

# Comprehensive Engineering Exhibit

## Minor Modification BPFT - 20110823ACL

### Facility ID No. 140483, W228BY

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This exhibit is part of an application for minor modification of granted permit BPFT - 20110823ACL for translator W228BY. This requests only a change of the permitted antenna manufacturer. No change in location, height, power, channel, or antenna pattern is being requested.

### Antenna Location

The permitted location is on ASR 1047672 at 152 meters above ground, to serve as a fill-in translator for standard band station WIOD. This application seeks only a change in antenna manufacturer and model to specify "SWR" "FMEC/1-PLUS-TA" with no other changes in the permit.

Below as Figure 1 is a spacing study from which it can be determined that this proposal is within the protected contour of second adjacent channel stations WFEZ and WMIA-FM, and the co-channel application for a new assignment, BNPH-20110523AEW.

### Regarding BNPH-20110523AEW

Section 74.1204(a) states that *"An application for an FM translator station will not be accepted for filing if the proposed operation would involve overlap of predicted field contours with any other authorized commercial or noncommercial educational FM broadcast stations, FM translators, and Class D (secondary) noncommercial educational FM stations; or if it would result in new or increased overlap with an LP100 station, as set forth: "*

The allotment at Islamorada, Florida has at this time no authorized facility, BNPH-20110523AEW is an application for a "new station"<sup>1</sup> which has yet to be granted. Thus no "authorized" station exists to which protection must be given.

The translator licensee recognizes that a translator facility is secondary to that of a higher class station and will respect all protections given authorized facilities.

### Regarding WFEZ and WMIA-FM.

Section 74.1204(d) states that *"The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable."*

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<sup>1</sup> See response to question 4 of Section 1 of original application for BNPH- 20110523AEW dated May 23, 2011

We will demonstrate that a lack of population and/or other factors allow this proposal to be compliant with 74.1204. The process commonly called “Living Way”<sup>2</sup>, allows for the use of U/D Analysis, also known as “signal strength ratio methodology” to be utilized. In this instant case the facilities of to be protected are second adjacent and are to be afforded protection from signals 40 dB stronger than they present in the location of the permitted antenna location.

Figure 2 is a map showing the predicted signal contour of WFEZ and WMIA-FM at the permitted antenna location utilizing the FCC F50:50 curve. Both stations operate from the same antenna with the same authorized power thus both present a signal of 86.3 dBu. Thus, protection of an 86.3 dBu contour from a signal produced by this proposal exceeding 126.3 is required.

Utilizing the line of sight equation<sup>3</sup> it has been determined that a 126.3 dBu signal is developed by 250 watts, as permitted, emitted by an isotropic radiator extends only out to a distance of 53.7 meters. As the antenna is mounted 152 meters above ground, and by examination of the image in Figure 3 showing the mounting location and a 53.7 meter radius distance thereof, it can be seen that no habitable space extends into a 53.7 meter radius of the antenna, the provisions of the rules section concerning prohibited overlap will not apply as it has been demonstrated that no actual interference will occur due to a lack of population and other factors as applied in this instant proposal.

#### **Minor Application Justification**

Figure 4 demonstrates the proposed 60 dBu contour will continue to be contained within a 25 mile radius and the 1 mV/m contour of primary station WIOD, and that the existing and proposed contours of this facility overlap.

#### **RF Statement**

Due to the complexities of the RF environment of this shared use site, the applicant will take power density measurements prior to filing of an application for license, for demonstrating compliance with 73 CFR 1.1306.

