

TECHNICAL EXHIBIT  
DISPLACEMENT APPLICATION  
STATION K53DR (FACILITY ID 35309)  
CORTEZ, COLORADO  
CH 47 1.8 KW (MAX-DA)

Technical Narrative

This Technical Exhibit supports a displacement application for TV translator station K53DR at Cortez, Colorado. Station K53DR is licensed to operate on channel 53 with a directional antenna maximum effective radiated power (ERP) of 8.83 kW and an antenna height above mean sea level (RCAMSL) of 2703 meters (BLTT-19890919IJ).

Proposed Facilities

This displacement application proposes operation on channel 47 at the current site. A Kathrein-Scala 2xPRTV-47/50/HV directional antenna array with an ERP of 1.8 kW and antenna RCAMSL of 2704 meters is proposed. The antenna will be oriented with main lobes at 0° and 275° True. The transmitter site coordinates remain: 37-19-32 N, 108-14-55 W.

Figure 1 is the azimuth antenna pattern. Since there is no change in transmitter site it is apparent that there will be common contour overlap of the 74 dBu contours. Figure 2 is a map showing the predicted 74 dBu coverage contour.

NTSC Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.707 and 74.709 to assure that the proposal will not create prohibited interference with other licensed, authorized or pending analog (NTSC) full-power TV, LPTV/translator and Class A TV stations. Prohibited contour overlap is predicted to occur to the following stations:

K64FF	46	CORTEZ-RED MESA	CO	BPTT-20031031AAT
NEW	47	BLANDING & MONTICELL	UT	BNPTT-20000815AAH

Using the procedures outlined in the FCC's OET-69 Bulletin, there is no predicted interference to any of the above mentioned stations (see Figure 3). 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 to the remaining LPTV/translator stations.

#### DTV Allocation Considerations

There are no licensed, authorized, pending or allotted digital (DTV) stations on channels 46, 47 or 48 within 375 kilometers of the K53DR site. Therefore, no impact to any DTV stations is expected.

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.

#### Environmental Considerations

The proposed K53DR facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed antenna is located 14 meters above ground level with a maximum visual ERP of 1.8 kW. A conservative relative field value of 0.25 was assumed for the proposed antenna. Therefore, the "worst-case" calculated power density at a point 2 meters above ground level will be  $0.02 \text{ mW/cm}^2$ . This is less than 5% of the FCC's recommended limit of  $0.45 \text{ mW/cm}^2$  for channel 47 for an "uncontrolled" 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.

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 provided to the FCC by the tower owner as part of the tower registration process.

