

TECHNICAL EXHIBIT
DIGITAL DISPLACEMENT RELIEF APPLICATION FOR
CLASS A STATION WSJN-CA
FACILITY ID 48239
SAN JUAN, PUERTO RICO
CH 20 1.5 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of a digital displacement relief application for Class A station WSJN-CA at San Juan, Puerto (Facility ID: 48239).

Specifically, this displacement relief application proposes to modify the WSJN-CA licensed operation by relocating to an alternate transmitter site and converting to a digital operation on channel 20. It is proposed to operate on digital channel 20 employing an Scala K723147 directional antenna having a main lobe orientation of 30 degrees true. The maximum directional effective radiated power will be 1.5 kW and the antenna radiation center above mean sea level will be 553 meters.

Displacement Relief Eligibility

The WSJN-CA currently licensed facility on channel 15 is located 45.7 kilometers from the authorized, co-channel facility of full-power DTV station WTIN on channel 15 at Ponce, PR (BMPCDT-20040803ABE). According to Section 73.3572(a)(4)(iii) and 73.3572(a)(4)(iv)(A)(1) of FCC's rules, a Class A station is eligible for displacement relief if it is located within 265 km from the coordinates of a co-channel DTV authorization or DTV allotment. Therefore, Class A station WSJN-CA is eligible for displacement relief.

Figure 1 depicts the licensed 74 dBu contour and herein proposed digital 51 dBu contour for WSJN-CA. As indicated, the proposed 51 dBu contour overlaps a portion of the licensed 74 dBu contour.

Antenna Structure Registration

Results of the FCC's TOWAIR Program indicate that the existing 38.8 meter (127 foot) structure does not require

registration. Figure 2 shows the results of the FCC's TOWAIR Program.

Response to Paragraph 13 (Interference)

The proposed facility complies with all the following applicable rule Sections: Sections 73.6016, 73.6017, 73.6018, 73.6019, 73.6020, 73.6027, and 74.794(b).

Environmental Considerations

The WSJN-CA facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields adopted by the Commission in 1996.¹

The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. As shown on Figure 3 (antenna vertical relative pattern), the maximum vertical relative field for depression angles towards the tower base (-60° to -90°) is less than 0.25. Therefore, using a vertical relative field value of 0.25, a maximum ERP of 1.5 kilowatts, and an antenna center of radiation height above ground level of 23 meters, the calculated power density at two meters above ground level at the base of the tower is 0.0071 milliwatt per square centimeter (mW/cm^2), or 2.09 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.339 \text{ mW}/\text{cm}^2$ for TV channel 20). Therefore, the facility complies with the FCC's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is

¹ See *Report and Order* in ET Docket 93-62, FCC 96-326, adopted August 1, 1996, 11 FCC Rcd 15123 (1997). See also *First Memorandum Opinion and Order*, ET Docket 93-62, FCC 96-487, adopted December 23, 1996, 11 FCC Rcd 17512 (1997), and *Second Memorandum Opinion and Order and Notice of Proposed Rulemaking*, ET Docket 93-62, FCC 97-303, adopted August 25, 1997.

a multi-user site, an agreement will be in effect to control access to the site. In the event that workers or other authorized personnel enter the restricted area appropriate measures shall be taken to limit RF energy exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been addressed by the tower owner.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

