

TECHNICAL EXHIBIT
LPTV DTV DISPLACEMENT APPLICATION
STATION K40FF (FACILITY ID 10291)
ST. LOUIS, MISSOURI

OCTOBER 8, 2002

CH 51(-) 70 KW-ND

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Technical Narrative

This technical exhibit supports a digital television (DTV) displacement application from low power television (LPTV) station K40FF at St. Louis, Missouri (Facility ID 10291). According to the Federal Communications Commission (FCC) database, station K40FF is currently licensed to operate on channel 40 with a non-directional (ND) antenna system (BLTTV-19971112IH). The visual effective radiated power (ERP) is 15.6 kilowatts (kW). The antenna center of radiation is 279 meters above mean sea level (AMSL). The transmitter site coordinates are 38-38-10, 90-20-38 (NAD-27).

Station K40FF is being displaced from operation on channel 40 by the DTV operation of station WSIU-DT on channel 40 at Carbondale, Illinois (BPEDT-20000428ACV, Facility ID 4297). Station WSIU-DT is located 112.8 kilometers southeast of the present K40FF site. In accordance with Section 73.3572(a)(4)(iv)(A) of the FCC rules, station K40FF is eligible for displacement relief.

Proposed Facilities

Station K40FF proposes change frequency to channel 51 with a minus (-) carrier offset. It is proposed to relocate the transmitter site to a SpectraSite tower. There is no proposed change in the antenna pattern (ND) or city of assignment (St. Louis, MO). It is proposed to install a Dielectric TLP-16A(C)DC non-directional antenna system on the SpectraSite tower (FCC Registration No. 1020785). The tower coordinates are 38-34-24, 90-

19-30 (NAD-27). The proposed K40FF site is located 7.2 kilometers south-southeast of the present K40FF site. The proposed antenna system will be installed with the center of radiation at 274.3 meters above ground level (AGL) and 417.6 meters AMSL (see Figure 1). The power gain for the proposed Dielectric TLP-16A(C)DC antenna system is 16. It is proposed to couple the antenna system to the transmitter through approximately 289.6 meters (950 feet) of 3 inch rigid coaxial air dielectric transmission line. The efficiency of the transmission line on channel 51 is 54.2%. The proposed transmitter power output (TPO) will be 8.07 kW. The combination of these parameters results in the proposed visual ERP of 70 kW. It is noted that the transmitting facilities proposed herein are the same as those recently granted a construction permit to station K40FF (BMPTT-20020814AAF).

NTSC Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.707, 74.708 and 74.709 of the FCC rules to assure that the proposal will not create prohibited interference with other authorized or pending analog (NTSC) full-power TV, LPTV, Class A TV, and land mobile radio service (LMRS) stations. The proposed K40FF operation complies with the FCC's allocation standards with respect to all known analog assignments, except K43EU on channel 52 at St. Louis, Missouri (CP, BMPTTL-19980601SX, Facility ID 57397). There are no pertinent LMRS stations in the area for protection from the proposed channel 51 operation.

With respect to station K43EU on adjacent channel 52, it is noted that there is an agreement between K40FF and K43EU for co-located adjacent channel operations. The FCC has issued waivers for the adjacent channel collocated operations of K40FF on channel 51 (BPTT-JG0601AN) and K43EU on channel 52 (BMPTTL-19980601SX, Facility ID 57397). It is understood that K43EU will be filing an application concurrently to move its channel 52 operation to the SpectraSite tower and use the same antenna system as proposed for K40FF on channel 51. Hence the 2 stations propose to remain as co-located adjacent channel operations with similar power. As such, no adjacent channel interference is expected or calculated using the procedures outlined in the FCC's OET-69 Bulletin. The FCC is

respectfully requested to continue the waiver for the K40FF (Ch.51) and K43EU (Ch.52) adjacent channel operations.

The proposed K40FF channel 51 site is more than 700 kilometers from the nearest point of the US/Canada border, and more than 1400 kilometers from the closest point of the Mexican border. These distances are sufficient to not be a coordination concern.

DTV Allocation Considerations

Pertinent DTV allotments and assignments on channels 50, 51 and 52 have been examined using the procedures outlined in the FCC's OET-69 Bulletin.¹ Figure 3 shows the calculated interference caused by the proposed K40FF channel 51 operation to pertinent DTV allotments and assignments. The proposed K40FF channel 51 operation complies with the FCC's "de minimis" (0.5%) interference policy.

