

**ENGINEERING EXHIBIT**  
**APPLICATION FOR DIGITAL TELEVISION**  
**STATION LICENSE**  
prepared for

**Greater Washington Educational  
Telecommunications Association, Inc.**

WETA-DT Washington, DC

Facility ID 65670  
Ch. 27 90 kW 254 m

**Table of Contents**

FCC Form 302-DTV, Section III Engineering

Exhibit 8

Statement A  
Table 1

Compliance with Special Operating Conditions  
Antenna / Line Systems Gains and Losses

*This material supplies a "hard copy" of the engineering portions of this application as entered July 27, 2007 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.*

<b>Section III - Engineering</b>		
<b>TECHNICAL SPECIFICATIONS</b>		
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.		
<b>TECH BOX</b>		
1. Channel: 27		
2. Operating Constants		
Transmitter power output (average power at input to transmission line, after any filter attached to the transmitter, if used)		Transmission line power loss
4.58 dBk 2.87 kW		0.785 dB
Antenna Input power	Maximum antenna power gain	Maximum effective radiated power
3.79 dBk	15.75 dB	19.54 dBk 90 kW
3. Antenna Data		
Manufacturer DIE		Model TUP-04-12-2
<b>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.</b>		
<b>CERTIFICATION</b>		
4.	<b>Main Studio Location.</b> The main studio location complies with 47 C.F.R. Section 73.1125.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 6]
5.	<b>Constructed Facility</b> The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 7]
6.	<b>Special Operating Conditions.</b> The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit.  <b>An exhibit may be required.</b> Review the underlying construction permit	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 8]
7.	<b>Transmitter.</b> The transmitter complies with 47 C.F.R. Section 73.1660.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 9]

**APPLICATION FILED PURSUANT TO 47 C.F.R. SECTIONS 73.1675(c) OR 73.1690(c).**

Only applicants filing this application pursuant to 47 C.F.R. Sections 73.1675(c) or 73.1690(c) must complete the following section.

8.	<b>Changing transmitter power output.</b> Is this application being filed to authorize a change in transmitter power output caused by the replacement of an omnidirectional antenna with another omnidirectional antenna or an alteration of the transmission line system? See 47 C.F.R. Sections 73.1690(c)(1) and (c)(10).	<input type="radio"/> Yes <input type="radio"/> No
9.	<b>Replacing a directional antenna.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(3) to replace a directional antenna with a nother directional antenna?  If "Yes" to the above, the applicant certifies the following:	<input type="radio"/> Yes <input type="radio"/> No
	a. <b>Pattern of Directional Antenna.</b> The proposed theoretical antenna pattern complies with 47 C.F.R. Section 73.1690(c)(3). <b>Exhibit is required.</b>	<input type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 10]
10	<b>Use a formerly licensed main facility as an auxiliary facility.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1675(c)(1) to request authorization to use a formerly licensed main facility as an auxiliary facility and/or change the ERP of the proposed auxiliary facility?  If "Yes" to the above, the applicant certifies the following:	<input type="radio"/> Yes <input type="radio"/> No
	a. <b>Auxiliary antenna service area.</b> The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a). <b>Exhibit is required.</b>	<input type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 11]
	b. <b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1 306 (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).  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 type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 12]
11.	<b>Change the license status.</b> Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(9) to change the license status from commercial to noncommercial or from noncommercial to commercial?  If "Yes" to above, submit an exhibit providing full particulars. For applications changing license status from commercial to noncommercial, include Section II of FCC Form 340 as an exhibit to this application.	<input type="radio"/> Yes <input type="radio"/> No  [Exhibit 13]

**PREPARER'S CERTIFICATION ON PAGE 6 MUST BE COMPLETED AND SIGNED****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	Relationship to Applicant (e.g., Consulting Engineer)
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RICHARD H. MERTZ		CONSULTANT
Signature		Date
		7/27/2007
Mailing Address		
CAVELL, MERTZ & ASSOCIATES, INC.		
7839 ASHTON AVENUE		
City	State or Country (if foreign address)	Zip Code
MANASSAS	VA	20109 -
Telephone Number (include area code)	E-Mail Address (if available)	
703929090	RMERTZ@CAVELLMERTZ.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).

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**Exhibits**

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**Exhibit 8**

**Description:** WETA-DT APPLICATION FOR LICENSE - EXHIBIT 8

EXHIBIT 8 CONTAINS STATEMENT A COMPLIANCE WITH SPECIAL OPERATING CONDITIONS AND TABLE1, ANTENNA / LINE SYSTEM GAINS AND LOSSES

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**Attachment 8**

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**Description**

[WETA-DT Application for License - Exhibit 8](#)

Exhibit 8 - Statement A  
**COMPLIANCE WITH SPECIAL OPERATING CONDITIONS**  
prepared for  
**The Greater Washington Educational Telecommunications Association, Inc.**  
WETA-DT Washington, D.C.  
Facility ID: 65670  
Ch. 27 90 kW (MAX-DA) 254 m

The Greater Washington Educational Telecommunications Association, Inc. (“*GWETA*”) is the licensee of digital television station WETA-DT, Washington, D.C. (FCC File No. BLEDT-19981207KF). *GWETA* has completed construction of a new DTV facility authorized for WETA-DT in the construction permit (“CP”) FCC File No. BPEDT-20040426ABF and has commenced program tests in accordance with Section 73.1620(a)(1) of the FCC Rules.

The WETA-DT CP contains one *Special Operating Condition* that requires notification of health care facilities prior to the commencement of operation. Based on information provided by Mr. Ed Kennedy, Senior Director, Engineering & Technology for WETA-TV-DT, the Commission was notified on November 20, 1998 that the required health care facility notification had been completed prior to commencing operation of the currently licensed DTV facility.

**Exhibit 8-Table 1**, attached, provides information regarding the antenna, transmission line, and transmitter combiner specifications employed in the determination of the transmitter power output.

Exhibit 8 - Table 1  
**ANTENNA / LINE SYSTEM GAINS AND LOSSES**  
 prepared July, 2007 for  
**The Greater Washington Educational Telecommunications**  
**Association, Inc.**  
 WETA-DT Washington, D.C.  
 Facility ID 65670  
 Ch. 27 90 kW (MAX-DA) 254 m

Constuction Permit File Number BPEDT-20040426ABF

<b>Authorized Effective Radiated Power:</b>		<b>90 kW</b>	<b>19.54 dBk</b>
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<b><u>Antenna System</u></b>			
Dielectric TUP-04-12-2	Max Power Gain:	37.6	15.75 dB
	<b>Antenna Input Power:</b>	<b>2.39 kW</b>	<b>3.79 dBk</b>
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<b><u>Line and Other Losses</u></b>			
Transmission Line Delectric 8 3/16" digiTLine Length 607 ft.	Efficiency:	0.888	
	Loss:		0.516 dB
3 1/8" Rigid Line Length 69 ft.	Efficiency:	0.962	
	Loss:		0.169 dB
Combiner Loss	Efficiency:	0.977	
	Loss:		0.100 dB
	<b>Total Losses:</b>		<b>0.785 dB</b>
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<b><u>Transmitter Power Output:</u></b>		<b>2.87 kW</b>	<b>4.58 dBk</b>