

ENGINEERING EXHIBIT

Application for Digital Television Station Construction Permit

prepared for

Young Broadcasting of Sioux Falls, Inc.

KPLO-TV Reliance, SD

Facility ID 41964

Ch. 13 46.9 kW 306 m

Young Broadcasting of Sioux Falls, Inc. (“*Young*”) is the licensee of television station KPLO-TV, Channel 13, Reliance, SD (BLCDT-20030519AER). The tower supporting KPLO-TV’s main antenna collapsed during an ice storm in January 2010. KPLO-TV has been operating with a reduced facility pursuant to Special Temporary Authority (BDSTA-20100212AAH as extended). *Young* herein seeks a Construction Permit to locate a permanent facility for KPLO-TV at a different transmitting location.

It is proposed to construct a new tower at the intended site to support the KPLO-TV antenna. The FAA has been notified of the proposed tower construction on that agency’s form 7460-1 (FAA study number 2012-AGL-5813-OE). *Young* will apply for FCC Antenna Structure Registration (“ASR”) upon receipt of a *Determination of No Hazard* from the FAA and completion of required environmental studies. This application will be amended to supply an ASR number when it becomes available. Pending submission of that amendment, a response of “no” has been supplied in response to Item 5 of the associated FCC Form 301 Section III-D checklist.

As specified herein, the KPLO-TV facility will be relocated 9.9 km from the licensed site and will operate with an effective radiated power (“ERP”) of 46.9 kW with a directional antenna having a height above average terrain (“HAAT”) of 306 meters. These parameters are comparable to the licensed 40 kW ERP 318 meter HAAT facility.

The proposed directional antenna is identical to the licensed antenna, a horizontally polarized Dielectric model THA-P4SP-2H/8HD-1-R. The directional antenna’s azimuthal and elevation patterns are depicted in Figures 1, 2, and 2A.

A map is supplied as Figure 3 which depicts the standard predicted coverage contours. This map includes the location of Reliance, KPLO-TV's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1) as the entire principal community will be encompassed by the 43 dBμ contour.

Population and Coverage

The proposed KPLO-TV facility's predicted service population provides a 104.8 percent match of the MB Docket 87-268 Seventh Report and Order Appendix B facility, as detailed in the following table.

Digital Television Population Summary

Population Summary (2000 Census) OET Bulletin 69 method	Appendix B	Proposed
Within Noise Limited Contour	56,183	57,604
Not affected by terrain losses	53,474	56,470
Lost to all interference	3,584	4,197
Net DTV Service	49,890	52,273
Match of Appendix B	---	104.78%

Owing to the 9.9 km site relocation, there will be some areas of service contour coverage gain and loss. Figure 4 depicts the contour gain and loss resulting from the proposal, when compared to the licensed KPLO-TV facility.

KPLO-TV Coverage Contour Gain-Loss

	Area (sq. km)	Population (2000 Census)
36 dBμ Contour		
Licensed KPLO-TV	31,327.8	56,130
Proposed KPLO-TV	31,597.6	57,574
Loss Area	2,156.5	2,937
Gain Area	2,426.3	4,381
Net Change (increase)	269.8	1,444

Most of the loss area is within the service contour of KDLO-TV (Ch. 3, Florence, SD) which is commonly owned with KPLO-TV and carries the same CBS Network programming as KPLO-TV.¹ The overlapping KDLO-TV contour covers all of the loss area except for two areas containing a population of 1,245 persons. As shown in Figure 5, of those 1,245 persons that might lose CBS Network service, none would be left in "white" or "gray" areas (*i.e.*, with no or one other

¹KPLO-TV and KDLO-TV are satellite stations of KELO-TV (Ch. 11, Sioux Falls, SD).

television service). Most of the 1,245 persons would be within the service contour of three other television services² as shown in the following table.

Alternate Television Services in Gain and Loss Areas
 (Beyond Overlapping Contour of CBS Network Station KDLO-TV)

		Population (2000 Census)	
		Loss Area	Gain Area
Number of Other Television Services	5 or more	0	0
	4	1	0
	3	1,164	12
	2	80	1,380
	1	0	2,989
	0	0	0
Totals:		1,245	4,381

The entire gain area has a population of 4,381 persons and would receive CBS Network service for the first time. The table above also shows that a portion of the gain area is considered to be “gray” area, wherein 2,989 persons are within the service contour of only one other station and KPLO-TV would provide a second service. Nearly all of the gain area’s remainder, 1,380 persons, presently receives only two other services.

The proposed KPLO-TV facility is intended to replicate, to the extent possible, the licensed facility. The antenna system will be identical to the licensed antenna which was victim to the tower collapse. The antenna will be centered 307.8 meters above ground level (“AGL”) and the ERP will be 46.9 kW, which exceed the licensed facility’s 182.9 meter antenna height AGL and 40 kW ERP. The proposed antenna height above mean sea level of 844.9 meters is identical to the licensed facility. The minor shift in service area results from the use of a different transmitter site. The licensed site is atop Medicine Butte, and this application to move the transmitter site has been prompted by *Young’s* willingness to leave the Butte in deference to the recognition that the Butte is a site of great spiritual significance to local Native American Tribes. Counsel for *Young* is providing a separate exhibit that further describes the various issues that have necessitated an alternate site for KPLO-TV.

² Contour levels are pursuant to §73.622(e).

Allocation and Interference

The proposed facility expands the KPLO-TV service contour beyond that established by Appendix B values. A detailed interference study per OET Bulletin 69³ shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby digital television and Class A television stations. The interference study output report is provided as Table 1.

The nearest FCC monitoring station is 348 km distant at Grand Island, NE. This exceeds 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 3.2 kilometers of the site. The site location is beyond the border areas requiring international coordination.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

Since the proposal involves a new tower, *Young* has commissioned a review of the various environmental subjects outlined in §1.1307(a)(1-8). This application will be amended when that review is complete to provide any additional material that may be necessary. Pending submission of that amendment, a response of “no” has been supplied in response to Item 2 of the associated FCC Form 301 Section III-D checklist.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission’s OET Bulletin Number 65. Based on OET-65 equation (10), and considering 25 percent antenna relative field in downward elevations (pattern data shows less than 25 percent relative field at angles 15 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $1.05 \mu\text{W}/\text{cm}^2$, which is 0.5 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

³FCC 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. A cell size of 2 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.

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.

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 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.

Certification

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



Joseph M. Davis, P.E.
July 24, 2012

Chesapeake RF Consultants, LLC
207 Old Dominion Road
Yorktown, VA 23692
703-650-9600

List of Attachments

Figure 1	Antenna Azimuthal Pattern
Figure 2, 2A	Antenna Elevation Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Coverage Contour Comparison - Alternate CBS Network Services
Figure 5	Alternative Services in Gain and Loss Areas
Table 1	OET Bulletin 69 Interference Study
Form 301	Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered July 24, 2012 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.