The applicant recognizes the proposal is secondary to authorized full-service analog and DTV operations. The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation. If necessary, a waiver of the FCC rules is respectfully requested based on use of the procedures outlined in the FCC's OET-69 Bulletin.

Radiofrequency Electromagnetic Field Exposure

The proposed K40FF channel 51 facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A

¹ The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

visual ERP of 70 kW with 10% aural power was assumed. A conservative relative field value of 0.3 was assumed for the antenna's downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0014 mW/cm^2 . This is less than 1% of the FCC's recommended limit of 0.46 mW/cm^2 for channel 51 for an "uncontrolled" environment. It is less than 0.1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed K40FF channel 51 operation appears to be otherwise categorically excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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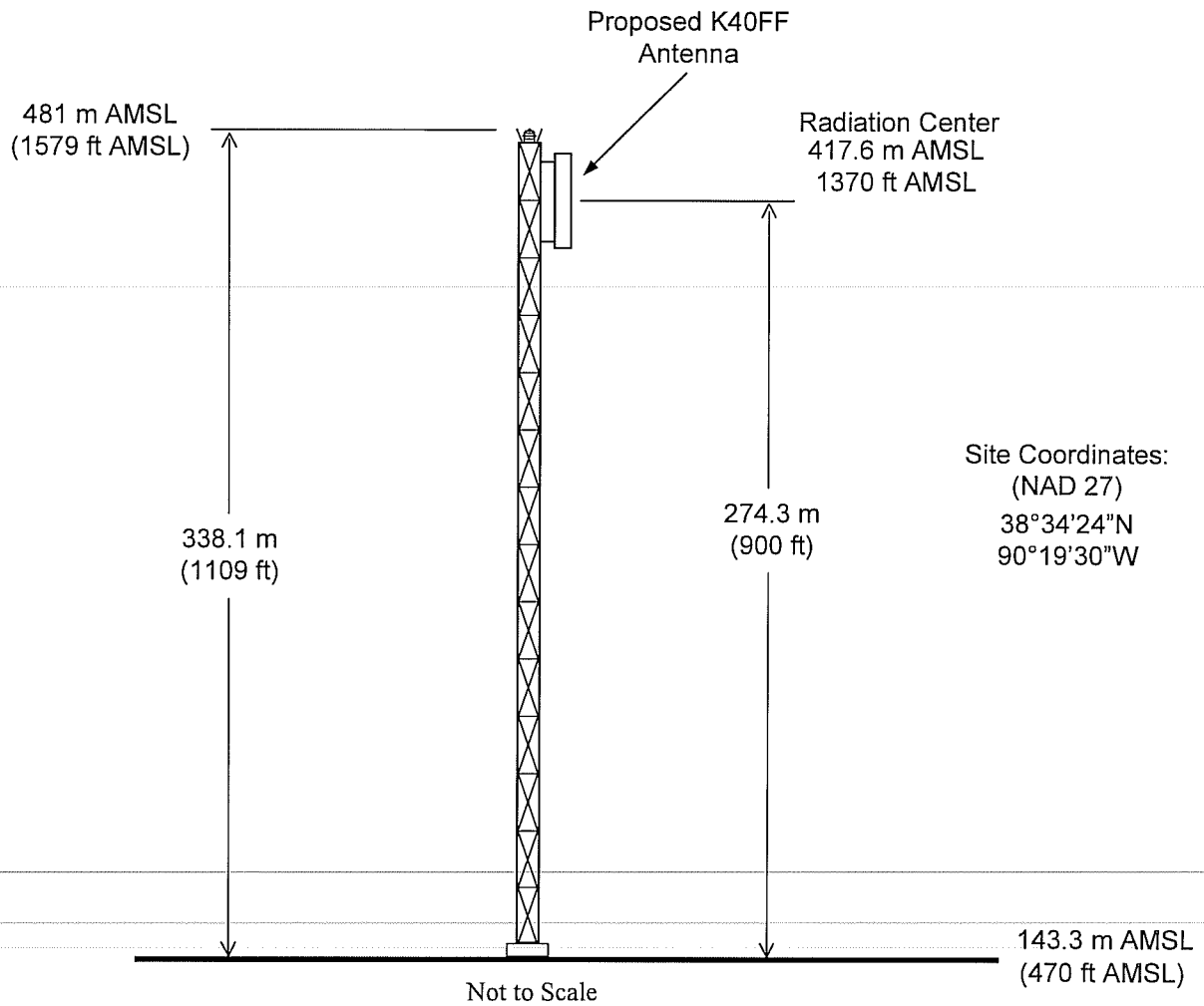
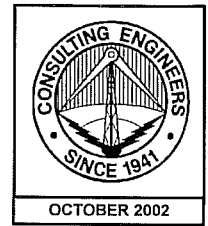
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October 8, 2002

