attention to measurements between 0.1 and 2 miles. Determination of the location of the points where these field intensity measurements are to be made should be considered beforehand to facilitate the non-directional proof and to assure that the distances involved are accurate. Field intensity measurements taken at locations beyond ten times the spacing between the directional antenna elements should be taken for non-directional as well as directional operation at each measuring location for the purpose of clearly relating the directional radiation with the non-directional radiation. Since the non-directional inverse distance field intensity at a distance of one mile can now be accurately determined, the corresponding directional inverse distance field intensity at a distance of one mile can also be determined in the most reliable manner known at this time.

The proof of performance report should contain explanations of the method of isolation of all towers not used during the non-directional operation; reasons why the phase monitor phase readings differ, if they do, from those specified in the construction permit; and reasons why the sample current ratios differ, if sample current magnitudes are submitted and differ from those specified.

In order to definitely establish monitoring point locations, ordinary snapshots, clear and sharp, must be taken of each monitoring point, with the field intensity meter in its measuring position, and with the camera so located that its field takes in as many permanent landmarks as possible. These photographs may be submitted as part of the monitoring point location descriptions.

PERFORMANCE MEASUREMENTS

Sec. 3.47 requires all standard broadcast stations to make certain performance measurements at yearly intervals, with one such set of measurements being made during the four-month period preceding the date of filing application for renewal of station license. It should be noted that the measurements are not to be submitted to the Commission but are to be retained at the station and be available upon request by any duly authorized representative of the Commission.

The Commission does not specify the type of equipment to be used in making the performance measurements nor does it list or approve equipment for this purpose. A station may purchase its own equipment or may have the measurements made at the proper intervals by others having the equipment and personnel qualified for such work. However, the Commission considers it desirable for licensees to have the equipment available and to have their own technical personnel make the measurements when it is possible to do so.

The ultimate reason for the measuring procedure is to afford a means of locating and correcting defective equipment and may be termed a "preventive maintenance procedure". Obviously, preventive maintenance is best carried out as a continuing process, rather than an intermittent one where the test equipment is only available for a short period once each year.

In the event your construction permit requires performance measurements prior to the commencement of program tests (ordinarily required for composite transmitters), three copies of the measurements must be submitted the Commission as a part of the application for station license.

The performance requirements for standard broadcast equipment are set out in Sec. 3.40. These requirements will, of course, have to be considered in determining specifications for the measuring equipment. Measurements are to be made at the transmitter output with the antenna connected for normal operation. Measurements made with an artificial antenna will not be considered satisfactory.

INSPECTION

Preparation of the necessary applications and appropriate notifications to the Engineer in Charge of your radio district in accordance with Sec. 3.95(d) will facilitate inspection of your station. Timely receipt by the Engineer in Charge of your District of notice of readiness for inspection without undue delay. In order to further facilitate this inspection, it will be appreciated if you will assure yourself that all construction, and adjustments and measurements have been completed and all necessary technical items which are required for the operation and maintenance of the station, and which are included or associated with the transmitter, frequency monitor, modulation monitor and accessories in regular use, as well as these parts retained as spares, have been obtained and are at the station prior to inspection. All operating authorizations received from the Commission, such as construction permit, telegraphic or letter communications granting authority to a station, should be posted in the room where the transmitter is located. It is necessary, of course, that the operator license of each station operator be posted in accordance with the Commission's Rules and Regulations.

The engineering field office's efforts are directed to the end that inspection of your broadcast station may be made timely, thoroughly, and with completeness of detail in order that there shall be no unnecessary delay in reporting to the Commission the facts found upon inspection. The results of the Engineer's inspection is a prerequisite to a consideration of a request for program test authority in most instances.

SECTION 3.96: Program Test

"Program tests.--(a) Upon completion of construction of a standard broadcast station in accordance with the terms of the construction permit, the technical provisions of the application therefor, and the Rules and Regulations and applicable engineering standards and when an application for station license has been filed showing the station to be in satisfactory operating condition, the permittee may request authority to conduct program tests: Provided. That such request shall be filed with the Commission at least ten (10) days prior to the date on which it is desired to begin such operation and that the Engineer in Charge of the District in which the station is located is notified. All data necessary to show compliance with the terms and conditions of the construction permit must be filed with the license application. If the station is using a directional antenna, a proof of performance must also be filed as required by Section 3.33(b).

(b) Program tests shall not commence until specific Commission authority is received. The Commission reserves the right to change the date of the beginning of such tests or to suspend or revoke the authority for program tests as and when such action may appear to be in the public interest, convenience, and necessity.

"(c) Unless sooner suspended or revoked program test authority continues valid during Commission consideration of the application for license and during this period further extension of the construction permit is not required. Program test authority shall be automatically terminated by final determination upon the application for station license.

(d) All operation on program test authority shall be in strict compliance with the rules governing standard broadcast stations and in strict accordance with representations made in the application for license pursuant to which the tests were authorized.

(e) The granting of program test authority shall not be construed as approval by the Commission of the application for station license."

You are cautioned not to schedule program service until program tests have been specifically authorized by the Commission. An increasing number of permittees have arranged for formal "openings", with elaborate programs and invited guests, without making certain that their intended operation meets technical and other requirements. Consequently, the Commission has found it necessary to deny last-minute pleas by stations which have advertised air debuts but which have not complied with the terms of their permits.

It is becoming increasingly difficult to "squeeze" new stations into the crowded broadcast spectrum. In order to fit in, stations must meet exacting technical requirements. The growing number of complex antenna systems adds to the difficulty in making adjustments to the fine point required. You should realize that the majority of discrepancies and indications of actual noncompliance with the terms of the construction permit are not apparent until the Commission has had time to examine, not only the information submitted by you, such as antenna resistance measurements, and proof of performance, but also the inspection report from the engineer in charge of the district in which the station is located. In many instances these discrepancies can be cleared or corrected in a few days and, had the permittee provided some leeway, a postponement of regular operation would not be necessary.