Proposal Number	DCA-9660		
Date	29-Oct-01		
Call Letters	KPLO	Channel	13
Location	Reliance, SD		
Customer			
Antenna Type	THA-P4SP-2H/8HD-1-R		

AZIMUTH PATTERN

Gain	1.71	(2.34 dB)
Calculated / Measured	Calculated	

Frequency	213.00 MHz
Drawing #	THA-P4SP-213

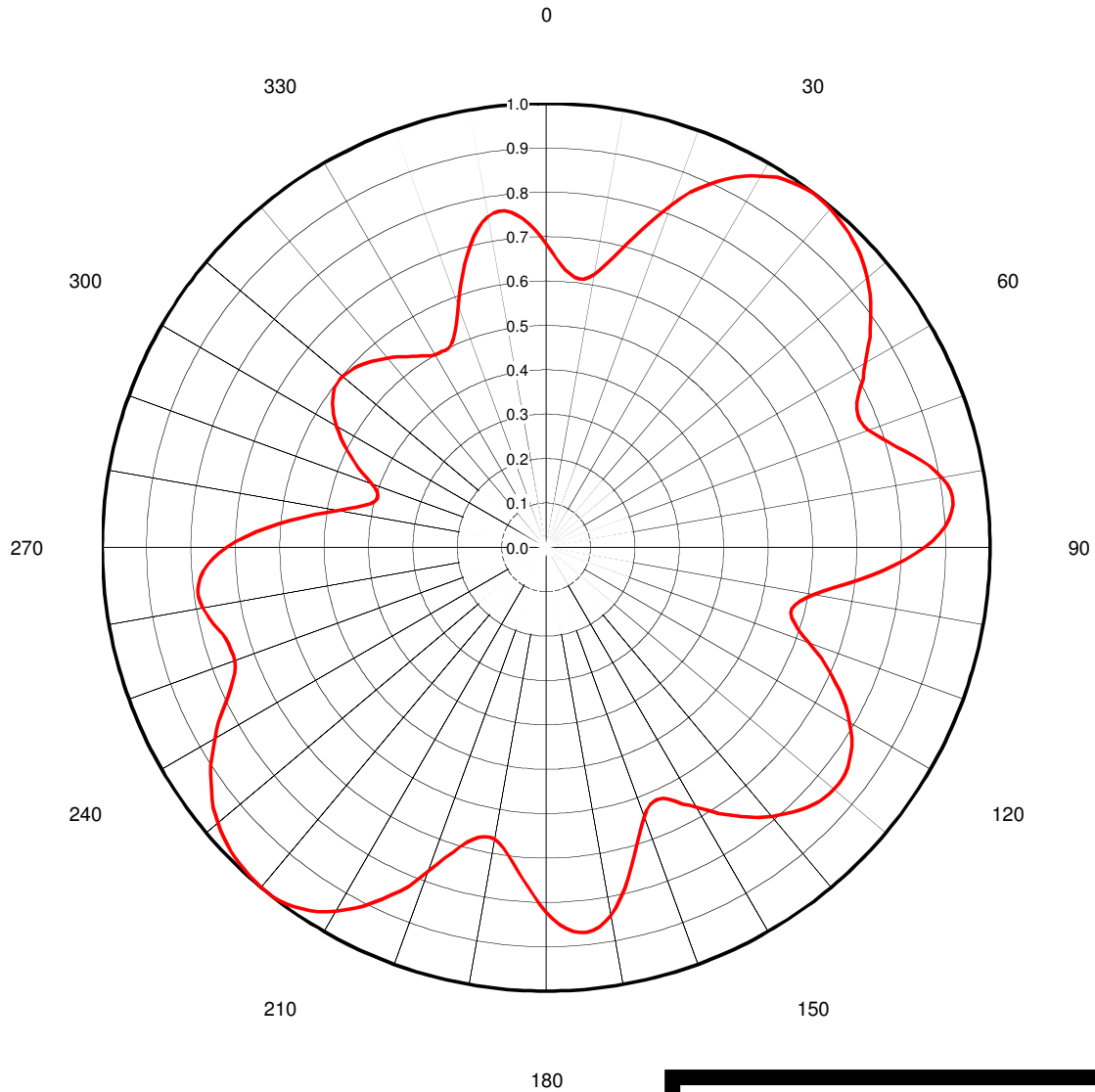


Figure 1
Antenna Azimuthal Pattern
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m

prepared for
Young Broadcasting
of Sioux Falls, Inc.

July, 2012



Proposal Number **DCA-9660**
Date **29-Oct-01**
Call Letters **KPLO** Channel **13**
Location **Reliance, SD**
Customer
Antenna Type **THA-P4SP-2H/8HD-1-R**

ELEVATION PATTERN

RMS Gain at Main Lobe	4.82	(6.83 dB)	Beam Tilt	0.40 deg
RMS Gain at Horizontal	4.80	(6.81 dB)	Frequency	213.00 MHz
Calculated / Measured	Calculated		Drawing #	02H048000-S213-90

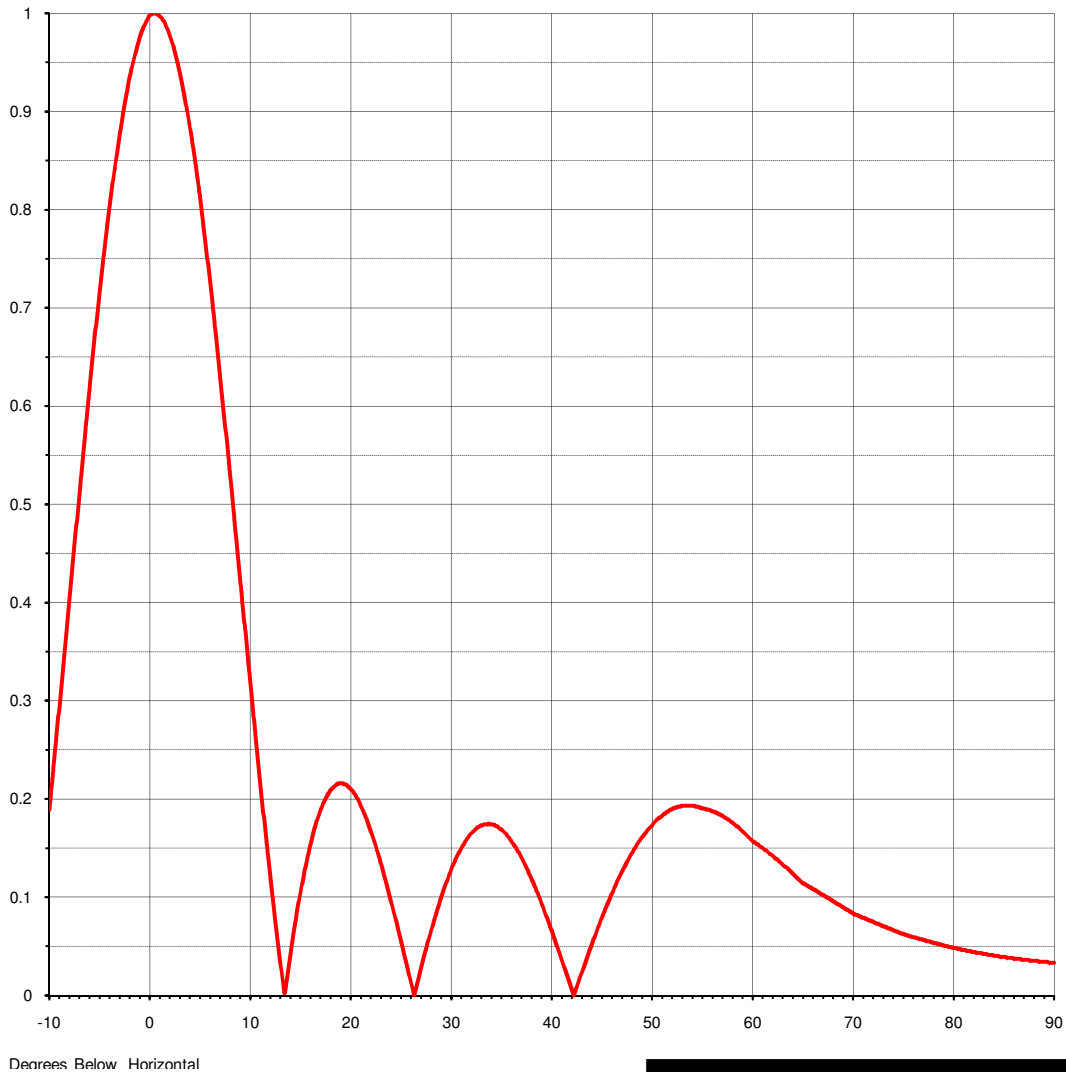


Figure 2
Antenna Elevation Pattern
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m

