TECHNICAL STATEMENT
WESTERN PACIFIC WACP, LLC
WACP 79.4 KW-ND 258.4 M HAAT CH. 4
ATLANTIC CITY, NEW JERSEY

INTRODUCTION

Western Pacific WACP, LLC ("Western Pacific"), the licensee of digital television station WACP, Facility ID No. 189358, proposes a minor modification during the temporary lifting of the freeze by the Media Bureau to increase WACP's noise-limited contour beyond the station's authorized facilities.[1] More Specifically, Western Pacific seeks to increase WACP's effective radiated power (ERP) to 79.4 kW as part of a contingent mutual power increase and interference consent agreement involving three other Low-band VHF stations, namely WVIR-TV, KJWP and WJLP (collectively the "Joint Applicants").[2] Western Pacific proposes no other changes to WACP's existing facility.

INTERFERENCE PROTECTION AND OET-69 ANALYSIS SETTINGS

A copy of the *TVStudy* analysis is provided in Figure 1. This study indicates that the proposed power increase for WACP will cause excessive interference to WJLP Channel 3, Middletown Township, NJ, Facility ID No. 86537. As stated above, Western Pacific and the licensee of WJLP have entered into a mutual power increase and interference consent agreement in which both stations propose to increase ERP by 9 dB and will accept the resulting interference. Aside from the aforementioned interference that WJLP and WACP have agreed to accept, this proposal is not predicted to cause new interference beyond the normal

[1] *Media Bureau Temporarily Lifts the Freeze on the Filing of Minor Modifications Applications That Expand the Contour of Full Power and Class A Television Stations From November 28 Through December 7, 2017*, Public Notice, DA 17-1086 (rel. Nov. 6, 2017).

[2] The contingent mutual power increase and interference consent agreement involves the following four stations: WVIR-TV Channel 2, Charlottesville, VA Facility ID No. 70309; KJWP Channel 2, Wilmington, DE, Facility ID No. 1283; WJLP Channel 3, Middletown Township, NJ Facility ID No. 86537; and, WACP Channel 4, Atlantic City, NJ, Facility ID No. 189358 (the "Joint Applicants").

tolerance to any other full-service or Class A TV stations.[3] The study further reflects that the following analysis settings were used:

Study cell size:	2.0 kilometer
Profile point spacing:	1.0 kilometer

The proposed technical facilities for the Joint Applicants are listed below.[4] The User Records for WJLP and KJWP were included in the aforementioned *TVStudy* analysis.

Call	Channel	Latitude	Longitude	ERP	RCAMSL	Ant. ID	FCC File/User record
WACP	4	39-44-04.0	74-50-27.0	79.4	287.7	118440	USERRECORD01
WJLP	3	40-42-46.8	74-00-47.3	18.11	484.6	118158	USERRECORD02
KJWP	2	40-02-30.14	75-14-10.08	74.3	378.9	117588	USERRECORD03
WVIR-TV	2	37-59-01.0	78-28-53.0	79.4	534.8	1002063	0000034904

WAIVER OF THE MAXIMUM POWER LIMIT

Western Pacific respectfully requests waiver of the maximum power limit in 47 CFR § 73.622(f)(6) to permit an ERP in excess of the power limit for WACP's height above average terrain (HAAT) of 258.4 meters. WACP is currently authorized on Channel 4 to operate with 10 kW ERP pursuant to its license in File Number BMLCDT-20140304AAS. Western Pacific desires to increase WACP's ERP by 9 dB (for a resultant ERP of 79.4 kW) to help resolve the numerous reception problems that the station has experienced since it began operations on June 21, 2012. For clarification, the power increase proposed by Western Pacific is not intended to broaden the outer reaches of WACP's signal contour; instead, the intent is to strengthen the station's signal in its present core and fringe areas in order to improve over-the-air reception.

WACP's reception problems are principally due to WACP's low power low-band VHF Channel 4 authorization and the widespread use by viewers of poor indoor antennas, and high

[3] *TVStudy* Program, Version 2.2.3.

