

ENGINEERING STATEMENT  
RE DIGITAL FLASHCUT APPLICATION  
FOR LOW POWER TELEVISION STATION  
KWDW-LP, OKLAHOMA CITY, OKLAHOMA  
CH.48 15 KW ERP ND 557.4 METERS RCAMSL

MARCH 2011

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         )

Ross J. Heide, being duly sworn upon his oath, deposes and states that:

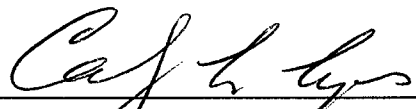
He is a graduate of the Massachusetts Institute of Technology in Operations Research and Management Science, a Registered Professional Engineer in the District of Columbia, and employed by Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

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

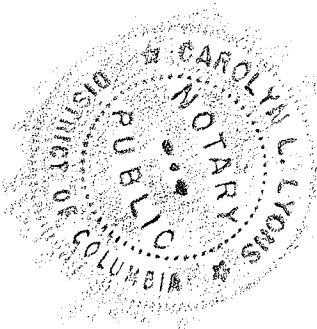
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
\_\_\_\_\_  
Ross J. Heide  
District of Columbia  
Professional Engineer  
Registration No. PE900748

Subscribed and sworn to before me this 17<sup>th</sup> day of March, 2011.

  
\_\_\_\_\_  
Carolyn L. Lyons  
Notary Public

My Commission Expires: 2/28/2017



Introduction

This engineering statement has been prepared on behalf of Oklahoma Land Company, LLC in support of its proposed digital flashcut of licensed low power television station KWDW-LP, Channel 48, Tulsa, Oklahoma [BLTTL-200703ASABX]. The proposed facilities have a center of radiation above mean sea level ("RCAMSL") of 557.4 meters and an ERP of 15 kW non-directional.

Exhibits requested by FCC Form 346 are included with this report.

Antenna Site

The proposed Channel 48 antenna is side-mounted on an existing tower with a center of radiation of 213 meters (698.8 feet) above ground level. The antenna site is located at 7416 N. Kelly, Oklahoma City, Oklahoma. The geographic coordinates (NAD-27) of the existing tower site are as follows:

North Latitude: 35° 32' 51"

West Longitude: 97° 29' 30"

The tower registration number for the antenna structure is 1011487.

Transmitting Equipment

The following data provides the pertinent information concerning the proposed digital television translator station operation.

Transmitter:	Type-approved, stringent mask
Antenna:	SWR, Type SWLP8OM horizontally polarized, non-directional antenna with a power gain of 9.3 (9.68 dB)
Transmission Line:	227 meters (745 feet) of 1-5/8", 50 ohm, foam dielectric, coaxial line, 0.605 dB loss/100 ft

COHEN, DIPPELL AND EVERIST, P.C.

KWDW-LP, OKLAHOMA CITY, OKLAHOMA

PAGE 2

Power Data

Transmitter output	4.55 kW	6.58 dBk
Transmission line efficiency/loss	35.4%	-4.51 dB
Power input to antenna	1.61 kW	2.07 dBk
Antenna power gain (Peak Lobe -1.0°)	9.3	9.68
Effective Radiated Power	15 kW	11.76 dBk

Elevation Data

Vertical dimension of Ch. 48 antenna (side-mounted w/o beacon or lightning rod)	3.57 meters 11.7 feet
Overall height of tower above ground	327 meters 1072.8 feet
Elevation of radiation center of Ch. 48 antenna above ground	213 meters 698.8 feet
Elevation of site above mean sea level	344.4 meters 1130 feet
Elevation of center of Ch. 48 antenna above mean sea level	557.4 meters 1828.7 feet
Overall tower height above mean sea level	671.4 meters 2202.8 feet

Allocation

The attached Table II shows the stations potentially affected by the proposed KWDW-LP operation. The Longley-Rice (OET Bulletin 69) method predicts no impermissible interference.

### Topographic Data

The average elevation data of each radial from 3.2-16.1 km was obtained from the 3-second database. The distances along each radial to the limits of the normally protected 51 dBu F(50,90) and noise-limited 41 dBu F(50,90) contours were determined from reference to the propagation data for Channels 14-69, as published by the FCC in Figure 10b, Section 73.699 of the FCC Rules without the use of the roughness correction.

Utilizing the formula in Section 73.684(c)(1) for the effective heights shown on the attached tabulation, it is found that the depression angle  $A_h$ , varies between 0.37 to 0.43 degrees. The relative field in the vertical radiation pattern at these angles is greater than 90% of the maximum. Therefore, maximum power at the vertical angle was used in determining the distance to the respective contours.

