

## **ENGINEERING EXHIBIT**

### **Amendment to Displacement Application for a Low Power Television Station**

prepared for

**Guenter Marksteiner**

WZDT-LP Naples, Florida

Facility ID 25539

Ch. 39+ 20.0 kW

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FCC Form 346, Section III

#### **Exhibit 6**

Statement A	Allocation Considerations, Requests for Waiver and OET-69 Showings
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Table I	OET-69 Interference Analysis Summary
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#### **Exhibit 7**

Statement B	Environmental Considerations
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Figure 1	Vertical Plane Radiation Pattern
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*This material supplies a "hard copy" of the engineering portions of this application as entered April 10, 2002 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

**SECTION III - ENGINEERING DATA****TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1.	Channel Number: 39				
2.	Frequency Offset: <input type="radio"/> No offset <input type="radio"/> Zero offset <input checked="" type="radio"/> Plus offset <input type="radio"/> Minus offset				
3.	Translator Input Channel No. :				
4.	Primary station proposed to be rebroadcast: <table border="1"> <tr> <td>Call Sign</td> <td>City</td> <td>State</td> <td>Channel</td> </tr> </table>	Call Sign	City	State	Channel
Call Sign	City	State	Channel		
5.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 26 Minutes 12 Seconds 7 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 81 Minutes 48 Seconds 49 <input checked="" type="radio"/> West <input type="radio"/> East				
6.	Antenna Structure Registration Number: <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA				
7.	Antenna Location Site Elevation Above Mean Sea Level: 2.1 meters				
8.	Overall Tower Height Above Ground Level: 69.4 meters				
9.	Height of Radiation Center Above Ground Level: 68.4 meters				
10.	Maximum Effective Radiated Power (ERP) Towards Radio Horizon: 20.0 kW				
11.	Maximum ERP in any Horizontal and Vertical Angle: 20.0 kW				
12.	Transmitting Antenna: <input checked="" type="radio"/> Nondirectional <input type="radio"/> Directional "Off-the-shelf" <input type="radio"/> Directional composite Manufacturer MCI Model 955122				

Directional Antenna Relative Field Values: ☒ N/A (Directional "Off-the-shelf" or Nondirectional)

Rotation (Degrees): ☐ No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	
300		310		320		330		340		350	

Additional  
Azimuths

**NOTE:** In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

**CERTIFICATION**

13.	
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<b>Interference :</b> The proposed facility complies with all of the following applicable rule sections. Check all those that apply.		<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>TV broadcast analog system protection.</b>		See Explanation in [Exhibit 6]
a. <input checked="" type="checkbox"/> 47 C.F.R. Section 74.705		
<b>Digital TV station protection.</b>		
b. <input checked="" type="checkbox"/> 47 C.F.R. Section 74.706		
<b>Low Power TV and TV translator station protection.</b>		
c. <input checked="" type="checkbox"/> 47 C.F.R. Section 74.707		
14.	<b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an <b>Exhibit is required.</b>  By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 7]
<b>PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.</b>		

### SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JONATHAN A. SCHULTZ		Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT		
Signature		Date 4/10/2002		
Mailing Address CAVELL, MERTZ & DAVIS, INC. 7839 ASHTON AVENUE				
City MANASSAS		State or Country (if foreign address) VA		Zip Code 20109 -
Telephone Number (include area code) 7033929090		E-Mail Address (if available) JSCHULTZ@CMDCONSULTING.COM		

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

**Exhibits****Exhibit 6****Description:** EXHIBIT 6 - ALLOCATION CONSIDERATIONS

EXHIBIT 6 - ALLOCATION CONSIDERATIONS - ATTACHED AS A PDF DOCUMENT

**Attachment 6**

Description	Type	Conversion	
		Status	File
<u>EXHIBIT 6 - STATEMENT A, TABLE I</u>	Adobe Acrobat File	not needed	PDF

**Exhibit 7****Description:** EXHIBIT 7 - ENVIRONMENTAL CONSIDERATIONS

EXHIBIT 7 - ENVIRONMENTAL CONSIDERATIONS - ATTACHED AS A PDF DOCUMENT

**Attachment 7**

Description	Type	Conversion	
		Status	File
<u>EXHIBIT 7 - STATEMENT B, FIGURE 1</u>	Adobe Acrobat File	not needed	PDF

Exhibit 7 - Statement B  
**ENVIRONMENTAL CONSIDERATIONS**  
prepared for  
**Guenter Marksteiner**  
WZDT-LP Naples, Florida  
Facility ID 25539  
Ch. 39+ 20.0 kW

**Introduction**

The instant proposal is not believed to have a significant environmental impact as defined under Section 1.1306 of the Commission's Rules. Consequently, preparation of an Environmental Assessment is not required.

