



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN  
APPLICATION FOR MODIFICATION OF  
A DTV CONSTRUCTION PERMIT  
BPCDT-20080317AGR  
WRDC-DT - DURHAM, NORTH CAROLINA  
DTV - CH. 28 - 725 kW - 585 m HAAT**

Prepared for: Raleigh (WRDC-TV) Licensee, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by Raleigh (WRDC-TV) Licensee, Inc., licensee of WRDC(TV), channel 28, Durham, North Carolina, and permittee of WRDC-DT, on post-transition channel 28, to prepare this statement, FCC Form 301, Section III-D, and the associated exhibits in support of an application for modification of its post-transition construction permit BPCDT-20080317AGR. The permittee proposes to alter its post-transition DTV facility to utilize its existing analog transmission facility on channel 28 at the current WRDC analog site. The current proposal permits WRDC-DT to transition rapidly and serve all of its current analog viewers. It is herein proposed to increase WRDC-DT's effective radiated power (ERP) to 725 kW, decrease its HAAT to 585 meters and operate from its existing analog site. No other changes are proposed.

### **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 2 contains the predicted DTV Noise Limited (41 dBu) contour and the predicted principal community (48 dBu) contour. The 48 dBu contour entirely encompasses the principal community of license, Durham, North Carolina.

### **DTV Allocation Considerations**

A study was performed utilizing the Commission's application processing software to determine compliance with the post-transition limitations contained in §73.616 of the Commission's rules. Results indicate that the instant proposal to increase WRDC-DT's ERP from 225 kW to 725 kW is predicted to cause no unacceptable level (0.5%) of new interference to the populations served by any DTV station, expansion construction permit or allotment, except to WXLV-DT, ch. 29, Winston-Salem, NC, for which an interference agreement between the parties has been executed, and a copy is attached.

### **Class A Television Allocation Considerations**

As required in Section 73.613 of the FCC's Rules, the interference contour overlap analysis which is provided by TV\_Process was considered, based on the proposed WRDC-

DT facility, to establish compliance with the protection requirements contained therein. The study results indicate that no prohibited contour overlap exists with any Class A LPTV stations.

### **BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed WRDC-DT transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997 the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines establish a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (DA 04-319, February 6, 2004), provides assistance in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with guideline limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 provides

the technical data required to evaluate compliance with the FCC's policies and guidelines.

The FCC's Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is 0.2 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHz and 1500 MHz, primarily UHF TV stations, is derived from the formula,  $(\text{frequency}/1500)$ . The MPE level for "controlled" environments is 1.0 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) for operations between 30 MHz and 300 MHz, and for broadcast stations operating between 300 MHz and 1500 MHz is derived from the formula,  $(\text{frequency}/300)$ . The predicted emissions of WRDC-DT must be considered, along with the predicted emissions from other proposed stations at the site, and within 315 meters of the site. For WRDC-DT, which will operate on DTV Channel 28 (554-560 MHz), the MPE is 0.371 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an "uncontrolled" environment and 1.855  $\text{mW}/\text{cm}^2$  in a "controlled" environment. The proposed WRDC-DT facility will operate with a maximum ERP of 725 kW using a horizontally polarized transmitting antenna at a centerline height of 579 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WRDC-DT facility is predicted to produce a power density at two meters above ground level of 0.00655  $\text{mW}/\text{cm}^2$ , which is 1.76% of the FCC guideline value for "uncontrolled" environments, and 0.352% of the FCC guideline value for "controlled" environments (see Appendix A). The total percentage of the ANSI value including all stations at the proposed site is 54.88% of the limit for "uncontrolled" environments, and 18.98% of the limit for "controlled" environments.

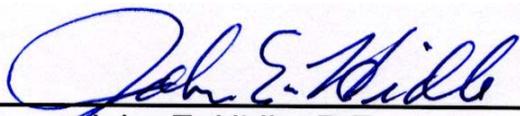
**OCCUPATIONAL SAFETY**

The permittee for WRDC-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the proposed WRDC-DT antenna. The applicant is committed to reducing power and/or ceasing operation during times of service or maintenance of the transmission systems, as necessary, to protect personnel.

