

(5) Using transmission line current meter at transmitter as remote reading ammeter. See paragraph (c) of this section.

(6) Using the indications of the antenna (phase) monitor, provided that when the monitor is used to obtain remote reading indication of non-directional antenna base current, the monitor calibration can be independently made and maintained for each mode of operation.

(b) Devices used for obtaining remote reading antenna or common point current indications, except antenna monitor coupling elements, shall be located at the same point as, but below (transmitter side) the associated main ammeter.

(c) In the case of shunt-excited antennas, the transmission line current meter at the transmitter may be considered as the remote antenna ammeter provided the transmission line is terminated directly into the excitation circuit feed line, which shall employ series tuning only (no shunt circuits of any type shall be employed) and insofar as practicable, the type and scale of the transmission line meter should be the same as those of the excitation circuit feed line meter (meter in slant wire feed line or equivalent).

(d) Each remote reading ammeter shall be accurate to within 2 percent of the value read on its corresponding regular ammeter.

(e) All remote reading ammeters shall conform with the specifications for regular antenna ammeters.

(f) Meters with arbitrary scale divisions may be used provided that calibration charts or curves are provided at the transmitter control point showing the relationship between the arbitrary scales and the reading of the main meters.

(g) If a malfunction affects the remote reading indicators of the antenna or common point ammeter, the operating power may be determined by a method using alternative procedures as described in § 73.51.

[41 FR 36817, Sept. 1, 1976, as amended at 48 FR 38477, Aug. 24, 1983; 49 FR 49850, Dec. 24, 1984; 50 FR 32416, Aug. 12, 1985; 60 FR 55480, Nov. 1, 1995]

#### § 73.58 Indicating instruments.

(a) Each AM broadcast station must be equipped with indicating instruments which conform with the specifications described in § 73.1215 for determining power by the direct and indirect methods, and with such other instruments as are necessary for the proper adjustment, operation, and maintenance of the transmitting system. However, auxiliary transmitters with a nominal power rating of 100 watts or less are not required to be equipped with instruments to determine power by the indirect method provided that the licensee can determine the antenna input power at all times.

(b) Since it is usually impractical to measure the actual antenna current of a shunt excited antenna system, the current measured at the input of the excitation circuit feed line is accepted as the antenna current.

(c) The function of each instrument shall be clearly and permanently shown on the instrument itself or on the panel immediately adjacent thereto.

(d) In the event that any one of these indicating instruments becomes defective when no substitute which conforms with the required specifications is available, the station may be operated without the defective instrument pending its repair or replacement for a period not in excess of 60 days without further authority of the Commission. If the defective instrument is the antenna current meter of a nondirectional station which does not employ a remote antenna ammeter, or if the defective instrument is the common point meter of a station which employs a directional antenna and does not employ a remote common point meter, the operating power shall be determined by a method described in § 73.51(a)(1) or § 73.51(d) during the entire time the station is operated without the antenna current meter or common point meter. However, if a remote meter is employed and the antenna current ammeter or common point meter becomes defective, the remote meter can be used to determine operating power pending the return to service of the regular meter.

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(e) If conditions beyond the control of the licensee prevent the restoration of the meter to service within the above allowed period, information requested in accordance with § 73.3549 may be filed by letter with the FCC in Washington, DC, Attention: Audio Division, Media Bureau, to request additional time as may be required to complete repairs of the defective instrument.

[41 FR 36817, Sept. 1, 1976, as amended at 48 FR 38477, Aug. 24, 1983; 49 FR 49850, Dec. 24, 1984; 50 FR 32416, Aug. 12, 1985; 51 FR 2707, Jan. 21, 1986; 53 FR 2498, Jan. 28, 1988; 63 FR 33876, June 22, 1998; 66 FR 20755, Apr. 25, 2001; 67 FR 13231, Mar. 21, 2002]

### § 73.61 AM directional antenna field strength measurements.

(a) Each AM station using a directional antenna must make field strength measurements at the monitoring point locations specified in the instrument of authorization, as often as necessary to ensure that the field at those points does not exceed the values specified in the station authorization. Additionally, stations not having an approved sampling system must make the measurements once each calendar quarter at intervals not exceeding 120 days. The provision of this paragraph supersedes any schedule specified on a station license issued prior to January 1, 1986. The results of the measurements are to be entered into the station log pursuant to the provisions of § 73.1820.

(b) Partial proof of performance measurements using the procedures described in § 73.154 must be made whenever the licensee has reason to believe that the radiated field may be exceeding the limits for which the station was most recently authorized to operate.

(c) A station may be directed to make a partial proof of performance by the FCC whenever there is an indication that the antenna is not operating as authorized.

[50 FR 47054, Nov. 14, 1985]

### § 73.62 Directional antenna system operation and tolerances.

(a) Each AM station operating a directional antenna must maintain the relative amplitudes of the antenna cur-

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rents, as indicated by the antenna monitor, within 5% of the values specified on the instrument of authorization. Directional antenna relative phases must be maintained within 3 degrees of the values specified on the instrument of authorization.

(b) In the event of a failure of system components, improper pattern switching or any other event that results in operation substantially at variance from the radiation pattern specified in the instrument of authorization for the pertinent time of day, operation must be terminated within three minutes unless power can be reduced sufficiently to eliminate any excessive radiation. *See* § 73.1350(e).

(1) Any variation of operating parameters by more than  $\pm 15$  percent sample current ratio or  $\pm 10$  degrees in phase, any monitor point that exceeds 125 percent of the licensed limit, or any operation at variance that results in complaints of interference shall be considered operation substantially at variance from the license and will require immediate corrective action.

(2) [Reserved]

(c) In the event of minor variations of directional antenna operating parameters from the tolerances specified in paragraph (a) of this section, the following procedures will apply:

(1) The licensee shall measure and log every monitoring point at least once for each mode of directional operation. Subsequent variations in operating parameters will require the remeasuring and logging of every monitoring point to assure that the authorized monitoring point limits are not being exceeded. The licensee will be permitted 24 hours to accomplish these actions; provided that, the date and time of the failure to maintain proper operating parameters have been recorded in the station log.

(2) Provided each monitoring point is within its specified limit, operation may continue for a period up to 30 days before a request for Special Temporary Authority (STA) must be filed, pursuant to paragraph (c)(4) of this section, to operate with parameters at variance from the provisions of paragraph (a) of this section.