

Availability of Other Radio Services  
for Multiple Ownership Considerations  
for Bad Lands Broadcasting Company, Inc.

Introduction

This Engineering Study has been prepared for Bad Lands Broadcasting Company, Inc., licensee of FM Broadcast Stations KFMH, Belle Fourche, South Dakota; and KRKI, Keystone, South Dakota. The Study provides information about the availability of other commercial and noncommercial radio services to the radio markets that would be created by the inclusion of FM Station KXZT, Newell, South Dakota, with the common ownership, operation or control of KFMH(FM), KRKI(FM), and also KHAD(FM), Upton, Wyoming (licensed to The Casper Radio Group, Inc.). The Study takes into account both the present licensed facilities of KXZT(FM) and the modified facilities authorized for this station.

Since KXZT(FM) is not in a BIA radio market, the Commission's "Interim Contour-Overlap Methodology" was used for determining compliance with Section 73.3555 of the Rules and Regulations of the Federal Communications Commission. As shown in this Study, the number of other available radio services conforms with the requirements of the Commission's Rules for the proposed common interests.

Boundaries of Radio Markets

Two radio markets require evaluation in this Study. Radio Market #1 is defined by the predicted principal city (70 dBu) contour for the licensed operation of KXZT(FM), and the 70 dBu contours for KFMH(FM), KRKI(FM), and KHAD(FM). The common overlap of these contours results in a four-station radio market that is represented by the respective 70 dBu contours. The pertinent contours for this radio market are shown in Figure 1 of this Study /1, and the facilities of these stations are listed in Table A of this Study.

Radio Market #2 is defined by the 70 dBu contour for the operation of KXZT(FM) authorized in construction permit File Number BPH-20130123AGC, and the 70 dBu contours for KFMH(FM), KRKI(FM), and KHAD(FM). Again, the common overlap of these contours results in a four-station radio market represented by the respective 70 dBu contours. Figure 2 of this Study shows the pertinent contours that comprise this radio market, and the facilities of these stations are listed in Table B of this Study.

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/1 Enlargement of a portion of Figure 1 shows that the 70 dBu contour for the licensed operation of KXZT(FM) encompasses a very small area of contour overlap between KRKI(FM) and KHAD(FM), that falls within the KFMH(FM) contour, resulting in a four-station radio market.

Figures 1 and 2 of this Study show that the 70 dBu contours for the licensed and also the authorized operation of KXZT(FM) fall entirely within the 70 dBu contour for co-located station KFMH(FM). The boundaries of both Radio Market #1 and Radio Market #2 therefore are defined by the 70 dBu contours for KFMH(FM), KRKI(FM), and KHAD(FM) alone. This makes the two radio markets identical, and in the remainder of this Study only a single radio market boundary is considered.

#### Other Radio Services Available to Radio Market

Figures 3A and 3B of this Study each show the boundary of the four-station radio market defined by the common ownership of both the licensed and authorized operation of KXZT(FM), and KFMH(FM), KRKI(FM), and KHAD(FM); along with the principal city service contours--daytime 5 mV/m contour for AM stations or 70 dBu contour for FM stations--for the licensed facilities of a total of 15 other existing commercial and noncommercial radio stations that overlap the 70 dBu contour for one or more of the stations that comprise the radio market. These other radio services are listed in Table C of this Study; the stations identified in Table C do not represent an exhaustive listing. None of the stations in Table C are more than 92 kilometers from the boundary of the radio market, and none have common ownership with the stations that make up the radio market.

The common ownership of either the licensed or authorized operation of KXZT(FM) with KFMH(FM), KRKI(FM), and KHAD(FM) therefore conforms with the requirements of Section 73.3555(a)(1)(iii) of the Commission's Rules for a radio market of 15 to 29 radio services, as there are no more than six commercial stations, and no more than four stations in the same service, with such common interests.

