

TECHNICAL EXHIBIT  
AMENDMENT TO  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
LPTV STATION K66FN  
FCC FILE NO. BMPTT-20021015ACA  
LOW POWER TV STATION K66FN  
FACILITY ID 57448  
SALT LAKE CITY, UTAH  
CH 66 38 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an amendment to the pending application for modification of the construction permit for Low Power TV station K66FN at Salt Lake City, Utah (Facility ID: 57448; File No. BMJPTT-20021015ACA). The pending application proposes to change transmitter site and increase the effective radiated power (ERP) and antenna radiation center height above mean sea level (RCMSL). The purpose of this instant amendment is to provide the tower registration information for the proposed tower structure as requested by the Commission's letter dated March 13, 2003. No facility changes are proposed. As detailed below, the pending application, as amended herein, is considered a "minor change" in facilities pursuant to Section 73.3572.

Response to Paragraph 6 - Antenna Structure Registration Number

It is proposed to side-mount the directional antenna on an authorized 86 meter supporting structure. The tower registration number is 1237796.

Proposed Facilities

Operation is proposed on K66FN's current channel 66 (782-788 MHz) with a "minus" carrier frequency offset using an Andrew model ALP16L10CSW66 "composite", circularly polarized directional antenna oriented at 136° true and incorporating 2.5 degrees of electrical beam tilt. The antenna radiation center height above mean sea level will be 2795 meters. The maximum ERP towards the radio horizon will be 38 kW (H&V), and the maximum ERP at any horizontal or vertical angle will be 150 kW (H&V).

Figure 1 depicts the authorized (BMJPTT-200000831CKN) and herein proposed 74 dBu contours for K66FN. As indicated, the proposed 74 dBu contour encompasses a portion of the authorized 74 dBu contour. Therefore, the proposed modification is considered a "minor" change in facilities pursuant to Section 73.3572.

Response to Paragraph 13(a) - TV Broadcast Analog Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed K66FN operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations.

Response to Paragraph 13(b) - DTV Station Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed K66FN operation on channel 66 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 65, 66 and 67.

Response to Paragraph 13(c) - LPTV/TV Translator/Class A TV Protection

A study has been conducted which indicates that the K66FN proposal will not create prohibited contour overlap to other existing, authorized or proposed LPTV/TV Translator/Class A TV stations with the exception of the following:

KULX-CA, Ch. 51, Salt Lake City, UT (BPTTA-20020814AAY)  
K66EH, Ch. 66, Delta & Oak City, UT (License, BLTT-19921109IL)  
K66AA, Ch. 66, Duchesne, UT (License, BLTT-925)  
K66FC, Ch. 66, Rural Randolph, UT (License, BLTT-19960216JD)  
K66BK, Ch. 66, Salina & Redmond, UT (License, BLTT-19800414IN)

However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)] it is believed that K66FN's proposed operation complies with the FCC's interference criteria towards these stations. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 are tabulated on Figure 2 and, as

indicated, the proposal complies with the FCC's 0.5% interference threshold.

Response to Paragraph 14 - Environmental Protection Act

The proposed K66FN LPTV facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation."<sup>1</sup> The calculated power density at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin. Using a greater than expected vertical relative field value of 0.15, a maximum visual effective radiated power of 300 kilowatts (H+V) and 10 percent aural power, the calculated power density at 2 meters above ground level at the base of the tower is 0.0741 milliwatt per square centimeter (mW/cm<sup>2</sup>), or 14.2 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas (0.52 mW/cm<sup>2</sup> for TV channel 66). However, as this is a multi-user site, measurements will be made to substantiate compliance with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that 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.

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<sup>1</sup> See *Report and Order* in ET Docket 93-62, FCC 96-326, adopted August 1, 1996, 11 FCC Rcd 15123 (1997). See also *First Memorandum Opinion and Order*, ET Docket 93-62, FCC 96-487, adopted December 23, 1996, 11 FCC Rcd 17512 (1997), and *Second Memorandum Opinion and Order and Notice of Proposed Rulemaking*, ET Docket 93-62, FCC 97-303, adopted August 25, 1997.