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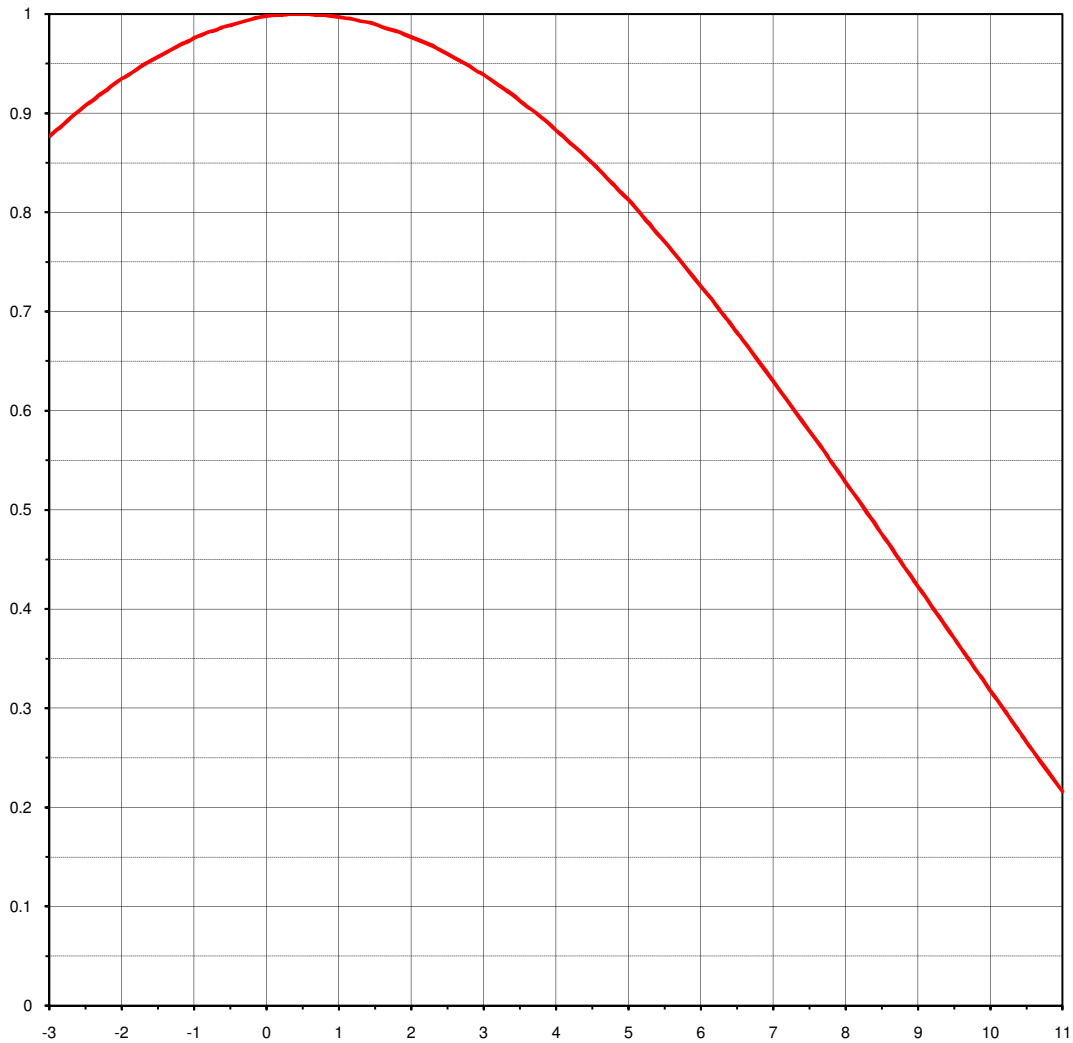
July, 2012



Proposal Number **DCA-9660**
Date **29-Oct-01**
Call Letters **KPLO** Channel **13**
Location **Reliance, SD**
Customer
Antenna Type **THA-P4SP-2H/8HD-1-R**

ELEVATION PATTERN

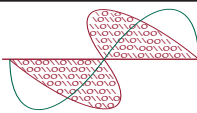
RMS Gain at Main Lobe	4.82	(6.83 dB)	Beam Tilt	0.40 deg
RMS Gain at Horizontal	4.80	(6.81 dB)	Frequency	213.00 MHz
Calculated / Measured	Calculated		Drawing #	02H048000-S213



**Figure 2A - Detail
Antenna Elevation Pattern
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m**

prepared for
**Young Broadcasting
of Sioux Falls, Inc.**

July, 2012



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

Figure 3
Proposed Coverage Contours
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m

prepared for
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of Sioux Falls, Inc.

July, 2012

Proposed KPLO-TV
DTV City Grade (43 dBμ)
DTV Service (36 dBμ)

Proposed Digital Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	57,574	31,597.6
OET Bulletin 69 method		
Within noise limited contour	57,604	31,542.8
Not affected by terrain losses	56,470	29,642.2
Lost to all interference	4,197	2,306.4
Net DTV Service	52,273	27,335.8

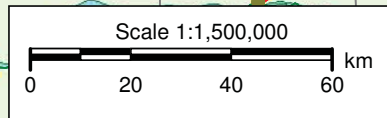


Figure 4
Coverage Contour Comparison
Alternate CBS Network Services
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m

