

ENGINEERING REPORT FOR
DEEPAK VISWANATH
APPLICATION FOR W45BZ
LOW POWER TELEVISION STATION
JACKSONVILLE, FL
CHANNEL 45 50 KW MAX. 178 METERS

JANURARY 24, 2001

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BROADCAST CONSULTANTS
RADIO AND TELEVISION
HENDERSONVILLE, TN

Introduction

This engineering report has been prepared on behalf of Deepak Viswanath in support of a minor change application for W45BZ, FCC Facility ID No. 16394 for Channel 45 at Jacksonville, Florida.

It is proposed to operate using a Propagation Systems Inc. directional antenna with an effective radiated power (ERP) of 50 Kw and a radiation center of 178 meters above sea level. Aural power is proposed at 10% of visual power value.

Transmitter Site

It is proposed to side-mount the Channel 45 television antenna on an existing 314meter guide tower. The transmitter site is located at 8675-1 Hogan Road, Jacksonville, FL.

The NAD-27 geographic coordinates of the transmitter site are:

North Latitude: 30° 16' 51.13"

West Longitude: 81° 34' 11.67"

Equipment Data

Transmitter: Type-Verified, rated at 5 Kw visual and .5 Kw aural
Transmission Line: 178 meters of Andrew, Type LDF7-50A
(1-5/8") Foam Dielectric 50-ohm line
Antenna: Propagation Systems Inc, PSILP16EC, horizontal polarized, Slot Array Antenna.

Power Data

Visual

Transmitter output	4.29 kW	6.33 dBk
Transmission line efficiency	42.17%	-3.75 dB
Power input to antenna	1.81 kW	2.58 dBk
Antenna power gain	27.66	14.42 dB
Effective Radiated Power	50 kW	17.00 dBk

Elevation Data

Vertical dimension antenna	7.7 meters	25.2 feet
Elevation of the site above mean sea level	3.0 meters	9.8 feet
Height of top of structure above ground	313.5 meters	1028.6 feet
Height of top of supporting structure above mean sea level	316.5 meters	1038.4 feet
Radiation center above ground	175.0 meters	574.2 feet

Other Stations

No objectionable interference problems are anticipated, however, if any problems occur, the applicant will take the necessary steps to resolve them.

FCC Rule, Section 1.1307

The proposed TV operation with an ERP of 50 kW visual and 5 kW aural will utilize a Propagation Systems Inc. horizontal polarized slot array directional Channel 45 antenna. Calculations to determine power density levels from the proposed operation were performed using formulas outlined in OET Bulletin 65 (Edition 97-01) based on antenna relative field factor of .1 The formula used is:

$$S = \frac{(33.4)(F^2)(.4VERP+AERP)}{R^2}$$

The maximum power density levels at two meters above ground level are .2789 $\mu\text{W}/\text{cm}^2$ computed for a radiation center of 175 meters above ground level. The maximum allowed by OET65 bulletin is:

Occupational/Controlled Exposure	General Population
Frequency / .3	Frequency / 1.5
2,200 $\mu\text{W}/\text{cm}^2$	440 $\mu\text{W}/\text{cm}^2$

The proposed operation will be in compliance with the FCC RF radiation guidelines since areas that exceed the FCC standards will be alerted to workers by posting warning signs and restricting areas. All stations on the tower will have a mutual written agreement and procedures for workers climbing the tower. Transmitter power of each station will be reduced or terminated when workers are near areas on the tower where power density levels are in excess of the FCC

standard. An environmental assessment (EA) is categorically excluded under Section 1.1307 of the FCC Rules and Regulations since the applicant indicates:

- (a)(1) The proposed facilities are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities are not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities are not located near any known Indian religious sites.
- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The side-mounted TV antenna on the existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) The existing tower structure is not equipped with high intensity white lights.
- (b) There will be a security fence with a locked gate to surround the tower. Workers and the general public will not be subjected to RF radiation levels in excess of FCC OET Bulletin 65 (Edition 97-01). Authorized personnel will be alerted to areas of the tower where potential radiation levels are in excess of the FCC standard. The transmitter power will be reduced or terminated when necessary.

Interference Study

A study was done and the following were found to cause objectionable interference.

WAWS-TV	30	Jacksonville, FL	See attached Longley-Rice Study.
WJEB-DT	44	Jacksonville, FL	See attached Longley-Rice Study.
WLCB-TV	45	Leesburg, FL	See attached Longley-Rice Study.

As can be seen, the proposed station meets the FCC criteria and is grantable.

Longley-Rice Study

Call City	Stat St	Ch. File No.	Zone	ERP	HAAT RCAMS	Latitude Longitude	Bear Fm	Dist Contour	Ant Difference	
WAW	APP	--	30+	3	4000Kw	306m	30-16-51	0	0	DIE TFU-31JTH 6T17 0
JACKSONVIL	FL	BMPCT20011120AAF			312.0m	081-34-12	180	80	-80	TV
Population Within Contour : 1013794										
Population Within Contour To Receive Interference : 0										
% Of Population Within Contour To Receive Interference : 00.00%										
WAW	LIC	--	30+	3	2820Kw	300m	30-16-53	307	0	RCA ODDWAW
JACKSONVIL	FL	BLCT19810210KF			308.0m	081-34-15	127	70	-70	0
Population Within Contour : 1005857										
Population Within Contour To Receive Interference : 0										
% Of Population Within Contour To Receive Interference : 00.00%										
WAW	CP	--	30+	3	5000Kw	301m	30-16-53	307	0	RCA TFU28DAS
JACKSONVIL	FL	BPCT19960711LB			309.0m	081-34-15	127	75	-75	0
Population Within Contour : 1027445										
Population Within Contour To Receive Interference : 0										
% Of Population Within Contour To Receive Interference : 00.00%										
WJEB-DT	CP	--	44	3	1000Kw	300m	30-16-51	0	0	DIE TUC-P5-12/60H- 0
JACKSONVIL	FL	BPEDT20000428ACG			305.4m	081-34-12	180	96	-96	DT
Population Within Contour : 1078313										
Population Within Contour To Receive Interference : 0										
% Of Population Within Contour To Receive Interference : 00.00%										
WJEB-TV	APP	--	44Z	3	2109Kw	289m	30-16-34	135	0	AND ATW30HWSW4-HSC1 0
JACKSONVIL	FL	BPET20020523AAR			293.0m	081-33-53	315	74	-74	TV
Population Within Contour : 967223										
Population Within Contour To Receive Interference : 0										
% Of Population Within Contour To Receive Interference : 00.00%										