

ENGINEERING STATEMENT
AMENDMENT TO PENDING FLASHCUT APPLICATION FOR
DTV CONSTRUCTION PERMIT
FCC FILE NO. BDFCDVL-20090630AGH
FOR DIGITAL OPERATION OF
K10GF, MILES CITY, MONTANA
CHANNEL 10 0.20 KW ERP 811 METERS RC/AMSL

SEPTEMBER 2009

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

City of Washington)
) ss
District of Columbia)

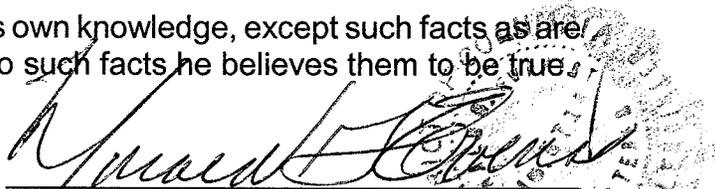
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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;

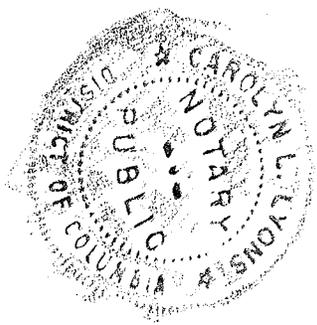
That his qualifications are a matter of record in the Federal Communications Commission;

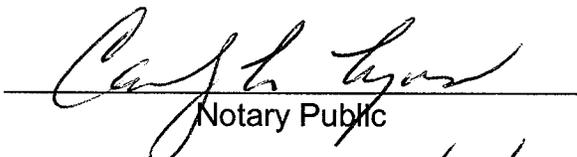
That the attached engineering report was prepared by him or under his supervision and direction and

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 30th day of September, 2009.




Notary Public

My Commission Expires: 2/28/2013

Introduction

This engineering statement has been prepared on behalf of KTVQ Communications, Inc. (“KTVQ”), licensee of television translator station K10GF, Miles City, Montana. This statement supports the licensee’s amendment to its request for digital construction permit, FCC File No. BDFCDVL-20090630AGH. KTVQ hereby requests an amendment to its pending flashcut application for construction permit for digital low-power translator facilities of K10GF on Channel 10 with a maximum effective radiated power (“ERP”) of 0.2 kW at a radiation center above mean sea level (“RCAMSL”) of 811 meters. The purpose of this amendment is to correct the ERP for this proposed digital television translator station. No other changes are requested.

Transmitter Site

No significant alteration of the tower is proposed and there is no change in transmitter site. The geographic coordinates of the site follow below.

North Latitude: 46° 26' 01"

West Longitude: 105° 50' 51"

NAD-27

Equipment Data

Transmitter:	Type-approved-LARCAN
Transmission Line:	Andrew, Type LDF4-50, FLEXLine 1-5/8”, 21.3 meters (70 feet)
Antenna:	Kathrein-Scala composite, Model HDCA-10 with maximum gain of 8.3 (Exhibit E-1)

Power Data

Transmitter:	0.028 kW	-15.528 dBk
Transmission Line Loss:	85.6%	0.676 dB
Input Into Antenna:	0.024 kW	-16.2 dBk
Antenna Gain:	8.3	9.2 dB
ERP:	0.2 kW	-6.99 dBk
Emission Mask:	Simple	

The existing tower is less than 200 feet and TOWAIR indicates that this structure does not require registration. The existing structure passes TOWAIR's slope test relative to Frank Wiley Field in Miles City, Montana.

Elevation Data

Elevation of site above mean sea level	791 meters (2595.1 feet)
Center of radiation of antenna above ground level	20 meters (65.6 feet)
Center of radiation of antenna above mean sea level	811 meters (2660.8 feet)
Overall tower height above ground level	20 meters (65.6 feet)

As indicated above, the transmitter with typical power output of 0.028 kW will deliver 0.024 kW to the input of the antenna. The antenna, having a maximum gain of 9.2 dB will produce a maximum ERP of 0.2 kW. A coverage map providing the protected contour of the

proposed digital facility relative to the licensed analog operation of K10GF has been included as Exhibit E-2 of this report.