Figure 1



FCC Tower ID: 1020785

PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION K40FF
ST. LOUIS, MISSOURI
CH 51 70 KW-ND

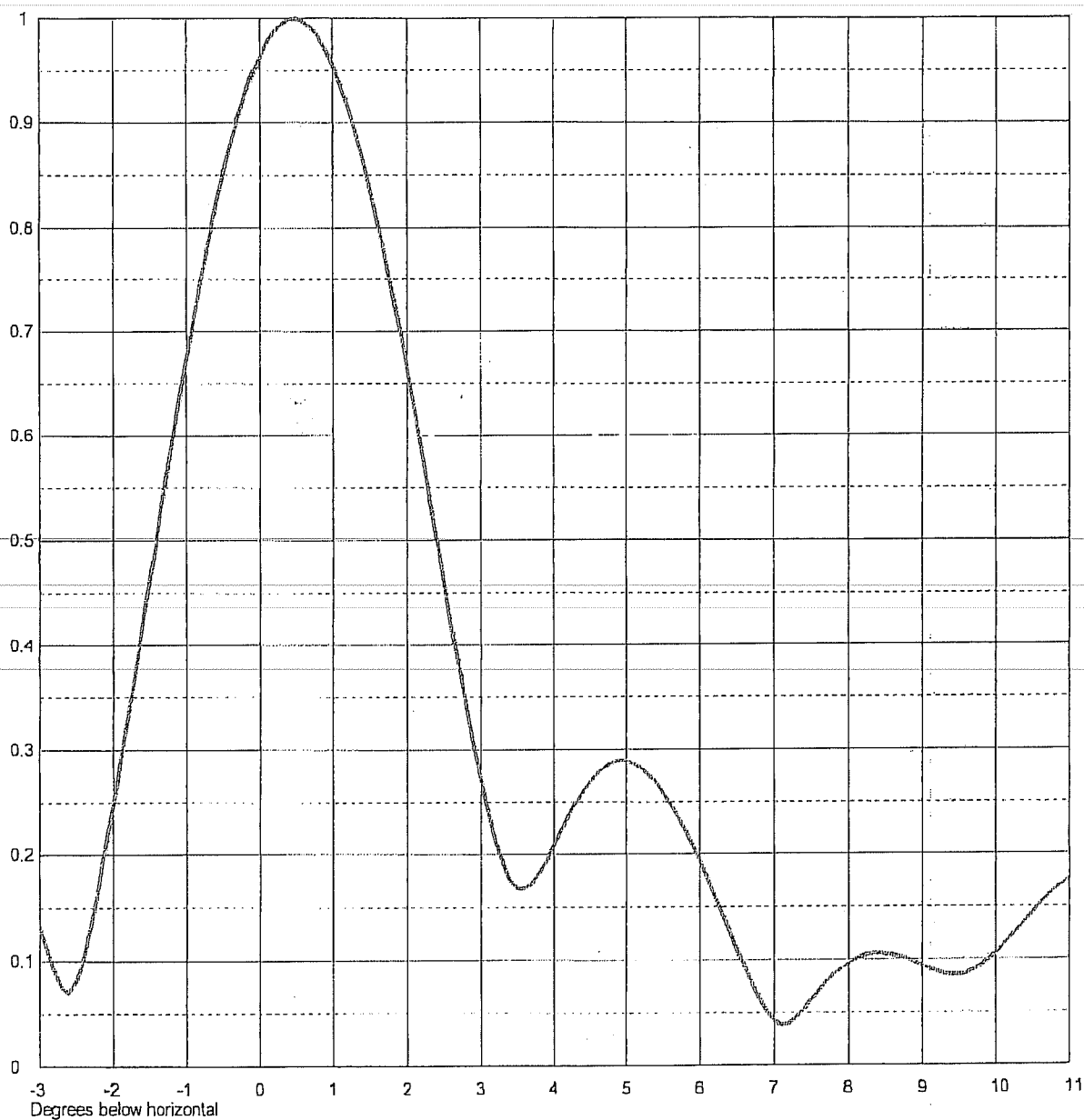
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