#### Methods Employed in Determining Contours

For the AM stations shown in this Study, the predicted contours were determined in accordance with the requirements of Section 73.183 of the Commission's Rules, from computerized calculations based on the ground conductivity values of FCC Figure M-3. Distances to the contours were calculated at azimuthal increments of one degree.

For the FM stations shown in this Study, the predicted contours were determined in accordance with the requirements of Section 73.313 of the Commission's Rules, from computerized calculations based on the NGDC 30-second terrain database, and Figure 1 of Section 73.333 of the Commission's Rules. Distances to the contours were calculated at azimuthal increments of one degree.

Fred W. Volken  
Engineering Consultant

March 2016

Sierra Madre, California

Statement of Engineer

FRED W. VOLKEN, whose place of business is located at 348 W. Sierra Madre Blvd., Sierra Madre, California, hereby states that he is a graduate physicist holding the degree Bachelor of Arts from Occidental College, Los Angeles, California; that his qualifications as an engineering consultant are a matter of record with the Federal Communications Commission; that he has prepared, or supervised the preparation of, this document as engineering consultant for Bad Lands Broadcasting Company, Inc., licensee of FM Broadcast Stations KFMH, Belle Fourche, South Dakota, and KRKI, Keystone, South Dakota; and that all of the information contained in this document is accurate and correct to the best of his knowledge and ability.

I state under penalty of perjury that the foregoing is true and correct. Executed on March 23, 2016.

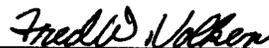
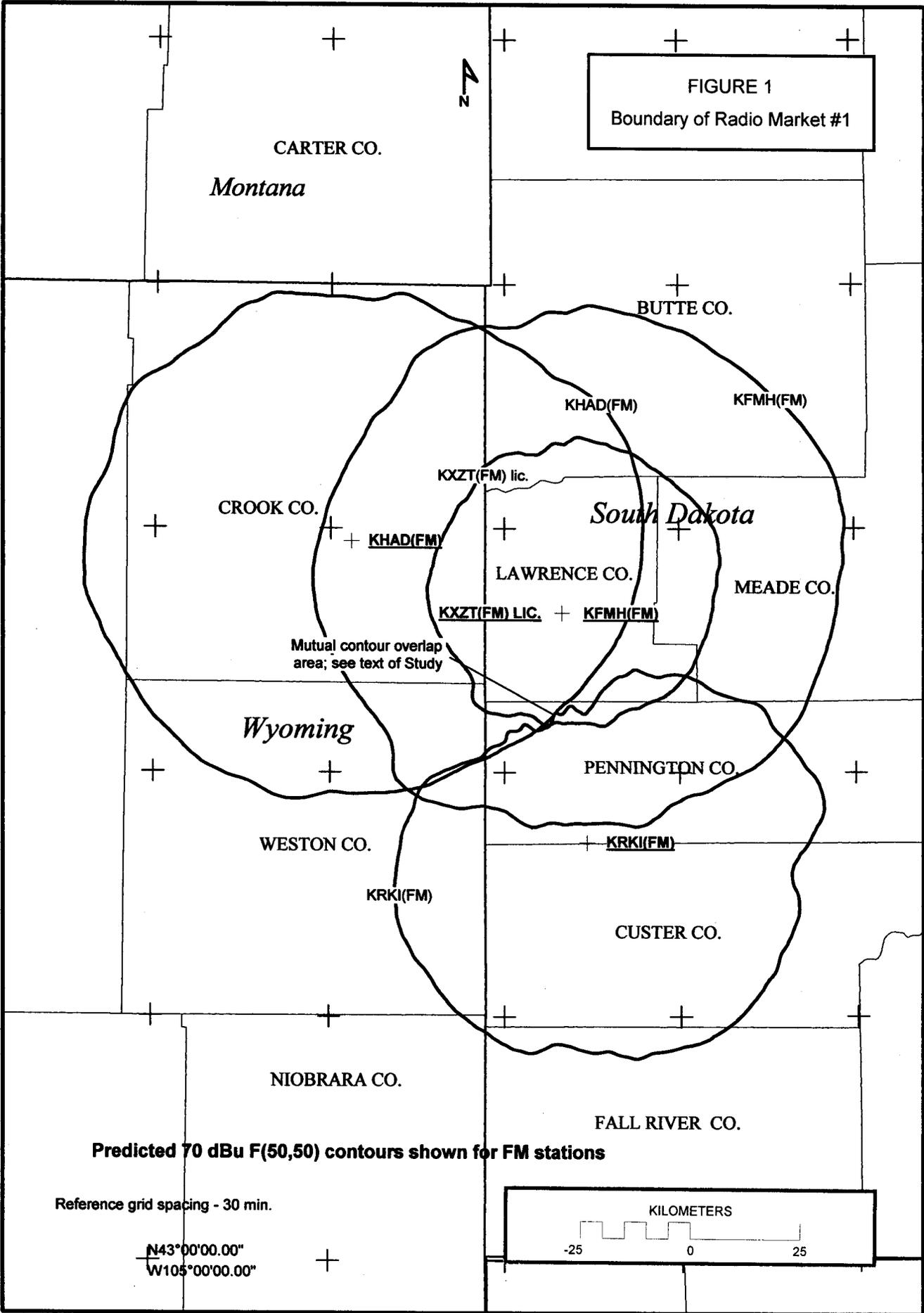
  
