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Communications Equipment Installation - Site Surveys - Broadcast Support Services

Partial Proof of Performance

Proposed Station :	W217BJ	Freeport, IL	91.3 mHz
AM Station:	WFRL	Freeport, IL	1570 kHz

Proposed Licensee: Community Public Radio, Inc.
AM Licensee: Mayfair Broadcasting

At the request of the Permittee for W217BJ I was asked to perform a Partial Proof of Performance of AM Station WFRL, Freeport, IL prior and after construction of an FM translator W217BJ as required by Special Operating Condition 3 to the Construction Permit.

METHODOLOGY

In accordance with 47CFR 73.1692(d) and 73.154 a proof is necessary for this AM station as it is located at 2.85km from the FM transmitter site, within the 3.2km required by 73.1692(d).

Due to some mix-up in the application and subsequent grant of the construction permit (BPFT19990902TB, subsequently modified by CP BMPFT20010919ABE) the coordinates for the new translator are in error by approximately 1.78km. There is no tower at the location specified in the CP, but the site should have been at coordinates N42-19-45.40, W089-37-12.0 (NAD27). A further description will be submitted by the applicant in the License to Cover application. This study is based on the distance between the correct location and the WFRL tower site.

On March 8, 2004 I contacted the Chief Engineer for WFRL who provided me with a copy of the monitoring point locations. There are three (3) monitoring points specified for WFRL: 025 degrees at 4.70mi/5.45km, 065 degrees at 3.39mi/7.09km and 245 degrees at 4.39mi/7.58. In accordance with 73.154(a) I added a fourth radial to be shown as 000 degrees which would be an adjacent radial to the 025 degree MP radial.

The equipment used for this study includes, but was not limited to:

Potomac Instruments FIM-21 , serial number 878
Potomac Instruments FIM-41, serial number 1387
DeLorme StreetAtlas™ 2004
Magellan GPS315

Both Potomac units were verified against each other for accuracy. Only the FIM-41 was used to take measurements. However, at the Monitor Points, both units were used for verifiability.

The StreetAtlas™ program was used to align the radials to determine the measurement points and the Magellan unit was used to monitor the distance from the WFRL transmitter site. Both units were set for NAD27 and True North orientation.

I first determined the radials in the software, based on NAD27 datum and True North orientation. Once the radials were described and plotted in the software I began driving the radials and making measurements as I went.

Local sunrise/sunset was determined from the US Naval Observatory website and was found to be 6:20 am and 5:59pm for March 9 and 6:18am and 6:00pm for March 10. All calculations were made 2 hours after sunrise and 2 hours prior to sunset.

Good engineering practices were employed in the measurement process such as not testing under power lines or near metal objects, etc. The weather for both days was substantially the same: clear, cool and windy, temperature in the mid 40's.

Pre construction measurements were accomplished on March 9, then new W217BJ antenna/feedline was installed that afternoon and the post construction measurements were taken on March 10.

Based on the comparison of the two sets of measurements, I found no significant difference between them. Only three points of the 32 measured were found to be different, but only by 1 mv/m. This is attributable to allowable error during the measurement process and is well within accepted practices.

My work of this nature has been accepted by the Commission in the past.

Based on the measurements and subsequent evaluation, I find that the construction of W217BJ has made NO impact on the directional antenna pattern of AM station WFRL.

/s/

Harold S. "Steve" Vogt
Project Engineer