

TECHNICAL EXHIBIT  
DTV DISPLACEMENT APPLICATION  
FOR CONSTRUCTION PERMIT  
STATION K27CK (FACILITY ID 71547)  
WILLMAR, MINNESOTA

SEPTEMBER 22, 2003

CH 28(+) 1 KW-ND

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Technical Narrative

This technical exhibit supports a digital television (DTV) displacement application for low power television (LPTV) station K27CK at Willmar, Minnesota (Facility ID 71547).

Station K27CK is currently licensed to operate on channel 27 with a zero (0) carrier offset and a non-directional (ND) antenna system (BLTTL-19890726ID). The visual effective radiated power (ERP) is 0.98 kilowatt (kW). The antenna center of radiation is 134 meters above ground level (AGL) and 497 meters above mean sea level (AMSL). The transmitter site coordinates are 45-09-58, 95-02-41.

Proposed Facilities

Station K27CK is being displaced from its current operation by the co-channel DTV allotment and operation on channel 27 for station KRWF-DT at Redwood Falls, Minnesota. Station KRWF-DT is located only 83.6 kilometers south-southwest of the K27CK site.

It is proposed to change K27CK's frequency to channel 28 with a plus (+) carrier offset. It is proposed to use the MCI model 955126 multi-station non-directional antenna system on the current supporting structure. Although there is no proposed change in site, there are small changes in the site coordinates and elevation due to tower registration.

The Federal Communications Commission (FCC) antenna structure registration number for the tower is 1040404. The site coordinates are 45-09-58, 95-02-37 (NAD-27). It is proposed to use the MCI model 955126 non-directional antenna system. The proposed visual ERP will be 1.0 kW. The center of radiation for the antenna system is 144 meters AGL and 509.8 meters AMSL (see Figure 1). FM translator station K240CU on channel 240 (95.9 MHz) at Willmar is located on the structure. In addition LPTV stations K44AE (Ch.44), K46AC (Ch.46), K48AH (Ch.48), K30FZ (Ch.30), K17FA (Ch.17), K20GD (Ch.20), K52GK (Ch.52), K14LF (Ch.14), K54GG (Ch.54) and K39FE (Ch.39), all at Willmar, are located on the structure.

#### NTSC Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.707 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 and Class A TV stations. The proposed K27CK channel 28 operation complies with the FCC's allocation standards with respect to other analog assignments.

The K27CK site is more than 384 kilometers from the nearest point of the US/Canada border. The predicted 19 dBu F(50,10) interfering contour only extends about 150 kilometers, well short of the Canadian border. The closest point of the Mexican border is more than 1700 kilometers to the southwest. The closest FCC monitoring station is at Grand Island, Nebraska, approximately 545 kilometers to the southwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 1300 kilometers to the east-southeast. The Table Mountain Radio Quiet Zone is more than 900 kilometers to the west-southwest. The closest radio astronomy site using channel 37 is at North Liberty, Iowa, approximately 469 kilometers to the southeast. These separations are considered sufficient to not be a coordination concern.

### DTV Allocation Considerations

Pertinent DTV allotments and assignments on channels 27, 28 and 29 have been examined using the procedures outlined in the FCC's OET-69 Bulletin.<sup>1</sup> The proposed K27CK 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 K27CK facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A visual ERP of 1 kW with 10% aural power was assumed. A conservative relative field value of 1.0 was assumed for the MCI model 955126 antenna's downward radiation. The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0008 mW/cm<sup>2</sup>. This is less than 1% of the FCC's recommended limit of 0.37 mW/cm<sup>2</sup> for channel 28 for an "uncontrolled" environment. It is also less than 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

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<sup>1</sup> 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. A Sun 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.

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.

If there are questions concerning the technical portion of this application, please communicate with the office of the undersigned.

