

TECHNICAL EXHIBIT  
DIGITAL DISPLACEMENT RELIEF APPLICATION FOR  
TV TRANSLATOR STATION K27BN  
FACILITY ID 11564  
TRUTH OR CONSEQUENCE, NEW MEXICO  
CH 22 0.13 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of a digital displacement relief application for TV translator (TVT) station K27BN at Truth or Consequence, New Mexico (Facility ID: 11564).

Specifically, this displacement relief application proposes to modify the K27BN licensed operation by converting to a digital operation on channel 22. It is proposed to operate on digital channel 22 employing an Scala 4DR-8-2HW "off-the-shelf" wide cardioid antenna (Antenna ID 20751) having a main lobe orientation of 110 degrees true. The maximum directional effective radiated power will be 0.13 kW and the antenna radiation center above mean sea level will be 1535 meters.

Displacement Relief Eligibility

The K27BN currently licensed facility on channel 27 is located 242 kilometers from the authorized, co-channel facility of full-power DTV station KASA-TV on channel 27 at Santa Fe, NM (BPCDT-20080619AIC). According to Section 73.3572(a)(4)(ii) and 73.3572(a)(4)(iv)(A)(1) of FCC's rules, a TVT station is eligible for displacement relief if it is located within 265 km from the coordinates of a co-channel DTV authorization or DTV allotment. Therefore, TVT station K27BN is eligible for displacement relief.

Figure 1 depicts the licensed 74 dBu contour and herein proposed digital 51 dBu contour for K27BN. As indicated, the proposed 51 dBu contour encompasses the entire licensed 74 dBu contour.

Antenna Structure Registration

Results of the FCC's TOWAIR Program indicate that the existing 15 meter (49 foot) structure does not require registration. Figure 2 shows the results of the FCC's TOWAIR Program.

Response to Paragraph 13 (Interference)

The proposed facility complies with all the following applicable rule Sections: Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030.

Mexican Coordination/MOU Compliance

The proposed transmitter site is located 151 kilometers from the US-Mexican border. Therefore, it is respectfully requested that the FCC coordinate this proposal with Mexico.

Figure 3 is a separation study based on the provisions of the US-Mexican TV Agreement (June 1982) and the Memorandum of Understanding (MOU) between the United States and Mexico regarding the use of DTV Broadcasting Service along the common border.<sup>1</sup> The separation requirements are applicable to full-power NTSC and DTV stations (but are not applicable to TVT stations) but have been used for this analysis in an abundance of caution. As indicated, the proposed channel 22 digital operation complies with the full power separation requirements to all Mexican NTSC and DTV stations and allotments.

Environmental Considerations

The K27BN facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields adopted by the Commission in 1996.<sup>2</sup>

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<sup>1</sup> See "Memorandum of Understanding Between the Federal Communications Commission of the United States of America and the Secretaria de Comunicaciones y Transportes of the United Mexican States Related to the Use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz Bands for The Digital Television Broadcasting Service Along the Common Border" dated July 22, 1998 ("MOU").

<sup>2</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

The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. As shown on Figure 4 (antenna vertical relative pattern), the maximum vertical relative field for depression angles towards the tower base ( $-60^{\circ}$  to  $-90^{\circ}$ ) is less than 0.15. Therefore, using a vertical relative field value of 0.15, a maximum ERP of 0.13 kilowatts, and an antenna center of radiation height above ground level of 11 meters, the calculated power density at two meters above ground level at the base of the tower is 0.0012 milliwatt per square centimeter ( $\text{mW}/\text{cm}^2$ ), or 0.35 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ( $0.35 \text{ mW}/\text{cm}^2$  for TV channel 22). Therefore, the facility complies with the FCC's 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 to control access to the site. In the event that workers or other authorized personnel enter the restricted area appropriate measures shall be taken to limit RF energy exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been addressed by the tower owner.

