



Technical Statement In Support of an STA WXLW, 950 kHz, Indianapolis, IN

6 July 2015

Summary:

WXLW operates a three tower directional array with 5000 watts daytime and 36 watts nighttime, and the same pattern day and night (BMML-20120809ACZ). WXLW has recently filed an application for minor changes under BP-20150612ABD) which has been accepted for filing.

WXLW has been operating the same facilities since the 1940's, with towers of that era. A recent inspection has determined that the towers are no longer safe and need to be demolished. The present intent is to proceed with construction of the replacement towers by sequencing demolition and replacement so one radiating tower is always available for use.

This STA request is for 1000 watts daytime and 14 watts nighttime, non-directional. Further, the request is that any one of the three towers can be employed, as construction timing dictates. Should more than one tower be standing at any time, the unused tower(s) will be detuned.

Discussion:

Daytime: The present and replacement towers will be 81.5 electrical degrees high. The FCC Section 73.190 Figure 8 Program tool provides an efficiency of 293.6 mv/m/km for 1000 watts. The existing day standard pattern minimum is 291.0 mv/m. Therefore, it is concluded that 1000 watts non-directional STA operation will maintain the worst case protection to all co- and adjacent channel stations.

Nighttime: Figure 7C of the BP-20150612ABD Engineering Exhibit discloses that the controlling nighttime interference protection for WXLW is towards WWJ, Detroit, MI. The permitted radiation from WXLW towards WWJ is 30.74 mv/m between 21.63 and 33.61 degrees elevation at an azimuth of 45.34 degrees true. Adjusting for the vertical radiation characteristic of an 81.5 degree tower, the permissible radiation at ground elevation would increase by a factor of $1.12 \times 30.74 = 34.53$ mv/m. A nondirectional nighttime power of 14 watts, using the Figure 8 Program, would radiate 34.74 mv/m on the ground, or 31.10 mv/m towards WWJ at the pertinent angle. Therefore, it is concluded that a 14 watt non-directional STA operation would substantially protect WWJ and all other nighttime interference factors.

Submitted:

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