Other Broadcast Facilities

A brief analysis was completed to determine the presence of stations in the vicinity of the proposed digital operation K10GF tower site using the August 19, 2009, data contained within the Commission's Consolidated Database System ("CDBS"). Within 0.5 km of the proposed site, there are no authorized FM radio stations, no DTV and NTSC television stations, and two low-power analog television or television translator stations and four digital low-power television or digital television translator stations in addition to the licensed K10GF operation. There are no AM facilities within 3.22 km of the existing tower. Although no adverse technical effects are expected due to the proposed changes, the licensee will take measures to resolve any problems proven to be related to the changes proposed in this application.

Interference Analysis

A study of predicted interference caused by the proposed K10GF digital translator Channel 10 operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at www.fcc.gov/oet/dtv/dtv_apps.html. The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Microsoft Windows XP platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice

propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2000 census centroids, all studies are based upon data in the current CDBS database. A Longley-Rice study was performed with the proposed K10GF digital television translator facilities and all potentially affected stations listed in the FCC database. The results of the study are included as Table I.

FCC Rule, Section 1.1307

The proposed 0.2 kW directional operation will utilize a Kathrein-Scala composite Model HDCA-10 antenna (or equivalent) described above with a center of radiation above ground of 20 meters. The antenna will be top-mounted on an existing tower with an overall height of 20 meters above ground. The proposed digital operation of K10GF will create a radio frequency field level of less than $21 \mu\text{W}/\text{cm}^2$ at the base of the tower. This level is less than 10.5% of the Maximum Permissible Exposure (“MPE”) level for the general population and uncontrolled environment which is less than 2.1% MPE level for the occupational/controlled environment.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radio frequency field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the applicant indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will be located on a tower which was built prior to the adoption of WT Docket No. 03-128 and will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I
INTERFERENCE ANALYSIS
FOR THE DIGITAL OPERATION OF
K10GF, MILES CITY, MONTANA
CHANNEL 10 0.2 KW MAX ERP 811 METERS AMSL
USING THE SIMPLE EMISSION MASK
SEPTEMBER 2009

<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>
9	K09VL	BOYES, ETC. MT	162.4	LIC	BLTTV-19900718IK	0.00%
9	K09OY	COLSTRIP MT	83.9	LIC	BLTTV-19800326IB	No interference
9	K09BE	EKALAKA MT	116.2	LIC	BLTTV-3674	No interference
9	K09BW	FORSYTH MT	66.1	LIC	BLTTV-795	No interference
9	K09HI	JORDAN, ETC. MT	137.2	LIC	BLTTV-1622	No interference
9	K09HY	KING SPRINGS, ETC. MT	205.6	LIC	BLTTV-4575	0.00%
9	K09IV	PLEVNA MT	101.6	LIC	BLTTV-3033	No interference
9	K09OK	ROSEBUD, ETC. MT	52.3	LIC	BLTTV-19800129ID	No interference
9	K09WS	ROUNDUP MT	208	LIC	BLTTV-19970409JB	0.00%
10	K10MO	ABSAROCKE MT	293.8	LIC	BLTTV-19850703IB	No interference
10	K10JP	BAKER MT	126.5	LIC	BLTTV-4608	No interference
10	K10BK	BIG SANDY MT	369.4	LIC	BLTTV-261	0.00%
10	KTVQ-DT	BILLINGS MT	214.3	CP MO	BMPCDT-20060705ABU	0.00%
10	K10AC	BROADUS, ETC. MT	92.9	LIC	BLTTV-19950109JD	No interference
10	K10AT	CIRCLE, ETC. MT	100	LIC	BLTTV-3769	No interference
10	NEW	COLSTRIP MT	84.8	CP	BDCCDVL-20061010AEF	No interference
10	K10FC	DODSON, WAGNER MT	278.9	LIC	BLTTV-1391	No interference
10	K10JK	HINSDALE MT	230.8	LIC	BLTTV-4514	No interference
10	K10AJ	HOWARD MT	88.6	LIC	BLTTV-31	No interference
10	K10AU	NORTH FORK, ETC. MT	152.4	LIC	BLTTV-1983	No interference
10	NEW	ROSEBUD, ETC. MT	52.3	CP	BDCCDTV-20061010AMV	No interference
10	KMOT	MINOT ND	394.5	CP	BPCDT-20080314AAE	No interference
10	KHSD-DT	LEAD SD	281.9	LIC	BLCDDT-20050825ABN	No interference
10	K10PC	GILLETTE WY	238.9	LIC	BLTVL-20080313ABI	No interference
10	KFNE-DT	RIVERTON WY	379.1	CP MO	BMPCDT-20080516AAH	No interference
11	KULR-DT	BILLINGS MT	214.4	LIC	BLCDDT-20070521AFW	0.00%
11	NEW	COLSTRIP MT	84.8	CP	BDCCDVL-20061010AEG	No interference
11	K11CB	FORSYTH MT	66.1	LIC	BLTTV-796	No interference

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I
INTERFERENCE ANALYSIS
FOR THE DIGITAL OPERATION OF
K10GF, MILES CITY, MONTANA
CHANNEL 10 0.2 KW MAX ERP 811 METERS AMSL
USING THE SIMPLE EMISSION MASK
SEPTEMBER 2009

<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>
11	K11OS	HYSHAM MT	113.2	LIC	BLTTV-19791210IA	0.00%
11	K11HE	JORDAN, ETC. MT	137.2	LIC	BLTTV-3030	No interference
11	K11IA	KING SPRINGS, ETC. MT	205.6	LIC	BLTTV-1958	0.00%
11	K11FS	ROUNDUP MT	208	LIC	BLTTV-4858	0.00%

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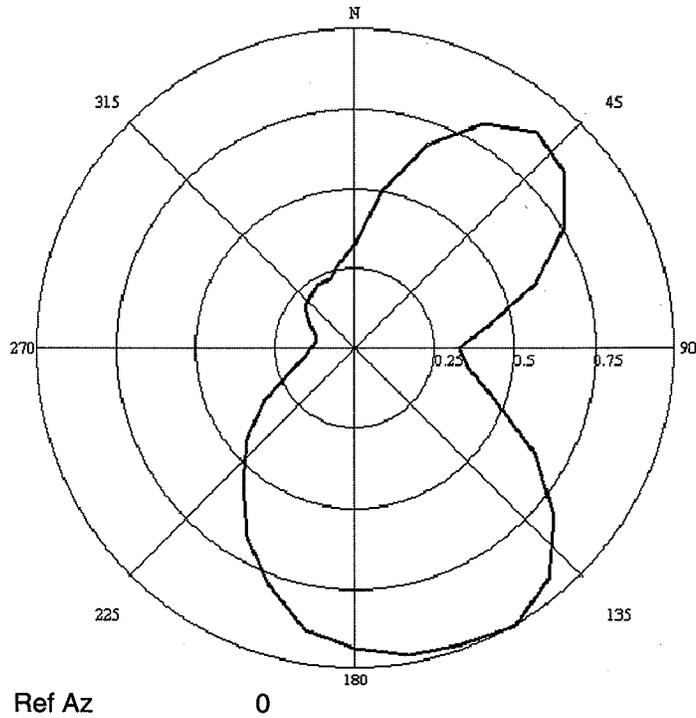
EXHIBIT E-1

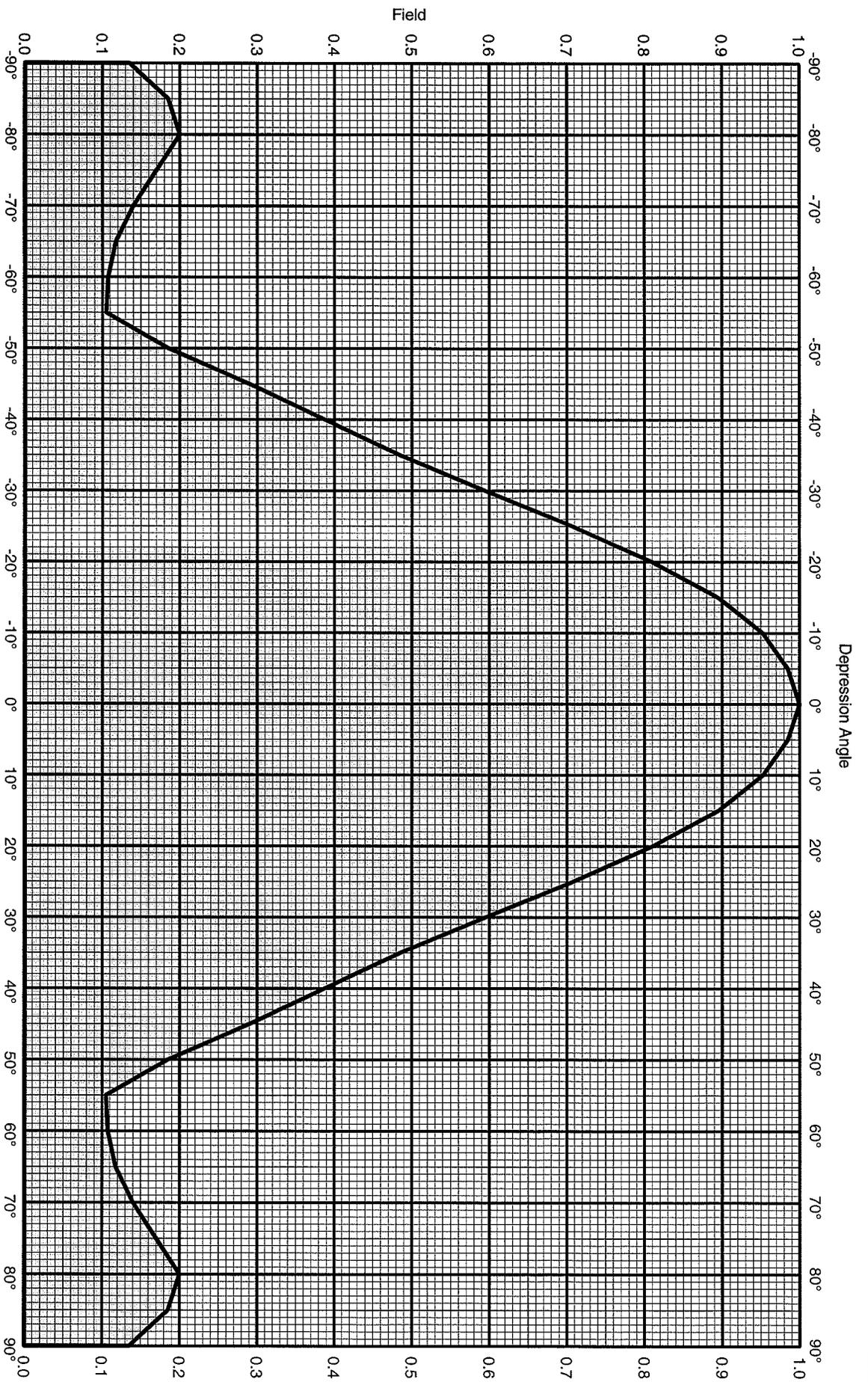
ANTENNA MANUFACTURER DATA

K10GF, MILES CITY, MONTANA

Proposed Ch.10 Pattern

Azimuth	Field_Value
0	0.324
10	0.505
20	0.68
30	0.812
40	0.886
50	0.856
60	0.752
70	0.6
80	0.428
90	0.324
100	0.36
110	0.466
120	0.648
130	0.814
140	0.938
150	1
160	0.982
170	0.97
180	0.936
190	0.892
200	0.786
210	0.68
220	0.55
230	0.44
240	0.324
250	0.224
260	0.16
270	0.138
280	0.124
290	0.133
300	0.168
310	0.202
320	0.218
330	0.232
340	0.232
350	0.272





HDCA-10 Yagi

Ch-10

Maximum gain: 10.0 dBd

Horizontal polarization

Vertical radiation pattern
0 degree electrical downtilt



KATHREIN
SCALA DIVISION
Post Office Box 4580
Medford, OR 97501 (USA)
Phone: (541) 779-6500
Fax: (541) 779-3991
<http://www.kathrein-scala.com>