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July, 2012

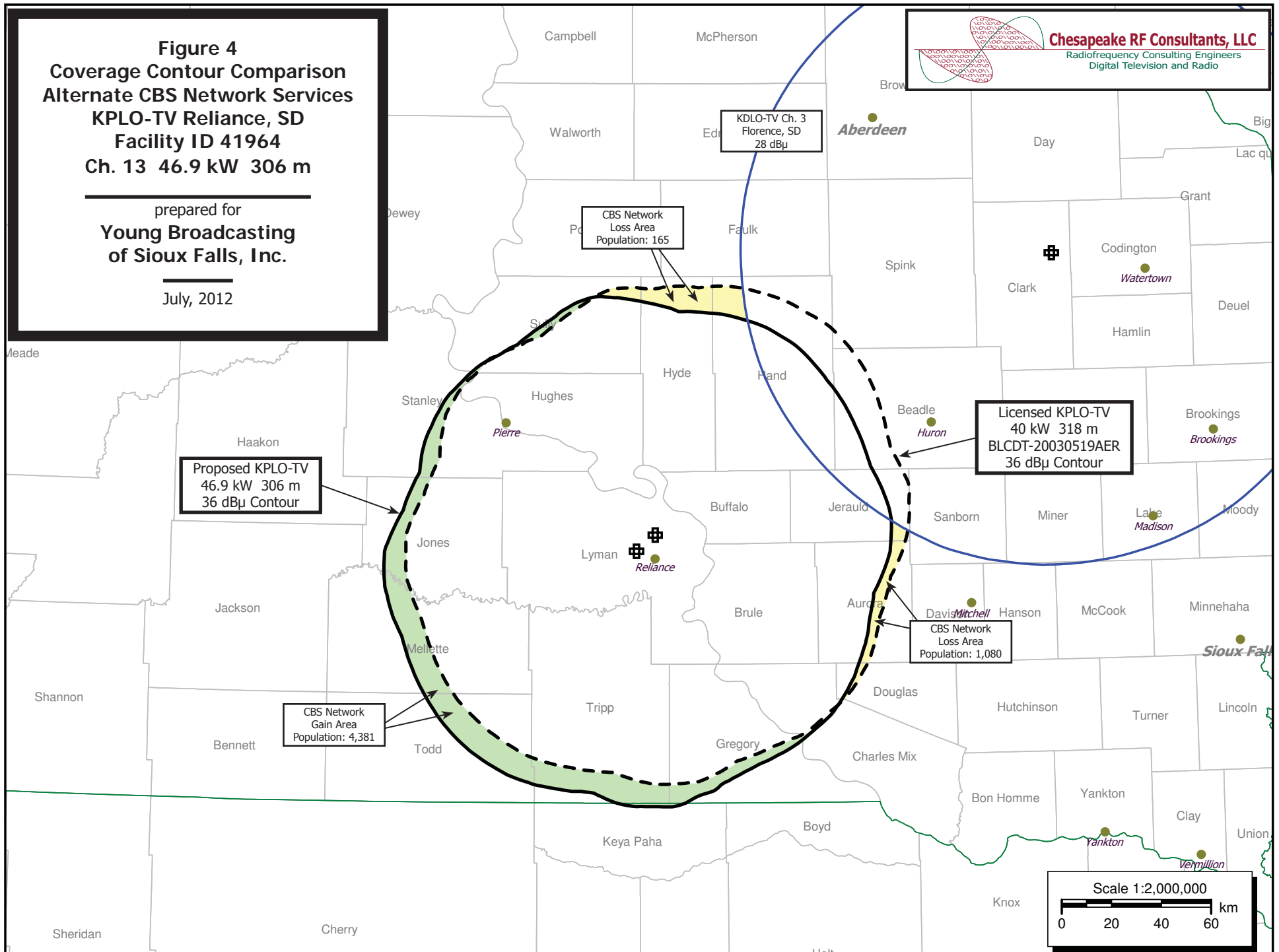


Figure 5
Alternative Services
In Gain and Loss Areas
KPLO-TV Reliance, SD
Facility ID 41964
Ch. 13 46.9 kW 306 m

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July, 2012

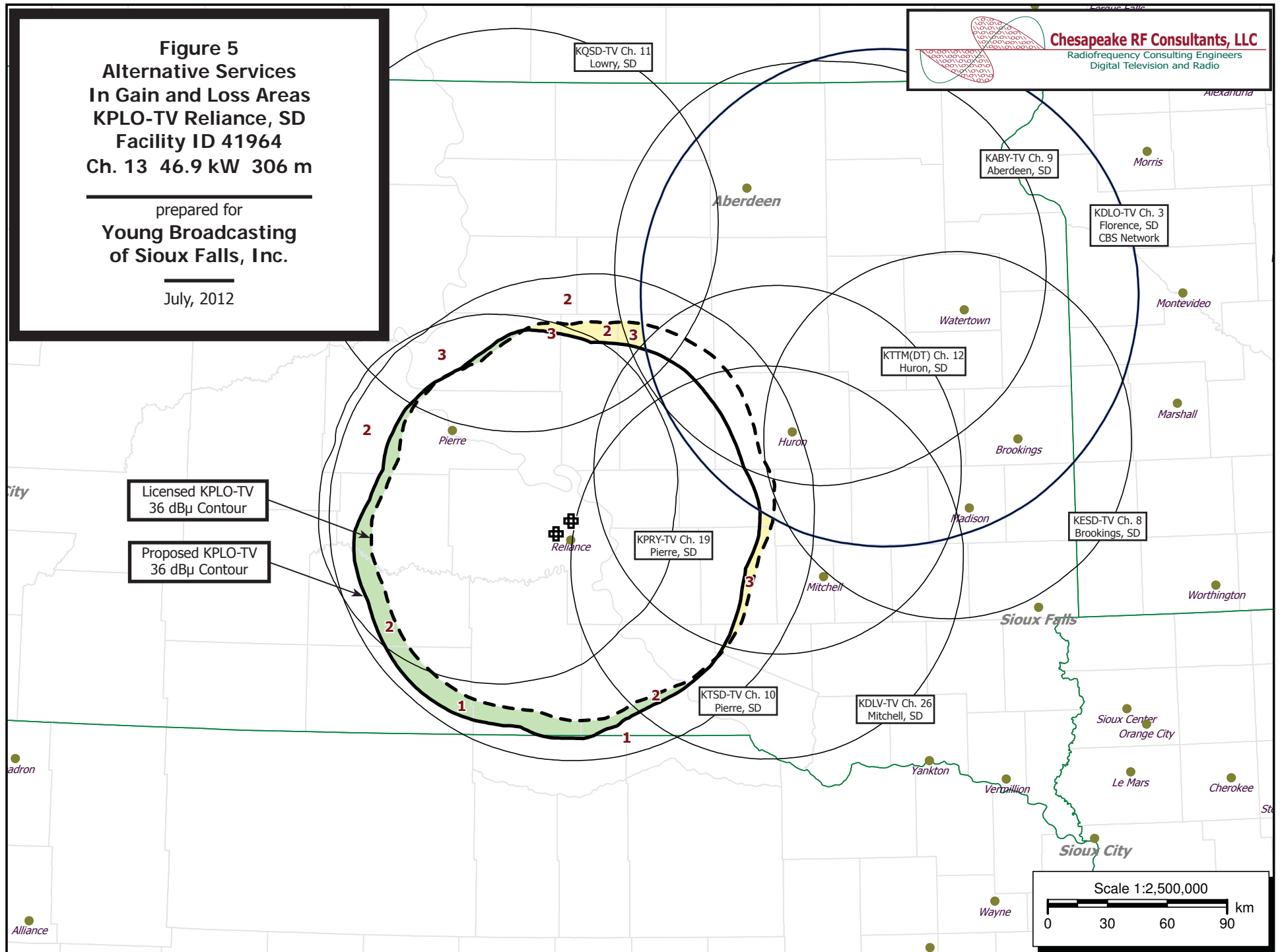


Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 1 of 11)



TW Census data selected 2000
Data Base Selected
/space/software/cdbs/pt_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 07-23-2012 Time: 14:41:26

Record Selected for Analysis

KPLO-TV USERRECORD-01 RELIANCE SD US
Channel 13 ERP 46.9 kW HAAT 306. m RCAMSL 00845 m
Latitude 043-54-27 Longitude 0099-41-46
Status APP Zone 2 Border Site number: 01
Dir Antenna Make usr Model KPLO-TV_Lic Beam tilt N Ref Azimuth 0.
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility (site # 01) meets maximum height/power limits

Site number	1		
Azimuth (Deg)	ERP (kW)	HAAT (m)	36.0 dBu F(50,90) (km)
0.0	21.942	325.2	100.3
45.0	44.128	282.7	103.3
90.0	34.125	294.7	101.7
135.0	31.459	296.1	101.1
180.0	31.690	312.2	102.3
225.0	45.273	293.9	104.1
270.0	24.245	322.3	100.9
315.0	15.641	323.1	97.4

