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| Federal Communications Commission Washington, D.C. 20554 | Approved by OMB 3060-0029 (December 2008) | FOR FCC USE ONLY |
| FCC 340 | | |
| APPLICATION FOR CONSTRUCTION PERMIT FOR RESERVED CHANNEL NONCOMMERCIAL EDUCATIONAL BROADCAST STATION | | FOR COMMISSION USE ONLY FILE NO. BPED - 20100802AVM |
| Read INSTRUCTIONS Before Filling Out Form | | |

Section I - General Information

| | | |
|----|---|---|
| 1. | Legal Name of the Licensee/Permittee MINNESOTA PUBLIC RADIO | |
| | Mailing Address 480 CEDAR STREET | |
| | City ST. PAUL | State or Country (if foreign address) MN |
| | Zip Code 55101 - | |
| | Telephone Number (include area code) 6512901259 | E-Mail Address (if available) FCCFILING@MPR.ORG |
| | FCC Registration Number: 0002642510 | Call Sign KNOW-FM |
| | | Facility Identifier 42949 |
| 2. | Contact Representative (if other than licensee/Permittee) TODD M STANSBURY | Firm or Company Name WILEY REIN LLP |
| | Mailing Address 1776 K STREET NW SUITE 500 | |
| | City WASHINGTON | State or Country (if foreign address) DC |
| | ZIP Code 20006 - | |
| | Telephone Number (include area code) 2027194948 | E-Mail Address (if available) TSTANSBURY@WILEYREIN.COM |
| 3. | Is this application being filed in response to a window? If Yes, specify closing date and/or window number: | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 4. | Application Purpose | |
| | <input type="radio"/> New station | |
| | <input type="radio"/> Major Change in licensed facility | |
| | <input checked="" type="radio"/> Minor Change in licensed facility | |
| | <input type="radio"/> Major Modification of construction permit | |
| | <input type="radio"/> Minor Modification of construction permit | |
| | <input type="radio"/> Major Amendment to pending application | |
| | <input type="radio"/> Minor Amendment to pending application | |
| | (a) File number of original construction permit: - | |
| | (b) Service Type: <input checked="" type="radio"/> FM <input type="radio"/> TV <input type="radio"/> DTV <input type="radio"/> DTS | |
| | (c) DTV Type: <input type="radio"/> Pre-Transition <input type="radio"/> Post-Transition <input type="radio"/> Both | |
| | (d) Community of License: | |
| | City: MINNEAPOLIS-ST. PAUL | State: MN |
| | (e) Facility Type <input checked="" type="radio"/> Main <input type="radio"/> Auxiliary | |
| | If an amendment, submit as an Exhibit a listing by Section and Question Number the portions of the pending application that are being revised. | |
| | | [Exhibit 1] |

NOTE: The failure to include an explanatory providing full particulars in connection with a "No" response may result in dismissal of the application. See Instructions, paragraph L for additional information regarding completion of explanatory exhibits.

SECTION II - Legal and Financial

| | | |
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| 1. | <p>Certification. Applicant certifies that it has answered each question in this application based on its review of the application instructions and worksheets. Applicant further certifies that where it has made an affirmative certification below, this certification constitutes its representation that the application satisfies each of the pertinent standards and criteria set forth in the application instructions and worksheets.</p> | <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> |
| 2. | <p>Eligibility. Each application must answer "Yes" to one and "No" to two of the three following certifications. An applicant should not submit an explanatory exhibit in connection with these Question 2 "No" responses.</p> <p>The applicant certifies that it is:</p> <p>a. a nonprofit educational institution; or</p> <p>b. a governmental entity other than a school; or</p> <p>c. a nonprofit educational organization, other than described in a. or b.</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> |
| 3. | <p>For applicants checking "Yes" to question 2(c) and applying for a new noncommercial educational television station only, the applicant certifies that the applicant's officers, directors and members of its governing board are broadly representative of the educational, cultural, and civic segments of the principal community to be served.</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> N/A</p> |
| 4. | <p>a. The applicant certifies that the Commission has previously granted a broadcast application identified here by file number that found this applicant qualified as a noncommercial educational entity with a qualifying educational program, and that the applicant will use the proposed station to advance a program similar to that the Commission has found qualifying in applicant's previous application.</p> <p>b. Applicants who answered "No" to Question 4(a), must include an exhibit that describes the applicant's educational objective and how the proposed station will be used to advance an educational program that will further that objective according to 47 C.F.R. Section 73.503 (for radio applicants) and 47 C.F.R. Section 73.621 (for television applicants).</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> <p>FCC FileNumber -</p> <p>[Exhibit 2]</p> |
| 5. | <p>The applicant certifies that its governing documents (e.g., articles of incorporation, by-laws, charter, enabling statute, and/or other pertinent organizational document) permit the applicant to advance an educational program and that there is no provision in any of those documents that would restrict the applicant from advancing an educational program or complying with any Commission rule, policy, or provision of the Communications Act of 1934, as amended.</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> |
| 6. | <p>a. Parties to the Application. List separately each party to the application including, as applicable, the applicant, its officers, directors, five percent or greater stockholders, non-insulated partners, members, and all other persons and entities with attributable interests. If another entity hold an attributable interest in the applicant, list separately, as applicable, its officers, directors, five percent or greater stockholders, non-insulated partners, and board members. Create a separate row for each individual or entity. Attach additional pages if necessary.</p> <p>[Enter Parties/Owners Information]</p> <p>_____</p> <p>_____</p> <p>b. Applicant certifies that equity and financial interests not set forth above are non-attributable pursuant to 47 C.F.R. Section 73.3555 and that there are no agreements or understandings with any non-party that would give influence over the applicant's programming, personnel, or finances to that non-party.</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> <p>[Exhibit 3]</p> |

| | | |
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| 7. | Other Authorizations. List call signs, locations, and facility identifiers of all other broadcast stations in which applicant or any party to the application has an attributable interest pursuant to the notes to 47 C.F.R. Section 73.3555. | <input type="checkbox"/> N/A [Exhibit 4] |
| 8. | Character Issues. Applicant certifies that neither applicant nor any party to the application has or has had any interest in or connection with: a. any broadcast application in any proceeding where character issues were left unresolved or were resolved adversely against the applicant or party to the application; or b. any pending broadcast application in which character issues have been raised. | <input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 5] |
| 9. | Adverse Findings. Applicant certifies that, with respect to the applicant, any party to the application, and any non-party equity owner in the applicant, no adverse finding has been made, nor has an adverse final action been taken by any court or administrative body in a civil or criminal proceeding brought under the provisions of any law related to any of the following: any felony; mass media-related antitrust or unfair competition; fraudulent statements to another government unit; or discrimination. If the answer is "No," attach as an Exhibit a full disclosure concerning the persons and matters involved, including an identification of the the court or administrative body and the proceeding (by dates and file numbers), and a description of the disposition of the matter. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 C.F.R. Section 1.65, the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter. | <input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 6] |
| 10. | Alien Ownership and Control. Applicant certifies that it complies with the provisions of Section 310 of the Communications Act of 1934, as amended, relating to interests of aliens and foreign governments. | <input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 7] |
| 11. | Program Service Certification. Applicant certifies that it is cognizant of and will comply with its obligations as a commission licensee to present a program service responsive to the issues of public concern facing the station's community of license and service area. | <input type="radio"/> Yes <input type="radio"/> No |
| 12. | Local Public Notice. Applicant certifies compliance with the public notice requirements of 47 C.F.R. Section 73.3580. | <input type="radio"/> Yes <input type="radio"/> No |
| 13. | Anti-Drug Abuse Act Certification. Applicant certifies that neither applicant nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862. | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| 14. | Equal Employment Opportunity (EEO). If the applicant proposes to employ five or more full-time employees, applicant certifies that it is filing simultaneously with this application a Model EEO Program Report on FCC Form 396-A. | <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A |

QUESTIONS 15, 16 AND 17 APPLY ONLY TO APPLICANTS FOR NEW STATIONS. OTHER APPLICANTS CAN PROCEED TO QUESTION 18.

| | | |
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| 15. | Financial. The applicant certifies that sufficient net liquid assets are on hand or that sufficient funds are available from committed sources to construct and operate the requested facilities for three months without revenue. If "No" to 15., answer question 16. and 17. | <input type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 8] |
| 16. | Is this application contingent upon receipt of a grant from the National Telecommunications and Information Administration? | <input type="radio"/> Yes <input type="radio"/> No |
| 17. | Is this application contingent upon receipt of a grant from a charitable organization, the approval of the budget of a school or university, or an appropriation from a state, county, municipality or other political subdivision? | <input type="radio"/> Yes <input type="radio"/> No |

NOTE: If Yes to 16. or 17., the application cannot be granted unconditionally until all of the necessary funds are committed or appropriated. In the case of grants from the National Telecommunications and Information Administration, no further action on the applicant's part is required. If the applicant relies on funds from a source specified in Question 17., **the applicant must advise the**

Commission when the funds are committed or appropriated. This should be accomplished by letter amendment to the application. Applicants should take note that the Commission's construction period is not considered "tolled" by funding difficulties and that any permit granted conditionally on funding will expire if the station is not constructed for any reason, including lack of funding.

QUESTIONS 18 AND 19 DO NOT APPLY TO APPLICATIONS FOR NEW STATIONS. APPLICANTS FOR NEW FM STATIONS CAN PROCEED TO SECTION III. APPLICANTS FOR NEW TV STATIONS CAN PROCEED TO SECTION IV.

Holding Period.

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| 18. | Applicant certifies that this application does not propose a modification to an authorization that was awarded on the basis of a preference for fair distribution of service pursuant to 47 U.S.C. Section 307(b). If "No," answer a. and b. below. If applicant answers "No" to 18. above and cannot answer "Yes" to either a. or b. below, the application is unacceptable. | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| | a. Applicant certifies that the proposed modification will not downgrade service to the area on which the Section 307(b) preference was based. | <input type="radio"/> Yes <input type="radio"/> No |
| | b. Applicant certifies that although it proposes to downgrade service to the area on which the Section 307(b) preference was based, applicant has provided full service to that area for a period of four years of on-air operations. | <input type="radio"/> Yes <input type="radio"/> No |
| 19. | Applicant certifies that this application does not propose a modification to an authorized station that received a credit for superior technical parameters under the point system selection method in 47 C.F.R. Section 73.7003. If "No," applicant must be able to answer "Yes" to a. below or provide an exhibit that makes a compelling showing that the downgrade would be in the public interest. | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| | a. Applicant certifies that the population and area within the proposed service contour (60 dBu (FM) or grade B (TV)) are greater than or equivalent to those authorized. | <input type="radio"/> Yes <input type="radio"/> No [Exhibit 9] |

Section III

Fair Distribution of Service Pursuant to 47 U.S.C. Section 307(b) (New and Major Changes to FM Radio Only) (Other applicants can proceed to Section IV).

| | | |
|----|--|--|
| 1. | Applicant certifies that the proposed station will provide a first noncommercial educational aural service to (a) at least 10 percent of the people residing within the station's 60 dBu (1mV/m) service contour and (b) to a minimum of 2,000 people. Applicants answering "Yes" must provide an Exhibit. | <input type="radio"/> Yes <input type="radio"/> No [Exhibit 10] |
| 2. | Applicant certifies that the proposed station will provide a second noncommercial educational aural service to (a) at least 10 percent of the people residing within the station's 60 dBu (1mV/m) service contour and (b) to a minimum of 2,000 people. Applicants answering "Yes" must provide an Exhibit. | <input type="radio"/> Yes <input type="radio"/> No [Exhibit 11] |

Section IV Point System Factors - New and Major Change Applications Only (used to select among mutually exclusive radio and television applications for new stations and major modifications) **NOTE:** Applicants will not receive any additional points for amendments made after the close of the application filing window.

| | | |
|----|---|--|
| 1. | Established Local Applicant: Applicant certifies that for at least the 24 months immediately prior to application, and continuing through the present, it qualifies as a local applicant pursuant to 47 C.F.R. Section 73.7000, that its governing documents require that such localism be maintained, and that it has placed documentation of its qualifications as an established local applicant in a local public inspection file and has submitted to the Commission copies of the documentation. | <input type="radio"/> Yes <input type="radio"/> No |
| 2. | Diversity of Ownership: (a) Applicant certifies that the principal community (city grade) contour of the proposed station does not overlap the principal community contour of any other authorized station (comparing radio and television to television, including non-fill-in translator stations other than those identified in 2(b) below) in which any party to the application has an attributable interest as defined in 47 | <input type="radio"/> Yes <input type="radio"/> No |

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| <p>C.F.R. Section 73.3555, that its governing documents require that such diversity be maintained, and that it has placed documentation of its diversity qualification in a local public inspection file and has submitted to the Commission copies of the documentation.</p> | |
| <p>(b) Is the application's certification to 2(a) based on its exclusion of translator station(s) that will be replaced with a full service station pursuant to the authorization requested here?</p> <p>If Yes, applicant must include an exhibit identifying the translator station authorization for which it will request cancellation upon commencement of operation of the proposed full service station (i.e., upon its filing of a license application and receipt of program test authority).</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> <p>[Exhibit 12]</p> |
| <p>3. State-wide Network: Applicant certifies that (a) it has NOT claimed a credit for diversity of ownership above: (b) it is one of the three specific types of organizations described in 47 C.F.R. Section 73.7003(b)(3); and (c) it has placed documentation of its qualifications in a local public inspection file and has submitted to the Commission copies of the documentation.</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> |
| <p>4. Technical Parameters: Applicant certifies that the numbers in the boxes below accurately reflect the new area and population that its proposal would serve with a 60 dBu (FM) or Grade B (TV) signal measured in accordance with the standard predicted contours in 47 C.F.R. Section 73.713(c) (FM) and 73.683(TV) and that it has documented the basis for its calculations in the local public inspection file and has submitted copies to the Commission. Major modification applicants should include the area of proposed increase only (exclude any area already within the station's existing service area). (Points, if any, will be determined by FCC)</p> | <p><input type="radio"/> Yes <input type="radio"/> No</p> |
| <p>New area served in square kilometers (excluding areas of water):</p> | |
| <p>Population served based on the most recent census block data from the United States Bureau of Census using the centroid method:</p> | |

SECTION V - Tie Breakers - New and Major Change Applications Only (used to choose among competing radio and television applications receiving the same number of points in Section IV)

| |
|--|
| <p>1. Existing Authorizations. By placing a number in the box, the applicant certifies that it and other parties to the application have, as of the date of filing and pursuant to 47 C.F.R. Section 73.3555, attributable interests in the stated number of relevant broadcast station authorizations. Radio applicants should count all attributable full service radio stations, AM and FM, commercial and noncommercial, and FM translator stations other than fill-in stations or those identified in IV (2)(b) above. TV applicants should count all attributable full service TV stations, commercial and noncommercial and TV translator stations other than fill-in stations or those identified in IV(2)(b) above. (number of commercial and non-commercial licenses and construction permits)</p> |
| <p>2. Pending Applications. By placing a number in the box, the applicant certifies that it and other parties to the application have, as of the date of filing and pursuant to 47 C.F.R. Section 73.3555, attributable interests in the stated number of pending applications for new or major changes to relevant broadcast stations. Radio applicants should count all attributable full service radio stations, AM and FM, commercial and noncommercial, and FM translator stations other than fill-in stations or those identified in IV(2)(b) above. TV applicants should count all attributable full service TV stations, commercial and noncommercial, and TV translator stations other than fill-in stations or those identified in IV(2)(b) above. (number of pending commercial and non-commercial applications)</p> |

Section VI -- Certification

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. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

| | |
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| <p>Typed or Printed Name of Person Signing THOMAS J. KIGIN</p> | <p>Typed or Printed Title of Person Signing EXECUTIVE VICE PRESIDENT</p> |
| <p>Signature</p> | <p>Date 8/2/2010</p> |

Section VII Preparer's Certification

I certify that I have prepared Section VII (Engineering Data) 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 THOMAS M. NELSON | | Relationship to Applicant (e.g., Consulting Engineer) STAFF ENGINEER | |
| Signature | | Date 7/13/2010 | |
| Mailing Address 480 CEDAR ST | | | |
| City ST. PAUL | | State or Country (if foreign address) MN | Zip Code 55101- |
| Telephone Number (include area code) 6512901312 | | E-Mail Address (if available) TNELSON@MPR.ORG | |

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), 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).

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| Section VII - FM Engineering | | | |
| TECHNICAL SPECIFICATIONS | | | |
| Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable. | | | |
| TECH BOX | | | |
| 1. | Channel Number: 216 | | |
| 2. | Class (select one): <input type="radio"/> D <input type="radio"/> A <input type="radio"/> B1 <input type="radio"/> B <input type="radio"/> C3 <input type="radio"/> C2 <input type="radio"/> C1 <input checked="" type="radio"/> C0 <input type="radio"/> C | | |
| 3. | Antenna Location Coordinates: (NAD 27) Latitude: Degrees 45 Minutes 3 Seconds 44 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 93 Minutes 8 Seconds 21 <input checked="" type="radio"/> West <input type="radio"/> East | | |
| 4. | Proposed Assignment Coordinates: (NAD 27) - RESERVED CHANNELS ABOVE 220 ONLY <input checked="" type="checkbox"/> Not Applicable Latitude: Degrees Minutes Seconds <input type="radio"/> North <input type="radio"/> South Longitude: Degrees Minutes Seconds <input type="radio"/> West <input type="radio"/> East | | |
| 5. | Antenna Structure Registration Number: 1023882 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA | | |
| 6. | Overall Tower Height Above Ground Level: | 437.7 meters | |
| 7. | Height of Radiation Center Above Mean Sea Level: | 663.3 meters(H) 663.3 meters(V) | |
| 8. | Height of Radiation Center Above Ground Level: | 359.4 meters(H) 359.4 meters(V) | |
| 9. | Height of Radiation Center Above Average Terrain: | 388.5 meters(H) 388.5 meters(V) | |
| 10. | Effective Radiated Power: | 100 kW(H) 100 kW(V) | |
| 11. | Maximum Effective Radiated Power: (Beam-Tilt Antenna ONLY) | <input checked="" type="checkbox"/> Not Applicable | kW(H) kW(V) |
| 12. | Directional Antenna Relative Field Values: <input checked="" type="checkbox"/> Not applicable (Nondirectional) Rotation (Degrees): <input type="checkbox"/> No Rotation | | |

| Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value | Degrees | Value |
|---------------------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| 0 | | 10 | | 20 | | 30 | | 40 | | 50 | |
| 60 | | 70 | | 80 | | 90 | | 100 | | 110 | |
| 120 | | 130 | | 140 | | 150 | | 160 | | 170 | |
| 180 | | 190 | | 200 | | 210 | | 220 | | 230 | |
| 240 | | 250 | | 260 | | 270 | | 280 | | 290 | |
| 300 | | 310 | | 320 | | 330 | | 340 | | 350 | |
| Additional Azimuths | | | | | | | | | | | |

[Relative Field Polar Plot](#)

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-17. PROCEED TO ITEM 18.

13. **Main Studio Location.** The proposed main studio location complies with 47 C.F.R. Section 73.1125. Yes No
See Explanation in [Exhibit 13]

14. **Community Coverage.** The proposed facility complies with 47 C.F.R. Section 73.315. (Channels 221 and above) or 47 C.F.R. Section 73.515 (Channels 220 and below). Yes No
See Explanation in [Exhibit 14]

15. **Interference.** The proposed facility complies with all of the following applicable rule sections. Check all that apply: Yes No
See Explanation in [Exhibit 15]

Contour Overlap Requirements.

a. 47 C.F.R. Section 73.509 **Exhibit Required.** [Exhibit 16]

Spacing Requirements.

b. 47 C.F.R. Section 73.207 with respect to station(s)

Grandfathered Short-Spaced.

c. 47 C.F.R. Section 73.213(a) with respect to station(s) **Exhibit Required.** [Exhibit 17]

Contour Protection.

d. 47 C.F.R. Section 73.215(a) with respect to station(s) **Exhibit Required.** [Exhibit 18]

Television Channel 6 Protection.

e. 47 C.F.R. Section 73.525 with respect to station(s) **Exhibit Required.** [Exhibit 19]

16. **Reserved Channels Above 220.**

a. **Availability of Channels.** The proposed facility complies with the assignment requirements of 47 C.F.R. Section 73.203. Yes No
See Explanation in [Exhibit 20]

17. **International Borders.** The proposed antenna location is not within 320 kilometers of the common border between the United States and Canada or Mexico. Yes No
 Canada
 Mexico
[Exhibit 21]

If "No," specify the country and provide an exhibit of compliance with all provisions of the relevant International Agreement.

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| 18. | <p>Environmental Protection Act. The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Worksheet #7, an Exhibit is required.</p> <p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p> | <input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 22] |
| 19. | <p>Community of License Change - Section 307(b). If the application is being submitted to change the facility's community of license, then the applicant certifies that it has attached an exhibit containing information demonstrating that the proposed community of license change comports with the fair distribution of service policies underlying Section 307(b) of the Communications Act of 1934, as amended (47 U.S.C. Section 307(b)).</p> <p>An exhibit is required unless this question is not applicable.</p> | <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A [Exhibit 23] |
| PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED. | | |

Exhibits

Exhibit 1

Description: BACKGROUND EXPLANATION TO MINOR MODIFICATION

ON JULY 19, 2000 MINNESOTA PUBLIC RADIO (MPR), THE APPLICANT, FILED ITS INITIAL REQUEST FOR SPECIAL TEMPORARY AUTHORITY (STA) TO OPERATE KNOW AT A LOWER HEIGHT ON THE TOWER THAN ITS LICENSED HEIGHT. THE MOVE DOWN ON THE TOWER WAS DUE TO MPR'S LOSS OF ITS HIGHER TOWER HEIGHT BECAUSE OF THE TOWER OWNER'S NEED TO BE HIGHER ON THE TOWER BECAUSE OF HDTV. THE STA WAS GRANTED AND RENEWED NUMEROUS TIMES THROUGHOUT THE YEARS. THE MOST CURRENT STA EXPIRES NOVEMBER 4, 2010.

MPR NOW HAS WORKED OUT A SOLUTION WITH THE TOWER OWNER AND IN THIS MINOR MODIFICATION APPLICATION PROPOSES TO MOVE THE KNOW ANTENNA UP HIGHER THAN THE LOWER HEIGHT IT HAS BEEN OPERATING AT PURSUANT TO THE STA, BUT AT A SLIGHTLY LOWER HEIGHT THAN ITS LICENSED PARAMETERS.

Attachment 1

Exhibit 14

Description: EXHIBIT #14 COMMUNITY LICENSE

THIS SHOWS THE CURRENT LICENSED 60 DBU AS WELL AS THE SLIGHTLY SMALLER CONTOUR FOR THE MINOR MODIFICATION LOWER ON THE TOWER.

Attachment 14

| Description |
|---|
| Exhibit #14 showing current & proposed 60 dBu |

Attachment 15

Exhibit 16

Description: CONTOUR OVERLAP REQUIREMENTS

PLEASE SEE ATTACHED EXHIBIT. PLEASE NOTE THE OVERLAP WITH STATION KXLC, LA CRESCENT. THIS OVERLAP IS HISTORICAL. THE INSTANT PROPOSAL TO REDUCE THE ANTENNA HEIGHT ABOVE GROUND, MEAN SEA LEVEL AND AVERAGE TERRAIN, WHILE MAINTAINING ERP OF 100 KW, WILL REDUCE THE AMOUNT OF OVERLAP.