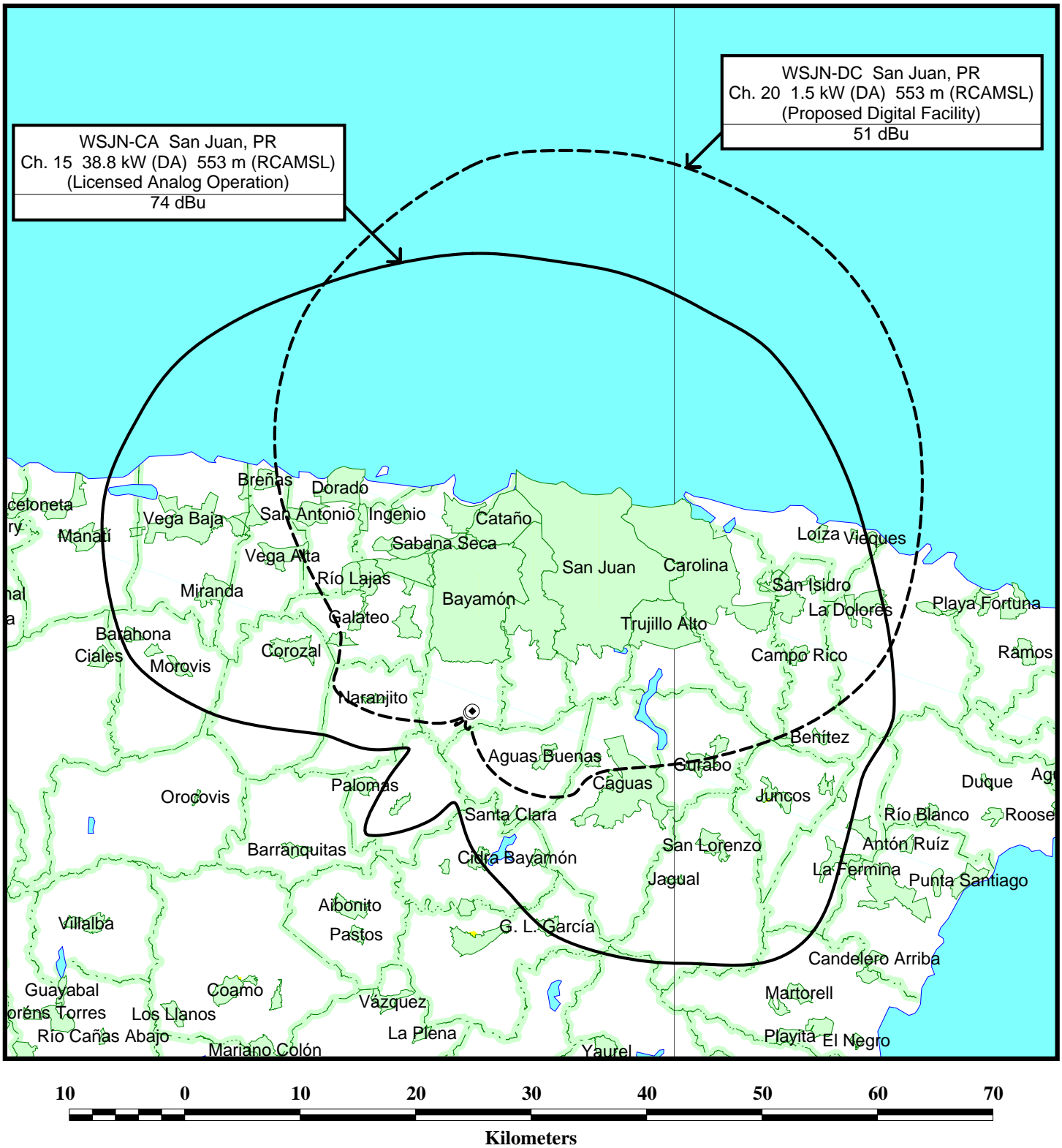


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Figure 1



FCC PREDICTED COVERAGE CONTOURS

CLASS A STATION WSJN-CA
SAN JUAN, PUERTO RICO
CH 20 1.5 KW (MAX-DA) 553 M (RCAMSL)

du Treil, Lundin & Rackley, Inc. Sarasota, FL 34237

TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	18-17-30.8 north
Longitude	066-09-59.3 west

Measurements (Meters)

Overall Structure Height (AGL)	38.1
Support Structure Height (AGL)	37.1
Site Elevation (AMSL)	530