Proposal Number	DCA-9191	Revision	
Date	26 Jan 2001		
Call Letters	K51FT	Channel	51
Location	St. Louis, MO		
Customer	Paxson Communications		
Antenna Type	TLP16-A (C) DC		

ELEVATION PATTERN

RMS Gain at Main Lobe	16.0 (12.04 dB)	Beam Tilt	0.50 Degrees
RMS Gain at Horizontal	14.8 (11.70 dB)	Frequency	695.00 MHz
Calculated / Measured	Calculated	Drawing #	16L160050

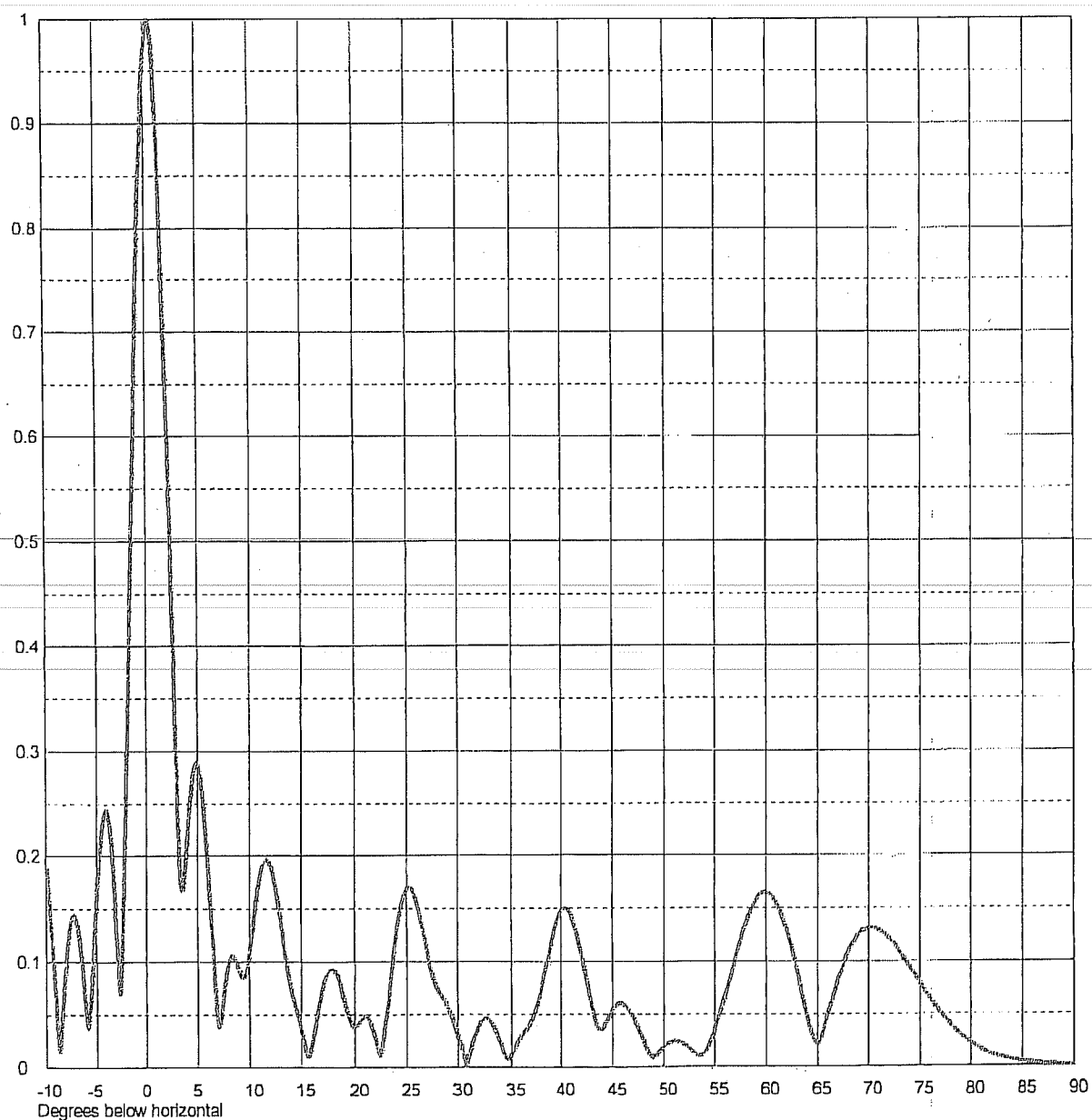




Proposal Number	DCA-9191	Revision	
Date	26 Jan 2001		
Call Letters	K51FT	Channel	51
Location	St. Louis, MO		
Customer	Paxson Communications		
Antenna Type	TLP16-A (C) DC		

