

*APPLICATION FOR MODIFICATION
OF CONSTRUCTION PERMIT*

KKTW-LD – MINNEAPOLIS, MINNESOTA
FACILITY ID: 68054

DIGITAL NETWORKS–MIDWEST, LLC

JUNE 2021

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6.13.2021

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APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Midwest, LLC** ("Midwest"), licensee of digital low power television station KKTW-LD at Minneapolis, Minnesota, and are in support of their application for modification of construction permit for that facility.¹

Under the current construction permit for the facility, assigned LMS File No. 0000140372, Midwest is authorized to operate KKTW-LD on television channel 19 with a maximum effective radiated power of 9.4 kW at a center of radiation of 390 meters above mean sea level, 87.9 meters above ground, utilizing a directional antenna. Under this application, Midwest proposes to increase the center of radiation elevation to 395.1 meters above mean sea level, or 93 meters above ground level. In order to accommodate this proposed increase in the center of radiation elevation, Midwest would reduce the maximum effective radiated power to 8.75 kW. All other parameters associated with the current construction permit, including the directional antenna pattern, would remain identical to current values.

Since no relocation of the transmission facility is proposed under this application, there would be contour overlap between the authorized and proposed technical parameters. A map demonstrating the same has been omitted from this application as unnecessary.

Exhibit E-1 is the output of TVStudy for the proposed facility. This study was based on a cell size of 1.0 kilometer, and a profile spacing of 0.1 km. This study indicates that the proposed technical parameters would result in 13.62 percent interference to the license for W47CO-D at

¹ The Facility ID for KKTW-LD at Minneapolis, Minnesota is 68054.

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River Falls, Wisconsin under LMS File No. 000060427.² This level of interference is identical to the current construction permit for KKTW-LD, and is less than that caused by the current license for KKTW-LD at 13.83 percent.³ Thus, the proposed technical parameters would maintain the outgoing interference at the current authorized levels, and would represent a reduction relative to the current license for KKTW-LD.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed antenna would be mounted to an existing tower that is registered with the Commission. The addition of the proposed antenna to this tower would not increase the already existing environmental impact present from the structure.

In addition, the proposed facility would not result in human exposure at ground level to radiofrequency radiation in excess of the Commission's safety standards. Using the equations in Supplement A of *OET Bulletin 65*, the calculated worst-case power density at ground level assuming a downward radiation relative field of 0.3 is 3.18 $\mu\text{W}/\text{cm}^2$. This value is substantially below the upper limit of the uncontrolled environment condition. Midwest certifies it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

² The Facility ID for W47CO-D at River Falls, Wisconsin is 63054. Note that this facility operates on television channel 19.

³ See Exhibits E-2 and E-3 in the original application under LMS File No. 0000140372.

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The proposed facility complies with the provisions of Section 74.709 of the Commission's Rules. No land mobile protection issues have been identified based on the tables in that section of the rules, or on the output of *TVStudy*. The proposed facility also complies with Sections 74.793(e)-(h) and 74.793(h) of the Commission's Rules. The proposed facility is not located within the vicinity of the Table Mountain receiving zone, nor is it located within the West Virginia quiet zone area. The proposed facility is located 607 kilometers from the Grand Island, Nebraska monitoring station.

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, 2021

Jeremy D. Ruck, PE
June 13, 2021

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Exhibit E-1 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: KKTW CH 19 ASRN 1027973 395.1 m AMSL 8.75 kW ERP KAT 75010210 3x2 @265 1.0 km
cell - 0.1 km profile, Model: Longley-Rice
Start: 2021.06.13 15:18:03