Structure Type

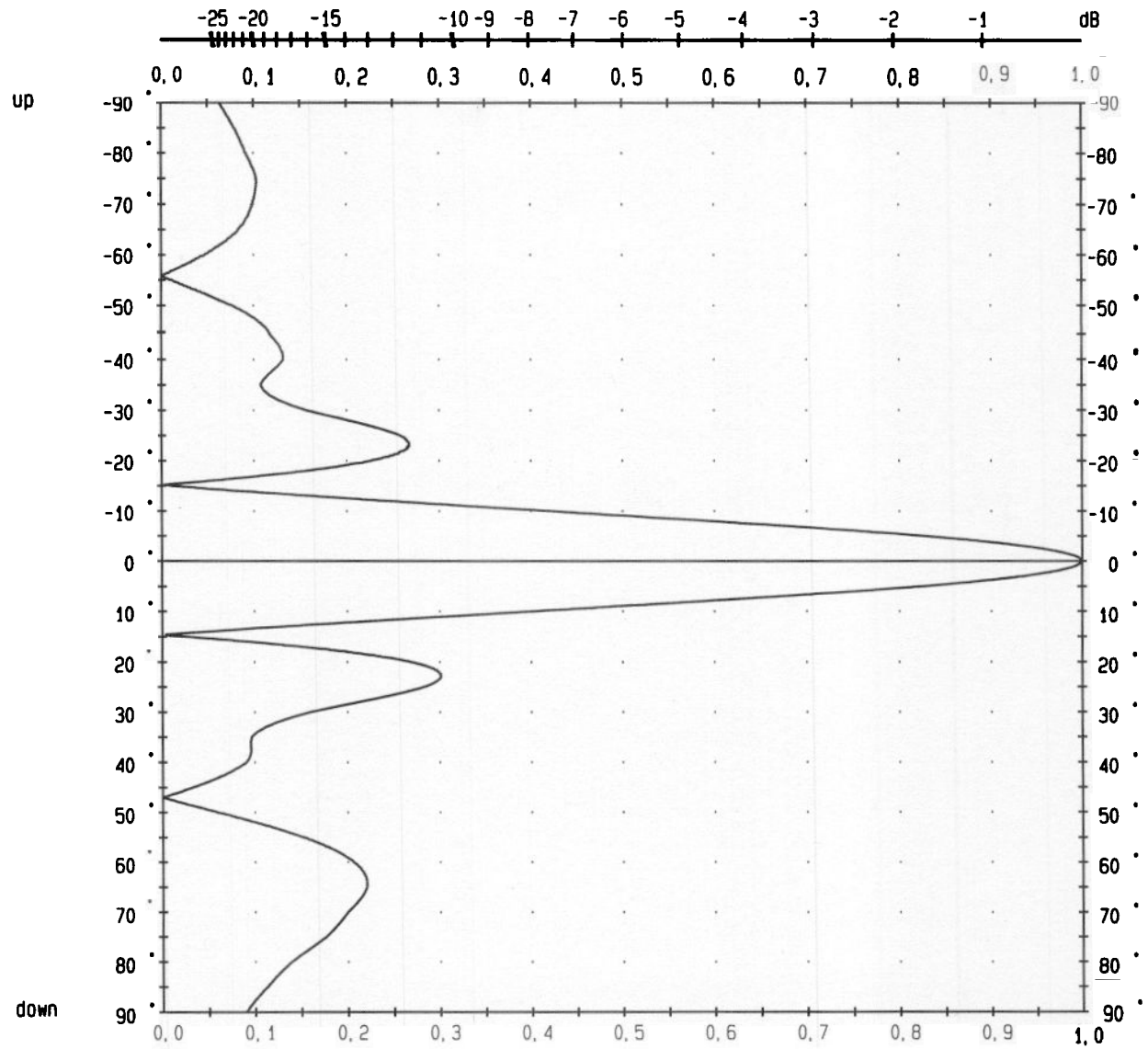
TOWER - Free standing or Guyed Structure used for Communications Purposes

[Tower Construction Notifications](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

Figure 3



du Treil, Lundin & Rackley

SCALA Medford Oregon	2 x 1 K723147 array reduced rear lobe	Typ Nr.
MB 10.12. 8 15: 48	Channel-20	B1.: