

**Engineering Statement
Request for Special Temporary Authority**

prepared for

Gray Television Licensee, LLC

WRDW-CD Augusta, GA

Facility ID 3369

STA Ch. 30 (digital) 15 kW

Gray Television Licensee, LLC (“*Gray*”) is the licensee of Class A Television station WRDW-CD, Channel 16, Facility ID 3369, Augusta, GA. WRDW-CD is licensed to operate pursuant to file number 0000001455 with 6.9 kW effective radiated power (“ERP”) utilizing a directional antenna mounted on a municipal water tower, centered 36.8 meters above ground level (“AGL”). *Gray* herein seeks Special Temporary Authority (“STA”) to operate WRDW-CD on a different channel at an alternate site location.

WRDW-CD is presently operating pursuant to STA with a reduced facility (4 kW ERP at 15.2 meters AGL) at an alternate transmitting location (file# 0000004789). The present STA operation utilizes a directional transmitting antenna side-mounted on the tower structure adjacent to the studio building associated with WRDW-CD and WRDW-TV (Ch. 12, Facility ID 73937, Augusta, GA, also licensed to *Gray*). The WRDW-CD license has recently been assigned to *Gray*, (BALDTA-20150828AAG, consummated 10/27/2015).

This statement supports *Gray’s* request for STA to operate WRDW-CD on Channel 30 at an altogether different transmitting location, increased antenna height, and increased ERP on an interim basis. The proposed transmitting location is 20.2 km distant from the licensed WRDW-CD site and 16.3 km from the current STA site. The proposed STA facility will employ an existing top-mount nondirectional antenna on the tower structure associated with Antenna Structure Registration number 1058894. The antenna height is 447 meters AGL and the proposed ERP is 15 kW (the maximum ERP permitted for UHF Class A). The STA facility will allow interim operation of an expanded facility which can be implemented in a short timeframe in order for WRDW-CD to provide significantly improved operation beginning February 1, 2016.

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A different channel is requested due to equipment availability. *Gray* is unable to secure and install a Channel 16 antenna system on short notice, however there is an operational Channel 30 facility located at the site proposed herein. No tower work is required to carry out this proposal.

Figure 1 depicts the 51 dB μ coverage contour of the proposed STA facility as well as that of the licensed and existing STA facilities. The proposed STA facility's contour encompasses and expands beyond that of the licensed WRDW-CD.

Once the Commission lifts the freeze¹ on modification applications that increase a Class A station's service area, *Gray* will file an application for minor modification to permanently relocate WRDW-CD to one of *Gray's* towers on Channel 16 or other channel that may result from post-auction repacking and subsequent alternate channel substitution procedures. *Gray* acknowledges that in any repack of the broadcast spectrum following the Incentive Auction, WRDW-CD will only receive protection for the licensed contour of the station as of May 29, 2015.

Interference study per OET Bulletin 69² shows that the STA proposal complies with the FCC's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility except for WAGT (Channel 30, Augusta, GA).

¹"Media Bureau Announces Limitations on the Filing and Processing of Full Power and Class A Television Station Modification Applications, Effective Immediately, and Reminds Stations of Spectrum Act Preservation Mandate," DA 13-618, Public Notice, released April 5, 2013.

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. The default cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

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WAGT would receive 94.8 percent interference to its licensed facility (file# 0000004602). The licensee of WAGT has agreed to accept this level of interference from WRDW-CD caused to WAGT. A copy of a consent statement from WAGT is attached separately. As a practical matter, the interference is theoretical because WAGT and the proposed STA Channel 30 WRDW-CD facility will not operate simultaneously.

The nearest FCC monitoring station is 273 km distant at Powder Springs, GA. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with quiet zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3 kilometers of the site. The site is not located within any border area requiring international coordination.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed STA operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number. 65. Based on OET-65 equation (10) and the worst-case of 100% field at all elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $2.5 \mu\text{W}/\text{cm}^2$, which is 0.7 percent of the general population/uncontrolled maximum permitted exposure limit.

This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent. When the antenna's elevation pattern is considered, the calculated electromagnetic field will be even lower.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and

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will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposal involves continued use of a top-mounted transmitting antenna on an existing antenna support structure. No tower work or change in structure height is proposed.

List of Attachments

Figure 1	Coverage Contour Comparison
Table 1	Interference Analysis Results Summary
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	December 17, 2015	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

Figure 1
Coverage Contour Comparison
WRDW-CD Augusta, GA
Facility ID 3369
STA Ch. 30 (digital) 15 kW
 prepared for
Gray Television Licensee, LLC
 December, 2015

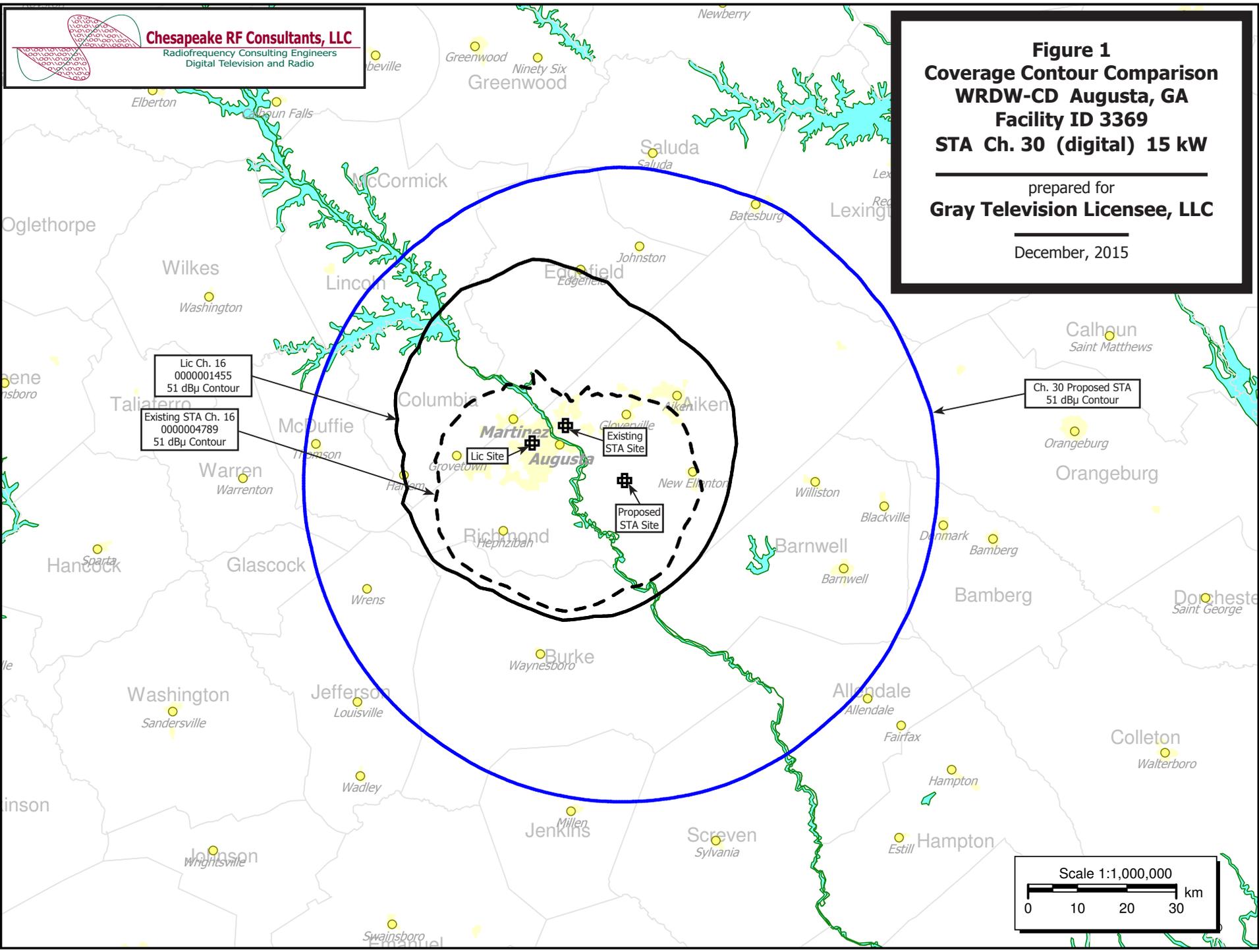


Table 1

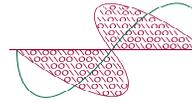
Interference Analysis Results Summary

prepared for

Gray Television Licensee, LLC

WRDW-CD Augusta, GA

STA Ch. 30 (digital) 15 kW



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

WRDW-CD	USERRECORD-01	AUGUSTA	GA US
Channel 30	ERP 15. kW	HAAT 483. m	RCAMSL 00562 m
Latitude	033-24-20	Longitude	0081-50-01
Nondirectional			

The LMS application requires NAD-83 coordinates. FCC internal systems then convert to NAD-27 and port over to CDBS for processing. This interference analysis utilizes truncated NAD-27 coordinates to replicate FCC processing.

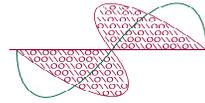
Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
29	W29DN-D	ATHENS GA	127.2	LIC	BLDTL-20140221ACE	---	none
29	W29DN-D	ATHENS GA	171.8	CP	BPDTL-20140228AEM	---	none
29	W29DY-D	AUGUSTA GA	32.5	CP MOD	BMPDTL-20140528ACZ	14,389	0 (0.00%)
29	NEW	MACON GA	190.6	APP	BNPDTT-20090825BMS	---	none
29	W29EN-D	SOPERTON GA	122.7	CP	BNPDTL-20100510AHF	---	none
29	W29EC-D	FLORENCE SC	206.7	CP	BNPDTL-20100409ABX	---	none
29	WAZS-LD	NORTH CHARLESTON SC	169.5	LIC	BLDTL-20100916ADH	---	none
29	WSQY-LP	SPARTANBURG SC	178.8	CP	BDISDTL-20110824BCU	---	none
30	W30BD	EUFAULA AL	353.3	LIC	BLTTL-19960628JF	---	none
30	WLGA	OPELIKA AL	301.3	LIC	BLCDDT-20140827ABB	858,410	0 (0.00%)
30	WLGA-DR	OPELIKA AL	301.3	APP	BPRM-20090722ACP	---	none
30	NEW	TALLAHASSEE FL	398.0	APP	BNPDTL-20090825AAK	---	none
30	NEW	TALLAHASSEE FL	401.5	APP	BNPDTL-20090825AXO	---	none
30	NEW	TALLHASSEE FL	398.0	APP	BNPDTL-20090825AJK	---	none
30	WTBS-LD	ATLANTA GA	236.2	LIC	BLDTL-20110105ABR	3,646,289	0 (0.00%)
30	WAGT	AUGUSTA GA	0.0	LIC	BLANK-0000004602	1,259,766	1,194,182 (94.8%) *
30	W30DW-D	TIFTON GA	273.4	LIC	BLDTT-20141124ARP	---	none
30	WVCZ-LD	VALDOSTA GA	322.7	CP	BLANK-0000001343	---	none
30	WVCZ-LD	VALDOSTA GA	327.8	LIC	BLANK-0000001216	---	none
30	W30CR-D	BISCOE NC	277.4	LIC	BLDTT-20101029AAJ	---	none
30	W35AV	BLACK MOUNTAIN NC	245.5	CP MOD	BMPDTT-20110127AAQ	220,952	288 (0.13%)
30	W35AV	BLACK MOUNTAIN NC	245.6	CP	BDISDTT-20090824ACP	180,721	0 (0.00%)
30	W30DX-D	BRYSON CITY, ETC NC	270.5	CP	BDCCDTT-20140611AAE	---	none
30	WUNC-TV	RALEIGH NC	393.9	LIC	BLEDT-20110705ACT	---	none
30	WSOC-TV	SHELBY NC	209.4	LIC	BLCDDT-20100119ACN	---	none
30	WSFX-TV	WILMINGTON NC	346.3	LIC	BLCDDT-20110209AAO	---	none
30	W30CS-D	ZIONVILLE NC	322.2	LIC	BLDTT-20090615AAL	---	none
30	W30DH-D	FLORENCE SC	206.7	CP	BNPDTL-20100409ABY	---	none
30	W30CV-D	HILTON HEAD ISLAND SC	171.3	LIC	BLDTL-20110110AAR	---	none

* WAGT is accepting 94.8 percent interference from WRDW-CD.
See engineering statement.

Table 1

Interference Analysis Results Summary

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30	WVLT-TV	KNOXVILLE TN	347.1	LIC	BLCDT-20120103ABR	---	none
31	WSB-TV	ATHENS GA	189.6	LIC	BLCDT-20100429ADZ	---	none
31	WFXG	AUGUSTA GA	1.2	CP	BPCDT-20090303ABA	889,582	1,654 (0.19%)
31	WDMA-CD	MACON GA	182.2	LIC	BLDTA-20140602AAA	---	none
31	WJNI-LD	NORTH CHARLESTON SC	169.5	LIC	BLDTL-20100916ADG	---	none
31	W31DY-D	PICKENS SC	178.7	CP	BDCCDTT-20120614AAI	---	none

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	3369
	State	Georgia
	City	AUGUSTA
	DCA Channel	30

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1058894
Coordinates (NAD83)	Latitude	33° 24' 20.7" N+
	Longitude	081° 50' 00.5" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	475.6 meters
	Support Structure Height	435.8 meters
	Ground Elevation (AMSL)	115.2 meters
Antenna Data	Height of Radiation Center Above Ground Level	447 meters
	Height of Radiation Center Above Mean Sea Level	562.2 m
	Effective Radiated Power	15 kW

**Antenna
Technical Data**

Section	Question	Response
Antenna Type	Antenna Type	Non-Directional
	Do you have an Antenna ID?	
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	DIE
	Model	TFU-28GTH RO4
	Rotation	75 degrees
	Electrical Beam Tilt	0.75
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Stringent