**SUMMARY**

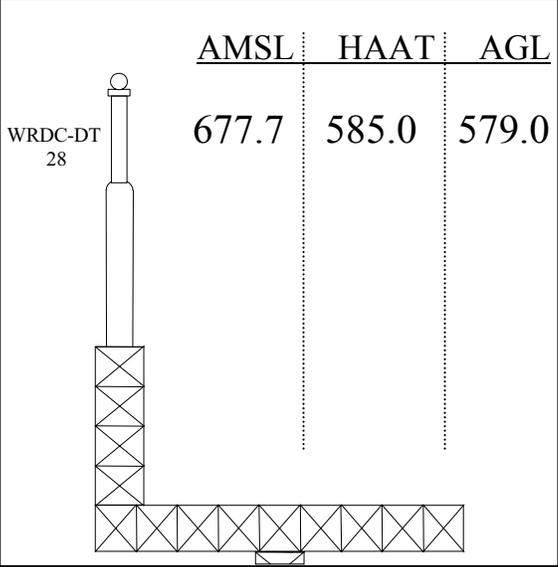
It is submitted that the instant application for modification of construction permit for WRDC-DT seeking to utilize its existing analog site and increase its effective radiated power from 225 kW to 725 kW, as described herein complies with the Rules, Regulations and Policies of the Federal Communications Commission, except for predicted interference to WXLV-DT, for which an interference agreement has been executed, and a copy of the agreement is attached. This statement, FCC Form 301, Section III-D, and the attached exhibits, except for the interference agreement, were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: February 12, 2009