HDCA-10 Yagi

Ch-10

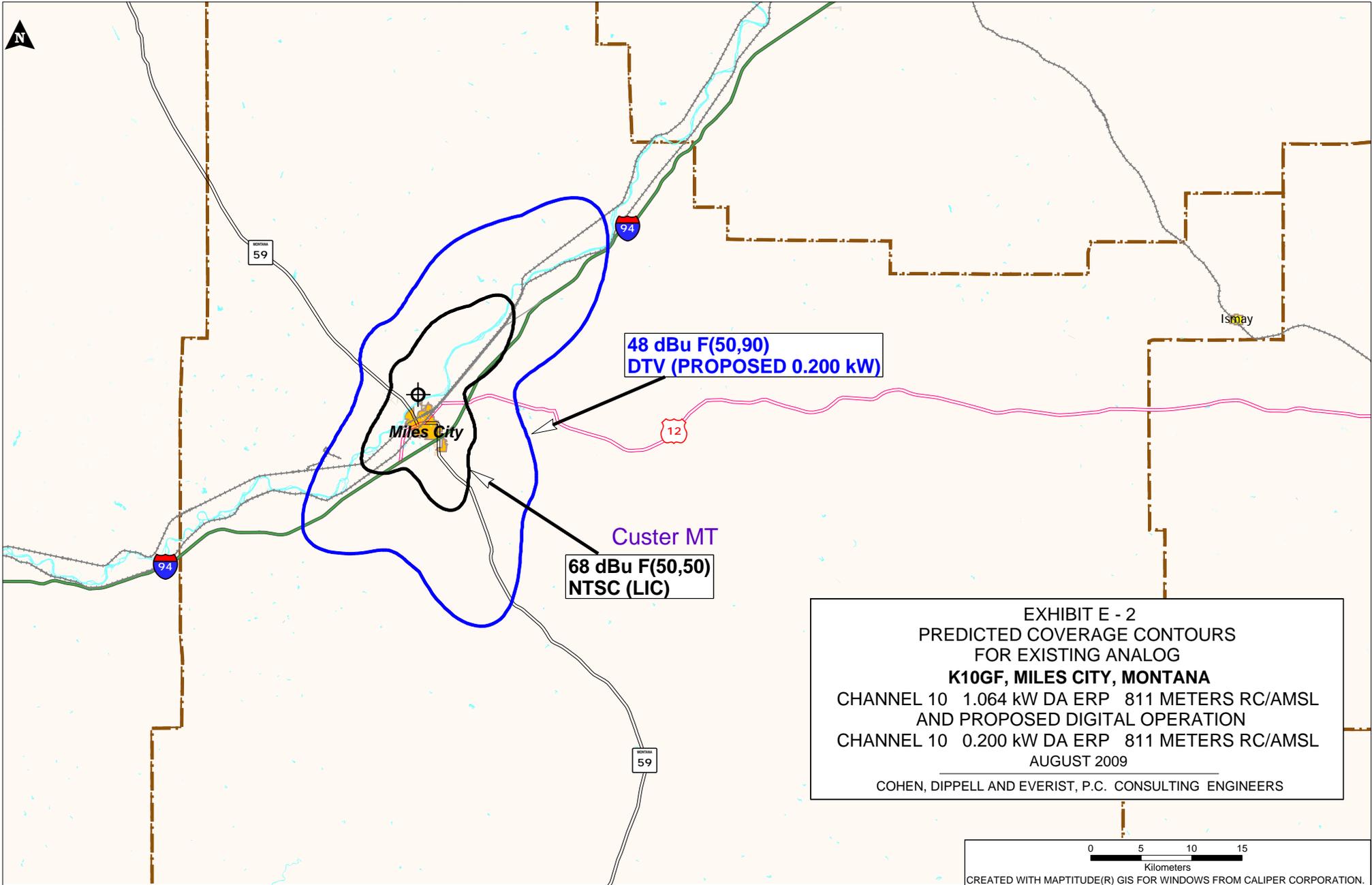
Maximum gain: 10.0 dBd

Horizontal polarization

Vertical radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.135	-17.39	-7.39	0.18	-45	0.290	-10.75	-0.75	0.84
-89	0.145	-16.77	-6.77	0.21	-44	0.309	-10.19	-0.19	0.96
-88	0.155	-16.19	-6.19	0.24	-43	0.329	-9.66	0.34	1.08
-87	0.165	-15.65	-5.65	0.27	-42	0.349	-9.16	0.84	1.21
-86	0.175	-15.14	-5.14	0.31	-41	0.368	-8.68	1.32	1.35
-85	0.185	-14.66	-4.66	0.34	-40	0.387	-8.23	1.77	1.50
-84	0.188	-14.52	-4.52	0.35	-39	0.407	-7.81	2.19	1.66
-83	0.191	-14.38	-4.38	0.36	-38	0.427	-7.40	2.60	1.82
-82	0.194	-14.24	-4.24	0.38	-37	0.446	-7.01	2.99	1.99
-81	0.197	-14.11	-4.11	0.39	-36	0.465	-6.64	3.36	2.17
-80	0.200	-13.98	-3.98	0.40	-35	0.485	-6.29	3.71	2.35
-79	0.194	-14.24	-4.24	0.38	-34	0.507	-5.90	4.10	2.57
-78	0.188	-14.52	-4.52	0.35	-33	0.529	-5.53	4.47	2.80
-77	0.182	-14.80	-4.80	0.33	-32	0.551	-5.18	4.82	3.04
-76	0.176	-15.09	-5.09	0.31	-31	0.573	-4.84	5.16	3.28
-75	0.170	-15.39	-5.39	0.29	-30	0.595	-4.51	5.49	3.54
-74	0.164	-15.70	-5.70	0.27	-29	0.618	-4.19	5.81	3.81
-73	0.158	-16.03	-6.03	0.25	-28	0.640	-3.88	6.12	4.10
-72	0.152	-16.36	-6.36	0.23	-27	0.663	-3.58	6.42	4.39
-71	0.146	-16.71	-6.71	0.21	-26	0.685	-3.29	6.71	4.69
-70	0.140	-17.08	-7.08	0.20	-25	0.707	-3.01	6.99	5.01
-69	0.136	-17.36	-7.36	0.18	-24	0.728	-2.76	7.24	5.30
-68	0.131	-17.65	-7.65	0.17	-23	0.748	-2.52	7.48	5.60
-67	0.126	-17.96	-7.96	0.16	-22	0.769	-2.28	7.72	5.91
-66	0.122	-18.27	-8.27	0.15	-21	0.789	-2.05	7.95	6.23
-65	0.117	-18.60	-8.60	0.14	-20	0.810	-1.83	8.17	6.56
-64	0.116	-18.75	-8.75	0.13	-19	0.827	-1.65	8.35	6.84
-63	0.114	-18.90	-8.90	0.13	-18	0.844	-1.47	8.53	7.12
-62	0.111	-19.05	-9.05	0.12	-17	0.861	-1.30	8.70	7.41
-61	0.109	-19.21	-9.21	0.12	-16	0.878	-1.13	8.87	7.71
-60	0.108	-19.37	-9.37	0.12	-15	0.895	-0.96	9.04	8.01
