## News & Information Schedule )))

KNOW 91.1fm Minneapolis/St. Paul

KNCM 88.5 fm Appleton • KNBJ 91.3 fm Benidji/Grand Rapids • KLNI 88.7 fm Decorah, it • WSCN 180.5 fm Duluth/Superior KCCD 90.3 fm Fargo/Moorhead • KXLC 91.1 fm La Crescent/La Crosse • KZSE 90.7 fm Rochester • KNSR 88.9 fm St. Cloud/Collegeville KNGA 91.5 fm St. Peter/Mankato • KNTN 182.7 fm Thief River Falls • WIRN 82.5 fm Virginla/Hibbing KNSW 91.7 fm Worthington/Marshall

AM	Weekdays	Saturday	Sunday	
AM :		BBC World Service	BBC World Service	
A.H	Morning Edition* with Bob Potter In St. Paul	Only A Game * with Bill Littlefield	The Spiendid Table" with Lynne Rossetto Kesper	
AM AM	and Bob Edwards in Washington, D.C.	Weekend Edition* with Maryann Sullivan in St. Paul and Scott Simon in Washington, D.C.	Waskend Edition® with Mayann Sullivan in St. Paul and Llane Hansen in Washington, D.C.	
LM.	Midmorning with Katherine Lampher	Sound Money* with Bob Potter	Wait, WaltDon't Tell Mei™ with Peter Segal	-
AM ON	Midday	Car Talk* with Tom and Ray Magliszzi	Car Talk*	┤`
PM	with Gary Eichten Hoon Speeches, Faaturas, Call-ins	The Savry Traveler with Rudy Maxa	A Prairie Home Companion*	
PM	Talk of the Nation®	The Splendid Table" with Lynne Rossetto Kasper	with Garrison Keiller	<u> </u>
PM		Daie Connelly Reporting Rewind with Bill Radhe This American Life	Whad'Ys Know?	
M	All Things Considered* with Lorna Benson in St. Paul, and Linda Worthelmer, Noah Adams and Robert Siegel in Washington, D.C.	with he Glass  All Things Considered®	All Things Considered*	-
PM			Sound Money* with Bob Potter	┥;
M	Word of Mouth with Chris Roberts (Fri. 6-6:30)  Marketplace with David Brancaccio	A Prairie Home Companion <sup>e</sup> with Garrison Keillor	On the Media	- 6
*M	The World	·	The Savvy Traveler with Rudy Muse	7
	Fresh Air® with Terry Gross	THE JAZZ IMAGE" with Leigh Kamman	This American Life with ha Glass	
M	Midday		Beyond Computers with Mauroen Taylor	-   °
M	As it Happens with Mary Lou Finley and Barbara Budd Foolars Dale Connelly Reporting		To The Best of Our Knowledge with Jim Fleming	],
M	Only Word of Mouth with Chris Roberts			
м				,
M	BBC World Service	BBC World Service	BBC World Service	1
M				1
M	WC341 - \$1.14m #agites, Million	Classis a in ord programs selected from they the c pulser Call Mark's Montendistency Services (1980)	Tass Tall otto om and trouged mountain	

Schedule subject to change. Local station schedules may vary.

Mankato

5 AM

6 AM

7 AM

8 AM

10 AM

**11 AM** 

NOON

1 PM

5 PM

6 PM

7 PM

8 PM

9 PM

10 PM

11 PM

12 PM

1 AM

**2 AM** 

5 AM

edules may vary.



#### Schedule of Program Sources

National Public Radio
The following programs are produced and distributed by NPR in Washington, DC

Morning Edition and All Things Considered with regional segments from Minnesota Public Radio's News and Information Station staff.

Talk of the Nation, Weekend Edition, Weekend All Things Considered,

The following programs are distributed by National Public Radio and produced by the stations listed

Fresh Air and Fresh Air Weekend from WHYY, Philadelphia Car Talk from WBUR, Boston Only a Game from WBUR, Boston Selected Shorts from WNYC, New York

Public Radio International

The following programs are distributed by Public Radio International and produced by the stations listed

Marketplace from KUSC, Los Angeles

The World from WGBH, Boston and the British Broadcasting Corporation, London As it Happens from the Canadian Broadcasting Corporation, Toronto, Ontario The BBC World Service from the British Broadcasting Corporation, London. The Savvy Traveler from KUSC, Los Angeles

On Your Health from WHA/Wisconsin Public Radio, Madison, WI
This American Life from WBEZ, Chicago
Whad Ya Know from WHA/Wisconsin Public Radio, Madison, WI
This Morning from the Canadian Broadcasting Corporation, Toronto, Ontario

The following programs are produced by Minnesota Public Radio and distributed by Public Radio International

Sound Money from MPR
The Splendid Table from MPR and Tom Voegeli Productions
A Prairie Home Companion from MPR
Future Tense from MPR





The following programs are produced by Minnesota Public Radio and only carried on the stations of MPR.

Midmorning from MPR Midday from MPR



SECTION V-B - FM BROADCAST ENGIN	NEERING DATA		FOR COMM File No. SSB Referra Referred By		NLY		
Name of Applicant Minnesota Public	Radio			-			
Call Letters (if issued) TBA	Is this application bein filing window? If Yes, specify closing	_	esponse to an	application	☐ Yes	X.	No
Purpose of Application: (check appropriate b	boxes)		<del></del>				<del></del>
Construct a new (main) facility See Ex #E1, Engineering Modify existing construction permit  Modify licensed main facility	for main facility	Mod back	lify existing c cup facility lify licensed a	construction permanentiliary backup	ait for auxilia		
Antenna supporting structure height  Antenna height above average terrai  Antenna location  Main Studio location per 47 C.F.R.: 73.1125(b)(2)  Directional Antenna  File Number(s)	in.	Effe Free Class One	ctive radiated	l power	tions affected	i.	
1. Allocation:  Channel No. Principal co  County  209 Koochiching  2. Exact location of antenna.  (a) Specify address, city, county an landmark. 3909 County E	Road 98 South, Income set second). If moun location. Specify South	s, specify on ternat: a a ated on eler	distance and Lonal Fall ment of an Al and East Long	ls , M array, specify itude where appl	to the near	est tow	ter of
Latitude 48 o 28	24	Longitude	93	o 20	•	00	<b>-</b> .