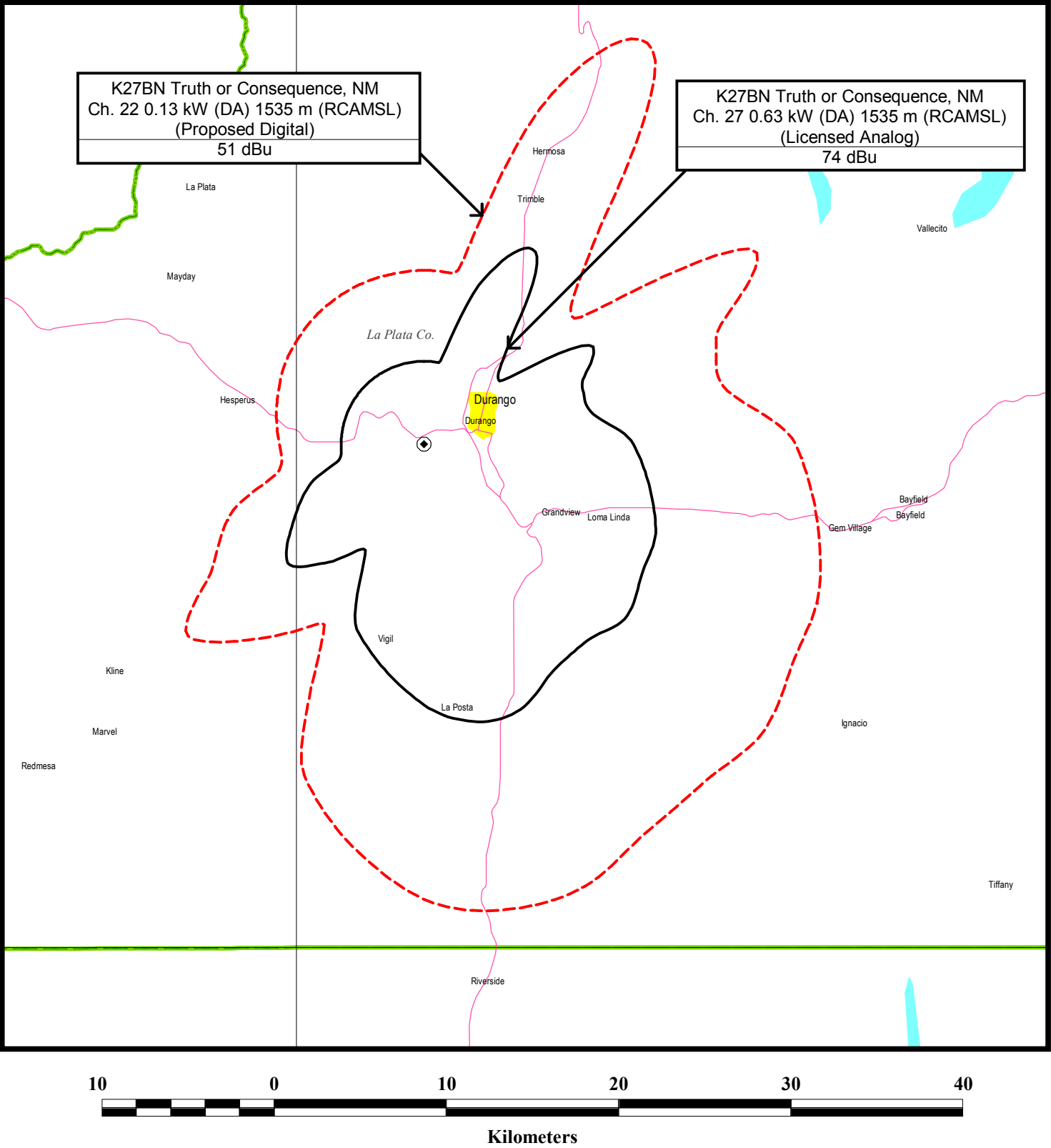
If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

A handwritten signature in black ink, appearing to read 'J. Howell', is centered on the page. The signature is fluid and cursive, with a large initial 'J' and 'H'.