[4] As part of the negotiated agreement between the Joint Applicants, WVIR-TV submitted its application to increase power to 79.4 kW in the second filing window, which closed on November 2, 2017. This filing window was the only opportunity for WVIR-TV to request a power increase as the station was assigned a new channel as a result of the Incentive Auction. WVIR-TV's application was assigned FCC File No. 0000034904.

levels of consumer electronic "noise."[5] Indeed, the Commission is aware that VHF channels have certain characteristics that pose challenges for DTV broadcast stations and that such stations have been experiencing some difficulty in ensuring consistent reception of their VHF signals. Specifically, the propagation characteristics of VHF channels enable undesired signals and noise to be receivable at greater distances, electrical devices in close proximity tend to emit noise that can cause interference, and VHF signals require relatively large antennas for reception. In June of 2010, the third Omnibus Broadband Initiative technical paper was released, which recommended that the Commission address the reception issues that DTV stations are experiencing on their VHF channels so that the lower and upper VHF bands may be utilized more effectively for DTV broadcasting.[6] Furthermore, the Commission's rulemaking initiative in ET Docket 10-235 to permit VHF stations located in Zone 1, such as WACP, to increase ERP by 6 dB, also makes it clear that the Commission understands the hardship to viewers caused by VHF signal issues.[7]

Under the Commission's current case-by-case practice of granting power increase waivers through the license modification process, applicants are generally expected to make a showing of service loss that has resulted from the station's conversion from analog to digital. WACP operates on a new DTV channel assignment that was created subsequent to the initial DTV Table of Allotments and, therefore, the station does not have former analog viewers. Nonetheless, WACP is still faced with the same reception problems as other VHF stations that previously had analog viewers. For example, WPVI-TV Channel 6 in Philadelphia, PA, a former analog TV station that is located in the same designated market area (DMA) as WACP, was granted a waiver to increase power to 34 kW at a HAAT of 330 meters. The Commission has underscored the importance of ensuring that all stations are able to provide DTV service competitively within their markets by creating the largest station within the market rule in 47

[5] *See generally Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF*, Notice of Proposed Rule Making, 25 FCC Rcd 16498 (2010), ¶¶ 42-57 (discussing the various sources of interference, causes of poor reception, and suggesting potential strategies to mitigate the issues).

[6] *See* Federal Communications Commission, Omnibus Broadband Initiative, Spectrum Analysis: Options for Broadcast Spectrum, OBI Technical Paper No. 3 (June 2010) at pp.6-7. "Currently, broadcast TV stations in the VHF bands are experiencing reception issues after the Digital Television (DTV) transition due to low antenna gain, fading, weak signal levels and environmental noise from other electronic devices in homes. To ensure the most efficient use of the VHF bands, the FCC should first work to address these reception issues so that TV stations can continue broadcasting in the lower and upper VHF bands."

[7] *See Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF*, Notice of Proposed Rule Making ("NPRM"), ET Docket 10-235, 25 FCC Rcd 16498 (2010), ¶¶ 42-49.

CFR § 73.622(f)(5). Absent a waiver of 47 CFR § 73.622(f)(6), WACP will remain less competitive with 10 kW at an HAAT of 258.4 meters.

The "largest station" rule allows licensees assigned a DTV channel in the initial DTV Table of Allotments to request the maximum ERP and HAAT combination needed to provide the same geographic coverage area as the largest station within the DMA. The Commission has clarified that under this provision an application cannot request a power higher than the maximum ERP to compensate for an antenna HAAT that is lower than the value specified in the rule and further it cannot request a power and antenna height combination that would serve more square kilometers of area than the largest station in the market.[8] While expanding coverage is not the objective here, it is notable that the proposed increase in WACP's ERP to 79.4 kW at an HAAT of 258.4 meters will not serve more square kilometers of land area than that currently served by WPVI-TV. A map that depicts the geographical coverage area of WPVI-TV as compared to WACP's present and proposed coverage is attached as Figure 2.[9]

In addition to core and fringe viewers experiencing reception problems, complaints of poor signal quality from cable systems continue to persist in fringe areas. The FCC record supports the fact that WACP has a history of cable headend reception difficulties in fringe areas based on the documented cases in which mandatory carriage by cable systems has been rebutted on the grounds of poor signal quality.[10]

Given the nature of the reception issues that currently limit the utility of VHF spectrum for DTV broadcasts, the Joint Applicants mutually agree that all four stations will do a better job of serving the public with a 9 dB increase in ERP. Therefore, Western Pacific submits that deviation from the rule in 47 CFR § 73.622(f)(6) is appropriate given the special circumstances and that such deviation is necessary and will further the public interest goal espoused in both

[8] See *Report And Order And Further Notice Of Proposed Rule Making*, 16 FCC Rcd 5946 (2001), ¶¶ 73-74.