Se	ection V-B - FM BROADCAST ENGINEERING DATA (Page 2)	•
3.	Will the antenna be mounted on an antenna structure which has been registered with the Commission?	Yes No
$\bigcirc$	If Yes, provide the seven digit registration number and proceed to item 8.	<del></del>
4.	Has the owner of the antenna structure filed an application for registration with the Commission?	Yes X Na
	If yes, provide the date FCC Form 854 was filed and proceed to item 8.	
5.	Applicant certifies that antenna structure meets 6.10 meter (20 feet) exception rule and therefore do not require registration. In other words, the overall height of the entire structure is not more than 6.1 meters (20 feet) above the ground or the antenna does not extend more than 6.10 meters (20 feet) above a man-made structure (structure built for a purpose other than mounting an antenna, i.e., building, wat tank, silo, fire tower, etc.).	10 ve
	If yes, skip items 6 and 7.	
6.	Antenna structure will be shielded by existing structures of a permanent and substantial character or leadural terrain or topographic features of equal or greater height, and would be located in the congests area of a city, town or settlement where it is evident beyond all reasonable doubt that the structure is a shielded that it will not adversely affect safety in air navigation.	ed.
	If yes, submit as an Exhibit a detailed explanation and/or diagram to support your claim and skip item 8.	Byhibit No. N/A
7.	Antenna structure does not meet FAA notification criteria as defined under 47 C.F.R. Section 17.7 ar therefore does not require registration.	d X Yes No
O <sup>*</sup>	Is the supporting structure the same as that of another station(s) or proposed in another pendir application(s)?	g X Yes No
	If Yes, give call letter(s) or file number(s) or both. Pending MPR Ch. 202	<del></del>
	If proposal involves a change in height of an existing structure, specify existing height above ground all other appurtenances, and lighting, if any.	level including antenna,
· 9.	Does the application propose to correct previous site coordinates?  If Yes, list old coordinates.	Yes X No
Lai	itude o Longitude o	
10.	Has the FAA been notified of the proposed construction?	Yes X No
	If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FA determination, if available.	A Exhibit No. N/A
	Date Office where filed	
11.	List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to ne	arest point of the nearest
and the second	None	g (degrees True)
	(a) ————————————————————————————————————	
	(b) ————————————————————————————————————	

## Section V-B - FM BROADCAST ENGINEERING DATA (Page 3)

(12.	(a)	Elev	vation: (to the nearest meter)		
U		(1)	Of the site above mean sea level;	342	- meters
		(2)	61	- meters	
		(3)	ond lighting, if any); and  Of the top of supporting structure above mean sea level [(a)(1) + (a)(2)].	403	meters
	<b>(</b> b)	Heig	th of radiation center: (to the nearest meter) H = Horizontal; V = Vertical		
			Above ground;	55	– meters (I
			_	55	_ meters (\
		(2)	Above mean sea level $\{(a)(1) + (b)(1)\}$ ; and	396*	- meters (F
			*Figure from vertical sketch to avoid rounding error.	396*	- meters (V
		(3)	Above average terrain.	47	- meters (H
			_	47	- meters (V
13.		,	an Exhibit sketch(es) of the supporting structure, labeling all elevations required in Question except item 12(b)(3). If mounted on an AM directional array element, specify heights and its of all array towers, as well as location of FM radiator.	Exhibit N E2	<b>6.</b>
	Effe	tive l	Radiated Power:		
	(a)	ERP	in the horizontal plane $\frac{6}{\text{kw (H^{\circ})}}$ $\frac{6}{\text{kw (V^{\circ})}}$		
		Is be	am tilt proposed?	Yes	X No
		CICYB	s, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical tion plot of radiated field.  kw (H*) kw (V*)	Exhibit No N/A	<b>0.</b>
18	<b>*</b>		arization		-
1.7.			onal antenna proposed?	Yes	X No
	If Ye plot(s relati	,, an	ach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including d tabulations of horizontally and vertically polarized radiated components in terms of ld.	Exhibit No N/A	<b>.</b>
16.	Will	the ma	ain studio be located within the 70 dBu or 3.16 mV/m contour?	Yes	X No
	If No	, attac	ch as justification an Exhibit pursuant to 47 C.F.R. Section 73.1125.	Exhibit No E3	

<b>17.</b>	Are there: (a) within 60 meters of the propose transmitters, or any nonbroadcast (except citizens blanketing contour, any established commercial facilities, or populated areas; or (c) within ten (10) authorized FM or TV transmitters which may produce the proposed for the propos	s band or amates or government kilometers of the	<ul> <li>radio stations;</li> <li>receiving stations</li> <li>proposed auteors</li> </ul>	or (b) within the cable head-end	☐ Yes	X No
	If Yes, attach as an Exhibit a description of any exsteps to be pursued f necessary, and a statement ac objectionable interference (including that caused t facilities in existence or authorized or to radio receive. C.F.R. Section 73.315(b), 73.316(d) and 73.318.)	cepting full response ov receiver-induc	ed or other types	limination of any	Exhibh N N/A	0.
18.	Attach as an Exhibit a 7.5 minute series U.S. G shows clearly, legibly, and accurately, the locatio must comply with the requirements set forth in Is clearly and legibly display the original printed commarkings, and must bear a scale of distance in kilon	on of the propose astruction D for atour lines and da	d transmitting and Section V. Furth	enna. This map	Exhibit N E4	<u>.</u>
19.	Attach as an Exhibit (name the source) a map which	ch shows clearly,	legibly, and accur	ately, and with the	Exhibit No	o.
	original printed latitude and longitude markings and	a scale of distan	ce in kilometers:		E5	
	(a) The proposed transmitter location, and the rad	lials along with pr	rofile graphs have l	been prepared;		
	(b) The 1 mV/m predicted contour and, for ne commercial channel, the 3.16 mv/m contour; a	oncommercial ed	lucational applica	nts applying on a		
	(c) The legal boundaries of the principal commun	ity to which the s	tation is or will be	licensed.		
20.	Specify area in square kilometers (1 sq. mi. = 2.5) predicted 1 mv/m contour.	9 sq. km.) and po	opulation (latest ce	nsus) within the		
	Area 1,033* sq.km. *US Land Area	Population	13,545	_		
21.	Attach as an Exhibit a map (Sectional Aeronautical proposed I mv/m (60 dbu) contours.	l charts where ol	btainable) showing	the present and		
	Enter the following from Exhibit above:	Gain Area	N/A	_ sq. km.		
		Loss Area				
		Present Area				
	Percent change (gain area plus loss area as divided	by present area ti	mes 100%) Nev	# station		
	If 50% or more, this constitutes a major change. In 47 C.F.R. Section 73.3573(a)(1).)		<del></del>	<del></del>		
	•					

#### Section V-B - FM BROADCAST ENGINEERING DATA (Page 5) 22. For an application involving an auxiliary backup facility only, attach as an Exhibit a map (Sectional Exhibit No. N/A Aeronautical Chart or equivalent) which shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers: (a) the proposed auxiliary 1 mv/m contour; and (b) the 1 mv/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license. See 47 C.F.R. Section 73.1675. File No. 23. Terrain and coverage data (to be calculated in accordance with 47 C.F.R. Section 73.313) Source of terrain data: (check only one box below) Linearly interpolated 30-second database 7.5 minute topographic map (Source: \_ X Linearly interpolated 3-second database Other (summarize) USGS V-Soft Communications ROM Are more than eight radials being used to calculate HAAT? X Yes No If Yes, specify how many radials are being used. Please note the radials must be evenly spaced and 36 start with the 0 degree radial. Height of radiation Predicted Distances If operating on Commercial Radial bearing center above average to the 1 mV/m contour Channel | elevation of radial 3.16 my/m contour (degrees True) from 3 to 16 km (meters) (kilometers) (kilometers) O \* \* \*See Ex #E1, Pg #3 45 90 \* 135 180 225 270 315 Allocation Studies (See Subpart C of 47 C.F.R. Part 73) Is the proposed antenna location within 320 kilometers (199 miles) of the common border between the Yes X No United States and Mexico? If Yes, attach as an Exhibit a showing of compliance with all provisions of the Agreement between the Exhibit No.