Attachment 16

| Description |
|---|
| Exhibit #16, Contour Overlap Requirements |

Attachment 22

| Description |
|-----------------------------------|
| RFR certification |

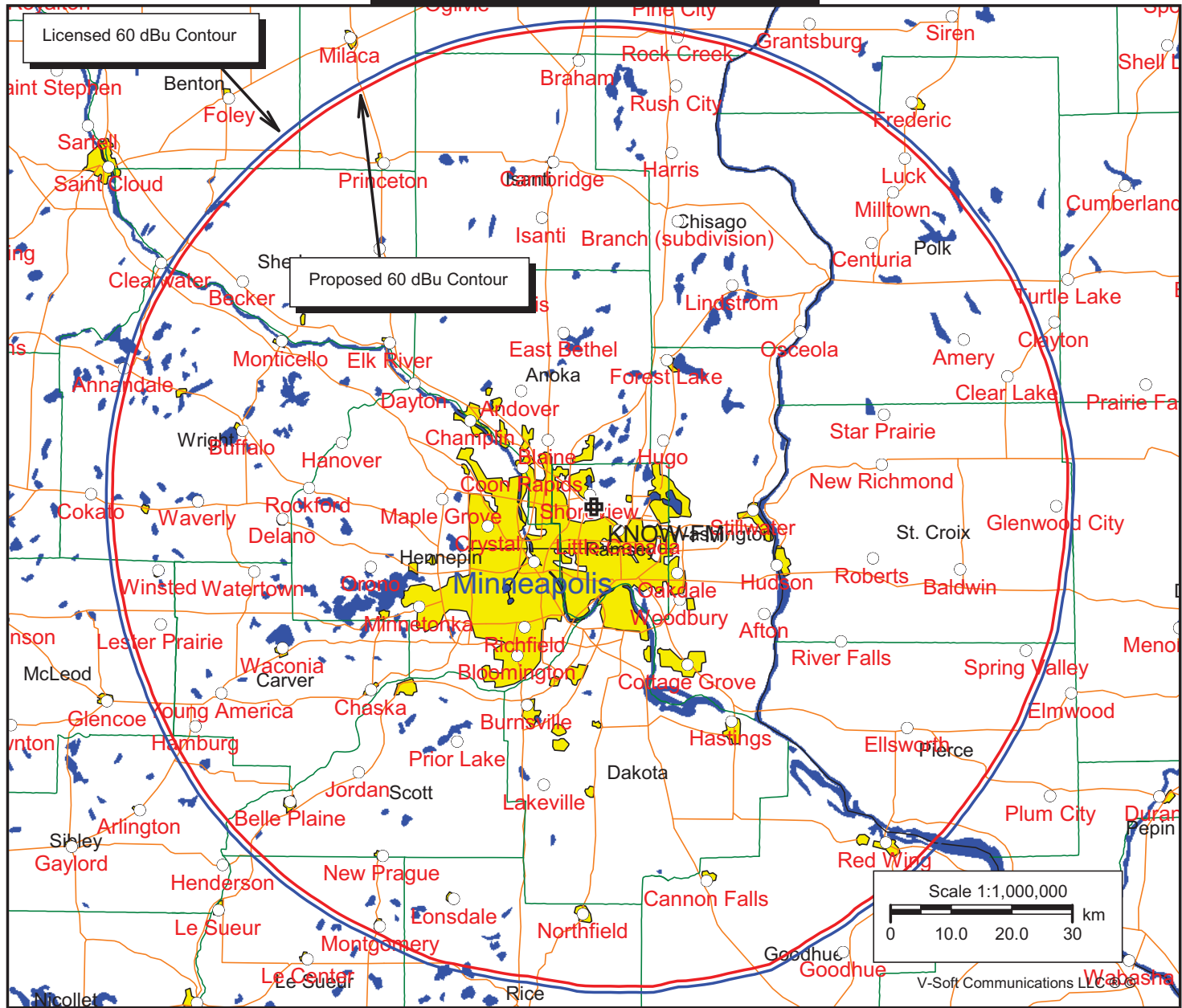
FCC 60 dBu F(50-50) Coverage Contour

KNOW-FM (Proposed)

BMLED19940420KA
 Latitude: 45-03-44 N
 Longitude: 093-08-21 W
 ERP: 100.00 kW
 Channel: 216
 Frequency: 91.1 MHz
 AMSL Height: 663.3 m
 Elevation: 303.9 m
 Horiz. Pattern: Omni
 Vert. Pattern: No

KNOW-FM

BMLED19940420KA
 Latitude: 45-03-44 N
 Longitude: 093-08-21 W
 ERP: 100.00 kW
 Channel: 216
 Frequency: 91.1 MHz
 AMSL Height: 677.0 m
 Elevation: 307.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: No



Doug Vernier Telecommunications Consultants
401 Main Street Suite 213, Cedar Falls, IA 50613

Minnesota Public Radio
KNOW Reduce Antenna Height
Average Protected F(50-50)= 78.91 km
Omni-directional

REFERENCE
45 03 44.0 N.
93 08 21.0 W.

CH# 216C0 - 91.1 MHz, Pwr= 100 kW, HAAT= 388.5 M, COR= 663.3 M

DISPLAY DATES
DATA 07-29-10
SEARCH 07-29-10

| CH CITY | CALL | TYPE STATE | ANT STATE | AZI <-- | DIST FILE # | LAT LNG | PWR(kW) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *IN* (Overlap in km) | *OUT* (Overlap in km) |
|------------|---------------------------------|---------------|--------------|----------------|---------------------------|--------------------------|--------------------|-------------------|---------------------|-------------------------|--------------------------|
| 216C | KNOW-FM Minneapolis-st. Paul | LIC | _CN | 0.0 0.0 | 0.0 BLED19940420KA | 45 03 44.0 93 08 21.0 | 100.000 400 | 183.2 677 | 80.1 | -262.2*< | -262.1*< |
| 216A | KXLC La Crescent | LIC | _CX | 134.3 315.5 | 198.1 BLED20090730ACK | 43 48 16.1 91 22 19.3 | 0.230 257 | 59.3 522 | 19.2 | 60.8 | -2.6< |
| 217A | WHEM Eau Claire | LIC | _CX | 104.0 285.1 | 131.9 BLED20030715ABI | 44 45 50.0 91 31 06.0 | 0.300 87 | 22.4 364 | 15.4 | 32.8 | 1.3 |
| 214A | WVSS Menomonie | LIC | DCX | 100.7 281.4 | 85.2 BLED20020903AFN | 44 54 56.0 92 04 34.0 | 0.590 130 | 1.6 449 | 14.8 | 5.7 | 59.2 |
| 218C3 | 1210394 Turtle Lake | APP | DVX | 56.9 237.6 | 88.1 BNPED20071012AHI | 45 29 27.0 92 11 33.0 | 20.000 100 | 3.7 473 | 31.3 | 6.6 | 45.6 |
| 215A | KKLW Willmar | LIC | _CX | 276.7 95.4 | 142.8 BLED20040204ABY | 45 11 52.0 94 56 58.0 | 0.400 129 | 24.4 491 | 16.3 | 39.0 | 8.5 |
| 216C | KTPR Fort Dodge | LIC | _CX | 202.6 21.8 | 269.5 BLED20070911ABL | 42 49 03.0 94 24 41.0 | 100.000 326 | 176.0 676 | 74.9 | 14.7 | 12.4 |
| 218C2 | 1224021 Barron | APP | _CX | 62.3 243.1 | 95.9 BNPED20071015ABH | 45 27 30.0 92 03 00.0 | 39.000 124 | 5.2 499 | 47.4 | 12.7 | 37.2 |
| 218C3 | KCFB St. Cloud | LIC | _C_ | 299.9 119.1 | 99.1 BLED19991213AAH | 45 30 02.0 94 14 31.0 | 15.000 106 | 4.0 435 | 39.5 | 15.4 | 48.1 |
| 218C2 | 1243847 Rice Lake | APP | DCX | 69.6 250.5 | 101.3 BNPED20071022AVW | 45 22 23.2 91 55 22.4 | 55.000 144 | 5.9 503 | 51.2 | 17.6 | 38.8 |
| 218A | 1212217 Turtle Lake | APP | _CX | 58.3 239.1 | 98.1 BNPED20071018BAV | 45 31 16.0 92 04 02.0 | 5.000 77 | 2.5 460 | 25.5 | 17.6 | 61.4 |
| 217C1 | KUWS Superior | LIC | _CN | 22.1 202.8 | 207.7 BLED19910122KA | 46 47 21.0 92 06 51.0 | 83.000 197 | 104.0 501 | 71.7 | 24.8 | 19.1 |
| 217A | KMSK Austin | LIC | _CN | 175.9 356.0 | 154.3 BLED19890831KA | 43 40 39.0 93 00 04.0 | 0.135 59 | 11.7 436 | 8.6 | 63.1 | 28.2 |
| 217C0 | KRSU Appleton | LIC | _CX | 274.0 92.0 | 224.8 BLED20071206ACC | 45 10 03.1 96 00 01.9 | 82.000 345 | 107.5 653 | 73.7 | 37.9 | 33.3 |
| 213C1 | KGAC St. Peter | LIC | _CN | 220.0 39.3 | 121.3 BLED19850401KB | 44 13 20.0 94 07 03.0 | 75.000 216 | 8.3 504 | 61.6 | 33.9 | 48.3 |
| 218C2 | KNGA St. Peter | LIC | _VN | 220.0 39.3 | 121.3 BLED19920303KA | 44 13 20.0 94 07 03.0 | 8.500 183 | 4.1 471 | 39.4 | 38.1 | 70.5 |

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone = 2, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside protected contour.

HOW TO READ THE FM COMPUTER PRINT-OUT

Full Service Stations

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. Contour distances are in kilometers and are predicted 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 difference in kilometers between of the reference station's protected contour and the data file station's interference contour at the closest point between the contours. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, "IN" column is a measure of incoming interference. Negative distances in this column indicate the presence of contour overlap. Listed antenna heights and power are those given in the FCC database. The column labeled "OUT " shows the greatest distance in kilometers of overlap or smallest of clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap.

Under the "AZI" column, the first row of numbers indicate the True North bearings from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station.

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

For I.F. relationships, some channel-six TV relationships and relationships with commercial channel stations providing clearance the minimum spacings values the "IN" and "OUT" columns can 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** (or lack of it) 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 call letters of stations meeting the minimum separation distances under the rules will be flagged by the characters "<<" appended to the right-hand side of the call sign. The "^" character appended to the call sign means the station has been "max-classed" according to the provisions of section 73.525 of the Rules.

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. 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 or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

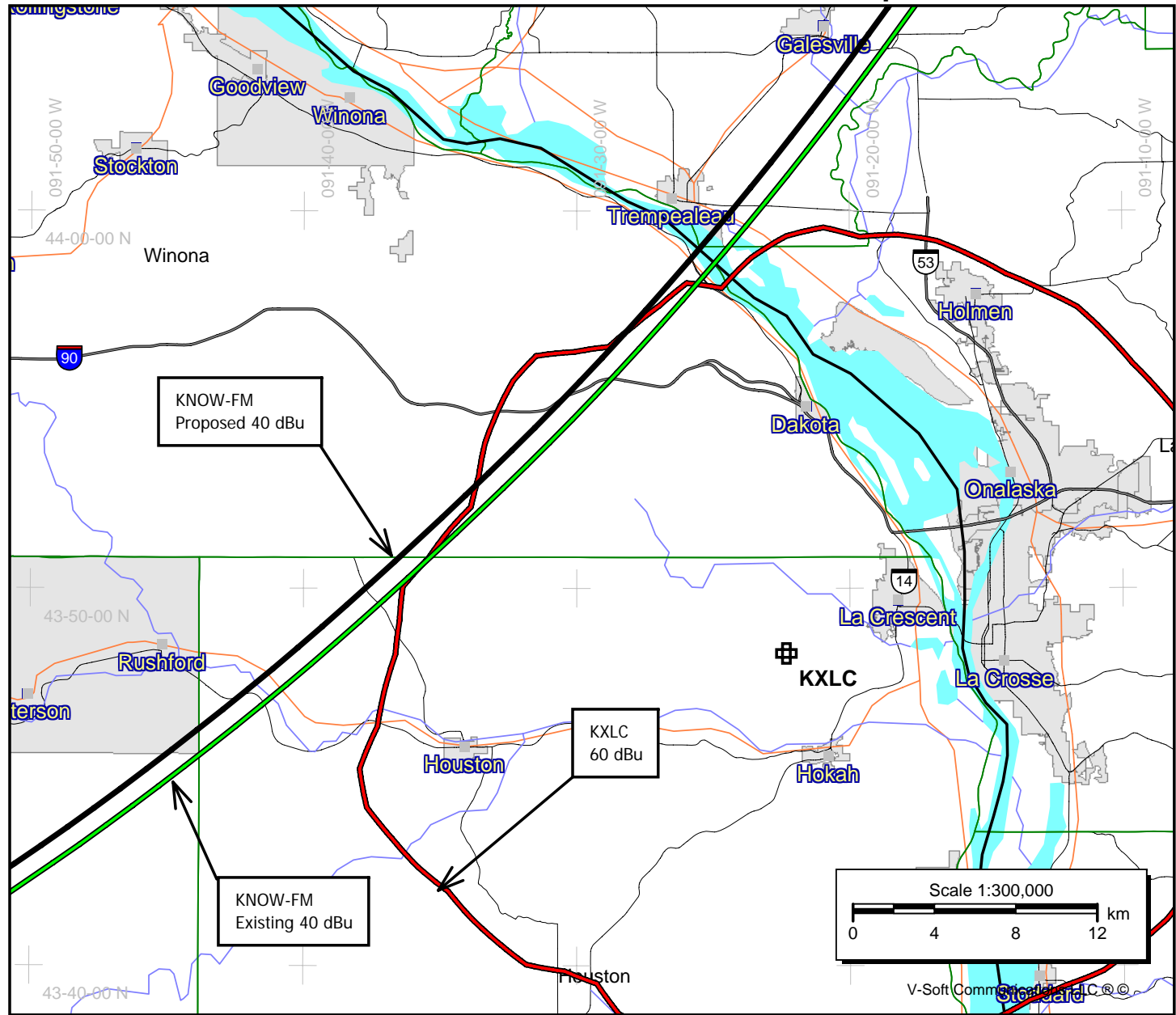
KNOW-FM - Overlap with station KXLC

KNOW-FM^{New}
 Latitude: 45-03-44 N
 Longitude: 093-08-21 W
 ERP: 100.00 kW
 Channel: 216
 Frequency: 91.1 MHz
 AMSL Height: 665.0 m
 HAAT: 389.49 m
 Horiz. Pattern: Omni

KNOW-FM
 BMLD19940420KA
 Latitude: 45-03-44 N
 Longitude: 093-08-21 W
 ERP: 100.00 kW
 Channel: 216
 Frequency: 91.1 MHz
 AMSL Height: 677.0 m
 HAAT: 400.0 m
 Horiz. Pattern: Omni

KXLC
 BLED20090730ACK
 Latitude: 43-48-16.10 N
 Longitude: 091-22-19.30 W
 ERP: 0.23 kW
 Channel: 216
 Frequency: 91.1 MHz
 AMSL Height: 522.0 m
 HAAT: 257.0 m
 Horiz. Pattern: Omni

7/29/2010



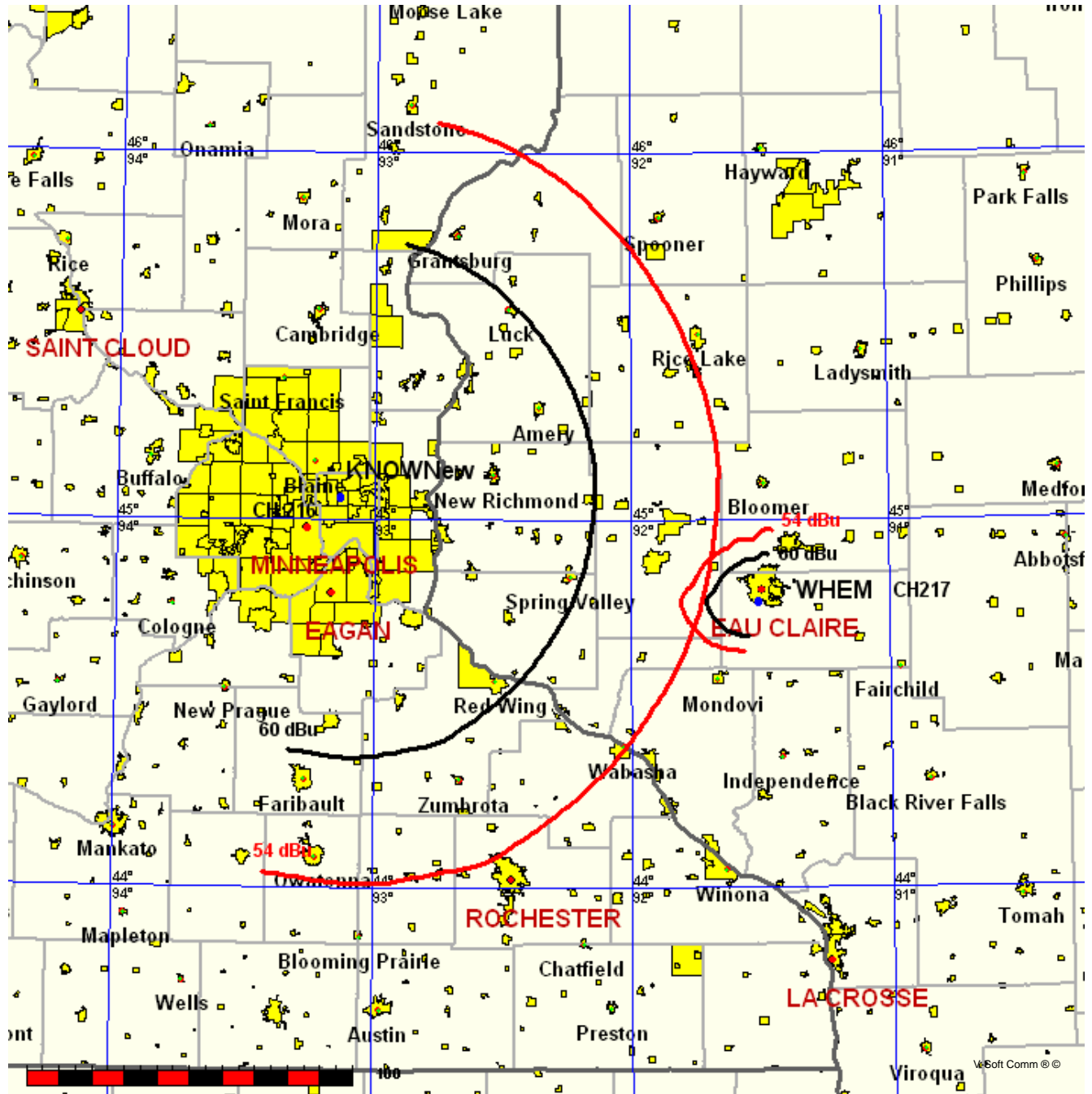
V-Soft Communication Consultants, LLC ©

Minnesota Public Radio
KNOW(New) vs. WHEM

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec
KNOWNew's Overlaps (In= 32.81 km, Out= 1.3 km)

KNOWNew CH 216 C0
Lat= 45 03 44.0, Lng= 93 08 21.0
100.0 kW 388.5 M HAAT, 663.3 M COR
Prot.= 60 dBu, Intef.= 54 dBu

WHEM CH 217 A BLED20030715ABI
Lat= 44 45 50.0, Lng= 91 31 06.0
0.3 kW 87 M HAAT, 364 M COR
Prot.= 60 dBu, Intef.= 54 dBu