Study created: 2021.06.13 15:18:03

Study build station data: LMS TV 2021-06-13

Proposal: KKTW-LD D19 LD LIC Minneapolis, MN
File number: BLANK0000059790
Facility ID: 68054
Station data: User record
Record ID: 337
Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	179.0 km
No	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	224.8
No	K18GF-D	D18	LD	LIC	LITTLE FALLS, MN	BLDTL20120523ADD	128.9
Yes	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000052068	22.9
No	K18IR-D	D18	LD	LIC	OLIVIA, MN	BLDTT20120213ABO	115.2
No	K18NE-D	D18	LD	LIC	ST. JAMES, MN	BLANK0000088224	134.3
No	WBOO-LP	D18	LD	CP	ELK MOUND, WI	BLANK0000143670	157.7
No	KDMI	D19	DT	LIC	DES MOINES, IA	BLCDT20120627AAE	352.1
No	KDMI	D19	DT	APP	DES MOINES, IA	BPCDT20130205AAM	352.1
No	K19MS-D	D19	LD	CP	ALEXANDRA, MN	BLANK0000072314	185.4
No	K49JG-D	D19	LD	LIC	FROST, MN	BLANK0000062830	161.3
No	K19LX-D	D19	LD	LIC	GRANITE FALLS, MN	BLANK0000063065	169.1
No	K19HZ-D	D19	LD	LIC	JACKSON, MN	BLDTT20090910AAS	197.5
No	K19KB-D	D19	LD	CP	OAKLAND, MN	BNPDTL20100510AJX	151.3
No	K19CV-D	D19	LD	LIC	REDWOOD FALLS, MN	BLDTT20120604AAX	129.6
No	K19IT-D	D19	LD	CP	ST CHARLES, MN	BNPDTL20090825BXQ	167.0
No	K19LI-D	D19	LD	LIC	ST. JAMES, MN	BLANK0000064438	134.3
No	K19IH-D	D19	LD	LIC	WILLMAR, MN	BLDTT20100122ACJ	126.6
No	KVRR	D19	DT	LIC	FARGO, ND	BLCDT20090820ABE	284.8
No	KXNE-TV	D19	DT	CP	NORFOLK, NE	BLANK0000035898	434.6
No	KXNE-TV	D19	DT	LIC	NORFOLK, NE	BLEDT20090615ADS	434.6
No	K19KH-D	D19	LD	CP	WATERTOWN, SD	BNPDTL20100505AEC	283.4
No	WTPX-TV	D19	DT	LIC	ANTIGO, WI	BLANK0000054113	315.3
No	W19DJ-D	D19	LD	CP	EAU CLAIRE, WI	BNPDTL20090825AYI	160.7
No	W19DP-D	D19	LD	CP	LA CROSS, WI	BNPDTL20100422ABU	195.1
No	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAW	383.3
Yes	W47CO-D	D19	LD	LIC	RIVER FALLS, WI	BLANK0000060427	60.5
No	KBJR-TV	D19	DT	LIC	SUPERIOR, WI	BLANK0000066392	224.5
No	KSMQ-TV	D20	DT	LIC	AUSTIN, MN	BLEDT20081223AAK	167.3
No	K20NH-D	D20	LD	LIC	BRAINERD, MN	BLANK0000068736	157.6
No	KMBD-LD	D20	LD	LIC	MINNEAPOLIS, MN	BLANK0000121916	14.0
No	K20JY-D	D20	LD	LIC	OLIVIA, MN	BLDTT20120213ABM	115.2
No	K20KW-D	D20	LD	CP	SAINT CLOUD, MN	BLANK0000013930	114.4
No	K20LP-D	D20	LD	LIC	ST. JAMES, MN	BLDTL20120625AAR	134.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
Mask: Full Service
Latitude: 44 59 44.10 N (NAD83)
Longitude: 93 26 56.60 W
Height AMSL: 395.1 m
HAAT: 110.6 m
Peak ERP: 8.75 kW

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Antenna: KAT 75010210 3x2 265.0 deg
Elev Pattern: Generic

49.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.40 kW	108.5 m	33.7 km
45.0	0.187	124.2	24.5
90.0	0.054	130.2	18.5
135.0	0.210	119.2	24.7
180.0	2.43	111.8	36.9
225.0	7.41	107.2	42.0
270.0	8.32	92.5	40.9
315.0	7.65	91.4	40.3

Distance to Canadian border: 367.8 km

Distance to Mexican border: 1829.9 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 223.5 degrees Distance: 607.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 244.9 degrees Distance: 1102.4 km

No land mobile station failures found

Study cell size: 1.00 km
Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000052068 CP scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHVM-LD	D18	LD	CP	MINNEAPOLIS, MN	BLANK0000052068	
Undesireds:	KKTW-LD	N19-	TX	LIC	Minneapolis, MN	BLTTL19870921IE	96.4 km
	KKTW-LD	D19	LD	LIC	Minneapolis, MN	BLANK0000059790	22.9
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	180.9
	KQDS-TV	D18	DT	LIC	DULUTH, MN	BLANK0000120640	208.5
	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX		
	3485.3	2,331,930	3466.1	2,310,207	3442.9	2,306,546	0.62 0.16
Undesired			Total IX	Unique IX, before	Unique IX, after		
KKTW-LD N19- TX LIC		0.0	0	0.0	0		
KKTW-LD D19 LD LIC		21.3	3,661	21.3	3,661		
KYIN D18 DT LIC		6.1	4,035	4.0	2,593	4.0	2,593
KQDS-TV D18 DT LIC		19.2	11,873	17.1	10,431	17.1	10,431

Interference to BLANK0000060427 LIC scenario 1

**IX: 13.62% interference caused

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W47CO-D	D19	LD	LIC	RIVER FALLS, WI	BLANK0000060427	
Undesireds:	KKTW-LD	N19-	TX	LIC	Minneapolis, MN	BLTTL19870921IE	138.6 km
	KKTW-LD	D19	LD	LIC	Minneapolis, MN	BLANK0000059790	60.5
	KBJR-TV	D19	DT	LIC	SUPERIOR, WI	BLANK0000006392	214.4
	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX		
	4081.3	698,059	3968.9	676,610	3949.7	584,469	2.05 13.62

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Undesired		Total IX	Unique IX, before	Unique IX, after
KKTW-LD N19- TX LIC	0.0	0	0.0	0
KKTW-LD D19 LD LIC	81.0	92,141		81.0 92,141
KBJR-TV D19 DT LIC	19.1	4,924	19.1 4,924	19.1 4,924

 Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KKTW-LD	D19	LD	LIC	Minneapolis, MN	BLANK0000059790	
Undesireds:	KBJR-TV	D19	DT	LIC	SUPERIOR, WI	BLANK0000006392	224.5 km
	KMBD-LD	D20	LD	LIC	MINNEAPOLIS, MN	BLANK0000121916	14.0

	Service area	Terrain-limited	IX-free	Percent IX
3542.5	1,607,034	3542.5 1,607,034	3533.5 1,600,537	0.25 0.40

Undesired		Total IX	Unique IX	Prcnt Unique IX
KBJR-TV D19 DT LIC	6.0	1,001	4.0 577	0.11 0.04
KMBD-LD D20 LD LIC	5.0	5,920	3.0 5,496	0.08 0.34

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