In view of the present situation, and in accordance with Section 3.96 the Commission will not authorize program tests unless a request for authority to conduct program tests precedes the proposed date of commencement of tests by at least ten days, and is accompanied by the license application and data to indicate that the construction and operation is in accordance with the Commission's Rules and Regulations, and terms of the construction permit. The interests of the public, your station and the Commission will best be served if you will arrange to submit to the Commission the required forms and data at least ten days prior to the desired date for commencement of program tests.

In no event should definite arrangements for regular operation be made until specific authority is received from the Commission.

LICENSE APPLICATION

Section 1A, Form 302, must be signed by the proper party in accordance with paragraph "F" of the instructions.

Paragraph 4 of Section 1 must contain the actual cost of construction authorized under the construction permit.

Paragraph 5 of Section 1 requires that a detailed balance sheet be filed with the license application, showing all the assets, liabilities and net worth as of date of completion of construction. In the event liabilities exceed current assets (cash, accounts receivable, etc.) on the balance sheet being submitted, submit a detailed statement showing your plan of financing such liabilities and the operation of the station, should operating expenses exceed operating revenues. It is necessary that specific source or sources of funds be supported by definite legally enforceable commitments and not proposals which cannot be given consideration in determining the financial status of an applicant.

Paragraph 1, Section II(a), requires that all paragraphs be answered. It is suggested that the appropriate information be entered in each paragraph of this section even though the same information may be set forth in a different manner in the engineering report accompanying the license application.

Paragraph 7 of Section II(a) requires antenna impedance measurements. These measurements must be approved before program tests will be authorized. The value to be inserted in this paragraph is the actual measured impedance. In the case of directional antenna systems, the actual measured value is to be used and not the calculated value as determined in accordance with Section 3.54 In addition to the above data the following should be submitted in triplicate:

1. Complete data taken (tabulated).
2. A graph of frequency versus resistance and reactance.
3. Description of method used to take readings (including schematic circuit diagrams of the measurement circuit and of the antenna system showing point of measurement and location in circuit of both regular and remote antenna ammeters).
4. Manufacturer's name of each calibrated instrument used and manufacturer's rated accuracy.
5. Accuracy, date, and by whom each instrument was last calibrated.
6. Qualifications of engineer making measurements.

Paragraph 11 of Section II(a) requires frequency calibration data. This calibration must be approved before program test will be authorized.

Section II(a) must be dated no later than the date inserted in Section I.

Paragraph 13 of Section II (a) requires information to be supplied as any changes which may have been made when the actual construction is different than that authorized. In this connection the reason for even one foot difference in tower height (both above ground and/or above mean sea level) must be explained.

The Federal Communications Commission desires to assist you in every possible manner. Compliance with the instructions contained in this guide will result generally in a more expeditious processing of applications and will further assist the Commission in its determination looking to the final licensing of your broadcast station. Your full cooperation will be appreciated.

RENEWAL OF LICENSE

Licenses for Standard, FM and Television broadcast stations expire on a geographical basis on the dates shown in Appendix I. It is necessary that application for renewal of license be filed ninety days prior to the expiration date. In general, the Commission will not issue an initial license less than four months prior to the date it would be necessary to renew the license unless specifically requested by applicant. In the event the initial license is granted less than four months prior to the expiration date of that license, it will be necessary to file a complete renewal application. (See Section 1.320 of the Rules).

Enc: 302(4)

EXPIRATION DATE OF LICENSES IN ACCORDANCE WITH RULES EFFECTIVE AUGUST 1, 1951

ALABAMA	4-1-58	MONTANA	4-1-59
ALASKA	2-1-60	NEBRASKA	6-1-59
ARIZONA	10-1-59	NEVADA	10-1-59
ARKANSAS	6-1-58	NEW HAMPSHIRE	4-1-60
CALIFORNIA	12-1-59	NEW JERSEY	6-1-60
COLORADO	4-1-59	NEW MEXICO	10-1-59
CONNECTICUT	4-1-60	NEW YORK	6-1-60
DELAWARE	8-1-60	NORTH CAROLINA	12-1-60
DISTRICT OF COLUMBIA	10-1-60	NORTH DAKOTA	4-1-59
FLORIDA	2-1-58	OHIO	10-1-58
GEORGIA	4-1-58	OKLAHOMA	6-1-59
GUAM	2-1-60	OREGON	2-1-60
HAWAII	2-1-60	PENNSYLVANIA	8-1-60
IDAHO	10-1-59	PUERTO RICO	2-1-58
ILLINOIS	12-1-58	RHODE ISLAND	4-1-60
INDIANA	8-1-58	SOUTH CAROLINA	12-1-60
IOWA	2-1-59	SOUTH DAKOTA	4-1-59
KANSAS	6-1-59	TENNESSEE	8-1-58
KENTUCKY	8-1-58	TEXAS	8-1-59
LOUISIANA	6-1-58	UTAH	10-1-59
MAINE	4-1-60	VERMONT	4-1-60
MARYLAND	10-1-60	VIRGINIA	10-1-60
MASSACHUSETTS	4-1-60	VIRGIN ISLANDS	2-1-58
MICHIGAN	10-1-58	WASHINGTON	2-1-60
MINNESOTA	4-1-59	WEST VIRGINIA	10-1-60
MISSISSIPPI	6-1-58	WISCONSIN	12-1-58
MISSOURI	2-1-59	WYOMING	10-1-59