United States of America and the United Mexican States concerning Frequency Modulation

Broadcasting in the \$8 to 108 MHz band.

PCC 340 (Page 17) July 1997

N/A

54	HUI	T-B-FM BROADCAST ENGINEERING DATA (Page 6)				
25.	Is t	the proposed antenna location within 320 kilometers of the common border between the United tes and Canada?	X Yes		No	
U	All	Yes, attach as an Exhibit a showing of compliance with all provisions of the Working Agreement for ocation of FM Broadcasting Stations on Channels 201-300 under the Canada-United States FM reement of 1947.	Exhibit N E6	ło.		
26.	ran; allo	he proposed operation is for a full service or Class D facility for a channel in the range from Channel I through 220 (88.1 through 91.9 MHz), or if this proposed operation is for a Class D station in the ge from Channel 221 through 300 (92.1 through 107.9 MHz), attach as an Exhibit a complete ocation study to establish the lack of prohibited overlap of contours with other U.S. stations. The ocation study should include the following:	Exhibit N E7	lo.		
	(a)	The normally protected interference-free and the interfering contours for the proposed operation along all azimuths;				
	<b>(b)</b>	Complete normally protected interference-free contours of all other proposals and existing stations to which objectionable interference would be caused;				
	(c)	Interfering contours over pertinent arcs of all other proposals and existing stations from which objectionable interference would be received;				
	(d)	Normally protected and interfering contours over pertinent arcs, of all other proposals and existing stations, which require study to show the absence of objectionable interference;				
	(e)	Plot of the transmitter location of each station or proposal requiring investigation, with identifying call letters, file numbers and operating or proposed facilities;				
	<b>(f)</b>	When necessary to show more detail, an additional allocation study will be attached utilizing a map with a larger scale to clearly show interference or absence thereof;				
	<b>(g</b> )	A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire Exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified; and				
	(h)	The name of the map(s) used in the Exhibit(s).				
<b>27.</b>	TUIO	h regard to any stations separated by 53 or 54 channels (10.6 or 10.8 MHz), attach as an Exhibit rmation required in 1/ (separation requirements involving intermediate frequency (i.f.) reference).	Exhibit N E7	).		
28.	(a)	Is the proposed operation on Channel 218, 219 or 2207	Yes	X	No	
	(ъ)	If the answer to (a) is Yes, does the proposed operation satisfy the requirements of 47 C.F.R. Section 73.207?	Yes		No	N/
	(c)	If the answer to (b) is Yes, attach as an Exhibit information required in 1/ regarding separation requirements with respect to stations on Channels 221, 222 and 223.	Exhibit No.	<u>,                                     </u>		
	(d)	If the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.	Exhibit No. N/A	<u>,                                     </u>	•	
<u>a</u>					•	

A showing that the proposed operation meets the minimum distance separation requirements of 47 C.F.R. Section 73.507. Include existing stations, proposed stations, and cities which appear in the Table of Allotments; the location and geographic coordinates of each antenna, proposed antenna or reference point, as appropriate; and distance to each from proposed antenna

## Section V-B - FM BROADCAST ENGINEERING DATA (Page 7)

0	(e)	con	authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a aplete engineering study to establish the lack of prohibited overlap of contours involving exted stations. The engineering study must include the following:	Exhibit No. N/A	
		(1)	Protected and interfering contours, in all directions (360 degrees), for the proposed operation;		
		(2)	Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as transmitter location;		
		(3)	When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur;		
		(4)	A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire Exhibit(s) (Sufficient lines should be shown so that the location of the sites may be verified.); and		
		(5)	The official title(s) of the map(s) used in the Exhibit(s).		
29.	and the pr	гороз	d station for a channel in the range from Channel 201 to 220 (88.1 through 91.9 MHz) ed antenna location within the distance to an affected TV Channel 6 station(s) as defined ection 73.525?	Yes X	No.
	mab suc s	an en	s an Exhibit either a TV Channel 6 agreement letter dated and signed by both parties or a gineering statement with calculations demonstrating compliance with 47 C.F.R. Section a affected TV Channel 6 station.	Exhibit No. N/A	]
30.	Is the prop	posed	station for a channel in the range from Channel 221 to 300 (92.1 through 107.9 MHz)?	Yes X	l No
	If Yes, att	ach a	s an Exhibit information required in 1/. (Except for Class D (secondary) proposals.)	ExhibitNo.	]
31.	Environme	ental	Statement. (See 47 C.F.R. Section 1.1301 et seq.)		
-	(a) Wou may	ild a ( have	Commission grant of this application come within 47 C.F.R. Section 1.1307, such that it a significant environmental impact?	☐ Yes 区	No
	If yo Secti	ou ansion 1.	swer Yes, submit as an Exhibit an Environmental Assessment required by 47 C.F.R. 1311.	Exhibit No. N/A	]
	(b) If No	o, exp	lain briefly why not.		
			Tower height 200 ft. or less.		
•	tower	r site. : certi	o OST/OET Bulletin No. 65, the applicant must explain in an Exhibit what steps will be imit the RF radiation exposure to the public and to persons authorized access to the . In addition, where there are multiple contributors to radiofrequency radiation, you fy that the established RF radiation exposure procedures will be coordinated with all		•
	3640	/113.	See Ex #E8 for RF hazard statement.		

#### CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed)  Douglas L. Vernier	Relationship to Applicant (e.g., Consulting Engineer) Technical Consultant
Signature Danglas R Vermin	Address (include ZIP Code) 1600 Picturesque Dr. Cedar Falls, IA 50613
January 5, 2000	Telephone No. (include Area Code) 319 266-8402



## EXHIBIT #E1 ENGINEERING STATEMENT

Concerning the Application of
Minnesota Public Radio
To Construct a New Non-Commercial FM Station to Serve
International Falls, MN

January, 2000

Channel 209A

6 kW

This engineering statement supports the application of Minnesota Public Radio of St. Paul, Minnesota to build a new non-commercial educational FM station on channel 209 to serve International Falls, Minnesota.

Under this proposal, an FM transmitter generates an output power of 3.578 kilowatts on 89.7 MHz. The 50 ohm Andrew HJ5-50A, 1 5/8" Heliax, air copper, coaxial transmission line, has a loss for its 57 meter length of .367 dB, and the proposed diplexer has and a loss of .5 dB. The combined system efficiency is 78 percent. Therefore, the proposed 4-bay circularly polarized antenna has at its input 2.791 kilowatts of power. The antenna has a power gain of 2.15 resulting in an effective radiated power of 6 kW.