Fred W. Volken

FIGURE 1  
Boundary of Radio Market #1



Predicted 70 dBu F(50,50) contours shown for FM stations

Reference grid spacing - 30 min.

$N43^{\circ}00'00.00''$   
 $W105^{\circ}00'00.00''$

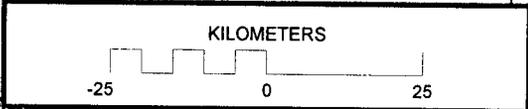
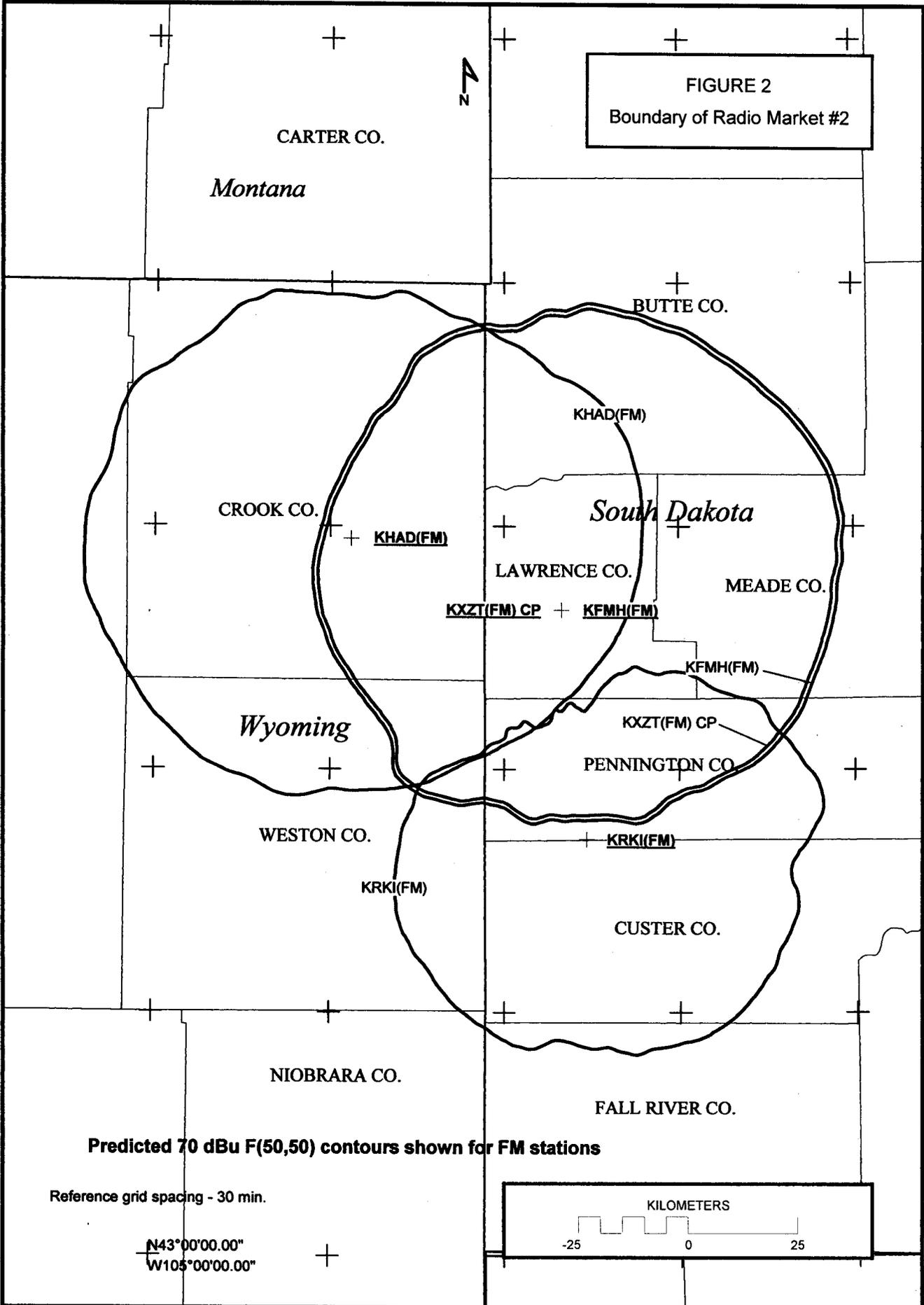