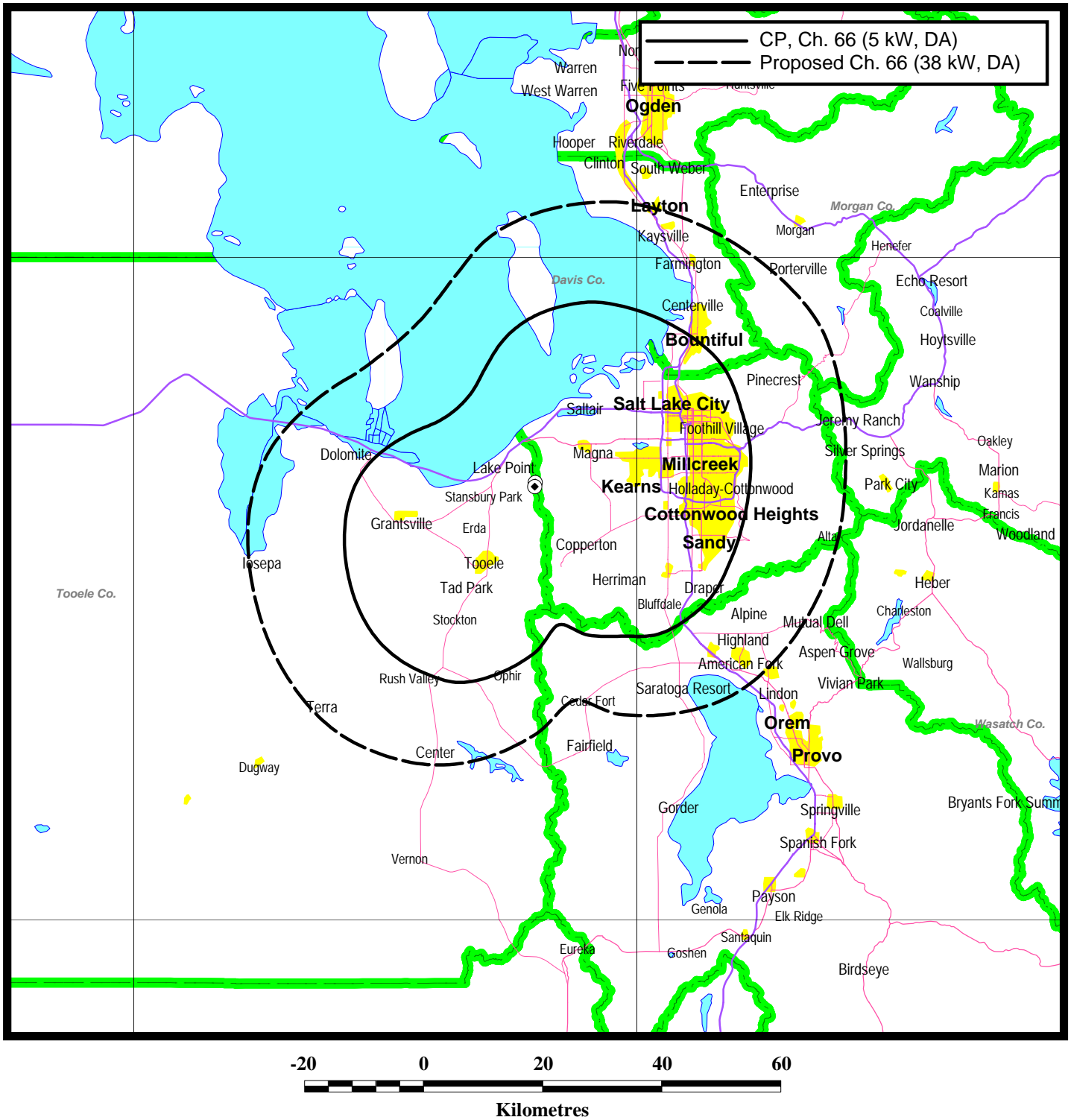
In addition, it appears that the existing tower is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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Figure 1



## PREDICTED 74 DBU CONTOURS

STATION K66FN  
 SALT LAKE CITY, UTAH  
 CH 66 38 KW (MAX-DA)

OET-69 INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00  
Using offset in determining thresholds

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KULX-C 40-39-34 112-12-05 51(N) 18.200 kw 2777 m DA 50.0 % 75.0 dBu  
SALT LAKE CITY UT  
APP BPTTA20020814AAY  
1.00 0.95 0.81 0.62 0.36 0.09 0.01 0.01 0.01 0.01 0.01 0.01  
0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01  
0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.09 0.36 0.62 0.81 0.95  
Ref Az: 30.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	1374.585	214881
not affected by terrain losses	1350.399	214881

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K66FN 40-39-35 112-12-02 66(-) 38.000 kw 2795 m DA 10.0 % 76.1  
SALT LAKE CITY UT  
APP BMPTT20021015ACA  
1.00 1.00 0.98 0.96 0.93 0.96 0.99 1.00 0.98 0.92 0.85 0.76  
0.68 0.61 0.51 0.40 0.30 0.25 0.24 0.25 0.30 0.40 0.51 0.61  
0.68 0.76 0.85 0.92 0.98 1.00 0.99 0.96 0.93 0.96 0.98 1.00  
Ref Az: 136.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

	Area	Pop
Interference	0	0

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K66AA 39-45-22 110-59-26 66(N) 2.060 kw 2989 m DA 50.0 % 76.1 dBu  
DUCHESNE ETC. UT  
LIC BLTT925  
1.00 0.76 0.09 0.05 0.04 0.04 0.04 0.04 0.04 0.04 0.11 0.40  
0.65 0.69 0.54 0.16 0.06 0.06 0.06 0.05 0.05 0.05 0.05 0.06  
0.06 0.06 0.05 0.05 0.04 0.04 0.04 0.04 0.04 0.06 0.14 0.78  
Ref Az: 12.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	312.0090	9993
not affected by terrain losses	272.0078	8567