KNOWNew

WHEM BLED20030715ABI

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Protected
 60 dBu

Channel = 217A
 Max ERP = 0.3 kW
 RCAMSL = 364 M
 N. Lat. 44 45 50.0
 W. Lng. 91 31 06.0
 Interfering
 54 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 044.0 | 100.0000 | 0382.4 | 078.5 | 321.2 | 000.3000 | 0090.3 | 115.6 | 20.13 | |
| 045.0 | 100.0000 | 0382.0 | 078.4 | 321.3 | 000.3000 | 0090.3 | 114.1 | 20.40 | |
| 046.0 | 100.0000 | 0381.9 | 078.4 | 321.4 | 000.3000 | 0090.3 | 112.7 | 20.64 | |
| 047.0 | 100.0000 | 0382.0 | 078.4 | 321.4 | 000.3000 | 0090.3 | 111.3 | 20.89 | |
| 048.0 | 100.0000 | 0381.9 | 078.4 | 321.5 | 000.3000 | 0090.3 | 110.0 | 21.15 | |
| 049.0 | 100.0000 | 0381.5 | 078.4 | 321.5 | 000.3000 | 0090.2 | 108.6 | 21.41 | |
| 050.0 | 100.0000 | 0380.7 | 078.3 | 321.5 | 000.3000 | 0090.3 | 107.3 | 21.68 | |
| 051.0 | 100.0000 | 0379.8 | 078.3 | 321.4 | 000.3000 | 0090.3 | 105.9 | 21.95 | |
| 052.0 | 100.0000 | 0378.9 | 078.2 | 321.4 | 000.3000 | 0090.3 | 104.5 | 22.22 | |
| 053.0 | 100.0000 | 0378.2 | 078.2 | 321.3 | 000.3000 | 0090.3 | 103.2 | 22.51 | |
| 054.0 | 100.0000 | 0377.6 | 078.1 | 321.2 | 000.3000 | 0090.3 | 101.8 | 22.79 | |
| 055.0 | 100.0000 | 0377.1 | 078.1 | 321.2 | 000.3000 | 0090.3 | 100.5 | 23.09 | |
| 056.0 | 100.0000 | 0376.8 | 078.0 | 321.1 | 000.3000 | 0090.3 | 099.1 | 23.39 | |
| 057.0 | 100.0000 | 0376.7 | 078.0 | 321.0 | 000.3000 | 0090.3 | 097.8 | 23.70 | |
| 058.0 | 100.0000 | 0376.7 | 078.0 | 320.9 | 000.3000 | 0090.3 | 096.5 | 24.02 | |
| 059.0 | 100.0000 | 0376.7 | 078.0 | 320.8 | 000.3000 | 0090.3 | 095.1 | 24.34 | |
| 060.0 | 100.0000 | 0376.8 | 078.0 | 320.6 | 000.3000 | 0090.3 | 093.8 | 24.67 | |
| 061.0 | 100.0000 | 0376.8 | 078.0 | 320.5 | 000.3000 | 0090.3 | 092.4 | 25.01 | |
| 062.0 | 100.0000 | 0376.7 | 078.0 | 320.3 | 000.3000 | 0090.4 | 091.1 | 25.35 | |
| 063.0 | 100.0000 | 0376.7 | 078.0 | 320.1 | 000.3000 | 0090.4 | 089.8 | 25.70 | |
| 064.0 | 100.0000 | 0376.7 | 078.0 | 319.9 | 000.3000 | 0090.5 | 088.5 | 26.05 | |
| 065.0 | 100.0000 | 0376.7 | 078.0 | 319.6 | 000.3000 | 0090.6 | 087.2 | 26.41 | |
| 066.0 | 100.0000 | 0376.6 | 078.0 | 319.4 | 000.3000 | 0090.7 | 085.9 | 26.77 | |
| 067.0 | 100.0000 | 0376.1 | 078.0 | 319.1 | 000.3000 | 0091.0 | 084.6 | 27.13 | |
| 068.0 | 100.0000 | 0375.4 | 077.9 | 318.7 | 000.3000 | 0091.3 | 083.3 | 27.49 | |
| 069.0 | 100.0000 | 0375.2 | 077.9 | 318.4 | 000.3000 | 0091.6 | 082.1 | 27.85 | |
| 070.0 | 100.0000 | 0375.3 | 077.9 | 318.0 | 000.3000 | 0091.8 | 080.8 | 28.21 | |
| 071.0 | 100.0000 | 0375.9 | 078.0 | 317.6 | 000.3000 | 0092.1 | 079.6 | 28.57 | |
| 072.0 | 100.0000 | 0376.6 | 078.0 | 317.3 | 000.3000 | 0092.3 | 078.3 | 28.92 | |
| 073.0 | 100.0000 | 0377.4 | 078.1 | 316.9 | 000.3000 | 0092.4 | 077.1 | 29.28 | |
| 074.0 | 100.0000 | 0377.9 | 078.1 | 316.4 | 000.3000 | 0092.5 | 075.8 | 29.62 | |
| 075.0 | 100.0000 | 0377.9 | 078.1 | 315.9 | 000.3000 | 0092.5 | 074.6 | 29.96 | |
| 076.0 | 100.0000 | 0377.7 | 078.1 | 315.4 | 000.3000 | 0092.5 | 073.5 | 30.28 | |
| 077.0 | 100.0000 | 0377.8 | 078.1 | 314.8 | 000.3000 | 0092.4 | 072.3 | 30.61 | |
| 078.0 | 100.0000 | 0378.2 | 078.2 | 314.2 | 000.3000 | 0092.3 | 071.2 | 30.93 | |
| 079.0 | 100.0000 | 0378.9 | 078.2 | 313.6 | 000.3000 | 0092.2 | 070.0 | 31.25 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 080.0 | 100.0000 | 0379.6 | 078.2 | 312.9 | 000.3000 | 0092.1 | 068.9 | 31.57 |
| 081.0 | 100.0000 | 0380.2 | 078.3 | 312.3 | 000.3000 | 0092.1 | 067.8 | 31.89 |
| 082.0 | 100.0000 | 0380.8 | 078.3 | 311.5 | 000.3000 | 0092.3 | 066.8 | 32.21 |
| 083.0 | 100.0000 | 0381.3 | 078.4 | 310.8 | 000.3000 | 0092.5 | 065.7 | 32.53 |
| 084.0 | 100.0000 | 0381.7 | 078.4 | 310.0 | 000.3000 | 0092.9 | 064.7 | 32.86 |
| 085.0 | 100.0000 | 0381.6 | 078.4 | 309.1 | 000.3000 | 0093.5 | 063.8 | 33.18 |
| 086.0 | 100.0000 | 0380.8 | 078.3 | 308.1 | 000.3000 | 0094.2 | 062.9 | 33.50 |
| 087.0 | 100.0000 | 0379.9 | 078.3 | 307.1 | 000.3000 | 0095.0 | 062.1 | 33.82 |
| 088.0 | 100.0000 | 0378.6 | 078.2 | 306.1 | 000.3000 | 0095.9 | 061.3 | 34.14 |
| 089.0 | 100.0000 | 0377.9 | 078.1 | 305.0 | 000.3000 | 0096.6 | 060.5 | 34.44 |
| 090.0 | 100.0000 | 0377.1 | 078.1 | 303.9 | 000.3000 | 0096.7 | 059.8 | 34.70 |
| 091.0 | 100.0000 | 0376.3 | 078.0 | 302.8 | 000.3000 | 0096.8 | 059.1 | 34.95 |
| 092.0 | 100.0000 | 0375.7 | 078.0 | 301.6 | 000.3000 | 0096.8 | 058.5 | 35.18 |
| 093.0 | 100.0000 | 0375.0 | 077.9 | 300.4 | 000.3000 | 0096.8 | 057.9 | 35.39 |
| 094.0 | 100.0000 | 0374.6 | 077.9 | 299.1 | 000.3000 | 0096.8 | 057.4 | 35.59 |
| 095.0 | 100.0000 | 0374.0 | 077.8 | 297.9 | 000.3000 | 0097.1 | 056.9 | 35.80 |
| 096.0 | 100.0000 | 0373.4 | 077.8 | 296.6 | 000.3000 | 0097.5 | 056.4 | 35.99 |
| 097.0 | 100.0000 | 0373.1 | 077.8 | 295.3 | 000.3000 | 0097.9 | 056.0 | 36.17 |
| 098.0 | 100.0000 | 0373.1 | 077.8 | 293.9 | 000.3000 | 0098.3 | 055.6 | 36.34 |
| 099.0 | 100.0000 | 0373.2 | 077.8 | 292.6 | 000.3000 | 0098.9 | 055.3 | 36.51 |
| 100.0 | 100.0000 | 0373.3 | 077.8 | 291.2 | 000.3000 | 0099.5 | 055.0 | 36.66 |
| 101.0 | 100.0000 | 0373.8 | 077.8 | 289.8 | 000.3000 | 0100.2 | 054.7 | 36.80 |
| 102.0 | 100.0000 | 0374.4 | 077.9 | 288.4 | 000.3000 | 0100.9 | 054.5 | 36.93 |
| 103.0 | 100.0000 | 0375.0 | 077.9 | 286.9 | 000.3000 | 0101.6 | 054.4 | 37.03 |
| 104.0 | 100.0000 | 0375.6 | 078.0 | 285.5 | 000.3000 | 0102.4 | 054.3 | 37.12 |
| 105.0 | 100.0000 | 0376.0 | 078.0 | 284.1 | 000.3000 | 0103.6 | 054.3 | 37.21 |
| 106.0 | 100.0000 | 0376.1 | 078.0 | 282.6 | 000.3000 | 0105.9 | 054.3 | 37.34 |
| 107.0 | 100.0000 | 0376.1 | 078.0 | 281.2 | 000.3000 | 0109.6 | 054.5 | 37.53 |
| 108.0 | 100.0000 | 0376.0 | 078.0 | 279.8 | 000.3000 | 0113.5 | 054.7 | 37.70 |
| 109.0 | 100.0000 | 0375.8 | 078.0 | 278.4 | 000.3000 | 0117.3 | 054.9 | 37.83 |
| 110.0 | 100.0000 | 0375.7 | 078.0 | 277.0 | 000.3000 | 0121.6 | 055.2 | 37.95 |
| 111.0 | 100.0000 | 0375.8 | 078.0 | 275.6 | 000.3000 | 0125.1 | 055.6 | 38.01 |
| 112.0 | 100.0000 | 0376.3 | 078.0 | 274.3 | 000.3000 | 0128.2 | 055.9 | 38.04 |
| 113.0 | 100.0000 | 0376.8 | 078.0 | 273.0 | 000.3000 | 0130.4 | 056.3 | 38.00 |
| 114.0 | 100.0000 | 0377.4 | 078.1 | 271.7 | 000.3000 | 0131.3 | 056.8 | 37.87 |
| 115.0 | 100.0000 | 0377.9 | 078.1 | 270.4 | 000.3000 | 0131.8 | 057.3 | 37.70 |
| 116.0 | 100.0000 | 0378.2 | 078.1 | 269.2 | 000.3000 | 0132.3 | 057.9 | 37.50 |
| 117.0 | 100.0000 | 0378.1 | 078.1 | 268.0 | 000.3000 | 0132.8 | 058.6 | 37.29 |
| 118.0 | 100.0000 | 0377.8 | 078.1 | 266.9 | 000.3000 | 0132.9 | 059.3 | 37.03 |
| 119.0 | 100.0000 | 0377.6 | 078.1 | 265.8 | 000.3000 | 0132.3 | 060.1 | 36.72 |
| 120.0 | 100.0000 | 0377.4 | 078.1 | 264.7 | 000.3000 | 0131.4 | 060.9 | 36.39 |
| 121.0 | 100.0000 | 0377.2 | 078.1 | 263.7 | 000.3000 | 0130.2 | 061.7 | 36.03 |
| 122.0 | 100.0000 | 0376.8 | 078.0 | 262.7 | 000.3000 | 0128.7 | 062.6 | 35.64 |
| 123.0 | 100.0000 | 0376.4 | 078.0 | 261.8 | 000.3000 | 0127.3 | 063.5 | 35.26 |
| 124.0 | 100.0000 | 0376.3 | 078.0 | 260.9 | 000.3000 | 0126.3 | 064.4 | 34.89 |
| 125.0 | 100.0000 | 0376.5 | 078.0 | 260.1 | 000.3000 | 0125.2 | 065.4 | 34.53 |
| 126.0 | 100.0000 | 0377.2 | 078.1 | 259.2 | 000.3000 | 0124.2 | 066.3 | 34.17 |
| 127.0 | 100.0000 | 0378.1 | 078.1 | 258.4 | 000.3000 | 0123.2 | 067.3 | 33.81 |
| 128.0 | 100.0000 | 0379.2 | 078.2 | 257.6 | 000.3000 | 0122.3 | 068.3 | 33.44 |
| 129.0 | 100.0000 | 0380.2 | 078.3 | 256.8 | 000.3000 | 0121.4 | 069.3 | 33.08 |
| 130.0 | 100.0000 | 0381.2 | 078.4 | 256.1 | 000.3000 | 0120.6 | 070.4 | 32.71 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 131.0 | 100.0000 | 0382.1 | 078.4 | 255.5 | 000.3000 | 0119.8 | 071.5 | 32.33 |
| 132.0 | 100.0000 | 0383.0 | 078.5 | 254.8 | 000.3000 | 0118.9 | 072.6 | 31.95 |
| 133.0 | 100.0000 | 0383.8 | 078.6 | 254.2 | 000.3000 | 0117.9 | 073.7 | 31.56 |
| 134.0 | 100.0000 | 0384.5 | 078.6 | 253.7 | 000.3000 | 0117.0 | 074.9 | 31.16 |
| 135.0 | 100.0000 | 0384.9 | 078.6 | 253.2 | 000.3000 | 0116.0 | 076.1 | 30.76 |
| 136.0 | 100.0000 | 0385.3 | 078.7 | 252.7 | 000.3000 | 0115.2 | 077.3 | 30.36 |
| 137.0 | 100.0000 | 0385.9 | 078.7 | 252.2 | 000.3000 | 0114.3 | 078.6 | 29.96 |
| 138.0 | 100.0000 | 0386.7 | 078.8 | 251.8 | 000.3000 | 0113.7 | 079.8 | 29.57 |
| 139.0 | 100.0000 | 0387.5 | 078.8 | 251.4 | 000.3000 | 0113.1 | 081.0 | 29.19 |
| 140.0 | 100.0000 | 0388.3 | 078.9 | 251.0 | 000.3000 | 0112.7 | 082.3 | 28.81 |
| 141.0 | 100.0000 | 0388.9 | 078.9 | 250.6 | 000.3000 | 0112.3 | 083.6 | 28.42 |
| 142.0 | 100.0000 | 0389.3 | 079.0 | 250.3 | 000.3000 | 0112.0 | 084.9 | 28.04 |
| 143.0 | 100.0000 | 0389.9 | 079.0 | 250.0 | 000.3000 | 0111.6 | 086.2 | 27.65 |
| 144.0 | 100.0000 | 0390.3 | 079.0 | 249.8 | 000.3000 | 0111.4 | 087.5 | 27.27 |
| 145.0 | 100.0000 | 0390.5 | 079.1 | 249.5 | 000.3000 | 0111.1 | 088.9 | 26.89 |
| 146.0 | 100.0000 | 0390.8 | 079.1 | 249.3 | 000.3000 | 0110.9 | 090.2 | 26.51 |
| 147.0 | 100.0000 | 0392.2 | 079.2 | 249.1 | 000.3000 | 0110.7 | 091.5 | 26.13 |
| 148.0 | 100.0000 | 0394.2 | 079.3 | 248.8 | 000.3000 | 0110.4 | 092.9 | 25.77 |
| 149.0 | 100.0000 | 0395.6 | 079.4 | 248.6 | 000.3000 | 0110.2 | 094.2 | 25.40 |
| 150.0 | 100.0000 | 0396.7 | 079.5 | 248.4 | 000.3000 | 0110.0 | 095.6 | 25.04 |
| 151.0 | 100.0000 | 0397.7 | 079.6 | 248.3 | 000.3000 | 0109.9 | 097.0 | 24.69 |
| 152.0 | 100.0000 | 0399.1 | 079.7 | 248.2 | 000.3000 | 0109.7 | 098.3 | 24.34 |
| 153.0 | 100.0000 | 0400.9 | 079.8 | 248.0 | 000.3000 | 0109.6 | 099.7 | 24.00 |
| 154.0 | 100.0000 | 0403.6 | 080.0 | 247.8 | 000.3000 | 0109.3 | 101.1 | 23.67 |
| 155.0 | 100.0000 | 0406.7 | 080.3 | 247.7 | 000.3000 | 0109.1 | 102.5 | 23.35 |
| 156.0 | 100.0000 | 0409.3 | 080.5 | 247.6 | 000.3000 | 0109.0 | 103.9 | 23.03 |
| 157.0 | 100.0000 | 0411.2 | 080.6 | 247.5 | 000.3000 | 0108.8 | 105.3 | 22.72 |
| 158.0 | 100.0000 | 0412.1 | 080.7 | 247.5 | 000.3000 | 0108.8 | 106.7 | 22.42 |
| 159.0 | 100.0000 | 0411.9 | 080.6 | 247.5 | 000.3000 | 0108.9 | 108.1 | 22.14 |
| 160.0 | 100.0000 | 0410.8 | 080.6 | 247.6 | 000.3000 | 0109.0 | 109.5 | 21.86 |
| 161.0 | 100.0000 | 0409.0 | 080.4 | 247.7 | 000.3000 | 0109.1 | 110.9 | 21.59 |
| 162.0 | 100.0000 | 0406.6 | 080.2 | 247.8 | 000.3000 | 0109.3 | 112.3 | 21.34 |
| 163.0 | 100.0000 | 0404.0 | 080.1 | 248.0 | 000.3000 | 0109.6 | 113.7 | 21.09 |

07-29-2010 FCC NGDC 30 Sec Terrain Data

WHEM BLED20030715ABI

KNOWNew

Channel = 217A
 Max ERP = 0.3 kW
 RCAMSL = 364 M
 N. Lat. 44 45 50.0
 W. Lng. 91 31 06.0
 Protected
 60 dBu

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Interfering
 54 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 225.0 | 000.3000 | 0088.2 | 012.7 | 109.0 | 100.0000 | 0375.8 | 126.0 | 51.33 | |
| 226.0 | 000.3000 | 0090.0 | 012.8 | 109.0 | 100.0000 | 0375.8 | 125.8 | 51.39 | |
| 227.0 | 000.3000 | 0091.2 | 012.9 | 109.0 | 100.0000 | 0375.8 | 125.5 | 51.45 | |
| 228.0 | 000.3000 | 0092.1 | 012.9 | 109.0 | 100.0000 | 0375.8 | 125.3 | 51.51 | |
| 229.0 | 000.3000 | 0092.8 | 013.0 | 108.9 | 100.0000 | 0375.9 | 125.1 | 51.56 | |
| 230.0 | 000.3000 | 0093.4 | 013.0 | 108.9 | 100.0000 | 0375.9 | 124.9 | 51.62 | |
| 231.0 | 000.3000 | 0093.9 | 013.0 | 108.9 | 100.0000 | 0375.9 | 124.7 | 51.67 | |
| 232.0 | 000.3000 | 0094.5 | 013.1 | 108.8 | 100.0000 | 0375.9 | 124.4 | 51.73 | |
| 233.0 | 000.3000 | 0095.4 | 013.1 | 108.8 | 100.0000 | 0375.9 | 124.2 | 51.78 | |
| 234.0 | 000.3000 | 0096.5 | 013.2 | 108.8 | 100.0000 | 0375.9 | 124.0 | 51.84 | |
| 235.0 | 000.3000 | 0097.4 | 013.3 | 108.7 | 100.0000 | 0375.9 | 123.8 | 51.90 | |
| 236.0 | 000.3000 | 0097.7 | 013.3 | 108.7 | 100.0000 | 0375.9 | 123.6 | 51.95 | |
| 237.0 | 000.3000 | 0097.7 | 013.3 | 108.6 | 100.0000 | 0375.9 | 123.4 | 52.00 | |
| 238.0 | 000.3000 | 0097.9 | 013.3 | 108.5 | 100.0000 | 0375.9 | 123.2 | 52.05 | |
| 239.0 | 000.3000 | 0098.5 | 013.3 | 108.5 | 100.0000 | 0375.9 | 123.0 | 52.10 | |
| 240.0 | 000.3000 | 0099.4 | 013.4 | 108.4 | 100.0000 | 0376.0 | 122.8 | 52.16 | |
| 241.0 | 000.3000 | 0100.4 | 013.5 | 108.4 | 100.0000 | 0376.0 | 122.5 | 52.21 | |
| 242.0 | 000.3000 | 0101.4 | 013.5 | 108.3 | 100.0000 | 0376.0 | 122.3 | 52.27 | |
| 243.0 | 000.3000 | 0102.4 | 013.6 | 108.3 | 100.0000 | 0376.0 | 122.1 | 52.32 | |
| 244.0 | 000.3000 | 0103.5 | 013.7 | 108.2 | 100.0000 | 0376.0 | 121.9 | 52.38 | |
| 245.0 | 000.3000 | 0104.9 | 013.8 | 108.2 | 100.0000 | 0376.0 | 121.6 | 52.44 | |
| 246.0 | 000.3000 | 0106.5 | 013.9 | 108.1 | 100.0000 | 0376.0 | 121.4 | 52.50 | |
| 247.0 | 000.3000 | 0108.1 | 014.0 | 108.1 | 100.0000 | 0376.0 | 121.2 | 52.56 | |
| 248.0 | 000.3000 | 0109.5 | 014.1 | 108.0 | 100.0000 | 0376.0 | 120.9 | 52.62 | |
| 249.0 | 000.3000 | 0110.6 | 014.2 | 108.0 | 100.0000 | 0376.0 | 120.7 | 52.68 | |
| 250.0 | 000.3000 | 0111.6 | 014.2 | 107.9 | 100.0000 | 0376.0 | 120.5 | 52.73 | |
| 251.0 | 000.3000 | 0112.7 | 014.3 | 107.8 | 100.0000 | 0376.0 | 120.3 | 52.79 | |
| 252.0 | 000.3000 | 0114.0 | 014.4 | 107.7 | 100.0000 | 0376.0 | 120.1 | 52.84 | |
| 253.0 | 000.3000 | 0115.7 | 014.5 | 107.7 | 100.0000 | 0376.1 | 119.8 | 52.90 | |
| 254.0 | 000.3000 | 0117.6 | 014.6 | 107.6 | 100.0000 | 0376.1 | 119.6 | 52.96 | |
| 255.0 | 000.3000 | 0119.2 | 014.7 | 107.5 | 100.0000 | 0376.1 | 119.4 | 53.02 | |
| 256.0 | 000.3000 | 0120.5 | 014.8 | 107.5 | 100.0000 | 0376.1 | 119.2 | 53.08 | |
| 257.0 | 000.3000 | 0121.6 | 014.9 | 107.4 | 100.0000 | 0376.1 | 119.0 | 53.13 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 258.0 | 000.3000 | 0122.7 | 014.9 | 107.3 | 100.0000 | 0376.1 | 118.8 | 53.18 |
| 259.0 | 000.3000 | 0124.0 | 015.0 | 107.2 | 100.0000 | 0376.1 | 118.6 | 53.23 |
| 260.0 | 000.3000 | 0125.2 | 015.1 | 107.1 | 100.0000 | 0376.1 | 118.4 | 53.27 |
| 261.0 | 000.3000 | 0126.3 | 015.1 | 107.0 | 100.0000 | 0376.1 | 118.2 | 53.32 |
| 262.0 | 000.3000 | 0127.6 | 015.2 | 106.9 | 100.0000 | 0376.1 | 118.0 | 53.37 |
| 263.0 | 000.3000 | 0129.1 | 015.3 | 106.8 | 100.0000 | 0376.1 | 117.8 | 53.42 |
| 264.0 | 000.3000 | 0130.6 | 015.4 | 106.7 | 100.0000 | 0376.1 | 117.6 | 53.47 |
| 265.0 | 000.3000 | 0131.7 | 015.5 | 106.6 | 100.0000 | 0376.1 | 117.4 | 53.52 |
| 266.0 | 000.3000 | 0132.4 | 015.5 | 106.5 | 100.0000 | 0376.1 | 117.3 | 53.56 |
| 267.0 | 000.3000 | 0132.9 | 015.6 | 106.4 | 100.0000 | 0376.1 | 117.2 | 53.59 |
| 268.0 | 000.3000 | 0132.8 | 015.6 | 106.2 | 100.0000 | 0376.1 | 117.1 | 53.61 |
| 269.0 | 000.3000 | 0132.4 | 015.5 | 106.1 | 100.0000 | 0376.1 | 117.0 | 53.62 |
| 270.0 | 000.3000 | 0131.9 | 015.5 | 106.0 | 100.0000 | 0376.1 | 117.0 | 53.64 |
| 271.0 | 000.3000 | 0131.5 | 015.5 | 105.8 | 100.0000 | 0376.1 | 116.9 | 53.65 |
| 272.0 | 000.3000 | 0131.2 | 015.5 | 105.7 | 100.0000 | 0376.1 | 116.9 | 53.66 |
| 273.0 | 000.3000 | 0130.3 | 015.4 | 105.6 | 100.0000 | 0376.1 | 116.8 | 53.67 |
| 274.0 | 000.3000 | 0128.7 | 015.3 | 105.4 | 100.0000 | 0376.1 | 116.9 | 53.66 |
| 275.0 | 000.3000 | 0126.7 | 015.2 | 105.3 | 100.0000 | 0376.1 | 117.0 | 53.64 |
| 276.0 | 000.3000 | 0124.2 | 015.0 | 105.2 | 100.0000 | 0376.0 | 117.1 | 53.61 |
| 277.0 | 000.3000 | 0121.6 | 014.9 | 105.0 | 100.0000 | 0376.0 | 117.2 | 53.58 |
| 278.0 | 000.3000 | 0118.5 | 014.7 | 104.9 | 100.0000 | 0376.0 | 117.3 | 53.54 |
| 279.0 | 000.3000 | 0115.6 | 014.5 | 104.7 | 100.0000 | 0375.9 | 117.5 | 53.50 |
| 280.0 | 000.3000 | 0112.9 | 014.3 | 104.6 | 100.0000 | 0375.9 | 117.6 | 53.46 |
| 281.0 | 000.3000 | 0110.1 | 014.1 | 104.5 | 100.0000 | 0375.8 | 117.8 | 53.42 |
| 282.0 | 000.3000 | 0107.5 | 014.0 | 104.4 | 100.0000 | 0375.8 | 117.9 | 53.38 |
| 283.0 | 000.3000 | 0105.2 | 013.8 | 104.2 | 100.0000 | 0375.7 | 118.1 | 53.34 |
| 284.0 | 000.3000 | 0103.7 | 013.7 | 104.1 | 100.0000 | 0375.7 | 118.2 | 53.32 |
| 285.0 | 000.3000 | 0102.7 | 013.6 | 104.0 | 100.0000 | 0375.6 | 118.2 | 53.30 |
| 286.0 | 000.3000 | 0102.1 | 013.6 | 103.9 | 100.0000 | 0375.5 | 118.3 | 53.28 |
| 287.0 | 000.3000 | 0101.6 | 013.6 | 103.8 | 100.0000 | 0375.5 | 118.3 | 53.27 |
| 288.0 | 000.3000 | 0101.1 | 013.5 | 103.7 | 100.0000 | 0375.4 | 118.4 | 53.26 |
| 289.0 | 000.3000 | 0100.6 | 013.5 | 103.5 | 100.0000 | 0375.3 | 118.4 | 53.24 |
| 290.0 | 000.3000 | 0100.1 | 013.5 | 103.4 | 100.0000 | 0375.3 | 118.5 | 53.23 |
| 291.0 | 000.3000 | 0099.6 | 013.4 | 103.3 | 100.0000 | 0375.2 | 118.5 | 53.21 |
| 292.0 | 000.3000 | 0099.1 | 013.4 | 103.2 | 100.0000 | 0375.2 | 118.6 | 53.19 |
| 293.0 | 000.3000 | 0098.7 | 013.4 | 103.1 | 100.0000 | 0375.1 | 118.6 | 53.18 |
| 294.0 | 000.3000 | 0098.3 | 013.3 | 103.0 | 100.0000 | 0375.0 | 118.7 | 53.16 |
| 295.0 | 000.3000 | 0098.0 | 013.3 | 102.9 | 100.0000 | 0375.0 | 118.8 | 53.14 |
| 296.0 | 000.3000 | 0097.7 | 013.3 | 102.8 | 100.0000 | 0374.9 | 118.8 | 53.12 |
| 297.0 | 000.3000 | 0097.4 | 013.3 | 102.7 | 100.0000 | 0374.9 | 118.9 | 53.10 |
| 298.0 | 000.3000 | 0097.1 | 013.3 | 102.6 | 100.0000 | 0374.8 | 119.0 | 53.08 |
| 299.0 | 000.3000 | 0096.9 | 013.2 | 102.5 | 100.0000 | 0374.7 | 119.0 | 53.06 |
| 300.0 | 000.3000 | 0096.8 | 013.2 | 102.4 | 100.0000 | 0374.7 | 119.1 | 53.04 |
| 301.0 | 000.3000 | 0096.8 | 013.2 | 102.2 | 100.0000 | 0374.6 | 119.2 | 53.02 |
| 302.0 | 000.3000 | 0096.8 | 013.2 | 102.1 | 100.0000 | 0374.5 | 119.3 | 53.00 |
| 303.0 | 000.3000 | 0096.8 | 013.2 | 102.0 | 100.0000 | 0374.5 | 119.3 | 52.98 |
| 304.0 | 000.3000 | 0096.7 | 013.2 | 101.9 | 100.0000 | 0374.4 | 119.4 | 52.95 |
| 305.0 | 000.3000 | 0096.6 | 013.2 | 101.8 | 100.0000 | 0374.3 | 119.5 | 52.93 |
| 306.0 | 000.3000 | 0096.0 | 013.2 | 101.7 | 100.0000 | 0374.3 | 119.6 | 52.89 |
| 307.0 | 000.3000 | 0095.1 | 013.1 | 101.7 | 100.0000 | 0374.2 | 119.8 | 52.85 |
| 308.0 | 000.3000 | 0094.3 | 013.1 | 101.6 | 100.0000 | 0374.1 | 119.9 | 52.81 |