FIGURE 2  
Boundary of Radio Market #2



Predicted 70 dBu F(50,50) contours shown for FM stations

Reference grid spacing - 30 min.

N43°00'00.00"  
W105°00'00.00"

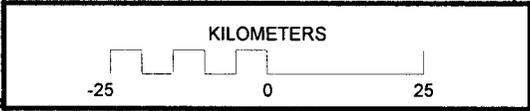


TABLE A

Stations Comprising Radio Market #1

Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities Assumed	
			Effective Radiated Power and Antenna	Antenna Height Above Average Terrain (meters)
300C2	KXZT(FM), Newell, SD License BLH-20090212ACN	N 44° 19' 40" W 103° 50' 06"	4.8 kW Nondirectional	455
270C	KFMH(FM), Belle Fourche, SD License BLH-20060822AIM	N 44° 19' 40" W 103° 50' 06"	100 kW Nondirectional	454
283C	KHAD(FM), Upton, WY License BLH-20130214ABX	N 44° 28' 29" W 104° 26' 27"	85 kW Nondirectional	479
258C1	KRKI(FM), Keystone, SD License BLH-20121004ABW	N 43° 51' 24" W 103° 45' 50"	100 kW Nondirectional	224

TABLE B

Stations Comprising Radio Market #2

Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities Assumed	
			Effective Radiated Power and Antenna	Antenna Height Above Average Terrain (meters)
300C0	KXZT(FM), Newell, SD Construction permit BPH-20130123AGC	N 44° 19' 40" W 103° 50' 06"	90 kW Nondirectional	449
270C	KFMH(FM), Belle Fourche, SD License BLH-20060822AIM	N 44° 19' 40" W 103° 50' 06"	100 kW Nondirectional	454
283C	KHAD(FM), Upton, WY License BLH-20130214ABX	N 44° 28' 29" W 104° 26' 27"	85 kW Nondirectional	479
258C1	KRKI(FM), Keystone, SD License BLH-20121004ABW	N 43° 51' 24" W 103° 45' 50"	100 kW Nondirectional	224

