

TECHNICAL EXHIBIT  
MINOR CHANGE APPLICATION  
TV TRANSLATOR STATION K31DR  
CABALLO, NEW MEXICO  
CH 31 10 KW

Technical Narrative

The technical exhibit of which this narrative is part supports a minor change application for low power television (LPTV) station K31DR at Caballo, New Mexico. Station K31DR is licensed to operate on channel 31 with a non-directional antenna (DA) maximum visual effective radiated power (ERP) of 1.16 kilowatts (kW) and an antenna radiation center height above mean sea level (RCAMSL) of 2310 meters (BLTT-19930312JE).

Proposed Facilities

Station K31DR proposes only to increase its ERP to 10 kW. There will be no change in transmitter site (32-58-16 N, 107-13-23 W) or antenna location on the existing tower.

Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.706, 74.707 and 74.709 to assure that the proposal will not create prohibited interference with other licensed or authorized NTSC/DTV full-power or LPTV/TV translator stations. Based on the use of the OET-69 software, no prohibited interference to any NTSC stations will be created by the proposed operation (see Figure 1).

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.

#### Mexican Coordination

The proposed site is located 132 kilometers from the closest point of the U.S./Mexico border. Since the proposed ERP does not exceed 10 kW it is believed that the proposal complies with the U.S./Mexican Agreement and coordination is not necessary.

#### Radiofrequency Electromagnetic Field Exposure

The proposed K31DR 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 10 kW with 22% aural power was assumed. A relative field value of 0.27 was assumed for the Andrew AL-8 antenna's downward radiation. The calculated power density at a point 2 meters (6.6 feet) above ground level is  $0.0721 \text{ mW/cm}^2$ . This is 19% of the FCC's recommended limit of  $0.38 \text{ mW/cm}^2$  for channel 31 for an "uncontrolled" environment. It is 3.8% of the recommended limit of  $1.9 \text{ mW/cm}^2$  for a "controlled" environment.

The transmitter site is located on the top of a remote mountain where various other broadcast stations operate. While there is no actual fence around the property restricting access to the multi-use tower, there is a gate restricting access along the road further down the mountain. Because of this restricting gate and the remote location of the transmitter site, it is believed that this site location can be considered a "controlled" environment. If the FCC differs in opinion, further RFR study and/or RF measurements will be taken.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site an agreement control access to the site. 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 K31DR operation appears to be otherwise categorically excluded from environmental processing.

In addition, it appears that the existing structure 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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May 6, 2004

## TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 05-06-2004 Time: 16:42:48  
Record Selected for Analysis

K31DR USERRECORD-01 CABALLO NM US  
Channel 31 ERP 10. kW HAAT 974. m RCAMSL 02310 m  
Latitude 032-58-16 Longitude 0107-13-23  
Status APP Zone 2

Cell Size for Service Analysis 2.0 km/side  
Distance Increments for Longley-Rice Analysis 1.00 km

Not full service station  
Facility meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	74.0 dBu F(50,50) (km)
0.0	7.040	620.4	31.6
45.0	6.215	720.1	32.5
90.0	6.075	737.9	32.7
135.0	6.385	698.7	32.3
180.0	6.699	660.5	32.0
225.0	3.898	959.2	32.9
270.0	3.781	968.9	32.8
315.0	3.716	973.8	32.7

Contour Overlap Evaluation from LPTV Station to Full Service TV & DTV  
No Spacing violations or contour overlap from LPTV station  
Contour Overlap Evaluation from LPTV to Full Service TV & DTV Complete

Contour Overlap Evaluation from LPTV Station to LPTV Stations

Contour overlap to station  
K31GJ 31 ALAMOGORDO NM BLTT 20020722ABJ

Contour overlap to station  
K02KG 31 CLIFF, GILA NM BMJPTTV 20000829ARW

Contour overlap to station  
K31HQ 31 LORDSBURG NM BNPTT 20000823AAJ

Contour overlap to station  
K31FX 31 PIE TOWN NM BLTT 20031114ADI

Contour Overlap Evaluation from LPTV to LPTV Stations Complete

Proposed facility OK to FCC Monitoring Stations  
Proposed facility OK toward West Virginia quite zone  
Proposed facility OK toward Table Mountain  
Proposed facility is beyond the Canadian coordination distance  
Proposed facility is within the Mexican coordination distance  
Distance to border = 132.0km  
Proposed station is OK toward AM broadcast stations

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Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
31	K31DR	CABALLO NM	USERRECORD01

## Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
31	K31GJ	ALAMOGORDO NM	125.7	LIC	BLTT	-20020722ABJ
31	K02KG	CLIFF, GILA NM	138.5	CP	BMJPTTV	-20000829ARW
31	K31HQ	LORDSBURG NM	120.2	CP	BNPTT	-20000823AAJ
31	K31FX	PIE TOWN NM	159.2	LIC	BLTT	-20031114ADI

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## Analysis of Interference to Affected Station 1

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
31	K31GJ	ALAMOGORDO NM	BLTT	-20020722ABJ