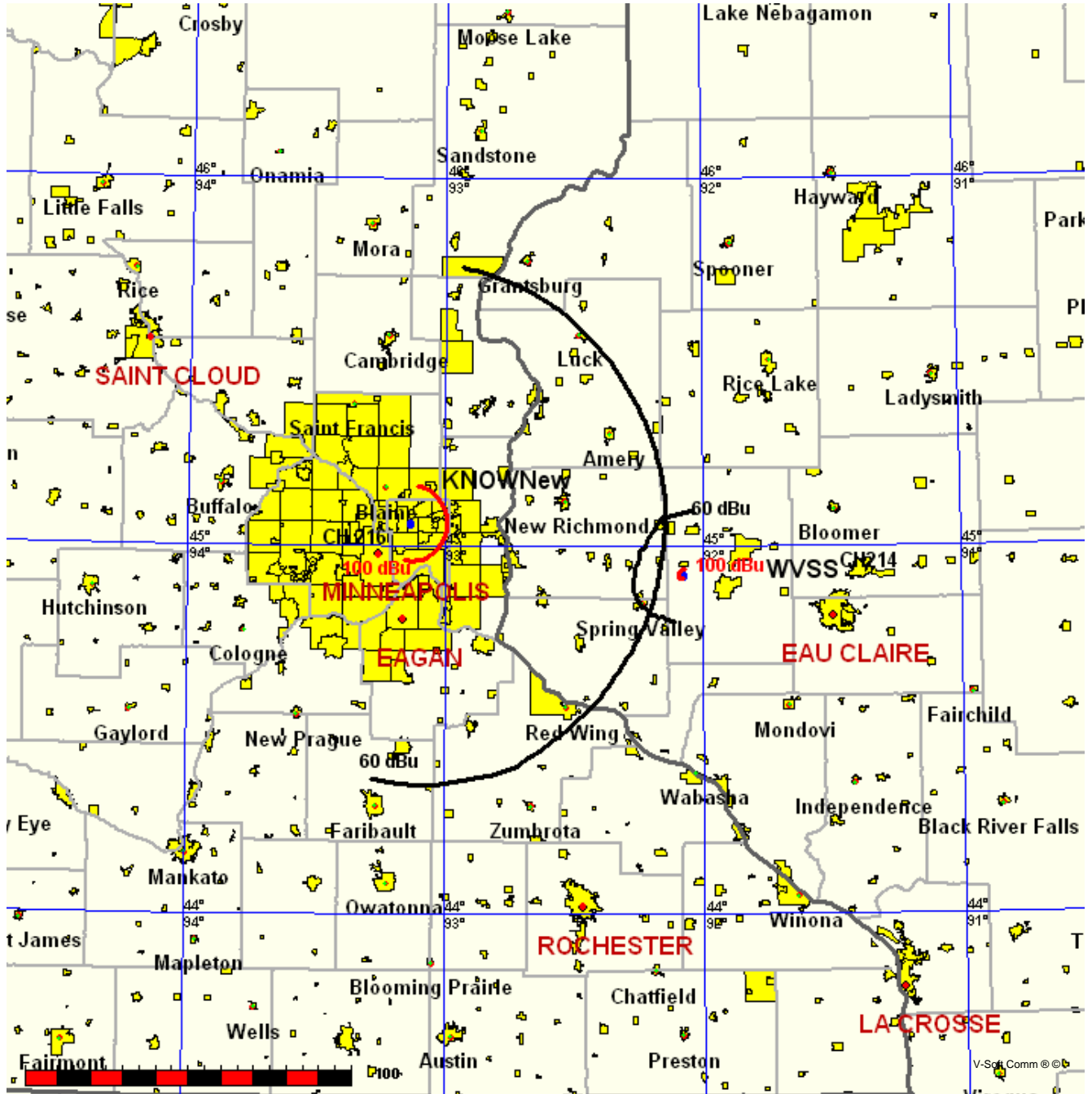
| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 309.0 | 000.3000 | 0093.5 | 013.0 | 101.5 | 100.0000 | 0374.1 | 120.1 | 52.78 |
| 310.0 | 000.3000 | 0092.9 | 013.0 | 101.4 | 100.0000 | 0374.0 | 120.2 | 52.74 |
| 311.0 | 000.3000 | 0092.4 | 012.9 | 101.3 | 100.0000 | 0374.0 | 120.4 | 52.70 |
| 312.0 | 000.3000 | 0092.2 | 012.9 | 101.2 | 100.0000 | 0373.9 | 120.5 | 52.67 |
| 313.0 | 000.3000 | 0092.1 | 012.9 | 101.1 | 100.0000 | 0373.9 | 120.6 | 52.64 |
| 314.0 | 000.3000 | 0092.2 | 012.9 | 101.0 | 100.0000 | 0373.8 | 120.7 | 52.61 |
| 315.0 | 000.3000 | 0092.4 | 012.9 | 100.9 | 100.0000 | 0373.7 | 120.8 | 52.58 |
| 316.0 | 000.3000 | 0092.5 | 012.9 | 100.8 | 100.0000 | 0373.7 | 120.9 | 52.54 |
| 317.0 | 000.3000 | 0092.4 | 012.9 | 100.8 | 100.0000 | 0373.6 | 121.1 | 52.51 |
| 318.0 | 000.3000 | 0091.8 | 012.9 | 100.7 | 100.0000 | 0373.6 | 121.2 | 52.47 |
| 319.0 | 000.3000 | 0091.0 | 012.8 | 100.6 | 100.0000 | 0373.6 | 121.4 | 52.42 |
| 320.0 | 000.3000 | 0090.5 | 012.8 | 100.5 | 100.0000 | 0373.5 | 121.6 | 52.38 |
| 321.0 | 000.3000 | 0090.3 | 012.8 | 100.5 | 100.0000 | 0373.5 | 121.7 | 52.34 |
| 322.0 | 000.3000 | 0090.2 | 012.8 | 100.4 | 100.0000 | 0373.5 | 121.9 | 52.30 |
| 323.0 | 000.3000 | 0090.0 | 012.8 | 100.3 | 100.0000 | 0373.4 | 122.0 | 52.26 |
| 324.0 | 000.3000 | 0089.8 | 012.8 | 100.2 | 100.0000 | 0373.4 | 122.2 | 52.22 |
| 325.0 | 000.3000 | 0089.6 | 012.7 | 100.2 | 100.0000 | 0373.4 | 122.4 | 52.17 |
| 326.0 | 000.3000 | 0089.2 | 012.7 | 100.1 | 100.0000 | 0373.4 | 122.5 | 52.13 |
| 327.0 | 000.3000 | 0088.6 | 012.7 | 100.0 | 100.0000 | 0373.3 | 122.7 | 52.08 |
| 328.0 | 000.3000 | 0088.0 | 012.6 | 100.0 | 100.0000 | 0373.3 | 122.9 | 52.03 |
| 329.0 | 000.3000 | 0087.4 | 012.6 | 099.9 | 100.0000 | 0373.3 | 123.1 | 51.98 |
| 330.0 | 000.3000 | 0086.9 | 012.6 | 099.9 | 100.0000 | 0373.3 | 123.3 | 51.94 |
| 331.0 | 000.3000 | 0087.1 | 012.6 | 099.8 | 100.0000 | 0373.3 | 123.4 | 51.90 |
| 332.0 | 000.3000 | 0087.5 | 012.6 | 099.7 | 100.0000 | 0373.3 | 123.6 | 51.86 |
| 333.0 | 000.3000 | 0088.3 | 012.7 | 099.6 | 100.0000 | 0373.3 | 123.7 | 51.82 |
| 334.0 | 000.3000 | 0089.2 | 012.7 | 099.6 | 100.0000 | 0373.2 | 123.9 | 51.79 |
| 335.0 | 000.3000 | 0090.0 | 012.8 | 099.5 | 100.0000 | 0373.2 | 124.0 | 51.75 |
| 336.0 | 000.3000 | 0090.9 | 012.8 | 099.4 | 100.0000 | 0373.2 | 124.2 | 51.71 |
| 337.0 | 000.3000 | 0092.0 | 012.9 | 099.3 | 100.0000 | 0373.2 | 124.3 | 51.67 |
| 338.0 | 000.3000 | 0093.1 | 013.0 | 099.2 | 100.0000 | 0373.2 | 124.5 | 51.64 |
| 339.0 | 000.3000 | 0093.8 | 013.0 | 099.1 | 100.0000 | 0373.2 | 124.6 | 51.59 |
| 340.0 | 000.3000 | 0094.2 | 013.1 | 099.1 | 100.0000 | 0373.2 | 124.8 | 51.55 |
| 341.0 | 000.3000 | 0094.2 | 013.1 | 099.0 | 100.0000 | 0373.2 | 125.0 | 51.50 |
| 342.0 | 000.3000 | 0094.1 | 013.0 | 099.0 | 100.0000 | 0373.2 | 125.2 | 51.45 |
| 343.0 | 000.3000 | 0093.8 | 013.0 | 098.9 | 100.0000 | 0373.2 | 125.4 | 51.39 |
| 344.0 | 000.3000 | 0093.3 | 013.0 | 098.9 | 100.0000 | 0373.2 | 125.6 | 51.34 |

Minnesota Public Radio
KNOW(New) vs. WVSS

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec
KNOWNew's Overlaps (In= 5.75 km, Out= 59.21 km)

KNOWNew CH 216 C0
Lat= 45 03 44.0, Lng= 93 08 21.0
100.0 kW 388.5 M HAAT, 663.3 M COR
Prot.= 60 dBu, Intef.= 100 dBu

WVSS CH 214 A DA BLED20020903AFN
Lat= 44 54 56.0, Lng= 92 04 34.0
0.59 kW 130 M HAAT, 449 M COR
Prot.= 60 dBu, Intef.= 100 dBu



KNOWNew

WVSS BLED20020903AFN

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Protected
 60 dBu

Channel = 214A
 Max ERP = 0.59 kW
 RCAMSL = 449 M
 N. Lat. 44 54 56.0
 W. Lng. 92 04 34.0
 Interfering
 100 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 041.0 | 100.0000 | 0385.0 | 078.6 | 337.2 | 000.5900 | 0125.9 | 082.2 | 32.39 | |
| 042.0 | 100.0000 | 0383.9 | 078.6 | 337.7 | 000.5900 | 0127.2 | 080.8 | 32.85 | |
| 043.0 | 100.0000 | 0383.1 | 078.5 | 338.1 | 000.5900 | 0128.0 | 079.5 | 33.26 | |
| 044.0 | 100.0000 | 0382.4 | 078.5 | 338.5 | 000.5900 | 0128.5 | 078.3 | 33.66 | |
| 045.0 | 100.0000 | 0382.0 | 078.4 | 338.9 | 000.5900 | 0129.0 | 077.0 | 34.06 | |
| 046.0 | 100.0000 | 0381.9 | 078.4 | 339.3 | 000.5900 | 0129.4 | 075.8 | 34.45 | |
| 047.0 | 100.0000 | 0382.0 | 078.4 | 339.7 | 000.5900 | 0129.6 | 074.5 | 34.84 | |
| 048.0 | 100.0000 | 0381.9 | 078.4 | 340.0 | 000.5900 | 0129.8 | 073.2 | 35.24 | |
| 049.0 | 100.0000 | 0381.5 | 078.4 | 340.4 | 000.5900 | 0129.9 | 072.0 | 35.64 | |
| 050.0 | 100.0000 | 0380.7 | 078.3 | 340.7 | 000.5900 | 0130.0 | 070.7 | 36.04 | |
| 051.0 | 100.0000 | 0379.8 | 078.3 | 341.1 | 000.5900 | 0129.8 | 069.4 | 36.44 | |
| 052.0 | 100.0000 | 0378.9 | 078.2 | 341.4 | 000.5900 | 0129.5 | 068.1 | 36.83 | |
| 053.0 | 100.0000 | 0378.2 | 078.2 | 341.7 | 000.5900 | 0129.0 | 066.8 | 37.22 | |
| 054.0 | 100.0000 | 0377.6 | 078.1 | 342.0 | 000.5900 | 0128.3 | 065.5 | 37.61 | |
| 055.0 | 100.0000 | 0377.1 | 078.1 | 342.4 | 000.5900 | 0127.6 | 064.1 | 37.99 | |
| 056.0 | 100.0000 | 0376.8 | 078.0 | 342.7 | 000.5900 | 0126.8 | 062.8 | 38.38 | |
| 057.0 | 100.0000 | 0376.7 | 078.0 | 343.0 | 000.5900 | 0126.0 | 061.5 | 38.79 | |
| 058.0 | 100.0000 | 0376.7 | 078.0 | 343.4 | 000.5900 | 0125.2 | 060.2 | 39.21 | |
| 059.0 | 100.0000 | 0376.7 | 078.0 | 343.7 | 000.5900 | 0124.5 | 058.9 | 39.65 | |
| 060.0 | 100.0000 | 0376.8 | 078.0 | 344.0 | 000.5900 | 0123.8 | 057.6 | 40.10 | |
| 061.0 | 100.0000 | 0376.8 | 078.0 | 344.3 | 000.5900 | 0123.2 | 056.3 | 40.57 | |
| 062.0 | 100.0000 | 0376.7 | 078.0 | 344.6 | 000.5900 | 0122.6 | 054.9 | 41.05 | |
| 063.0 | 100.0000 | 0376.7 | 078.0 | 344.9 | 000.5900 | 0122.1 | 053.6 | 41.54 | |
| 064.0 | 100.0000 | 0376.7 | 078.0 | 345.2 | 000.5900 | 0121.7 | 052.3 | 42.03 | |
| 065.0 | 100.0000 | 0376.7 | 078.0 | 345.5 | 000.5900 | 0121.4 | 050.9 | 42.54 | |
| 066.0 | 100.0000 | 0376.6 | 078.0 | 345.7 | 000.5900 | 0121.2 | 049.6 | 43.05 | |
| 067.0 | 100.0000 | 0376.1 | 078.0 | 345.9 | 000.5900 | 0121.1 | 048.3 | 43.57 | |
| 068.0 | 100.0000 | 0375.4 | 077.9 | 346.1 | 000.5900 | 0121.1 | 046.9 | 44.10 | |
| 069.0 | 100.0000 | 0375.2 | 077.9 | 346.3 | 000.5900 | 0121.3 | 045.6 | 44.65 | |
| 070.0 | 100.0000 | 0375.3 | 077.9 | 346.5 | 000.5900 | 0121.6 | 044.2 | 45.22 | |
| 071.0 | 100.0000 | 0375.9 | 078.0 | 346.7 | 000.5900 | 0122.1 | 042.9 | 45.81 | |
| 072.0 | 100.0000 | 0376.6 | 078.0 | 346.9 | 000.5900 | 0122.6 | 041.5 | 46.42 | |
| 073.0 | 100.0000 | 0377.4 | 078.1 | 347.1 | 000.5900 | 0123.2 | 040.2 | 47.05 | |
| 074.0 | 100.0000 | 0377.9 | 078.1 | 347.3 | 000.5900 | 0123.6 | 038.8 | 47.68 | |
| 075.0 | 100.0000 | 0377.9 | 078.1 | 347.4 | 000.5900 | 0123.9 | 037.4 | 48.31 | |
| 076.0 | 100.0000 | 0377.7 | 078.1 | 347.4 | 000.5900 | 0123.9 | 036.1 | 48.95 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 077.0 | 100.0000 | 0377.8 | 078.1 | 347.4 | 000.5900 | 0124.0 | 034.7 | 49.60 |
| 078.0 | 100.0000 | 0378.2 | 078.2 | 347.5 | 000.5900 | 0124.1 | 033.4 | 50.27 |
| 079.0 | 100.0000 | 0378.9 | 078.2 | 347.5 | 000.5900 | 0124.1 | 032.0 | 50.95 |
| 080.0 | 100.0000 | 0379.6 | 078.2 | 347.5 | 000.5900 | 0124.1 | 030.6 | 51.66 |
| 081.0 | 100.0000 | 0380.2 | 078.3 | 347.4 | 000.5900 | 0123.9 | 029.3 | 52.43 |
| 082.0 | 100.0000 | 0380.8 | 078.3 | 347.3 | 000.5900 | 0123.6 | 027.9 | 53.24 |
| 083.0 | 100.0000 | 0381.3 | 078.4 | 347.1 | 000.5900 | 0123.0 | 026.5 | 54.09 |
| 084.0 | 100.0000 | 0381.7 | 078.4 | 346.8 | 000.5900 | 0122.2 | 025.2 | 54.96 |
| 085.0 | 100.0000 | 0381.6 | 078.4 | 346.3 | 000.5900 | 0121.3 | 023.8 | 55.87 |
| 086.0 | 100.0000 | 0380.8 | 078.3 | 345.5 | 000.5900 | 0121.3 | 022.5 | 56.86 |
| 087.0 | 100.0000 | 0379.9 | 078.3 | 344.6 | 000.5900 | 0122.6 | 021.2 | 57.95 |
| 088.0 | 100.0000 | 0378.6 | 078.2 | 343.5 | 000.5900 | 0125.0 | 019.9 | 59.14 |
| 089.0 | 100.0000 | 0377.9 | 078.1 | 342.2 | 000.5900 | 0128.0 | 018.6 | 60.38 |
| 090.0 | 100.0000 | 0377.1 | 078.1 | 340.6 | 000.5900 | 0130.0 | 017.3 | 61.56 |
| 091.0 | 100.0000 | 0376.3 | 078.0 | 338.8 | 000.5900 | 0128.9 | 016.0 | 62.52 |
| 092.0 | 100.0000 | 0375.7 | 078.0 | 336.5 | 000.5900 | 0123.6 | 014.8 | 63.11 |
| 093.0 | 100.0000 | 0375.0 | 077.9 | 333.8 | 000.5900 | 0116.0 | 013.6 | 63.98 |
| 094.0 | 100.0000 | 0374.6 | 077.9 | 330.5 | 000.5900 | 0109.6 | 012.5 | 65.04 |
| 095.0 | 100.0000 | 0374.0 | 077.8 | 326.5 | 000.5900 | 0102.9 | 011.4 | 66.11 |
| 096.0 | 100.0000 | 0373.4 | 077.8 | 321.5 | 000.5900 | 0098.1 | 010.4 | 67.33 |
| 097.0 | 100.0000 | 0373.1 | 077.8 | 315.7 | 000.5900 | 0093.5 | 009.5 | 68.50 |
| 098.0 | 100.0000 | 0373.1 | 077.8 | 308.6 | 000.5900 | 0085.4 | 008.8 | 69.13 |
| 099.0 | 100.0000 | 0373.2 | 077.8 | 300.4 | 000.5900 | 0087.2 | 008.2 | 70.47 |
| 100.0 | 100.0000 | 0373.3 | 077.8 | 291.0 | 000.5900 | 0082.7 | 007.8 | 70.76 |
| 101.0 | 100.0000 | 0373.8 | 077.8 | 281.0 | 000.5900 | 0085.8 | 007.6 | 71.44 |
| 102.0 | 100.0000 | 0374.4 | 077.9 | 270.8 | 000.5900 | 0086.9 | 007.7 | 71.35 |
| 103.0 | 100.0000 | 0375.0 | 077.9 | 261.3 | 000.5900 | 0095.3 | 008.1 | 71.46 |
| 104.0 | 100.0000 | 0375.6 | 078.0 | 252.9 | 000.5812 | 0099.5 | 008.7 | 70.62 |
| 105.0 | 100.0000 | 0376.0 | 078.0 | 245.7 | 000.5523 | 0100.7 | 009.4 | 69.05 |
| 106.0 | 100.0000 | 0376.1 | 078.0 | 239.9 | 000.5210 | 0103.3 | 010.4 | 67.35 |
| 107.0 | 100.0000 | 0376.1 | 078.0 | 235.2 | 000.4953 | 0107.1 | 011.4 | 65.73 |
| 108.0 | 100.0000 | 0376.0 | 078.0 | 231.5 | 000.4714 | 0107.7 | 012.5 | 63.88 |
| 109.0 | 100.0000 | 0375.8 | 078.0 | 228.4 | 000.4524 | 0103.6 | 013.7 | 61.78 |
| 110.0 | 100.0000 | 0375.7 | 078.0 | 226.0 | 000.4372 | 0104.5 | 014.9 | 60.28 |
| 111.0 | 100.0000 | 0375.8 | 078.0 | 223.9 | 000.4245 | 0107.8 | 016.1 | 59.49 |
| 112.0 | 100.0000 | 0376.3 | 078.0 | 222.1 | 000.4139 | 0111.6 | 017.4 | 58.63 |
| 113.0 | 100.0000 | 0376.8 | 078.0 | 220.6 | 000.4051 | 0112.3 | 018.7 | 57.54 |
| 114.0 | 100.0000 | 0377.4 | 078.1 | 219.4 | 000.3978 | 0111.7 | 020.0 | 56.38 |
| 115.0 | 100.0000 | 0377.9 | 078.1 | 218.3 | 000.3919 | 0111.4 | 021.3 | 55.26 |
| 116.0 | 100.0000 | 0378.2 | 078.1 | 217.5 | 000.3873 | 0111.4 | 022.6 | 54.19 |
| 117.0 | 100.0000 | 0378.1 | 078.1 | 216.9 | 000.3839 | 0111.5 | 024.0 | 53.16 |
| 118.0 | 100.0000 | 0377.8 | 078.1 | 216.5 | 000.3814 | 0111.5 | 025.3 | 52.18 |
| 119.0 | 100.0000 | 0377.6 | 078.1 | 216.1 | 000.3794 | 0111.6 | 026.7 | 51.24 |
| 120.0 | 100.0000 | 0377.4 | 078.1 | 215.9 | 000.3778 | 0111.6 | 028.1 | 50.35 |
| 121.0 | 100.0000 | 0377.2 | 078.1 | 215.7 | 000.3767 | 0111.5 | 029.4 | 49.51 |
| 122.0 | 100.0000 | 0376.8 | 078.0 | 215.5 | 000.3760 | 0111.4 | 030.8 | 48.73 |
| 123.0 | 100.0000 | 0376.4 | 078.0 | 215.5 | 000.3756 | 0111.4 | 032.1 | 48.02 |
| 124.0 | 100.0000 | 0376.3 | 078.0 | 215.4 | 000.3753 | 0111.4 | 033.5 | 47.36 |
| 125.0 | 100.0000 | 0376.5 | 078.0 | 215.4 | 000.3750 | 0111.4 | 034.9 | 46.70 |
| 126.0 | 100.0000 | 0377.2 | 078.1 | 215.3 | 000.3747 | 0111.4 | 036.2 | 46.07 |
| 127.0 | 100.0000 | 0378.1 | 078.1 | 215.3 | 000.3744 | 0111.4 | 037.6 | 45.44 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 128.0 | 100.0000 | 0379.2 | 078.2 | 215.2 | 000.3743 | 0111.4 | 039.0 | 44.83 |
| 129.0 | 100.0000 | 0380.2 | 078.3 | 215.3 | 000.3744 | 0111.4 | 040.4 | 44.23 |
| 130.0 | 100.0000 | 0381.2 | 078.4 | 215.3 | 000.3747 | 0111.4 | 041.7 | 43.65 |
| 131.0 | 100.0000 | 0382.1 | 078.4 | 215.4 | 000.3752 | 0111.4 | 043.1 | 43.08 |
| 132.0 | 100.0000 | 0383.0 | 078.5 | 215.5 | 000.3758 | 0111.4 | 044.5 | 42.53 |
| 133.0 | 100.0000 | 0383.8 | 078.6 | 215.7 | 000.3766 | 0111.5 | 045.8 | 41.99 |
| 134.0 | 100.0000 | 0384.5 | 078.6 | 215.8 | 000.3777 | 0111.6 | 047.2 | 41.47 |
| 135.0 | 100.0000 | 0384.9 | 078.6 | 216.1 | 000.3789 | 0111.6 | 048.6 | 40.96 |
| 136.0 | 100.0000 | 0385.3 | 078.7 | 216.3 | 000.3802 | 0111.5 | 049.9 | 40.45 |
| 137.0 | 100.0000 | 0385.9 | 078.7 | 216.5 | 000.3816 | 0111.5 | 051.3 | 39.93 |
| 138.0 | 100.0000 | 0386.7 | 078.8 | 216.8 | 000.3829 | 0111.5 | 052.7 | 39.41 |
| 139.0 | 100.0000 | 0387.5 | 078.8 | 217.0 | 000.3843 | 0111.5 | 054.0 | 38.90 |
| 140.0 | 100.0000 | 0388.3 | 078.9 | 217.3 | 000.3858 | 0111.4 | 055.4 | 38.39 |
| 141.0 | 100.0000 | 0388.9 | 078.9 | 217.6 | 000.3874 | 0111.4 | 056.7 | 37.89 |
| 142.0 | 100.0000 | 0389.3 | 079.0 | 217.9 | 000.3892 | 0111.5 | 058.1 | 37.41 |
| 143.0 | 100.0000 | 0389.9 | 079.0 | 218.2 | 000.3909 | 0111.4 | 059.4 | 36.93 |
| 144.0 | 100.0000 | 0390.3 | 079.0 | 218.5 | 000.3928 | 0111.4 | 060.8 | 36.47 |
| 145.0 | 100.0000 | 0390.5 | 079.1 | 218.8 | 000.3949 | 0111.5 | 062.1 | 36.03 |
| 146.0 | 100.0000 | 0390.8 | 079.1 | 219.2 | 000.3968 | 0111.6 | 063.4 | 35.62 |
| 147.0 | 100.0000 | 0392.2 | 079.2 | 219.5 | 000.3985 | 0111.7 | 064.8 | 35.21 |
| 148.0 | 100.0000 | 0394.2 | 079.3 | 219.7 | 000.4000 | 0111.9 | 066.1 | 34.80 |
| 149.0 | 100.0000 | 0395.6 | 079.4 | 220.0 | 000.4018 | 0112.0 | 067.5 | 34.41 |
| 150.0 | 100.0000 | 0396.7 | 079.5 | 220.4 | 000.4038 | 0112.1 | 068.8 | 34.03 |
| 151.0 | 100.0000 | 0397.7 | 079.6 | 220.7 | 000.4057 | 0112.3 | 070.2 | 33.66 |
| 152.0 | 100.0000 | 0399.1 | 079.7 | 221.0 | 000.4077 | 0112.4 | 071.5 | 33.28 |
| 153.0 | 100.0000 | 0400.9 | 079.8 | 221.4 | 000.4095 | 0112.4 | 072.8 | 32.89 |
| 154.0 | 100.0000 | 0403.6 | 080.0 | 221.6 | 000.4111 | 0112.1 | 074.2 | 32.49 |
| 155.0 | 100.0000 | 0406.7 | 080.3 | 221.9 | 000.4127 | 0111.9 | 075.6 | 32.09 |
| 156.0 | 100.0000 | 0409.3 | 080.5 | 222.2 | 000.4144 | 0111.5 | 076.9 | 31.69 |
| 157.0 | 100.0000 | 0411.2 | 080.6 | 222.5 | 000.4164 | 0110.8 | 078.3 | 31.29 |
| 158.0 | 100.0000 | 0412.1 | 080.7 | 222.9 | 000.4188 | 0110.1 | 079.6 | 30.91 |
| 159.0 | 100.0000 | 0411.9 | 080.6 | 223.4 | 000.4215 | 0109.0 | 080.9 | 30.52 |
| 160.0 | 100.0000 | 0410.8 | 080.6 | 223.9 | 000.4244 | 0107.9 | 082.1 | 30.15 |