FIGURE 3A  
Other Radio Services (Part)  
Available to Radio Market

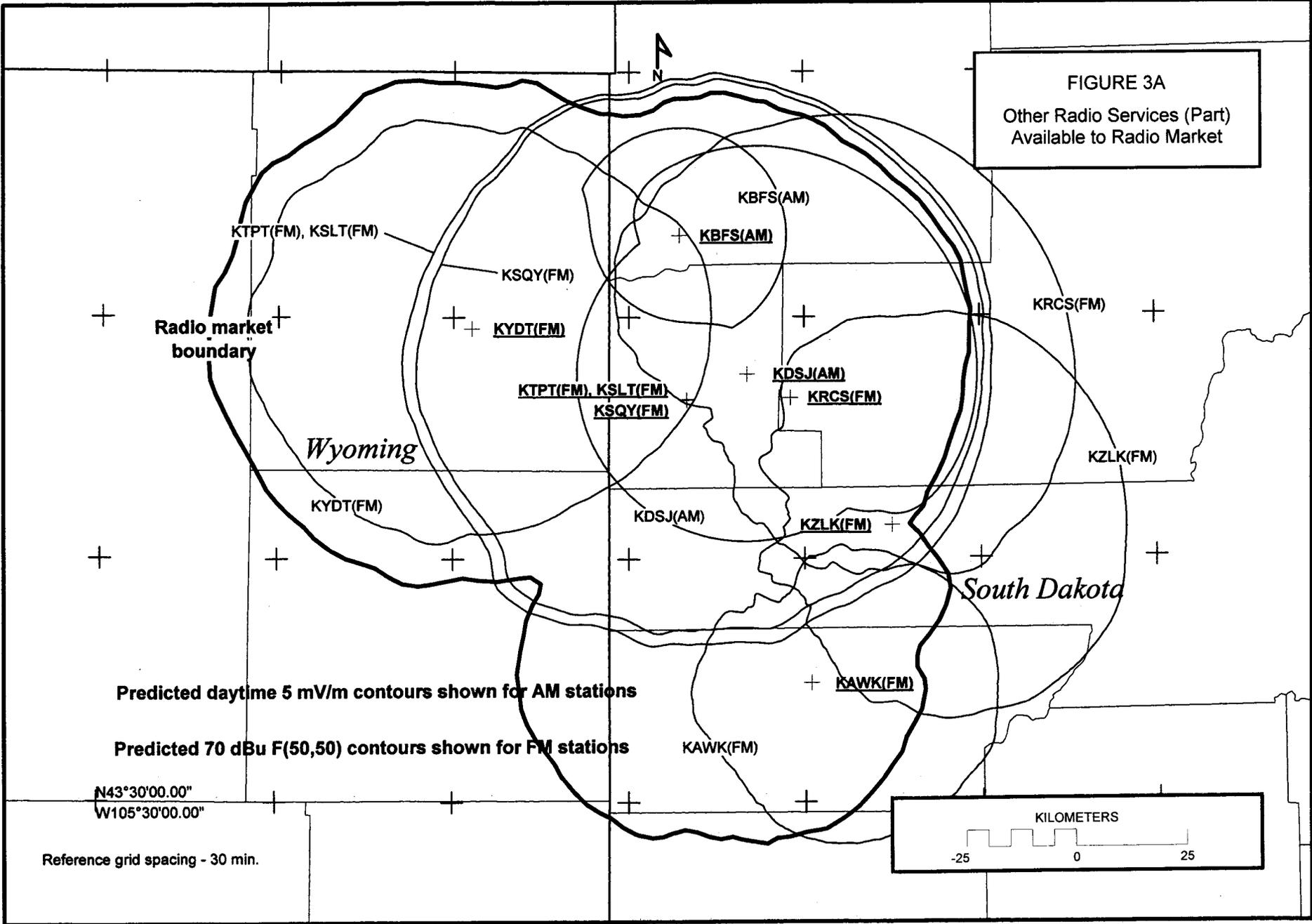
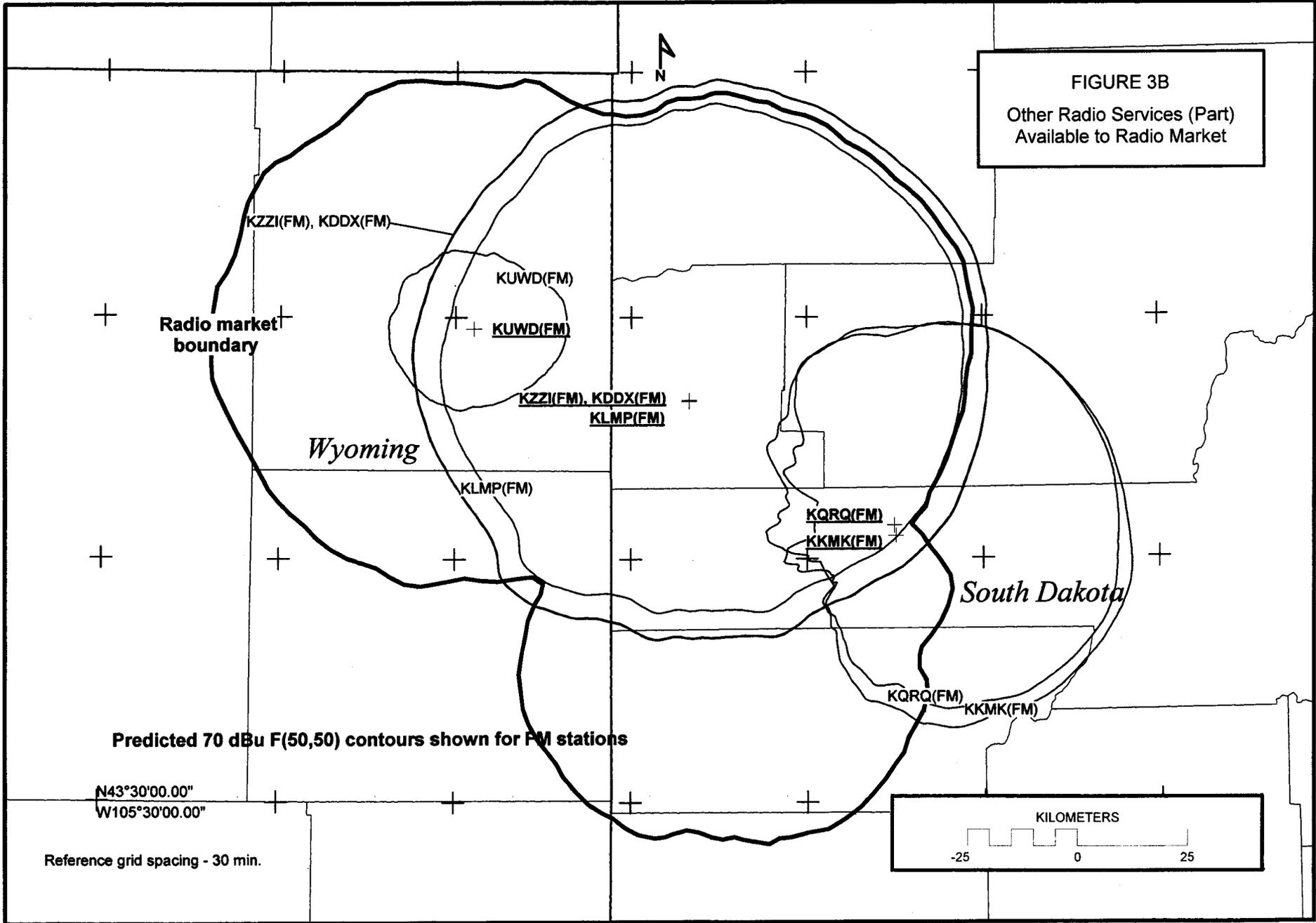


