

ENGINEERING STATEMENT
RE APPLICATION FOR LICENSE
(FCC FILE NO. BMPCDT-20080618AAD)
ON BEHALF OF
CAPITOL BROADCASTING CO., INC.
WRAL-DT, RALEIGH, NORTH CAROLINA
CHANNEL 48 1000 KW ND ERP 629 METERS HAAT

JULY 2009

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

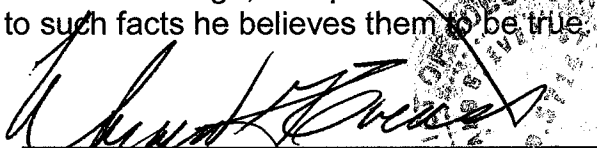
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;


That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



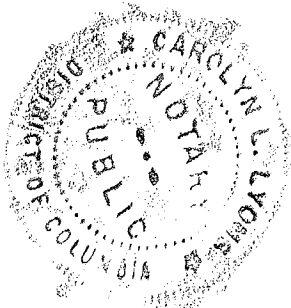
Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 7th day of July, 2009.



Notary Public

My Commission Expires: 2/28/2013



This engineering statement has been prepared in support of an application for license of the outstanding construction permit (FCC File No. BMPCDT-20080618AAD) on behalf of Capitol Broadcasting Co., Inc. ("CBC"), licensee of WRAL-TV, Raleigh, North Carolina.

WRAL-TV was licensed to operate on NTSC television Channel 5 with a maximum visual ERP of 100 kW and a HAAT of 604 meters. WRAL-DT has been allocated DTV Channel 48 with facilities of 916 kW directional ERP and HAAT of 629 meters in the final DTV Table of Allotments.¹ WRAL-DT has been authorized in its outstanding construction permit (FCC File No. BMPCDT-20080618AAD) to construct DTV facilities of 1000 kW (non-directional antenna) at a HAAT of 629 meters with 1.25° electrical beam tilt at an HAAT of 629 meters.

Transmitter Site

The DTV antenna is top-mounted on the existing tower. The WRAL-DT antenna is located on an existing tower having a total overall structure height above ground of 606.2 meters (1988.8 feet). The existing transmitter site is located at 5033 TV Tower Road, Garner, North Carolina. The registration number for the existing tower is 1027322.

The geographic coordinates of the existing site are as follows:

North Latitude: 35° 40' 29"

West Longitude: 78° 31' 40"

NAD-27

¹"In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service", MM Docket 87-268, Memorandum Opinion and Order on Reconsideration of the Seventh Report and Order and Eighth Report & Order (FCC 08-72) Appendix B, Released March 6, 2008.

Equipment Data

Antenna: ERI, Model ATW25H5-ETO-48H antenna with 1.25° electrical beam tilt.

Transmission Line: 548.6 meters (1800 ft) of ERI, Type GLW1500, 15" circular waveguide

95.4 meters (313 ft) of ERI, Type WR1500, 15" wide rectangular waveguide

31.4 meters (103 ft) of ERI, Type MACX775, 7-3/16" 75 ohm rigid transmission line

Power Data

Transmitter output	74.35 kW	18.71 dBk
Total Transmission line efficiency/loss	78.65%	1.04 dB
Input power to the antenna	58.48 kW	17.67 dBk
Antenna power gain,		
Horizontal Polarization	17.10	12.33 dB
Vertical Polarization	7.27	8.61 dB

Maximum Effective Radiated Power		
Horizontal Polarization	1000 kW	30 dBk
Vertical Polarization	425 kW	26.28 dBk

Elevation Data

Vertical dimension for Channel 48 antenna	12.2 meters 40.1 feet
Overall height above ground of the existing antenna structure (including beacon and lightning rod)	606.2 meters 1988.8 feet

Center of radiation of Channel 48 antenna above ground	598.9 meters 1964.9 feet
Elevation of site above mean sea level	109.7 meters 359.9 feet
Center of radiation of Channel 48 antenna above mean sea level	708.7 meters 2325.1 feet
Overall height above mean sea level of existing tower and stacked antenna (including beacon)	715.9 meters 2348.8 feet
Antenna height above average terrain	629 meters

Note: Slight height differences may result due to conversion to metric.

Section III - Engineering

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 _____			
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	
kW		dBk	
Antenna Input power		Effective radiated power (average power)	
dBk	Maximum antenna power gain	kW	dBk
dB			
3. Antenna Data			
Manufacturer		Model	

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

CERTIFICATION

4. Main Studio Location. The main studio location complies with 47 C.F.R. Section 73.1125.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.
5. Constructed Facility. The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.
6. Special Operating Conditions. The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.
An exhibit may be required. Review the underlying construction permit.		Exhibit No.
7. Transmitter. The transmitter complies with 47 C.F.R. Section 73.1660.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.

PREPARER'S CERTIFICATION ON PAGE 6 MUST BE COMPLETED AND SIGNED.

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

8. **Changing transmitter power output.** 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). ☐ Yes ☐ No

9. **Replacing a directional antenna.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(3) to replace a directional antenna with another directional antenna? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Pattern of Directional Antenna.** The proposed theoretical antenna pattern complies with 47 C.F.R. Section 73.1690(c)(3). **Exhibit is required.** ☐ Yes ☐ No

See Explanation in Exhibit No.

Exhibit No.

10. **Use a formerly licensed main facility as an auxiliary facility.** 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? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Auxiliary antenna service area.** The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a). **Exhibit is required.** ☐ Yes ☐ No

See Explanation in Exhibit No.

- b. **Environmental Protection Act.** 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). ☐ Yes ☐ No

See Explanation in Exhibit No.

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.

11. **Change the license status.** 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? ☐ Yes ☐ No

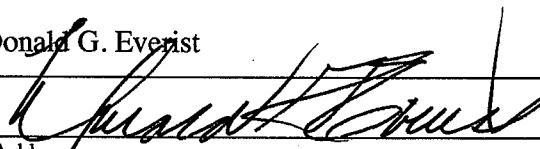
Exhibit No.

If "Yes" to the 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.

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 Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date July 7, 2009	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100			
City Washington		State or Country (if foreign address) DC	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@attglobal.net	

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).