07-29-2010 FCC NGDC 30 Sec Terrain Data

WVSS BLED20020903AFN

KNOWNew

Channel = 214A
 Max ERP = 0.59 kW
 RCAMSL = 449 M
 N. Lat. 44 54 56.0
 W. Lng. 92 04 34.0
 Protected
 60 dBu

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Interfering
 100 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 221.0 | 000.4074 | 0112.4 | 015.5 | 110.5 | 100.0000 | 0375.7 | 078.7 | 64.84 | |
| 222.0 | 000.4133 | 0111.8 | 015.5 | 110.5 | 100.0000 | 0375.7 | 078.4 | 64.93 | |
| 223.0 | 000.4193 | 0109.9 | 015.4 | 110.3 | 100.0000 | 0375.7 | 078.2 | 65.00 | |
| 224.0 | 000.4253 | 0107.6 | 015.3 | 110.2 | 100.0000 | 0375.7 | 078.0 | 65.07 | |
| 225.0 | 000.4313 | 0105.7 | 015.2 | 110.0 | 100.0000 | 0375.7 | 077.8 | 65.14 | |
| 226.0 | 000.4374 | 0104.5 | 015.2 | 109.9 | 100.0000 | 0375.7 | 077.6 | 65.22 | |
| 227.0 | 000.4435 | 0103.7 | 015.2 | 109.8 | 100.0000 | 0375.7 | 077.3 | 65.30 | |
| 228.0 | 000.4497 | 0103.6 | 015.2 | 109.8 | 100.0000 | 0375.7 | 077.1 | 65.39 | |
| 229.0 | 000.4559 | 0103.8 | 015.3 | 109.7 | 100.0000 | 0375.7 | 076.8 | 65.48 | |
| 230.0 | 000.4621 | 0104.9 | 015.4 | 109.7 | 100.0000 | 0375.7 | 076.5 | 65.59 | |
| 231.0 | 000.4684 | 0106.9 | 015.7 | 109.8 | 100.0000 | 0375.7 | 076.2 | 65.71 | |
| 232.0 | 000.4747 | 0108.4 | 015.9 | 109.8 | 100.0000 | 0375.7 | 075.8 | 65.82 | |
| 233.0 | 000.4811 | 0108.5 | 015.9 | 109.7 | 100.0000 | 0375.7 | 075.5 | 65.92 | |
| 234.0 | 000.4875 | 0107.9 | 015.9 | 109.6 | 100.0000 | 0375.7 | 075.3 | 66.00 | |
| 235.0 | 000.4940 | 0107.2 | 015.9 | 109.5 | 100.0000 | 0375.7 | 075.1 | 66.08 | |
| 236.0 | 000.4994 | 0107.1 | 016.0 | 109.4 | 100.0000 | 0375.7 | 074.8 | 66.17 | |
| 237.0 | 000.5048 | 0106.7 | 016.0 | 109.3 | 100.0000 | 0375.8 | 074.6 | 66.25 | |
| 238.0 | 000.5103 | 0105.6 | 015.9 | 109.1 | 100.0000 | 0375.8 | 074.4 | 66.32 | |
| 239.0 | 000.5158 | 0104.1 | 015.9 | 108.9 | 100.0000 | 0375.9 | 074.2 | 66.38 | |
| 240.0 | 000.5213 | 0103.3 | 015.8 | 108.8 | 100.0000 | 0375.9 | 074.1 | 66.45 | |
| 241.0 | 000.5269 | 0103.3 | 015.9 | 108.7 | 100.0000 | 0375.9 | 073.8 | 66.53 | |
| 242.0 | 000.5325 | 0103.6 | 016.0 | 108.6 | 100.0000 | 0375.9 | 073.6 | 66.62 | |
| 243.0 | 000.5381 | 0103.7 | 016.0 | 108.4 | 100.0000 | 0376.0 | 073.3 | 66.71 | |
| 244.0 | 000.5437 | 0102.9 | 016.0 | 108.3 | 100.0000 | 0376.0 | 073.1 | 66.77 | |
| 245.0 | 000.5494 | 0101.6 | 015.9 | 108.1 | 100.0000 | 0376.0 | 073.0 | 66.82 | |
| 246.0 | 000.5534 | 0100.5 | 015.8 | 107.9 | 100.0000 | 0376.0 | 072.8 | 66.87 | |
| 247.0 | 000.5574 | 0100.3 | 015.8 | 107.7 | 100.0000 | 0376.1 | 072.7 | 66.94 | |
| 248.0 | 000.5614 | 0100.8 | 015.9 | 107.6 | 100.0000 | 0376.1 | 072.4 | 67.02 | |
| 249.0 | 000.5655 | 0101.4 | 016.0 | 107.5 | 100.0000 | 0376.1 | 072.2 | 67.11 | |
| 250.0 | 000.5695 | 0101.8 | 016.1 | 107.3 | 100.0000 | 0376.1 | 071.9 | 67.19 | |
| 251.0 | 000.5736 | 0101.4 | 016.1 | 107.2 | 100.0000 | 0376.1 | 071.8 | 67.25 | |
| 252.0 | 000.5777 | 0100.4 | 016.0 | 107.0 | 100.0000 | 0376.1 | 071.7 | 67.29 | |
| 253.0 | 000.5818 | 0099.3 | 015.9 | 106.7 | 100.0000 | 0376.1 | 071.6 | 67.33 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 254.0 | 000.5859 | 0098.1 | 015.9 | 106.5 | 100.0000 | 0376.1 | 071.5 | 67.36 |
| 255.0 | 000.5900 | 0097.3 | 015.8 | 106.3 | 100.0000 | 0376.1 | 071.4 | 67.39 |
| 256.0 | 000.5900 | 0096.8 | 015.8 | 106.1 | 100.0000 | 0376.1 | 071.3 | 67.43 |
| 257.0 | 000.5900 | 0096.7 | 015.8 | 105.9 | 100.0000 | 0376.1 | 071.1 | 67.48 |
| 258.0 | 000.5900 | 0096.6 | 015.8 | 105.7 | 100.0000 | 0376.1 | 071.0 | 67.52 |
| 259.0 | 000.5900 | 0096.3 | 015.7 | 105.5 | 100.0000 | 0376.1 | 070.9 | 67.56 |
| 260.0 | 000.5900 | 0096.0 | 015.7 | 105.3 | 100.0000 | 0376.1 | 070.8 | 67.59 |
| 261.0 | 000.5900 | 0095.5 | 015.7 | 105.1 | 100.0000 | 0376.0 | 070.7 | 67.62 |
| 262.0 | 000.5900 | 0094.8 | 015.6 | 104.8 | 100.0000 | 0376.0 | 070.7 | 67.63 |
| 263.0 | 000.5900 | 0093.8 | 015.5 | 104.6 | 100.0000 | 0375.9 | 070.7 | 67.63 |
| 264.0 | 000.5900 | 0092.8 | 015.4 | 104.4 | 100.0000 | 0375.8 | 070.6 | 67.64 |
| 265.0 | 000.5900 | 0092.5 | 015.4 | 104.2 | 100.0000 | 0375.7 | 070.6 | 67.66 |
| 266.0 | 000.5900 | 0092.0 | 015.3 | 104.0 | 100.0000 | 0375.6 | 070.5 | 67.67 |
| 267.0 | 000.5900 | 0091.1 | 015.2 | 103.7 | 100.0000 | 0375.4 | 070.5 | 67.67 |
| 268.0 | 000.5900 | 0090.0 | 015.1 | 103.5 | 100.0000 | 0375.3 | 070.6 | 67.65 |
| 269.0 | 000.5900 | 0088.9 | 015.0 | 103.3 | 100.0000 | 0375.2 | 070.6 | 67.64 |
| 270.0 | 000.5900 | 0087.7 | 014.9 | 103.0 | 100.0000 | 0375.1 | 070.6 | 67.62 |
| 271.0 | 000.5900 | 0086.9 | 014.8 | 102.8 | 100.0000 | 0374.9 | 070.6 | 67.61 |
| 272.0 | 000.5900 | 0087.1 | 014.9 | 102.6 | 100.0000 | 0374.8 | 070.6 | 67.63 |
| 273.0 | 000.5900 | 0087.4 | 014.9 | 102.4 | 100.0000 | 0374.7 | 070.5 | 67.66 |
| 274.0 | 000.5900 | 0087.7 | 014.9 | 102.2 | 100.0000 | 0374.6 | 070.4 | 67.68 |
| 275.0 | 000.5900 | 0087.8 | 014.9 | 102.0 | 100.0000 | 0374.4 | 070.4 | 67.69 |
| 276.0 | 000.5900 | 0088.0 | 014.9 | 101.8 | 100.0000 | 0374.3 | 070.3 | 67.70 |
| 277.0 | 000.5900 | 0088.1 | 014.9 | 101.6 | 100.0000 | 0374.2 | 070.3 | 67.71 |
| 278.0 | 000.5900 | 0088.1 | 014.9 | 101.4 | 100.0000 | 0374.0 | 070.3 | 67.71 |
| 279.0 | 000.5900 | 0087.6 | 014.9 | 101.2 | 100.0000 | 0373.9 | 070.3 | 67.70 |
| 280.0 | 000.5900 | 0086.8 | 014.8 | 100.9 | 100.0000 | 0373.7 | 070.4 | 67.68 |
| 281.0 | 000.5900 | 0085.8 | 014.7 | 100.7 | 100.0000 | 0373.6 | 070.5 | 67.64 |
| 282.0 | 000.5900 | 0084.8 | 014.7 | 100.5 | 100.0000 | 0373.5 | 070.5 | 67.61 |
| 283.0 | 000.5900 | 0084.2 | 014.6 | 100.3 | 100.0000 | 0373.4 | 070.6 | 67.58 |
| 284.0 | 000.5900 | 0083.7 | 014.5 | 100.1 | 100.0000 | 0373.4 | 070.7 | 67.56 |
| 285.0 | 000.5900 | 0083.3 | 014.5 | 099.9 | 100.0000 | 0373.3 | 070.7 | 67.54 |
| 286.0 | 000.5900 | 0083.0 | 014.5 | 099.7 | 100.0000 | 0373.3 | 070.8 | 67.52 |
| 287.0 | 000.5900 | 0082.5 | 014.4 | 099.5 | 100.0000 | 0373.2 | 070.8 | 67.49 |
| 288.0 | 000.5900 | 0082.3 | 014.4 | 099.3 | 100.0000 | 0373.2 | 070.9 | 67.48 |
| 289.0 | 000.5900 | 0082.3 | 014.4 | 099.1 | 100.0000 | 0373.2 | 070.9 | 67.46 |
| 290.0 | 000.5900 | 0082.4 | 014.4 | 098.9 | 100.0000 | 0373.2 | 071.0 | 67.45 |
| 291.0 | 000.5900 | 0082.7 | 014.5 | 098.7 | 100.0000 | 0373.2 | 071.0 | 67.44 |
| 292.0 | 000.5900 | 0083.1 | 014.5 | 098.5 | 100.0000 | 0373.1 | 071.0 | 67.43 |
| 293.0 | 000.5900 | 0084.2 | 014.6 | 098.3 | 100.0000 | 0373.1 | 071.0 | 67.45 |
| 294.0 | 000.5900 | 0086.0 | 014.8 | 098.0 | 100.0000 | 0373.1 | 070.9 | 67.48 |
| 295.0 | 000.5900 | 0088.0 | 014.9 | 097.8 | 100.0000 | 0373.1 | 070.8 | 67.52 |
| 296.0 | 000.5900 | 0089.7 | 015.1 | 097.6 | 100.0000 | 0373.1 | 070.7 | 67.54 |
| 297.0 | 000.5900 | 0090.6 | 015.2 | 097.3 | 100.0000 | 0373.1 | 070.7 | 67.54 |
| 298.0 | 000.5900 | 0090.5 | 015.2 | 097.1 | 100.0000 | 0373.1 | 070.8 | 67.51 |
| 299.0 | 000.5900 | 0089.4 | 015.1 | 097.0 | 100.0000 | 0373.1 | 071.0 | 67.44 |
| 300.0 | 000.5900 | 0087.8 | 014.9 | 096.8 | 100.0000 | 0373.1 | 071.2 | 67.36 |
| 301.0 | 000.5900 | 0086.1 | 014.8 | 096.7 | 100.0000 | 0373.1 | 071.4 | 67.27 |
| 302.0 | 000.5900 | 0084.8 | 014.6 | 096.5 | 100.0000 | 0373.2 | 071.7 | 67.20 |
| 303.0 | 000.5900 | 0083.8 | 014.6 | 096.4 | 100.0000 | 0373.2 | 071.9 | 67.13 |
| 304.0 | 000.5900 | 0082.8 | 014.5 | 096.2 | 100.0000 | 0373.2 | 072.1 | 67.06 |

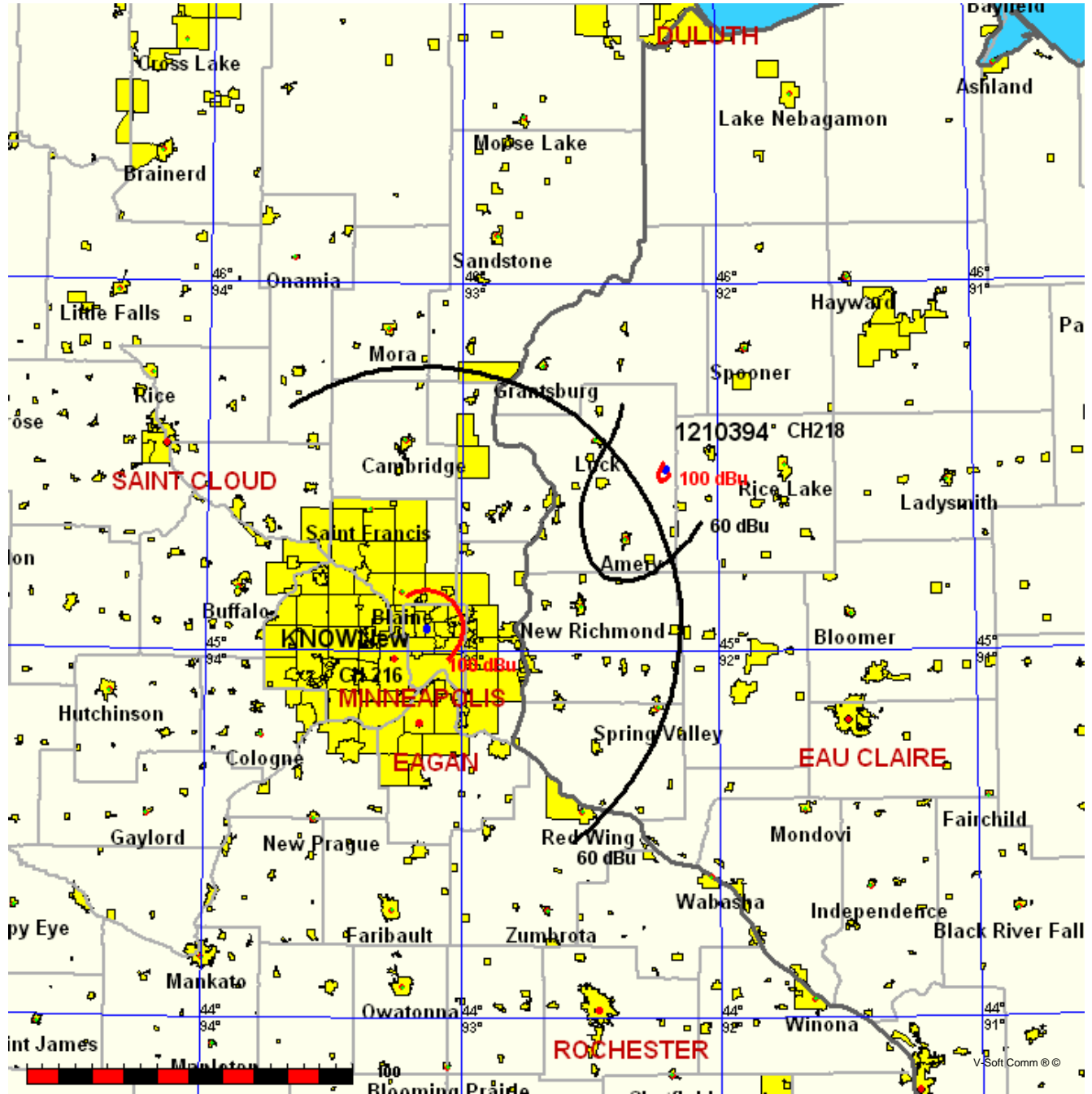
| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 305.0 | 000.5900 | 0082.0 | 014.4 | 096.1 | 100.0000 | 0373.3 | 072.2 | 67.00 |
| 306.0 | 000.5900 | 0081.8 | 014.4 | 095.9 | 100.0000 | 0373.4 | 072.4 | 66.96 |
| 307.0 | 000.5900 | 0082.6 | 014.5 | 095.7 | 100.0000 | 0373.5 | 072.4 | 66.94 |
| 308.0 | 000.5900 | 0084.1 | 014.6 | 095.5 | 100.0000 | 0373.7 | 072.4 | 66.94 |
| 309.0 | 000.5900 | 0086.0 | 014.8 | 095.2 | 100.0000 | 0373.8 | 072.4 | 66.95 |
| 310.0 | 000.5900 | 0087.6 | 014.9 | 095.0 | 100.0000 | 0374.0 | 072.5 | 66.95 |
| 311.0 | 000.5900 | 0088.9 | 015.0 | 094.8 | 100.0000 | 0374.1 | 072.5 | 66.93 |
| 312.0 | 000.5900 | 0090.0 | 015.1 | 094.6 | 100.0000 | 0374.2 | 072.6 | 66.91 |
| 313.0 | 000.5900 | 0090.9 | 015.2 | 094.4 | 100.0000 | 0374.4 | 072.7 | 66.88 |
| 314.0 | 000.5900 | 0091.8 | 015.3 | 094.1 | 100.0000 | 0374.5 | 072.8 | 66.85 |
| 315.0 | 000.5900 | 0092.8 | 015.4 | 093.9 | 100.0000 | 0374.6 | 072.9 | 66.82 |
| 316.0 | 000.5900 | 0093.9 | 015.5 | 093.7 | 100.0000 | 0374.7 | 073.0 | 66.79 |
| 317.0 | 000.5900 | 0094.7 | 015.6 | 093.5 | 100.0000 | 0374.8 | 073.1 | 66.75 |
| 318.0 | 000.5900 | 0095.1 | 015.6 | 093.3 | 100.0000 | 0374.9 | 073.2 | 66.69 |
| 319.0 | 000.5900 | 0095.4 | 015.6 | 093.2 | 100.0000 | 0375.0 | 073.4 | 66.64 |
| 320.0 | 000.5900 | 0096.2 | 015.7 | 093.0 | 100.0000 | 0375.1 | 073.6 | 66.59 |
| 321.0 | 000.5900 | 0097.4 | 015.8 | 092.8 | 100.0000 | 0375.2 | 073.7 | 66.55 |
| 322.0 | 000.5900 | 0098.7 | 016.0 | 092.6 | 100.0000 | 0375.3 | 073.8 | 66.51 |
| 323.0 | 000.5900 | 0099.9 | 016.1 | 092.4 | 100.0000 | 0375.4 | 073.9 | 66.47 |
| 324.0 | 000.5900 | 0100.7 | 016.2 | 092.2 | 100.0000 | 0375.6 | 074.1 | 66.42 |
| 325.0 | 000.5900 | 0101.4 | 016.2 | 092.0 | 100.0000 | 0375.7 | 074.3 | 66.36 |
| 326.0 | 000.5900 | 0102.4 | 016.3 | 091.8 | 100.0000 | 0375.8 | 074.5 | 66.30 |
| 327.0 | 000.5900 | 0103.6 | 016.4 | 091.6 | 100.0000 | 0375.9 | 074.6 | 66.25 |
| 328.0 | 000.5900 | 0105.1 | 016.6 | 091.4 | 100.0000 | 0376.1 | 074.8 | 66.20 |
| 329.0 | 000.5900 | 0106.7 | 016.7 | 091.2 | 100.0000 | 0376.2 | 074.9 | 66.15 |
| 330.0 | 000.5900 | 0108.5 | 016.9 | 090.9 | 100.0000 | 0376.4 | 075.1 | 66.10 |
| 331.0 | 000.5900 | 0110.7 | 017.1 | 090.7 | 100.0000 | 0376.6 | 075.3 | 66.05 |
| 332.0 | 000.5900 | 0112.7 | 017.2 | 090.5 | 100.0000 | 0376.7 | 075.4 | 66.00 |
| 333.0 | 000.5900 | 0114.6 | 017.4 | 090.3 | 100.0000 | 0376.9 | 075.6 | 65.93 |
| 334.0 | 000.5900 | 0116.5 | 017.6 | 090.1 | 100.0000 | 0377.1 | 075.8 | 65.87 |
| 335.0 | 000.5900 | 0118.9 | 017.7 | 089.8 | 100.0000 | 0377.2 | 076.0 | 65.81 |
| 336.0 | 000.5900 | 0122.0 | 018.0 | 089.6 | 100.0000 | 0377.4 | 076.2 | 65.75 |
| 337.0 | 000.5900 | 0125.2 | 018.2 | 089.3 | 100.0000 | 0377.6 | 076.4 | 65.69 |
| 338.0 | 000.5900 | 0127.7 | 018.4 | 089.1 | 100.0000 | 0377.8 | 076.6 | 65.62 |
| 339.0 | 000.5900 | 0129.1 | 018.5 | 088.9 | 100.0000 | 0377.9 | 076.9 | 65.53 |
| 340.0 | 000.5900 | 0129.8 | 018.5 | 088.8 | 100.0000 | 0378.0 | 077.2 | 65.43 |

Minnesota Public Radio
KNOW(New) vs. Turtle Lake Application

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec
KNOWNew's Overlaps (In= 6.55 km, Out= 45.62 km)

KNOWNew CH 216 C0
Lat= 45 03 44.0, Lng= 93 08 21.0
100.0 kW 388.5 M HAAT, 663.3 M COR
Prot.= 60 dBu, Intef.= 100 dBu

1210394 CH 218 C3 DA BNPED20071012AHI
Lat= 45 29 27.0, Lng= 92 11 33.0
20.0 kW 99.6 M HAAT, 473.2 M COR
Prot.= 60 dBu, Intef.= 100 dBu