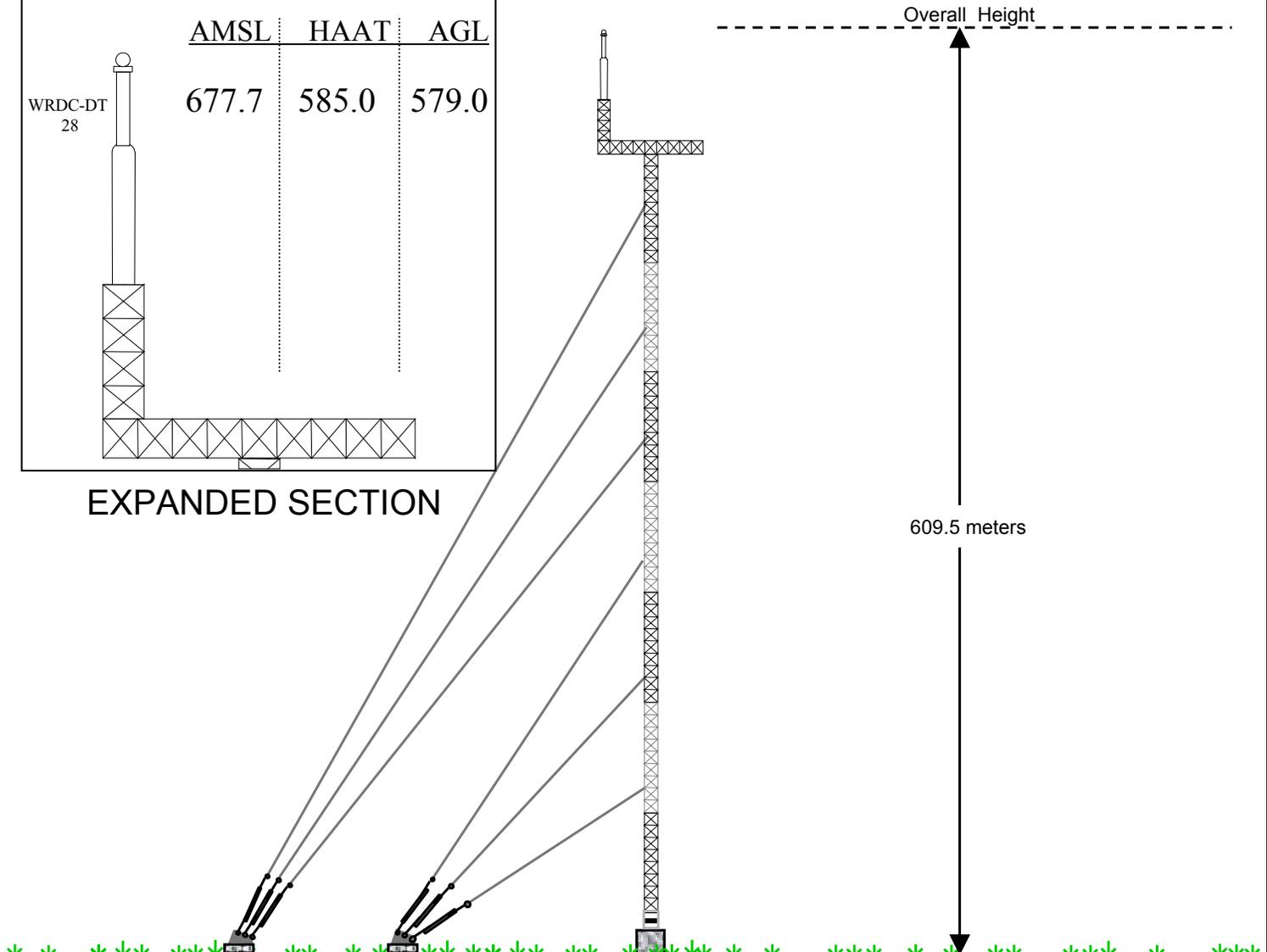
  
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John E. Hidle, P.E.  


COORDINATES NAD-27  
NORTH LATITUDE: 35° 40' 35"  
WEST LONGITUDE: 78° 32' 8"

RADIATION CENTERLINE HEIGHT IN METERS



EXPANDED SECTION



GROUND ELEVATION = 98.7 meters A.M.S.L. / AVERAGE TERRAIN = 92.7 meters A.M.S.L.

**VERTICAL PLAN ANTENNA SKETCH**  
WRDC-DT - DURHAM, NORTH CAROLINA  
Ch. 28 - 725 kW ERP - 585.0 HAAT  
JUNE, 2008

**CARL T. JONES**  
CORPORATION

NOTE : NOT DRAWN TO SCALE



**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WRDC-DT, DURHAM, NORTH CAROLINA  
CHANNEL 28, 725 kW ERP, 585.0 m HAAT  
JUNE, 2008

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WRDC-DT	DT	28	557	H	577	725.000	0.300	0.00655	0.371	1.76%
WLFL-DT	DT	27	551	H	578	725.000	0.300	0.00652	0.367	1.78%
WACN-LP	TV	34	593	H	298	49.160	0.300	0.00083	0.395	0.21%
WRAZ-DT	DT	49	683	H	581.9	1000.000	0.300	0.00888	0.455	1.95%
WRAL-DT	DT	48	677	H	597	916.000	0.300	0.00773	0.451	1.71%
WNCN-DT	DT	17	491	H	596	525.000	0.300	0.00444	0.327	1.36%
WRDC-DT	DT	28	557	H	578	725.000	0.300	0.00652	0.371	1.76%
W64CN	TV	64	773	H	150	27.000	0.300	0.00180	0.515	0.35%
WQDR	FM	234	94.7	H & V	505	100.000	1.000	0.02620	0.200	13.10%
WRAL	FM	268	101.5	H & V	548	100.000	1.000	0.02225	0.200	11.13%
WRDU	FM	291	106.1	H & V	411	100.000	1.000	0.03956	0.200	19.78%

**TOTAL PERCENTAGE OF ANSI VALUE= 54.88%**

*\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights so that the predicted power densities consider the 2 meter human height allowance.  
This evaluation includes facilities collocated at the site, and facilities located within 315 meters.*