Thomas J. Howell

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November 11, 2007



## FCC PREDICTED COVERAGE CONTOURS

TV TRANSLATOR STATION K27BN  
TRUTH OR CONSEQUENCE, NEW MEXICO

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

\*\*\* NOTICE \*\*\*

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	33-08-48.3 north
Longitude	107-17-08.1 west

Measurements (Meters)

Overall Structure Height (AGL)	15
Support Structure Height (AGL)	15
Site Elevation (AMSL)	1524

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

[Tower Construction Notification](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.  
Note: Notification does NOT replace [Section 106 Consultation](#).

CLOSE WINDOW

# TV Study

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



**Station Type:** DT      **Station Coordinates:** 033-08-48.00 107-17-06.00 (NAD 27)  
**Station Channel:** 22      **Station Zone:** II      **Equivalent Canadian Class:** EX  
**Buffer Distance:** 32 km      **Comment:**

<i>Callsign</i>	<i>Status</i>	<i>Channel</i>	<i>Service</i>	<i>Zone</i>	<i>City</i>			<i>State</i>	<i>Latitude</i>	<i>Dist. (km)</i>	<i>Min. (km)</i>	<i>Spacing (km)</i>	
<i>Facility ID</i>	<i>ARN</i>			<i>Class</i>	<i>DA</i>	<i>Ant ID</i>	<i>ERP (kW)</i>	<i>HAAT (m)</i>	<i>Rec Type</i>	<i>Longitude</i>	<i>Bear. (deg)</i>	<i>Max. (km)</i>	<i>Comment</i>
K14MM	CP	14 +	TX					TRUTH OR CONSEQUENCE	NM	033-17-06	15.35	24.1	8.75
126207	BNPTTL	20000828AEP			N	39633	5		C	107-17-24	358.27	96.6	CLOSE
NEW	APP	14 +	TX					TRUTH OR CONSEQUENCE	NM	033-17-06	15.35	24.1	8.75
127021	BNPTTL	20000828AMB			N	34830	5		C	107-17-24	358.27	96.6	CLOSE
K14LO	LIC	14 -	TX					LORDSBURG	NM	032-34-57	123.67	24.1	27.07
48573	BLTT	20051026AAI			C	41425	0.189		C	108-25-29	239.8	96.6	CLEAR
		15 -	TA	2				SOCORRO	NM	034-03-29	107.48	24.1	10.88
97412					N				C	106-53-29	19.68	96.6	CLEAR
K18DY	LIC	18 N	TX					HILLSBORO	NM	032-55-24	34.71	24.1	-10.61
27238	BLTT	19930624IC			D	23500	0.011		C	107-32-43	224.4	96.6	SHORT
		18 -	TA	2				ALAMOGORDO	NM	032-54-00	127.09	24.1	30.49
97582					N				C	105-57-24	102.13	96.6	CLEAR
K55BT	CP	19 Z	TX					DEMING	NM	032-11-40	109.84	24.1	13.24
49835	BDISTT	20060324AAH			D	20735	0.25		C	107-36-27	196	96.6	CLEAR
KCWF-CA	CP	20 +	TX					LAS CRUCES	NM	032-24-16	95.86	24.1	-0.74
33767	BDISTTL	20071113AIB			N	83412	0.99		C	106-45-38	149.14	96.6	SHORT
K20HA	LIC	20 Z	TX					CABALLO	NM	032-58-17	20.27	24.1	3.83
126189	BLTT	20050202ADM			D	20748	0.64		C	107-13-25	163.62	96.6	CLOSE
KCWO-LD	CP	21	LD					SILVER CITY, ETC.	NM	032-50-41	95.18	24	-14.82
168347	BDCCDT	20070419ADX			N	78724	1.5		C	108-14-18	249.57	110	SHORT
NEW	APP	21	LD					ALAMOGORDO	NM	032-25-48.1	104.3	24	-5.7
166985	BDCCDT	20061027AFJ			C	86656	4.73		C	106-33-50.4	139.58	110	SHORT
K21JO-D	CP	21	LD					LORDSBURG	NM	032-34-57	123.67	24	13.67
168138	BDCCDT	20070723ACS			C	80082	2		C	108-25-29	239.8	110	CLEAR
KRWG-TV	LIC	22 -	TV	2				LAS CRUCES	NM	032-15-33	102.62	244.6	-141.98
55516	BLET	20031223AAG			N	34265	1550	125	C	106-58-30	163.54	244.6	SHORT