The RF output from this transmitter will be combined with the output from another proposed MPR transmitter for Channel 202 for delivery to a common antenna. The proposed diplexer and transmission system will be designed to exhibit broadband impedance and bandpass characteristics such that the carriers and sidebands of both FM channels will be properly transferred to the antenna.

Exhibit #E2 is a vertical sketch of the tower depicting the proposed antenna.

Exhibit #E3 is a waiver request of Section 73.1125, allowing the main studio to be located outside of the 60 dBu contour.

Exhibit #E4 is a full scale section of a 1:24,000 scale U.S. Geological Survey topographic quadrangle map (Ericsburg Quadrangle) showing the exact transmitter location. Page #2 of this exhibit is a photocopy of the map, showing the proposed transmitter location in relationship to the map's edge markings.

Exhibit #E5 is a Digital Line Graph map (U.S.G.S.) of the proposed one mV/m F(50-50) contour. International Falls, the city of license, is shown to be fully encompassed by the

Phone: (319) 266-8402 E-mail: dvernier@v-soft.com Fax: (319) 266-9212

proposed 60 dBu city service contour. The coverage map was computer generated using U.S. Geological Survey Digital Line Graph data, which was originally digitized from 1:2,000,000 scale maps. The U.S. land area within the proposed one mV/m contour amounts 1,033 square kilometers. This figure was determined by using a compensating polar-planimeter. The population within the 60 dBu service contour was determined to be 13,545 people through the use of a computer program which extracts a population count based on population centroids defined by U.S. Census 1990 (PL-94-171) digital census data. This program draws data from the following summary level: State-County-Voting District/Remainder-County Subdivision, Place/Remainder-Census Tract/Block Numbering Area-Block Group.

A total of 36 evenly spaced radials were used to determine the antenna height above average terrain. The N.G.D.C. 03 arc second database was employed to determine the radial elevations at .1 kilometer increments from 3 to 16 kilometers. The elevation points were averaged using the required four-point interpolation method and then the average was employed to project antenna heights above average terrain and the consequent distances to signal contours along the pertinent radials. A tabular listing of the distance to the one mV/m contour can be found on page #3 of this exhibit. The base elevation was determined by a survey performed by Murray Surveying, Inc. of Bemidji, Minnesota.

Exhibit #E6. The proposed facility has a 3<sup>rd</sup> adjacent relationship with station CKSB9F licensed to Fort Francis, Ontario. Exhibit #E6 shows the relationship of the proposed station's 94 dBu, F(50-10), 3<sup>rd</sup> adjacent interfering contour with the U.S. Border with Canada. Our calculations show that the 94 dBu signal contour does not reach Canadian soil. Page # 2 of this exhibit is a table showing the distances to the proposed 94 dBu signal contour. Page # 3 is a minimum distance spacings table showing that, except for CKSB9F, all US-Canada Working Arrangement Treaty spacings are met.

Exhibit #E7 is an Allocation Report showing that no interference will be caused to any existing licenses, construction permits or allocations. The first page is a computer channel study of all stations having a frequency and distance relationship. The exhibit gives current operating powers, HAAT's, bearings and distances. (All distances were computed according to the method described under Section 73.208 of the Commission's Rules.) The second page is a narrative of the methods and conventions used in the report.

The closest U.S. channel-six TV station is KBJRTV. This station is located at a distance of 208.47 kilometers. The section 73.525 cutoff distance for stations on channel 209 is 196 kilometers, therefore a channel-six TV showing is not required.

Exhibit #E8 is an RF hazard study.

Page #4 of Exhibit #E1 is a statement of the qualifications of the preparer.

Ex #E1, Pg #3

## Doug Vernier Telecommunications Consultants Minnesota Public Radio, International Falls, Channel 209 RRP = 6 kW Channel = 209

	Ave. Elev.	Effective		F(50-50) Distance to
Azimuth	3 to 16 km	Antenna Height		0 dBu Contour
Deg.T.	Meters AMSL	Meters AAT	(dBk)	km
0	350.5	45.9	7.782	19.67
10	348.3	48.1	7.782	20.17
20	347.2	49.2	7.782	20.41
30	349.9	46.5	7.782	19.81
40	341.7	54.7	7.782	21.53
50	3 <b>42</b> .3	54.1	7.782	21.41
60	348.3	48.1	7.782	20.17
70	348.5	47.9	7.782	20.12
80	348.7	<b>47.7</b>	7.782	20.08
90	350.7	45.7	7.782	19.63
100	357.7	38.7	7.782	17.95
110	357.3	39.1	7.782	18.05
120	356.2	40.2	7.782	18.32
130	356.1	40.3	7.782	18.35
140	353.7	42.7	7.782	18.93
150	354.0	42.4	7.782	18.86
160	351.5	44.9	7.782	19.44
170	351.9	44.5	7.782	19.35
180	353.2	43.2	7.782	19.05
190	351.9	44.5	7.782	19.35
200	353.3	43.1	7.782	19.02
210	352.3	44.1	7.782	19.26
220	355.1	41.3	7.782	18.59
230	353.7	42.7	7.782	18.93
240	351.8	44.6	7.782	19.37
250	347.0	49.4	7.782	20.45
260	345.6	50.8	7.782	20.75
270	344.5	51.9	7.782	20.97
280	345.5	50.9	7.782	20.77
290	346.9	49.5	7.782	20.47
300	346.1	50.3	7.782	20.64
310	344.9	51.5	7.782	20.89
320	343.7	52.7	7.782	21.14
330	346.5	49.9	7.782	20.56
340	349.3	47.1	7.782	19.95
350	349.3	47.1	7.782	19.95
λ	240 0 M	46 E M		

349.9 M 46.5 M Ave. =

Antenna Radiation Center AMSL =396.4 M NGDC 03 Arc Sec.

Geographic Coordinates:

N. Lat. 48 28 24 W. Lng. 93 20 00

#### Declaration:

I, Doug Vernier, declare that I have received training as an engineer from the University of Michigan School of Engineering. That, I have received degrees from the University in the field of Broadcast Telecommunications. That, I have been active in broadcast consulting for over 25 years;

That, I have held a Federal Communications Commission First Class Radiotelephone License continually since 1964. In 1985, this license was reissued by the Commission as a lifetime General Radiotelephone license no. PG-16-16464;

That, I am certified as a Professional Broadcast Engineer (#50258) by the Society of Broadcast Engineers, Indianapolis, Indiana. (Re-certified 11/95.)

That, my qualifications are a matter of record with the Federal Communications Commission;

That, I have been retained by Minnesota Public Radio, St. Paul, Minnesota, and as such have prepared the engineering showings appended hereto;

That, a portion of the exhibits contained herein were prepared under my supervision by Kate Michler, Associate;

That, I have prepared these engineering showings, the technical information contained in same and the facts stated within are true of my knowledge;

That, under penalty of perjury, I declare that the foregoing is correct.

1 100 1100 Douglas L. Vernie

Executed on January 5, 2000

Subscribed and sworn before me this 5th day of January, 2000.