[9] The land area coverage for WPVI-TV is 39,088.6 square kilometers. WACP's present coverage is 22,255.0 square kilometers and its proposed coverage is 30,806.0 square kilometers. The DTV noise-limited contours shown in Figure 2 were calculated in accordance with 47 CFR §§ 73.622(e) and 73.625(b).

[10] For example, see Armstrong Utilities, Inc., CSR-8752-M in Docket No. 12-364 and CSR-8838-A in Docket No. 13-245; Service Electric Cable Television, Inc., CSR-8757-M in Docket No. 13-14 and CSR-8772-A in Docket No. 13-68; and, Blue Ridge Cable Technologies, CSR-8753-M in Docket 12-365.

the OBI Technical Paper No. 3 and ET Docket 10-235. Western Pacific further submits that the following special circumstances are present here.

First, Western Pacific's proposal is predicted to cause no prohibited interference to any other primary station, with the exception of WJLP which as indicated above is part of a contingent agreement to mutually increase power and accept interference.

Second, while WACP's power increase proposal exceeds the maximum power permitted under 47 CFR § 73.622(f)(6), it is not intended to expand WACP's coverage area. Rather, the purpose of WACP's proposed operation is to enhance service to viewers who cannot receive WACP's DTV signal despite being located in WACP's digital service area.

WACP respectfully submits that the instant request satisfies the Commission's waiver standard. WACP's low-band VHF digital reception issues and the lack of any interference implications by WACP's proposed operation are special circumstances that warrant deviation from 47 CFR § 73.622(f)(6), and such deviation will serve the public interest by improved television service to the public.

For the foregoing reasons, Western Pacific respectfully requests that the Media Bureau waive 47 CFR § 73.622(f)(6).

ENVIRONMENTAL IMPACT

The construction permit application specifies an existing FCC registered tower that was constructed before March 16, 2001.[11] Given that WACP will continue to utilize its existing antenna in connection with the proposed increase in ERP, the criteria outlined in 47 CFR §

[11] 47 CFR Part 1, App. B, § III.A. "An antenna may be mounted on an existing tower constructed on or before March 16, 2001 without such collocation being reviewed through the Section 106 process set forth in the NPA, unless: 1. The mounting of the antenna will result in a substantial increase in the size of the tower as defined in Stipulation I.E, above; or, 2. The tower has been determined by the FCC to have an adverse effect on one or more historic properties, where such effect has not been avoided or mitigated through a conditional no adverse effect determination, a Memorandum of Agreement, a programmatic agreement, or a finding of compliance with Section 106 and the NPA; or, 3. The tower is the subject of a pending environmental review or related proceeding before the FCC involving compliance with Section 106 of the National Historic Preservation Act; or, 4. The collocation licensee or the owner of the tower has received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties."

1.1307(a) for certain types of facilities that may significantly affect the environment do not apply. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate a television broadcast antenna in full compliance with those guidelines as described in greater detail below. Below are the technical specifications under consideration:

Frequency :	66 - 72 MHz (VHF Channel 4)
Effective Radiated Power:	79.4 kW
Antenna Type:	JAM JHD-LV2-3/3 (18) SR
Antenna Polarization:	Horizontal
Antenna Height:	251.8 meters above ground level (AGL)
Location coordinates:	39-44-04.0 N, 74-50-27.0 W (NAD83)
Site elevation:	35.9 meters above mean sea level (AMSL)
Overall tower height:	284.0 meters AGL
FCC ASRN:	1042989; Constructed in 1981