Evaluation toward Class A Stations from site # 01

No Spacing violations or contour overlap
to Class A stations from site # 01

Class A Evaluation Complete

Checks to Site Number 01

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 2 of 11)



Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Call	City/State	ARN
13	KPLO-TV	RELIANCE SD	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KRNE-TV	MERRIMAN NE	212.8	LIC	BLEDT	20090225ABL
12	KTTM	HURON SD	114.6	LIC	BLCDT	20081204AFD
13	KFME	FARGO ND	396.4	LIC	BLEDT	20090818ABM
13	KTNE-TV	ALLIANCE NE	357.2	LIC	BLEDT	20090225ABJ
13	KHGI-TV	KEARNEY NE	367.6	LIC	BLCDT	20091019AFG
13	KHGI-DR	KEARNEY NE	367.6	APP	BPRM	20080715AFI
13	KPSD-TV	EAGLE BUTTE SD	240.1	LIC	BLEDT	20081209AED
13	KSFY-TV	STIOUX FALLS SD	257.6	LIC	BLCDT	20090223ABE

Analysis of Interference to Affected Station 1

Channel	Call	City/State	Application	Ref. No.
12	KRNE-TV	MERRIMAN NE	BLEDT	-20090225ABL

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KSNK	MCCOOK NE	327.5	LIC	BLCDT	-20031017ABP
12	KTTM	HURON SD	321.6	LIC	BLCDT	-20081204AFD
12	KCWY-DT	CASPER WY	375.4	LIC	BLCDT	-20100909AAY
13	KTNE-TV	ALLIANCE NE	144.4	LIC	BLEDT	-20090225ABJ
13	KPLO-TV	RELIANCE SD	222.6	PLN	DTVPLN	-DTVP0458
13	KPLO-TV	RELIANCE SD	212.8	APP	USERRECORD-01	

Proposal causes no interference

Analysis of Interference to Affected Station 2

Channel	Call	City/State	Application	Ref. No.
12	KTTM	HURON SD	BLCDT	-20081204AFD

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
11	KQSD-TV	LOWRY SD	178.4	LIC	BLEDT	-20090527AGY

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 3 of 11)



11	KELO-TV	SIOUX FALLS SD	161.4	LIC	BLCDDT	-20090619AAZ
12	KEYC-TV	MANKATO MN	313.3	LIC	BLCDDT	-20090622AGL
12	KEYC-TV	MANKATO MN	313.3	CP MOD	BMPDDT	-20080620AHS
12	KCCW-TV	WALKER MN	427.8	LIC	BLCDDT	-20100811ABF
12	KXMB-TV	BISMARCK ND	329.5	LIC	BLCDDT	-20090602ACO
12	KUON-TV	LINCOLN NE	372.2	LIC	BLEDT	-20090406AIP
12	KRNE-TV	MERRIMAN NE	321.6	LIC	BLEDT	-20090225ABL
13	KPLO-TV	RELIANCE SD	105.7	PLN	DTVPLN	-DTVP0458
13	KSFY-TV	SIOUX FALLS SD	161.4	LIC	BLCDDT	-20090223ABE
13	KPLO-TV	RELIANCE SD	114.6	APP	USERRECORD-01	

Total scenarios = 2

Result key: 1
Scenario 1 Affected station 2
Before Analysis

Results for: 12A SD HURON		BLCDDT	20081204AFD	LIC
HAAT	257.0 m, ATV ERP	12.6 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	79153	26736.9		
not affected by terrain losses	76419	25645.4		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	975	1191.5		
lost to ATV IX only	975	1191.5		
lost to all IX	975	1191.5		

Potential Interfering Stations Included in above Scenario 1

12A MN MANKATO	BLCDDT	20090622AGL	LIC
12A ND BISMARCK	BLCDDT	20090602ACO	LIC
12A NE LINCOLN	BLEDT	20090406AIP	LIC
12A NE MERRIMAN	BLEDT	20090225ABL	LIC
13A SD RELIANCE	DTVPLN	DTVP0458	PLN

After Analysis

Results for: 12A SD HURON		BLCDDT	20081204AFD	LIC
HAAT	257.0 m, ATV ERP	12.6 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	79153	26736.9		
not affected by terrain losses	76419	25645.4		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	859	1027.6		
lost to ATV IX only	859	1027.6		
lost to all IX	859	1027.6		

Potential Interfering Stations Included in above Scenario 1

12A MN MANKATO	BLCDDT	20090622AGL	LIC
12A ND BISMARCK	BLCDDT	20090602ACO	LIC
12A NE LINCOLN	BLEDT	20090406AIP	LIC
12A NE MERRIMAN	BLEDT	20090225ABL	LIC
13A SD RELIANCE	USERRECORD01	APP	

Percent new IX = -0.1538%

Worst case new IX -0.1538% Scenario 1

#####

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 4 of 11)



Analysis of Interference to Affected Station 3

Analysis of current record				
Channel	Call	City/State	Application	Ref. No.
13	KFME	FARGO ND	BLEDT	-20090818ABM

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KCCW-TV	WALKER MN	207.9	LIC	BLCDDT	-20100811ABF
12	KNRR	PEMBINA ND	221.0	LIC	BLCDDT	-20091016AAS
13	WIRT-DT	HIBBING MN	322.8	LIC	BLCDDT	-20090417ABE
13	KXMC-TV	MINOT ND	331.9	LIC	BLCDDT	-20090612AKC
13	KPLO-TV	RELIANCE SD	387.1	PLN	DTVPLN	-DTVP0458
13	KSFY-TV	SIOUX FALLS SD	391.8	LIC	BLCDDT	-20090223ABE
13	KPLO-TV	RELIANCE SD	396.4	APP	USERRECORD-01	

Total scenarios = 1

Result key: 3
Scenario 1 Affected station 3
Before Analysis

Results for: 13A ND FARGO		BLEDT	20090818ABM	LIC
HAAT	342.0 m, ATV ERP	56.2 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	360388	37679.1		
not affected by terrain losses	359507	37410.1		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	256	256.9		
lost to ATV IX only	256	256.9		
lost to all IX	256	256.9		

Potential Interfering Stations Included in above Scenario 1

13A MN HIBBING	BLCDDT	20090417ABE	LIC
13A ND MINOT	BLCDDT	20090612AKC	LIC
13A SD RELIANCE	DTVPLN	DTVP0458	PLN

After Analysis

Results for: 13A ND FARGO		BLEDT	20090818ABM	LIC
HAAT	342.0 m, ATV ERP	56.2 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	360388	37679.1		
not affected by terrain losses	359507	37410.1		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	256	256.9		
lost to ATV IX only	256	256.9		
lost to all IX	256	256.9		

Potential Interfering Stations Included in above Scenario 1

13A MN HIBBING	BLCDDT	20090417ABE	LIC
13A ND MINOT	BLCDDT	20090612AKC	LIC
13A SD RELIANCE	USERRECORD01	APP	

Percent new IX = 0.0000%

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 5 of 11)



Worst case new IX 0.0000% Scenario 1

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Analysis of Interference to Affected Station 4

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
13	KTNE-TV	ALLIANCE NE	BLEDT	-20090225ABJ

