



**ENGINEERING STATEMENT**

**OF**

**BENJAMIN L. PIDEK, P.E.**

**IN SUPPORT OF**

**APPLICATION FOR CONSTRUCTION PERMIT**

**POST-INCENTIVE AUCTION ASSIGNMENT FACILITY**

**WMTJ**

**FAJARDO, PR**

**Background**

Sistema Universitario Ana G. Mendez, Inc. (Mendez) is the licensee of WMTJ, located at Fajardo, PR, which is presently authorized to operate its digital facility on Channel 16 with the following parameters:

**Pre-Incentive Auction Facility (Ch. 16)**

Coordinates: 18° 18' 35" N (NAD27)  
65° 47' 73" W  
ERP: 178.0 kW (DA)  
RCAMSL: 1058.2m

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WMTJ has been assigned Ch. 15 for its post-incentive auction facility with the following parameters:

Post-Incentive Auction Facility (Ch. 15)

Coordinates: 18° 18' 35" N (NAD27)  
65° 47' 73" W  
ERP: 174.0 kW (DA)  
RCAMSL: 1058.2m

**Antenna System and Tower**

The existing side-mounted directional WMTJ Ch. 16 antenna (Dielectric TFU-16DSC-R S300) is a coaxial slot antenna that is channel specific and not usable on Ch. 15. Mendez intends to replace the existing top-mounted antenna with a new directional coaxial slot antenna for Ch. 15 (Dielectric TFU-16DSC-R S300). The azimuth and elevation patterns and dBk table for the proposed antenna have been attached to the application.

The replacement of the side-mounted antenna will result in no change to the overall height of the structure. The antenna structure will be installed on a tower that is less than 200 ft tall above ground level and, therefore, the tower is unregistered (same tower / heights as assigned).

The new Ch. 15 antenna will have a center of radiation of 1058.2 m AMSL (with a calculated HAAT of 853m) which is the same height as the radiation center height of the assigned repack facility; however, the antenna manufacturer was not able to produce an exact match of the assigned repack antenna azimuth pattern due to the change in the operating channel (from Ch. 16 to Ch. 15). Some sections of the azimuth pattern will produce 0.03 dB more power (compared to the assigned repack pattern).

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The minor variation in the antenna azimuth pattern will result in a very slight increase in the noise-limited contour of the proposed WMTJ facility when compared to the noise-limited contour of the assigned repack facility; however, the increase is minor and will be less than allowable 1% increase in any azimuth (in fact, it will be less than a 0.1% increase in any azimuth).

### **Site**

While the proposed site is 70km from the FCC monitoring station at Santa Isabella, PR, the mountainous terrain of central Puerto Rico completely prevents any line-of-sight propagation condition between the WMTJ transmitter and the FCC site.

The proposed WMTJ facility is located on the island of Puerto Rico, and, therefore, the Interference Office located at the Arecibo Observatory will be notified of its plans to change its facility parameters by forwarding a copy of this application.

### **Coverage**

The entire principal community of Fajardo, PR is well within the predicted F(50,90) 48 dBu contour based on the proposed directional 174 kW ERP.

### **Interference**

An interference check study was run using the FCC TVStudy software (Version 2.2.2) for the proposed WMTJ post-repack facility parameters. The results of the study show that the proposed facility is not predicted to cause more than 0.5% new interference to any other surrounding co-channel or adjacent channel post-repack facilities.

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## **Environmental/RFR**

This report addresses only the conditions specified in 47CFR1.1307 that deal with Radio Frequency Radiation. Any other non-RFR conditions that might require the preparation of an EA are beyond the scope of this report; since the structure is existing and registered, such conditions should not be an issue requiring further consideration.

The location of the proposed post-incentive auction facility is assumed to currently be “in compliance” with FCC guidelines for human exposure to RFR (as defined in OET-65). The worst case ground level RFR contributed to the site by this proposal in public areas is calculated to be 0.0022176 mW/cm<sup>2</sup>, which is only 7.0% of the MPE limit for public exposure (0.319333 mW/cm<sup>2</sup>) at Ch. 15 (476-482 MHz). Since this is not a multi-user site, there are no other significant contributors of RFR and, therefore, the site will remain “in compliance” with FCC guidelines.

Mendez agrees to comply with the Commission’s requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be trained on RFR issues and encouraged to wear personal RFR monitors when on the structure. The tower base is enclosed by a locked security fence and appropriate signage warning of potential RFR hazards is posted.

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**Certification**

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.

A handwritten signature in black ink, appearing to read "Ben Pidek", is written over a horizontal line.

Benjamin L. Pidek, P.E.  
July 6, 2017

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