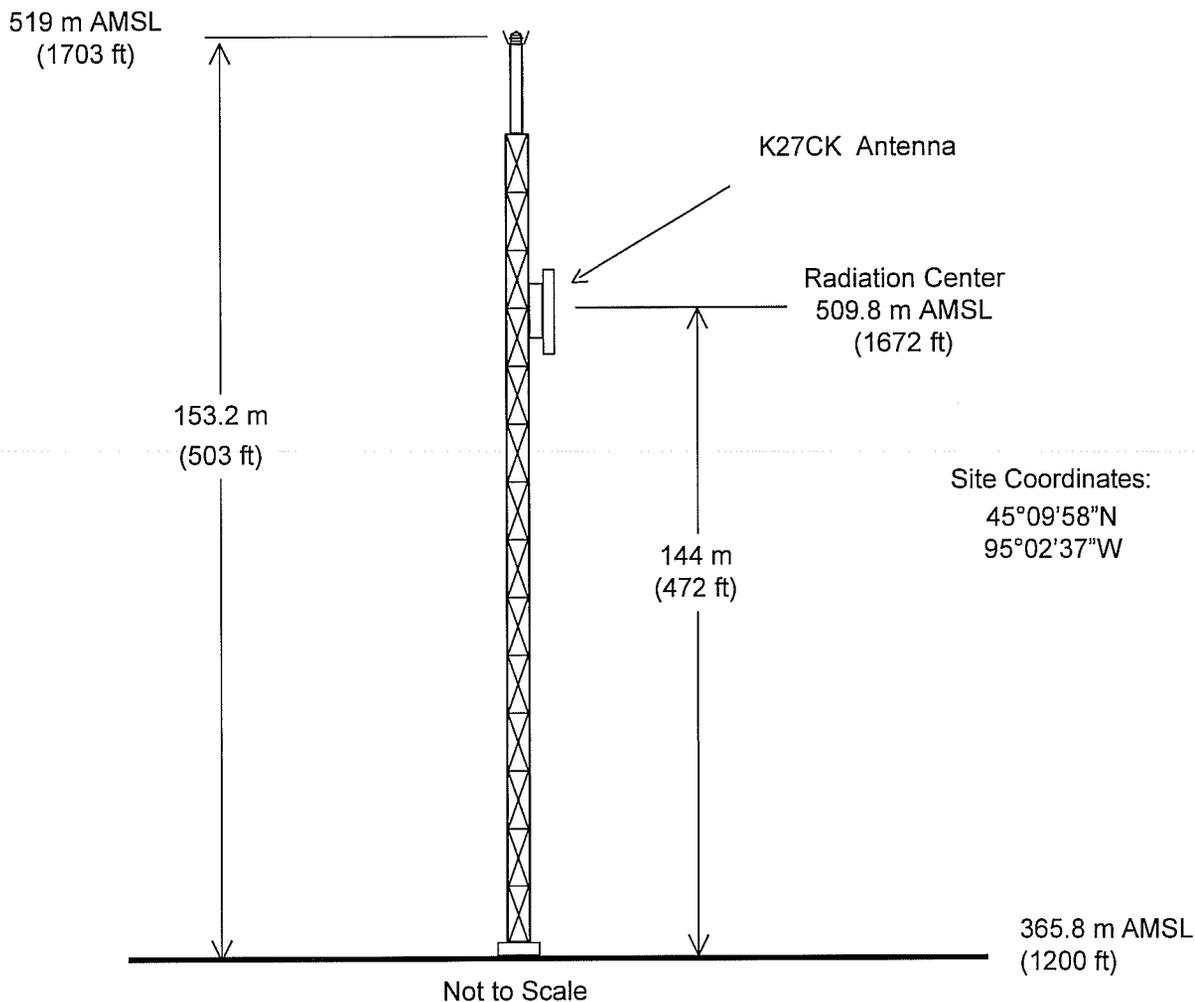
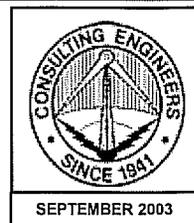
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September 22, 2003

FCC Tower ID: 1040404



# PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION K27CK  
WILLMAR, MINNESOTA  
CH 28(+) 1 KW-ND

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