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KRNE-TV	MERRIMAN NE	144.4	LIC	BLEDT	-20090225ABL
13	KBDI-TV	BROOMFIELD CO	316.0	LIC	BLEDT	-20090618ACH
13	KHGI-TV	KEARNEY NE	373.8	LIC	BLCDDT	-20091019AFG
13	KHGI-DR	KEARNEY NE	373.8	APP	BPRM	-20080715AFI
13	KPSD-TV	EAGLE BUTTE SD	362.8	LIC	BLEDT	-20081209AED
13	KPLO-TV	RELIANCE SD	367.1	PLN	DTVPLN	-DTVP0458
13	KPLO-TV	RELIANCE SD	357.2	APP	USERRECORD-01	

Total scenarios = 1

Result key: 4

Scenario 1 Affected station 4
Before Analysis

Results for: 13A NE ALLIANCE		BLEDT	20090225ABJ	LIC
HAAT	466.0 m, ATV ERP	27.0 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	101830	40320.1		
not affected by terrain losses	95967	37310.9		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	2075	2679.7		
lost to ATV IX only	2075	2679.7		
lost to all IX	2075	2679.7		

Potential Interfering Stations Included in above Scenario 1

12A NE MERRIMAN	BLEDT	20090225ABL	LIC
13A CO BROOMFIELD	BLEDT	20090618ACH	LIC
13A SD EAGLE BUTTE	BLEDT	20081209AED	LIC
13A SD RELIANCE	DTVPLN	DTVP0458	PLN

After Analysis

Results for: 13A NE ALLIANCE		BLEDT	20090225ABJ	LIC
HAAT	466.0 m, ATV ERP	27.0 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	101830	40320.1		
not affected by terrain losses	95967	37310.9		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	2081	2703.8		
lost to ATV IX only	2081	2703.8		
lost to all IX	2081	2703.8		

Potential Interfering Stations Included in above Scenario 1

12A NE MERRIMAN	BLEDT	20090225ABL	LIC
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Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 6 of 11)



13A CO BROOMFIELD	BLEDT	20090618ACH	LIC
13A SD EAGLE BUTTE	BLEDT	20081209AED	LIC
13A SD RELIANCE	USERRECORD01		APP

Percent new IX = 0.0064%

Worst case new IX 0.0064% Scenario 1

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Analysis of Interference to Affected Station 5

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
13	KHGI-TV	KEARNEY NE	BLCDDT	-20091019AFG

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KUON-TV	LINCOLN NE	209.6	LIC	BLEDT	-20090406AIP
12	KSNK	MCCOOK NE	180.7	LIC	BLCDDT	-20031017ABP
13	KUPK	GARDEN CITY KS	368.5	LIC	BLCDDT	-20090226ABS
13	WIBW-TV	TOPEKA KS	302.6	LIC	BLCDDT	-20110111ABO
13	KTNE-TV	ALLIANCE NE	373.8	LIC	BLEDT	-20090225ABJ
13	KHGI-DR	KEARNEY NE	0.0	APP	BPRM	-20080715AFI
13	KPLO-TV	RELIANCE SD	372.6	PLN	DTVPLN	-DTVP0458
13	KSFY-TV	SIOUX FALLS SD	371.6	LIC	BLCDDT	-20090223ABE
13	KPLO-TV	RELIANCE SD	367.6	APP	USERRECORD-01	

Total scenarios = 3

Result key: 5

Scenario 1 Affected station 5
Before Analysis

Results for: 13A NE KEARNEY		BLCDDT	20091019AFG	LIC
HAAT	340.0 m, ATV ERP	19.8 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	230205	31551.3		
not affected by terrain losses	227456	30983.9		
lost to NTSC IX	0	0.0		
lost to additional IX by ATV	2862	507.4		
lost to ATV IX only	2862	507.4		
lost to all IX	2862	507.4		

Potential Interfering Stations Included in above Scenario 1

13A KS GARDEN CITY	BLCDDT	20090226ABS	LIC
13A KS TOPEKA	BLCDDT	20110111ABO	LIC
13A NE ALLIANCE	BLEDT	20090225ABJ	LIC
13A SD RELIANCE	DTVPLN	DTVP0458	PLN

After Analysis

Results for: 13A NE KEARNEY		BLCDDT	20091019AFG	LIC
HAAT	340.0 m, ATV ERP	19.8 kW		
	POPULATION	AREA (sq km)		
within Noise Limited Contour	230205	31551.3		
not affected by terrain losses	227456	30983.9		

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 7 of 11)



lost to NTSC IX	0	0.0
lost to additional IX by ATV	2862	507.4
lost to ATV IX only	2862	507.4
lost to all IX	2862	507.4

Potential Interfering Stations Included in above Scenario 1

13A KS GARDEN CITY	BLC DT	20090226ABS	LIC
13A KS TOPEKA	BLC DT	20110111ABO	LIC
13A NE ALLIANCE	BLE DT	20090225ABJ	LIC
13A SD RELIANCE	USERRECORD01		APP

Percent new IX = 0.0000%

Worst case new IX 0.0000% Scenario 1

#####

Analysis of Interference to Affected Station 6

Analysis of current record

Channel	Call	City/State	Application Ref. No.
13	KHGI-DR	KEARNEY NE	BPRM -20080715AFI

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
12	KUON-TV	LINCOLN NE	209.6	LIC	BLE DT -20090406AIP
12	KSNK	MCCOOK NE	180.7	LIC	BLE DT -20031017ABP
13	KUPK	GARDEN CITY KS	368.5	LIC	BLE DT -20090226ABS
13	WIBW-TV	TOPEKA KS	302.6	LIC	BLE DT -20110111ABO
13	KTNE-TV	ALLIANCE NE	373.8	LIC	BLE DT -20090225ABJ
13	KHGI-TV	KEARNEY NE	0.0	LIC	BLE DT -20091019AFG
13	KPLO-TV	RELIANCE SD	372.6	PLN	DTVPLN -DTVPO458
13	KSFY-TV	SIOUX FALLS SD	371.6	LIC	BLE DT -20090223ABE
13	KPLO-TV	RELIANCE SD	367.6	APP	USERRECORD-01

Total scenarios = 1

Result key: 8

Scenario 1 Affected station 6
Before Analysis

Results for: 13A NE KEARNEY BPRM 20080715AFI APP

HAAT 340.0 m, ATV ERP 8.0 kW	POPULATION	AREA (sq km)
within Noise Limited Contour	213236	27300.3
not affected by terrain losses	212753	26920.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	211685	26157.6
lost to ATV IX only	211685	26157.6
lost to all IX	211685	26157.6

Potential Interfering Stations Included in above Scenario 1

13A KS GARDEN CITY	BLC DT	20090226ABS	LIC
13A KS TOPEKA	BLC DT	20110111ABO	LIC
13A NE ALLIANCE	BLE DT	20090225ABJ	LIC
13A NE KEARNEY	BLC DT	20091019AFG	LIC

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 8 of 11)



13A SD SIOUX FALLS	BLC DT	20090223ABE	LIC
13A SD RELIANCE	DTVPLN	DTVPO458	PLN

After Analysis

Results for: 13A NE KEARNEY BPRM 20080715AFI APP
HAAT 340.0 m, ATV ERP 8.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	213236	27300.3
not affected by terrain losses	212753	26920.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	211685	26157.6
lost to ATV IX only	211685	26157.6
lost to all IX	211685	26157.6

Potential Interfering Stations Included in above Scenario 1

13A KS GARDEN CITY	BLC DT	20090226ABS	LIC
13A KS TOPEKA	BLC DT	20110111ABO	LIC
13A NE ALLIANCE	BLE DT	20090225ABJ	LIC
13A NE KEARNEY	BLC DT	20091019AFG	LIC
13A SD SIOUX FALLS	BLC DT	20090223ABE	LIC
13A SD RELIANCE	USERRECORD01		APP