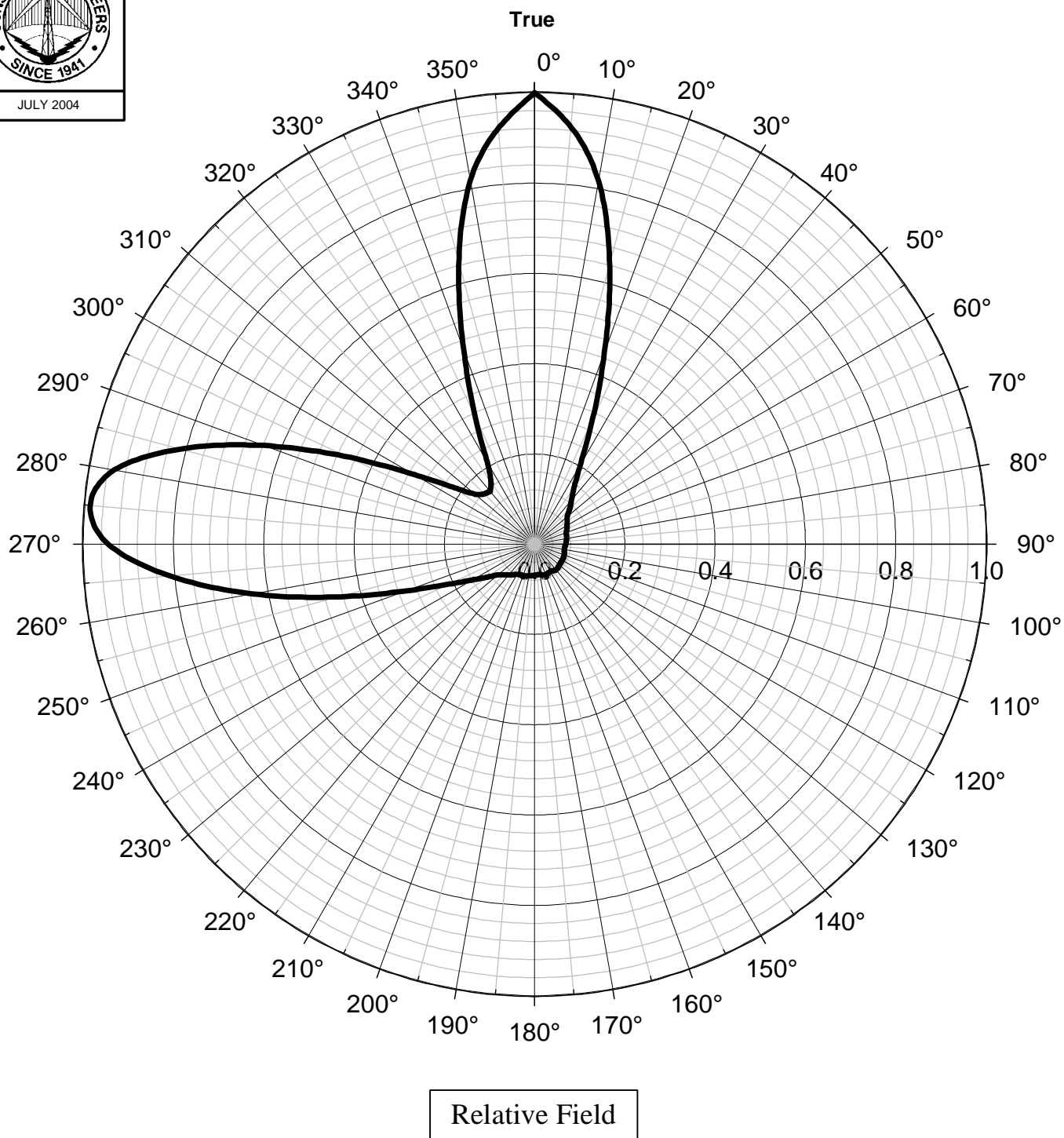
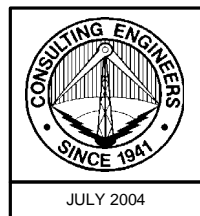