Using the methodology for predicting power density levels for television broadcast antennas outlined in *FCC OET Bulletin No. 65, Edition 97-01,* (OET-65), the proposed increase in WACP's facilities is calculated to produce a maximum power density of 2.45 μW/cm² at points 2 meters above ground (approximate human head height). This exposure level was determined using 24 percent antenna relative field, which is the maximum value for the specified antenna at downward angles greater than 16 degrees below the horizontal. A plot and tabulation of the antenna elevation pattern supplied by the manufacturer are attached as Figures 3 and 3A. The maximum exposure limits applicable to Channel 4, as indicated in 47 CFR § 1.1310 for uncontrolled and controlled situations, are 200 μW/cm² and 1,000 μW/cm² respectively. Because the worst-case exposure level determined for WACP is not more than 5% of those guidelines and considering that the existing tower location is fenced and suitable warning signs are posted, no further showing of compliance is necessary. Accordingly, this application complies with the RF exposure limits and is categorically excluded from environmental processing by 47 CFR § 1.1306.

Steps to limit exposure to persons authorized to access the transmitter site will be consistent with the appropriate recommendations in OET-65. All maintenance and other related work to be performed at elevations higher than 2 meters above ground will be

coordinated to prevent exposure to RF fields in excess of the controlled limit. Such preventative steps shall include reducing power or shutting down the facility.

Respectfully submitted,

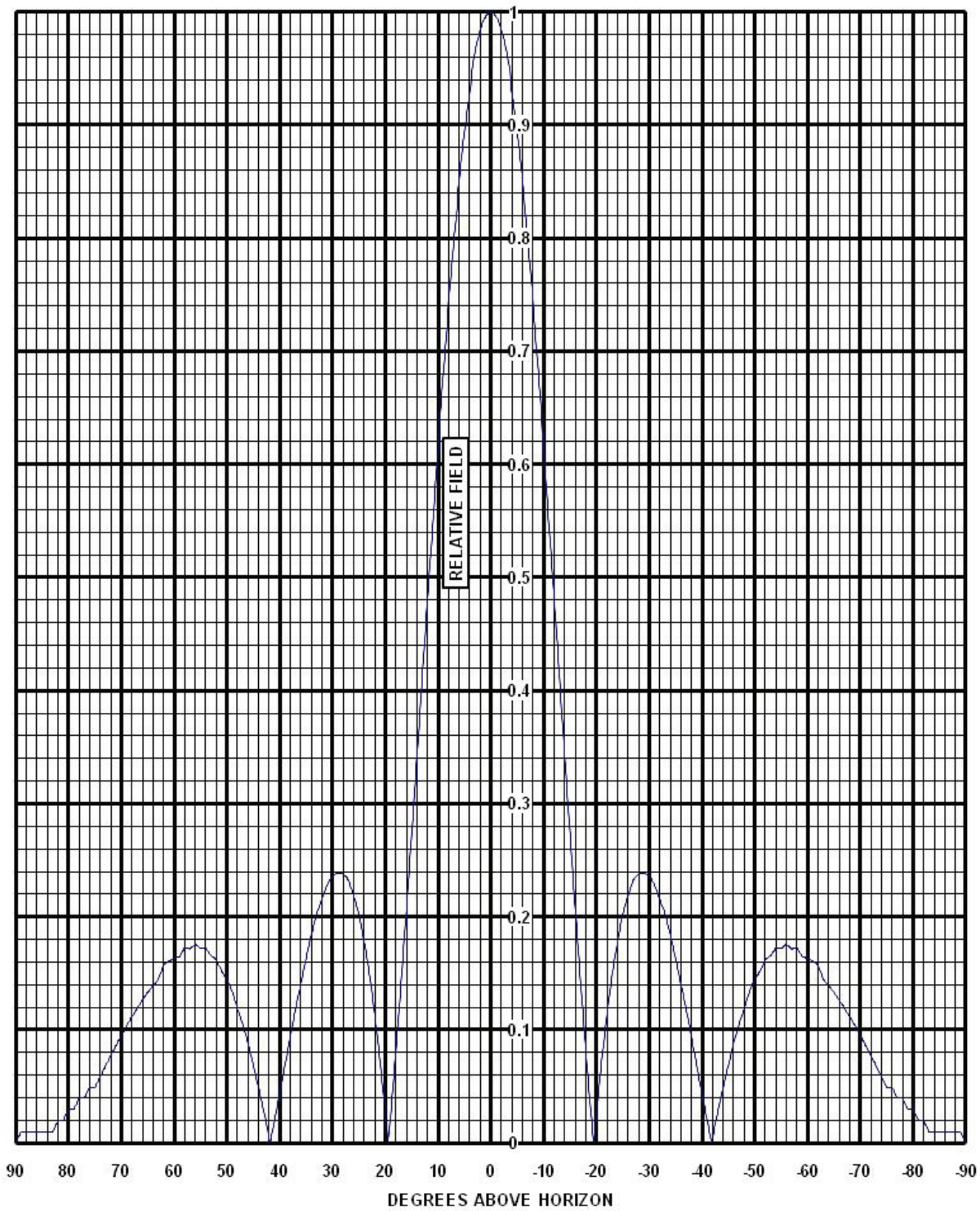
Scott Turpie
Technical Consultant
Lohnes & Culver LLC
P.O. Box 881
Silver Spring, MD 20918-0881
Ph. 301-776-4488