Notary Public in and for the State of Iowa

My Commission Expires August 10, 2001

- 60.96M AG. 402.8M AMSL

54.6M AG, 396.4M AMSL, 46.5M HAAT (Proposed COR)

GROUND ELEVATION = 341.8M

## VERTICAL SKETCH

N. Lat. 48 28 24 W. Lng. 93 20 00

(Not to Scale)

## EXHIBIT #E2

Ch 209 46.5M HAAT 6kW Minnesota Public Radio International Falls, MN

Jan. 2000

DOUG VERNIER
BROADCAST CONSULTANTS
1600 PICTURESQUE DRIVE
CEDAR FALLS, IA 50613
319 266-8402

#### Minnesota Public Radio

Minnesota Public Radio ("MPR") proposes to construct and operate a new noncommercial educational FM station to serve International Falls, MN and the surrounding area. Its studios will be co-located with those of KNOW (FM) for which MPR is the licensee. That studio is located at 45 East Seventh Street, Saint Paul, MN 55101.

MPR is a nonprofit corporation formed for the purpose of providing noncommercial educational radio service to listeners in Minnesota and surrounding states. MPR's current 29 FM and one AM operating facilities provide 24 hours-per-day quality programming accessible to 98% of Minnesota's citizens, as well as to substantial numbers of listeners in North and South Dakota, Iowa, Wisconsin, Michigan, Idaho and southern Ontario. MPR provides programming to its network of stations from its primary Minneapolis/Saint Paul stations – KSJN (FM), Minneapolis, Minnesota, and KNOW (FM), Saint Paul, Minnesota, and from many of its network stations throughout the region. KNOW (FM) is an all news/information station and KSJN(FM) is a classical music station. The proposed station will be operated as a "news/information service" station in that it will primarily broadcast KNOW (FM).

MPR currently operates two FM translators in International Falls. One translator, at 97.7, rebroadcasts the signal of KCRB, MPR's classical music service station in Bernidji, MN. The other FM translator, at 88.1, rebroadcasts the signal of KNBJ, MPR's News & Information Service station in Bernidji. MPR expects to replace its translator at 88.1 with the proposed station once it is built.

MPR currently has 138 members in International Falls who make financial contributions to MPR.

MPR therefore requests a waiver of Section 73.1125 of the Commission's Rules to permit MPR to operate its proposed noncommercial educational FM station on Channel 209 at International Falls, MN, as a satellite station without a main studio in the community of license. As demonstrated below, grant of the instant waiver request would be in the public interest.

The Commission has issued decisions stating that the "main studio must, at a minimum, maintain full-time managerial and full-time staff personnel." <u>Jones Eastern of the Outer Banks, Inc.</u>, FCC 91-175, released June 19, 1991, at ¶ 9; <u>see also Salem Broadcasting, Inc.</u>, DA 91-804, released July 2, 1991.

Grant of this requested waiver is necessary to permit MPR to operate the proposed International Falls station as a "satellite" because the International Falls area could not otherwise support another wholly independent non-commercial educational FM station. The population of International Falls is only about 12,000. Because of this area's limited economic base, it is highly unlikely that a station with separate staff and studio could provide the same high quality public radio service that MPR proposes. Therefore, waiver of Section 73.1125 is necessary in this case to ensure that the residents of International Falls area receive the diverse and important programming MPR will provide.

The Commission has recognized the advantages accruing to noncommercial broadcasters from consolidated operations:

#### Minnesota Public Radio

In the past, we have recognized the benefits of centralized operations for noncommercial educational stations, given the limited funding available to these stations, and we have granted waivers to state and regional public television and radio networks to operate "satellite" stations that do not necessarily meet the requirements of a main studio.

Main Studio Program Origination Rules, 3 FCC Rcd. 5024, 5027 (1988) (citing Nebraska Educational Television Commission, 4 R.R.2d 771 (1965). Indeed, the Commission has previously determined that waiver of the main studio rule for other stations in the MPR network serves the public interest. See Letter from Linda Blair, Chief, Audio Services Division to Todd M. Stansbury, dated May 31, 1996 (attached hereto); see also Letter from Dennis Williams, Assistant Chief, Audio Services Division to Todd M. Stansbury, dated November 6, 1995, File No. BPED-9508101A.

Upon grant of this request, MPR will satisfy the public needs and interests of residents of International Falls by the following means:

- MPR maintains a toll-free telephone line by which the residents of the International Falls area can reach MPR management to express concerns about the station operations. This toll-free telephone number goes into MPR's Member Listener Services (MLS) Department. MPR currently has 6 live phone lines and 7 full-time employees who answer the phones and emails. In the past year, MLS has handled about 60,000 incoming calls on every subject you can think of related to MPR, including comments and questions about programming on both services. In addition, MLS has handled about 9,000 email messages in the past year. While the number of phone lines and employees may change with time, MPR's commitment to maintain easy access is strong.
- MPR currently has one person in Saint Paul who is responsible for the final decisions on all programming on MPR stations. MPR has a news director and a classical music director who report to this person. Listener comments from MLS go to this person, who then distributes comments about the music service to the music programming people, and comments about news programming to the news programming director. Summaries of comments about both services are widely distributed throughout the company and to the Board. The current organizational structure may change with time, but the commitment to maintain control of programming and circulate listener opinions will not change.
- MPR has established a site on the World Wide Web (http://www.mpr.org) that enables local residents to receive extensive information regarding MPR's programming and provides a link for local residents to email concerns about the station operations to MPR management. The site contains descriptions of special reports, schedules for news and classical music programming, and on-line audio sources for MPR programming, including its radio series A Prairie Home Companion®. In addition, MPR has established home pages on the MPR Web Site for its network stations. When the proposed station is constructed, MPR will add the proposed station to the Web Site list.

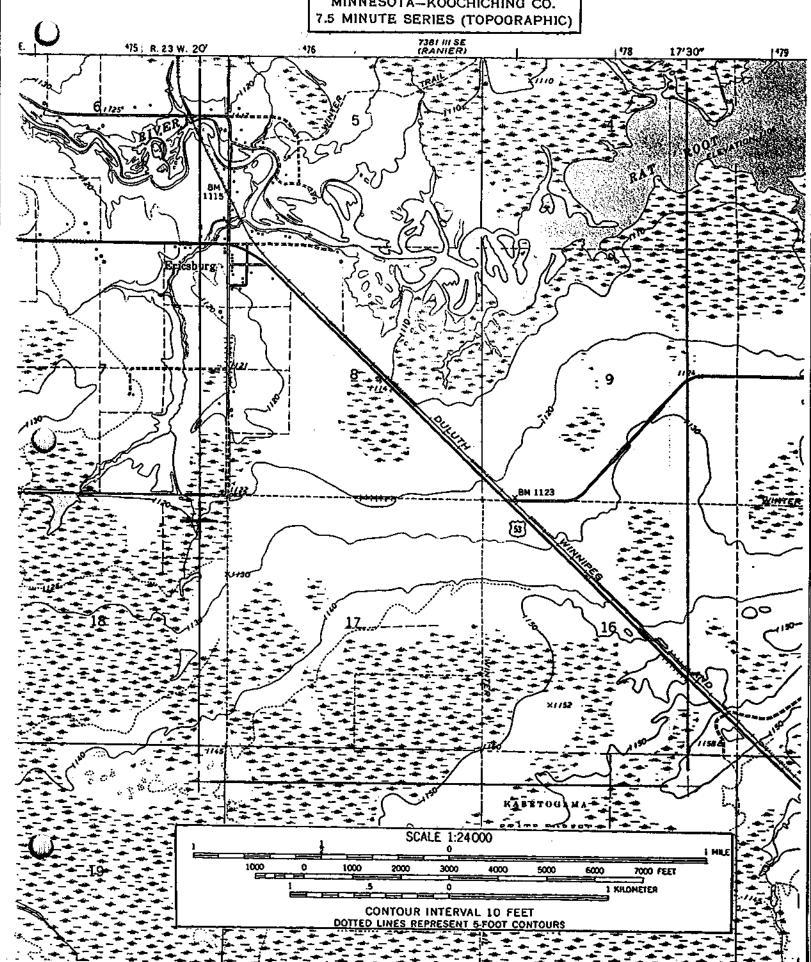
## Exhibit #E3, Page 3 Main Studio Exhibit for International Falls, Minnesota