### Contour Data

The distances to the contours, average elevations, and effective antenna heights are included on the attached tabulation (Table I). The contours determined from these distances are shown on the attached maps, Exhibits E-2 and E-3.

### Existing and Proposed Service Areas

The map in Exhibit E-2 compares the service contour (74 dBu) for the currently licensed analog KWDW-LP to the digital normally protected contour of the facilities proposed herein.

### Environmental Statement

According to the applicant, the proposed facilities are not located near any known wilderness area, wildlife preserve, historic place, or Indian religious site. The proposed facilities are not located

in a flood plain area. The proposed facilities will not affect or jeopardize the threatened or endangered species or their critical habitats. The use of an existing antenna on the tower does not involve any significant changes in the surface features.

The proposed facilities will not affect any districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.

The FCC guideline for human exposure to RF radiation level for Channel 48 (674-680 MHz) is 2246 and 449 microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) for controlled and uncontrolled environment, respectively. Computations made according to OET Bulletin 65 (Edition 97-01) show that based on the maximum ERP of 15 kW with 0.28 maximum antenna relative field factor towards the area at the base of the tower and 213 meters antenna radiation center above the ground, the RF radiation level would be less than  $0.9 \mu\text{W}/\text{cm}^2$  at 2 meters above the ground. This value is less than 0.2% of the FCC guideline for an uncontrolled environment and less than 0.04% of the guideline for a controlled environment.

Therefore, the RF contributions of the proposed KWDW-LP facilities are not predicted to exceed 5% of the guideline for an uncontrolled environment. For the reasons stated above, the proposed digital low power operation does not involve any action specified in Section 1.1307 of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from environmental processing.

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
KWDW-LP, OKLAHOMA CITY, OKLAHOMA  
CHANNEL 48 15 KW ERP 557.4 METERS RCAMSL  
MARCH 2011

Radial Bearing N ° E, T	Average*	Effective Height meters	Depression Angle	ERP At Radio Horizon kW	Distance to Contour F(50,90)	
	3.2 to 16.1 km meters				41 dBu Noise-Limited km	51 dBu Protected km
0	351.9	205.5	0.397	15	60.8	50.1
45	317.2	240.2	0.429	15	63.0	52.1
90	355.5	201.9	0.394	15	60.6	49.9
135	360.2	197.2	0.389	15	60.3	49.6
180	371.1	186.3	0.378	15	59.6	49.0
225	363.2	194.2	0.386	15	60.1	49.4
270	374.8	182.6	0.374	15	59.4	48.8
315	347.6	209.8	0.401	15	61.1	50.4
Average	355.2	202.2				

\*Based on data from FCC 3-second data base

DTV Channel 48 (674-680 MHz)  
Average Elevation 3.2 to 16.1 km 355.2 meters AMSL  
Center of Radiation 557.4 meters AMSL  
Antenna Height Above Average Terrain 202.2 meters  
Effective Radiated Power 15 kW (11.76 dBk) Max.

North Latitude: 35° 32' 51"  
West Longitude: 97° 29' 30"

(NAD-27)

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II  
LONGLEY-RICE INTERFERENCE  
FOR THE PROPOSED OPERATION OF  
KWDW-LP, OKLAHOMA CITY, OKLAHOMA  
CHANNEL 48 50 KW ERP ND 557.4 METERS RCMSL  
MARCH 2011