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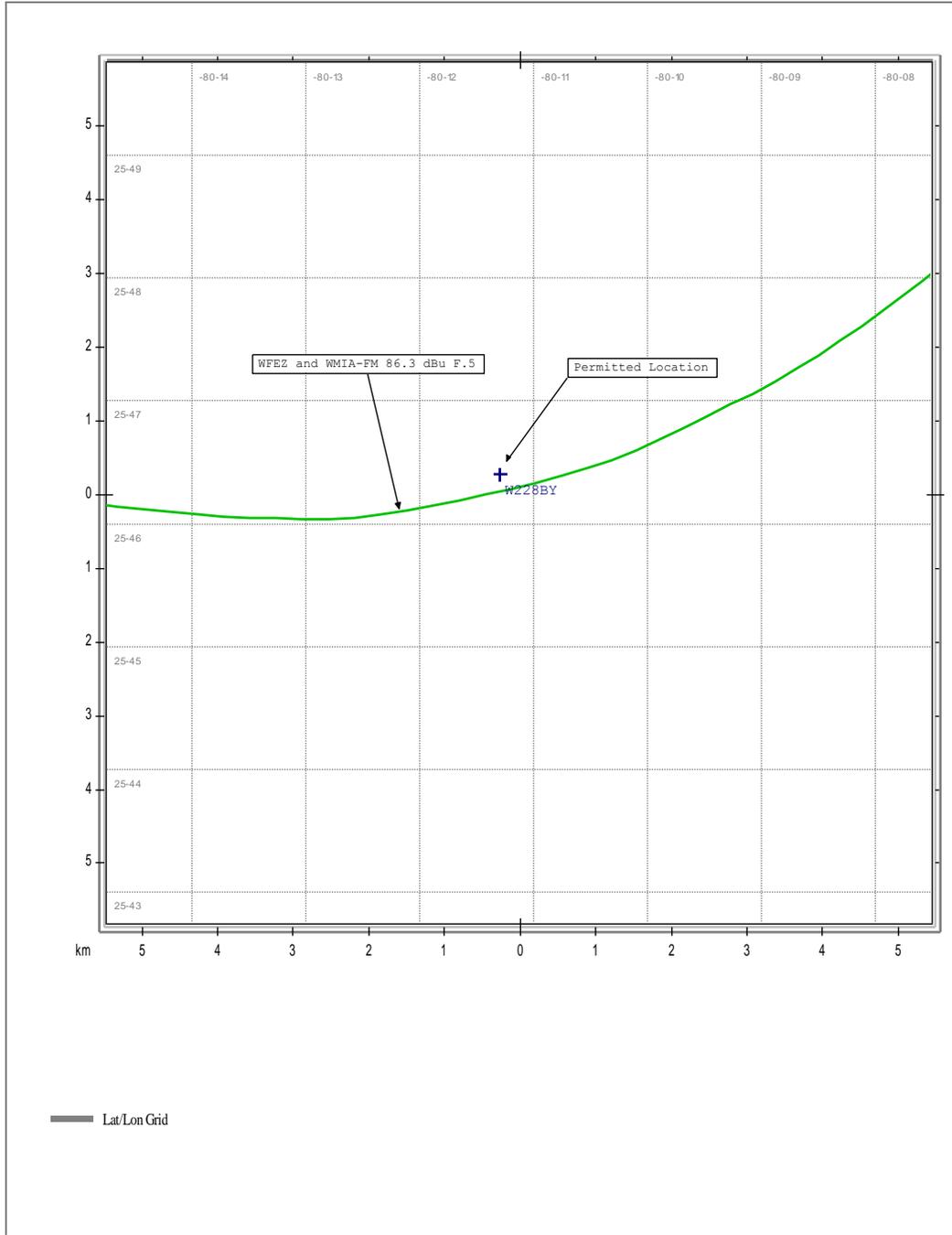
<sup>2</sup> As recently described in FCC 08-242 in connection with BPFT-19981001TA

<sup>3</sup>  $ReachDistMeters = 106.92 - (20 * (\log_{10}[DistMeters]/1000)) + [ERP_{in} \text{ dBk}]$