Percent new IX = 0.0000%

Worst case new IX 0.0000% Scenario 1

#####

Analysis of Interference to Affected Station 7

Analysis of current record

Channel	Call	City/State	Application Ref. No.
13	KPSD-TV	EAGLE BUTTE SD	BLE DT -20081209AED

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
12	KXMB-TV	BISMARCK ND	204.7	LIC	BLE DT -20090602ACO
13	KXMC-TV	MINOT ND	340.4	LIC	BLE DT -20090612AKC
13	KTNE-TV	ALLIANCE NE	362.8	LIC	BLE DT -20090225ABJ
13	KPLO-TV	RELIANCE SD	243.0	PLN	DTVPLN -DTVPO458
13	KSGW-TV	SHERIDAN WY	385.4	LIC	BLE DT -20051206AEI
13	KPLO-TV	RELIANCE SD	240.1	APP	USERRECORD-01

Total scenarios = 1

Result key: 9

Scenario 1 Affected station 7
Before Analysis

Results for: 13A SD EAGLE BUTTE BLE DT 20081209AED LIC

HAAT 516.0 m, ATV ERP 27.0 kW	POPULATION	AREA (sq km)
within Noise Limited Contour	20890	42490.9
not affected by terrain losses	19473	40123.6
lost to NTSC IX	0	0.0
lost to additional IX by ATV	688	1372.9

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 9 of 11)



lost to ATV IX only	688	1372.9
lost to all IX	688	1372.9
Potential Interfering Stations Included in above Scenario 1		
13A ND MINOT	BLC DT	20090612AKC LIC
13A NE ALLIANCE	BLE DT	20090225ABJ LIC
13A WY SHERIDAN	BLC DT	20051206AEI LIC
13A SD RELIANCE	DTVPLN	DTVP0458 PLN

After Analysis

Results for: 13A SD EAGLE BUTTE	BLE DT	20081209AED LIC
HAAT 516.0 m, ATV ERP 27.0 kW		
	POPULATION	AREA (sq km)
within Noise Limited Contour	20890	42490.9
not affected by terrain losses	19473	40123.6
lost to NTSC IX	0	0.0
lost to additional IX by ATV	415	1360.8
lost to ATV IX only	415	1360.8
lost to all IX	415	1360.8

Potential Interfering Stations Included in above Scenario 1

13A ND MINOT	BLC DT	20090612AKC LIC
13A NE ALLIANCE	BLE DT	20090225ABJ LIC
13A WY SHERIDAN	BLC DT	20051206AEI LIC
13A SD RELIANCE	USERRECORD01	APP

Percent new IX = -1.4533%

Worst case new IX -1.4533% Scenario 1

#####

Analysis of Interference to Affected Station 8

Analysis of current record

Channel	Call	City/State	Application Ref. No.
13	KSFY-TV	SIoux FALLS SD	BLC DT -20090223ABE

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
12	KEYC-TV	MANKATO MN	176.8	LIC	BLC DT -20090622AGL
12	KEYC-TV	MANKATO MN	176.8	CP MOD	BMPCDT -20080620AHS
12	KTTM	HURON SD	161.4	LIC	BLC DT -20081204AFD
13	WHO-DT	DES MOINES IA	305.0	LIC	BLC DT -20090410ASQ
13	KFME	FARGO ND	391.8	LIC	BLE DT -20090818ABM
13	KHGI-TV	KEARNEY NE	371.6	LIC	BLC DT -20091019AFG
13	KHGI-DR	KEARNEY NE	371.6	APP	BPRM -20080715AFI
13	KPLO-TV	RELIANCE SD	251.3	PLN	DTVPLN -DTVP0458
13	KPLO-TV	RELIANCE SD	257.6	APP	USERRECORD-01

Total scenarios = 6

Result key: 10
Scenario 1 Affected station 8
Before Analysis

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 10 of 11)



Results for: 13A SD SIOUX FALLS	BLC DT	20090223ABE LIC
HAAT 610.0 m, ATV ERP 22.7 kW		
	POPULATION	AREA (sq km)
within Noise Limited Contour	620447	45466.4
not affected by terrain losses	574971	43718.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	46074	2591.5
lost to ATV IX only	46074	2591.5
lost to all IX	46074	2591.5

Potential Interfering Stations Included in above Scenario 1

12A MN MANKATO	BLC DT	20090622AGL LIC
12A SD HURON	BLC DT	20081204AFD LIC
13A IA DES MOINES	BLC DT	20090410ASQ LIC
13A ND FARGO	BLE DT	20090818ABM LIC
13A NE KEARNEY	BLC DT	20091019AFG LIC
13A SD RELIANCE	DTVPLN	DTVP0458 PLN

After Analysis

Results for: 13A SD SIOUX FALLS	BLC DT	20090223ABE LIC
HAAT 610.0 m, ATV ERP 22.7 kW		
	POPULATION	AREA (sq km)
within Noise Limited Contour	620447	45466.4
not affected by terrain losses	574971	43718.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	45825	2439.5
lost to ATV IX only	45825	2439.5
lost to all IX	45825	2439.5

Potential Interfering Stations Included in above Scenario 1

12A MN MANKATO	BLC DT	20090622AGL LIC
12A SD HURON	BLC DT	20081204AFD LIC
13A IA DES MOINES	BLC DT	20090410ASQ LIC
13A ND FARGO	BLE DT	20090818ABM LIC
13A NE KEARNEY	BLC DT	20091019AFG LIC
13A SD RELIANCE	USERRECORD01	APP

Percent new IX = -0.0471%

Worst case new IX -0.0471% Scenario 1

#####

Analysis of Interference to Affected Station 9

Analysis of current record

Channel	Call	City/State	Application Ref. No.
13	KPLO-TV	RELIANCE SD	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
12	KRNE-TV	MERRIMAN NE	212.8	LIC	BLE DT -20090225ABL
12	KTTM	HURON SD	114.6	LIC	BLC DT -20081204AFD
13	KFME	FARGO ND	396.4	LIC	BLE DT -20090818ABM
13	KTNE-TV	ALLIANCE NE	357.2	LIC	BLE DT -20090225ABJ

Table 1 KPLO-TV OET Bulletin 69 Interference Study
(worst-case scenarios shown page 11 of 11)



13	KHGI-TV	KEARNEY NE	367.6	LIC	BLCDT	-20091019AFG
13	KHGI-DR	KEARNEY NE	367.6	APP	BPRM	-20080715AFI
13	KPSD-TV	EAGLE BUTTE SD	240.1	LIC	BLEDT	-20081209AED
13	KSFY-TV	SIOUX FALLS SD	257.6	LIC	BLCDT	-20090223ABE

Total scenarios = 3

Result key: 16
Scenario 1 Affected station 9
Before Analysis

Results for: 13A SD RELIANCE		USERRECORD01		APP
HAAT	306.0 m, ATV ERP	46.9 kW		
	within Noise Limited Contour	POPULATION	AREA (sq km)	
	not affected by terrain losses	57604	31542.8	
	lost to NTSC IX	56470	29642.2	
	lost to additional IX by ATV	0	0.0	
	lost to ATV IX only	4197	2306.4	
	lost to all IX	4197	2306.4	

Potential Interfering Stations Included in above Scenario 1

12A SD HURON	BLCDT	20081204AFD	LIC
13A ND FARGO	BLEDT	20090818ABM	LIC
13A NE ALLIANCE	BLEDT	20090225ABJ	LIC
13A NE KEARNEY	BLCDT	20091019AFG	LIC
13A SD EAGLE BUTTE	BLEDT	20081209AED	LIC
13A SD SIOUX FALLS	BLCDT	20090223ABE	LIC

