

ENGINEERING REPORT
FM Translator Minor
Construction Permit Application

for

W275BH – Lawrence, MA
License No. BLFT-20110610ACT

Power Increase and
Directional Antenna Change

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TABLE OF CONTENTS

Discussion of Report

FM Booster/Fill-in Translator Requirements (See Discussion)

Interference Requirements

Exhibit 13.1 - Copy of ASR No. 1005780

Exhibit 13.2 - Vertical Plan of Antenna System and Support Tower

Exhibit 13.3 - Present vs Proposed Service Contour Study

Exhibit 13.4 - Proposed vs Primary Station Service Contour Study

Contour Overlap Requirements

Exhibit 13.5 - Tabulation of Proposed Translator Allocation

Exhibit 13.6 - §74.1204(d) 2nd Adjacent Channel Waiver Request Showing

Exhibit 13.7 - Proposed Directional Antenna Pattern Study

Exhibit 13.8 - Contour Protection Studies Toward WLLO-LP - Londonderry, NH

Exhibit 13.9 - Contour Protection Studies Toward BNPFT-20030317JRJ

Exhibit 13.10 - Contour Protection Studies Toward BNPFT-20030317KLX

TV Channel 6 Protection Requirements (See Discussion)

Unattended Operation Requirements (See Discussion)

Multiple Translator Requirements (See Discussion)

RF Radiation Study Requirement

Exhibit 17.1 - RF Compliance Study

(Exhibit numbering is in response to FCC Online Form 349, Section III-A)

Discussion

This firm has been retained to prepare the required engineering report in support of a minor construction permit application for FM translator W275BH – Lawrence, MA, License No. BLFT-20110610ACT. W275BH is presently authorized to operate on 102.9 MHz with 0.097 kW of circularly polarized directional power with an antenna COR of 180 meters AMSL. A power increase and directional antenna change are requested from a slightly higher antenna height at the present antenna site. Operation on CH275D with 0.250 kW ERP at a COR of 181 meters AMSL is requested. The facility will operate with an alternate vertical only polarized directional antenna. The translator will continue to rebroadcast AM station WNNW(AM), Lawrence, MA, 800 kHz, Facility ID No. 14752.

The proposed facility will continue to be mounted on existing ASR tower 1005780. A copy of the existing Antenna Structure Registration has been included in **Exhibit 13.1**. A copy of the vertical antenna system has been included in **Exhibit 13.2**. As this proposal will not increase the overall tower height, it is believed the FAA need not be notified.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or facility with the exception of WODS(FM) - Boston, MA CH277B and WKLB-FM - Waltham, MA CH273B. General allocation details are found in **Exhibit 13.5**. §74.1204(d) second adjacent channel given interference waivers are requested toward WODS(FM) and WKLB-FM included in **Exhibit 13.6**. There are three additional facilities close enough to merit further protection showings. FMCommander™ maps and tabulations of contours toward WLLO-LP - Londonderry, NH; APP275D – Boston, MA (BNPFT-20030317JRJ); and APP275D – Boston, MA (BNPFT-20030317KLX) have been included in **Exhibit(s) 13.8 to 13.10**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note the use of the USGS 03 second terrain database for all allocation, contour and HAAT calculations contained here-in.

The translator site and proposed 60 dBu contour lie inside of the WNNW(AM) 2 mV/m daytime contour and within a 25 mile radius from the AM site. A map of the proposed service area in relation to the primary AM station and 2 mV/m AM service contour has been included in **Exhibit 13.4**.

Regarding protection of international concerns, the facility is and will remain within 320 km of the common border between the United States and Canada. As noted in **Exhibit 13.5**, all Canadian concerns have been fully protected. In addition, the application certifies that the proposed 34 dBu F(50:10) contour will not enter Canadian soil. A copy of the 34 dBu F(50:10) contour will be supplied upon request.

The proposed operating parameters have been changed from the licensed values, however the proposed service contour serves a portion of the present service area as seen in **Exhibit 13.3**.

Discussion (continued)

RADIATION PROTECTION: The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1307(b)(3) of the Commission's rules concerning RF contributors of less than 5%. ***Exhibit 17.1*** provides the details of the study that was made to demonstrate compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.

DISTANCES TO CONTOURS: The following tabulation of the distances to the proposed service contours results from calculations performed in accordance with §73.313(d) and §73.333 Figure 1 utilizing the USGS 03 terrain database.

| N. Lat. = 424026.0 W. Lng. = 711126.0 HAAT and Distance to Contour, FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC | | | | | | |
|--|-------|-------|--------|--------|-------|-------|
| Azi. | AV EL | HAAT | ERP kW | dBk | Field | 60-F5 |
| 000 | 46.2 | 134.8 | 0.2500 | -6.02 | 1.000 | 14.93 |
| 030 | 22.0 | 159.0 | 0.2500 | -6.02 | 1.000 | 16.47 |
| 060 | 35.9 | 145.1 | 0.2500 | -6.02 | 1.000 | 15.58 |
| 090 | 48.4 | 132.6 | 0.2500 | -6.02 | 1.000 | 14.80 |
| 120 | 49.1 | 131.9 | 0.0600 | -12.22 | 0.490 | 10.39 |
| 150 | 29.6 | 151.4 | 0.0156 | -18.06 | 0.250 | 7.97 |
| 180 | 33.8 | 147.2 | 0.0140 | -18.53 | 0.237 | 7.64 |
| 210 | 43.9 | 137.1 | 0.0653 | -11.85 | 0.511 | 10.81 |
| 240 | 46.7 | 134.3 | 0.2500 | -6.02 | 1.000 | 14.90 |
| 270 | 44.3 | 136.7 | 0.2500 | -6.02 | 1.000 | 15.05 |
| 300 | 53.0 | 128.0 | 0.2500 | -6.02 | 1.000 | 14.53 |
| 330 | 51.5 | 129.5 | 0.0196 | -17.08 | 0.280 | 7.79 |
| Ave EL= 42.03 M HAAT= 138.97 M AMSL= 181 | | | | | | |