KNOWNew

1210394 BNPED20071012AHI

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Protected
 60 dBu

Channel = 218C3
 Max ERP = 20 kW
 RCAMSL = 473.2 M
 N. Lat. 45 29 27.0
 W. Lng. 92 11 33.0
 Interfering
 100 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 357.0 | 100.0000 | 0389.4 | 079.0 | 292.3 | 001.0651 | 0107.7 | 083.7 | 33.67 | |
| 358.0 | 100.0000 | 0389.3 | 079.0 | 292.6 | 001.0648 | 0107.2 | 082.5 | 33.99 | |
| 359.0 | 100.0000 | 0389.2 | 079.0 | 293.0 | 001.0644 | 0106.8 | 081.3 | 34.33 | |
| 000.0 | 100.0000 | 0390.3 | 079.0 | 293.5 | 001.0640 | 0106.3 | 080.0 | 34.65 | |
| 001.0 | 100.0000 | 0391.8 | 079.1 | 293.9 | 001.0636 | 0105.9 | 078.8 | 34.98 | |
| 002.0 | 100.0000 | 0392.9 | 079.2 | 294.3 | 001.0632 | 0105.6 | 077.6 | 35.31 | |
| 003.0 | 100.0000 | 0392.7 | 079.2 | 294.7 | 001.0629 | 0105.3 | 076.3 | 35.66 | |
| 004.0 | 100.0000 | 0392.1 | 079.2 | 295.0 | 001.0626 | 0105.0 | 075.0 | 36.03 | |
| 005.0 | 100.0000 | 0391.8 | 079.2 | 295.4 | 001.0623 | 0104.7 | 073.7 | 36.39 | |
| 006.0 | 100.0000 | 0391.7 | 079.1 | 295.7 | 001.0619 | 0104.4 | 072.4 | 36.75 | |
| 007.0 | 100.0000 | 0391.4 | 079.1 | 296.1 | 001.0616 | 0104.2 | 071.1 | 37.12 | |
| 008.0 | 100.0000 | 0390.9 | 079.1 | 296.4 | 001.0613 | 0104.1 | 069.7 | 37.50 | |
| 009.0 | 100.0000 | 0390.4 | 079.0 | 296.7 | 001.0610 | 0103.9 | 068.4 | 37.89 | |
| 010.0 | 100.0000 | 0390.1 | 079.0 | 297.0 | 001.0607 | 0103.8 | 067.1 | 38.28 | |
| 011.0 | 100.0000 | 0389.6 | 079.0 | 297.3 | 001.0605 | 0103.6 | 065.8 | 38.68 | |
| 012.0 | 100.0000 | 0389.1 | 079.0 | 297.6 | 001.0602 | 0103.5 | 064.4 | 39.08 | |
| 013.0 | 100.0000 | 0388.7 | 078.9 | 297.9 | 001.0599 | 0103.4 | 063.1 | 39.50 | |
| 014.0 | 100.0000 | 0388.4 | 078.9 | 298.2 | 001.0597 | 0103.4 | 061.8 | 39.94 | |
| 015.0 | 100.0000 | 0388.3 | 078.9 | 298.5 | 001.0594 | 0103.4 | 060.4 | 40.40 | |
| 016.0 | 100.0000 | 0388.4 | 078.9 | 298.8 | 001.0591 | 0103.4 | 059.1 | 40.87 | |
| 017.0 | 100.0000 | 0388.5 | 078.9 | 299.0 | 001.0589 | 0103.5 | 057.8 | 41.37 | |
| 018.0 | 100.0000 | 0388.8 | 078.9 | 299.3 | 001.0586 | 0103.6 | 056.4 | 41.87 | |
| 019.0 | 100.0000 | 0389.1 | 079.0 | 299.6 | 001.0584 | 0103.6 | 055.1 | 42.38 | |
| 020.0 | 100.0000 | 0389.5 | 079.0 | 299.9 | 001.0581 | 0103.7 | 053.7 | 42.90 | |
| 021.0 | 100.0000 | 0389.8 | 079.0 | 300.1 | 001.0616 | 0103.7 | 052.4 | 43.43 | |
| 022.0 | 100.0000 | 0389.9 | 079.0 | 300.4 | 001.0678 | 0103.7 | 051.0 | 43.98 | |
| 023.0 | 100.0000 | 0389.9 | 079.0 | 300.6 | 001.0734 | 0103.7 | 049.7 | 44.52 | |
| 024.0 | 100.0000 | 0389.8 | 079.0 | 300.7 | 001.0783 | 0103.7 | 048.3 | 45.06 | |
| 025.0 | 100.0000 | 0389.7 | 079.0 | 300.9 | 001.0827 | 0103.6 | 046.9 | 45.59 | |
| 026.0 | 100.0000 | 0389.6 | 079.0 | 301.0 | 001.0865 | 0103.6 | 045.6 | 46.14 | |
| 027.0 | 100.0000 | 0389.4 | 079.0 | 301.1 | 001.0896 | 0103.6 | 044.2 | 46.69 | |
| 028.0 | 100.0000 | 0389.2 | 079.0 | 301.2 | 001.0919 | 0103.6 | 042.8 | 47.25 | |
| 029.0 | 100.0000 | 0389.0 | 078.9 | 301.3 | 001.0933 | 0103.5 | 041.5 | 47.82 | |
| 030.0 | 100.0000 | 0388.8 | 078.9 | 301.3 | 001.0940 | 0103.5 | 040.1 | 48.40 | |
| 031.0 | 100.0000 | 0388.7 | 078.9 | 301.3 | 001.0938 | 0103.5 | 038.7 | 49.00 | |
| 032.0 | 100.0000 | 0388.6 | 078.9 | 301.3 | 001.0928 | 0103.6 | 037.3 | 49.60 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 033.0 | 100.0000 | 0388.6 | 078.9 | 301.2 | 001.0909 | 0103.6 | 036.0 | 50.21 |
| 034.0 | 100.0000 | 0388.6 | 078.9 | 301.1 | 001.0881 | 0103.6 | 034.6 | 50.83 |
| 035.0 | 100.0000 | 0388.8 | 078.9 | 300.9 | 001.0843 | 0103.6 | 033.2 | 51.46 |
| 036.0 | 100.0000 | 0388.9 | 078.9 | 300.7 | 001.0785 | 0103.7 | 031.9 | 52.10 |
| 037.0 | 100.0000 | 0388.7 | 078.9 | 300.4 | 001.0700 | 0103.7 | 030.5 | 52.78 |
| 038.0 | 100.0000 | 0388.2 | 078.9 | 300.0 | 001.0584 | 0103.7 | 029.2 | 53.50 |
| 039.0 | 100.0000 | 0387.4 | 078.8 | 299.4 | 001.0585 | 0103.6 | 027.8 | 54.31 |
| 040.0 | 100.0000 | 0386.2 | 078.7 | 298.7 | 001.0592 | 0103.4 | 026.5 | 55.15 |
| 041.0 | 100.0000 | 0385.0 | 078.6 | 297.9 | 001.0600 | 0103.5 | 025.2 | 56.05 |
| 042.0 | 100.0000 | 0383.9 | 078.6 | 296.9 | 001.0609 | 0103.8 | 023.9 | 57.02 |
| 043.0 | 100.0000 | 0383.1 | 078.5 | 295.8 | 001.0619 | 0104.4 | 022.6 | 58.03 |
| 044.0 | 100.0000 | 0382.4 | 078.5 | 294.5 | 001.0631 | 0105.4 | 021.3 | 59.10 |
| 045.0 | 100.0000 | 0382.0 | 078.4 | 293.1 | 001.0644 | 0106.7 | 020.0 | 60.21 |
| 046.0 | 100.0000 | 0381.9 | 078.4 | 291.4 | 001.0659 | 0108.6 | 018.8 | 61.38 |
| 047.0 | 100.0000 | 0382.0 | 078.4 | 289.5 | 001.0710 | 0110.7 | 017.6 | 62.57 |
| 048.0 | 100.0000 | 0381.9 | 078.4 | 287.3 | 001.0902 | 0112.2 | 016.4 | 63.74 |
| 049.0 | 100.0000 | 0381.5 | 078.4 | 284.5 | 001.1137 | 0113.5 | 015.3 | 64.88 |
| 050.0 | 100.0000 | 0380.7 | 078.3 | 281.1 | 001.1426 | 0115.5 | 014.2 | 66.13 |
| 051.0 | 100.0000 | 0379.8 | 078.3 | 277.1 | 001.2227 | 0118.3 | 013.2 | 67.84 |
| 052.0 | 100.0000 | 0378.9 | 078.2 | 272.4 | 001.3408 | 0120.3 | 012.3 | 69.60 |
| 053.0 | 100.0000 | 0378.2 | 078.2 | 267.1 | 001.6279 | 0121.4 | 011.6 | 71.68 |
| 054.0 | 100.0000 | 0377.6 | 078.1 | 261.0 | 002.1437 | 0121.3 | 010.9 | 73.91 |
| 055.0 | 100.0000 | 0377.1 | 078.1 | 254.1 | 002.9539 | 0121.3 | 010.4 | 76.13 |
| 056.0 | 100.0000 | 0376.8 | 078.0 | 246.8 | 004.1425 | 0124.9 | 010.1 | 78.40 |
| 057.0 | 100.0000 | 0376.7 | 078.0 | 239.1 | 005.8716 | 0120.3 | 010.0 | 79.85 |
| 058.0 | 100.0000 | 0376.7 | 078.0 | 231.3 | 008.4067 | 0115.2 | 010.0 | 80.93 |
| 059.0 | 100.0000 | 0376.7 | 078.0 | 223.8 | 011.9505 | 0111.0 | 010.3 | 81.68 |
| 060.0 | 100.0000 | 0376.8 | 078.0 | 216.8 | 014.9371 | 0110.4 | 010.8 | 81.83 |
| 061.0 | 100.0000 | 0376.8 | 078.0 | 210.5 | 016.7666 | 0111.6 | 011.4 | 81.41 |
| 062.0 | 100.0000 | 0376.7 | 078.0 | 205.1 | 014.7504 | 0111.8 | 012.1 | 79.69 |
| 063.0 | 100.0000 | 0376.7 | 078.0 | 200.4 | 012.8112 | 0114.3 | 013.0 | 78.02 |
| 064.0 | 100.0000 | 0376.7 | 078.0 | 196.3 | 010.8191 | 0115.3 | 014.0 | 76.12 |
| 065.0 | 100.0000 | 0376.7 | 078.0 | 192.9 | 009.2214 | 0116.0 | 015.0 | 74.43 |
| 066.0 | 100.0000 | 0376.6 | 078.0 | 190.0 | 007.9826 | 0115.2 | 016.1 | 72.80 |
| 067.0 | 100.0000 | 0376.1 | 078.0 | 187.6 | 007.2270 | 0113.1 | 017.3 | 71.25 |
| 068.0 | 100.0000 | 0375.4 | 077.9 | 185.7 | 006.6282 | 0110.2 | 018.5 | 69.65 |
| 069.0 | 100.0000 | 0375.2 | 077.9 | 183.9 | 006.1233 | 0108.9 | 019.8 | 68.20 |
| 070.0 | 100.0000 | 0375.3 | 077.9 | 182.4 | 005.6895 | 0108.9 | 021.0 | 66.91 |
| 071.0 | 100.0000 | 0375.9 | 078.0 | 181.0 | 005.3111 | 0108.1 | 022.3 | 65.58 |
| 072.0 | 100.0000 | 0376.6 | 078.0 | 179.8 | 005.0005 | 0107.4 | 023.5 | 64.31 |
| 073.0 | 100.0000 | 0377.4 | 078.1 | 178.8 | 004.7865 | 0106.7 | 024.8 | 63.13 |
| 074.0 | 100.0000 | 0377.9 | 078.1 | 177.9 | 004.6168 | 0106.2 | 026.1 | 62.02 |
| 075.0 | 100.0000 | 0377.9 | 078.1 | 177.3 | 004.4904 | 0105.7 | 027.5 | 60.99 |
| 076.0 | 100.0000 | 0377.7 | 078.1 | 176.8 | 004.3925 | 0105.5 | 028.8 | 60.05 |
| 077.0 | 100.0000 | 0377.8 | 078.1 | 176.3 | 004.3034 | 0105.1 | 030.1 | 59.15 |
| 078.0 | 100.0000 | 0378.2 | 078.2 | 175.9 | 004.2241 | 0104.7 | 031.5 | 58.31 |
| 079.0 | 100.0000 | 0378.9 | 078.2 | 175.5 | 004.1529 | 0104.3 | 032.8 | 57.54 |
| 080.0 | 100.0000 | 0379.6 | 078.2 | 175.2 | 004.0951 | 0103.9 | 034.2 | 56.81 |
| 081.0 | 100.0000 | 0380.2 | 078.3 | 175.0 | 004.0503 | 0103.6 | 035.5 | 56.10 |
| 082.0 | 100.0000 | 0380.8 | 078.3 | 174.8 | 004.0162 | 0103.3 | 036.9 | 55.42 |
| 083.0 | 100.0000 | 0381.3 | 078.4 | 174.6 | 003.9922 | 0103.0 | 038.3 | 54.77 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 084.0 | 100.0000 | 0381.7 | 078.4 | 174.6 | 003.9796 | 0102.9 | 039.6 | 54.16 |
| 085.0 | 100.0000 | 0381.6 | 078.4 | 174.6 | 003.9835 | 0103.0 | 041.0 | 53.58 |
| 086.0 | 100.0000 | 0380.8 | 078.3 | 174.7 | 004.0049 | 0103.2 | 042.4 | 53.05 |
| 087.0 | 100.0000 | 0379.9 | 078.3 | 174.9 | 004.0334 | 0103.4 | 043.7 | 52.55 |
| 088.0 | 100.0000 | 0378.6 | 078.2 | 175.1 | 004.0715 | 0103.7 | 045.1 | 52.07 |
| 089.0 | 100.0000 | 0377.9 | 078.1 | 175.2 | 004.1052 | 0103.9 | 046.4 | 51.59 |
| 090.0 | 100.0000 | 0377.1 | 078.1 | 175.4 | 004.1420 | 0104.2 | 047.8 | 51.13 |
| 091.0 | 100.0000 | 0376.3 | 078.0 | 175.7 | 004.1821 | 0104.4 | 049.2 | 50.68 |
| 092.0 | 100.0000 | 0375.7 | 078.0 | 175.9 | 004.2237 | 0104.7 | 050.5 | 50.22 |
| 093.0 | 100.0000 | 0375.0 | 077.9 | 176.1 | 004.2681 | 0104.9 | 051.9 | 49.76 |
| 094.0 | 100.0000 | 0374.6 | 077.9 | 176.3 | 004.3129 | 0105.1 | 053.2 | 49.30 |
| 095.0 | 100.0000 | 0374.0 | 077.8 | 176.6 | 004.3621 | 0105.3 | 054.5 | 48.85 |
| 096.0 | 100.0000 | 0373.4 | 077.8 | 176.9 | 004.4139 | 0105.6 | 055.9 | 48.41 |
| 097.0 | 100.0000 | 0373.1 | 077.8 | 177.1 | 004.4632 | 0105.7 | 057.2 | 47.96 |
| 098.0 | 100.0000 | 0373.1 | 077.8 | 177.4 | 004.5116 | 0105.8 | 058.5 | 47.52 |
| 099.0 | 100.0000 | 0373.2 | 077.8 | 177.6 | 004.5610 | 0106.0 | 059.9 | 47.10 |
| 100.0 | 100.0000 | 0373.3 | 077.8 | 177.9 | 004.6119 | 0106.1 | 061.2 | 46.69 |
| 101.0 | 100.0000 | 0373.8 | 077.8 | 178.1 | 004.6615 | 0106.3 | 062.5 | 46.29 |
| 102.0 | 100.0000 | 0374.4 | 077.9 | 178.4 | 004.7109 | 0106.5 | 063.9 | 45.91 |
| 103.0 | 100.0000 | 0375.0 | 077.9 | 178.6 | 004.7631 | 0106.7 | 065.2 | 45.55 |
| 104.0 | 100.0000 | 0375.6 | 078.0 | 178.9 | 004.8184 | 0106.8 | 066.5 | 45.21 |
| 105.0 | 100.0000 | 0376.0 | 078.0 | 179.2 | 004.8773 | 0107.1 | 067.9 | 44.87 |
| 106.0 | 100.0000 | 0376.1 | 078.0 | 179.5 | 004.9428 | 0107.3 | 069.2 | 44.54 |
| 107.0 | 100.0000 | 0376.1 | 078.0 | 179.9 | 005.0102 | 0107.5 | 070.5 | 44.22 |
| 108.0 | 100.0000 | 0376.0 | 078.0 | 180.2 | 005.0915 | 0107.7 | 071.8 | 43.91 |
| 109.0 | 100.0000 | 0375.8 | 078.0 | 180.5 | 005.1843 | 0107.9 | 073.1 | 43.62 |
| 110.0 | 100.0000 | 0375.7 | 078.0 | 180.9 | 005.2790 | 0108.1 | 074.3 | 43.33 |
| 111.0 | 100.0000 | 0375.8 | 078.0 | 181.2 | 005.3715 | 0108.3 | 075.6 | 43.04 |
| 112.0 | 100.0000 | 0376.3 | 078.0 | 181.6 | 005.4622 | 0108.5 | 076.9 | 42.75 |
| 113.0 | 100.0000 | 0376.8 | 078.0 | 181.9 | 005.5535 | 0108.7 | 078.2 | 42.46 |
| 114.0 | 100.0000 | 0377.4 | 078.1 | 182.3 | 005.6470 | 0108.8 | 079.5 | 42.17 |
| 115.0 | 100.0000 | 0377.9 | 078.1 | 182.6 | 005.7441 | 0109.0 | 080.8 | 41.89 |
| 116.0 | 100.0000 | 0378.2 | 078.1 | 183.0 | 005.8460 | 0109.0 | 082.0 | 41.61 |

07-29-2010 FCC NGDC 30 Sec Terrain Data

1210394 BNPED20071012AHI

KNOWNew

Channel = 218C3
 Max ERP = 20 kW
 RCAMSL = 473.2 M
 N. Lat. 45 29 27.0
 W. Lng. 92 11 33.0
 Protected
 60 dBu

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Interfering
 100 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 178.0 | 004.6349 | 0106.2 | 027.5 | 074.6 | 100.0000 | 0378.0 | 077.8 | 65.20 | |
| 179.0 | 004.8354 | 0106.9 | 027.8 | 074.8 | 100.0000 | 0378.0 | 077.3 | 65.39 | |
| 180.0 | 005.0401 | 0107.5 | 028.1 | 074.9 | 100.0000 | 0378.0 | 076.7 | 65.58 | |
| 181.0 | 005.3045 | 0108.1 | 028.5 | 075.1 | 100.0000 | 0377.9 | 076.2 | 65.77 | |
| 182.0 | 005.5757 | 0108.7 | 028.9 | 075.3 | 100.0000 | 0377.9 | 075.6 | 65.98 | |
| 183.0 | 005.8536 | 0109.0 | 029.3 | 075.5 | 100.0000 | 0377.8 | 075.0 | 66.18 | |
| 184.0 | 006.1383 | 0108.9 | 029.6 | 075.6 | 100.0000 | 0377.8 | 074.4 | 66.38 | |
| 185.0 | 006.4298 | 0109.5 | 030.0 | 075.7 | 100.0000 | 0377.7 | 073.8 | 66.59 | |
| 186.0 | 006.7280 | 0110.6 | 030.4 | 075.9 | 100.0000 | 0377.7 | 073.2 | 66.81 | |
| 187.0 | 007.0330 | 0112.1 | 030.9 | 076.2 | 100.0000 | 0377.7 | 072.5 | 67.05 | |
| 188.0 | 007.3447 | 0113.6 | 031.5 | 076.4 | 100.0000 | 0377.7 | 071.8 | 67.29 | |
| 189.0 | 007.6632 | 0114.6 | 031.9 | 076.6 | 100.0000 | 0377.7 | 071.1 | 67.53 | |
| 190.0 | 007.9885 | 0115.2 | 032.3 | 076.7 | 100.0000 | 0377.8 | 070.5 | 67.76 | |
| 191.0 | 008.4085 | 0115.8 | 032.8 | 076.9 | 100.0000 | 0377.8 | 069.7 | 68.01 | |
| 192.0 | 008.8392 | 0116.3 | 033.3 | 077.1 | 100.0000 | 0377.8 | 069.0 | 68.27 | |
| 193.0 | 009.2807 | 0115.9 | 033.6 | 077.1 | 100.0000 | 0377.9 | 068.4 | 68.50 | |
| 194.0 | 009.7329 | 0115.3 | 033.9 | 077.1 | 100.0000 | 0377.9 | 067.7 | 68.73 | |
| 195.0 | 010.1959 | 0115.0 | 034.2 | 077.1 | 100.0000 | 0377.9 | 067.0 | 68.97 | |
| 196.0 | 010.6697 | 0115.2 | 034.6 | 077.2 | 100.0000 | 0377.9 | 066.3 | 69.22 | |
| 197.0 | 011.1542 | 0115.5 | 035.0 | 077.2 | 100.0000 | 0377.9 | 065.6 | 69.48 | |
| 198.0 | 011.6495 | 0115.4 | 035.3 | 077.2 | 100.0000 | 0377.9 | 064.9 | 69.72 | |
| 199.0 | 012.1555 | 0115.0 | 035.6 | 077.1 | 100.0000 | 0377.9 | 064.2 | 69.96 | |
| 200.0 | 012.6723 | 0114.5 | 035.9 | 077.1 | 100.0000 | 0377.8 | 063.6 | 70.20 | |
| 201.0 | 013.0702 | 0114.0 | 036.0 | 076.9 | 100.0000 | 0377.8 | 063.0 | 70.42 | |
| 202.0 | 013.4743 | 0113.4 | 036.2 | 076.7 | 100.0000 | 0377.7 | 062.3 | 70.64 | |
| 203.0 | 013.8844 | 0112.7 | 036.3 | 076.4 | 100.0000 | 0377.7 | 061.8 | 70.85 | |
| 204.0 | 014.3008 | 0112.0 | 036.5 | 076.2 | 100.0000 | 0377.7 | 061.2 | 71.07 | |
| 205.0 | 014.7233 | 0111.8 | 036.7 | 076.0 | 100.0000 | 0377.7 | 060.5 | 71.30 | |
| 206.0 | 015.1519 | 0111.8 | 036.9 | 075.8 | 100.0000 | 0377.7 | 059.9 | 71.54 | |
| 207.0 | 015.5867 | 0111.9 | 037.1 | 075.5 | 100.0000 | 0377.8 | 059.3 | 71.78 | |
| 208.0 | 016.0277 | 0111.9 | 037.4 | 075.3 | 100.0000 | 0377.9 | 058.6 | 72.01 | |
| 209.0 | 016.4748 | 0111.9 | 037.6 | 075.0 | 100.0000 | 0377.9 | 058.0 | 72.24 | |
| 210.0 | 016.9280 | 0111.7 | 037.8 | 074.7 | 100.0000 | 0378.0 | 057.4 | 72.47 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 211.0 | 016.6276 | 0111.5 | 037.6 | 074.1 | 100.0000 | 0378.0 | 057.1 | 72.59 |
| 212.0 | 016.3299 | 0111.2 | 037.4 | 073.5 | 100.0000 | 0377.7 | 056.8 | 72.71 |
| 213.0 | 016.0348 | 0111.0 | 037.2 | 072.9 | 100.0000 | 0377.3 | 056.5 | 72.81 |
| 214.0 | 015.7425 | 0110.7 | 037.1 | 072.2 | 100.0000 | 0376.8 | 056.2 | 72.89 |
| 215.0 | 015.4528 | 0110.5 | 036.9 | 071.6 | 100.0000 | 0376.3 | 055.9 | 72.97 |
| 216.0 | 015.1659 | 0110.3 | 036.7 | 071.0 | 100.0000 | 0375.8 | 055.7 | 73.05 |
| 217.0 | 014.8816 | 0110.4 | 036.6 | 070.3 | 100.0000 | 0375.4 | 055.4 | 73.13 |
| 218.0 | 014.6000 | 0110.9 | 036.5 | 069.7 | 100.0000 | 0375.2 | 055.2 | 73.23 |
| 219.0 | 014.3211 | 0111.5 | 036.4 | 069.1 | 100.0000 | 0375.1 | 054.9 | 73.33 |
| 220.0 | 014.0449 | 0111.9 | 036.3 | 068.5 | 100.0000 | 0375.3 | 054.7 | 73.42 |
| 221.0 | 013.4743 | 0111.8 | 036.0 | 067.8 | 100.0000 | 0375.6 | 054.7 | 73.43 |
| 222.0 | 012.9155 | 0111.6 | 035.6 | 067.0 | 100.0000 | 0376.1 | 054.7 | 73.42 |
| 223.0 | 012.3685 | 0111.2 | 035.2 | 066.2 | 100.0000 | 0376.5 | 054.8 | 73.40 |
| 224.0 | 011.8334 | 0110.9 | 034.8 | 065.5 | 100.0000 | 0376.7 | 054.9 | 73.36 |
| 225.0 | 011.3101 | 0111.1 | 034.5 | 064.8 | 100.0000 | 0376.7 | 055.0 | 73.32 |
| 226.0 | 010.7986 | 0111.7 | 034.2 | 064.1 | 100.0000 | 0376.7 | 055.1 | 73.30 |
| 227.0 | 010.2990 | 0112.6 | 034.0 | 063.4 | 100.0000 | 0376.6 | 055.2 | 73.27 |
| 228.0 | 009.8112 | 0113.5 | 033.7 | 062.8 | 100.0000 | 0376.7 | 055.2 | 73.24 |
| 229.0 | 009.3352 | 0114.2 | 033.4 | 062.1 | 100.0000 | 0376.7 | 055.4 | 73.19 |
| 230.0 | 008.8711 | 0114.7 | 033.1 | 061.4 | 100.0000 | 0376.8 | 055.6 | 73.12 |
| 231.0 | 008.5099 | 0115.1 | 032.8 | 060.8 | 100.0000 | 0376.8 | 055.7 | 73.06 |
| 232.0 | 008.1562 | 0115.4 | 032.5 | 060.2 | 100.0000 | 0376.8 | 055.9 | 72.98 |
| 233.0 | 007.8100 | 0115.7 | 032.2 | 059.6 | 100.0000 | 0376.8 | 056.2 | 72.90 |
| 234.0 | 007.4713 | 0116.3 | 031.9 | 059.0 | 100.0000 | 0376.7 | 056.4 | 72.82 |
| 235.0 | 007.1401 | 0116.9 | 031.7 | 058.4 | 100.0000 | 0376.7 | 056.6 | 72.74 |
| 236.0 | 006.8164 | 0117.6 | 031.4 | 057.8 | 100.0000 | 0376.7 | 056.8 | 72.65 |
| 237.0 | 006.5003 | 0118.3 | 031.1 | 057.3 | 100.0000 | 0376.7 | 057.1 | 72.55 |
| 238.0 | 006.1916 | 0119.2 | 030.9 | 056.7 | 100.0000 | 0376.7 | 057.3 | 72.46 |
| 239.0 | 005.8905 | 0120.3 | 030.6 | 056.2 | 100.0000 | 0376.8 | 057.6 | 72.36 |
| 240.0 | 005.5968 | 0121.3 | 030.4 | 055.7 | 100.0000 | 0376.9 | 057.9 | 72.26 |
| 241.0 | 005.3686 | 0122.1 | 030.2 | 055.2 | 100.0000 | 0377.1 | 058.1 | 72.17 |
| 242.0 | 005.1450 | 0122.8 | 029.9 | 054.7 | 100.0000 | 0377.3 | 058.4 | 72.07 |
| 243.0 | 004.9263 | 0123.3 | 029.7 | 054.2 | 100.0000 | 0377.5 | 058.7 | 71.96 |
| 244.0 | 004.7123 | 0123.9 | 029.4 | 053.7 | 100.0000 | 0377.8 | 059.1 | 71.85 |
| 245.0 | 004.5030 | 0124.5 | 029.2 | 053.3 | 100.0000 | 0378.0 | 059.4 | 71.73 |
| 246.0 | 004.2985 | 0124.9 | 028.9 | 052.9 | 100.0000 | 0378.3 | 059.8 | 71.60 |
| 247.0 | 004.0987 | 0124.8 | 028.6 | 052.5 | 100.0000 | 0378.5 | 060.2 | 71.46 |
| 248.0 | 003.9037 | 0124.5 | 028.3 | 052.1 | 100.0000 | 0378.8 | 060.6 | 71.29 |
| 249.0 | 003.7135 | 0123.9 | 027.9 | 051.8 | 100.0000 | 0379.1 | 061.1 | 71.12 |
| 250.0 | 003.5280 | 0123.0 | 027.5 | 051.4 | 100.0000 | 0379.4 | 061.6 | 70.94 |
| 251.0 | 003.3850 | 0122.3 | 027.2 | 051.1 | 100.0000 | 0379.7 | 062.1 | 70.79 |
| 252.0 | 003.2450 | 0121.7 | 026.9 | 050.8 | 100.0000 | 0380.0 | 062.5 | 70.63 |
| 253.0 | 003.1079 | 0121.5 | 026.6 | 050.5 | 100.0000 | 0380.3 | 063.0 | 70.49 |
| 254.0 | 002.9737 | 0121.3 | 026.3 | 050.2 | 100.0000 | 0380.5 | 063.4 | 70.34 |
| 255.0 | 002.8426 | 0121.0 | 026.1 | 049.9 | 100.0000 | 0380.7 | 063.8 | 70.18 |
| 256.0 | 002.7144 | 0120.9 | 025.8 | 049.7 | 100.0000 | 0381.0 | 064.3 | 70.03 |
| 257.0 | 002.5891 | 0120.9 | 025.5 | 049.4 | 100.0000 | 0381.2 | 064.7 | 69.88 |
| 258.0 | 002.4668 | 0121.1 | 025.3 | 049.2 | 100.0000 | 0381.3 | 065.2 | 69.73 |
| 259.0 | 002.3475 | 0121.1 | 025.0 | 049.0 | 100.0000 | 0381.5 | 065.6 | 69.58 |
| 260.0 | 002.2311 | 0121.2 | 024.7 | 048.7 | 100.0000 | 0381.6 | 066.1 | 69.42 |
| 261.0 | 002.1399 | 0121.3 | 024.5 | 048.5 | 100.0000 | 0381.7 | 066.5 | 69.27 |