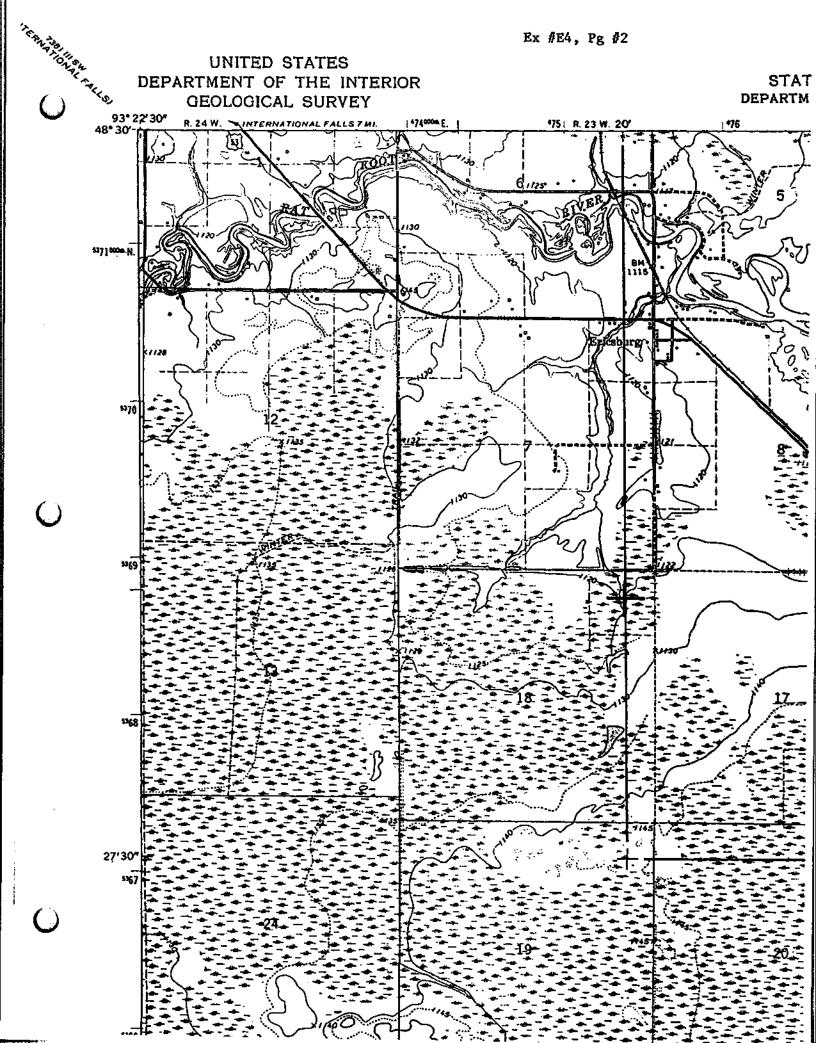
#### Minnesota Public Radio

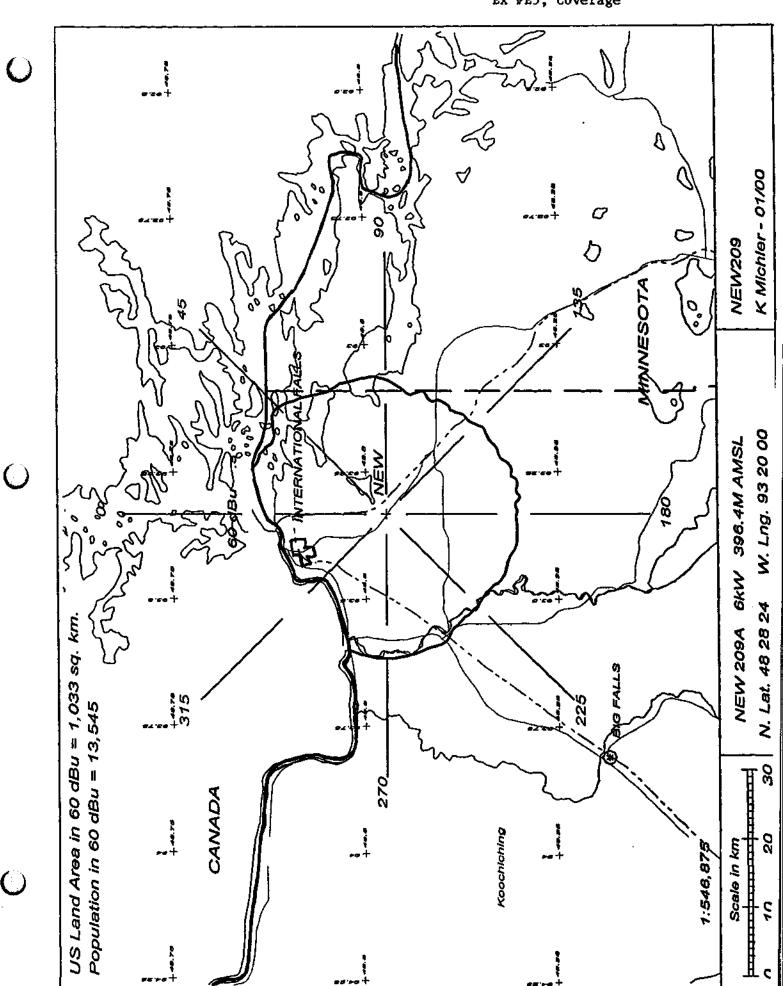
• MPR operates the largest news organization of any radio service in the Midwest. With this extensive news resource, MPR is able to produce news, arts and cultural programming from throughout MPR's service area and distribute it to all stations in the network. MPR's staff located in nearby Bemidji, MN and the staff in Saint Paul already subscribe to the local and area publications and maintain ongoing relationships with community residents and leaders, who are periodically contacted regarding local events and developments, including local arts and cultural events. MPR's staff uses information provided by these contacts to keep the communities it is involved in informed about local and regional arts and cultural events and to keep classical music hosts informed about these events for broadcast by MPR either regionally or throughout the MPR multi-state network.. In addition, MPR broadcasts news reports on its classical music service.