**Categorical Exclusion**

*Guenter Marksteiner*, ("*Marksteiner*") licensee of analog low power television ("LPTV") station WZDT-LP, Channel 52, Naples, Florida, herein amends a pending application to move from Channel 52 to Channel 39 at the same location on the existing supporting structure.

The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Based on information provided by the applicant, it is believed that the provisions of Section 1.1307(a)(1-7) would not apply in this case. No change in structure height is proposed, thus no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

**Human Exposure to Radiofrequency Radiation - Rooftop**

The proposed antenna will be located on top of the Solamar building. This is an established managed multiuser communications site with rooftop access restricted to site workers and other maintenance personnel. The rooftop is not accessible to the general public, and access is restricted by a log entry process to prevent anyone from unknowingly entering a potentially hazardous area. Warning signs will continue to be posted, and *Marksteiner* will cease transmission as necessary during maintenance to prevent harmful exposure. General public at ground level and inside the office building are shielded from RF exposure by the rooftop itself.

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**ENVIRONMENTAL CONSIDERATIONS**  
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**Human Exposure to Radiofrequency Radiation - Ground Level**

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with these FCC limits.

*Marksteiner* proposes to replace the existing WZDT-LP antenna such that its center of radiation will be 68.4 meters above ground level. An effective radiated power ("ERP") of 20.0 kilowatts (10% aural), horizontally polarized, will be employed. Based on data provided in the attached **Exhibit 7 - Figure 1**, the proposed WZDT-LP antenna (MCI 955122) will have a relative field value of less than 15 percent in downward directions (from 40 to 90 degrees below the horizon). Therefore, for these calculations, a conservative value for relative field of 15 percent is used. The "uncontrolled/general population" limit specified in §1.1310 for Channel 39 (center frequency 623 MHz) is 415.3  $\mu\text{W}/\text{cm}^2$ .

OET-65's formula for NTSC television transmitting antennas as used for calculating signal density in this analysis is:

$$S(\mu\text{W}/\text{cm}^2) = \frac{(33.4098 \times F^2 \times [(0.4 \times \text{ERP}_{\text{Visual}}) \% \text{ERP}_{\text{Aural}}])}{R^2}$$

Where:

S	=	Plane Wave Power Density ( $\mu\text{W}/\text{cm}^2$ ) at specified point
F	=	Relative Field Factor for Horizontal and Vertical Planes
$\text{ERP}_{\text{Visual}}$	=	total visual ERP in Watts
$\text{ERP}_{\text{Aural}}$	=	total aural ERP in Watts
R	=	distance in meters from center of radiation to the specified point.

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Using this formula, in a worst case, the proposed facility would contribute a power density of  $1.7 \mu\text{W}/\text{cm}^2$  at two meters above ground level near the antenna support structure, or 0.4 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

§1.1307(b)(3) states that facilities contributing less than five percent of the exposure limit at locations with multiple transmitters are categorically excluded from responsibility for taking any corrective action in the areas where its contribution is less than five percent. Since the instant situation meets the five percent exclusion test with a considerable margin at all ground level areas, the impact of other broadcast facilities may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b).

### **Safety of Tower Workers and the General Public**

As demonstrated herein, excessive levels of RF energy will not be caused at publicly accessible areas at ground level near the antenna supporting structure by the instant proposal. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, rooftop access will continue to be restricted and controlled through the use of a locked door. Additionally, appropriate RF exposure warning signs will continue to be posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on the rooftop in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be

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**ENVIRONMENTAL CONSIDERATIONS**  
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undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

**Conclusion**

Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under Section 1.1306 of the Rules. Hence, preparation of an Environmental Assessment is not required.