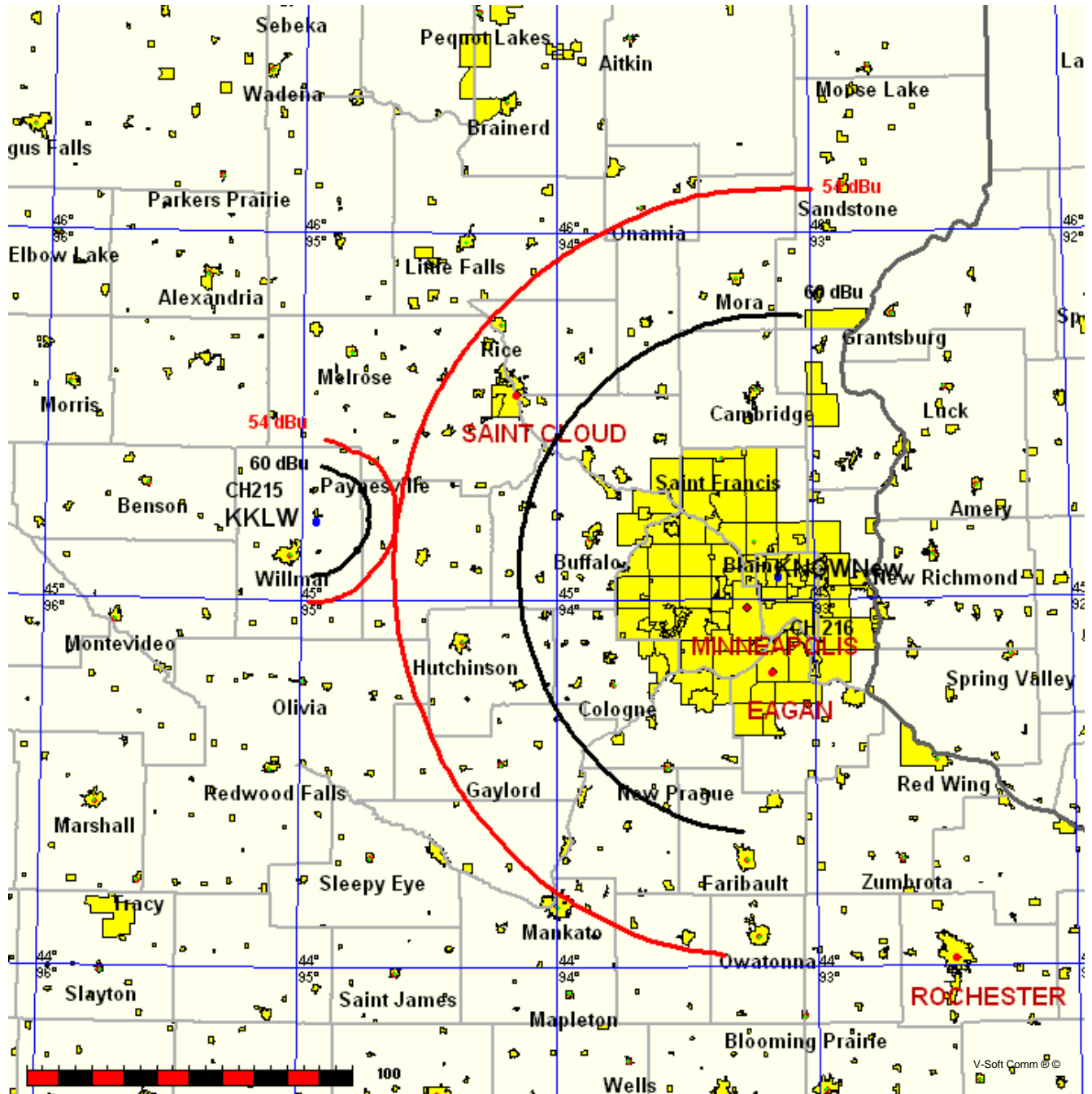
| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 262.0 | 002.0506 | 0121.5 | 024.3 | 048.3 | 100.0000 | 0381.7 | 066.9 | 69.13 |
| 263.0 | 001.9631 | 0121.5 | 024.0 | 048.1 | 100.0000 | 0381.8 | 067.3 | 68.98 |
| 264.0 | 001.8776 | 0121.6 | 023.8 | 048.0 | 100.0000 | 0381.9 | 067.7 | 68.83 |
| 265.0 | 001.7940 | 0121.6 | 023.5 | 047.8 | 100.0000 | 0381.9 | 068.2 | 68.68 |
| 266.0 | 001.7123 | 0121.5 | 023.3 | 047.7 | 100.0000 | 0381.9 | 068.6 | 68.52 |
| 267.0 | 001.6325 | 0121.4 | 023.0 | 047.5 | 100.0000 | 0381.9 | 069.1 | 68.36 |
| 268.0 | 001.5546 | 0121.3 | 022.8 | 047.4 | 100.0000 | 0382.0 | 069.5 | 68.20 |
| 269.0 | 001.4786 | 0121.2 | 022.5 | 047.3 | 100.0000 | 0382.0 | 070.0 | 68.04 |
| 270.0 | 001.4045 | 0121.1 | 022.2 | 047.2 | 100.0000 | 0382.0 | 070.5 | 67.88 |
| 271.0 | 001.3781 | 0121.0 | 022.1 | 047.0 | 100.0000 | 0382.0 | 070.8 | 67.76 |
| 272.0 | 001.3520 | 0120.6 | 022.0 | 046.9 | 100.0000 | 0382.0 | 071.2 | 67.63 |
| 273.0 | 001.3261 | 0120.1 | 021.8 | 046.8 | 100.0000 | 0382.0 | 071.5 | 67.51 |
| 274.0 | 001.3005 | 0119.6 | 021.7 | 046.6 | 100.0000 | 0382.0 | 071.9 | 67.38 |
| 275.0 | 001.2751 | 0119.2 | 021.6 | 046.5 | 100.0000 | 0382.0 | 072.3 | 67.25 |
| 276.0 | 001.2500 | 0118.8 | 021.4 | 046.4 | 100.0000 | 0381.9 | 072.6 | 67.12 |
| 277.0 | 001.2251 | 0118.3 | 021.3 | 046.3 | 100.0000 | 0381.9 | 073.0 | 66.99 |
| 278.0 | 001.2005 | 0117.8 | 021.2 | 046.2 | 100.0000 | 0381.9 | 073.4 | 66.86 |
| 279.0 | 001.1761 | 0117.3 | 021.0 | 046.1 | 100.0000 | 0381.9 | 073.8 | 66.73 |
| 280.0 | 001.1520 | 0116.5 | 020.8 | 046.0 | 100.0000 | 0381.9 | 074.2 | 66.59 |
| 281.0 | 001.1434 | 0115.6 | 020.7 | 045.9 | 100.0000 | 0381.9 | 074.5 | 66.47 |
| 282.0 | 001.1348 | 0114.7 | 020.6 | 045.8 | 100.0000 | 0381.9 | 074.9 | 66.34 |
| 283.0 | 001.1262 | 0114.2 | 020.5 | 045.7 | 100.0000 | 0381.9 | 075.2 | 66.23 |
| 284.0 | 001.1177 | 0113.7 | 020.4 | 045.6 | 100.0000 | 0381.9 | 075.6 | 66.11 |
| 285.0 | 001.1092 | 0113.3 | 020.4 | 045.5 | 100.0000 | 0381.9 | 075.9 | 65.99 |
| 286.0 | 001.1007 | 0112.9 | 020.3 | 045.5 | 100.0000 | 0381.9 | 076.3 | 65.87 |
| 287.0 | 001.0923 | 0112.4 | 020.2 | 045.4 | 100.0000 | 0382.0 | 076.6 | 65.75 |
| 288.0 | 001.0839 | 0111.8 | 020.1 | 045.3 | 100.0000 | 0382.0 | 076.9 | 65.63 |
| 289.0 | 001.0756 | 0111.2 | 020.0 | 045.3 | 100.0000 | 0382.0 | 077.3 | 65.51 |
| 290.0 | 001.0672 | 0110.3 | 019.9 | 045.2 | 100.0000 | 0382.0 | 077.7 | 65.39 |
| 291.0 | 001.0663 | 0109.2 | 019.8 | 045.2 | 100.0000 | 0382.0 | 078.0 | 65.27 |
| 292.0 | 001.0654 | 0108.0 | 019.7 | 045.2 | 100.0000 | 0382.0 | 078.4 | 65.14 |
| 293.0 | 001.0644 | 0106.8 | 019.6 | 045.1 | 100.0000 | 0382.0 | 078.7 | 65.02 |
| 294.0 | 001.0635 | 0105.8 | 019.5 | 045.1 | 100.0000 | 0382.0 | 079.1 | 64.90 |
| 295.0 | 001.0626 | 0105.0 | 019.4 | 045.1 | 100.0000 | 0382.0 | 079.4 | 64.78 |
| 296.0 | 001.0617 | 0104.3 | 019.3 | 045.0 | 100.0000 | 0382.0 | 079.8 | 64.67 |
| 297.0 | 001.0608 | 0103.8 | 019.3 | 045.0 | 100.0000 | 0382.0 | 080.1 | 64.55 |

Minnesota Public Radio
KNOW(New) vs. KKLW

FMCommander Single Allocation Study - 07-29-2010 - FCC NGDC 30 Sec
KNOWNew's Overlaps (In= 39.01 km, Out= 8.46 km)

KNOWNew CH 216 C0
Lat= 45 03 44.0, Lng= 93 08 21.0
100.0 kW 388.5 M HAAT, 663.3 M COR
Prot.= 60 dBu, Intef.= 54 dBu

KKLW CH 215 A BLED20040204ABY
Lat= 45 11 52.0, Lng= 94 56 58.0
0.4 kW 129 M HAAT, 491 M COR
Prot.= 60 dBu, Intef.= 54 dBu



KNOWNew

KKLW BLED20040204ABY

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Protected
 60 dBu

Channel = 215A
 Max ERP = 0.4 kW
 RCAMSL = 491 M
 N. Lat. 45 11 52.0
 W. Lng. 94 56 58.0
 Interfering
 54 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 217.0 | 100.0000 | 0393.8 | 079.3 | 129.2 | 000.4000 | 0111.4 | 123.1 | 20.74 | |
| 218.0 | 100.0000 | 0393.6 | 079.3 | 129.1 | 000.4000 | 0111.5 | 121.9 | 20.95 | |
| 219.0 | 100.0000 | 0392.9 | 079.2 | 129.1 | 000.4000 | 0111.5 | 120.5 | 21.19 | |
| 220.0 | 100.0000 | 0392.2 | 079.2 | 129.1 | 000.4000 | 0111.5 | 119.1 | 21.43 | |
| 221.0 | 100.0000 | 0391.7 | 079.1 | 129.1 | 000.4000 | 0111.5 | 117.7 | 21.68 | |
| 222.0 | 100.0000 | 0391.4 | 079.1 | 129.0 | 000.4000 | 0111.5 | 116.3 | 21.92 | |
| 223.0 | 100.0000 | 0391.3 | 079.1 | 129.0 | 000.4000 | 0111.5 | 115.0 | 22.17 | |
| 224.0 | 100.0000 | 0390.9 | 079.1 | 128.9 | 000.4000 | 0111.5 | 113.6 | 22.42 | |
| 225.0 | 100.0000 | 0390.7 | 079.1 | 128.9 | 000.4000 | 0111.5 | 112.2 | 22.67 | |
| 226.0 | 100.0000 | 0390.6 | 079.1 | 128.8 | 000.4000 | 0111.5 | 110.8 | 22.94 | |
| 227.0 | 100.0000 | 0390.5 | 079.1 | 128.7 | 000.4000 | 0111.6 | 109.5 | 23.21 | |
| 228.0 | 100.0000 | 0390.2 | 079.0 | 128.6 | 000.4000 | 0111.6 | 108.1 | 23.48 | |
| 229.0 | 100.0000 | 0389.8 | 079.0 | 128.5 | 000.4000 | 0111.7 | 106.7 | 23.77 | |
| 230.0 | 100.0000 | 0389.8 | 079.0 | 128.3 | 000.4000 | 0111.7 | 105.4 | 24.06 | |
| 231.0 | 100.0000 | 0390.3 | 079.0 | 128.2 | 000.4000 | 0111.8 | 104.0 | 24.35 | |
| 232.0 | 100.0000 | 0391.1 | 079.1 | 128.1 | 000.4000 | 0111.8 | 102.6 | 24.66 | |
| 233.0 | 100.0000 | 0391.5 | 079.1 | 127.9 | 000.4000 | 0111.9 | 101.3 | 24.97 | |
| 234.0 | 100.0000 | 0391.2 | 079.1 | 127.7 | 000.4000 | 0112.0 | 099.9 | 25.29 | |
| 235.0 | 100.0000 | 0390.6 | 079.1 | 127.4 | 000.4000 | 0112.1 | 098.6 | 25.61 | |
| 236.0 | 100.0000 | 0390.4 | 079.0 | 127.2 | 000.4000 | 0112.2 | 097.3 | 25.95 | |
| 237.0 | 100.0000 | 0390.5 | 079.1 | 126.9 | 000.4000 | 0112.4 | 096.0 | 26.28 | |
| 238.0 | 100.0000 | 0390.6 | 079.1 | 126.7 | 000.4000 | 0112.5 | 094.7 | 26.63 | |
| 239.0 | 100.0000 | 0390.5 | 079.1 | 126.4 | 000.4000 | 0112.7 | 093.4 | 26.97 | |
| 240.0 | 100.0000 | 0390.3 | 079.0 | 126.0 | 000.4000 | 0112.8 | 092.1 | 27.32 | |
| 241.0 | 100.0000 | 0390.0 | 079.0 | 125.7 | 000.4000 | 0113.0 | 090.9 | 27.67 | |
| 242.0 | 100.0000 | 0389.6 | 079.0 | 125.3 | 000.4000 | 0113.2 | 089.6 | 28.02 | |
| 243.0 | 100.0000 | 0389.2 | 079.0 | 124.9 | 000.4000 | 0113.4 | 088.4 | 28.37 | |
| 244.0 | 100.0000 | 0388.7 | 078.9 | 124.4 | 000.4000 | 0113.7 | 087.2 | 28.71 | |
| 245.0 | 100.0000 | 0387.9 | 078.9 | 123.9 | 000.4000 | 0113.9 | 086.0 | 29.05 | |
| 246.0 | 100.0000 | 0386.8 | 078.8 | 123.4 | 000.4000 | 0114.1 | 084.9 | 29.39 | |
| 247.0 | 100.0000 | 0385.9 | 078.7 | 122.9 | 000.4000 | 0114.3 | 083.8 | 29.72 | |
| 248.0 | 100.0000 | 0385.7 | 078.7 | 122.3 | 000.4000 | 0114.6 | 082.6 | 30.06 | |
| 249.0 | 100.0000 | 0386.0 | 078.7 | 121.8 | 000.4000 | 0114.8 | 081.5 | 30.39 | |
| 250.0 | 100.0000 | 0386.8 | 078.8 | 121.2 | 000.4000 | 0115.1 | 080.4 | 30.73 | |
| 251.0 | 100.0000 | 0387.9 | 078.9 | 120.7 | 000.4000 | 0115.4 | 079.2 | 31.07 | |
| 252.0 | 100.0000 | 0388.8 | 078.9 | 120.0 | 000.4000 | 0115.8 | 078.1 | 31.41 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 253.0 | 100.0000 | 0389.5 | 079.0 | 119.4 | 000.4000 | 0116.3 | 077.1 | 31.74 |
| 254.0 | 100.0000 | 0390.1 | 079.0 | 118.7 | 000.4000 | 0116.8 | 076.0 | 32.07 |
| 255.0 | 100.0000 | 0390.6 | 079.1 | 118.0 | 000.4000 | 0117.3 | 075.0 | 32.39 |
| 256.0 | 100.0000 | 0391.3 | 079.1 | 117.2 | 000.4000 | 0117.6 | 074.1 | 32.70 |
| 257.0 | 100.0000 | 0392.3 | 079.2 | 116.4 | 000.4000 | 0117.7 | 073.1 | 32.99 |
| 258.0 | 100.0000 | 0393.2 | 079.3 | 115.6 | 000.4000 | 0117.8 | 072.2 | 33.27 |
| 259.0 | 100.0000 | 0394.1 | 079.3 | 114.8 | 000.4000 | 0117.8 | 071.3 | 33.55 |
| 260.0 | 100.0000 | 0394.7 | 079.4 | 113.9 | 000.4000 | 0117.7 | 070.4 | 33.80 |
| 261.0 | 100.0000 | 0394.9 | 079.4 | 113.0 | 000.4000 | 0117.8 | 069.6 | 34.05 |
| 262.0 | 100.0000 | 0394.9 | 079.4 | 112.0 | 000.4000 | 0118.2 | 068.9 | 34.29 |
| 263.0 | 100.0000 | 0394.7 | 079.4 | 111.0 | 000.4000 | 0118.9 | 068.2 | 34.54 |
| 264.0 | 100.0000 | 0394.6 | 079.4 | 109.9 | 000.4000 | 0119.9 | 067.6 | 34.79 |
| 265.0 | 100.0000 | 0394.4 | 079.3 | 108.9 | 000.4000 | 0120.7 | 067.0 | 35.03 |
| 266.0 | 100.0000 | 0394.3 | 079.3 | 107.8 | 000.4000 | 0121.4 | 066.4 | 35.23 |
| 267.0 | 100.0000 | 0394.2 | 079.3 | 106.7 | 000.4000 | 0122.0 | 065.9 | 35.42 |
| 268.0 | 100.0000 | 0394.5 | 079.4 | 105.5 | 000.4000 | 0122.8 | 065.4 | 35.63 |
| 269.0 | 100.0000 | 0395.2 | 079.4 | 104.4 | 000.4000 | 0123.8 | 065.0 | 35.83 |
| 270.0 | 100.0000 | 0395.8 | 079.4 | 103.2 | 000.4000 | 0124.6 | 064.6 | 36.00 |
| 271.0 | 100.0000 | 0396.5 | 079.5 | 102.0 | 000.4000 | 0124.8 | 064.2 | 36.13 |
| 272.0 | 100.0000 | 0397.1 | 079.5 | 100.8 | 000.4000 | 0124.7 | 063.9 | 36.22 |
| 273.0 | 100.0000 | 0397.6 | 079.6 | 099.6 | 000.4000 | 0124.7 | 063.7 | 36.30 |
| 274.0 | 100.0000 | 0397.7 | 079.6 | 098.3 | 000.4000 | 0124.8 | 063.5 | 36.36 |
| 275.0 | 100.0000 | 0397.8 | 079.6 | 097.1 | 000.4000 | 0124.6 | 063.4 | 36.39 |
| 276.0 | 100.0000 | 0397.9 | 079.6 | 095.8 | 000.4000 | 0123.9 | 063.3 | 36.37 |
| 277.0 | 100.0000 | 0397.8 | 079.6 | 094.6 | 000.4000 | 0123.1 | 063.4 | 36.32 |
| 278.0 | 100.0000 | 0397.7 | 079.6 | 093.3 | 000.4000 | 0122.3 | 063.4 | 36.25 |
| 279.0 | 100.0000 | 0397.6 | 079.6 | 092.1 | 000.4000 | 0122.1 | 063.6 | 36.20 |
| 280.0 | 100.0000 | 0397.5 | 079.6 | 090.8 | 000.4000 | 0121.9 | 063.7 | 36.13 |
| 281.0 | 100.0000 | 0397.4 | 079.6 | 089.6 | 000.4000 | 0121.7 | 064.0 | 36.04 |
| 282.0 | 100.0000 | 0397.6 | 079.6 | 088.4 | 000.4000 | 0121.6 | 064.2 | 35.95 |
| 283.0 | 100.0000 | 0397.7 | 079.6 | 087.2 | 000.4000 | 0122.0 | 064.5 | 35.87 |
| 284.0 | 100.0000 | 0397.9 | 079.6 | 086.0 | 000.4000 | 0122.5 | 064.9 | 35.78 |
| 285.0 | 100.0000 | 0398.1 | 079.6 | 084.8 | 000.4000 | 0123.3 | 065.3 | 35.69 |
| 286.0 | 100.0000 | 0398.4 | 079.6 | 083.7 | 000.4000 | 0124.3 | 065.8 | 35.59 |
| 287.0 | 100.0000 | 0398.8 | 079.7 | 082.6 | 000.4000 | 0124.9 | 066.3 | 35.47 |
| 288.0 | 100.0000 | 0399.3 | 079.7 | 081.5 | 000.4000 | 0125.4 | 066.8 | 35.32 |
| 289.0 | 100.0000 | 0399.8 | 079.7 | 080.4 | 000.4000 | 0125.9 | 067.4 | 35.16 |
| 290.0 | 100.0000 | 0400.1 | 079.8 | 079.4 | 000.4000 | 0126.5 | 068.1 | 34.99 |
| 291.0 | 100.0000 | 0400.3 | 079.8 | 078.3 | 000.4000 | 0127.1 | 068.8 | 34.80 |
| 292.0 | 100.0000 | 0400.4 | 079.8 | 077.4 | 000.4000 | 0127.7 | 069.5 | 34.60 |
| 293.0 | 100.0000 | 0400.5 | 079.8 | 076.4 | 000.4000 | 0128.9 | 070.3 | 34.42 |
| 294.0 | 100.0000 | 0400.5 | 079.8 | 075.5 | 000.4000 | 0130.3 | 071.1 | 34.23 |
| 295.0 | 100.0000 | 0400.3 | 079.8 | 074.7 | 000.4000 | 0131.5 | 072.0 | 34.02 |
| 296.0 | 100.0000 | 0400.0 | 079.8 | 073.8 | 000.4000 | 0132.4 | 072.9 | 33.79 |
| 297.0 | 100.0000 | 0399.7 | 079.7 | 073.0 | 000.4000 | 0133.1 | 073.9 | 33.53 |
| 298.0 | 100.0000 | 0399.2 | 079.7 | 072.3 | 000.4000 | 0133.6 | 074.8 | 33.25 |
| 299.0 | 100.0000 | 0398.8 | 079.7 | 071.6 | 000.4000 | 0134.0 | 075.8 | 32.97 |
| 300.0 | 100.0000 | 0398.4 | 079.6 | 070.9 | 000.4000 | 0134.3 | 076.9 | 32.67 |
| 301.0 | 100.0000 | 0398.0 | 079.6 | 070.2 | 000.4000 | 0134.5 | 077.9 | 32.36 |
| 302.0 | 100.0000 | 0397.6 | 079.6 | 069.6 | 000.4000 | 0134.6 | 079.0 | 32.04 |
| 303.0 | 100.0000 | 0397.0 | 079.5 | 069.0 | 000.4000 | 0134.8 | 080.2 | 31.71 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 304.0 | 100.0000 | 0396.3 | 079.5 | 068.5 | 000.4000 | 0134.9 | 081.3 | 31.37 |
| 305.0 | 100.0000 | 0395.6 | 079.4 | 067.9 | 000.4000 | 0134.9 | 082.5 | 31.03 |
| 306.0 | 100.0000 | 0395.1 | 079.4 | 067.4 | 000.4000 | 0134.9 | 083.6 | 30.68 |
| 307.0 | 100.0000 | 0394.6 | 079.4 | 067.0 | 000.4000 | 0134.9 | 084.8 | 30.33 |
| 308.0 | 100.0000 | 0394.2 | 079.3 | 066.5 | 000.4000 | 0134.8 | 086.0 | 29.97 |
| 309.0 | 100.0000 | 0393.8 | 079.3 | 066.1 | 000.4000 | 0134.6 | 087.3 | 29.61 |
| 310.0 | 100.0000 | 0393.3 | 079.3 | 065.7 | 000.4000 | 0134.5 | 088.5 | 29.25 |
| 311.0 | 100.0000 | 0392.6 | 079.2 | 065.3 | 000.4000 | 0134.4 | 089.8 | 28.89 |
| 312.0 | 100.0000 | 0391.7 | 079.1 | 065.0 | 000.4000 | 0134.2 | 091.0 | 28.52 |
| 313.0 | 100.0000 | 0391.1 | 079.1 | 064.7 | 000.4000 | 0134.1 | 092.3 | 28.16 |
| 314.0 | 100.0000 | 0390.7 | 079.1 | 064.4 | 000.4000 | 0134.0 | 093.6 | 27.80 |
| 315.0 | 100.0000 | 0390.7 | 079.1 | 064.1 | 000.4000 | 0134.0 | 094.9 | 27.45 |
| 316.0 | 100.0000 | 0390.8 | 079.1 | 063.8 | 000.4000 | 0133.9 | 096.2 | 27.10 |
| 317.0 | 100.0000 | 0390.9 | 079.1 | 063.6 | 000.4000 | 0133.9 | 097.5 | 26.75 |
| 318.0 | 100.0000 | 0390.8 | 079.1 | 063.3 | 000.4000 | 0133.9 | 098.8 | 26.41 |
| 319.0 | 100.0000 | 0390.8 | 079.1 | 063.1 | 000.4000 | 0133.9 | 100.1 | 26.08 |
| 320.0 | 100.0000 | 0390.6 | 079.1 | 062.9 | 000.4000 | 0133.9 | 101.4 | 25.75 |
| 321.0 | 100.0000 | 0390.3 | 079.0 | 062.8 | 000.4000 | 0134.0 | 102.8 | 25.43 |
| 322.0 | 100.0000 | 0390.0 | 079.0 | 062.6 | 000.4000 | 0134.0 | 104.1 | 25.12 |
| 323.0 | 100.0000 | 0389.8 | 079.0 | 062.5 | 000.4000 | 0134.0 | 105.5 | 24.81 |
| 324.0 | 100.0000 | 0389.6 | 079.0 | 062.3 | 000.4000 | 0134.0 | 106.8 | 24.51 |
| 325.0 | 100.0000 | 0389.5 | 079.0 | 062.2 | 000.4000 | 0134.1 | 108.2 | 24.22 |
| 326.0 | 100.0000 | 0389.5 | 079.0 | 062.1 | 000.4000 | 0134.1 | 109.5 | 23.93 |
| 327.0 | 100.0000 | 0389.5 | 079.0 | 062.1 | 000.4000 | 0134.1 | 110.9 | 23.66 |
| 328.0 | 100.0000 | 0389.5 | 079.0 | 062.0 | 000.4000 | 0134.1 | 112.2 | 23.39 |
| 329.0 | 100.0000 | 0389.3 | 079.0 | 061.9 | 000.4000 | 0134.1 | 113.6 | 23.13 |
| 330.0 | 100.0000 | 0389.1 | 079.0 | 061.9 | 000.4000 | 0134.1 | 115.0 | 22.87 |
| 331.0 | 100.0000 | 0388.8 | 078.9 | 061.9 | 000.4000 | 0134.1 | 116.4 | 22.62 |
| 332.0 | 100.0000 | 0388.5 | 078.9 | 061.9 | 000.4000 | 0134.1 | 117.7 | 22.37 |
| 333.0 | 100.0000 | 0388.1 | 078.9 | 061.9 | 000.4000 | 0134.1 | 119.1 | 22.12 |
| 334.0 | 100.0000 | 0388.0 | 078.9 | 061.9 | 000.4000 | 0134.1 | 120.5 | 21.88 |
| 335.0 | 100.0000 | 0387.9 | 078.9 | 061.9 | 000.4000 | 0134.1 | 121.8 | 21.63 |
| 336.0 | 100.0000 | 0388.0 | 078.9 | 061.9 | 000.4000 | 0134.1 | 123.2 | 21.38 |