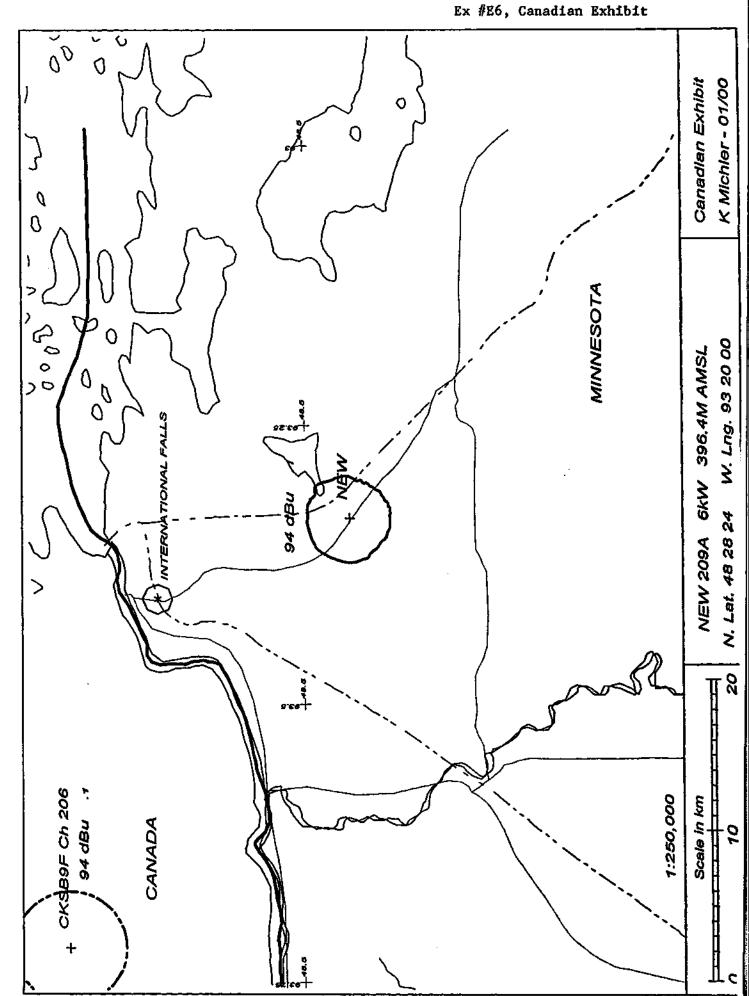
For the foregoing reasons, MPR submits that it will be able to ascertain and satisfy the interests and need of residents of the International Falls area and, therefore, respectfully requests that the Commission grant this waiver of the main studio rule for the proposed station.

Prepared 1/19/00 Mitzi T Gramling ERICSBURG QUADRANGLE
MINNESOTA-KOOCHICHING CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)









# Doug Vernier Telecommunications Consultants Minnesota Public Radio, Channel 209, Canadian Exhibit Pg #2 BRP = 6 kW Channel = 209

)		•	namici - 205		F(50-10)
,	Azimuth Deg.T.	Ave. Elev. 3 to 16 km Meters AMSL	Effective Antenna Height Meters AAT	ERP 94 (dBk)	Distance to dBu Contour km
-	0	350.5	45.9	7.782	2.77
	10	348.3	48.1	7.782	2.84
	20	347.2	49.2	7.782	2.87
	30	349.9	46.5	7.782	2.79
	40	341.7	54.7	7.782	3.01
	50	342.3	54.1	7.782	2.99
	60	348.3	48.1	7.782	2.84
	70	348.5	47.9	7.782	2.83
	80	348.7	47.7	7.782	2.83
	90	350.7	45.7	7.782	2.77
	100	357.7	38.7	7.782	2.54
	110	357.3	39.1	7.782	2.55
	120	356.2	40.2	7.782	2.59
	130	356.1	40.3	7.782	2.59
	140	353.7	42.7	7.782	2.67
	150	354.0	42.4	7.782	2.66
	160	351.5	44.9	7.782	2.74
	170	351.9	44.5	7.782	2.73
	180	353.2	43.2	7.782	2.69
	190	351.9	44.5	7.782	2.73
	200	353.3	43.1	7.782	2.69
	210	352.3	44.1	7.782	2.72
1	220	355.1	41.3	7,782	2.63
	230	353.7	42.7	7.782	2.67
	240	351.8	44.6	7.782	2.73
	250	347.0	49.4	7.782	2.87
	260	345.6	50.8	7.782	2.91
	270	344.5	51.9	7.782	2.94
	280	345.5	50.9	7.782	2.91
	290	346.9	49.5	7.782	2.88
	300	346.1	50.3	7.782	2.90
	310	344.9	51.5	7.782	2.93
	320	343.7	52.7	7.782	2.96
	330	346.5	49.9	7.782	2.89
	340	349.3	47.1	7.782	2.81
	350	349.3	47.1	7.782	2.81

Ave. = 349.9 M 46.5 M

Antenna Radiation Center AMSL =396.4 M NGDC 03 Arc Sec.

#### Geographic Coordinates:

N. Lat. 48 28 24 W. Lng. 93 20 00

#### Doug Vernier Telecommunications Consultants 1600 Picturesque Dr. Cedar Falls IA 50613 Minnesota Public Radio International Falls Canadian Exhibit Pg #3

EFERENCE 48 28 24 N 93 20 00 W

CLASS = A93 20 00 W Current Spacings SEARCH 01-04-00

DISPLAY DATES DATA 12-31-99 SEARCH 01-04-00

Call		Channel	Location		Dist	Azi	FCC	Margin
CKSB9F	OP	206B	Fort Frances	ON	34.03	303.1	69.0	-34.97
AL208	$\mathbf{AL}$	208B	Kenora	ON	167.45	329.8	137.0	30.45
KBSB	LI	209A	Bemidji	MN	159.22	226.7	115.0	44.22
CBLAFM	OP	211A	Atikokan	ON	131.28	74.6	51.0	80.28
AL210	AL	210A	Cat Hills	MB	187.01	290.9	98.0	89.01
KADU	LI	211A	Hibbing	MN	122.54	166.9	31.0	91.54
AP209	AP	209C3	Grand Marais	MN	235.35	108.3	142.0	93.35
AL209	AL	209A	Red Lake	ON	285.62	353.0	151.0	134.62
AP207	ΑP	207C1	Sebeka	MN	212.34	215.5	75.0	137.34