-59	0.107	-19.41	-9.41	0.11	-14	0.906	-0.85	9.15	8.22
-58	0.106	-19.45	-9.45	0.11	-13	0.918	-0.74	9.26	8.43
-57	0.106	-19.49	-9.49	0.11	-12	0.929	-0.64	9.36	8.64
-56	0.105	-19.53	-9.53	0.11	-11	0.941	-0.53	9.47	8.85
-55	0.105	-19.58	-9.58	0.11	-10	0.952	-0.42	9.58	9.07
-54	0.121	-18.34	-8.34	0.15	-9	0.959	-0.36	9.64	9.20
-53	0.137	-17.27	-7.27	0.19	-8	0.965	-0.30	9.70	9.32
-52	0.153	-16.31	-6.31	0.23	-7	0.972	-0.25	9.75	9.45
-51	0.169	-15.44	-5.44	0.29	-6	0.979	-0.19	9.81	9.57
-50	0.185	-14.66	-4.66	0.34	-5	0.985	-0.13	9.87	9.70
-49	0.206	-13.72	-3.72	0.42	-4	0.988	-0.10	9.90	9.76
-48	0.227	-12.88	-2.88	0.52	-3	0.991	-0.08	9.92	9.82
-47	0.248	-12.11	-2.11	0.62	-2	0.994	-0.05	9.95	9.88
-46	0.269	-11.40	-1.40	0.72	-1	0.997	-0.03	9.97	9.94
					0	1.000	0.00	10.00	10.00



48 dBu F(50,90)
DTV (PROPOSED 0.200 kW)

Custer MT
68 dBu F(50,50)
NTSC (LIC)

EXHIBIT E - 2
 PREDICTED COVERAGE CONTOURS
 FOR EXISTING ANALOG
K10GF, MILES CITY, MONTANA
 CHANNEL 10 1.064 kW DA ERP 811 METERS RC/AMSL
 AND PROPOSED DIGITAL OPERATION
 CHANNEL 10 0.200 kW DA ERP 811 METERS RC/AMSL
 AUGUST 2009
 COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS

0 5 10 15
 Kilometers
 CREATED WITH MAPTITUDE(R) GIS FOR WINDOWS FROM CALIPER CORPORATION.

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

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

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:

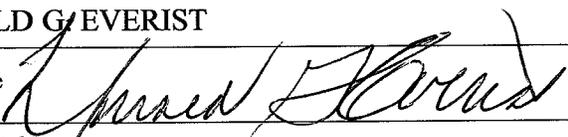
- The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.
- Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV 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 DONALD G. EVERIST		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date September 30, 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	

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