ELEVATION PATTERN

RMS Gain at Main Lobe	16.0 (12.04 dB)	Beam Tilt	0.50 Degrees
RMS Gain at Horizontal	14.8 (11.70 dB)	Frequency	695.00 MHz
Calculated / Measured	Calculated	Drawing #	16L160050-90



Study Date: 20020716

Study Start: 10:40:47

INTERFERENCE CAUSED TO DTV ALLOTMENTS & ASSIGNMENTS FROM PROPOSED K40FF OPERATION

CELL SIZE : 1.0 km

Using offset in determining thresholds

Per 6th Report & Order and FCC OET-69 Bulletin

DWDKA 37-23-42 088-56-23 50(0) 68.2 kW-DA 455 m AMSL 90.0 % 42.0 dBu

PADUCAH KY 14893 435 DTVSERVICE: 435000 NTSCSERVICE: 435000

DTVALT DTV ALLOTMENT

0.72 0.87 0.98 0.92 0.71 0.52 0.36 0.28 0.27 0.27 0.41 0.60

0.73 0.88 1.00 0.94 0.73 0.53 0.37 0.28 0.27 0.28 0.41 0.61

0.73 0.88 1.00 0.94 0.72 0.53 0.37 0.28 0.27 0.27 0.41 0.60

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	15228.8 sq km	435968
not affected by terrain losses	15005.3	434737

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu

ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

WDKA-DT 37-23-42 088-56-23 50(N) 1000.0 kW-ND 454.5 m AMSL 90.0 % 42.0 dBu

PADUCAH KY 14893 435 DTVSERVICE: 435000 NTSCSERVICE: 435000

CP BPCDT-19991029ACT

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	29747.0 sq km	650833
not affected by terrain losses	29489.6	644608

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu

ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

DWEIU 39-28-43 088-10-21 50(0) 50.0 kW-DA 276 m AMSL 90.0 % 42.0 dBu
CHARLESTON IL 2801 71 DTVSERVICE: 71000 NTSCSERVICE: 71000
DTVALT DTV ALLOTMENT

0.96	0.96	0.96	0.96	0.97	0.96	0.96	0.96	0.95	0.95	0.95	0.95
0.96	0.96	0.96	0.97	0.98	0.99	1.00	0.99	0.98	0.97	0.96	0.95
0.95	0.95	0.95	0.95	0.95	0.96	0.96	0.96	0.96	0.96	0.96	0.96

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	2811.3 sq km	71069
not affected by terrain losses	2811.3	71069

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO
PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

WEIU-DT 39-28-46 088-10-23 50(N) 1000.0 kW-ND 443.3 m AMSL 90.0 % 42.0 dBu
CHARLESTON IL 2801 71 DTVSERVICE: 71000 NTSCSERVICE: 71000
APP BPEDT-20000501AGV

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	23098.3 sq km	706536
not affected by terrain losses	23057.7	704855

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO
PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

KPXE-DT 39-01-19 094-30-49 51(N) 1000.0 kW-ND 616 m AMSL 90.0 % 42.0 dBu
KANSAS CITY MO 16177 1670 DTVSERVICE: 1670000 NTSCSERVICE: 1659000
CP BPCDT-19991018AAT

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	30465.5 sq km	1927391
not affected by terrain losses	30244.6	1925761

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	2.0 sq km	0 (0.0%)

DKYFC 39-01-19 094-30-50 51(0) 50.0 kW-DA 616 m AMSL 90.0 % 42.0 dBu
KANSAS CITY MO 16177 1670 DTVSERVICE: 1670000 NTSCSERVICE: 1659000
DTVALT DTV ALLOTMENT

1.00	1.00	0.99	0.98	0.98	0.97	0.98	0.98	0.98	0.99	0.98	0.98
0.98	0.98	0.98	0.98	0.97	0.97	0.97	0.98	0.98	0.98	0.98	0.98
0.98	0.98	0.97	0.97	0.98	0.98	0.99	0.99	0.99	0.99	1.00	1.00