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

SECTION III-D - DTV Engineering

Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1 (a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1 (a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must submit the Exhibit called for in Item 13.	<input type="radio"/> Yes <input checked="" type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	<input type="radio"/> Yes <input checked="" type="radio"/> No

SECTION III-D - DTV 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 Number: DTV 13 Analog TV, if any																																				
2.	Zone: <input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III																																				
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 43 Minutes 54 Seconds 27 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 99 Minutes 41 Seconds 46 <input checked="" type="radio"/> West <input type="radio"/> East																																				
4.	Antenna Structure Registration Number: <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> Notification filed with FAA																																				
5.	Antenna Location Site Elevation Above Mean Sea Level: 537.1 meters																																				
6.	Overall Tower Height Above Ground Level: 313 meters																																				
7.	Height of Radiation Center Above Ground Level: 307.8 meters																																				
8.	Height of Radiation Center Above Average Terrain : 306.3 meters																																				
9.	Maximum Effective Radiated Power (average power): 46.9 kW																																				
10.	Antenna Specifications: a. Manufacturer DIE Model THA-P4SP-2H/8HD-1-R b. Electrical Beam Tilt: 0.4 degrees <input type="checkbox"/> Not Applicable c. Mechanical Beam Tilt: degrees toward azimuth degrees True <input checked="" type="checkbox"/> Not Applicable Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 45] d. Polarization: <input checked="" type="radio"/> Horizontal <input type="radio"/> Circular <input type="radio"/> Elliptical e. Directional Antenna Relative Field Values: <input type="checkbox"/> Not applicable (Nondirectional) [For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.] [Relative Field Values] <div style="text-align: center; padding: 10px;"> 10e. Directional Antenna Relative Field Values [Fill in this subform for a composite directional (not off-the-shelf) antenna, only.] </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td colspan="12">e. Directional Antenna Relative Field Values:</td> </tr> <tr> <td colspan="12">Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation</td> </tr> <tr> <td>Degrees</td><td>Value</td><td>Degrees</td><td>Value</td><td>Degrees</td><td>Value</td><td>Degrees</td><td>Value</td><td>Degrees</td><td>Value</td><td>Degrees</td><td>Value</td> </tr> </table>	e. Directional Antenna Relative Field Values:												Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation												Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
e. Directional Antenna Relative Field Values:																																					
Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation																																					
Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value																										

0	0.684	10	0.624	20	0.818	30	0.966	40	0.996	50	0.944
60	0.83	70	0.773	80	0.906	90	0.853	100	0.613	110	0.63
120	0.79	130	0.847	140	0.791	150	0.675	160	0.646	170	0.841
180	0.822	190	0.668	200	0.777	210	0.946	220	1	230	0.965
240	0.861	250	0.746	260	0.785	270	0.719	280	0.478	290	0.417
300	0.545	310	0.599	320	0.556	330	0.501	340	0.579	350	0.756
Additional Azimuths		37	1	83	0.923	174	0.872	262	0.792	352	0.765

[Relative Field Polar Plot](#)

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 46]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? ☒ Yes ☐ No [Exhibit 47]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 48]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 49]

If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, 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.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

PREPARERS CERTIFICATION ON SECTION III 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.

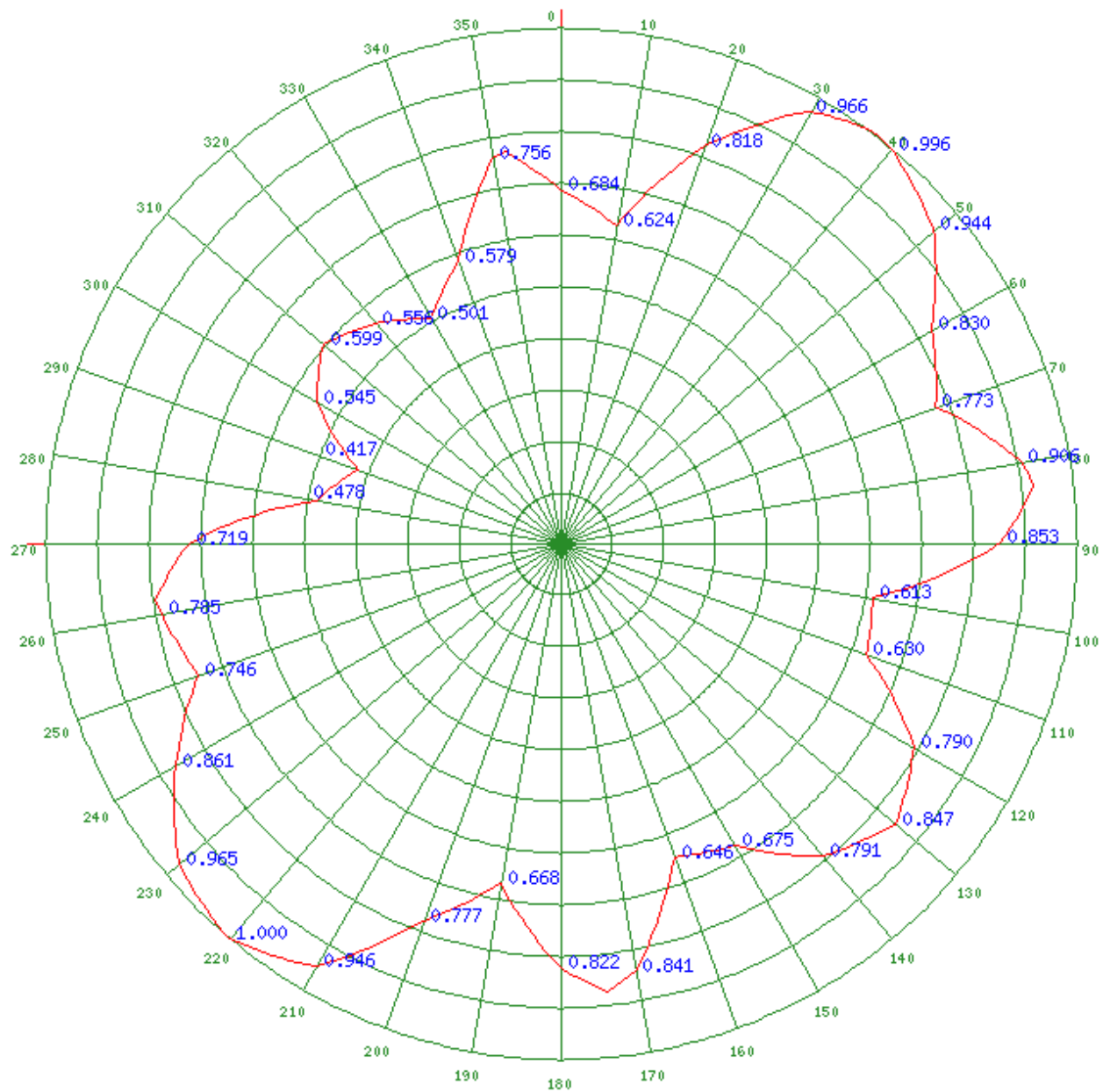
Name JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER
Signature	Date

7/24/2012		
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD		
City YORKTOWN	State or Country (if foreign address) VA	Zip Code 23692 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

Any specified rotation has already been applied to the plotted pattern.

Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.

Close Window



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