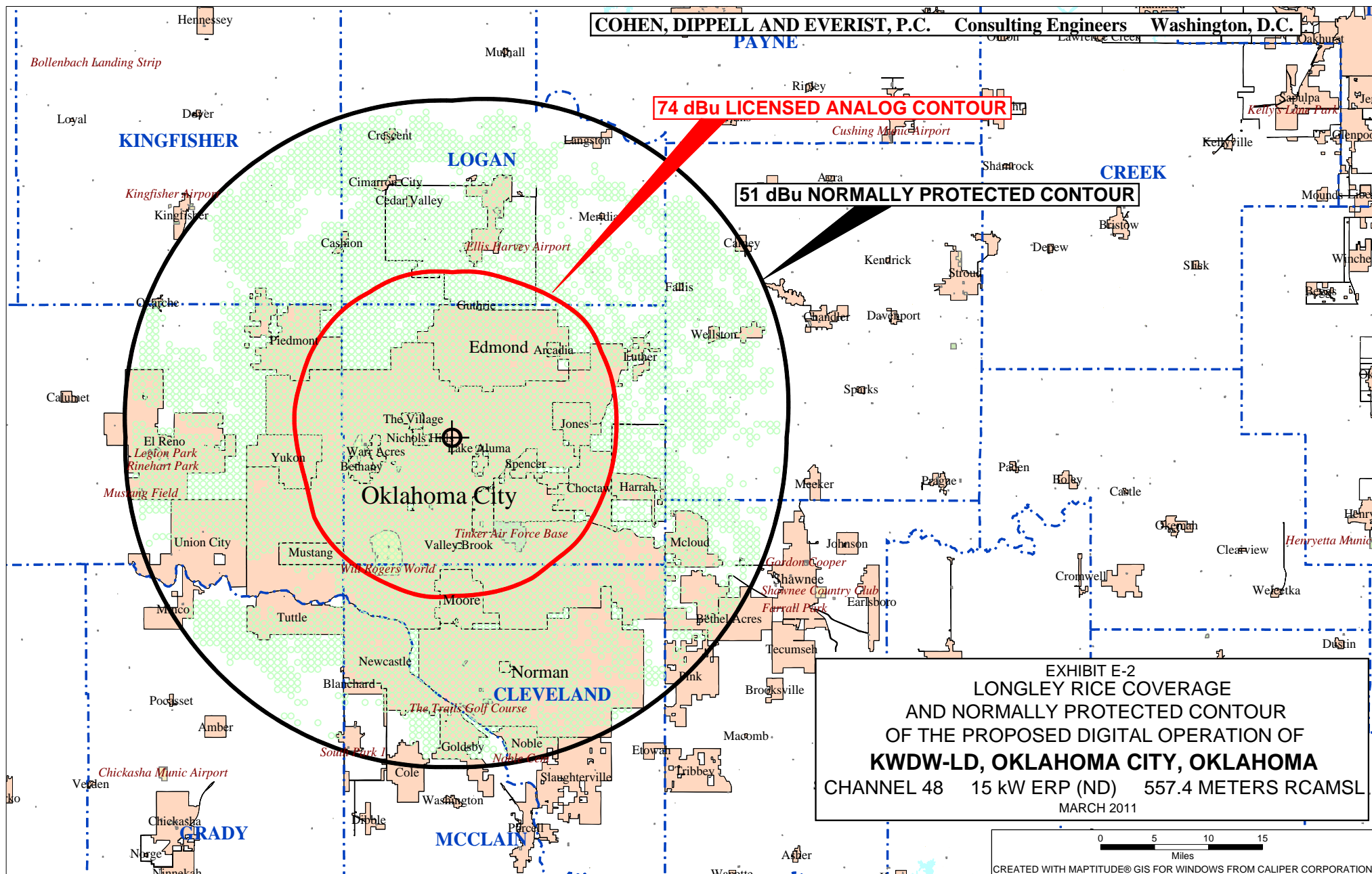
<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
41	KXOC-LP	OKLAHOMA CITY OK	5.6	LIC	BLTTL-20060203AAZ	No interference
41	KXOC-LP	OKLAHOMA CITY OK	5.6	APP	BSTA-20050721ADG	No interference
44	K44BQ	ARDMORE OK	125.3	LIC	BLTT-19900823II	0.00%
45	K45EJ	ENID OK	110.3	LIC	BLTT-19970310JJ	0.00%
47	K47KI-D	DUNCAN OK	125.1	APP	BMPDTT-20100202ACD	No interference
47	K47KI-D	DUNCAN OK	125.1	LIC	BLDTT-20091228AEH	No interference
47	KXDA-LP	DURANT OK	157	APP	BDISDTL-20090605ACG	No interference
47	K47LR-D	ELK CITY OK	162.3	LIC	BLDTT-20100510ASX	0.00%
47	K47LT-D	SAYRE OK	206.2	CP	BDCCDTT-20070410AAI	0.00%
47	K47LB-D	SEILING OK	145.1	LIC	BLDTT-20101007ACJ	0.00%
47	KWHB	TULSA OK	172	CP MO	BMPCDT-20080619ABI	No interference
47	KWHB	TULSA OK	172	LIC	BLCDDT-20090217ACO	No interference
48	K45EI	BENTONVILLE & ROGERS AR	297.8	CP	BDISTTL-20090622AFA	No interference
48	K45EI	BENTONVILLE & ROGERS AR	297.8	APP	BSTA-20090619ADL	No interference
48	K45EI	BENTONVILLE & ROGERS AR	297.8	CP	BDISTTA-20100527AFR	No interference
48	K48FL	FORT SMITH AR	242.6	LIC	BLTTL-20041021AEM	No interference
48	NEW	FORT SMITH AR	294.2	APP	BNPDTL-20100902ABI	No interference
48	K48MV-D	GARDEN CITY KS	399	CP	BNPDTL-20100108ADH	No interference
48	K61GJ	AURORA MO	370	CP	BDISDTL-20060331AXX	No interference
48	K48KY-D	ALTUS OK	197.3	LIC	BLDTT-20100709AKI	No interference
48	K48KE-D	BUFFALO OK	239	LIC	BLDTT-20091228AEL	No interference
48	DK48AP	ELK CITY, ETC. OK	162.3	LIC	BLTT-19881215IB	No interference
48	NEW	ENID OK	119.5	APP	BNPDTL-20101027AAR	No interference
48	NEW	LAWTON OK	144.7	APP	BNPDTL-20100930ARJ	0.00%
48	K48LJ	MCALISTER OK	173.2	CP	BNPTTL-20000830AIV	No interference
48	KELF-LP	MIAMI OK	268.8	LIC	BLTTL-20060301ADE	No interference
48	DK59GH	AMARILLO TX	392.8	CP	BDISTTL-20070216ABD	0.00%
48	K48DD-D	CHILDRESS TX	278.6	LIC	BLDTT-20100708TQH	No interference
48	K48MU-D	CISCO TX	382.1	CP	BNPDTL-20100304AAW	0.00%
48	KSTR-DT	IRVING TX	337.5	CP	BPCDDT-20080618AEK	No interference