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
23	KRWG-DT	LAS CRUCES NM	120.3	PLN	DTVPLN	-DTVP0534
23	KRWG-TV	LAS CRUCES NM	96.8	CP MOD	BMPEDT	-20020916AAI
28	KRPV	ROSWELL NM	139.1	CP	BPCDT	-19991018ABL
28	KRPV-DT	ROSWELL NM	139.1	PLN	DTVPLN	-DTVP0718
30	KCOS-DT	EL PASO TX	128.5	PLN	DTVPLN	-DTVP0804
30	KCOS	EL PASO TX	128.5	CP	BPEDT	-20000313AAI
31	K31DR	CABALLO NM	125.7	LIC	BLTT	-19930312JE
31	NEW	ROSWELL NM	115.2	APP	BPRM	-20020626ABF
31	KOSA-DT	ODESSA TX	328.6	PLN	DTVPLN	-DTVP0845
31	KOSA-TV	ODESSA TX	328.6	APP	BPCDT	-19991029ADU
39	KSCE-DT	EL PASO TX	126.0	PLN	DTVPLN	-DTVP1106
46	NEW	TIMBERON NM	27.8	APP	BNPTTL	-20000831EIH
31	K31DR	CABALLO NM	125.7	APP	USERRECORD-01	

**Proposal causes no interference**

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## Analysis of Interference to Affected Station 2

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
31	K02KG	CLIFF, GILA NM	BMJPTTV	-20000829ARW

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
31	NEW	DUNCAN AZ	56.9	APP	BNPTTL	-20000830BNJ
31	KSAZ-DT	PHOENIX AZ	315.1	PLN	DTVPLN	-DTVP0812
31	KSAZ-TV	PHOENIX AZ	315.0	LIC	BLCDT	-19991101ALB
31	KSAZ-TV	PHOENIX AZ	315.0	CP MOD	BMPCDT	-19990526KF
31	K31DR	CABALLO NM	138.5	LIC	BLTT	-19930312JE
31	K31HQ	LORDSBURG NM	48.4	CP	BNPTT	-20000823AAJ
31	NEW	ROSWELL NM	365.8	APP	BPRM	-20020626ABF
31	K31DR	CABALLO NM	138.5	APP	USERRECORD-01	

**Proposal causes no interference**

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## Analysis of Interference to Affected Station 3

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
31	K31HQ	LORDSBURG NM	BNPTT	-20000823AAJ

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
23	KRWG-DT	LAS CRUCES NM	140.6	PLN	DTVPLN	-DTVP0534
31	NEW	DUNCAN AZ	89.8	APP	BNPTTL	-20000830BNJ
31	KSAZ-DT	PHOENIX AZ	349.4	PLN	DTVPLN	-DTVP0812
31	KSAZ-TV	PHOENIX AZ	349.4	LIC	BLCDT	-19991101ALB
31	KSAZ-TV	PHOENIX AZ	349.4	CP MOD	BMPCDT	-19990526KF
31	K31DR	CABALLO NM	120.2	LIC	BLTT	-19930312JE
31	K02KG	CLIFF, GILA NM	48.4	CP	BMJPTTV	-20000829ARW
31	NEW	ROSWELL NM	347.6	APP	BPRM	-20020626ABF
31	K31DR	CABALLO NM	120.2	APP	USERRECORD-01	

**Proposal causes no interference**

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Analysis of Interference to Affected Station 4

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
31	K31FX	PIE TOWN NM	BLTT	-20031114ADI

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
31	NEW	GIBSON PEAK CO	162.9	APP	BNPTT	-20000829AGM
31	K31DR	CABALLO NM	159.2	LIC	BLTT	-19930312JE
31	NEW	GALLUP NM	154.4	APP	BNPTT	-20000831ARZ
31	K31GG	GRANTS NM	94.3	CP	BNPTTL	-20000828AKU
31	NEW	ROSWELL NM	305.8	APP	BPRM	-20020626ABF
31	K31DR	CABALLO NM	159.2	APP	USERRECORD-01	

**Proposal causes no interference**

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Analysis of Interference to Affected Station 5

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
31	K31DR	CABALLO NM	USERRECORD-01	

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
23	KRWG-DT	LAS CRUCES NM	82.7	PLN	DTVPLN	-DTVP0534
23	KRWG-TV	LAS CRUCES NM	90.3	CP MOD	BMPEDT	-20020916AAI
31	K31GJ	ALAMOGORDO NM	125.7	LIC	BLTT	-20020722ABJ
31	NEW	ROSWELL NM	228.6	APP	BPRM	-20020626ABF
39	KSCE-DT	EL PASO TX	145.8	PLN	DTVPLN	-DTVP1106

Total scenarios = 1

Result key: 1

Scenario 1 Affected station 5

Before Analysis

Results for: 31N NM CABALLO

USERRECORD01

APP

	POPULATION	AREA (sq km)
within Noise Limited Contour	10654	3634.5
not affected by terrain losses	9669	3558.5
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
<b>lost to all IX</b>	<b>0</b>	<b>0.0</b>

Potential Interfering Stations Included in above Scenario 1

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