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



**Station Type:** DT      **Station Coordinates:** 033-08-48.00 107-17-06.00 (NAD 27)  
**Station Channel:** 22      **Station Zone:** II      **Equivalent Canadian Class:** EX  
**Buffer Distance:** 32 km      **Comment:**

Callsign	Status	Channel	Service	Zone	City			State	Latitude	Dist. (km)	Min. (km)	Spacing (km)	
Facility ID	ARN			Class	DA	Ant ID	ERP (kW)	HAAT (m)	Rec Type	Longitude	Bear. (deg)	Max. (km)	Comment
K22FN	LIC	22 Z	TX			WHITE OAKS, ETC.			NM	033-49-34	122.32	244.6	-122.28
55529	BLTT	20000309AAB			D	22595	2.09		C	106-14-54	51.55	244.6	SHORT
K54GR	APP	22	LD			LAS CRUCES			NM	032-17-33	109.57	223.7	-114.13
55521	BDISDTT	20080514ACO			C	86526	15		C	106-41-51	149.78	223.7	SHORT
		22 +	TA	2	MCNARY				AZ	034-04-22	259.55	244.6	14.95
97760					N				C	109-51-12	294.12	244.6	CLEAR
K23JT-D	CP	23	LD			SILVER CITY			NM	032-51-49	94.68	24	-15.32
168139	BDCCDT	20061030AID			N	76452	9.38		C	108-14-27	250.81	110	SHORT
DKRWGTV	DTVALT	23	DT	2	LAS CRUCES				NM	32-15-24	102.86	24	-7.14
0							50	137	C	106-58-34	163.64	110	SHORT
KRWG-TV	STA	23	DS			LAS CRUCES			NM	032-16-58	108.13	24	-1.87
55516	BDSTA	20030317MXO			D	58855	1.03	-49	C	106-45-00.8	152.34	110	SHORT
KRWG-TV	APP	23	DS	2	LAS CRUCES				NM	032-17-33	109.57	24	-0.43
55516	BDSTA	20070214ABA			D	78056	9.57	205	C	106-41-51	149.78	110	SHORT
KRWG-TV	CP	23	DT	2	LAS CRUCES				NM	032-17-33	109.57	24	-0.43
55516	BPEDT	20080709AHL			D	88175	1000	205	C	106-41-51	149.78	110	SHORT
KRWG-TV	LIC	23	DT	2	LAS CRUCES				NM	032-17-33	109.57	24	-0.43
55516	BLEDT	20071119AFE			D	83970	200	205	C	106-41-51	149.78	110	SHORT
K25DI	LIC	25 N	TX			SILVER CITY			NM	032-50-40	95.19	24.1	-1.41
32323	BLTT	19910325JS			N		1.14		C	108-14-18	249.55	96.6	SHORT
K25HV	LIC	25 Z	TX			TRUTH OR CONSEQUENCE			NM	033-08-48	0	24.1	24.1
11568	BLTT	20040325ACC			D	20751	0.653		C	107-17-06	140.06	96.6	CLEAR
NEW	APP	29 Z	TX			DEMING			NM	032-15-05	108.71	24.1	12.11
126419	BNPTTL	20000829AEI			D	20068	20		C	107-45-26	204.06	96.6	CLEAR
KLCP-LP	LIC	30 N	TX			LAS CRUCES			NM	032-24-17	95.83	24.1	-0.77
54988	BLTTL	19990419JD			D	20731	42.5		C	106-45-38	149.13	96.6	SHORT



Figure 4