## Doug Vernier Telecommunications Consultants Ex #E7, Allocation 1600 Picturesque Dr. Cedar Falls IA 50613

Minnesota Public Radio International Falls

REFERENCE 28 24 N 20 00 W	CH# 7	209A - 89 50-10) 40	7 MHz Dwr=	6 kw, HAAT=4 rotected F(50-5 4 dBu= 29.1 80	6.5 M. COR= 39 0)= 19.81 km ) dBu= 6.1 100 d	6 M Bu≠ 2.0	DISPLAY ( DATA 1 SEARCH 0	DATES 2-31-99 1-04-00
CH CALL CITY	TYPE STATE		IST ILE #	LAT. LNG.	Pwr(kw) COR(M) HAAT(M) INT(km)	PRO(km) LICENSEE		OUT* n km)
206B *CKSB9F Fort Frances > Reference HAAT at	OP CN	123.1	4.03 wr= 6.0 kw.	93 43 14	50.000 0 -350 2.7 0.54 km, Int Di	36.1 st. = 2.88	10.81 km	-4.97
208B AL208 Kenora	AL ON	329.8 16 149.8		49 46 06 94 30 16	50.000 0 150 78.1	65.1	69.53	58.01
209A KBSB Bemidji	LI HN MN		9.22 BLED790913A8	47 29 00 94 52 27	0.120 460 38 22.0	6.6 Bemidji Sta	117.39 te Universi	<i>7</i> 7.31 ty
211A CBLAFM Atikokan	OP CN	74.6 13 254.6	31.28	48 46 23 91 36 38	2.900 0 81 6.8	29.7	104.69	92.80
210A AL210 Cat Hills	AL MB	290.9 18 110.9	37.01	49 02 50 95 43 29	6.000 0 100 43.7	38.7	123.46	103.92
211A KADU Hibbing Accepted by Canada	MN		LED941004KC			8.4 JPI Radio,		107.95
209C3 AP209 Grand Marais amended 990317	AP CN MN	288.3 E	35.35 SPED981204MB	47 46 13 90 21 06	6.000 540 187 99.1	37.8 Minnesota P		122.23
Accepted by Canada 209A AL209 Red Lake	AL ON	353.0 28		51 01 18 93 49 44	6.000 0 100 86.7	38.7	179.15	144.47
207C1 AP207 Sebeka Proposed as Class C	AP CN	215.5 23 35.5 E	3PED960712MG	46 54 28 94 57 12	100.000 530	50.5 LifeTalk Br	173.54 oadcasting	155.70 Asso
75+2C *KBJRTV PERIOR Reference HAAT at	LI HN WI : 153.5°=	153.5 20 333.5 ( 41.6 M, (	08.47 BLCT2419 PWr= 6.0 kW,	46 47 21 92 06 51 Pro. Dist. = 3	100.000 610 187 122.1 242.11 km, Int I	KRID ITCENS	To Grd B= E, INC. 82 km	115.67

<sup>\* =</sup> ERP and HAAT on direct line to and from reference station.

#### **HOW TO READ THE FM COMPUTER PRINT-OUT**

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table, while the 40, 54, 80 and 100 dBu contours are interference contours derived from the Commission's F(50-10) table. Contour distances are in kilometers and are predicted using spline interpolation from data points identical to those published in Report No. RS 76-01 by Gary C. Kalagian. Critical contour distances are determined using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "\* IN \*" is the sum of the reference station's 60 dBu protected contour and the data file station's interference contour subtracted from the distance between the stations. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, the column is a measure of incoming interference. Negative distances in this column indicate the presence of interference. Listed antenna heights are the average heights of eight standard radials as found in the Commission's records unless otherwise noted, in which case the specific antenna heights along the azimuths between the reference station and the database station are used and visa versa. The column labeled "\* OUT \*" shows the distance of kilometers of overlap or clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing interference.

Under the "AZIMUTH" column, the first row of numbers indicate the bearings from true north of the data base stations in relationship with the reference station, while the numbers in the second row indicate the reverse bearings from the database station to the reference station.

The columns labeled "INT" and "PRO" hold the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the "IN" and "OUT" columns change their significance. The letter "R" stands for the minimum required distance in kilometers, while the letter "M" in the next column follows the available clear space separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" or "Z" (Sec. 73.215) if the facility is directional. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt.

#### EXHIBIT # E8

#### R.F. RADIATION COMPLIANCE STATEMENT

#### Channel 209 – 6 kW H & V International Falls, Minnesota

January, 2000

The proposed 4-bay antenna will be energized such that it produces 6 kW effective radiated power, circularly polarized, from a center of radiation of 54.6 meters above ground. Using the formulas expressed in the OET Bulletin, No. 65, August 1997, "Evaluating Compliance with F.C.C. Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", published by the Federal Communication Commission's Office of Science and Engineering, and then by applying a combination of the element and array pattern as defined in E.P.A. study PB85-245868 ("Engineering Assessment of the Potential Impact of the Federal Radiation Protection Guidance on the AM, FM and TV Broadcast Services".) the following table of exposure levels were developed for four common antennas.

Antenna Type	Level at 2 M above Ground at the tower base. mlcroW/Sq cm	% controlled	% uncontrolled
Dielectric (Type #5)	9.419	.9419	4.709
ERI (Type #3)	4.347	.4347	2.174
Jampro (Type #2)	10.143	1.0143	5.072
Shively (Type #6)	.725	.0725	.362

In a separate application, the applicant proposes to build an additional 5.75 kW station, using a common antenna. There are no other RF sources on the tower. The RF exposure levels will still be well within the allowable limits.

The applicant will protect workers on the tower by either reducing ERP or terminating transmission.

Consequently, it appears that the proposed FM station, when using one of the four common antenna listed above, will be in full compliance with the Commission's human exposure to radiofrequency electromagnetic field rules and regulations.

	SECTION VI - EQUAL EMPLOYMENT OPPORTUNITY PROGRAM							
	Doe	es the applicant propose to employ five or more full-time emplo	yees?		Yes	⊠ No		
Yes, the applicant must include an EEO program called for in the separate Broadcast Equal Employment Opportunity Program Report (FCC Form 396-A). (See also 47 C.F.R. Section 73.2080.)								
SECTION VII - CERTIFICATIONS								
	1.	Has or will the applicant comply with the public notice requir	ements of 47 C.F.R. Section 73.3580?	X		No applicable for change)		
2. By checking Yes, the applicant certifies that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).						□ No		
C	Starthis Trep Ton	The APPLICANT hereby waives any claim to the use of any particular frequency as against the regulatory power of the United rates because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with is application. (See Section 304 of the Communications Act of 1934, as amended.)  The APPLICANT acknowledges that all the statements made in this application and attached Exhibits are considered material presentations, and that all Exhibits are a material part hereof and incorporated herein.  The APPLICANT represents that this application is not filed for the purpose of impeding, obstructing, or delaying determination in any other application with which it may be in conflict.  In accordance with 47 C.F.R. Section. 1.65, the APPLICANT has a continuing obligation to advise the Commission, through mendments, of any substantial and significant changes in information furnished.						
	I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.							
		ame MINNESOTA PUBLIC RADIO itle	Signature Mas J las	Mh				
	L	EXECUTIVE VICE PRESIDENT  yped or Printed Name of Person Signing  THOMAS J KIGIN	Date 00.01.18	<del>)</del>	<u> </u>			

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION I 00 1), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).