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	16223.7 sq km	1669982
not affected by terrain losses	16200.8	1669951

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

DWFBFI 35-12-41 089-48-54 51(0) 50.0 kW-DA 403 m AMSL 90.0 % 42.0 dBu
MEMPHIS TN 14801 1118 DTVSERVICE: 1118000 NTSCSERVICE: 1129000

DTVALT DTV ALLOTMENT

1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.98	0.98	0.97	0.97	0.98
0.98	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	15684.2 sq km	1129662
not affected by terrain losses	15678.2	1129542

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

WPXX-DT 35-12-41 089-48-54 51(N) 1000.0 kW-ND 386 m AMSL 90.0 % 42.0 dBu
MEMPHIS TN 14801 1118 DTVSERVICE: 1118000 NTSCSERVICE: 1129000

CP BPCDT-19990514KE

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	27647.5 sq km	1313868
not affected by terrain losses	27419.2	1308456

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

DWFTE 38-21-00 085-50-57 51(0) 50.0 kW-DA 544 m AMSL 90.0 % 42.0 dBu
SALEM IN 15053 1217 DTVSERVICE: 1217000 NTSCSERVICE: 1209000

DTVALT DTV ALLOTMENT

0.92	0.89	0.90	0.94	0.98	0.99	0.98	0.95	0.92	0.92	0.96	0.99
1.00	0.99	0.97	0.90	0.76	0.62	0.52	0.41	0.26	0.15	0.12	0.12
0.12	0.15	0.26	0.39	0.50	0.59	0.71	0.84	0.91	0.93	0.95	0.95

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	15576.2 sq km	1227734
not affected by terrain losses	15200.5	1221109

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

WFTE-DT 38-21-00 085-50-57 51(N) 1000.0 kW-DA 588.9 m AMSL 90.0 % 42.0 dBu
SALEM IN 15053 1217 DTVSERVICE: 1217000 NTSCSERVICE: 1209000

CP BPCDT-19991101ACP

1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.50	0.31	0.31	0.50	0.80
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	32491.7 sq km	1634313
not affected by terrain losses	31616.4	1616894

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu
ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

WPGD-DT 36-15-50 086-47-39 51(N) 175.0 kW-DA 610 m AMSL 90.0 % 42.0 dBu
HENDERSONVILLE TN 11900 996 DTVSERVICE: 996000 NTSCSERVICE: 966000

CP BPCDT-19991101AHR

0.68	0.67	0.66	0.64	0.62	0.61	0.60	0.61	0.63	0.67	0.72	0.77
0.82	0.87	0.92	0.95	0.98	0.99	1.00	0.99	0.98	0.95	0.92	0.87
0.82	0.77	0.72	0.67	0.63	0.61	0.60	0.61	0.62	0.64	0.66	0.67

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	23739.2 sq km	1354632
not affected by terrain losses	23122.0	1345622

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu

ST. LOUIS

MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

DWPGD 36-28-02 086-28-53 51(0) 140.6 kW-DA 446 m AMSL 90.0 % 42.0 dBu
HENDERSONVILLE TN 11900 996 DTVSERVICE: 996000 NTSCSERVICE: 966000

DTVALT DTV-ALLOTMENT

0.13	0.15	0.19	0.21	0.22	0.21	0.19	0.15	0.13	0.12	0.14	0.18
0.23	0.29	0.37	0.45	0.54	0.64	0.76	0.87	0.93	0.98	1.00	0.95
0.88	0.80	0.70	0.59	0.51	0.43	0.36	0.28	0.22	0.17	0.14	0.11

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	12467.5 sq km	1011664
not affected by terrain losses	12014.5	996904

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu

ST. LOUIS

MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

DTV-PRM 38-28-56 090-23-53 52(Z) 1000.0 kW-ND 443 m AMSL 90.0 % 42.1 dBu

ST. LOUIS MO

ADD BPRM-19960725AAF

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	26114.5 sq km	2663187
not affected by terrain losses	25828.6	2661492

K40FF-P 38-34-24 090-19-30 51(-) 70.0 kW-ND 417.6 m AMSL 10.0 % 75.0 dBu

ST. LOUIS MO

PROPOSAL

Using DEFAULT vertical antenna pattern

D/U Baseline: -48.00 dB

	Area	Pop
Interference	0 sq km	0 (0.0%)

Study end time: 10:48:21