07-29-2010 FCC NGDC 30 Sec Terrain Data

KKLW BLED20040204ABY

KNOWNew

Channel = 215A
 Max ERP = 0.4 kW
 RCAMSL = 491 M
 N. Lat. 45 11 52.0
 W. Lng. 94 56 58.0
 Protected
 60 dBu

Channel = 216C0
 Max ERP = 100 kW
 RCAMSL = 663.3 M
 N. Lat. 45 03 44.0
 W. Lng. 93 08 21.0
 Interfering
 54 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 035.0 | 000.4000 | 0128.1 | 016.6 | 282.8 | 100.0000 | 0397.7 | 135.4 | 49.59 | |
| 036.0 | 000.4000 | 0128.7 | 016.6 | 282.8 | 100.0000 | 0397.7 | 135.2 | 49.66 | |
| 037.0 | 000.4000 | 0129.2 | 016.6 | 282.7 | 100.0000 | 0397.7 | 134.9 | 49.73 | |
| 038.0 | 000.4000 | 0129.8 | 016.7 | 282.7 | 100.0000 | 0397.7 | 134.6 | 49.80 | |
| 039.0 | 000.4000 | 0130.8 | 016.8 | 282.7 | 100.0000 | 0397.7 | 134.3 | 49.88 | |
| 040.0 | 000.4000 | 0132.2 | 016.8 | 282.6 | 100.0000 | 0397.7 | 134.0 | 49.95 | |
| 041.0 | 000.4000 | 0133.6 | 017.0 | 282.6 | 100.0000 | 0397.7 | 133.7 | 50.03 | |
| 042.0 | 000.4000 | 0134.9 | 017.0 | 282.6 | 100.0000 | 0397.7 | 133.4 | 50.11 | |
| 043.0 | 000.4000 | 0136.0 | 017.1 | 282.6 | 100.0000 | 0397.7 | 133.1 | 50.18 | |
| 044.0 | 000.4000 | 0136.8 | 017.2 | 282.5 | 100.0000 | 0397.7 | 132.8 | 50.25 | |
| 045.0 | 000.4000 | 0137.3 | 017.2 | 282.4 | 100.0000 | 0397.7 | 132.5 | 50.32 | |
| 046.0 | 000.4000 | 0137.6 | 017.2 | 282.4 | 100.0000 | 0397.7 | 132.3 | 50.39 | |
| 047.0 | 000.4000 | 0137.9 | 017.3 | 282.3 | 100.0000 | 0397.6 | 132.0 | 50.45 | |
| 048.0 | 000.4000 | 0138.2 | 017.3 | 282.2 | 100.0000 | 0397.6 | 131.8 | 50.52 | |
| 049.0 | 000.4000 | 0138.4 | 017.3 | 282.2 | 100.0000 | 0397.6 | 131.5 | 50.58 | |
| 050.0 | 000.4000 | 0138.5 | 017.3 | 282.1 | 100.0000 | 0397.6 | 131.3 | 50.64 | |
| 051.0 | 000.4000 | 0138.3 | 017.3 | 282.0 | 100.0000 | 0397.6 | 131.1 | 50.70 | |
| 052.0 | 000.4000 | 0138.0 | 017.3 | 281.9 | 100.0000 | 0397.6 | 130.9 | 50.75 | |
| 053.0 | 000.4000 | 0137.6 | 017.2 | 281.8 | 100.0000 | 0397.5 | 130.7 | 50.80 | |
| 054.0 | 000.4000 | 0137.2 | 017.2 | 281.7 | 100.0000 | 0397.5 | 130.5 | 50.85 | |
| 055.0 | 000.4000 | 0136.6 | 017.2 | 281.6 | 100.0000 | 0397.5 | 130.3 | 50.90 | |
| 056.0 | 000.4000 | 0136.0 | 017.1 | 281.5 | 100.0000 | 0397.5 | 130.1 | 50.95 | |
| 057.0 | 000.4000 | 0135.6 | 017.1 | 281.4 | 100.0000 | 0397.5 | 129.9 | 50.99 | |
| 058.0 | 000.4000 | 0135.1 | 017.1 | 281.3 | 100.0000 | 0397.4 | 129.7 | 51.04 | |
| 059.0 | 000.4000 | 0134.7 | 017.0 | 281.2 | 100.0000 | 0397.4 | 129.5 | 51.08 | |
| 060.0 | 000.4000 | 0134.4 | 017.0 | 281.1 | 100.0000 | 0397.4 | 129.4 | 51.12 | |
| 061.0 | 000.4000 | 0134.2 | 017.0 | 281.0 | 100.0000 | 0397.4 | 129.2 | 51.17 | |
| 062.0 | 000.4000 | 0134.1 | 017.0 | 280.9 | 100.0000 | 0397.4 | 129.0 | 51.21 | |
| 063.0 | 000.4000 | 0133.9 | 017.0 | 280.8 | 100.0000 | 0397.4 | 128.9 | 51.26 | |
| 064.0 | 000.4000 | 0133.9 | 017.0 | 280.6 | 100.0000 | 0397.4 | 128.7 | 51.30 | |
| 065.0 | 000.4000 | 0134.2 | 017.0 | 280.5 | 100.0000 | 0397.4 | 128.5 | 51.35 | |
| 066.0 | 000.4000 | 0134.6 | 017.0 | 280.4 | 100.0000 | 0397.4 | 128.3 | 51.39 | |
| 067.0 | 000.4000 | 0134.9 | 017.0 | 280.3 | 100.0000 | 0397.5 | 128.1 | 51.44 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 068.0 | 000.4000 | 0134.9 | 017.0 | 280.2 | 100.0000 | 0397.5 | 128.0 | 51.48 |
| 069.0 | 000.4000 | 0134.8 | 017.0 | 280.1 | 100.0000 | 0397.5 | 127.8 | 51.51 |
| 070.0 | 000.4000 | 0134.5 | 017.0 | 280.0 | 100.0000 | 0397.5 | 127.7 | 51.55 |
| 071.0 | 000.4000 | 0134.2 | 017.0 | 279.9 | 100.0000 | 0397.5 | 127.6 | 51.58 |
| 072.0 | 000.4000 | 0133.7 | 017.0 | 279.7 | 100.0000 | 0397.5 | 127.5 | 51.60 |
| 073.0 | 000.4000 | 0133.1 | 016.9 | 279.6 | 100.0000 | 0397.5 | 127.4 | 51.63 |
| 074.0 | 000.4000 | 0132.3 | 016.9 | 279.5 | 100.0000 | 0397.5 | 127.3 | 51.65 |
| 075.0 | 000.4000 | 0131.0 | 016.8 | 279.3 | 100.0000 | 0397.6 | 127.3 | 51.65 |
| 076.0 | 000.4000 | 0129.6 | 016.7 | 279.2 | 100.0000 | 0397.6 | 127.3 | 51.66 |
| 077.0 | 000.4000 | 0128.1 | 016.6 | 279.1 | 100.0000 | 0397.6 | 127.3 | 51.66 |
| 078.0 | 000.4000 | 0127.2 | 016.5 | 278.9 | 100.0000 | 0397.6 | 127.2 | 51.67 |
| 079.0 | 000.4000 | 0126.7 | 016.5 | 278.8 | 100.0000 | 0397.6 | 127.2 | 51.69 |
| 080.0 | 000.4000 | 0126.1 | 016.4 | 278.7 | 100.0000 | 0397.6 | 127.1 | 51.70 |
| 081.0 | 000.4000 | 0125.6 | 016.4 | 278.5 | 100.0000 | 0397.6 | 127.1 | 51.71 |
| 082.0 | 000.4000 | 0125.1 | 016.3 | 278.4 | 100.0000 | 0397.6 | 127.0 | 51.72 |
| 083.0 | 000.4000 | 0124.7 | 016.3 | 278.3 | 100.0000 | 0397.6 | 127.0 | 51.74 |
| 084.0 | 000.4000 | 0124.0 | 016.3 | 278.2 | 100.0000 | 0397.7 | 127.0 | 51.74 |
| 085.0 | 000.4000 | 0123.2 | 016.2 | 278.0 | 100.0000 | 0397.7 | 127.0 | 51.74 |
| 086.0 | 000.4000 | 0122.5 | 016.2 | 277.9 | 100.0000 | 0397.7 | 126.9 | 51.74 |
| 087.0 | 000.4000 | 0122.1 | 016.1 | 277.8 | 100.0000 | 0397.7 | 126.9 | 51.75 |
| 088.0 | 000.4000 | 0121.7 | 016.1 | 277.6 | 100.0000 | 0397.7 | 126.9 | 51.75 |
| 089.0 | 000.4000 | 0121.6 | 016.1 | 277.5 | 100.0000 | 0397.7 | 126.9 | 51.76 |
| 090.0 | 000.4000 | 0121.8 | 016.1 | 277.4 | 100.0000 | 0397.8 | 126.8 | 51.77 |
| 091.0 | 000.4000 | 0121.9 | 016.1 | 277.3 | 100.0000 | 0397.8 | 126.8 | 51.78 |
| 092.0 | 000.4000 | 0122.1 | 016.1 | 277.1 | 100.0000 | 0397.8 | 126.8 | 51.79 |
| 093.0 | 000.4000 | 0122.2 | 016.1 | 277.0 | 100.0000 | 0397.8 | 126.7 | 51.80 |
| 094.0 | 000.4000 | 0122.8 | 016.2 | 276.9 | 100.0000 | 0397.8 | 126.7 | 51.81 |
| 095.0 | 000.4000 | 0123.4 | 016.2 | 276.8 | 100.0000 | 0397.8 | 126.6 | 51.83 |
| 096.0 | 000.4000 | 0124.0 | 016.3 | 276.6 | 100.0000 | 0397.8 | 126.6 | 51.84 |
| 097.0 | 000.4000 | 0124.6 | 016.3 | 276.5 | 100.0000 | 0397.8 | 126.6 | 51.85 |
| 098.0 | 000.4000 | 0124.8 | 016.3 | 276.4 | 100.0000 | 0397.8 | 126.6 | 51.85 |
| 099.0 | 000.4000 | 0124.7 | 016.3 | 276.2 | 100.0000 | 0397.9 | 126.6 | 51.84 |
| 100.0 | 000.4000 | 0124.7 | 016.3 | 276.1 | 100.0000 | 0397.9 | 126.6 | 51.84 |
| 101.0 | 000.4000 | 0124.7 | 016.3 | 276.0 | 100.0000 | 0397.9 | 126.6 | 51.83 |
| 102.0 | 000.4000 | 0124.8 | 016.3 | 275.9 | 100.0000 | 0397.9 | 126.7 | 51.82 |
| 103.0 | 000.4000 | 0124.6 | 016.3 | 275.7 | 100.0000 | 0397.8 | 126.7 | 51.81 |
| 104.0 | 000.4000 | 0124.1 | 016.3 | 275.6 | 100.0000 | 0397.8 | 126.8 | 51.79 |
| 105.0 | 000.4000 | 0123.3 | 016.2 | 275.5 | 100.0000 | 0397.8 | 126.9 | 51.76 |
| 106.0 | 000.4000 | 0122.4 | 016.2 | 275.4 | 100.0000 | 0397.8 | 127.0 | 51.73 |
| 107.0 | 000.4000 | 0121.8 | 016.1 | 275.2 | 100.0000 | 0397.8 | 127.1 | 51.71 |
| 108.0 | 000.4000 | 0121.3 | 016.1 | 275.1 | 100.0000 | 0397.8 | 127.2 | 51.68 |
| 109.0 | 000.4000 | 0120.7 | 016.0 | 275.0 | 100.0000 | 0397.8 | 127.3 | 51.65 |
| 110.0 | 000.4000 | 0119.8 | 016.0 | 274.9 | 100.0000 | 0397.8 | 127.5 | 51.62 |
| 111.0 | 000.4000 | 0118.9 | 015.9 | 274.8 | 100.0000 | 0397.8 | 127.6 | 51.58 |
| 112.0 | 000.4000 | 0118.2 | 015.9 | 274.7 | 100.0000 | 0397.8 | 127.7 | 51.55 |
| 113.0 | 000.4000 | 0117.8 | 015.8 | 274.6 | 100.0000 | 0397.8 | 127.8 | 51.52 |
| 114.0 | 000.4000 | 0117.7 | 015.8 | 274.4 | 100.0000 | 0397.8 | 127.9 | 51.49 |
| 115.0 | 000.4000 | 0117.8 | 015.8 | 274.3 | 100.0000 | 0397.8 | 128.0 | 51.47 |
| 116.0 | 000.4000 | 0117.8 | 015.8 | 274.2 | 100.0000 | 0397.8 | 128.2 | 51.44 |
| 117.0 | 000.4000 | 0117.7 | 015.8 | 274.1 | 100.0000 | 0397.8 | 128.3 | 51.41 |
| 118.0 | 000.4000 | 0117.3 | 015.8 | 274.0 | 100.0000 | 0397.7 | 128.4 | 51.38 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 119.0 | 000.4000 | 0116.6 | 015.7 | 273.9 | 100.0000 | 0397.7 | 128.6 | 51.34 |
| 120.0 | 000.4000 | 0115.9 | 015.7 | 273.8 | 100.0000 | 0397.7 | 128.7 | 51.29 |
| 121.0 | 000.4000 | 0115.2 | 015.6 | 273.7 | 100.0000 | 0397.7 | 128.9 | 51.25 |
| 122.0 | 000.4000 | 0114.7 | 015.6 | 273.6 | 100.0000 | 0397.7 | 129.1 | 51.21 |
| 123.0 | 000.4000 | 0114.3 | 015.6 | 273.5 | 100.0000 | 0397.7 | 129.2 | 51.16 |
| 124.0 | 000.4000 | 0113.8 | 015.5 | 273.4 | 100.0000 | 0397.6 | 129.4 | 51.12 |
| 125.0 | 000.4000 | 0113.4 | 015.5 | 273.3 | 100.0000 | 0397.6 | 129.6 | 51.08 |
| 126.0 | 000.4000 | 0112.9 | 015.4 | 273.2 | 100.0000 | 0397.6 | 129.8 | 51.03 |
| 127.0 | 000.4000 | 0112.3 | 015.4 | 273.1 | 100.0000 | 0397.6 | 130.0 | 50.98 |
| 128.0 | 000.4000 | 0111.9 | 015.4 | 273.1 | 100.0000 | 0397.6 | 130.1 | 50.93 |
| 129.0 | 000.4000 | 0111.5 | 015.3 | 273.0 | 100.0000 | 0397.5 | 130.3 | 50.89 |
| 130.0 | 000.4000 | 0111.3 | 015.3 | 272.9 | 100.0000 | 0397.5 | 130.5 | 50.84 |
| 131.0 | 000.4000 | 0111.2 | 015.3 | 272.8 | 100.0000 | 0397.5 | 130.7 | 50.80 |
| 132.0 | 000.4000 | 0111.1 | 015.3 | 272.7 | 100.0000 | 0397.4 | 130.8 | 50.75 |
| 133.0 | 000.4000 | 0111.1 | 015.3 | 272.6 | 100.0000 | 0397.4 | 131.0 | 50.71 |
| 134.0 | 000.4000 | 0111.3 | 015.3 | 272.5 | 100.0000 | 0397.4 | 131.2 | 50.66 |
| 135.0 | 000.4000 | 0111.8 | 015.4 | 272.4 | 100.0000 | 0397.3 | 131.3 | 50.62 |
| 136.0 | 000.4000 | 0112.4 | 015.4 | 272.3 | 100.0000 | 0397.3 | 131.5 | 50.58 |
| 137.0 | 000.4000 | 0112.8 | 015.4 | 272.2 | 100.0000 | 0397.2 | 131.7 | 50.53 |
| 138.0 | 000.4000 | 0113.0 | 015.5 | 272.1 | 100.0000 | 0397.2 | 131.9 | 50.49 |
| 139.0 | 000.4000 | 0113.6 | 015.5 | 272.1 | 100.0000 | 0397.1 | 132.0 | 50.44 |
| 140.0 | 000.4000 | 0114.4 | 015.6 | 272.0 | 100.0000 | 0397.1 | 132.2 | 50.40 |
| 141.0 | 000.4000 | 0114.9 | 015.6 | 271.9 | 100.0000 | 0397.0 | 132.4 | 50.35 |
| 142.0 | 000.4000 | 0115.2 | 015.6 | 271.8 | 100.0000 | 0397.0 | 132.6 | 50.30 |
| 143.0 | 000.4000 | 0115.6 | 015.7 | 271.7 | 100.0000 | 0396.9 | 132.8 | 50.25 |
| 144.0 | 000.4000 | 0116.1 | 015.7 | 271.6 | 100.0000 | 0396.9 | 133.0 | 50.20 |
| 145.0 | 000.4000 | 0116.6 | 015.7 | 271.5 | 100.0000 | 0396.8 | 133.2 | 50.14 |
| 146.0 | 000.4000 | 0117.2 | 015.8 | 271.5 | 100.0000 | 0396.7 | 133.4 | 50.09 |
| 147.0 | 000.4000 | 0118.1 | 015.8 | 271.4 | 100.0000 | 0396.7 | 133.5 | 50.04 |
| 148.0 | 000.4000 | 0119.3 | 015.9 | 271.3 | 100.0000 | 0396.6 | 133.7 | 49.99 |
| 149.0 | 000.4000 | 0120.1 | 016.0 | 271.2 | 100.0000 | 0396.6 | 133.9 | 49.94 |
| 150.0 | 000.4000 | 0120.3 | 016.0 | 271.1 | 100.0000 | 0396.5 | 134.2 | 49.88 |
| 151.0 | 000.4000 | 0120.3 | 016.0 | 271.1 | 100.0000 | 0396.5 | 134.4 | 49.81 |
| 152.0 | 000.4000 | 0120.4 | 016.0 | 271.0 | 100.0000 | 0396.5 | 134.7 | 49.75 |
| 153.0 | 000.4000 | 0120.7 | 016.0 | 270.9 | 100.0000 | 0396.4 | 134.9 | 49.69 |
| 154.0 | 000.4000 | 0120.9 | 016.0 | 270.9 | 100.0000 | 0396.4 | 135.1 | 49.63 |

Non-Ionizing Radiation Compliance Statement

The following engineering statement has been prepared for **Minnesota Public Radio**, and pertain to non-ionizing radiation compliance for station KNOW(FM)¹. The data contained in this report was acquired on Wednesday June 16, 2010.

Measurements were performed using a Narda 8718 Broadband Radiation Survey System with a model 8742D isotropic electric field probe. The probe utilized is frequency shaped and provides a value that is a percentage of the occupational / controlled environment condition of the IEEE C95.1-1991 standard.

At the time of the survey, all broadcast facilities were known to be operational into their main antenna systems at full power. The acquired measurements therefore represent the normal operating conditions of the site. Survey measurements were performed both within the transmitter building and on the grounds outside the building.

Within the shared transmitter building housing KNOW(FM) transmission equipment, measurements were performed in areas under and immediately adjacent to transmitter and transmission line². No locations within these areas were identified where the measured power density exceeded the uncontrolled environment condition of the applicable safety standard.

Additional measurements were performed outside the transmitter buildings within the fenced compound. Within these measurements, performed within an approximate radius of 200 meters

¹ KNOW(FM) has a Facility ID of 42949 and operates from the Telefarm, Inc. tower assigned ASRN 10223882.

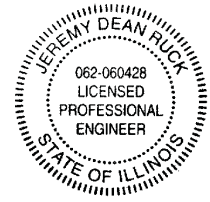
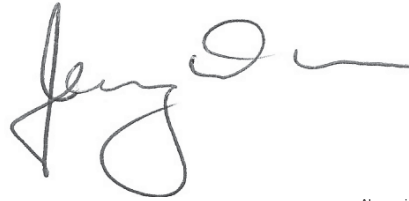
² The building and tower support additional facilities including; WCCO(TV), KSTC(TV), KSTP(TV), WUCW(TV), KARE(TV), WLTE(FM), & KSTP(FM).

from the base of the tower, no locations were identified where the measured power density exceeded the uncontrolled environment condition of the applicable safety standard. The radius of 100 meters was chosen based on data from the Commissions *FM Model* software package, which indicated the peak in power density was expected to occur between 80 and 100 meters from the tower base.

Access to the areas referenced within this report are restricted to personnel having training in RF safety procedures as well as education in the hazards of exposure to RF radiation in the excess of applicable standards. As a result, the controlled environment condition of the IEEE C95.1-1991 standard is applicable in this instance. Access to the area is controlled to the perimeter by fencing and electronically controlled gates with ID proximity card controls. The building is further secured by steel doors and locks. There is no general public access to these areas.

All areas within the study are in controlled areas. However, the measured power density at all locations **does not exceed 100% of the uncontrolled environment condition** of the IEEE C95.1-1991 standard at any of the locations described. Outside of the building power densities were between 1.5 and 19% of the uncontrolled environment condition of the standard. Inside the controlled access transmitter facility power densities were measured between 48.5 and 97% of the uncontrolled environment condition of the standard.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2011

Jeremy D. Ruck, PE
June 17, 2010