November 27, 2017

Attachments
Figure 1 – TVStudy Results
Figure 2 – Geographical Coverage Map
Figure 3 – Antenna Elevation Pattern Plot
Figure 3A – Antenna Elevation Pattern Tabulation

JAMPRO ANTENNAS, INC.
6340 Sky Creek Drive
Sacramento, California 95828 USA
Telephone (916) 383-1177
Fax (916) 383-1182

COMPUTED ELEVATION PATTERN



Customer: Richland Towers
For: Philadelphia
Bays: 3

Model: JHD-LV2-3/3 (18)
Description: VHF Panel Antenna
-0° Beam Tilt, 0% Null Fill

JAMPRO ANTENNAS, INC.
6340 Sky Creek Drive
Sacramento, California 95828 USA
Telephone (916) 383-1177
Fax (916) 383-1182

Elevation Pattern Tabulation

RELATIVE FIELD VS ELEVATION ANGLE

ELEVATION ANGLE	RELATIVE FIELD	ELEVATION ANGLE	RELATIVE FIELD	ELEVATION ANGLE	RELATIVE FIELD
10	0.615	-26	0.219	-61	0.161
9	0.682	-27	0.232	-62	0.157
8	0.746	-28	0.238	-63	0.144
7	0.798	-29	0.238	-64	0.139
6	0.853	-30	0.237	-65	0.133
5	0.893	-31	0.228	-66	0.127
4	0.928	-32	0.215	-67	0.119
3	0.964	-33	0.203	-68	0.112
2	0.984	-34	0.184	-69	0.104
1	0.996	-35	0.163	-70	0.095
0	1.000	-36	0.141	-71	0.087
-1	0.996	-37	0.119	-72	0.077
-2	0.984	-38	0.094	-73	0.068
-3	0.964	-39	0.069	-74	0.059
-4	0.928	-40	0.044	-75	0.049
-5	0.893	-41	0.020	-76	0.049
-6	0.853	-42	0.004	-77	0.040
-7	0.798	-43	0.027	-78	0.040
-8	0.746	-44	0.049	-79	0.030
-9	0.682	-45	0.069	-80	0.030
-10	0.615	-46	0.088	-81	0.020
-11	0.547	-47	0.105	-82	0.020
-12	0.482	-48	0.119	-83	0.010
-13	0.412	-49	0.134	-84	0.010
-14	0.341	-50	0.144	-85	0.010
-15	0.273	-51	0.152	-86	0.010
-16	0.206	-52	0.162	-87	0.010
-17	0.142	-53	0.166	-88	0.010
-18	0.081	-54	0.172	-89	0.010
-19	0.025	-55	0.172	-90	0.000
-20	0.027	-56	0.176		
-21	0.073	-57	0.171		
-22	0.114	-58	0.172		
-23	0.149	-59	0.165		
-24	0.178	-60	0.163		
-25	0.202				

Customer: Richland Towers
For: Philadelphia
Bays: 3

Model: JHD-LV2-3/3 (18)
Description: VHF Panel Antenna
-0° Beam Tilt, 0% Null Fill