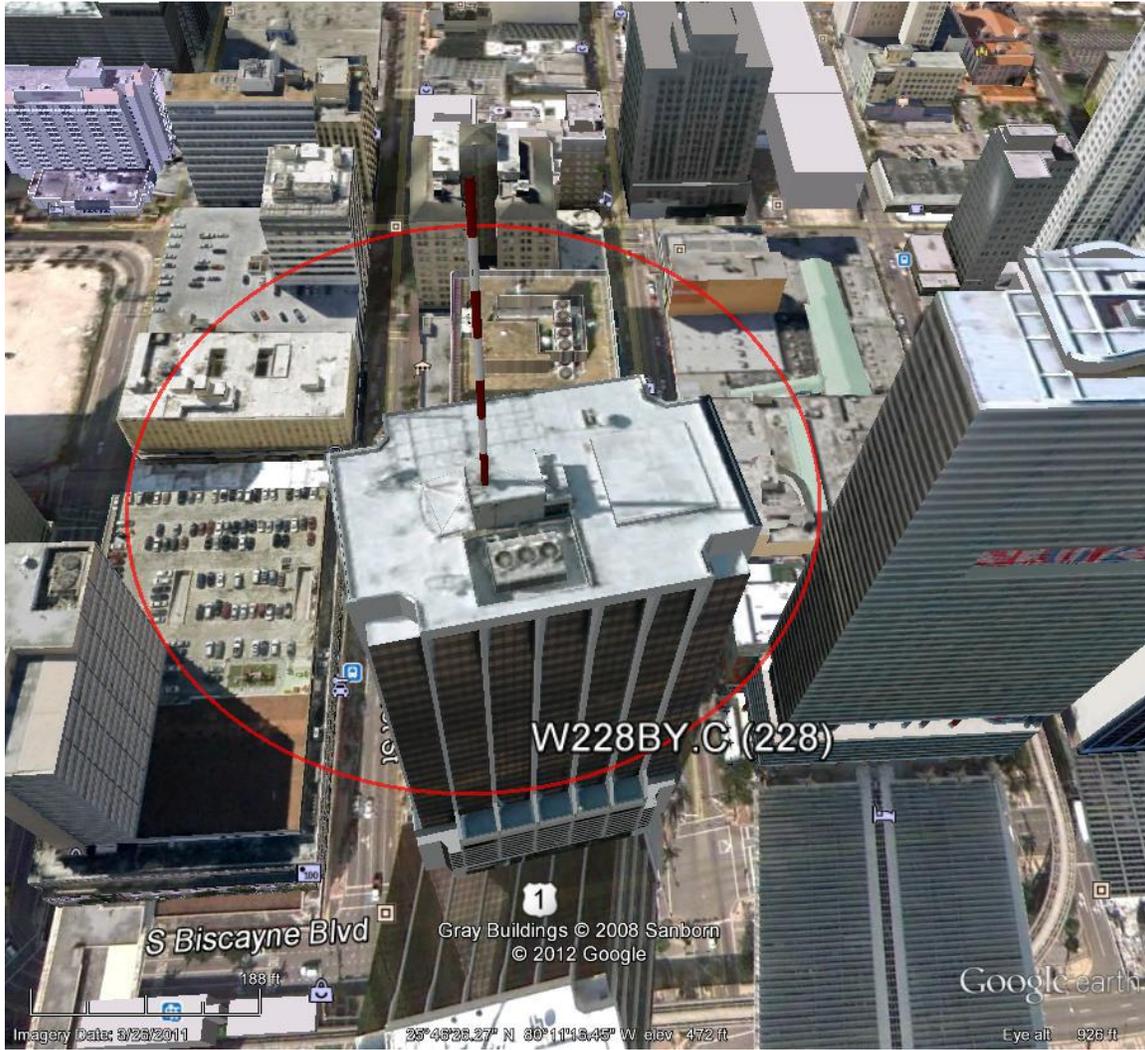
**Figure 1. Spacing Study**

Callsign	Chanl	ARN	Status	Dist_km	Sep	Clr	Compliance
WFEZ	226	BLH20050224ABN	LIC	21.58	0	-27.26 dB	Living Way
WMIA-FM	230	BLH20050225AAH	LIC	21.58	0	-27.26 dB	Living Way
NEW	228	BNPH20110523AEW	APP	69.78	0	-21.48 dB	Not Yet Authorized
WMSF	282	BPH20120529AKO	APP	23.55	22	1.5	Clear
NEW	282	BNPFT20030317MDE	APP	5.61	0	5.6	Clear
NEW	282	BNPFT20030313BLF	APP	10.59	0	10.6	Clear
WBGF	228	BLH20080411AAR	LIC	114.31	0	12.79 dB	Clear
NEW	282	BNPFT20030317MKU	APP	12.03	0	12	Clear
NEW	228		RSV	91.98	0	12.98 dB	Clear
WMSF	282		RSV	41.45	22	19.5	Clear
NEW	282	BNPFT20030317MBE	APP	19.22	0	19.2	Clear
NEW	282	BNPFT20030313BQJ	APP	19.12	0	19.1	Clear
NEW	228	BNPFT20030314ADY	APP	110.04	0	19.03 dB	Clear

**Figure 2. Contour Map**



**Figure 3. Aerial View of Antenna Location.**



**Figure 4. Contour Map**