FIGURE 3B  
Other Radio Services (Part)  
Available to Radio Market



Radio market boundary

*Wyoming*

*South Dakota*

Predicted 70 dBu F(50,50) contours shown for FM stations

$N43^{\circ}30'00.00''$   
 $W105^{\circ}30'00.00''$

Reference grid spacing - 30 min.

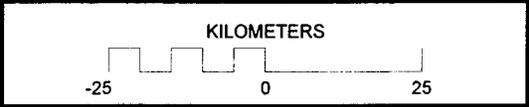


TABLE C  
 Other Radio Services  
 Available to Radio Markets

AM Stations

Frequency (kHz), Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities Assumed
			Power and Antenna
980 Class B	KDSJ(AM), Deadwood, SD License BL-19800128AJ	N 44° 22' 57" W 103° 39' 44"	5.0 kW day, nondirectional antenna 1.0 kW night, directional antenna
1450 Class C	KBFS(AM), Belle Fourche, SD License BL--	N 44° 40' 02" W 103° 51' 22"	1.0 kW day and night, nondirectional antenna day and night

TABLE C (continued)

Other Radio Services  
Available to Radio MarketsFM Stations

Channel and Class	Station and Location, Status, File Number	Geographical Coordinates	Facilities Assumed	
			Effective Radiated Power and Antenna	Antenna Height Above Average Terrain (meters)
250C	KTPT(FM), Rapid City, SD License BLH-20021106ABV	N 44° 19' 42" W 103° 50' 03"	100 kW Nondirectional	579
296C	KSLT(FM), Spearfish, SD License BLH-20111026AEX	N 44° 19' 42" W 103° 50' 03"	100 kW Nondirectional	579
240C	KZZI(FM), Belle Fourche, SD License BLH-20000112ABG	N 44° 19' 35" W 103° 50' 06"	100 kW Nondirectional	545
266C	KDDX(FM), Spearfish, SD License BLH-20000112ABW	N 44° 19' 35" W 103° 50' 06"	100 kW Nondirectional	545
236C	KSQY(FM), Deadwood, SD License BLH-19820910AM	N 44° 19' 49" W 103° 50' 10"	100 kW Nondirectional	521
202C	KLMP(FM), Rapid City, SD License BLED-20050415ACE	N 44° 19' 42" W 103° 50' 03"	63.0 kW Nondirectional	522
226C0	KRCS(FM), Sturgis, SD License BMLH-20041019ABB	N 44° 19' 58" W 103° 32' 20"	100 kW Nondirectional	323
292C1	KZLK(FM), Rapid City, SD License BLH-20010925AAW	N 44° 04' 07" W 103° 15' 02"	100 kW Nondirectional	212
222C1	KQRQ(FM), Rapid City, SD License BIH-20021028ABX	N 44° 04' 07" W 103° 15' 02"	100 kW Nondirectional	177
230C1	KKMK(FM), Rapid City, SD License BMLH-20151105AAG	N 44° 02' 49" W 103° 14' 45"	100 kW Nondirectional	209
276C1	KYDT(FM), Pine Haven, WY License BLH-20111013AGZ	N 44° 28' 35" W 104° 26' 54"	25.0 kW Nondirectional	503
286C1	KAWK(FM), Custer, SD License BLH-19970925KD	N 43° 44' 41" W 103° 28' 52"	7.0 kW Nondirectional	400
218C3	KUWD(FM), Sundance, WY License BLED-20000830AFK	N 44° 28' 35" W 104° 26' 54"	0.43 kW Nondirectional	485