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Figure 1



## HORIZONTAL RELATIVE FIELD PATTERN

STATION K53DR

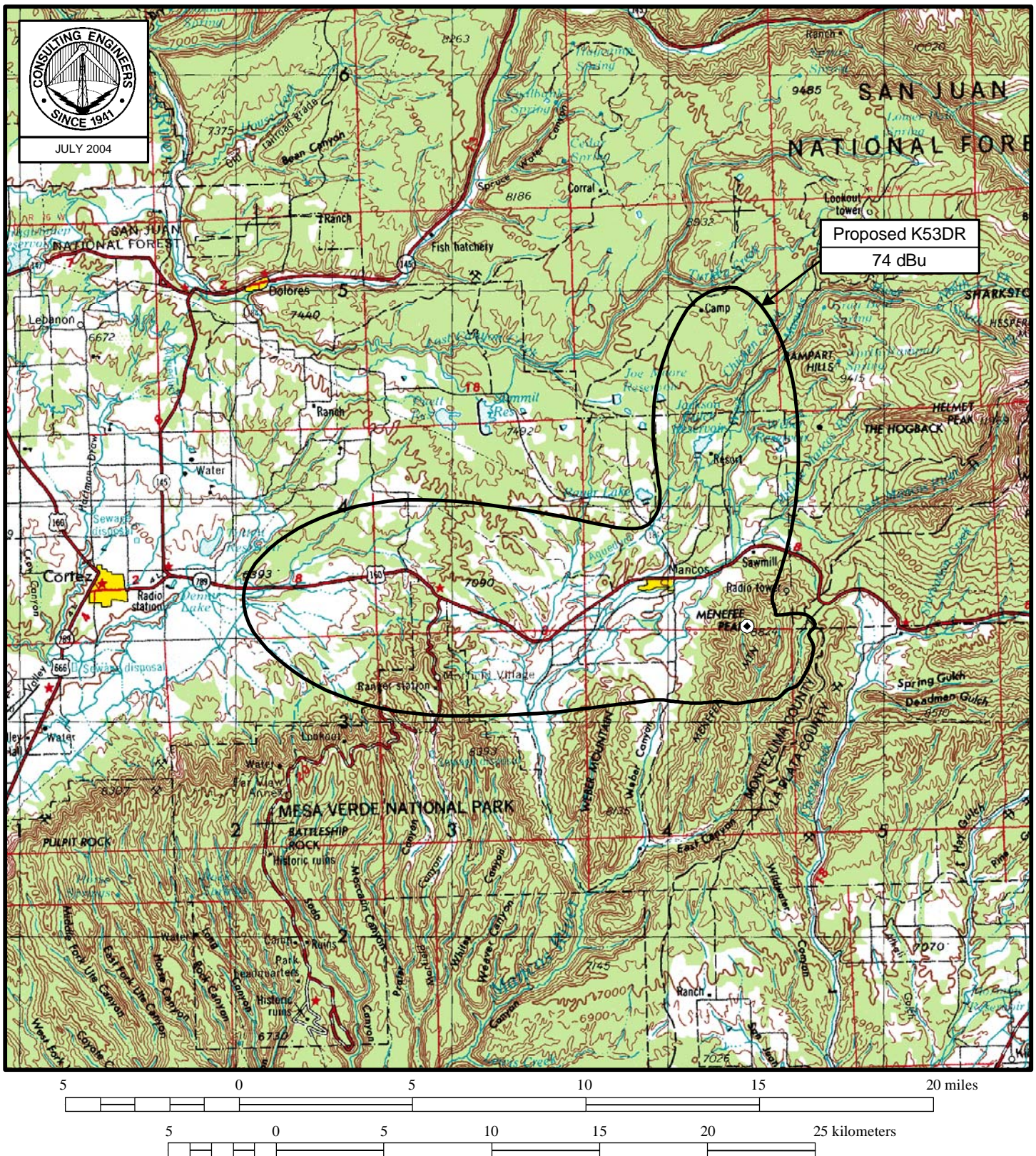
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### Figure 2



## PREDICTED COVERAGE CONTOUR

STATION K53DR

CORTEZ, COLORADO

CH 47 1.8 KW (MAX-DA)

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## TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Record Selected for Analysis

K53DR USERRECORD-01 CORTEZ CO US  
 Channel 47 ERP 1.8 kW HAAT 605. m RCAMSL 02704 m  
 Latitude 037-19-32 Longitude 0108-14-55  
 Status APP Zone 2 Border Offset -  
 Dir Antenna Make usr Model 000000000K53DR Beam tilt N Ref Azimuth 0.

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	1.394	277.0	14.6
45.0	0.021	33.0	1.8
90.0	0.000	260.7	1.5
135.0	0.000	362.9	1.5
180.0	0.000	449.2	1.5
225.0	0.000	536.7	1.5
270.0	0.019	604.9	5.3
315.0	0.000	492.7	1.5

Contour Overlap Evaluation from LPTV Station to Full Service TV &amp; DTV

No Spacing violations or contour overlap from LPTV station

Contour Overlap Evaluation from LPTV to Full Service TV &amp; DTV Complete

Contour Overlap Evaluation from LPTV Station to LPTV Stations

Station inside contour of station

K64FF 46 CORTEZ-RED MESA CO BPTT 20031031AAT

Contour overlap to station

NEW 47 BLANDING &amp; MONTICELL UT BNPTT 20000815AAH

Contour Overlap Evaluation from LPTV to LPTV Stations Complete

Contour Overlap to Proposed Station

K64FF	46 CORTEZ-RED MESA	CO BPTT20031031AAT	causes
NEW	47 PAGOSA SPRINGS	CO BNPTTL20000828ASN	causes
NEW	47 PAGOSA SPRINGS	CO BNPTTL20000828AFY	causes
K47DR	47 FARMINGTON	NM BLTTL19951211JA	causes
NEW	47 BLANDING & MONTICELL UT	BNPTT20000815AAH	causes