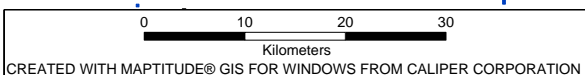


COHEN, DIPPELL AND EVERIST, P.C.

TABLE II  
LONGLEY-RICE INTERFERENCE  
FOR THE PROPOSED OPERATION OF  
KWDW-LP, OKLAHOMA CITY, OKLAHOMA  
CHANNEL 48 50 KW ERP ND 557.4 METERS RCAMSL  
MARCH 2011

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
48	KSTR-DT	IRVING TX	337.5	LIC	BLC DT-20020909AAM	No interference
48	K48MS-D	SHAMROCK TX	250.6	CP	BNPDTL-20100416ABM	No interference
48	K48HU	WICHITA FALLS TX	200.3	LIC	BLTT-20050916ABA	No interference
48	K48HU	WICHITA FALLS TX	200.3	CP	BDFCDTT-20090821AAF	No interference
49	NEW	ARDMORE OK	154.8	APP	BNPDTL-20101006AAJ	0.00%
49	NEW	DICKSON OK	204.6	APP	BNPDTL-20100510ANC	0.00%
49	K49KK-D	ELK CITY OK	162.3	LIC	BLDTT-20100510ASW	0.00%
49	K49GC	LAWTON OK	133.3	LIC	BLTT-20011109AAL	No interference
49	K49DO-D	SEILING OK	145.1	LIC	BLDTT-20101007ACH	0.00%
49	KGEB	TULSA OK	149.2	LIC	BLC DT-20060817ADB	No interference
50	KOKQ-LP	GLENCOE OK	81.8	LIC	BLTTL-19931227IA	0.00%





### Section III - Engineering (Digital)

#### 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. Translator Input Channel No. \_\_\_\_\_
3. Station proposed to be rebroadcast:

Call Sign	City	State	Channel
-----------	------	-------	---------

4. Antenna Location Coordinates: (NAD 27)

\_\_\_\_° \_\_\_\_' \_\_\_\_" ☐ N ☐ S Latitude  
\_\_\_\_° \_\_\_\_' \_\_\_\_" ☐ E ☐ W Longitude

5. Antenna Structure Registration Number: \_\_\_\_\_

☐

Not applicable

See Explanation  
in Exhibit No.

☐

FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters
7. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters
8. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters
9. Maximum Effective Radiated Power (ERP): \_\_\_\_\_ kW
10. Transmitter Output Power: \_\_\_\_\_ kW

11. a. Transmitting Antenna: ☐ Nondirectional ☐ Directional ☐ Directional composite

Manufacturer	Model
--------------	-------

- b. Electrical Beam Tilt: \_\_\_\_\_ degrees ☐ Not applicable

c. Directional Antenna Relative Field Values:

Rotation: \_\_\_\_\_ ° ☐ No rotation ☐ N/A (Nondirectional)

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

12. **Out-of-Channel Emission Mask:** Simple ☐ Stringent ☐

**CERTIFICATION**

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030. ☐ Yes ☐ No 

See Explanation in Exhibit No.

14. **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). Unless the applicant can determine RF compliance. An **Exhibit is required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

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.

15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.


☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

**PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.**

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- ☐ Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees,
- ☐ Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.
- ☐ Pursuant to Section 74.786(e), an applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

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 Ross J. Heide		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date March 17, 2011	
Mailing Address Cohen, Dippell and Everist, P.C., 1420 N Street, NW, Suite One			
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).