

**102W279AQ Comprehensive Engineering Exhibit  
Minor Change Application  
October 2013**

W279AQ is seeking to operate with a power of 212 watts ERP at a location 275 meters above ground level upon an existing tower site identified by ASR No. 1020785, utilizing a non-directional antenna.

Attached as Figure 1 is an allocation overlap report wherein it can be determined that the proposed location is within the protected contour of 2nd adjacent facilities of co-located KLOU and WHHL, which located a few kilometers away. WHHL is the facility with the weakest signal as can be seen in Figure 2 it presents an 87 dBu contour at the proposed translator site which must be protected from predicted interference and thus is the controlling protected signal level. As it will require a 127 dBu signal to cause predicted interference with the 87 dBu signal of WHHL based upon the standard FCC protection ratio of +40 db. The line of site formula<sup>1</sup> was utilized to determine that only an area within 46 meters of the transmit antenna would have a signal strength value this high, by reference to the image of the transmit location in Figure 3 it can be seen that no habitable space exists within this area.

The facility will be utilized as a “fill-in” translator for primary station KJMJ-FM. The 60 dBu service contour of the proposed facility is within that of the primary station, as demonstrated in Figure 4, where it can also be seen that the 60 dBu contour of the facility as proposed overlaps the existing authorized facility, making this application compliant for filing as a minor modification application.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, “Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation.”

The proposed antenna system is an ERI “100A-2”, 2- element; 1.0 wave spaced antenna mounted 275 meters above ground. As this element type is not modeled in any current computer program, for purposes of this analysis the FM Model program has been set to calculate values for a “worst case” type of antenna element array, “Ring Stub”, operated with an effective radiated power of 0.212 Kilowatts in both the horizontal and vertical planes 100 meters above ground. At 2 meters above the surface, at 68.4 meters from the base of the tower, this proposal will contribute worst case, 0.11 microwatts per square centimeter, or 0.01 percent of the allowable ANSI limit for controlled exposure, and 0.05 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC exposure limit at all locations extending out from the base of

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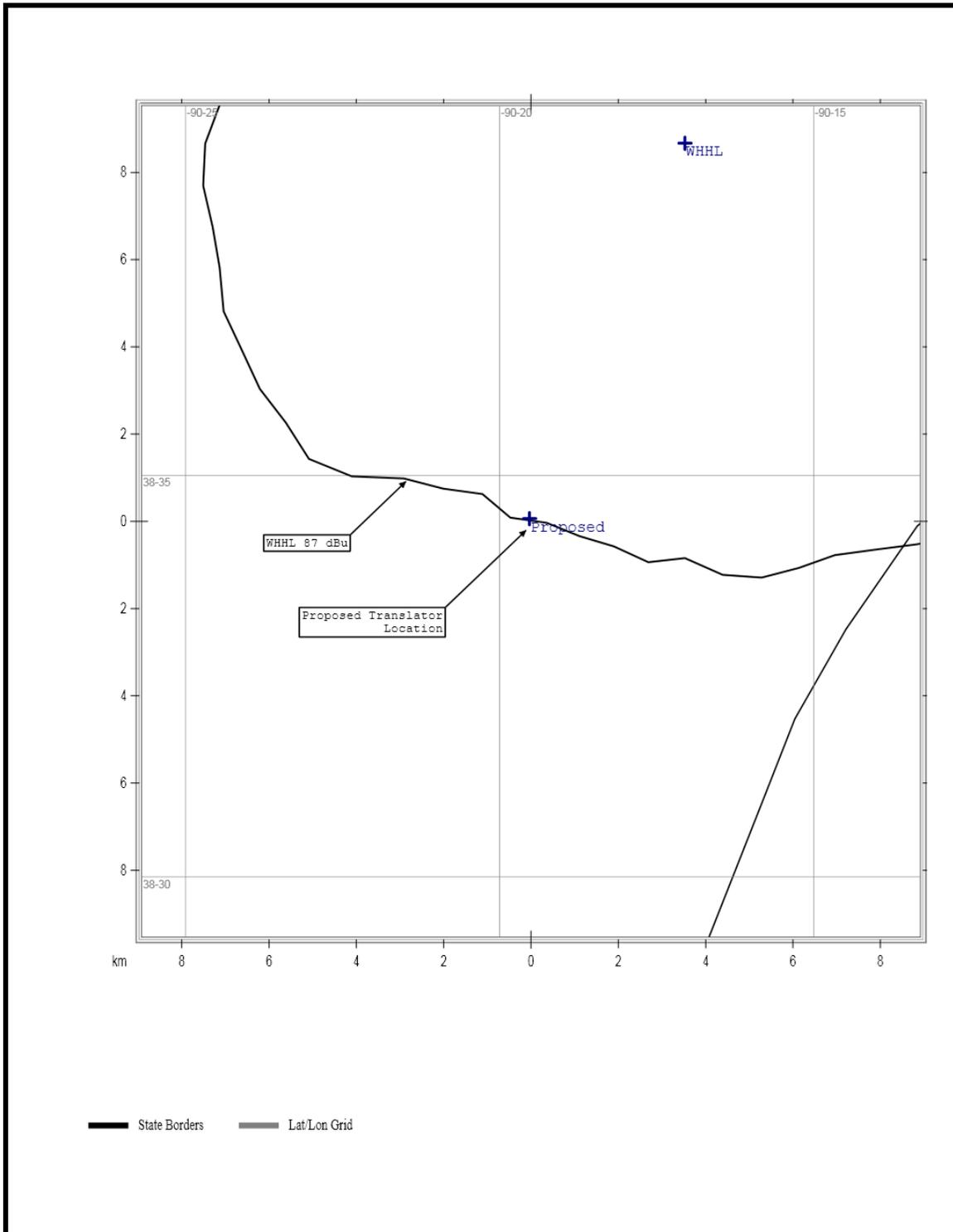
<sup>1</sup>  $ReachDistMeters = 106.92 - (20 * (\log_{10}[DistMeters]/1000)) + [ERP \text{ in dBk}]$

the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable exposure limit. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.



**Figure 2. Contour Map**



**Figure 3. Transmitter Location**



**Figure 4. Contour Overlap Map**