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K66FN 40-39-35 112-12-02 66(-) 38.000 kw 2795 m DA 10.0 % 76.1  
SALT LAKE CITY UT  
APP BMPTT20021015ACA  
1.00 1.00 0.98 0.96 0.93 0.96 0.99 1.00 0.98 0.92 0.85 0.76  
0.68 0.61 0.51 0.40 0.30 0.25 0.24 0.25 0.30 0.40 0.51 0.61  
0.68 0.76 0.85 0.92 0.98 1.00 0.99 0.96 0.93 0.96 0.98 1.00  
Ref Az: 136.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

**Interference**                      **Area**                      **Pop**  
   4.00                      0( 0.0)

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K66FC 41-39-54 111-05-55 66(N) 0.932 kw 2406 m DA 50.0 % 76.1 dBu

RURAL RANDOLPH UT

LIC BLTT19960216JD

1.00	0.80	0.40	0.15	0.09	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
0.05	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.09	0.18	0.46	0.81	

Ref Az: 350.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	120.6763	86
not affected by terrain losses	104.5862	79

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K66FN 40-39-35 112-12-02 66(-) 38.000 kw 2795 m DA 10.0 % 76.1

SALT LAKE CITY UT

APP BMPTT20021015ACA

1.00	1.00	0.98	0.96	0.93	0.96	0.99	1.00	0.98	0.92	0.85	0.76	
0.68	0.61	0.51	0.40	0.30	0.25	0.24	0.25	0.30	0.40	0.51	0.61	
0.68	0.76	0.85	0.92	0.98	1.00	0.99	0.96	0.93	0.96	0.98	1.00	

Ref Az: 136.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

**Interference**                      **Area**                      **Pop**  
   0                      0

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K66EH 39-21-15 112-20-30 66(N) 3.090 kw 2012 m DA 50.0 % 76.1 dBu

DELTA OAK CITY, ETCUT

LIC BLTT19921109IL

0.62	0.51	0.29	0.16	0.12	0.10	0.08	0.06	0.06	0.06	0.06	0.08	
0.09	0.11	0.10	0.10	0.09	0.08	0.07	0.08	0.08	0.09	0.10	0.13	
0.22	0.49	0.82	1.00	0.81	0.42	0.18	0.12	0.11	0.16	0.31	0.51	

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	369.9339	4274
not affected by terrain losses	285.4925	4198

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K66FN 40-39-35 112-12-02 66(-) 38.000 kw 2795 m DA 10.0 % 76.1

SALT LAKE CITY UT

APP BMPTT20021015ACA

1.00	1.00	0.98	0.96	0.93	0.96	0.99	1.00	0.98	0.92	0.85	0.76	
0.68	0.61	0.51	0.40	0.30	0.25	0.24	0.25	0.30	0.40	0.51	0.61	
0.68	0.76	0.85	0.92	0.98	1.00	0.99	0.96	0.93	0.96	0.98	1.00	

Ref Az: 136.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

**Interference**                      **Area**                      **Pop**  
   0                      0

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K66BK 38-52-37 111-52-30 66(N) 0.413 kw 2016 m DA 50.0 % 76.1 dBu  
 SALINA & REDMOND UT  
 LIC BLTT19800414IN  
 1.00 0.80 0.40 0.15 0.09 0.07 0.06 0.06 0.06 0.06 0.07 0.07  
 0.08 0.08 0.06 0.03 0.03 0.03 0.03 0.03 0.04 0.04 0.07 0.07  
 0.08 0.08 0.06 0.06 0.06 0.06 0.06 0.06 0.09 0.18 0.46 0.81  
 ( 5.0 0.95)(355.0 0.95)

Ref Az: 355.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	56.01189	1023
not affected by terrain losses	44.00934	1023

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K66FN 40-39-35 112-12-02 66(-) 38.000 kw 2795 m DA 10.0 % 76.1  
 SALT LAKE CITY UT  
 APP BMPTT20021015ACA  
 1.00 1.00 0.98 0.96 0.93 0.96 0.99 1.00 0.98 0.92 0.85 0.76  
 0.68 0.61 0.51 0.40 0.30 0.25 0.24 0.25 0.30 0.40 0.51 0.61  
 0.68 0.76 0.85 0.92 0.98 1.00 0.99 0.96 0.93 0.96 0.98 1.00

Ref Az: 136.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	0	0

### Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KULX-C, SALT LAKE CITY,	51	TV	214881	0.5	0	0.00 <sup>1</sup>
K66AA, DUCHESNE ETC.,	66	TV	9993	0.5	0	0.00
K66FC, RURAL RANDOLPH,	66	TV	86	0.5	0	0.00
K66EH, DELTA OAK CITY,	66	TV	4274	0.5	0	0.00
K66BK, SALINA & REDMOND	66	TV	1023	0.5	0	0.00

<sup>1</sup> Considers the effects of "masking" by other authorized NTSC and DTV stations.