Contour Overlap Evaluation to Proposed Station 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 beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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## Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
47	K53DR	CORTEZ CO	USERRECORD01

**Stations Potentially Affected by Proposed Station**

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
46	K64FF	CORTEZ-RED MESA CO	10.0	APP	BPTT	-20031031AAT
47	NEW	BLANDING & MONTICELL UT	121.2	APP	BNPTT	-20000815AAH
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## Analysis of Interference to Affected Station 1

## Analysis of current record

Channel	Call	City/State	Application	Ref. No.
46	K64FF	CORTEZ-RED MESA CO	BPTT	-20031031AAT

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
45	K45DH	DURANGO CO	28.9	LIC	BLTT	-19910621IF
46	K46FM	BAYFIELD CO	62.0	LIC	BLTT	-20020405AAV
46	KWHD	CASTLE ROCK CO	381.2	CP	BPCDT	-19991005ABO
46	KWHD-DT	CASTLE ROCK CO	381.2	PLN	DTVPLN	-DTVP1320
46	K46AF	BLANDING & MONTICELL UT	127.2	APP	BMJPTT	-20000828AGZ
46	K46AF	BLANDING, ETC. UT	127.4	LIC	BLTT	-19811222ID
47	K47IT	DURANGO CO	24.7	CP	BNPTTL	-20000829AQX
47	K53DR	CORTEZ CO	10.0	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.
47	NEW	BLANDING & MONTICELL UT	BNPTT	-20000815AAH

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
46	K46AF	BLANDING & MONTICELL UT	0.0	APP	BMJPTT	-20000828AGZ
46	K46AF	BLANDING, ETC. UT	0.4	LIC	BLTT	-19811222ID
47	K47IT	DURANGO CO	151.9	CP	BNPTTL	-20000829AQX
47	K47DR	FARMINGTON NM	170.3	LIC	BLTTL	-19951211JA
48	K48BK	DOVE CREEK, ETC. CO	5.3	LIC	BLTT	-19870330JJ
47	K53DR	CORTEZ CO	121.2	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.
47	K53DR	CORTEZ CO	USERRECORD-01	

## Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
46	K64FF	CORTEZ-RED MESA CO	10.0	APP	BPTT	-20031031AAT
47	K47IT	DURANGO CO	31.7	CP	BNPTTL	-20000829AQX
47	NEW	PAGOSA SPRINGS CO	102.2	APP	BNPTTL	-20000828ASN

47	NEW	PAGOSA SPRINGS CO	102.2	APP	BNPTTL	-20000828AFY
47	NEW	ROMEO CO	204.5	APP	BNPTTL	-20000802ADC
47	K56FB	ALBUQUERQUE NM	284.7	APP	BPTTL	-20031229ABO
47	K47DR	FARMINGTON NM	70.1	LIC	BLTTL	-19951211JA
47	NEW	BLANDING & MONTICELL UT	121.2	APP	BNPTT	-20000815AAH

Total scenarios = 2

Result key: 1  
Scenario 1 Affected station 3  
Before Analysis

Results for: 47N CO CORTEZ USERRECORD01 APP

	POPULATION	AREA (sq km)
within Noise Limited Contour	221	72.7
not affected by terrain losses	221	72.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

Result key: 2  
Scenario 2 Affected station 3  
Before Analysis

Results for: 47N CO CORTEZ USERRECORD01 APP

	POPULATION	AREA (sq km)
within Noise Limited Contour	221	72.7
not affected by terrain losses	221	72.7
lost to NTSC IX	217	48.4
lost to additional IX by ATV	0	0.0
lost to all IX	217	48.4

Potential Interfering Stations Included in above Scenario 2

47N UT BLANDING & MONTICELL BNPTT 20000815AAH APP

Proposal fails scenario 2 received IX increased to 98.2%

Proposed station is MX

47N CO CORTEZ USERRECORD01 APP

Proposal MX with group in scenario 2 of station 3

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